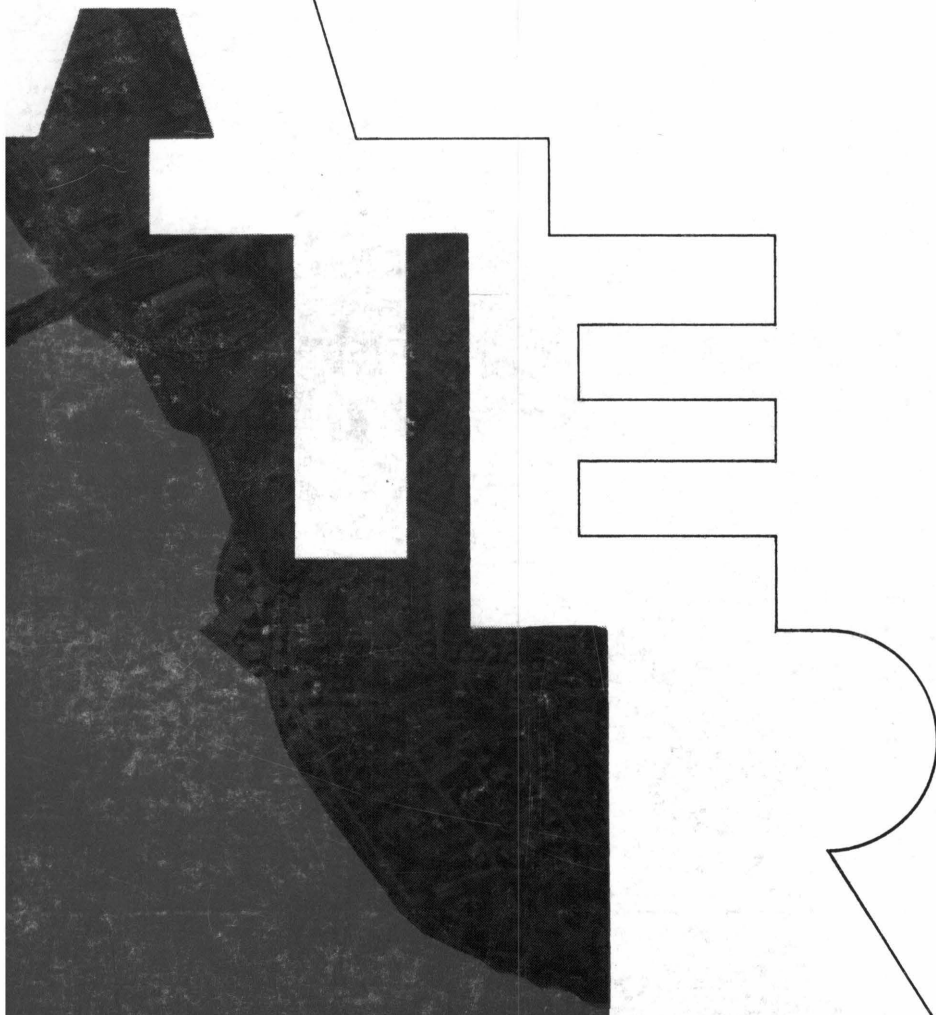


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Bulletin 44
PROCEEDINGS – COMMUNITY WORKSHOP
ON FLOOD INSURANCE

James E. Hackett
T. W. Johnson
Editors



PROCEEDINGS – COMMUNITY WORKSHOP
ON FLOOD INSURANCE

James E. Hackett, Acting Director
T. W. Johnson, Assistant to the Director

Editors

This project was partially financed by Program IMPACT of the Higher Education Act of 1965, Title I: Community Service and Continuing Education, U.S. Office of Education.

Water Resources Research Center
Virginia Polytechnic Institute
and State University
Blacksburg, Virginia
August 1971

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I. INTRODUCTION

INTRODUCTION

Dr. James E. Hackett
Acting Director
Water Resources Research Center

The Community Workshop on Flood Insurance was held at the William Byrd Hotel in Richmond, Virginia, on March 24-25, 1971. The Workshop, co-sponsored by the Water Resources Research Center of Virginia and the Virginia Division of Water Resources, was financed through Title I of the Higher Education Act of 1965. The primary purpose of the conference was to provide a better base of information for the communities of the State with regard to technical information requirements, program functions, and community responsibilities as defined by the terms of the National Flood Insurance Act of 1968. Of particular concern were the Emergency Provisions of the act which are due to expire on December 31, 1971. If communities of the State are to take advantage of the Emergency Provisions, decisions regarding involvement have to be made by that time.

It was the hope of the organizers of the Workshop that the meeting would lead to a better definition of the relevance of the Flood Insurance Program to community development and to a better understanding of the Program as it relates specifically to the needs of the community. It was our belief that this could be accomplished best by an airing of issues and experiences, both pro and con, regarding the Flood Insurance Program as it stands today. Not only would this be of value to the citizens and communities of the Commonwealth of Virginia, but would also have direct relationships to the national aspects of the Program.

The critique of the Flood Insurance Program that resulted from this Workshop is not, therefore, provincial in context, but has relevance to all areas of the country. In addition, the attitudes and responses to the Program reflected in this Workshop are believed to be symptomatic of reactions that can be anticipated for other areas of Federal hazard insurance if they are, in fact, patterned after the National Flood Insurance Program.

The program of the Workshop was organized to develop an adequate background for informed interaction between community representatives and those directly involved in the administration and conduct of the Flood Insurance Act. The first session was concerned primarily with the needs and values of the Flood Insurance Program to the community in the broadest sense, the State as well as the individual city or town. The tone and focus for

the workshop was established by Dr. William Ghee, one of the organizers of the Workshop, and in his initiating address some of the more basic concerns with the Program on the part of the communities were identified.

The second session dealt with the current status of the Flood Insurance Program at the national level as well as from the standpoint of the Commonwealth. Included in this session was a panel discussion incorporating representatives of various phases of the insurance aspects of the Program. The panel members highlighted some rather specific insurance and financing problems which have considerable bearing on the acceptance and continued successful operation of the Program.

With the general background provided by the two sessions of the first day of the Workshop, the program of the second day moved in the direction of the concerns and interests more specific to the community. At these sessions emphasis was given to information needs, reactions to the Program by communities, some specific problems that have been encountered by individual communities in attempting to respond to the Flood Insurance Program, and an airing of questions that the communities themselves have with regard to the Program.

The third session of the Workshop gave information to the communities on the availability of technical assistance to comply with data and information requirements of the Emergency and Regular Provisions of the act. Representatives of Federal, regional, and State agencies described their individual programs and the means by which communities could avail themselves of these services. Included were the programs of the U.S. Army Corps of Engineers, the U.S. Geological Survey, the U.S. Department of Agriculture Soil Conservation Service, the Tennessee Valley Authority, and the Virginia Division of Water Resources.

The fourth session dealt with experiences of individual communities within the State. From the standpoint of community experiences, Virginia is in a rather unique position. It has the third community in the country to qualify under the Regular Provisions of the Program (Alexandria) and the first community in the Nation to qualify under the Emergency Provisions (Hampton). Also, it has experiences with the problems associated with coastal flooding as well as riverine flooding, and one mountain community badly damaged by the "Camille" flooding of 1969 has decided against becoming qualified under the Flood Insurance Act. This background of experience provides a rather substantial base from which general reactions of communities to the provisions of the Flood Insurance Act can be examined.

In the fifth and final session of the Workshop, held on the afternoon of the second day, the reactions of conference participants to various aspects of the Flood Insurance Program as identified during the course of the preceding sessions were open to general discussion. Discussion leaders stimulated response by the participants in four general areas: 1) Program requirements and data needs; 2) Land use provisions; 3) Insurance provisions; and 4) Communication needs. Originally, independent workshops in each of these subject areas were to be conducted. However, because of the size of the group in attendance, a breakdown into individual workshop groups was not considered to be the best way to maximize interaction among participants.

The presentations and discussions were tape recorded, and this publication is presented in a manner in which it is hoped that the informal and open character of the conference is preserved. Formal manuscripts of presentations were not required, but the opportunity to edit transcriptions of individual talks prior to publication was given to all invited contributors.

The Workshop program organizers were gratified by the response of the participants to the material presented in the course of the conference. Response to individual presentations and to the subject area of each session was excellent. Discussions were lively, and a high level of interest was maintained at all sessions indicating that, on the part of those in attendance, there is serious concern about many facets of the Flood Insurance Program.

It is important to note, however, that, in contrast to the reaction of those present at the conference, there appears to be a general apathy or lack of interest on the part of the large majority of the communities of the State with regard to the Flood Insurance Program. Whether this is the consequence of inadequate knowledge about the Program or simply a general lack of interest in the Program is not clear. Of the more than 400 communities and responsible public bodies informed about and invited to the Workshop, only 12 were represented at the meetings.

In spite of, or perhaps more appropriately in view of, the poor response by the communities of the State, it was the considered opinion of those that participated that the information and discussions generated by the Workshop were of sufficient value in illuminating some of the basic as well as some of the more obscure aspects of the Flood Insurance Program to justify publication of the proceedings. In this way, others besides those who attended the Workshop would be able to benefit from this exploratory conference.

Some of the more significant issues, concerns, and problem areas concerning the Flood Insurance Program that surfaced during the course of the Workshop were those dealing with slow response to the Program on the part of communities, apathetic reactions by individual homeowners and business interests to the insurance provisions, the generally unresponsive attitude of the insurance industry toward the Program, the impact of the land management requirements and problems of implementation of these requirements at the community level, and responsibilities of communities to act on behalf of the members of the community. The interesting question of possible legal responsibility of the community to apply for eligibility was raised early in the proceedings. That a community that does not attempt to respond to the act might be held legally responsible by the citizenry when flood damage occurred is a significant question that remains to be answered.

The participants appeared to generally agree that the administrative mechanics of the program at the Federal level and at the State level in Virginia were in the main relatively smooth and well organized. The availability of technical assistance and the process of acquisition of data to comply with the information requirements of the Emergency and Regular Provisions of the Act, believed to be a potential major problem prior to the Workshop, are not major concerns owing to existing programs of Federal, regional, and state technical agencies.

Problems of communication exist, and although lines of communication between Federal and State administrative agencies and between State agencies and the communities within the State are well established, effective communication with the individual homeowner and small businessman is essentially nonexistent. The lack of promotion on the part of the insurance industry due to lack of economic incentive and policy management problems contribute to this communication gap. The Program appears to have had the best results in those areas, such as Alexandria, Virginia, where active citizen involvement has been stimulated.

It is not the intent to summarize here all of the contributions made during the Workshop or to draw comprehensive conclusions from these contributions. This is left to those who read the proceedings that constitute this report.

II. THE COMMUNITIES' NEEDS AND INTERESTS

THE FLOOD INSURANCE PROGRAM AND THE COMMUNITY

Dr. William Ghee
Department of Business Administration
Virginia Polytechnic Institute
and State University

I would like to welcome you to this workshop. We have been able to bring together with community officials some very fine experts to discuss and analyze the question: "Is the Flood Insurance Program Worthwhile for the Community?"

Several questions which need to be discussed in trying to reach a conclusion as to the value and benefits of the Flood Insurance Program are: (1) What does the community need to know in order to make a rational decision, (2) what are questions and problems which have arisen thus far, and (3) a look at how better communications concerning this program can be established.

I would like to try to make one point clear. Our purpose here is not to try to sell the program or even try to defend it. Nor is it to try to attack the flood insurance program. We are trying to provide a forum so you can take a close look at the program, ask questions, find out what information is available and the sources of such information, and make your own analysis of the program.

The need for an orderly method of dealing with flood losses has long existed and prompted numerous studies concerning the feasibility of flood insurance. In 1952 the American Insurance Association made a study and came to the conclusion that providing flood insurance by private insurance companies was not feasible. In 1956 they again studied the problem and obtained the same results – flood insurance on fixed location properties was not advisable. You can obtain flood insurance on certain types of property, such as your car or other movable objects. However, the AIA concluded that insurance against the flood peril (on fixed location property) could not be successfully written.

Thus, the individual homeowner was faced with one of two situations. He could assume the chance of flood loss himself or perhaps purchase insurance. (Of course he could seek a location where the flood loss potential was very minor or non-existent.) If he assumed the potential loss and a flood

did occur, he could look to his own resources, gifts, disaster relief, and if a businessman, assistance from the Small Business Administration.

The individual, in some instances, could purchase insurance from Lloyds of London or similar organizations. A few years ago, after a flood loss in the New Orleans area, some of the homeowners were rather irate because their company did not provide flood insurance. One of the radio stations contacted Lloyds and asked what the flood insurance premium on a \$20,000 home in the New Orleans area would cost per year. The rate quotation was about \$2000 a year for a \$20,000 home. So while insurance was available from Lloyds, it certainly was not financially practical for most homeowners to purchase it.

In 1966 Dr. Marion Clawson was appointed to head a study committee and report to Congress on the feasibility of offering flood insurance. His report recommended such a program and the National Flood Insurance Act was passed in 1968. It became known as the regular program and required a community not only to make certain commitments to land use, but also to have actuarial rates determined for the community before insurance was made available. It provided insurance protection for the homeowner on real property up to \$35,000 (\$17,500 on a subsidized basis and an additional \$17,500 on an actuarial rate basis) and contents coverage of up to \$10,000 (with \$5,000 on a subsidized basis and \$5,000 on an actuarial basis).

The regular program has several important characteristics — some of them unusual and perhaps some of them unique. First, publicity has been focused on insurance coverage, but there are two major objectives of the act. They are the insurance protection and also a land management and use aspect which is at least as important or perhaps more important.

This is one Federal program where insurance coverage is not automatic. The community must take the first step and initiate the request for the coverage. An individual cannot buy coverage until his community has become qualified for the insurance.

There is a non-duplication-of-benefits provision, which means that if a community applies for this insurance program and a person does not buy coverage within the first year, he may lose Federal disaster relief. The act provides for a disaster relief cut-off of funds up to the amount of insurance available to that individual. The only exception to this loss of relief funds would be those in the low income categories. The reason, of course, is that if the insurance is available there is an encouragement to buy it and thus cut down on the amount of disaster relief needed.

Responsibility for servicing this Federal program lies primarily with a state agency. In Virginia, it is the State Division of Water Resources.

Flood insurance is offered through a Federal Government-Private Insurance Industry partnership, which is not completely unique, but is one that is being watched with great interest. The Federal Government shares in the insured flood losses and also provides a reinsurance protection against catastrophic loss.

There is an intent to discourage new buildings in any special flood hazard area of a community which has become eligible, until proper land management use and control has been adopted. This feature has resulted in several communities rejecting the program after receiving severe political pressure from builders and other interested parties.

The Federal Insurance Administration has the option to negotiate with homeowners in special flood hazard areas to purchase their properties. Thus far no monies have been appropriated to the FIA for this purpose, but perhaps it could help reduce problems of loss in the special flood hazard areas. For example, land along a river which is flooded frequently might be purchased by the government for use as parks or recreational areas. Naturally, this would have an effect on the tax base of that community.

The community must obligate itself to the Federal Government (HUD) in certain respects. This includes land use obligations, regulations such as zoning ordinances, subdivision regulations, building codes, etc. In most cases the state or local community can adopt these regulations; however, the Federal Insurance Administration reserves the right to be the final judge as to whether or not they are adequate.

As previously indicated, a community to become eligible under the regular program had to first obtain actuarial studies of the community for rate purposes. One expert indicated that it might take three to five years for an area such as Blacksburg to start from scratch, initiate the rate studies, and carry them through to the actuarial rates. Partially because of the time involved in the rate studies, the growth of the regular program was fairly slow during the first few months. By October 1969 only three communities, including the Arlington-Alexandria area, had become eligible, and only 300 policies had been written.

In March 1970 emergency legislation was passed permitting a community to join before it obtained actuarial rates for its area. By

submitting an acceptable map and by passing certain land use resolutions, the community could become eligible for the subsidized coverages (\$17,500 on the property and \$5,000 on contents). The Emergency Program also broadened the potential insureds to include small business owners (up to \$30,000 on property and \$5,000 on contents – all at a subsidized rate). For the first time the program was broadened to include financial reimbursement in the event of loss to the homeowner or small businessman as a result of a mudslide. There is a deductible of \$200 or 2% of the amount of insurance, but an 80% co-insurance requirement that was in the original legislation was dropped.

Perhaps one thing that I should mention here is that this flood insurance is not an all-water-damage coverage. It protects only against damage as the result of flooding.

The Emergency Program as written runs through December 31st of this year [1971]. By that date, communities which have qualified under the Emergency Program must give indication of substantial progress towards proper land use or land management in their communities. A community which has not by that time applied would, as I understand it, not be eligible under the Emergency Program. There is the implication that all communities covered under the Emergency Program will at some point obtain actuarial rates for their areas.

Next, we need to look at the benefits of the program. Under the insurance portion of the program, there is coverage on both real property and contents. The subsidized rates on real property for homeowners is from 40 to 50 cents per \$100 of property value; the cost of contents coverage is a minimum of 50 cents and a maximum of 60 cents (depending on value of home) per \$100 of property value. The community then asks itself: "Do these benefits justify obligating our community to presently undefined land use and management controls and possibly losing disaster relief for some of our citizens?"

We also need to look at the benefits of proper land management. Several communities have asked: "What are the values and costs involved here?" An advantage would seem to make the community a better and safer place to live by requiring proper use of special flood hazard areas. This involves the cost of restricting new construction in the flood plain area (or special flood hazard area) until certain changes have been accomplished. Exactly what changes are involved may not be easy to determine at this point, and thus the amount of expenses must be an educated guess.

Proper use of land would certainly tie into the emphasis today on environmental improvement and on control of pollution. On the other hand, restriction of expansion into special flood hazard areas would severely limit the growth of certain communities. Converting certain lands into parks or recreational areas would probably reduce the tax base for the the community. However, if proper land management could be exercised for a community, certain areas that are now not profitable for business, or habitable for individuals, might be developed to a much greater extent. This might bring increased usage of the land and also substantially increase value of properties currently in the area. This could have a significant positive effect on the tax base of the community.

There is also the cost of properly informing the citizens of the community so they can make an informed decision concerning this program. In studies I made last year and in working with a questionnaire for this workshop, we verified once again that there is a substantial problem as to how to properly inform the individual citizen concerning the Flood Insurance Program. There seems to be a real communications gap here. The Water Resources Division, HUD, and the National Flood Insurers Association have provided information, but there were several instances where communities did not appear to be aware of the program, and many situations were found where citizens and officials did not adequately understand the program.

We sent out 230 questionnaires (a copy and the results are found on pages 16-18) to Virginia community officials and received approximately a 36% response. Of the 83 responding communities, eight indicated that until they received the questionnaire, they had not known that this program existed.

Of the communities responding, 16 indicated that they had substantial flood loss potential. Only 9 of these 16 had applied for flood insurance. Only 1 of the 43 communities with slight flood loss potential had applied and none of the communities indicating little or no loss potential had applied.

At this point I would like to pose the following question: "Is there any substantial benefit (either from an insurance point of view or from the land use management aspect) to a community which has a slight or perhaps almost no flood loss potential, in applying for the flood insurance program?"

Several other interesting or significant statistics are found in the results of the questionnaire. Twenty-nine communities indicated that they lacked sufficient information to enable them to make a proper decision on this

program. Fifteen communities said it was difficult to obtain adequate, prompt information on the program. Fifty-five communities indicated that there had been no substantial community interest in this program, but 30 said it was because the citizens have not been properly informed concerning the flood insurance program.

We also broke down the results and looked at the 16 communities which had indicated substantial flood hazards. (One word of warning: some of the questions gave a community the option to check more than one answer, so the totals will be greatly in excess of 16 for some questions.) Six of these communities indicated that it was difficult to obtain adequate and prompt information (3 of these communities had applied for "eligibility" and 3 had not).

These communities had learned about the availability of flood insurance from a variety of sources (but no one source provided the basic information for all). They indicated a substantial need for more land use information, a need to know where information is available, and the procedures to be used in establishing actuarial rates for their community. Twelve communities expressed concern about the special flood hazard area (and the effect on new construction). Only nine indicated that there was substantial interest in this program by the citizens of their communities.

Hopefully, I have raised several questions which will be worth discussing at some point during the program. One which I hope can be discussed is "Is there an advantage to a community which has a slight or practically no loss potential from flooding in becoming a part of this program?" If only a few communities (the ones faced with a major flood hazard) decide to apply for eligibility and only a few people within these areas (the ones faced with a major flood hazard) decided to become part of the program, this would not give a good spread of exposure units and would result in a great adverse selection. Unless land use management in areas of substantial flood potential proves effective, we could end up with a substantial subsidy of a few groups through this program.

An additional question involving spread of risk and adverse selection concerns the question of "persistency." If a person buys insurance in an area and there is no flooding during the next two or three years, will these people continue to renew their policies? This is a potential problem which is of some concern to several groups closely associated with this program.

Perhaps it would also be worth discussing whether the benefits of this program are set at an adequate level. At least one Virginia community (which

had a major flood loss in 1969) has indicated that a primary reason it has decided not to apply for flood insurance is that it feels certain benefits are not sufficient to justify a commitment to this program.

If land use management techniques are a part of the environmental approach to making our state a better place to live, perhaps the state at some point could pass land management resolutions which would apply to all communities. Thus, a community would have little to do in order to qualify for insurance. In addition, there would be the benefit of over-all planning for proper land management for all citizens within the state.

As has been pointed out before, there is a problem of communication – how to get information concerning this program to community officials and to private citizens in these towns, cities, or counties. We have asked many of the individuals who will be on the program to bring with them information (either hand-outs or packets) which will be available for you to use now and take home for reference.

One important question is “Why do individuals within a community which is eligible for flood insurance not buy the coverage?” For example: the Alexandria-Arlington area (third to be accepted under the regular program) and the Hampton area (first to become eligible under the Emergency Program) have neither found a large number of citizens purchasing flood insurance. It would appear that we need to know (not just in these communities) WHY people buy or do not buy this insurance. Perhaps a part of the problem is the questions of how to get more information directly to the individual citizen. Could it be best accomplished by television advertising, newspaper advertising, by the Division of Water Resources, local planning groups, a mailer in premium notices to property owners in Virginia, or by some other method.

In order to obtain an accurate picture of whether or not the Flood Insurance Program is proper for communities, we need to give communities sufficient information concerning benefits and costs so they can know what questions to ask. Then the community should be able to make a rational decision concerning whether or not to join the Flood Insurance Program.

Hopefully, this program will provide you with the information and give you the opportunity to ask questions, voice your opinions, state any problems which might be created by this program; and we hope this program will be a most worthwhile one for you.

COMMUNITY FLOOD INSURANCE QUESTIONNAIRE

(Please check X)

[Figures in parentheses represent answers of the 16 Virginia communities which indicated a substantial flood loss potential.]

1. During the past 10 years has your community experienced flood losses?
Yes 29 No 60

2. Do you feel that the flood loss potential in your community is:
Substantial 16 (9 had applied)
Slight 47 (2 had applied)
None 25 (0 had applied)

3. Is your community located in:
Coastal area 13
River area 37
Other 38

4. Has your community applied to the Department of Housing and Urban Development for "eligibility" for flood insurance?
Yes 11 (9) No 72

5. If your community has applied for flood insurance, has approval been granted as of this date?
Yes 8 No 3

6. If your community has decided NOT to apply for flood insurance at this time, please indicate which of the following were important in your decision:
 - (a) Concern over the following:
 - (1) Lack of sufficient information to make proper decisions 32 (3)
 - (2) Land management and use provisions 6 (0)
 - (3) Effect on disaster relief if program approved 4 (1)

 - (b) Concern over actual provisions of the program:
 - (1) Coverages offered homeowners is not sufficient 2 (0)
 - (2) Coverages offered businessmen is not sufficient 3 (1)
 - (3) Cost for homeowners coverages are too high 0 (0)
 - (4) Costs for business owners are too high 1 (0)

- (c) Other No need – 18 Other reasons – 4
(Please specify)
7. Have you found it difficult to obtain adequate and prompt information on this program?
Yes 18 (7) No 29 (8)
8. How did you first learn of the availability of flood insurance?
(a) State Division of Water Resources 32 (6)
(b) Department of Housing and Urban Development 13 (6)
(c) From radio, TV, or newspapers 17 (4)
(d) From other communities 6 (3)
(e) Insurance Company advertising 2 (0)
(f) Other This letter – 9 Other reasons – 6 (2)
(Please specify)
9. Please check each of the following which have provided you with information on flood insurance:
(a) State Division of Water Resources 34 (7)
(b) Local Planning Commission 0 (4)
(c) Department of Housing and Urban Development 7 (10)
(d) Corps of Engineers or TVA 17 (6)
(e) Other communities 10 (3)
(f) Other 10 (2)
(Please specify)
10. Would you like additional flood insurance information concerning:
(a) Land use management (to maintain insurance protection) 23 (12)
(b) The program itself (to qualify for program or explain benefits) 30 (7)
(c) Procedures to be used to establish actuarial rates (and zoning) 19 (11)
(d) Sources which provide information and assistance concerning flood insurance 26 (9)
(e) Other 3 (1)
(Please specify)
11. Do you have concerns about the “Special Flood Hazard Area” established for your community?
Yes 26 (13) No 36 (1)

12. If the answer to No. 11 is YES, is it because:
- (a) Special flood hazard area is too broad 7 (2)
 - (b) Restraint on new construction 11 (7)
 - (c) Land use management requirements 13 (5)
 - (d) Other 1 (0)
- (Please specify)
13. Has there been substantial community interest in this program?
 Yes 11 (9) No 60 (7)
14. If the answer to No. 13 is NO, is it because the citizens have not been properly informed concerning the flood insurance program?
 Yes 34 (7) No 2 (2)
 Uncertain 2 (2)
15. Would you like the Virginia Division of Water Resources to provide additional information and assistance to your community for obtaining flood insurance? If so, please provide address where this information is to be sent or who should be contacted by the Virginia Division of Water Resources. _____
16. Would you be interested in attending a workshop on the flood insurance program in order to discuss its objectives, benefits, costs, and potential problems?
 Yes 29 (11) No 30 (0)
 Uncertain 2 (2)

COMMENTS: _____

THANK YOU FOR YOUR HELP

NEEDS FOR FINANCIAL PREPAREDNESS

George L. Jones
Assistant Coordinator for Administration
State Office of Civil Defense

Dr. Hackett, thank you very much. I am pleased to be able to participate in this conference. In the summer of 1969, I had the pleasure of working with Don Richwine of the Division of Water Resources, in the barest infancy of the HUD Flood Insurance Program, when the Arlandria section of Alexandria became flooded several times that summer. I felt at that time, and I do now, that the HUD Flood Insurance Program can be a useful tool in the response to emergency or disaster situations.

Virginia's Civil Defense Program, simply stated, is the response of government to an emergency or to a disaster situation. This response has been developed through planning, training, and through the utilization and the coordination of available resources that might be needed for emergency relief. Local government has the primary responsibility for emergency response. The state and Federal programs supplement the resources of local government to respond to an emergency or to a disaster. We feel and we hope that Virginia's emergency response capability is adequate now. The Civil Defense agencies, local, state, and Federal, are continuing through planning and through training to strengthen this capability, but we've seen time and time again that in disasters, large and small, particularly those related to water or floods, governmental response and the response of charitable organizations such as the Red Cross or the Mennonite Relief Society or others, while they do a fine job, just doesn't do the total job. For example, when a home or a business which has a sizeable mortgage on it is substantially damaged by flood, government programs through low interest loans, or through mortgage write-offs help; but they just don't do enough of the job.

We feel that an insurance program like the HUD Flood Insurance Program is and can be a valuable tool – and that it has not yet reached its full potential in Virginia. We have had some indication – and Jim Hardee who heads our Disaster Planning Shop will describe this from studies in which we have participated, that Virginia's citizens might well be interested in a flood insurance program of this kind, particularly a subsidized program. If this indication is correct, it is the responsibility of local governing bodies to make sure that if their constituents want this kind of coverage, it can be available to them. As Dr. Ghee said, there are certain qualifications necessary for any community to participate. With that, I would like Jim Hardee to further

develop this theme through some of the experiences he had in "Camille," and if you have any questions please let us have them . . . Jim.

James C. Hardee
Disaster Planner
State Office of Civil Defense

Thank you, George. When George asked me to come over and help him with our participation in this workshop – I'm not going to tell you the date or the hour he asked me – I sat down and I thought how could I best contribute something to the workshop, and also how could it help me in my job as a Disaster Planner.

First, I want to say that I'm with you guys. If you can sell this flood insurance throughout Virginia it will certainly make my job as Disaster Planner much easier, because I firmly believe that the victims of floods would be far better off if they could recoup their damages through insurance claims than through the system that we work with which is basically aid and assistance through the state and Federal Governments.

I have been asked to talk to you briefly about the needs for financial preparedness, and I plan to relate my remarks to the major natural disaster we had in Virginia during August of 1969. Our damage, as you know, was primarily caused by flooding. When a disaster strikes anywhere in Virginia, and flooding will result in disaster, there are several methods by which disaster victims can be helped. Of course, the best method to recover from losses sustained as a result of flooding is insurance. Insurance claims can be adjusted quickly, and normally insurance companies will cooperate in every way to help victims to return to normalcy as quickly as possible and thus eliminate many hardships.

At first, should a disaster strike in any area of the state, the local government has the inherent responsibility to do everything within their power to cope with the situation. When conditions are such that the local government needs outside help, they request assistance from the state; and when the magnitude or severity of the disaster is such that the state needs assistance from the Federal Government, the Governor may request the President to declare a major natural disaster. A good example of this situation was in August, 1969, when the Governor of Virginia requested the President to declare portions of the State of Virginia a major disaster area. The areas covered were all jurisdictions damaged as a result of hurricane "Camille." When the President makes such a major declaration, the full force of Federal agencies having disaster responsibilities are brought into action. The primary objective of the Federal disaster assistance program is to help people and state and local governments. Assistance to individuals is based on needs of the

individuals and their families. At such time as the President makes a major declaration, in addition to the Federal agencies, the American National Red Cross, the Salvation Army, the Mennonite Disaster Service, and other relief organizations enter the scene, operating under agreements made between the relief organization and the Office of Emergency Preparedness.

The Office of Emergency Preparedness coordinates all Federal assistance for a natural disaster. I would like to mention briefly how this system works. When the disaster is not of the magnitude or severity to warrant a request that the President make a declaration of a major disaster, many Federal agencies have statutory authority to provide assistance to state and local governments, communities, and individuals. This can be done prior to or in the absence of a declaration of a major disaster; but these actions, based under this limited authority, are basically for life-saving and emergency measures. When a declaration of a major disaster is made by the President, all Federal agencies are authorized to aid and assist in the emergency and recovery periods of the disaster.

We have a new public law on aid and assistance to individuals and local and state governments. This new act was passed December 31, 1970, and is Public Law 91-606. I'm not going to attempt to mention all of it here; I will say that I analyzed the new law and tried to reduce it to barest of necessities — leave out as many legal terms as I could — and it still took 18 pages single-spaced to interpret this law. But it covers numerous things, low-interest long-term loans by the Small Business Administration, Federal Housing Administration, unemployment assistance, food coupons, many, many things.

Now back to our operations during "Camille." The estimated damage for this disaster to the economic sector, like the railroads, public utilities, business, and agriculture, totalled some \$82.6 million. Then you add another \$10,250,000 for the residential sector, and our estimated total damage in the category which involved people and things was some \$92.8 million. I have excluded from these calculations damage to state and local government facilities. In the State Office of Civil Defense we have tried to calculate as best we could the total aid and assistance poured into the disaster area by the Federal Government, state government, relief organizations, and all other sources. We think the figures we have are substantially correct. As I stated, the estimated damage, excluding damage to state and local facilities, was \$92 million. Railroads and public utilities took care of their own, but they do have some relief in the form of tax credits for the damage that I have not tried to calculate. For the residential sector, the Small Business

Administration poured in \$2.4 million in loans, HUD spent \$805,000 — this was temporary housing, primarily mobile homes. I think there were 273 of them brought into Virginia. The Red Cross poured in \$1 million; a lot of this was straight out grants. The Salvation Army spent \$24,000. Local welfare funds accumulated some \$140,000, and then miscellaneous — church groups, civic organizations, etc. — spent some \$585,000. That was a total of \$4.9 million. In Agriculture, the ASCS poured in \$1.6 million; and then as a reimbursement from another Federal agency, the OEP, some \$645,000 was expended for removal of debris from private property. The Soil Conservation Service spent \$4,250,000, and the Federal Housing Administration spent \$500,000. The SBA loans to businesses, commercial and industrial, amounted to \$9.1 million, and then another category of debris removal from private property was \$121,000. This was where individuals actually did the work for removal of debris and the Federal Government reimbursed them for actual cost.

You can readily see that there is a measureable difference between the damage suffered by the people and the amount of assistance put back into the disaster area. Some of this assistance was in grants, especially in all areas except loans which were made by the Small Business Administration and the FHA. In early 1970, the School of Commerce, Economics, and Politics, at Washington and Lee University made a study entitled, "The Reactions to Hurricane Camille in Nelson, Amherst, and Rockbridge Counties." I have extracted from this study an item on insurance which I think has a direct bearing on the purpose and goals of this workshop.

To get an approximation of the reactions of persons who had undergone flood damage to the idea of flood insurance, the sample victims of the flood were asked, "Some people say the best idea is insurance, like fire insurance for your home or theft insurance on your car. How much would you be willing to pay every month for insurance that would pay you back for your losses of any flood that might occur in the future?" The responses cannot be considered in terms of firm commitment, for the respondents had not given any prior thought to the matter and some had difficulty thinking of an appropriate amount. The responses are tabulated in the following table.

What Victims Would Pay per Month
for Flood Insurance.

(N = 224)

\$7 or more	18%
\$3 to \$6	14
Less than \$3	9
Amount not stated	7
Would not buy it	20
No answer	32
	100%

What is interesting about the table is that nearly half expressed a willingness to buy insurance and many would pay substantial premiums. Half the total damage reported in this sample is about \$800,000, so a voluntary insurance plan is apparently feasible if we take these calculations at face value. The subsidized insurance scheme might bring in the other half of the community. The nation-wide insurance program would get premiums from persons outside the immediate flood area who are now contributing to the payment of losses through Federal taxes and contributions to private relief organizations and are thus sharing the losses and who would derive the additional benefit of coverage. Next, I want to show that the willingness to buy insurance increases with income which would make a subsidized plan more feasible. In general, it was those with the moderate losses who were more interested in flood insurance.

The following chart reflects the willingness to take out flood insurance by income level. (N = 223).

	Under \$2,000 (41)	\$2,000- 3,999 (48)	\$4,000- 7,999 (73)	\$8,000 and over (51)
Would buy	19%	42%	58%	55%
Would not	29	23	19	14
No answer	52	35	23	31
	100%	100%	100%	100%

The Federal Government is subsidizing the National Flood Insurance Act of 1968 which it can afford to do since it now subsidizes disaster recovery in the absence of any available insurance. There's a problem I would like to mention, however. Here is a problem of government subsidies to those

who do not choose to take the voluntary insurance. Should the non-insured receive substantial assistance in the event of a disaster, the premium payers would soon recognize the inadvisability of renewing their policies. However, this problem would only arise in a widespread disaster area where many victims would be involved.

In the few minutes allotted to me, I have tried to portray to you a picture of the help flood victims could get in the absence of insurance. In summary, we believe that financial preparedness at the local level, such as flood insurance, is a more beneficial program for flood victims than depending on assistance from local, state, and Federal government as the latter is based on need and not loss. Adequate coverage by insurance would, in most cases, recoup the total damage that they had suffered. Now, I covered this briefly, and I'm open for questions if we have any.

DISCUSSION

Q: On your sampling of the public, was that limited to the people who sustained losses, or did it include the general public?

Mr. Hardee: It applied to the victims, a selected sampling in these three counties, and everyone that was sampled was a victim of this flood. I have only picked one subject out of this study by Washington and Lee. It was released to the press sometime last fall – I believe it was September. They also go into the reactions of the people who administer an assistance program, grants that were made, and loans that were made. It is a comprehensive study. I extracted the portion on insurance, which I knew this workshop would be interested in.

Q: Jim, how soon after the flood losses was the survey taken?

Mr. Hardee: Washington and Lee made a much more limited study immediately after the flood and included parts of Rockbridge County and Buena Vista. It was a pilot study for graduate students. Then they presented the results of that study to the Senate hearings in Roanoke in February on the "Camille" disaster, and right after that a contract was negotiated with the Office of Emergency Preparedness and our state office. They started to work

on this contract about March. The questionnaires were completed during the spring and summer and the study released in September. Professor William Buchanan was the man in charge, and you can get copies from him at Washington and Lee.

THE MEANING OF THE FLOOD INSURANCE PROGRAM TO THE STATE, THE COMMUNITY, AND THE INDIVIDUAL

Richard W. Krimm
Assistant Administrator for Flood Insurance
Department of Housing and Urban Development

I'm going to deviate a little bit from the program because I am going to tell you what the program is all about and then try to give a sales talk — although in the Federal Government we are not supposed to sell programs. Why should your communities in Virginia be part of the Flood Insurance Program?

As you all may know, back in 1966 there was a feasibility study which was made to determine whether or not the Federal Government and the private insurance industry could get together on a flood insurance program. As a result of that feasibility study, President Johnson sent a bill to Congress, through the Department of Housing and Urban Development, which set up the National Flood Insurance Act which was enacted in 1968.

But let me just go back a little bit and review the flood insurance problem. In recent years Americans have increasingly focused their attention on the problem confronting persons subject to severe loss whether from natural disasters such as flood, hurricane, earthquake, or from man-made perils such as crime and riot. There have been continued efforts to eliminate the impact of these disasters on their victims, but it is unlikely that either natural or man-made disasters will disappear as a fact of life in our time. Therefore, it became necessary to discover a way to minimize their devastating effect and to aid their victims.

In the past this concern has been expressed in one of two forms, disaster relief and rehabilitation measures for disaster victims, or the utilization of various mechanisms seeking to employ the insurance principle. In recent years, however, it has become generally recognized that after the fact compensatory measures are frequently inadequate, often inequitable, and almost always degrading to recipients. As a result, Congress has been giving more emphasis to the use of the insurance mechanism. One example was the enactment in 1968 of the Flood Insurance Act. The need for governmental involvement was intensified by the growing reluctance on the part of the insurance companies to make property insurance coverages widely available to the public; and, of course, flood insurance, although it was available, was only available at a prohibitive rate.

Prior to the enactment in 1968 of the National Flood Insurance Act, flood insurance had just not generally been available. The private insurance industry had found it uneconomical to write such coverage; only property owners living in flood areas were interested in the coverage with the result that adverse selection was guaranteed, thus making any spread of risk impossible. In these circumstances, the catastrophic potential of flood losses could bankrupt an insurance company. Furthermore, property insurance rates are based on loss and expense experience recorded over a period of years. Creditable experience data was lacking for flood insurance. Another point to consider is that even owners of properties located in a severe flood hazard were frequently unwilling or unable to pay the high premium necessary to obtain coverage, thus the insurance industry concluded that it was unable to provide flood coverage without at least initial Federal assistance. The inability of property owners to obtain flood insurance frequently resulted in a failure to rebuild the entire area stricken by a major flood. People often failed to take advantage of available government assistance. It is also apparent that any program of land management and other control measures to reduce the destructive effect of floods in inhabited areas would require assistance and direction from the Federal Government. Since the Federal Government was already providing disaster relief, as well as low interest loans to assist in the reconstruction of damaged property, Government aid in providing low-cost insurance seemed to be a logical extension.

In view of the critical shortage of flood insurance, the Federal Government conducted a study of the problem to determine the feasibility of providing flood insurance at the Federal level; and as a result, as I said earlier, the National Flood Insurance Act was passed in 1968. However, the act does not only provide for insurance. It was a recognized fact that floods are the most serious natural disasters facing citizens of the United States. In fact, about one billion dollars of damage is done annually as a result of floods. Therefore, the Flood Insurance Act had two purposes, one to provide financial assistance for victims of flood disasters in order to aid them in the rehabilitation of their property; and two, at the same time to prevent unwise use of land in those areas where flood damages would mount steadily and rapidly. Insurance was the mechanism which was capable of maintaining an acceptable balance between these two goals. The report concluded that a program of flood insurance was an excellent means of helping individuals bear more easily the risks of flood damage to which their locations exposed them, as well as an excellent means of discouraging unwise occupancy of flood prone areas. In response to the obvious need for Federal Government assistance in establishing viable flood insurance coverage, Congress enacted the National Flood Insurance Act of 1968.

A 1969 amendment to the act expanded the definition of "flood" to include mud slide, and for our purposes mud slides are defined as "movements down a slope of a mass of natural rock, soil, artificial fill, or a combination of these materials, caused or precipitated by the accumulation of water on or under the ground, and not caused by earthquakes or similar earth movements which are volcanic or tectonic in origin." I understand that at the time of the rains after hurricane "Camille" there were a number of mud slides in Nelson County, in Virginia. It is not only California that is subject to mud slides; mud slides occur all over the United States. In fact, there is a report that was put out by HUD a few years ago which told about mud slides which occurred in Alexandria, Virginia.

The National Flood Insurance Program, administered by the Federal Insurance Administration within the Department of Housing and Urban Development, is a cooperative effort between a private insurance industry and the Federal Government. An advisory committee composed of representatives of the insurance industry, state and local governments, the home building industry, and the general public, assists the Federal Insurance Administrator in carrying out the program. Designed to make at least partial flood insurance coverage available against property losses caused by floods, the long range goal of the program is to reduce or prevent future flood losses through improved flood plain management.

In order to obtain flood insurance coverage, initiative must be taken by each individual municipality or by that unit of government which has jurisdiction over land use control measures. A city must submit a complete application which meets all the requirements of the regulations governing the Flood Insurance Program. First of all, appropriate local officials must demonstrate that there is a local need for flood and/or mud slide insurance coverage, and supply evidence of their desire to participate in the program. In doing so, the municipality's application must cite the jurisdiction's legal authority to regulate land use and control measures in relation to floods and/or mud slides. A community must submit a copy of any flood plain management regulatory measures which are in effect for the area, including zoning, building codes, rating codes, health ordinances, easements, and other corrective and preventive measures designed to reduce property damage caused by flooding and mud slides. Each community must submit two maps. The first should, if possible, delineate local flood prone areas and local areas where mud slides may occur. The second should be a map which can be reproduced for publication clearly indicating the corporate limits of the community. If the application is made on behalf of a county or a political subdivision containing more than one incorporated community, the map

should be accompanied with a list of those incorporated communities. A community must also submit an outline of the community's flood history and flood prone characteristics, an estimate of population, the number of 1 to 4 family residences, and the number of small businesses in the flood prone area. However, one of the most important requirements of the program is that the city must take legislative action formally committing itself to adopt by December 31, 1971, and to maintain in force for areas having special flood hazards adequate land use and control measures designed to reduce exposure to flood damage. The measures ultimately adopted must be consistent with criteria established by the U.S. Government and should 1) constrict the development of land exposed to flood damage where appropriate, 2) guide development of proposed construction away from locations threatened by flood hazards, 3) assist in reducing damage caused by floods, and 4) generally improve the long-range land management and use of flood prone areas. The city must also cooperate with the Federal Insurance Administrator in his efforts to bring the benefits of the program to the area. Once an area has completed its application satisfactorily, it will be declared eligible for the sale of flood insurance policies within three weeks.

An important purpose of the National Flood Insurance Program is to encourage state and local governments to adopt and enforce land use and control measures. The law requires that the objectives of a Flood Insurance Program be related to a unified National program for flood plain management. Land use and control measures should encourage only development on identified flood prone areas which represent acceptable social and economic uses of the land in relation to the hazards involved and should discourage all other development in the identified areas of special flood hazard. For coastal plain areas, consideration should be given to first floor elevation and the need for bulkheads, seawalls, and piling for the purpose of reducing damage from flooding and improve the long-range flood plain management program. The requirements with regard to land use and control measures is really the essence of the program. Without it there would be no incentive to reduce losses and the program would then discourage rather than encourage the judicious use of land.

It is hoped that the states will adopt criteria for their municipalities to employ in establishing local land use and control measures. The states can also play a very important role in this program by reviewing these regulations as well as by assisting the Federal Insurance Administration in establishing priorities. The Division of Water Resources in the Department of Conservation and Economic Development, of course, is the state coordinating agency in Virginia.

Under the 1969 amendment to the Federal act, these local ordinances need not be enforced before December 31, 1971, but after that date flood insurance will no longer be made available to cities which have not enacted the necessary zoning and enforcement procedures. The statute prohibits any new flood insurance from being sold in the community after that date, and existing flood insurance policies will not be renewed. At a minimum, local land use and control measures must be made applicable to those areas identified by the Federal Insurance Administration on local maps, as precisely as available information will permit, on or before the date flood insurance is first made available to an applicant community. The minimum area of control and regulation should be predicted on the risk associated with the 100-year flood probability. Regional differences, storms of record, and topographical characteristics related to flood hazard must be considered. Existing structures generally do not have to meet the new building requirements. There is ordinarily no requirement to either improve or modify existing structures for flood damage protection since zoning and subdivision regulations are not usually retroactive. However, the floodproofing of existing structures should be an objective of sound flood plain management. Also, under the Flood Insurance Program if there is substantial improvement of a property, in other words if the property's value is increased by more than 50% due to improvement, we require that that property be improved to meet the new specifications for floodproofing or for elevations. Zoning ordinances, subdivision regulations, building codes, health regulations, and other controls for the health, safety, and welfare of the people should be designed to develop the widest or most economic use compatible with the flood risk. The areas most frequently flooded might be reserved for open space type of use such as playgrounds, parking areas, agricultural, and storage areas. Areas less frequently flooded might be used for industrial, commercial, and multi-story residential areas. Areas outside the area of special flood hazard can be used for residential purposes.

Flood insurance coverage is provided through a voluntary pool of private insurance companies, organized under the auspices of the National Flood Insurance Insurer's Association. The way this pool works and its relationship to us will be discussed later by Mr. Sorensen. I might add, also, and not to infringe upon Mr. Sorensen's talk, that one of the great advantages of the program is that when a community is declared eligible any duly licensed insurance agent or broker can sell the insurance thereby making the insurance very accessible to the people. It is up to the insurance agent and broker to service their clients.

Under the Flood Insurance Act subsidized insurance is prohibited for new construction located in areas identified by us as having special flood hazard. In these areas the purchaser may pay an actuarial rate based upon engineering and hydrological evaluation of the actual risks involved. To the extent that new construction includes floodproofing and higher first floor elevation, the actuarial rate can be substantially reduced. Property owners are encouraged to buy enough insurance to give them adequate protection where Federal flood insurance is available, and all but low income persons are denied disaster relief to the extent they could have purchased flood insurance coverage within one year of its availability in their community.

Many lending institutions are now requiring that Federal flood insurance be purchased to protect their mortgage loans. Although there is no recommended amount, there are minimum premium provisions of \$25 per policy and \$4 for any increase in coverage during the life of the policy. At present, the statutory limits applicable to the subsidized program are \$17,500 in coverage for a single family dwelling, \$30,000 for a 2 to 4 family dwelling, and \$30,000 for small businesses. Additional coverage equal to these amounts is available at actuarial rates under the regular program. Congress has placed a limitation of 2.5 billion on the amount of flood insurance coverage outstanding and in force at any time, and a limitation of \$250,000,000 in funds borrowed from the U.S. Treasury to pay losses and expenses. I might add that at the present time we are only covering 1 to 4 family dwellings and structures principally occupied by small businesses. Congress gave a priority to these structures to be the first to be insured because, according to the feasibility study, these were the individuals that suffered the most from loss during floods and had the most difficult time becoming rehabilitated; and until we are sure that the program is going to work and communities are going to go along with their flood plain management promises, we are not going to extend the program. However, after December 31 of this year if the communities do an adequate job of adopting proper flood plain management, we may consider expanding the program to include other types of property; and, of course, it will also depend on whether or not Congress raises the amount of insurance that can be in force at one time because at this point we are close to \$1 billion insurance in force with over 500 communities in the program.

I also want to mention just a little bit about what the flood insurance policy covers. The flood insurance policy covers losses resulting from the inundation of normally dry land areas from 1) the overflow of inland or tidal waters, or 2) the unusual or rapid accumulation or runoff of surface waters from any source, and 3) mud slides which are caused by accumulations of

water on or under the ground. It does not, however, cover water damage which results principally from causes on the insured's property or within his control, or from a condition that does not cause general flooding in the area. Now it is very important to remember that flooding as defined by the Federal Government is a general or temporary condition of overflow or inundation of normally dry land areas, and unless there is a general condition of flooding, claims cannot be paid under the program.

This is just a very brief explanation of what the program is about, and I have been asked to talk on why communities in Virginia should become involved in the Flood Insurance Program. If you are from a community which is subject to floods, you have an obligation to the citizens to take all actions necessary which are going to help them avoid loss from flooding. Certainly the Flood Insurance Program provides this means. If a flood occurs now in a community where there is no flood insurance availability thereby precluding an individual from purchasing the insurance, and there is damage done to their property, they must borrow money to reconstruct the property. If they can be insured, they don't have to borrow the money. They also feel more self-sufficient if they have purchased an insurance policy rather than always having to go to the Federal Government to borrow money. This program is kind of a carrot stick approach. We've offered a carrot of federally subsidized flood insurance, that is insurance at a low rate, in return for getting a promise from the communities to adopt land use and control measures which will have, as I said earlier, the overall effect of reducing future losses of life and property from flooding. And, of course, this is very important in the full planning of urban development – that new projects are not built in areas where they are going to be subject in a few years to partial destruction as the result of flooding. I think all of you here who are city planners involved in the planning of the cities will agree with me on that part.

There really are three main reasons why you should become involved in the Federal insurance program. As I said earlier, you should provide insurance for residents of your flood prone areas so that they can purchase this insurance and be covered in the event of flood losses. Also, if someone happens to own a property which is subject to frequent flooding and the property is damaged, there is a provision in the law which will allow the Secretary of Housing and Urban Development to negotiate with the homeowner for the purchase of the property if he deems it is in the public interest to purchase such a property. Second, the Flood Insurance Program assists the states in providing a state-wide, uniform program of flood plain management, and at the same time it is also providing for a National program of flood plain management. And third, the program provides for wise future

use of land by guiding people away from flood areas where they are subject to the loss of life and damage to their property, and encourages the so-called wise use of the area. In the past many homeowners purchased houses on lots which builders sold them not knowing the flood hazard. They would live there for a few years, and suddenly a flood would come along and they would have \$10,000, \$15,000, or \$20,000 damage done to their homes or they might lose their home completely.

This is a program in which I think every state should play an active role, and every community should take the necessary action to become eligible under the program. The program is in 40 states at the present time, with over 500 communities. It stretches from such diverse areas as Wareham, Massachusetts, to Honolulu, Hawaii; Fairbanks, Alaska, to Key West, Florida. Presently there are an equal number of coastal communities and riverine communities in the program. In Virginia, there are only 13 communities in the program, and I am sure you have more than that which are subject to flooding.

Jarl T. Sorensen
Assistant General Manager
National Flood Insurers Association

The National Flood Insurer's Association is an insurance pool representative of substantially all of the private insurance industry – stock companies, mutuals, organization companies, and independent companies. It is broadly representative of the business of insurance, being 98 companies or company groups who have subscribed a total participation of more than \$42,000,000 to back up the predominant financial support by the Federal Government.

The mechanics of policy issuance are all that I will comment on at this time, since you have had a briefing by Mr. Krimm of HUD of the amounts of coverage available on dwelling buildings (one to not more than four families) and household contents and on small business occupied buildings and business contents. It has been pointed out to you that the process is very simple; and while I know that all of you as city officials and planners are more interested in the very important aspects of land use and zoning, I think it is worth your while to know of the everyday mechanics of insurance issuance.

Once a local area is made eligible and has been so certified by HUD, both we and HUD separately issue press releases so that the local papers in that town and other communities close by get the word. We hope to reach everybody – the public and all insurance agents and brokers. Please make it clear to your people locally, including agents and brokers in your own towns, that any licensed agent or broker may accept applications and arrange for the purchase of flood insurance through one single servicing company for each section of the country. For Virginia the servicing company is the Insurance Company of North America in its Washington, D.C., office. I want to stress that these are association policies with the Insurance Company of North America only acting as our servicing agent.

Applications and the manuals of rates and-rules, all fundamentally very simple, may be obtained by local agents from the Insurance Company of North America in its Washington, D.C., office. For your pick-up at this meeting, I've brought a supply of pamphlets listing our servicing offices throughout the country. The servicing company will gladly provide any agent on request with pads of applications, the manuals, and instructions. The application, completed jointly by the agent and the insured, is to be sent back to the Insurance Company of North America with premium payment; and the policy will be promptly issued.

When a community is first made eligible, there is no waiting period for the first 30 days thereafter. After the first 30 days of eligibility, there is a minimum 15-day waiting period between the date of application and the effective date of the insurance. The chargeable rates under the Emergency Program are Government subsidized; and I stress this as a material benefit to your communities, because without such subsidy self-supporting actuarial rates in most cases would be far higher and in many flood-prone areas would be prohibitive to the individual homeowner. The subsidized rates range from 40 to 60 cents per \$100 of insurance per year for dwelling buildings and household contents. The subsidized small business buildings and contents rates range from 50 cents to \$1 per \$100 of insurance.

I suggest that it is an obligation of yours, and an obligation of the local insurance agent in his own community, to see to it that any town with a flood exposure, in whole or in part, applies to HUD for flood insurance eligibility so that property owners may have the opportunity of purchasing this coverage at Government subsidized rates. Flood coverage cannot be available to fixed property – buildings and their contents – otherwise. That American Insurance Association report that was referred to in the very beginning of this meeting by Dr. Ghee is not wrong. The private, unsubsidized insurance market simply cannot provide such flood coverage because of the lack of spread of risk – the only people who would buy it are those who are very vulnerable.

To conclude, I will just say that I am on the panel which follows later. If I can then answer some questions, I will be more than pleased to do so. Thank you.

DISCUSSION

Dr. Hackett: I think we have to take a few minutes right now for responses or questions to the related presentations. I did see some hands that came up.

Q: I have a question I would like to direct to Mr. Krimm if I could. Our community has applied for the insurance. A study was prepared by the Corps of Engineers, and the Corps of Engineers has essentially recommended that our first-floor elevations be 1 foot above the 100-year flood level. My question is, does that recommendation have to be what the ordinances are based on, or can they be based on the 100-year level in order to be eligible for the insurance.

Mr. Krimm: Did I understand the question? The Corps of Engineers has recommended that the first-floor elevations be 1 foot above the 100-year storm, and you're asking if the ordinance should be based on that or just at the 100-year level. I would suggest that the ordinances be based on the 1 foot above the 100-year level. We use the 100-year storm as our base flood, but conceivably for the first floor elevation you might want it to be somewhat above the actual base flood.

Q: The problem is dealing in tidal flooding. When you talk about 1 foot you're talking about a tremendous amount of area, particularly on the coastal area like Hampton is. You're increasing maybe the distance of a mile the area covered by the flood area by just raising a foot. The political push toward this is by developers and owners of the land; it is to adopt whatever is the minimum in order to be eligible for the insurance. Now the Corps of Engineers said that the 1 foot is a safety factor to take into account errors in calculations or things that they just might not have been able to perceive. Conversely, it is also possible that they could be a foot over — that they could be a foot higher.

Mr. Krimm: The reason I am suggesting the 1 foot is that your actuarial rates — new construction, etc. — would be lower at the 1 foot above than they would be at the zero level.

Q: After the home is built, the insurance rate will be less if he is 1 foot above?

Mr. Krimm: Right.

Q: But will he still be eligible for insurance if we cannot . . .

Mr. Krimm: I think you would be eligible as long as you adopt at the 100-year storm and it appears that you are taking all the necessary measures to be consistent with Federal criteria.

Q: Our problem is that, basically, when you are dealing with a capital and political parties or politically elected officials, pressure is put on these people; and they're the ones who have to adopt the ordinance.

Mr. Krimm: Well, I think in listening to you, you should point out to them that the FHA, which puts up a lot of mortgages for houses, is also using the 100-year flood level in most areas of the United States, and I believe theirs is first floor elevation — 1 foot above.

Q: Would you restate the circumstances which I understood you to relate that the availability of flood insurance would be adopted or withdrawn after December 31, 1971. I don't know that I got it straight.

Mr. Krimm: That's a good question because it is often confusing. Will flood insurance be available after December 31, 1971? On December 31, 1971, the two-year Emergency Program ends. After that date any community applying for flood insurance must first have an actuarial rate study done of the community, and they must have in effect their land use and control measures before they become eligible for the sale of flood insurance. In other words, the community would have to write to us and say they want to become eligible under the Flood Insurance Program, and they would have to give us a resolution that they desire to be eligible and they are going to adopt land use control measures. We would then contact the Corps of Engineers or another Federal agency, or possibly a private contractor, to delineate the area of special flood hazard in the community in relation to the 100-year flood, and also request information to establish actuarial rates and for the identification of the floodway. At the same time the community would have to start thinking about what they are going to adopt in the way of land use and control measures. All in all this would probably take anywhere from 8 to 12 months before the community could become eligible because it takes 6 months alone just to get a rate study done. So, under the Emergency Program

a community can become eligible for flood insurance within about 3 weeks, whereas after December 31, 1971, when the Emergency Program ends, it will take about 8 months to a year before a community can become eligible. They still can apply for the insurance after that date.

Q: On the dates that you give there, do we have to have the land use controls by that date to become eligible, or is this the filing date for the program?

Mr. Krimm: Are you saying what date? December 31. If the community becomes eligible under the Emergency Program, they must have adopted by December 31, 1971, land use and control measures. Now the adoption of these measures will be based on what technical data we have provided the community. For example, if we provide you in sufficient time – let's say 6 months prior to December 31 – the delineation of the area of special flood hazard, information on rates, elevations, etc., and the identification of the floodway, we would expect you to put into effect a two-zone ordinance. If we have only been able to give you information for the area of special flood hazard and the rate studies, then we would accept from you a rather strong one-zone ordinance. If we have only been able to give you the identification of the area of special flood hazard and no more, then we would expect a one-zone – a minimum of a one-zone ordinance and possibly including in that a minimum building code with some flood proofing. If we haven't been able to give you any information or let's say the community comes in in early December, we will expect you to at least adopt a minimum of a one-zone ordinance and a building code which will take cognizance of some flood proofing, and we would expect that in all building permits, etc., that are issued that you will take the flood hazard into consideration as it is known in the community.

Q: From your previous answer, the actuarial rates will be conducted in any event where we make application after December 31?

Mr. Krimm: That is correct.

Q: The study will be conducted by your office?

Mr. Krimm: When a community becomes eligible for the sale of flood insurance under the Emergency Program, we then contract with another

Federal agency or with a private engineering firm to conduct a rate study – an actuarial rate study, we just call it a rate study – which gives us information to establish actuarial rates. After December 31, 1971, when a community wants to become eligible for flood insurance, the rate study must be completed before the community can become eligible.

Q: After December 31 is the rate study also done by HUD the same as now?

Mr. Krimm: After December 31 there will be no change in the method by which we contract for the rate study. This is another advantage of the program. The Federal Government takes care of the expense of providing you with the flood plain information which you can use for enacting your ordinances, etc.

Q: After December 31, in order to become eligible will the community be required to have in force land use regulations?

Mr. Krimm: The question is that after December 31, 1971, in order to become eligible will the community have to have in effect land use regulations? The answer is yes, they will have to have a minimum of land use regulations based on the information provided by HUD. Just to reiterate again, it depends on the amount of information that is given to you. However, since the rate study would have to be completed before you become eligible, we would expect from you at least a good one-zone ordinance; and then, within 6 months after your eligibility date, we would expect a very strong two-zone ordinance.

Mr. Alexander: Perhaps it would be helpful to the group here if you might elaborate somewhat on the definition of a one-zone ordinance and a two-zone ordinance.

Mr. Krimm: I may ask the Director of our Engineering and Hydrology Division, Mr. Sutton, if he could do that for me.

Mr. Sutton: Mr. Alexander asked for clarification on what we are talking about with a one-zone and a two-zone ordinance. The good one-zone ordinance, single-zone ordinance Mr. Krimm referred to, is one which says that in this zone all structures, habitable structures, their first floor elevation

will be at a certain elevation. A two-zone ordinance would be one which would say that plus, however, in a riverine situation the zone will be divided down through the middle of it, usually with a floodway in which no obstructions would be permitted which would cause the flood height to be increased by a significant amount. To a technical man maybe that is clear but to a non-technical perhaps it's not. Mr. Alexander, do you understand the response.

Mr. Alexander: I understand it. I thought it might be helpful to some people, non-technical people, if you would elaborate on it.

Mr. Sutton: I might suggest this. A leaflet on the table at the rear explains this rather graphically, if anyone wants to get it and look it over I think he could get a lot of the answers right there.

Q: In the one-zone ordinance would there normally be special exceptions, that is, usually listed in the two-zone ordinance. I have reviewed the two-zone quite thoroughly, but I've not . . .

Mr. Sutton: In effect, with the one-zone ordinance you almost have to do the same thing you do with the two-zone ordinance because you still have to take into account the flood hazard or the effect of a particular structure on flood height. So the two-zone district is much better because you know what area you won't allow any construction in and you know what elevations are required, but as far as exceptions are concerned, you know there's always a provision for an exception if, in fact, there can be clear cut evidence that this is within the meaning of the ordinance.

**III. THE FLOOD INSURANCE PROGRAM
FROM AN ADMINISTRATIVE AND
FINANCING STANDPOINT**

THE PROGRAM EXPERIENCE FROM THE FEDERAL STANDPOINT

Richard W. Krimm
Assistant Administrator for Flood Insurance
Department of Housing and Urban Development

I want to clarify one thing which was brought to my attention during the break. When I was talking about a flood ordinance for Hampton, Virginia, and the fact that they could adopt the ordinance level of the 100-year flood and the Corps recommended the 1 foot, we were talking about a coastal situation. In a riverine situation you have to look at – in adopting your ordinances – what the future is going to be. For example, if there is going to be a bridge that is going to go up in the next year or two upstream or even near the community, you should take into consideration what effect the bridge will have in raising the level of the 100-year flood and you may want to adopt your ordinance based on that. We will, on an annual basis, review all flood plain ordinances, what improvements have been made in the community, either to raise the flood level or to lower the flood level. For example, if the bridge has been built or if certain communities along the stream have built a dike which might cause the level of the 100-year flood to rise in your particular community, then we would expect you to take this into consideration in your ordinances and in making changes. On the other hand, maybe you put a dike up or you have deepened the channel or some such thing which would have the effect of lowering the 100-year flood, you could then reduce the area affected by your flood plain management ordinances.

The question came up about an explanation of a rate study, and tomorrow Mr. Sutton, Chief of our Engineering and Hydrology Division, will explain to you what the various rate studies are and what goes into a rate study.

To talk briefly about some of the problems and the status of the Flood Insurance Program, we at HUD consider that to date it has been a success in the fact that there are over 500 communities in 40 states in the program. We have state coordinating agencies in all states except Wyoming and Illinois. The Governor of Wyoming just did not feel flooding was a problem and said he did not want to appoint a state coordinating agency. The Governor of Illinois, although we've written him about ten times and there are 318 flood prone communities in Illinois, has failed to respond to any of our correspondence. It just so happened the other day a reporter from the Chicago News came

into our office to talk about the flood program, and in the course of the conversation he was somewhat appalled to learn that there was no state coordinating agency in Illinois. When he asked me why, I very honestly told him. This Sunday there is going to be a very interesting article in the Chicago papers, and I'm sure that the Governor of Illinois will appoint a state coordinating agency very shortly.

We have had pressures from certain members of Congress to go easy on the land use and control measures. In other words, in certain areas of the United States builders or developers own land which is in areas subject to very severe floods, and we have been accused of (through our flood plain management criteria) restricting the development of certain communities. We have remained adamant that we are not going to make any changes in the flood plain management procedures, that we are going to stick very closely to them. We feel that without land use and control measures or flood plain management, the program is dead. You just might as well make it a giveaway program and forget about it. That is one thing we will fight to keep – the land use and control provisions. You as city planners or you who are involved in city administration might as well face up to the fact that you will be faced with the opposition of builders' associations and other political interests trying to force you to either not get into the flood insurance program or to get out of it so land which is in areas subject to flood hazards can be developed. I hope you will remain firm and realize the importance of proper land use control measures. I think the flood program is tied in with our whole ecology goal in the Federal Government at the present time.

Another area of great concern to me is the reception of flood insurance eligibility in various communities. In certain areas, the sale of policies is just great – for example, Minot, North Dakota, the flood waters were starting to rise so the people ran out and brought policies and we sold about 800 policies. In Des Moines, Iowa, which is subject to flooding, we have sold two policies in the same period of time. It is difficult to know where we are falling down or where the industry is falling down on selling flood policies, but it seems to be that local insurance agents are not notifying their insureds about the program. It would be helpful if the Mayor of the community, or the City Manager, talked about the program to their newspapers, etc.

We do have a very good coverage from the press. When a community becomes eligible, we send a press release through the news media, particularly to the local newspapers. The National Flood Insurer's Association also sends out a news release. We notify all the state insurance agencies, associations, and the state coordinating agency, and we even have radio spot

announcements. Recently we have received publicity in national magazines which has helped. A few weeks ago Ron Neissen on the "Today Show" told people about the flood program and we received a number of inquiries from this. I predict that the program is going to continue to grow. We expect to have 600 to 650 communities eligible by June 30, and I am sure by the end of this year we will have somewhere in the neighborhood of 900 to 1,000 in the program. Our main worries, really, are communities adopting land use and control regulations, then succumbing to political pressures or general apathy. We hope that they will make an effort to enact and enforce proper flood plain management legislation. That is really about all I have on the status of the program other than the fact that we have sold close to 60,000 policies and there is close to \$1 billion insurance in force, and we hope that this amount will increase as time goes on.

DISCUSSION

Q: Are there any provisions in the Flood Insurance Act to purchase property that is specifically . . .

Mr. Krimm: Yes, there is. There is a section in the act which allows the Secretary of HUD to negotiate with a property owner for the purchase of the property if he seems it in the public interest, and I want to make very sure that you get the word "negotiate" because some areas of the country have taken this as expropriation, particularly down in Louisiana where they have a great fear of anything that the Federal Government does. At the present time funds have not been appropriated for this negotiation. The purpose of this section is to help someone who lives in an area which is constantly subject to flooding to move out of that area, and under the law it requires that the Secretary can either give that land to the city or the state. For 40 years it has to remain as a recreational area or storage area, it cannot be used for dwellings; but let me reiterate again that it is "negotiate" not "expropriate."

Q: If we zone an area for flood plain – restrict the flood plain through zoning – what happens to a property owner who lives on a very small, say 3 or 5 foot wide stream, who has flash flooding? Can he buy insurance? He's not in a designated flood plain area.

Mr. Krimm: Is this someone who lives outside the area of special flood hazard? Anyone in the community is eligible to buy flood insurance. The subsidized rate is available to people living within the area of special flood hazard where construction is in existence at the time the community becomes eligible. New construction in the area of special flood hazard begun after the eligibility date has to purchase the insurance at the actuarial rate. People outside the area of special flood hazard can purchase the insurance at the actuarial rate or the subsidized rate, whichever is cheaper, but in most cases the actuarial rate is cheaper in what we call the Zone C area which is that area beyond the standard project flood of the Corps of Engineers which is usually a 500-year flood. The rates in that area have been running at 5 cents per hundred. There is another area between the so-called area of the 100-year flood and the standard project flood which we sometimes label Zone B. In that particular area the actuarial rate would be somewhat higher than the subsidized rate.

Q: If I interpret what you said correctly then, a person living on a small stream from 3 to 5 feet in width that has just a trickle of water in it most times, but is subject to occasional flash flooding even though it is well removed from the area of the major floods, can he get the subsidized rate?

Mr. Krimm: If we have not identified the stream, which we may not have in our study, he might be considered being in Zone C and he could buy the insurance at the subsidized or actuarial rate, whichever is cheaper.

Q: Suppose that same man subject to flash flooding lives in a county that has taken no action to qualify under this program, and he decides that he is going to try to hold the county authorities responsible for his damage for their failure to enable him to buy insurance. Has any thought been given to that?

Mr. Krimm: Yes, I think it would be a terribly exciting court case. There have been no cases to my knowledge. I was telling a gentleman from Richmond, Virginia, that I did have a telephone call (Do you mind if I repeat what I said?). I did have a telephone call several months ago from someone down here in Richmond where they wanted to sue the City of Richmond for failure to get in the Flood Insurance Program at the time when they were hit by the 1969 floods. I did explain to them that Congress had not enacted the 1969 Amendment to the act and there was no Emergency Program. If the City of Richmond had applied, they probably would not have been able to be covered because it was taking us 6 to 8 months to get a rate study completed. When hurricane "Camille" hit there were only 3 areas in the United States

that were covered by flood insurance, and that was really one of the many reasons the 1969 Amendment was put into effect. That's the only time I know when citizens were thinking very seriously about suing city officials. I think they would have a good case.

Q: Do you think the deductible clause will ever be eliminated in Zone A?

Mr. Krimm: No, the deductible is in there to have the insured accept a certain amount of the risk and also to keep the rates lower. If we eliminated the deductible we would have to raise the subsidized rate and the actuarial rate – I don't foresee eliminating it.

Q: Is it too early to see what rate of renewals you have in insurance?

Mr. Krimm: To my knowledge, and Jarl [Sorensen] you can correct me on this, I think the renewal has been pretty good in those communities which have been in the program for a year. The program really didn't get started until last year at this time. I've been with HUD a year, and when I came I guess there were only about 15 areas in the program. We know that in certain parts of Louisiana, in Fairbanks, Alaska, and in the Arlandria [Va.] area where the program has been in effect for more than a year there is a fairly good renewal of policies. Of course, in Arlandria, we paid our first claims this year. We have, so far in the program, paid about 50 claims amounting to \$150,000. In addition to Arlandria, claims have been paid in Minot, North Dakota, and some of the areas hit by Hurricane "Celia." Hurricane "Celia" was a dry hurricane, but there was some tidal water from it.

Q: Do you have any communities where all the communities in the state are zoned C or portions of the community are in Zone C where they don't have floods – it is primarily just a flash flooding problem?

Mr. Krimm: I would like to make a correction here on the flash flooding problem. A gentleman back here was talking about a little stream that maybe when the Corps of Engineers has gone in to delineate the area of special flood hazard they didn't have time to do this stream or they didn't think it was important enough to do the stream for some reason. Maybe we will have to go back at another time and do it, but in most communities where we have gone in, we have really done the main areas that are subject to flooding. There are some communities – Hartford, Conn., for one, or West Hartford – that have a very small area of special flood hazard.

Q: Suppose you have no area of special flood hazard other than small streams?

Mr. Krimm: Well, if you only would have the small stream, that's what would be considered the area of special flood hazard. Arlandria, Virginia, is a very good example of that. If you were to drive across Fourmile Run in Arlandria, and I would tell you where the flood waters were last July you wouldn't believe me. It really trickles; it is not any wider than this podium. If you have a community where you just have that type of flash flooding from the stream itself, that stream will be delineated as the area of special flood hazard.

Q: I'm from a very rural county, and I do not believe that many of the people in our county are aware of the fact that there's any such thing as this available. I've been in touch with some of the adjoining counties that we are in the planning district with, and I don't believe that they have ever taken any interest whatsoever in and they're not wanting to go along with the program. Now my reason for being here today is to find out whether or not a county is eligible, or when it will become eligible. Can a study be made? Do we have to decide that we should have it and then, how can we go about deciding?

Mr. Krimm: The Northumberland Board of Supervisors would have to take the initiative to apply for flood insurance coverage for their citizens. What they would do is submit a resolution and the other information such as maps, etc., that are listed on the check list. Did you receive one of the blue packets of information? On the check list are all the items the county or the jurisdiction that has control over land use and control measures will have to submit in order to become eligible. You submit your application, and it will take us about 2 to 3 weeks to process it. It is published in the Federal Register and we also notify the National Flood Insurer's Association who then appoints a servicing company to distribute and sell policies. Once the community is eligible, then owners of property eligible to purchase the insurance in the community may purchase a policy. Construction begun after the eligibility date is not eligible. Then we contract with the Corps of Engineers for the rate study, the mapping, etc. That usually takes about 6 months so that within 6 to 8 months after the date the community originally became eligible under the Emergency Program, they become eligible under the regular program. At that time eligible new construction can be covered at actuarial rates and existing construction may purchase a second layer of insurance.

Q: Suppose after making application we decided that we did not want to participate in it. The people were aware of the fact that it was available

they came to us and said, "Well, we don't want this." What do we do then?

Mr. Krimm: You mean, you say that you decided you wanted . . .

Q: My opinion is, as of now, I think we should get this. We make the application, let's say, our people don't like changes. If we say we are going to zone this area down at Reedsville, and from now on the first floor is going to have to be so many feet above sea level. We are going to be in trouble with those people right away because we never have had to do that, so now why do we have to do it all of a sudden; because we want them to have insurance damages.

Mr. Krimm: Well, let us say if you become eligible under the program and you would fail to adopt land use control measures or you would write us a letter and say "Now we no longer want to be in the program," we would stop the sale of insurance in that area and no policies could be renewed.

Q: The Board of Supervisors would not be forced to adopt such an ordinance unless the people would want it themselves, I would think. For anything like that we would normally have a hearing.

Mr. Krimm: I see what you mean. Let's say you went through and you were under the Emergency Program. You were preparing to adopt your flood plain management and you hold your hearing and everybody comes and is opposed to it, then you would just write us a letter and say, "I'm sorry, but the people down here don't want flood insurance." We would just take you out of the program. I should point out that there might be one problem that could occur. Let's say you become eligible in September of 1971, and it takes us 6 or 8 months to send the information for you to adopt your zoning ordinances, and you go ahead and hold a hearing, etc. Then you write us and say "We are not going to participate in the program." We would then stop the sale of flood insurance, and if any policies have been sold in that area they would not be renewed, but you would be subject to section 1314 in the statute called the "non-duplication of benefits" provision. Anyone who failed to purchase flood insurance within 1 year after the date the community became eligible is not eligible for Federal Disaster Relief up to the amount they could have been covered for by flood insurance. So if a storm hits, people who did not buy the policy, but could have bought it, would get disaster assistance only up to the amount that they could have had covered by flood insurance. This only pertains to flood damage. At the present time \$17,500 is the maximum amount of insurance which can be purchased under the Emergency Program.

Q: If residents in one part of the county wanted it and the other part absolutely did not, could they adopt the resolution taking part of the county, part of the jurisdiction, or is one that includes the whole . . .

Mr. Krimm: We originally – when the program was first initiated – did take in portions of counties, but that was more of an expediency, particularly for rate studies and that sort of thing. So we feel that in an application we should take the entire county because of the flood plain management program. It would defeat the whole program of land use and control measures to take just a part of a county.

Q: Suppose Mr. Brown, with a home in a low area of Louisiana, is unable to buy flood insurance because of the fact that his supervisors know that most of the people who live in that area are of his ecology or of his ethnic group, and he can't get flood insurance. Now is the Government going to make flood insurance available to him under those circumstances?

Mr. Krimm: Flood insurance will not be available in any area unless the local officials have submitted an application agreeing to adopt land use control measures. Then the flood insurance can be sold in the area, but without the community or the municipality or the county taking initial action and agreeing to adopt these measures, flood insurance will not be available.

Q: Dick, what I want to be sure of, in regard to counties, is that they understand you are talking about the unincorporated . . .

Mr. Krimm: Right. When I say a county, it is the unincorporated areas. Each incorporated community usually must make its own application. The applications are based on whoever has control of zoning ordinances, building codes, that sort of thing. Miami and Dade County, Florida, for example, have a joint form of government and they did make a single application; but as a rule the incorporated communities within a county make their own applications. Counties make a separate application for their unincorporated area.

THE PROGRAM EXPERIENCE FROM THE STATE STANDPOINT

D. B. Richwine
Flood Plain Engineer
Virginia Division of Water Resources

Thank you very much, Dr. Hackett. I'm fairly certain that quite a bit of the program has been covered by the previous speakers in one form or another. You've heard a lot about the statistics and what is going on in Virginia, but I think two or three points that I have written down here come to mind when we're talking about the program experience from the state standpoint.

First of all, a bit in the way of a history of how Virginia became involved. In June of 1969, when Congress passed the National Flood Insurance Program, we were immediately notified by HUD, as was the State Division of Planning, and we went to Washington twice. Mr. George Jones and Mr. Temple, former director of the Division of Planning, were quite familiar with the Federal program and knew some people up there. We were able to set up some conferences in Washington with HUD, talk about the program, and establish the fact that we felt that in the State of Virginia, the Division of Water Resources was best suited as a state agency to be designated as the coordinator for the program within the state. This action came into effect on August 18, very timely, two days before "Camille." Quite frankly, I feel that the success of this program in the first year really was the result of "Camille" itself, and that subsequent reactions have really verified or brought this point out to some degree. Within a week or so after that, Mr. Alexander, the Commissioner of the Division of Water Resources, and I attended a program in Washington on the state's role in the Flood Insurance Program. Mr. Sutton of HUD and several of the people including the administrator, Mr. Bernstein, had quite a program to define just what the state's role was in this. This was the initial attempt by HUD to contact a lot of the states — there were representatives of around 14 states there at that time. As you heard today, about 40 states now are in the program, so it has expanded since the beginning.

Now what has Virginia done to promote — and this is the second point I would like to bring out — this program. Well, in August of 1969 — early August — when we knew the Division of Water Resources was going to be appointed the state agency to coordinate the program, we made our first distribution of over 1,000 packets of letters to all the counties, cities, and

towns in the state. The packets contained a question and answer sheet – an information sheet that HUD had transmitted to us. We printed these in quantity and sent them out with a cover letter and a memo. In December of 1969 we had advanced into the program further and felt that we had more information, and we had received a new question and answer sheet from the Department of Housing and Urban Development. We also had received the Federal Register in large quantities which outlined the guidelines for the program – the guidelines for making application, drafts of resolutions for applications of insurance, and also drafts of letters of transmittal to go to the Department of Housing and Urban Development. We again distributed these to our mailing list of all counties, cities, and towns, the public officials involved, county boards of supervisors, the Executive Directors if they were in existence, or the Executive Secretary in counties, Mayors, Town Managers, and City Managers. So we had quite a distribution of material, and it has been as thorough as we could get up to the point of this distribution time.

Since 1969, in our River Basin Planning Reports, we have put out two or three volumes for each river basin that we have done. At this time we had completed the Potomac, James, and preliminary volumes on the Rappahannock and York. In these we have mentioned and promoted the National Flood Insurance Program, primarily as a non-structural method for reducing flood losses because of the meeting of the criteria, which would certainly encourage the non-construction in flooded areas. And we have promoted this program – paid quite a bit of attention to it and it has been one of the primary sections in our planning report volumes – promoting the use of this program. Of course, there has been much verbal promotion through the Division at River Basin meetings and meetings with local officials, and at the presentation of flood plain information reports that the Corps makes throughout the state. We have attended and promoted and answered questions about the Flood Insurance Program. We have had, of course, some miscellaneous requests by letter or by phone concerning the program and have used this opportunity to encourage people to become interested in it and inquire as to how they could become eligible.

Now as for the state's role, there are several points that I would like to cover. First of all, the promotion which I have just cited is one point. Point two is the real role that we serve besides promotion and that is the coordination of local effort. We provide information upon request on how to fill out application forms, the form that the resolutions should take, the reprints of Federal documents that are needed, the criteria that must be met on the local level, the check list that was mentioned (that is in the packet), sample resolutions, and applications and answers to various questions on the

technical or statistical things that might have to go into the report. Also, we have talked about zoning and what must be done and when it must be done — as best we could interpret it at that time. There has always been a subject that comes up more often than not, and that is the interpretation of the time limits and when and if the insurance is available. But considering that this is a new program, in the last two years much has been done. We have provided, in the coordination and local effort, the supporting letter where we knew that the agency or the locality or community was interested in obtaining this insurance, we have provided a supporting letter to HUD, and, where necessary, we are prepared to urge immediate action. We were prepared to set priorities should a large number of these applications come in, if we knew it was going to be a long time and that there may be a need to have one area's flood insurance eligibility take precedence over the other. So far this has not occurred. We have also sought information from HUD, when necessary, to coordinate these local efforts.

The third point is that we have served (part of the requirements in the law) as a flood insurance map depository. The maps, once they are drawn up outlining where the flood hazard areas are (special flood hazard areas in which the insurance could be sold and also any other zones in the city for identification purposes), have been deposited with us. We have disseminated these maps upon request and have provided them to different other local government and state government agencies for their information.

Finally, we coordinate this program with the Federal agency and with other state agencies, as some of the state agencies such as the Soil and Water Conservation Commission and the State Corporation Commission in connection with the insurance end of it are concerned. With the Federal people, we have coordinated along the many lines I have mentioned here, particularly with respect to requests and receiving and keeping files or transmitting data. We have worked in conjunction at one time or another mainly with the Corps of Engineers who does the map or some of the rate making, sometimes the SCS, and we have talked briefly with the USGS and TVA, but they have not been quite as involved in the rate making studies as the Corps of Engineers to date. With the State Corporation Commission, as a state agency we talked about items concerning insurance, the rates, etc., and who to contact, and just to keep abreast of what's going on between agencies.

Now, as to the progress in Virginia to date — as of today, and this has been mentioned before, we know there are 39 communities in Virginia that have expressed some interest in the program. We do know that 13 have been approved for the purchase of the flood insurance. Two additional

communities to our knowledge have actually made application. So this leaves about 23 communities that have just made some type of inquiry — one way, shape, or form — and this comes to 39. I think HUD had about 50 or something, so we seem to be missing some there. We do have an instance of one community that did apply for the insurance and then decided they did not want it after they saw what the limits would be; they thought that it would deter their development or maybe perhaps for some other reason, but I won't speculate on those. I think it is important to note that most of the communities approved for this program were approved within a year of July 1969, and between July 1969 and 1970 all but about two or three were approved. The latest one that has been approved in Virginia was Haysi, and that was just approved in February of 1971. One was approved back in September of 1970, but the other 10 or 11 were approved back between May and July of 1970, within a year of the time the program started. I think this points up the fact that except for those that became interested right away when we started taking action, very few others have initiated any type of action beyond that date. So, really, very few people, and this is our feeling, very few of the communities have actually communicated with us. Most of our knowledge comes through copies of correspondence from HUD.

Amazingly, of the 39 communities involved, only about 9 or 10 actually communicated with our department first or during any part of the transaction. Most of them went straight to HUD. Well, we're not disappointed because at least they were interested enough to do it, but I'm just citing the fact that we as the coordinating agency are really somewhat in the dark, yet we mailed out these 1,400 copies of all the information and have gotten a lot of these very same communities to initiate these programs and they failed to let us know what is going on. We also feel that by sending these communiques out that the local responsible official was informed. I might be taking exception to Dr. Ghee's remark that the people need to be informed, but we feel that we have informed local, responsible officials to pretty much the maximum degree and intend to continue doing so, as we wish to put another mailing out within two to three weeks after this community workshop with all the latest data we can glean from this, and we feel perhaps that if there is any fault it lies maybe between the local officials and the local communities. But we do agree that it must be a lack of information because of the lack of communication.

One community that has consulted with us extensively, and I think it is fair to say this, probably more so than any other, has been the City of Richmond. Other than that, the City of Waynesboro called us up there for consultation once or twice and corresponded with us; but other than these

two cities there has been no other area that has done more, out of the other eight or nine that have corresponded, than just to write us one letter or give us one phone call saying they are interested in applying. And that's about it.

So, in summary, our basic role, as I have said before, is one of promotion and coordination. Out of the 40 communities that have shown some form of interest, 13 have become eligible. There's been a definite lack of involvement by the communities, and by the number of communities in Virginia that could benefit from the program. You know it, and you've heard it said today; and we know it, that there are hundreds of communities that do have flooding problems and there are some that do not, but regardless of that they have failed to communicate or become involved. We do intend, as a last part of my presentation, to mail out another packet of information material to what we think is an adequate mailing list since it includes the responsible officials and all of the governing bodies of the State of Virginia, asking them to look into the program, providing them with all the information necessary to get initiated in this; and we feel, short of going to every single meeting in every single county and city, that this is about as far as we can go in our role. I will entertain any questions at this time.

DISCUSSION

Q: What is your relationship with the District Planning Commission? Do you have any general understanding about the relationship?

Mr. Richwine: We are in the process of setting this up. Of course, all the District Planning Commissions are not formed yet, and we are attempting to, within our department, set up one man for each District Planning Commission as a coordinator in our department, not specifically though with respect to this program. However, they are included as a separate mailing entity on our list. We do attend their meetings where possible and promote this program. We are paying service to that concept of the Commissions.

THE PROGRAM FROM THE
FINANCING STANDPOINT
(Panel Discussion)

Dr. William Ghee, Moderator

Panelists

Richard B. Leary
Rate Analyst, Bureau of Insurance
Virginia State Corporation Commission

George Mihok
Assistant Vice President
Associated Mortgage Companies, Inc.

Jarl T. Sorensen
Assistant General Manager
National Flood Insurer's Association

Dr. Ghee: The panel is really not going to devote itself only to financing. It is more a group of individuals that we thought might contribute something from their experiences, and after they have made the comments we will open it for questions — either from the panel towards other members or from the group out there. We have two gentlemen you have not met, Mr. George Mihok who is with the Associated Mortgage Companies, Inc., who has been involved with the Flood Insurance Program because of his involvement with companies, mortgages, and with the clients, and Mr. Richard Leary who was involved in a Virginia Advisory Legislative Council investigation into the flood insurance question. Each of these gentlemen will be given an opportunity to make comments at this point. Mr. Sorensen, would you start?

Mr. Sorensen: Briefly, I would emphasize that delivery or availability of the flood insurance policies themselves (which are Association policies and representative of all of the members of the Association) is essentially a very simple thing. The Virginia communities' local agents send the applications to a single servicing company which is the Insurance Company of North America in its Washington, D.C. Office. The policy is written on a continuous annual basis, with the renewal premium automatically extending it. For the benefit of mortgagees, we think we have made it very easy. The mortgagee does not need to have the original of the policy, as is quite often the case with

homeowner's policies and conventional fire policies. We protect the mortgagee as follows: "With respect to any mortgagee or trustee named below this insurance shall continue in force only for the benefit of such mortgagee or trustee for 20 days after written notice to the mortgagee or trustee of termination of the policy and shall then terminate." In other words, putting it in everyday language, if the renewal premium isn't paid at the end of the year, the mortgagee continues protected until we notify him that the period of time is up, so that mortgagees can have protection until they are notified to the contrary. This is an innovation that is not common in the field of general property insurance.

Mr. Mihok: If you have the insurance available, how do you get the homeowners to buy it?

Mr. Sorensen: Well, that is a question; I'd like to get some good answers.

Mr. Mihok: It isn't that we're evasive. First of all, we have over 260 investors for which we service loans in many parts of the country. Many of them insist on having the insurance. We have to have the coverage. Of course the VA came out with a requirement, which they later rescinded. First of all they required at least \$17,500 or the outstanding principal balance. Later on they reduced it to \$6,250, then as I was about ready to send out a letter to all our mortgagors in flood designated areas, the VA issued a bulletin rescinding the requirements. In the meantime some of the mortgagors who had already purchased a policy asked the neighbors if they had purchased a policy, and the latter said, "Oh, no, they don't have to buy any policy because the VA no longer makes it mandatory to purchase flood insurance." I was flooded with complaints - "How can you make me buy the policy and now my neighbor doesn't have to buy any policy?" "Now if I turn in a policy how much of a rebate am I going to get?"

Mr. Sorensen: I don't know whether I can answer all of those questions. As to a mortgagee's requirement of flood insurance, perhaps we regret as much as you do that the VA backed away. The fact still is that every mortgage I've ever seen allows the mortgagee the privilege of asking for insurance, something like "on the coverages which are usual and available in the area for protection from the hazards involved." Therefore, the mortgagee, I think, has a business decision to make. I will stress, and I think everything that has been said here this afternoon brings this out, that by and large the only local community which tends to have an interest in flood insurance and takes the initiative to make application to HUD is one where the local people

know that in part of the town or county there is a fairly serious flood hazard. Certain parts of that local area are flood prone. People don't ask for eligibility to a program such as this unless somebody feels that there is a degree of exposure, and if there are any exceptions to that somebody will have to show me. Now, therefore, when a mortgagee finds that a particular town is eligible for flood insurance he should consider that a bit of a red flag — that at least part of that community is flood prone, and as such, the mortgagee has an obligation to determine the degree of flood hazard at the particular home and to ask for the added protection just as they universally ask for fire insurance where needed. Beyond that, personally I don't believe in people being forced to do things with or without need. I feel a requirement of flood insurance should be based on the mortgagee's need for protection of his own interest and asking for it from his mortgagor if there is that need.

Mr. Mihok: The homeowner has no choice in this matter. It stipulates right in the contract you have to make deposit for taxes, insurance, and FHA Mortgage Insurance Premium. Now along comes this flood insurance which is forced on them. The investor who is holding the mortgage requires it. Let us get back to this individual. I'll cite some cases. We analyze escrow principally because of increased taxes. In comes a letter from a woman; it says, "Increase again — you are taking bread and butter off my table from my children with your increase." Then I send out the letter saying you will have to purchase flood insurance. The same woman calls me and says, "Forget about the bread and butter, you just removed the table." Now how do you answer that?

Mr. Sorensen: I'm afraid I can't.

Mr. Mihok: Well that's what we are faced with. In fact, I agree with you — flood insurance is a good idea, but how can you sell it? Actually it didn't have too much news coverage in the paper. I was sending out blocks of letters. The flood announcements that came to us were not too clear as to the prime areas of coverage. The maps had streets extending in and out of flood Zone A. How were we to determine the specific street blocks?

The VA requires flood insurance — at least the amount of your balance. When the mortgagors found out the rates they would have to pay, they really screamed. This is the problem we have to face. There is a constant increase in costs to administer this program, and we aren't getting any compensation from the investors. To give you an idea, we have over 900 flood policies on file. For these 900 policies we have sent out letters asking them whether they are going to renew it next year or not, in view of the VA rescinding the requirement. Five hundred replied that they will not renew it next year, so

now we have about 400 in file that will renew it. Out of this 400 I would say that many of them are in Zone C and are paying about \$9 a year at the rate of 5 cents per hundred. You say you have 60,000 policies in force. Nine hundred means we have 1.5% of the total in the country and 500 are not going to renew it next year. These are statistics taken last week from our files.

Mr. Sorensen: I must make this point again – I regret the bureaucratic backing and filling of the Veteran's Administration's approach, it was ridiculous. Beyond that I have to say that if you are a servicing agency for a group of mortgagee principals and are blindly adhering to some rule from that principal that everyone in Arlandria that has a mortgage must buy flood insurance, I would take you to court if I were the mortgagor. I'm going back to the question of need. Why do you require fire insurance? Because it is common and needed. In any area, in any particular locality, with any particular dwelling where there is a bonafide flood exposure, I think it makes common sense to ask for flood insurance; to ask for it elsewhere in that eligible town where there is no flood exposure, I think is stupid.

Dr. Ghee: Could I interject one comment here to make sure that everyone is familiar with this? The Veteran's Administration imposed for a period of time a requirement that in a flood hazard area of a community eligible for this insurance, those people having VA loans had to purchase at least a certain amount of insurance. FHA has never imposed such a provision. Sometime last year VA changed its requirements and no longer required the insurance.

Mr. Krimm: The Veteran's Administration was really very pleased about requiring flood insurance. Unfortunately, in Louisiana the Homebuilder's Association was causing all sorts of uproar with Congressman Boggs and Congressman Herbert over the flood insurance program. They said we were retarding the development of New Orleans, etc. The head of the VA went to New Orleans for an anniversary program and was lambasted by Congressman Herbert for making the poor people of Louisiana buy flood insurance. He returned to Washington and said that they were just going to have to change the requirements unless FHA and HUD would also require their mortgagees to have flood insurance. FHA said then they would not require flood insurance because they have never required it in the past and they don't deal with the public directly. They deal with mortgage companies, banks, etc. If the lending institutions want to make it a requirement they can, but FHA is not going to do it. Since FHA would not require flood insurance, the VA didn't want to have their neck out on the line. These are the brutal facts of the whole situation. The feasibility study which was done in 1966

and which resulted in the National Flood Insurance Act, encouraged the FHA, the Veteran's Administration, and private lending institutions to require flood insurance. It is an added protection for the mortgagor and for the mortgagee, I'm sorry for interrupting, but I thought I should tell you the whole story.

Mr. Leary: Could I make one comment on that? I believe that flood insurance, even at 40 cents a hundred is a bargain. Everybody thinks that except the man who has to buy it. He's buying fire and extended coverage for 20 cents a hundred at the most, so on \$17,500 he pays twice as much for this new thing that the VA asked or demanded that he carry. Sixty-eight dollars as against \$34 and it didn't sit well. It was the comparison rather than the improper charge for the flood insurance. The insurance industry has never been able to write flood insurance generally at any price.

Q: [Jumbled]

Mr. Krimm: This is another problem. Under the Emergency Program, when we first identify an area of special flood hazard to make a community eligible for flood insurance, the entire community is eligible. The VA was requiring that everybody in the community buy flood insurance. Therefore, a man who lived up on a hill where it would take a million-year flood to reach him was forced to buy the insurance. It just created another problem.

Mr. Sorensen: May I add a point? Let's also admit there is a normal human propensity (earthquake insurance is a beautiful illustration) — we're all human enough to think "it can't happen to me" or "if it happened in my town ten years ago it will probably never happen again." This is a normal human characteristic that I think influences everybody, and I suggest that some of those 500 that have indicated that they are not going to renew but are seriously exposed may very well be going on this false premise.

Mr. Mihok: Again a great deal depends on the topography of the land. Many reported that they are "X" feet above flood level. We can't make a personal inspection of every house. Now if they had provided a better map — better identification — and say, "O.K. now in this area, this street, from number so and so to number so and so should be covered by insurance." Then we would have something to work with. Do you have more updated maps now, as far as the street addresses go?

Mr. Sutton: We recognize that it would be helpful to have the address of every house in Zone A. It is simply an impractical thing for us to do.

Mr. Mihok: Just say street index and a list of numbers of the street . . .

Mr. Sutton: We are revising, reprinting the Arlandria map so that it will serve better. But the only instructions to my people are that they must be sure that the street on which the outside boundary falls is identified. I do not require them to put the names of the intermediate streets. But we are improving our maps.

Mr. Sorensen: I must say in fairness to HUD's efforts, which involve a great deal of work, that their map making is improving – improving strikingly and regularly. I have no doubt as local areas are converted from emergency to regular, and this has been explained in the course of the afternoon, that the new maps which break it down into Zone A, the area of serious exposure; intermediate Zone B; and then the great out-country within the town which is Zone C where loss is remote, but the coverage is available. Then it will be possible for any mortgagee or servicing agency to more easily determine that any property in Zone A in an eligible area should be asked to provide flood insurance. Beyond that, I suggest that it might be optional.

Q: [Jumbled]

Mr. Sorensen: It seems to me, if I understand your inquiry, that the company, which is the National Flood Insurers Association servicing company, was merely quoting to you the dicta of this program from HUD which were expressed this afternoon. In an emergency area where there are only the subsidized rates, what we call chargeable rates, it is not possible on a one-family dwelling to buy more than \$17,500.

Q: No, I was written a letter by the agency.

Mr. Sorensen: It came; it emanated from the servicing company passing on HUD's rules for this program – a maximum of \$17,500 on a one-family dwelling at the subsidized rates. That's all that can be purchased under the law.

Mr. Sutton: May I suggest that they just didn't get the word then that the emergency directive of the program added additional insurance was available?

Q: I had the actuarial rates with me and I had them in my hands for a month and a half . . .

Mr. Sorensen: The Insurance Company of North America is not servicing the flood program in Virginia out of any office in Hampton or Norfolk.

Q: This was INA. I'm talking about the INA. They're servicing it out of their Washington service office, and I doubt very much that any other branch office would have any information.

Dr. Ghee: I think we are going to need to give Dick Leary a chance to comment a little bit on the experiences they had with his study and any comments you might have on the application to Virginia.

Mr. Leary: I'm with the Bureau of Insurance, State Corporation Commission. Although Virginia is a regulated state, we do not regulate flood insurance. As one of our judges recently said, "you can hardly regulate something by rate when the market does not exist." So we do not act as a rate regulatory body as far as flood insurance goes in this state. The Corporation Commission relinquished that back in the 1950's in the hope of stimulating a market and since then we have been very unsuccessful, as I think the rest of the country has been, until HUD came along with this program. Now we do get a number of questions, and we also are a repository for the state maps that come in from HUD. I would like to say that they are becoming clearer.

I would like to cast a few bouquets to the Division of Water Resources who are always most helpful when I call them for information. We get a lot of questions. We don't always have the answers. We've talked with HUD in Washington. We've also called the Insurance Company of North America, and I have tried the Richmond office and they very nicely referred me to the Washington office and said that all information on floods should come from their servicing office in Washington.

Now I did have an experience this year, as a member of a legislative subcommittee of the Virginia Advisory Legislative Council. When the Senate passed Joint Resolution No. 18 in the 1970 regular session of the legislature, a study was authorized for adequate insurance coverage on coastal, river, and lake areas. Well, adequate insurance coverage encompasses a number of different forms of insurance against perils other than flood, and so we had the flood question as only a part of our general study. On this committee there were two state legislators and four representatives of the insurance industry, and I will say that they were agents. One of them was a former state legislator another one a member of a city council.

We did some research; we checked with the State of North Carolina who have a Beach Plan. Now that's not flood insurance; that's fire and extended coverage on the Outer Banks. We found that they had no flood insurance plan. We were misinformed. Someone had said that if North Carolina's got a plan, Virginia better get one. We went into that rather thoroughly and found out that we did have coverage, fire and extended coverage, through the placement facility in urban areas. Well, when you think that Virginia Beach now covers all of what used to be Princess Anne County and Chesapeake covers all of what was Norfolk County, you take in a good deal of territory where coverage for fire and extended coverage is available under the placement facility. We found in this study, though, that the requiring of adequate insurance for the rivers, lakes, and coastal areas interlocked with the need for adequate insurance through the State of Virginia on a voluntary basis; and after some study we decided that the best thing to do would be to make a recommendation that we not go into the flood insurance program — not consider it, certainly at this time, from a state standpoint. The main question there seemed to be that the limits of \$17,500 for a single-family dwelling and \$30,000 for a four-family dwelling, and the same amount, I believe, for small business enterprises, were not adequate. It was also brought up and correct me if I am wrong, Mr. Sorensen, that say a 50-family apartment house is not eligible. There are some gaps in this, and I would like to know later if those will be closed in time. Anyway, to make a long story short, we recommended and it was later adopted by the Virginia Advisory Legislative Council that they recommend to the Governor that the appropriate department of the state government encourage the localities to qualify under the National Flood Insurance Program.

Although a general study may be indicated, the Governor has been petitioned by the insurance industry to appoint a commission for the purpose of making such a study; therefore, it was recommended that the Council await the Governor's recommendations in this respect. Since that was published in December of 1970, I understand that the 1971 session of the legislature has asked the Virginia Advisory Legislative Council to go into the whole subject of insurance which would include all areas of the insurance market, including flood insurance; and maybe out of that something may come to supplement what the Federal Government, or what HUD is offering. At this time that is all we have to report; there's no further action on the part of the State that I know of.

Mr. Krimm: First of all, the limits of the coverage at this time were set by Congress. The program is designed really to help those individuals who would suffer the most from flood losses; and it was felt those were people in

lower priced houses, so that is one reason we have the \$17,500 at subsidized rates. I agree with you on the small business coverage, I think something has to be done there, particularly the contents. The most they can buy is \$10,000, \$5,000 at subsidized and \$5,000 at the actuarial rates. I know in Arlandria there was a small business which had a \$19,000 loss on contents.

The extension of the program to other types of property such as multi-dwelling apartment houses, churches, and non-profit organizations will probably take place in a year or so, but only after we are sure that communities are adopting land use and control measures. We want to see how that is going to work. Congress gave us priority that we do it for single dwellings and two- to four-family dwellings and for small businesses. Does that answer your question?

Mr. Leary: Yes, it does.

Mr. Sorensen: It is also a matter of funding in that we have under the law a ceiling of \$2,500,000,000 of outstanding liability, of which we are already (in the very early stages of this program) up to about a billion, and as it grows this year, even within the confines of one- to four-family dwellings and "small businesses," I personally think we will hit that ceiling very promptly.

Mr. Mihok: One more question. I need statistics. You say you have 13,000 policies in the New Orleans area alone? To what date were they sold? Were they recent sales, or did the VA require them, or what?

Mr. Krimm: Some policies were sold while the VA was requiring the purchase of flood insurance, but overall it has been continuous.

Mr. Mihok: I just was wondering if your records indicate sales in Zone A or Zone C, because I said, the majority of those are Zone C and pay \$9, \$10, or \$12 a year. They are the ones that will retain their policies, the other ones are going to cancel out next year. Another thing is that voluntary purchase of flood insurance is most desirable. Even with all the effort that HUD is making, the news media and all that, they're not getting any response. Take the Hampton area — they haven't had any policies there.

Mr. Krimm: Unfortunately, it often takes a disaster to encourage people to buy the policies. I'm not wishing that anything should occur in Hampton. Presently there are a number of communities coming in from the midwest, and the sale of policies seems to be picking up out there because of the flood threat.

IV. BANQUET ADDRESS

THE CAUSES OF FLOOD INSURANCE PROBLEMS, BOTH DIRECT AND INDIRECT

Robert E. Summers
President
Ezra P. Summers, Inc.

Thank you, Mr. Chairman, ladies and gentlemen. I do appreciate the opportunity to talk to you. As Dr. Hackett stated, I am an insurance agent; therefore, I'm a salesman. I hope tonight to take a very few minutes of your time to sell you on what I believe is an opportunity for the insurance industry to face up to a responsibility and an obligation.

I had the opportunity just recently to speak to the Cosmopolitan Club concerning virtually the same subject and other subjects related to the VALC. The man who introduced me was a fellow that I had grown up with, and who is now manager of an insurance adjusting firm; and he introduced me as a part-time insurance agent and a part-time politician. He couldn't understand why a person would pursue a vocation and the insurance business and also participate in politics. I hasten to say that there is a lot of similarity in it. There's no security in either one, there's turmoil constantly in both; and if you don't like things, smile because they are going to get worse. On the other hand, most people in the insurance business today, who are pursuing it with a healthy attitude, are optimistic that we have bottomed out and now the industry is going to become not only healthier but will be attractive to the younger generations. When you pass 30 you have a credibility gap problem, and when you pass 40 it gets worse than that.

Unfortunately, today there are very few people being attracted to the insurance industry. I know, Doctor Ghee, this is hitting at a subject that is close to you, but unfortunately it is true in our area of the state; and I have talked to those members of the VALC Study Committee from other parts of the state, and their experience has been almost identical. With the exception of those people whose relatives are already in the insurance business, virtually no one is going into the property insurance business as an agent today. You see many people going into the life insurance business, accident and health insurance, and going to work for insurance companies, but the agencies are becoming fewer and fewer. I mention this because it does have a direct effect on the subject at hand and that is the adequacy of the insurance industry to function and to provide the service needed by the public.

Mr. Caldwell Butler, a member of the House of Delegates (I guess you would call him the minority leader) and the Republican contact with the

Governor in the House of Delegates, is the chairman of the subcommittee; and he suggested to Mr. Alexander that I be considered as your speaker. I got to thinking, "Why would he suggest me?" I'm about as far away from him as anybody that's on the committee; he's a Republican and I'm not. My area of the state was the first to apply to be qualified for the Flood Insurance Act, and to this date we still haven't been approved. I figured that maybe he thought that we were at least trying in our area, and he felt that you all should have the benefit of what we think are some of the problems and some of the solutions to the problems.

The Senate Joint Resolution No. 18 of the 1970 Session dealt with the subject of property or coastal areas property insurance. Now the scope of this included not only the coastal areas, but the rivers and lakes. We approached the problem by having all the members of the committee sent the various legislation that had been passed and enacted and implemented in the State of North Carolina. They have what they call a Beach Plan in North Carolina. As of last summer they had only sold something like 52,000 policy premiums and had paid \$1400 in claims, and really this was nothing to go on. Whether or not that was rate adequacy was immaterial because we haven't had a bad storm, and obviously there wasn't enough spread there to say whether or not it was an adequate rate — too high or too low. It didn't give us a lot of help because we have a conflict in Virginia that they don't have in North Carolina. Our FAIR Plan, the plan that many of you may have heard is handled by the state under the Virginia Insurance Placement Facility, is applicable in some of our coastal areas. So, if we had a Beach Plan like they do in North Carolina, it would overlap in many areas of our state.

The FAIR Plan was put in because of a need — a real necessity. Flood Insurance came about for the same reason. So our study committee faced the problem and said, "What can we do? What can we recommend that the VALC do about this pressing problem?" Remember, this resolution was back in the very first part of 1970, and we met in September of 1970. The insurance industry had so many things happen to it in that 8-month period that it is almost unbelievable. The insurance market almost disappeared compared to what it had been 2 or 3 years ago. When I say the market, I'm referring to the ability to place all types of coverage, be it automobile insurance, home owners insurance, or fire insurance on commercial property.

When we met, we looked at what our instructions were and what the scope of the study was. We approached it with the idea that maybe we could extend the FAIR Plan rather than have an additional plan. We looked at the possibilities of providing flood coverage on the extended coverage

endorsement on the fire policy. This isn't a practical approach either because, as you can realize, if the cost of flood insurance were added to all extended coverage policies, it would be prohibitive to buy the normal extended coverage such as windstorm and the hail provision. People just couldn't afford it. Then we considered the North Carolina plan, as I mentioned, and then we considered the possibility of extending the FAIR Plan to include those risks that are not included now, namely farm properties and manufacturing risks. This would help some of the market problems of insurance in the Commonwealth. After much conversation and discussion concerning what was available to the people of the State of Virginia and what we could do as a committee with limited resources, we concluded that the problem was so broad that just discussing flood insurance would be like talking about the part of the iceberg that is out of the water. We had to get to the bottom of the problem. We drafted a proposal to the VALC that was adopted in December, and they have authorized the funding of a committee to look into the insurance industry as a whole. Once the ills in the insurance industry are somewhat solved, tackling flood insurance problems is going to be eased greatly.

As you probably know, there is a limit on the amount of money involved in insuring flood insurance in this country — \$2.5 million. There is a limit on each home. You can only get \$17,500 insurance on a one-family residence no matter what its value. If you owned a 40-room motel or a 140-room motel on the waterfront, the flood insurance as it stands today would not be of too much value to you, particularly if the mortgage company was in the process of talking to you about a 70% mortgage in a flood area. The program as it is today doesn't do the entire job, but it does make a step in the right direction — taking care of the person whose home is his only investment. If it is a modestly priced home, the \$17,500 will keep him out of the poor house. The problem, and I am sure this will be discussed if it hasn't already, is letting the community at large know that this coverage is coming about, to see that the governing body has made application and will take advantage of it, and to see that the people understand that it is subsidized. It's like the FAIR Plan; if it wasn't for the Department of Housing and Urban Development, it wouldn't work. They must realize that the premium that they will pay for flood insurance, though it seems a tremendous amount, does in no way underwrite the exposure — that the Government is subsidizing it in large part.

The insurance industry will have an opportunity in the next 2 or 3 years to face up to a problem — attracting the right people into the business and doing something about the bad publicity that the insurance industry is getting

today. Many of you know young people who are leaving college with a degree in business administration, finance, or whatever it may be, but very few of you — and I dare say none of you — know of any young man who is finishing college this year who is planning on going into the general insurance business, whose family is not already in it. This is unfortunate. We must do something about this, and it must be done soon.

It may be of interest to you to know how we got to this point. The agents on this study committee, almost to the man, agreed that since World War II the problem has been a lack of confidence between the company and the agent, a lack of communication between the insurance buyer and the agent, and unfortunately until just recently professionalism did not exist in the quantity that it should in the insurance business. All of us are the same. We are all human; if we have a bad experience with someone, we are suspect of him and his kind for many years to come.

In Virginia today, unfortunately, there are fewer agents every month. Every month there are fewer agencies in the insurance business in Virginia. We lose more than we gain every month of every year. By validation, merger, liquidation — you lose insurance companies because they merge. It may be of interest to you — it is sort of humorous — one of my fellow agents, in the same building and who has been in business much longer than I have, represented four companies ten years ago. He tried to give each company 25% of his business so he would have what they call a good spread and he wouldn't be vulnerable. To make a long story short, today one company has 75% of the business in his office because they purchased or merged with two of the others. He has now ended up with two companies. One company has 75% of his business, and he is at the mercy of that company. So this is what you see going on. You read about it in the financial page every day. The conglomerates are taking over the insurance industry; they are taking the surplus out of the business which allows the companies to have less leeway to underwrite flood insurance and other hazardous types of coverages that are needed in particular areas.

Virginia has a habit, in the insurance industry (and this is important I think for you all to understand about our industry), in that Virginia — next to Louisiana — is probably the last state to adopt new forms of insurance, and there is a reason for it. We would let the other states make the mistakes, iron out the wrinkles, and then we would adopt a plan. We were one of the last states to adopt a homeowner's policy and various other forms of insurance. Remember one thing. The decisions and the policies of insurance companies in the State of Virginia are not made in Virginia. They are made in Chicago,

New York, and Hartford. These people who control these companies and control the facilities that are available in the markets are not concerned about the State of Virginia. It's not that big in their financial picture. There are only three states in the United States that give insurance companies more trouble from a legislative standpoint than Virginia, and they are Massachusetts, Florida, and New Jersey. So Virginia's attitude (the General Assembly) is going to change, I am sure. They are going to open up and let it be a competitive business and let it seek its own level with fewer and fewer controls. It will not be to the disadvantage of the consumer, but to his advantage, because now he has a very limited market. It will be an open market in a year – maybe 18 months.

I've talked a little bit longer than I wanted to. It's 25 minutes till 9, and I know all of you have had a long day. I've enjoyed being here. I want you to know that the VALC probably is functioning faster, more positively, than they have after any General Assembly session that I can remember in my lifetime. The Governor has let it be known that he wants these problems faced up to now. He doesn't want to study them to death; he wants to find out what the problems are and to function. He's the first Governor – and I mentioned that I am not a Republican – that has seen the seriousness of the insurance industry's problem in this state, and he is committed to allowing the industry to solve its problems with the help of the State Corporation Commission's insurance department. I appreciate the opportunity of being here, and I want you to know that it was a pleasure. Thank you.

**V. INFORMATION NEEDS AND
THEIR ACQUISITION**

INFORMATION NEEDS OF THE REGULAR PROGRAM AND THE EMERGENCY PROGRAM

Walter Sutton
Director, Engineering Division
Flood Insurance Administration
Department of Housing and Urban Development

I won't lecture for very long. In fact, I'd rather you don't even think of it as a lecture, for I'm convinced that we will get more good out of questions and answers than we will from a lecture — although I'll try to anticipate as many questions as I can. I told my wife this morning that I needed to be prepared to give a startling statement to get the attention of all of you, but I suspect that isn't necessary.

However, I do want to start off by saying this: When I talk about the Federal agencies this morning, I am going to try awfully hard not to mention one of them by name, because if I do you will think I am prejudiced in favor of a particular agency. We just love the five Federal agencies that are doing our work — all of them equally. In case you didn't know, of course, the Corps of Engineers, the Tennessee Valley Authority, the Soil Conservation Service, the U.S. Geological Survey, and an agency not represented here today, the National Oceanographic and Atmospheric Administration (formerly the Environmental Science Services Administration) do all of our flood insurance study work and we appreciate them very much.

The topic of my talk is "Information that is needed." But before I go into the information that is needed, I want to start off the morning by attempting to answer a question that Bill Ghee stimulated yesterday. I don't know whether he meant what he said, but anyway what he was doing was stimulating. I think he was hoping to get some arguments, and I don't think he has received many yet. Bill, you're going to get an argument from me. The question about the advantages of the Flood Insurance Program to a Community. You heard some of the good reasons why a community should have flood insurance. There was an inference that flood insurance costs a community. Yes, maybe it does cost a little to administer a flood plain management program, zoning ordinances, building codes, if you like, but I would like to suggest to you that what the Federal Insurance Administration requires of a community is nothing but what it ought to do anyway, whether there was flood insurance involved or not. That is, the land use and control measures are aimed at reducing flood damages, while at the same time getting maximum wise use of the flood plain. I want particularly to refute any

statement ever made, that we are trying to discourage use of the flood plain. We are only asking that it be used wisely. Our criteria say simply that it must be that which is economically and socially desirable. Now I'll admit I've got a little problem with telling you what is socially desirable. In fact, I think you could probably do a better job of telling me what is socially desirable. I will give you some information later which I think will help you see how you can better get at the matter of determining what is economically desirable. I don't have the full answer on that, but I will show you what I know to help you see that all we are asking is economically and socially desirable use of the flood plain.

But first, I want to talk briefly about those items of information that a community must furnish which have been a problem. We have furnished the check list which a community can use in determining what commitments it must make and what information it must furnish. The main piece of that information, as far as I am concerned, is a map showing the location of its flood prone area. Some communities around the country have gotten the idea that they must give us a map which shows the areas that would be inundated by the 100-year flood. This we do not require of the community in connection with its application. We do require the community to give us a map showing its flood prone areas. One of the reasons for this, and gentlemen, you may be surprised, is that many communities around the Nation don't know where their flood problems are. Part of the problem is that maybe they didn't have a flood in the last 5 years, and I have found, personally, that people do not remember a flood for more than 5 years. You may even go into a community where you are going to locate a facility and go around and talk to the real estate people, or maybe you find some old timers who say, "Oh, this piece of land never has been flooded," but if, in fact, you get back into the records you find it had. So one of the reasons for requiring you to furnish a flood prone map is to cause you to get busy and begin to think about your flood problems.

We ask for information about population, number of properties, and this sort of thing. We also ask, in connection with the priority for rate making, what you have done about flood plain management so far; what the situation is now.

This would probably be a good time to point out that we started the program with a two-step eligibility procedure. For the first step, the community said, "We have a positive interest in flood insurance." In effect they were saying "We would like for you to have a rate making study in our community." Then we would contract for the rate making study and,

hopefully, by the time that was completed the community would have given us the second part of the eligibility application – the commitment to adopt land use and control measures. Well, the Emergency Program came along which authorized us to give flood insurance in a community without the rate making study, so all of a sudden the need for this two-step procedure was eliminated. So we have now a one-step procedure until December 31, 1971. After December 31, 1971, we may go back to the two-step procedure where the community gives us a positive indication of interest in flood insurance; we get a rate making study done; the community, during the rate study time, gives us the commitment to adopt land use and control measures or, in fact, puts the land use and control measures into effect. Then we cover the community under the regular flood insurance program.

Let me talk briefly about the state's role. In light of what Don Richwine said yesterday, I suggest that the state's role could be significantly greater than its role is now. For example, if the state had set its own standards for land use and control measures and if those standards are reasonable and at the same time meet the Federal Insurance Administration's criteria for land use and control measures, when a community adopts land use and control measures, and the State says to us "these meet state standards," we're in business. Now, I think this implies a lot of other things as far as the state's role is concerned. For example, the state should be able to assist the community, give them technical assistance in developing flood plain management. So I am simply suggesting for your consideration, that the state's role could be significantly greater than it is.

Let me give you a little bit better understanding of how we go about making rates and how these rates can be of use to you. I mentioned earlier that I was thinking about some shocking statements that I might get your attention with, and I thought about saying, "Hey, fellows, in half an hour you are going to be flood insurance engineers."

Let me insert another thought about the map that the community must furnish showing the location of the flood damages. This means that you would tell us on the map, "All right, this area here is one flood problem area"; and you tell us what it is, a stream, surface run-off, or an ocean; and here's another area over here. Now you may leave out one area. We hope you won't, but the point I want to make is, I would hope that somebody in one day could sit down and prepare the map that you have to submit with the application. Now maybe you don't know enough about the flood problem already and you've got to spend a week thinking about it, but the work involved in preparing that map should not take much time.

Now back to flood insurance rates. We discovered that the rate which reflects the risk is directly related to how close the structure is to water. You know fire insurance is the other way around, the closer you are to water the lower the rate. Here, the closer you are to water the higher the rate. That means both horizontally and vertically. The vertical relationship is the one we will use for an illustration this morning. We use the 100-year flood as the base. A house at a certain location, with its first floor at the elevation of the 100-year flood, has exactly the same risk as a house anywhere else in town with its first floor at the elevation of the 100-year flood. Likewise all houses with first floors at the elevation of the 10-year flood have the same risk, etc. So what we ask for in the rate making study is profiles of the water surface elevations for the 10-year flood, the 100-year flood, and some larger flood. This gives us an elevation-frequency curve which tells us the frequency of floods reaching various elevations and permits us to compute an elevation-rate table. We put down the rate for houses with their first floors at the 100-year flood, say 75 cents; and plus 1 foot would be, say, 40 cents; plus 2 feet would be maybe 10 cents; and minus one maybe \$2; and minus 2 maybe \$4. These are numbers out of my head but, however, I do have the standard rate tables, and I must be sure that every state agency gets a set.

I want to point out also that the difference between 10- and 100-year floods may be a lot more in one community than another. So the rate for a house at the elevation of the 10-year flood in one community may be higher than it is for the same house in the same relative location in another community. We have a scheme we call community flood hazard factor, so one of the first things you need to think about would be, what is the flood hazard factor for your community? For you engineers, I'll tell you that flood hazard factor and elevation-frequency curve are synonymous.

Under the program another piece of information that a community must provide is the elevation of the first floor of all houses constructed in the special flood hazard area after the community becomes eligible, and if they have basements, the distance down from that first floor to the bottom of the lowest opening where water may enter while flowing over the ground. The community must do this. Why? Because the rate depends directly on the relationship of the first floor to the base flood. If he's 2 feet down, his rate is \$4; if he's 1 foot down, it's \$2; if he's at the base flood, it's 55 cents.

Now you probably have already seen how this can be used in deciding what your land use and control measures ought to be. For example, your minimum first floor elevations. Let's say the owner is thinking about building at -2, flood insurance rates are \$4. He saves some money by building at -1,

whether he buys flood insurance or whether he suffers the flood damages. This will help make the decision how to use the flood plain because the flood insurance rate is directly related to the risk.

This is what we ask the Federal agencies to do for us. We ask them to give us the elevation frequency curve, the flood hazard factor for the community, and then we pull out the rate table for that particular flood hazard factor.

The flood insurance rates are directly proportional to the rate of average annual flood damages. We add something to the basic rate of average annual flood damages to cover the expenses of selling the flood insurance, and to cover the fact that people will not necessarily buy complete coverage. We make our computations for rate of average flood damage on the assumption that a \$10,000 house would be fully covered. The point I'm making is that whether you buy flood insurance or not, when these numbers are correct, the guy that builds at -2 suffers double the amount of damages of the guy that builds at -1, or he pays twice as much for the insurance as the guy that builds at -1.

I think we'll just take a minute to explain flood insurance zone maps. The special flood hazard area and Zone A are the same. Zone B is the remainder of the flood plain. We ask the contractor, after he has drawn the profiles, to put the 100-year flood (special flood hazard area) on the map and to block it out along streets so that anyone can tell whether he is in Zone A or Zone B. We also ask the contractor to put base flood elevation reference lines on the map. In other words we put the profile information on the map for you. Then when someone has located his building site on the map, he can find his base flood elevation.

We block out zone boundaries. Whoever did the flood insurance study for us outlined the 100-year flood with a curvilinear line and encompassed that area with blocked out zone boundaries so that people will be able to tell whether they are in Zone A or Zone B. Now, admittedly, when we blocked the area out, we included a little land that is not subject to flooding by the 100-year flood. I believe Jarl Sorensen, who is also on the program today, led us to adopt this scheme so that it would be practical from an insurance agent's viewpoint. I have learned a lot from Jarl Sorensen.

The really significant thing so far as land use is concerned is not the location of the zone boundary, but the elevation of the 100-year flood for the land involved. Also needed, however, is the area where velocity would

create an additional hazard as in the frontal areas of coastal flood plains and in floodways of streams. Within Zone A along rivers there is an area which must be reserved in order to pass a selected flood. For if you start obstructing this area, then your 100-year flood is going to be higher and spread out farther. If you start building bridges or let your channels get filled up with trees and this sort of thing, or you build industrial plants in here, or houses, or what have you, this area is not available to pass the flood and the base flood may reach elevation 103 instead of 99. We do suggest you not allow obstructions in the floodway, but the remainder of the 100-year flood plain can and ought to be used in one way or another. Maybe your immediate need is for parks, your highest priority is for parks or recreation areas, immersible parks is the term somebody used.

DIVISION OF WATER RESOURCES
ASSISTANCE TO COMMUNITIES
IN DEFINING HAZARD AREAS

Julian Alexander
Commissioner
Virginia Division of Water Resources

We in the Division of Water Resources have several functions, one of which is to gather information relative to stream flow and flood stages. We are involved in planning – making river basin planning studies – and in this planning effort we use the data collected and identify areas in a particular river basin that have flood problems. This is not to say that we, in these studies, define precisely the flood hazard area in a particular community. This can be done precisely when the community sees that this is desirable. We can assist the community in defining a flood hazard area in their boundaries by using the basic data that are available relative to flood discharges and flood profiles. This could be done rather easily and quickly in helping the community make application for flood plain insurance eligibility.

The Division of Water Resources has been designated as the coordinating state agency to assist the localities in making application to Federal agencies for detailed flood plain information studies. Also we have been designated to assist in coordinating relative to the Flood Insurance Program. If a community needs assistance in defining flood hazard areas, we can rather quickly assist them in outlining on a map an area that does have special flood hazards. This is not to say that this definition will be the most precise piece of information available, but it will show where the main problem lies. When it comes to defining the area more precisely, we recognize there are agencies which have ongoing programs which involve the making of precise flood plain information studies – these have been mentioned – the TVA, the USGS, the Corps of Engineers, and the Soil Conservation Service. We assist the communities in making application to these agencies to have precise flood plain delineation studies made. We like to think that we in our own shop have the expertise – and we do have – to make the same studies that the Federal agencies are making; however, due to manpower and budgetary limitations and priorities of work, we don't as a matter of course make these detailed flood plain information studies from which are derived the flood insurance rate making relationships. Again, let me say that the Division will assist in making a determination of the flood hazard area in a fairly short period of time. We do coordinate with the local communities in helping them make application to the appropriate Federal agency to have the

detailed studies made. Too, assistance is rendered to the localities in making application for flood insurance eligibility.

I will be happy to entertain any questions you might have, and we will answer them to the best of our ability.

DISCUSSION

Q: Would a member of your office come to the community, or would it be just as easy for us to bring our maps to Richmond?

Mr. Alexander: It would be agreeable to send maps to Richmond. It would probably be best to have face to face conferences in the delineation of a special flood hazard. I would suggest that we get together.

CORPS OF ENGINEERS ASSISTANCE TO COMMUNITIES AS RELATED TO THE NATIONAL FLOOD INSURANCE PROGRAM

John R. Philpott
Chief, Flood Plain Management Services Branch
Norfolk District, Corps of Engineers

THE ORGANIZATIONAL STRUCTURE OF THE CORPS OF ENGINEERS

Generally speaking, the Corps of Engineers functions at three permanent levels of authority. The lowest level, or operating level, is that of the District. District boundaries for Civil Works Functions generally coincide with watershed boundaries of river basins. A district may consist of several small river basins or in some cases, it may cover only part of a major river basin. There are 37 districts within the continental limits of the United States and one each in Alaska and Hawaii. Above the District is the Division level. Each division office usually has several districts under its control. The division offices furnish guidance to and review the work of the various districts and pass on recommendations to the Office of the Chief of Engineers headquartered in Washington, D.C. The Chief's Office is the top level and general policy-making organization for the entire Corps of Engineers.

Corps of Engineers' dealings with the general public are almost always carried on at the district level. Requests for assistance should be directed to the District Engineer of the office having jurisdiction in the area of interest.

Assistance to communities in defining flood hazards and other Corps of Engineers activities related to the National Flood Insurance Program are furnished primarily through the Corps' Flood Plain Management Services Program. Flood plain management units have been established in each Corps of Engineers' division and district office in the United States. In Virginia, the program is administered by three division offices with assistance from five district offices.

Appendix I identifies the various Corps of Engineers' offices that have jurisdiction in Virginia and their area of responsibility. When there is any doubt about which district has responsibility over a particular area, inquiries should be directed to the Norfolk District which is the coordinating district for all Flood Plain Management activities within the state.

NATURE OF ASSISTANCE PROVIDED

Appendix II, which is a modified version of a publication by the South Pacific Division, Corps of Engineers, entitled "Flood Plain Management by the U.S. Army Corps of Engineers," is suggestive of the type of assistance which is available from the Corps in connection with the National Flood Insurance Program. In addition to making data accumulated under the Flood Plain Management Program available to all those who have a need for this type of information, the Corps of Engineers cooperates with the Federal Insurance Administration on a reimbursable basis in the preparation of certain technical studies and reports related to the Insurance Program. For example, the Norfolk District prepared Special Flood Hazard Maps for Portsmouth and Chesapeake. A Flood Insurance Rate Study and Report has been completed by the Norfolk District for Hampton and reports are now underway in the district in connection with Type 10 Flood Insurance Studies for Portsmouth and Chesapeake. Flood Plain Information Reports prepared by the Norfolk District have been used by the cities of Hampton, Norfolk, and Virginia Beach to support their application for Federal Flood Insurance.

APPENDIX I

ADDRESSES AND AREAS OF RESPONSIBILITY OF THE
VARIOUS DIVISION AND DISTRICT CORPS OF ENGINEERS
OFFICES WHICH HAVE JURISDICTION IN VIRGINIA

Division Office

North Atlantic Division, Corps of Engineers
90 Church Street
New York, New York 10007

District Office

Baltimore District, Corps of Engineers
P.O. Box 1715
Baltimore, Maryland 21203

Norfolk District, Corps of Engineers
803 Front Street
Norfolk, Virginia 23510

Area of Civil Works Responsibility
in Virginia

Potomac River Basin.

York, Chowan, James, and Rappahannock
River Basins, Atlantic Coastal Area,
and Eastern and Western Shores of
Chesapeake Bay.

Ohio River Division, Corps of Engineers
P.O. Box 1159
Cincinnati, Ohio 45201

Huntington District, Corps of Engineers
P.O. Box 2127
Huntington, West Virginia 25701

Nashville District, Corps of Engineers
P.O. Box 1070
Nashville, Tennessee 37202

New, and Tug and Levisa Forks of
Big Sandy River Basins.

Powell, Clinch, Middle Fork Holston,
North Fork Holston, and South Fork
Holston River Basins.

South Atlantic Division, Corps of Engineers
P.O. Box 1889
Atlanta, Georgia 30301

Wilmington District, Corps of Engineers
P.O. Box 1890
Wilmington, North Carolina 28401

Charleston District, Corps of Engineers
P.O. Box 919
Charleston, South Carolina 29402

Roanoke River Basin.

Small tributaries of the Yadkin River
which extend from North Carolina into
Virginia.

APPENDIX II
FLOOD PLAIN MANAGEMENT SERVICES
BY THE
U.S. ARMY CORPS OF ENGINEERS

Introduction

Over the years, levees, channel improvements, and reservoirs have been constructed to protect the works of man from floods. Encroachment on lands subject to flooding, however, has taken place more rapidly than flood control works have been constructed, with the result that flood damages across the Nation have been steadily increasing. Further, it has been found that some floods cannot be prevented and that it is economically impossible to protect some cities with works such as dams and levees.

Despite the expenditure of tax funds running into the billions of dollars for flood control works, flood damage continues to increase. This has led to a new approach to flood damage reduction. This approach involves the application of control over the use of flood-prone lands through planned development and management, and the prevention of local flood damage as an essential part of the community planning and development. It means giving consideration to zoning and subdivision regulations, land acquisition for parks and open spaces, special planning of streets and utilities, and appropriate construction standards for building in flood hazard areas, as well as to levees, dams, and other protective works. The new approach requires a cooperative effort on the part of Federal, state, and local governmental agencies, but that the responsibility for solving the flood problems remains in local hands.

At the Federal level, efforts are being made to recognize flood hazards and limit the increase in flood damage. At the request of the Executive Branch, in 1966 a special task force (drawing on the combined experience and judgment of various Federal, state, and local agencies as well as outside experts) prepared a report on dealing with flood losses by a variety of means. The report was strongly endorsed by the Executive Branch when it was transmitted to the Congress in August of that year. A copy of that report is shown as Exhibit 1. At that time, the President issued Executive Order 11296, which directed Federal agencies to evaluate flood hazards in locating federally owned or financed buildings, roads, and other facilities, and in disposing of Federal lands and properties.

The entire text of Executive Order 11296 is shown as Exhibit 2. As a result of Executive Order 11296, and other continuing responsibilities assigned by the Congress, the Corps of Engineers' present Flood Plain Management Services Program was established. A more detailed explanation of the authority under which the Corps FPMS Program was established is given on Exhibit 3. This program plays a significant supporting role in the national effort to reduce flood damage. Its objective is comprehensive flood damage prevention planning that encourages and guides the wise and beneficial use of the Nation's flood plain areas. The program includes preparation of flood plain information reports, provision of technical services and guidance, preparation of guidance materials on various phases of flood plain management and conducting related research, and planning of long-range comprehensive flood damage reduction.

Flood Plain Information Reports

Flood plain information reports are prepared at the request of local interests to delineate flood problems in specific communities. The Corps of Engineers has gathered much flood hazard data in carrying out previously assigned responsibilities for flood control and, under the Flood Plain Information Report Program, these data may be assembled and organized as they relate to a certain community. When necessary, additional surveying to develop needed topographic and other physical data may be done, and new hydrologic studies may be undertaken. A typical flood plain information report will include maps or mosaics, flood profiles, charts, tables, photographs, and narrative material on the extent, depth, and duration of past floods, and similar data on floods that may reasonably be expected in the future. Exhibit 4 is a list of reports already completed or scheduled for completion in Virginia.

Requests for Flood Plain Information Reports

The states cooperate in the Flood Plain Information Report Program by receiving requests for studies from local agencies and forwarding them together with recommendations and assigned priority, to the appropriate Corps of Engineers' district. The governors of the states have delegated the responsibility for coordinating the program with the Corps of Engineers to certain state officials and their staffs. In Virginia, this responsibility rests with the Commissioner, Division of Water Resources, Commonwealth of Virginia, Department of Conservation and Economic Development, located at 911 East Broad Street, Richmond, Virginia 23219.

A request for a flood plain information report should be submitted to the appropriate state official by the duly constituted local governing body or by some other agency or official designated by that body. The request should consist of a letter stating that the signer has been authorized to submit the request to the state for its assistance with the flood problem and in arranging for preparation of a flood plain information report. To the extent practical, the letter should set out the local interest in the flood problem and express a desire for assistance in coping with it, how the requested report will be used, and when it will be needed for greatest efficiency in the local planning programs. The letter should also include assurances that available information such as physical and statistical data, photographs, maps, zoning ordinances, and flood control and planning studies will be furnished for the use of the Corps of Engineers. In addition, the local agency will agree to preserve any survey markers established during the course of the study, and to publicize the report in the local area and make it available for use or inspection by planning groups, zoning boards, private interests, engineering and planning firms, real estate and industrial developers, and others interested so that the information in the report will be considered in local planning decisions. The areal limits of the flood-prone area to be covered in the report may be included in the request or they may be agreed upon later in a conference of local, state, and Federal representatives concerned.

Requests submitted directly to the Corps of Engineers will be referred to the coordinating state official and the applicant notified of the referral and the state responsibility. States may also originate requests, but generally only for reports pertaining to state lands, or for special needs. Requests from Federal agencies for reports on Federal lands should be submitted by the regional or field office directly to the appropriate Corps of Engineers district. Requests made directly to the Chief of Engineers, or to a division office, will be referred to the appropriate district for action.

Responsibilities of the States

In forwarding a request to the Corps of Engineers, the state should give assurances similar to those given by the local requester and agree to publicize and disseminate the report. The priorities recommended by the state will be used by the Corps of Engineers for guidance in scheduling and budgeting, and therefore should be based on statewide considerations. Priorities will be reviewed annually to reflect changing conditions. Because the Corps of Engineers has wide experience in the field of flood damage prevention and knowledge of the flood problems at specific locations, its representatives can provide assistance to the state in its determinations. In assigning priorities,

some of the main considerations are past and current local planning toward solving the local flood problem, the magnitude and rate of growth of the problem, rate of growth of the community, and the attitude of probability of action by the community.

Special attention will be given to communities for which previous Corps of Engineers' flood control investigations show protective works are not economically justified or were not recommended for other reasons. Much of the necessary information for reports on such communities is available in Corps of Engineers' records, so the effort, time, and costs for a current report would probably be less than for areas not previously studied. Also, the communities covered by previous Corps of Engineers' reports have already expressed a desire for solving their flood problems. When a flood plain information report is to be prepared on a community in this category, the state should discuss its priority of completion with the Corps of Engineers and take the above factors into account.

Technical Services and Guidance

The Corps of Engineers stands ready to provide technical assistance and guidance to states and local agencies in the interpretation and application of data in flood plain information reports. This includes providing additional data pertinent to but not published in the report, assisting in the preparation of flood plain regulations, and suggesting floodway areas and evaluating the effects of such floodways. Technical services and guidance also includes furnishing generalized information on flood damage reduction by flood plain evacuation, flood forecasting, flood proofing, urban redevelopment, and by other corrective measures, and by subdivision regulations, building codes, health regulations, and other preventive measures.

Technical assistance will be given to Federal, state, and local governmental agencies in evaluating and using flood data in making decisions concerning flood hazards. This will include special flood hazard information reports, which comprise adequate data to permit wise decisions on the location of public buildings and other publicly owned facilities, and on subdivision development and other land uses where there is a Federal interest.

Requests for technical services and guidance should be made to the Corps of Engineers' district in which the Federal, state, or local agency's area of interest is located.

Special Flood Hazard Information Reports

Special flood hazard information reports provide information at spot locations or for very short stream reaches. The report will provide available information on the maximum historical flood height and the height of the Intermediate Regional and Standard Project Floods. Definitions of the Intermediate Regional Flood and Standard Project Flood are contained on Exhibit 5. Information and guidance of the area needed for a floodway, any special factors affecting floods and flood heights, and the effects of flood control projects will be provided if applicable.

Requests for special flood hazard information reports. Flood hazard information can be requested by regional and district offices of Federal agencies in meeting responsibilities under Executive Order 11269. States, communities, and any other legally constituted public agency can also request special reports as they may need flood information in advance of the completion of a flood plain information report, or for an area for which a flood plain information report is not scheduled. The need may relate to the preparation of flood plain regulations or to other planning requirements.

Upon request, the Corps of Engineers will continue to furnish individuals and other private interests the flood plain information that is readily available in its files. Detailed studies leading to reports of the type prepared for Federal, state, and local governmental agencies are not made for private interests.

Format and content of requests. Requests for special flood hazard information reports will be by letter to the appropriate Corps of Engineers' district and should contain as much pertinent information about the site as is available. Maps showing the location of the site and ground elevations should be furnished. All requests will be handled as promptly as possible within the limits of available funds.

Requesting agency responsibility. Although basic data and guidance are given by the Corps of Engineers under Executive Order 11296, it is the responsibility of the using Federal agency to evaluate the flood hazard and determine its own recommendations and appropriate course of action.

Guidance Materials and Research

The Flood Plain Management Services Program includes studies to improve methods and procedures for flood damage prevention and

abatement, and the preparation of guides and pamphlets on flood proofing, flood plain regulations and the economics thereof, flood plain occupancy, and other related approaches to flood damage prevention. The guides and pamphlets are for use of state and local governments, private citizens, and Federal agencies in planning and taking action to reduce flood damages or damage potential.

Research efforts related to the program are conducted by or under the close direction of the Chief of Engineers. The research effort includes studies of and means for illustrating alternative ways of coping with flood damages for the benefit of the growing number of local, state, and Federal officials concerned with flood problems. This requires investigation of the applicability and potential combinations of alternative methods of flood damage reduction, and study of the acceptability of various alternative or complementary measures. These activities are closely coordinated with related research programs of other Federal agencies and the various states.

Comprehensive Flood Damage Prevention Planning

Comprehensive flood damage prevention planning leading to sound flood plain management at all levels of government is the basic aim of the Flood Plain Management Services Program. The Corps of Engineers, working with and through the proper state agency, provides the engineering and other technical assistance and guidance. Through close local contacts and understanding, state and local officials are brought fully into planning actions and appropriate consideration is given to alternative or supplementary measures. Thus, planning considers flood control works, flood proofing of buildings, flood forecasting, zoning, subdivision regulations, building codes, city policies, and other elements to find the combination that gives the best solution.

EXHIBIT 1

89th Congress, 2d Session

House Document No. 465

A UNIFIED NATIONAL PROGRAM
FOR MANAGING FLOOD LOSSES

COMMUNICATION

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

A REPORT BY THE TASK FORCE ON FEDERAL FLOOD
CONTROL POLICY



AUGUST 10, 1966.—Referred to the Committee on Public Works, and
ordered to be printed with illustrations

U.S. GOVERNMENT PRINTING OFFICE

★ 67-663

WASHINGTON : 1966

LETTER OF TRANSMITTAL

THE WHITE HOUSE,
Washington, August 10, 1966.

Hon. JOHN W. McCORMACK,
Speaker of the House of Representatives,
Washington, D.C.

DEAR MR. SPEAKER: On many occasions, I have expressed my concern for the need to manage wisely America's water resources. For all our people, this country's inland streams and coastal waters are a source of well-being, both material and spiritual.

But they are also the source of great personal hardship. Despite our flood control achievements in the past 20 years, which have averted an untold number of disasters, our river system and coastal waters are still dangerous friends. They still cost us, every year, more than a billion dollars of our wealth.

It need not continue this way.

For three decades we have been engaged in a continuous effort to control flood losses. Over \$7 billion has been invested since 1936 by the Federal Government in flood control projects. Each year these projects save lives and prevent hundreds of millions of dollars in property damage throughout the country. Clearly we must and will continue to support these established programs.

But a Great Society cannot rest on the achievements of the past. It must constantly strive to develop new means to meet the needs of the people.

To hold the Nation's toll of flood losses in check and to promote wise use of its valley lands requires new and imaginative action.

Nature will always extract some price for use of her flood plains. However, this Nation's annual flood damage bill of more than \$1 billion per year is excessive, even in a growing economy. Beyond the dollar loss the accompanying toll in personal hardship cannot be calculated. In addition, opportunities are being lost to use flood plain lands effectively for recreation and wildlife purposes.

I believe that we can and must reduce these losses. At the administration's request, a special task force has submitted a report drawing upon the combined experience and judgment of the Corps of Engineers, Department of Agriculture, Department of the Interior, Tennessee Valley Authority, State and local agencies, and outside experts for providing guidance in dealing with flood losses by a wide variety of means.

The Federal interest in this matter is beyond doubt. The Federal effort to cope with the problem will be unsparring. But I cannot overemphasize that very great responsibility for success of the program rests upon State and local governments, and upon individual property owners in hazard areas. The key to resolving the problem lies, above all else, in the intelligent planning for and State and local regulation of use of lands exposed to flood hazard.

III

The task force report lays stress on actions which can and should be immediately undertaken—

To improve basic knowledge about the flood hazard;

To coordinate and better plan for new developments on the flood plain;

To initiate a program of technical information and services to managers of flood plain property;

To move ahead with studies aimed at a practical national program for flood insurance;

To adjust, through executive action and legislation, Federal flood control policy to sound criteria and changing needs.

I commend the consultants' report to the attention of the Congress and to the public at large. I strongly support its basic approach to the problem of curbing flood damage waste. Some of its recommendations can be carried out immediately. Others will require further study.

As a first and immediate step to carry out the recommendation of the task force report, I am today issuing an Executive order directing Federal agencies to consider flood hazard in locating new Federal installations and in disposing of Federal land.

A great deal can be accomplished within the scope of existing authorities. I am asking, through the Director of the Bureau of the Budget, that agencies of the executive branch begin immediately taking additional action and conducting studies in accord with the task force recommendations.

Some of the task force proposals would require legislation. I am requesting the appropriate Federal agencies to study these proposals and make recommendations to me for later submission to the Congress.

There is a role for each level of government in a successful flood damage abatement program. There is likewise a responsibility on all participants, from the individual citizen through many elements of Federal establishment, to contribute to the program's success. Let us begin today a renewed and cooperative effort to attack this problem.

Sincerely,

LYNDON B. JOHNSON.

Presidential Documents

Title 3—THE PRESIDENT

Executive Order 11296

EVALUATION OF FLOOD HAZARD IN LOCATING FEDERALLY OWNED OR FINANCED BUILDINGS, ROADS, AND OTHER FACILITIES, AND IN DISPOSING OF FEDERAL LANDS AND PROPERTIES

WHEREAS uneconomic uses of the Nation's flood plains are occurring and potential flood losses are increasing despite substantial efforts to control floods; and

WHEREAS national and regional studies of areas and property subject to flooding indicate a further increase in flood damage potential and flood losses, even with continuing investment in flood protection structures; and

WHEREAS the Federal Government has extensive and continuing programs for the construction of buildings, roads, and other facilities and annually disposes of thousands of acres of Federal lands in flood hazard areas, all of which activities significantly influence patterns of commercial, residential, and industrial development; and

WHEREAS the availability of Federal loans and mortgage insurance and land use planning programs are determining factors in the utilization of lands:

NOW, THEREFORE, by virtue of the authority vested in me as President of the United States, it is hereby ordered as follows:

SECTION 1. The heads of the executive agencies shall provide leadership in encouraging a broad and unified effort to prevent uneconomic uses and development of the Nation's flood plains and, in particular, to lessen the risk of flood losses in connection with Federal lands and installations and federally financed or supported improvements. Specifically:

(1) All executive agencies directly responsible for the construction of Federal buildings, structures, roads, or other facilities shall evaluate flood hazards when planning the location of new facilities and, as far as practicable, shall preclude the uneconomic, hazardous, or unnecessary use of flood plains in connection with such facilities. With respect to existing Federally owned properties which have suffered flood damage or which may be subject thereto, the responsible agency head shall require conspicuous delineation of past and probable flood heights so as to assist in creating public awareness of and knowledge about flood hazards. Whenever practical and economically feasible, flood proofing measures shall be applied to existing facilities in order to reduce flood damage potential.

(2) All executive agencies responsible for the administration of Federal grant, loan, or mortgage insurance programs involving the construction of buildings, structures, roads, or other facilities shall evaluate flood hazards in connection with such facilities and, in order to minimize the exposure of facilities to potential flood damage and the need for future Federal expenditures for flood protection and flood disaster relief, shall, as far as practicable, preclude the uneconomic, hazardous, or unnecessary use of flood plains in such connection.

THE PRESIDENT

(3) All executive agencies responsible for the disposal of Federal lands or properties shall evaluate flood hazards in connection with lands or properties proposed for disposal to non-Federal public instrumentalities or private interests and, as may be desirable in order to minimize future Federal expenditures for flood protection and flood disaster relief and as far as practicable, shall attach appropriate restrictions with respect to uses of the lands or properties by the purchaser and his successors and may withhold such lands or properties from disposal. In carrying out this paragraph, each executive agency may make appropriate allowance for any estimated loss in sales price resulting from the incorporation of use restrictions in the disposal documents.

(4) All executive agencies responsible for programs which entail land use planning shall take flood hazards into account when evaluating plans and shall encourage land use appropriate to the degree of hazard involved.

Sec. 2. As may be permitted by law, the head of each executive agency shall issue appropriate rules and regulations to govern the carrying out of the provisions of Section 1 of this order by his agency.

Sec. 3. Requests for flood hazard information may be addressed to the Secretary of the Army or, in the case of lands lying in the basin of the Tennessee River, to the Tennessee Valley Authority. The Secretary or the Tennessee Valley Authority shall provide such information as may be available, including requested guidance on flood proofing. The Department of Agriculture, Department of the Interior, Department of Commerce, Department of Housing and Urban Development, and Office of Emergency Planning, and any other executive agency which may have information and data relating to floods shall cooperate with the Secretary of the Army in providing such information and in developing procedures to process information requests.

Sec. 4. Any requests for appropriations for Federal construction of new buildings, structures, roads, or other facilities transmitted to the Bureau of the Budget by an executive agency shall be accompanied by a statement by the head of the agency on the findings of his agency's evaluation and consideration of flood hazards in the development of such requests.

Sec. 5. As used in this order, the term "executive agency" includes any department, establishment, corporation, or other organizational entity of the executive branch of the Government.

Sec. 6. The executive agencies shall proceed immediately to develop such procedures, regulations, and information as are provided for in, or may be necessary to carry out, the provisions of Sections 1, 2, and 3 of this order. In other respects this order shall take effect on January 1, 1967.

LYNDON B. JOHNSON

THE WHITE HOUSE,
August 10, 1966.

[F.R. Doc. 66-8838; Filed, Aug. 10, 1966; 12: 14 p.m.]

FEDERAL REGISTER, VOL. 31, NO. 155—THURSDAY, AUGUST 11, 1966

EXHIBIT 3

GENERAL AUTHORITY – Section 206, 1966 Flood Control Act

E-X-T-R-A-C-T

Pub. Law 89-789

November 7, 1966

* * * * *

Flood hazards,
etc., studies.
33 USC 709a.

Sec. 206. Section 206 of the Flood Control Act of 1960 (74 Stat. 500) is amended to read as follows:

“Sec. 206. (a) In recognition of the increasing use and development of the flood plains of the rivers of the United States and of the need for information on flood hazards to serve as a guide to such development, and as a basis for avoiding future flood hazards by regulation of use by States and political subdivisions thereof, and to assure that Federal departments and agencies may take proper cognizance of flood hazards, the Secretary of the Army, through the Chief of Engineers, is hereby authorized to compile and disseminate information on floods and flood damages, including identification of areas subject to inundation by floods of various magnitudes and frequencies, and general criteria for guidance of Federal and non-Federal interests and agencies in the use of flood plain areas; and to provide advice to other Federal agencies and local interests for their use in planning to ameliorate the flood hazard. Surveys and guides will be made for States and political subdivisions thereof only upon the request of a State or a political subdivision thereof, and upon approval by the Chief of Engineers, and such information and advice provided them only upon such request and approval.

Appropriation.

“(b) The Secretary of the Army is authorized to expend not to exceed \$7,000,000 per fiscal year for the compilation and dissemination of information under this section.”

EXHIBIT 4

FLOOD PLAIN INFORMATION REPORTS COMPLETED
OR SCHEDULED FOR COMPLETION IN VIRGINIA

<u>Location</u>	<u>Status</u> (Completion Date)
<u>Norfolk District</u>	
Meherrin River, Emporia	December 1965
James River, Richmond	December 1965
Tuckahoe C. & James R., Henrico County	November 1965
Gillie Creek, Henrico County	November 1966
North Run, Henrico County	April 1966
Upham Brook, Henrico County	May 1968
Coastal Flooding, Hampton	October 1968
Chickahominy R., Henrico County	December 1968
Jackson River, Covington, Alleghany County	July 1969
Coastal Flooding, Virginia Beach	July 1969
James River, Buchanan	July 1969
Coastal Flooding, Norfolk	March 1970
Smith Creek, Clifton Forge	January 1971
Coastal Flooding, Cape Charles	May 1970
Coastal Flooding, Wachapreague	March 1971
Rappahannock River, Fredericksburg	November 1970
Coastal Flooding, Poquoson	Scheduled 1971
Rivanna River, Charlottesville	Scheduled 1971
James River, Eagle Rock	Scheduled 1971
Meadow Creek, Charlottesville	Scheduled 1971
Moore's Creek, Charlottesville	Scheduled 1971
Pocoshock & Pocosham Creeks, Chesterfield County	Scheduled 1971
Coastal Area, Portsmouth	Scheduled 1972
Coastal Area, Chesapeake	Scheduled 1972
Falling Creek, Chesterfield County	Scheduled 1972
So. Fk. Rivanna River, Albemarle Co.	Scheduled 1972
No. Fk. Rivanna River, Albemarle Co.	Scheduled 1972
Mechum River, Albemarle Co.	Scheduled 1972
Proctors Creek, Chesterfield County	Scheduled 1973
Oldtown Creek, Chesterfield County	Scheduled 1973
Kingsland Creek, Chesterfield County	Scheduled 1973
Johnson Creek, Chesterfield County	Scheduled 1973
James River, Albemarle County	Scheduled 1973
Mechunk Creek, Albemarle County	Scheduled 1973
Ashton Creek, Chesterfield County	Scheduled 1974
Swift Creek, Chesterfield County	Scheduled 1974
Coastal Flooding, Northampton County (8 reports)	Scheduled 1974 - 1976
Misc. Streams, Hanover County (12 reports)	Scheduled 1975 - 1977

<u>Location</u>	<u>Status</u> (Completion Date)
<u>Wilmington District</u>	
Roanoke River, Roanoke	July 1968
Lick Run & Peters Creek, Roanoke	January 1969
Mason Creek, Roanoke	February 1969
Tinker & Carvin Creek, Roanoke	1970
Mudlick Creek, Roanoke	Scheduled 1971
Glade Creek, Roanoke	Scheduled 1971
Back Creek, Roanoke	Scheduled 1972
Dan & Sandy Rivers & Sandy Creek, Danville	October 1972
<u>Huntington District</u>	
Bluestone River & Tributary	Scheduled 1971
Levisa Fork & Tributary, Buchanan County	Scheduled 1971
<u>Baltimore District</u>	
Neabsco Creek, Prince William County	Scheduled 1973

EXHIBIT 5

Glossary of Terms

Flood. An overflow of lands not normally covered by water and that are used or usable by man. Floods have two essential characteristics: The inundation of land is temporary; and the land is adjacent to and inundated by overflow from a river, stream, ocean, lake, or other body of standing water.

Normally, a flood is considered as any temporary rise in streamflow or stage, but not the ponding of surface water, that results in significant adverse effects in the vicinity. Adverse effects may include damages from overflow of land areas, temporary backwater effects in sewers and local drainage channels, creation of unsanitary conditions or other unfavorable situations by deposition of materials in stream channels during flood recessions, rise of ground water coincident with increased streamflow, and other problems.

Intermediate Regional Flood. A flood having an average frequency of occurrence in the order of once in 100 years although the flood may occur in any year. It is based on statistical analyses of streamflow records available for the watershed and analyses of rainfall and runoff characteristics in the general region of the watershed.

Standard Project Flood. The flood that may be expected from the most severe combination of meteorological and hydrological conditions that are considered reasonably characteristic of the geographical area in which the drainage basin is located, excluding extremely rare combinations. Peak discharges for these floods are generally about 40-60 percent of the Probable Maximum Floods for the same basins. As used by the Corps of Engineers, Standard Project Floods are intended as practicable expressions of the degree of protection that should be sought in the design of flood control works, the failure of which might be disastrous.

Probable Maximum Flood. The flood discharge that may be expected from the most severe combination of critical meteorological and hydrological conditions that are reasonably possible in the region. As used by the Corps of Engineers, Probable Maximum Floods are applicable to projects, such as dams, when consideration is to be given to virtually complete security from potential floods.

TENNESSEE VALLEY AUTHORITY ASSISTANCE TO COMMUNITIES IN DEFINING HAZARD AREAS

John F. King
Civil Engineer
Tennessee Valley Authority

Thank you, Dr. Ghee. After hearing from a Corps of Engineers man this may sound like a rerun because much of what they do — we do. Some of our programs began earlier than theirs and some a little later.

I might start out by saying that the Tennessee Valley Authority strongly supports the flood insurance program — with an exception. We want to see strong land use controls. We would not support the program if it is to become a “give away” program without strong land use controls. We do not feel that such a program would be proper.

When the National Flood Insurance Act was adopted in 1968, it made little change in the operating procedure of TVA's Local Flood Relations Staff. The reason was that this staff — of which I am a member — has been in the flood plain management business since 1953. We have been providing technical data on floods to communities within the Tennessee Valley to enable them to manage their flood plains and avoid flood damage. As Mr. Philpott mentioned, in the early 1950's people began to realize that this Nation was spending large sums of money for flood control works, but despite this expenditure the Nation's potential for flood damage was increasing. This was not because the flood control works were unsuccessful. They were doing their job exactly as planned. The reason was that people were moving into flood plains much more rapidly than it was possible to build works to protect them. Flood hazards were being created where none existed before. Something needed to be done to reverse this trend. A number of people in the Corps of Engineers, TVA, and the University of Chicago — to name a few — thought that it would be possible to reverse this trend. They decided that a two-pronged approach would probably be the best way to approach the problem of increasing flood damage potential. The first would be to make the public aware of the hazard by providing flood plain information studies. These are the studies Mr. Philpott mentioned. TVA prepares such studies. In my hand I have a study TVA prepared for Gate City, Virginia. The other approach was to use the police power of local government to regulate land use in flood plain areas in order to avoid the greatest flood hazard. This was done through the medium of zoning ordinances, subdivision regulations, and building codes, either singly or in some combination. As a

result of TVA's efforts in this field there are 74 communities in the seven Tennessee River Valley states which have some type of flood plain regulation.

The flood plain information study, or as we call it, the flood report is the basic tool in a flood damage prevention program of this type. TVA began producing such reports in 1953. These reports contain information on the stream and its valley, data on past floods and on probable large future floods. This, of course, is the very information that is needed to operate a flood insurance program. Obviously, the nature of a hazard must be known if one expects to insure against it.

TVA tries to produce its flood reports so that they will be useful to all concerned. It doesn't do much good to prepare reports solely for engineers. Such reports are usually too technical, so they do not reach enough people. We try to prepare our reports so that the housewife, the doctor, the lawyer, the merchant, and the chiefs will read them and be able to make intelligent decisions based on the flood hazard.

Since 1953, TVA has produced 126 flood reports for 148 communities in the seven Tennessee Valley states. Fifteen of these reports are for twenty-one communities in Virginia. In addition, the State of Virginia produced one report for the town of Tazewell so there are a total of 16 reports covering 22 Virginia communities. A list of these communities is available at the information table in the rear of the room (Table I).

You might ask, "How does a community go about obtaining a TVA flood report?" Well, first and foremost, it must be in the Tennessee River Valley. On the table in the rear is a list of counties in the State of Virginia which are in the Tennessee Valley (Table II). They range from Lee County and Scott County which have 100% of their land areas in the Tennessee Valley to Grayson County which has 1%. That 1% is up on the top of a mountain so we're not going to make many reports for Grayson County, that's for sure. However, if a community is in the Tennessee Valley and wants a TVA flood report, then some official body of the community – the City Council, the Mayor and Board of Aldermen, or perhaps City Planning Commission – must request in writing through the appropriate state agency (and in Virginia, I believe, this is now Mr. Alexander's group) that the TVA produce a flood report for the community. We don't have a complicated application procedure. There are no lengthy forms to fill out. All we want is a simple business letter stating your problems and requesting a report. Forward it through the state agency, and we will start to work on the report.

Now the next question is, of course, money – the essential thing in every undertaking. Everybody wants to know, “What is this going to cost us?” The answer is: TVA does not charge for a TVA flood report. We bear all the cost, every cent of it from the gathering of field data to the final reproduction and presentation of the report, it’s all on TVA. Now somebody may say, “Well sure, there must be a gimmick somewhere, what is it?” We do ask a few things of the community, and they are not really very heavy burdens. We expect the communities to assist us in gathering flood data, particularly flood history. We try to get as much flood history in one of these reports as we reasonably can. Those of you who haven’t worked in the field may not be aware of the fact that prior to about the year 1900, especially in southwest Virginia, there isn’t a great deal of official flood data. They just didn’t have gages there in those days. So we have to go to other sources. We go to old newspaper files, for example. They are a rich source. Libraries quite often have old histories and other documents. We’ve gotten permission to borrow people’s diaries, journals, etc. We will study anything we can get that we think is a reasonably accurate record and see if we can put it in the report to enhance our flood history. And, of course, we need the good offices of the town to secure an entree to these various records. We also expect the community to assist our field survey parties. We have to go out and run profiles and take cross sections across the streams to develop this data so that means survey parties. You all know what happens when a survey party comes into a community and sets up their instruments and starts driving stakes and that sort of thing. Immediately the rumors fly. People say, “Oh boy, they’re going to tear the whole town up.” So it helps us if the community will sort of smooth the path for our surveyors and let the people know that all these fellows want to do is gather information on floods and that they are not planning a dam in the middle of Main Street.

When our report is available, we expect the community to use the data. As Mr. Philpott pointed out, there is no point in producing flood reports if the data are not used. We expect a community to make the data in the report freely available to anyone who has a need for it. The report is a public document; therefore, it can be useful and valuable only if the public has free access to the data.

The next question that you might ask is “How long does it take TVA to react to a request for a flood report?” The answer is we can provide the report rather quickly. As I said earlier, we have been producing these reports for 18 years. TVA has, of course, been gathering stream flow and flood data since it was founded in 1933. We have already prepared reports for most of the towns in the southwestern portion of Virginia that have a real need. If,

however, a town which already had one of our reports were to need additional data, say for example, they had expanded their corporate limits to include an additional stream, we can usually supply the desired data in from 1 to 3 months depending on our workload.

In the case of a small community which does not have a flood report of any type, we can produce what we call a Special Flood Report in from 3 to 6 months starting from scratch. I have here an example — one produced for Pennington Gap, a small town in the southwestern portion of Virginia. If there is no report available and one of our regular reports is needed, about a year will elapse from the request until the report is ready to present to the public.

When a TVA flood report is ready we don't simply mail it to the community and hope that they use it. It is our practice to send one of our engineers out to meet with the local people and discuss it with them. He is prepared to answer questions and assist local officials in understanding the report. In this way we can be sure that the full value of the report will be realized.

We assume that when a state gives approval for us to produce a flood report, we also have approval to go ahead with all phases of a flood damage prevention program in a community. We wish to explore all facets of the problem and seek solutions. In this we work with state and local planning agencies in an effort to provide for flood damage prevention. In the southwestern part of the state we are working with the Lee-Norton-Wise-Scott Planning District Commission (LENOWISCO) in an effort to relieve some of the local flood problems in the area. Some of you may be familiar with two of our projects in the southwestern part of the state. They are the Bristol Project, which consists of two fairly large dams to control the drainage area above the town, and the Coeburn channel improvement project. At Coeburn a series of floods threatened the very existence of the community. The channel improvement afforded major relief and led to an extensive community improvement project. Obviously, this type of program cannot be applied to every community with a flood problem. We do, however, encourage every community in our area to at least adopt flood plain regulations and, if there is a need, to apply for flood insurance.

As I said earlier, TVA's flood reports contain the basic information required for a flood insurance program. We also try to keep abreast of HUD's regulations with respect to flood insurance so that we may assist communities

in making application. We also try to support all phases of the local effort including the preparation of required zoning ordinances and subdivision regulations. TVA is not in the planning business, however. When we help with a zoning ordinance or subdivision regulation, it is primarily to enable the community to adopt reasonable flood plain regulations. After a community has adopted flood plain regulations, we will assist in interpreting the technical data with respect to floods if the need arises. We cannot, of course, actually enforce an ordinance. That is a matter for the local government.

As has been mentioned previously, TVA does make rate studies for the flood insurance program. This is done under contract to HUD. We have also provided other technical support in the establishment of the program.

In closing, let me say that TVA is interested in all facets of flood damage prevention including flood insurance. We are ready to work with any community in the Tennessee River Valley to the limit of our ability to reduce the flood damage potential. There is no charge for our services. All we ask in return is for the local people to sincerely try to reduce their flood damage potential. If there are any questions, I will be happy to try to answer them. Thank you.

TABLE I
 TENNESSEE VALLEY AUTHORITY
 LOCAL FLOOD REPORTS FOR COMMUNITIES IN VIRGINIA, MARCH 1971

Title	Date	Communities Affected
Floods on Powell River and South Fork Powell River in Vicinity of Big Stone Gap, Virginia	Apr. 1965	Big Stone Gap
Floods on Beaver Creek in Vicinity of Bristol, Virginia-Tennessee	Nov. 1961	Bristol
Floods on Guest River, Toms Creek and Little Toms Creek in Vicinity of Coeburn, Virginia	Jan. 1965	Coeburn
Floods on Laurel and Beaverdam Creeks in Vicinity of Damascus, Virginia	Oct. 1960	Damascus
Floods on Guest River at Norton, Virginia	May 1958	Norton
Floods on Clinch River and Tributaries in Vicinity of St. Paul, Virginia	May 1964	St. Paul, Castlewood
Floods on Clinch River and Tributaries in Vicinity of Richlands, Virginia	May 1964	Richlands, Raven, Cedar Bluff
Floods on Clinch River in Vicinity of Cleveland, Carbo, and Carterton, Virginia	May 1964	Cleveland, Carbo Carterton

TABLE I CONT.

Title	Date	Communities Affected
Floods on Clinch River in Russell County, Virginia	Sep. 1960	Russell County
Floods on Middle Fork Holston River and Staley Creek in Vicinity of Marion, Virginia	May 1961	Marion
Floods on Clinch River and Stoney Creek in Vicinity of Dungannon and Fort Blackmore, Virginia	May 1964	Dungannon, Fort Blackmore
Floods on Powell River and Callahan Creek in Vicinity of Appalachia, Virginia	Nov. 1964	Appalachia
Floods on Clinch River and Stock Creek in Vicinity of Clinchport, Virginia	Mar. 1966	Clinchport
Floods on Big Moccasin Creek and Little Moccasin Creek in Vicinity of Gate City, Virginia	May 1967	Gate City, Weber City
Floods on North Fork Powell River, Vicinity of Pennington Gap, Virginia (Special Report)	Apr. 1967	Pennington Gap
Flood Plain Information Study, Clinch River at Tazewell, Virginia (Prepared by Division of Water Resources, Virginia Department of Conservation and Economic Development)	May 1964	Tazewell

TABLE II
 VIRGINIA COUNTIES
 PERCENTAGE OF LAND AREA
 WITHIN TENNESSEE VALLEY

<u>County</u>	<u>Percentage</u>
Bland	13
Dickenson	2
Grayson	1
Lee	100
Russell	100
Scott	100
Smyth	96
Tazewell	63
Washington	100
Wise	71
Wythe	1

The Tennessee River drains 40,910 square miles. Eight percent of this area is in Virginia.

SOIL CONSERVATION SERVICE ASSISTANCE
TO COMMUNITIES
IN DEFINING FLOOD HAZARD AREAS

John K. Abernathy
Assistant State Conservationist
Soil Conservation Service

I wish to start by giving a brief run-down of what the Soil Conservation Service does. The SCS is the technical arm of the U.S. Department of Agriculture in the field of soil and water conservation, and this naturally involves land use, conservation, and management of the soil and water of the nation. We have no regulatory authority. We have been in the environment protection business for 35 years, regardless of what you might have recently read in some of the magazines. I say this because the protection of our environment begins with the proper conservation and utilization of our land and water.

We work with individuals, groups, agencies, or subdivisions of government, primarily through soil and water conservation districts. We have a memorandum of understanding with each of these soil and water conservation districts. Incidentally, all of the counties in the State of Virginia, except Arlington, and some of the cities, are included in these soil and water conservation districts. The SCS has several major responsibilities applicable to Virginia: (1) National leadership in making soil surveys – in Virginia, in cooperation with Virginia Polytechnic Institute and State University, (2) Leadership responsibility for the upstream watershed protection and flood prevention work under the authority of Public Laws 566 and 534, and (3) Technical responsibilities for engineering type practices under the Rural Environmental Assistance Program (formerly the Agricultural Conservation Program), which is a cost-sharing program for landowners in applying needed soil and water conservation practices on their land, administered by a sister USDA agency.

Being a Federal agency, our organizational structure starts with the National Office. We are organized on a line-staff pattern. The line runs from National to state to area to local or “district” offices. In the State of Virginia we do not have an office in every county, but every county is served, with local offices serving two or three counties in several cases.

With respect specifically to assistance in flood hazard areas, we can directly participate in the flood plain insurance studies. In so doing, we gather

information to the extent desired by HUD for the locality. This participation is contingent upon a request from HUD and is done on a reimbursable basis. At present, we have two studies underway – Waynesboro and the City of Fairfax. We do expect HUD to clear with the community for us to proceed with the work.

Now, a word about flood hazard analyses. We represent the USDA and coordinate the activities of the USDA with other agencies in connection with these. The SCS can make an analysis upon request from a local entity of government or a state agency; provided it is coordinated with the Corps of Engineers and provided the Corps does not have plans to make it in the immediate future. We get a small direct appropriation for this purpose and anticipate a slight increase. Some requests will probably be forthcoming this year.

As previously mentioned, the SCS has leadership responsibility for the soil survey program at the National level, and, in cooperation with Virginia Polytechnic Institute and State University, we are proceeding with making surveys and publishing them on a county basis. As of now, about a third of the state – a little over 9,000,000 acres – has been mapped. Some of the reports have been published, others have not. These reports contain maps delineating the various kinds of soils with descriptions and interpretations for various uses. These surveys are quite helpful to local entities of government in determining flood hazard areas in a general way, and let me underscore general. They are not accurate enough for determining flood levels for insurance. All of the areas shown as flood plain soils are subject to flooding under natural watershed conditions, but the maximum flood hazard area is not indicated. Where these reports have been published for a county, a copy may be secured from the Soil Conservation Service or Virginia Polytechnic Institute and State University. Assistance in further interpretation of these reports and in making on-site reviews and decisions may also be obtained by request from these agencies.

I wish to make a few more comments about the small watershed program. As previously mentioned, there are two authorities: (1) Public Law 566, which applies to the entire State with the exception of the Shenandoah, and (2) Public Law 534, which covers the Shenandoah. Under these authorities, the SCS assists local sponsors, subdivisions of the State, technically and financially in planning and installing upstream projects of a community nature for watershed protection and local flood prevention. These projects must be justified for flood prevention. They normally contain several floodwater retarding dams. Surveys and evaluations for developing

these projects require the same basic approach and information as for flood insurance and hazard studies. This information is public information and is available to sponsors and agencies upon request. With a little firming up, it can be used for flood insurance and zoning.

U. S. GEOLOGICAL SURVEY ASSISTANCE TO COMMUNITIES IN DEFINING HAZARD AREAS

James F. Bailey
Hydrologist
U.S. Geological Survey

Much of my discussion, or a good deal of it, has been covered by some of the other agencies as one might have expected at this time. I will try to limit my remarks here this morning to a discussion of some of the products that the USGS has that may be of value to you. The primary mission of the Water Resources Division is to collect and interpret hydrologic information. The USGS program is generally in cooperation with state and local agencies. Our district headquarters are here in Richmond, Virginia, and we have subdistrict offices in Charlottesville, Fairfax, Marion, and Norfolk.

A principal aspect of USGS programs is the collection of information. A lot of this information which we collect is used to prepare the studies that you have heard mentioned here today by the Soil Conservation Service, the Corps, and the State Division of Water Resources. The Virginia Division of Water Resources and the USGS both operate gaging stations throughout Virginia, and the information collected at these sites is used in these studies.

Mr. Sutton and Mr. Krimm had mentioned earlier that the primary objective of the HUD program is to secure better management of land resources. In order to do this, we obviously must define those areas that are subject to flooding. The Geological Survey is engaged in flood mapping programs throughout the United States. This morning I will give you some statistics in order to provide you with some idea of the magnitude of the USGS program. I have brought with me examples of any product I mention here today. These reports and maps are for you. I urge you to obtain copies before you go. Though you may forget what I say, the material serves as a reference to look at later so that you will have some idea of the kind of product that the USGS is generating.

The flood prone map program was an outgrowth of House Document 465 which authorized the USGS to designate, using whatever maps were available at the time, flood prone areas. I say "whatever" maps because these maps varied in quality and character. In some areas there were no maps; however, the intent remained to delineate the 100-year flood on whatever base was available. The purpose being to indicate the magnitude of the problem. The maps are, in many cases, not sufficiently accurate for flood

plain management use. I would like for you to consider this when you take a look at these maps because – and this is the important point – there are different degrees of accuracy in the products that we are talking about. More than 3,000 flood prone maps have been prepared to date. They are being prepared at roughly the order of 1,000 per year. There is a list on the back table here of all such maps that have been prepared in Virginia. While I do not have the exact number, about 130 such maps have been prepared. Hydrologic atlases have also been prepared in Virginia. Following hurricane “Camille,” the Virginia Division of Water Resources and the USGS prepared four such atlases on the Richmond area. We also have an atlas on the Buena Vista area and a report which contains information on discharges and floods following “Camille.”

Though Mr. Sutton has discussed the scope of HUD in regard to flood maps, I will mention that in general the maps that we have prepared in cooperation with HUD will provide information on the 10-year, 100-year, and 500-year floods. The Survey has undertaken flood insurance studies for HUD in 46 communities and 13 states. The only community in Virginia in which we are presently undertaking such a study is Fairfax County. Because there has been great pressure on HUD to activate the flood insurance program, the delineation of flood areas has generally been on the basis of existing information. It hasn't been possible to make the more sophisticated studies that we would all like. The products have been compiled mostly from information that had been collected previously. Regarding mapping for flood plain management, I have already indicated that studies resulting in more accurate delineation of flood plain areas may be needed. Such studies are undertaken by the USGS in cooperation with local communities and states.

One such example of cooperative studies is the Fairfax County Project. Maps showing the kinds of information that was supplied as a result of this cooperative effort are available as handouts. I should mention that this particular effort is unique in that the mapping is of extremely good quality, a scale of one inch to 200 feet with a 2-foot contour interval – unusually good mapping. As engineers, I think we would all like to see the day come when we had such high quality mapping to work with both on this and other programs.

One other aspect unique to the Fairfax County program is that it takes into account the effect of urbanization on floods. This is something that the USGS is very much interested in because as engineers we probably haven't done our homework over a great many years in defining the effects of urbanization. The effect of urbanization on floods is dramatic. In the Fairfax County area flood peak magnitudes have been increased two to eight times over what was experienced under natural conditions.

The USGS recognized the importance of flood mapping for studies of flood insurance rates and for land use management. The Geological Survey's activities are: (1) the collection and interpretation of base data, (2) the preparation and distribution of the flood-prone maps, (3) the preparation of hydrologic atlases, (4) the preparation of information for HUD, and (5) cooperative programs such as Fairfax.

If your community is interested in a cooperative program or if you are interested in getting a flood-prone map of a specific area, contact Mr. Gambrell of the Richmond office of the USGS. Despite the best efforts of the Corps, SCS, TAV, USGS, and others that are involved, we haven't been able to keep up with the demands and needs for flood plain information. If you are in areas where you would like to engage in a cooperative effort to get this information, I, again, encourage you to contact Mr. Gambrell.

I would like to mention one further item. The Survey is very much interested in broadening the information base on urban areas — an undertaking of interest to those of you who are in cities and communities. If you have water problems related to this, again you are encouraged to contact us. Mr. Chairman, I'm open to questions, or do you wish to postpone questions until later this afternoon?

Dr. Ghee: We had better, at this point, postpone it. All of the speakers, including Mr. Bailey, have indicated their willingness and in fact have encouraged questions later on. Because of the time limitations we will have to defer them until later.

VI. COMMUNITY EXPERIENCES

A COMMUNITY'S EXPERIENCE
WITH THE PROGRAM
(Alexandria, Virginia)

Thomas Holland
Management Analyst
City of Alexandria

Since I have been asked to discuss the insurance program, I thought that the easiest way to do that would be to briefly outline the events that happened prior to Alexandria getting into the program and then, step by step, tell you exactly how we went about getting the information on insurance to the people.

We had a series of floods in Alexandria, and we also had the advantage of having the studies from the various departments that you heard from here today available to us — studies that were taken back in 1966. In August of 1963 we had a flood of 11,700 cubic feet per second which did about \$2,000,000 worth of damage in the Fourmile Run, Arlandria area. At that time the City placed a moratorium on building in the area. In 1968, when the National Flood Insurance Act was passed, we received from HUD all the information that we would need in order to make application for insurance, including the criteria that we would need for the land management control. Frankly, we didn't do too much about it until 1969. In July of 1969 we had a flood which was probably the biggest one, 14,000 cubic feet per second, in the Arlandria area; and about a week or two later we had another flood in the same area which was about 9,000 cubic feet per second. These two floods did about \$4,500,000 damage. By this time we had all the citizens of the flooded area of Arlandria in the City Council chambers requesting that something be done.

The City, among other things, decided to look into the insurance program. The City Manager requested the Director of the Public Works Department, Director of the Planning Department, and the Legal Department to work with the City Manager's office to review, study, and determine just what we had to do in order to qualify for the flood insurance in the three major flood areas that we had. The major flood areas were the Fourmile Run flood plain, the Potomac River waterfront, and the Cameron Run, Holmes Run, Backlick Run Watershed. The study was made, and on August 14, 1969, the City made application to the Federal Insurance Administration. The application included the resolution to take the necessary lawful action to carry out the objectives of the National Flood Insurance Program, maps of

the flood plains, and copies of the appropriate section of the Code of Virginia and the City Charter. These were all spelled out in the information that we received from HUD. We first passed a resolution, but then a city ordinance was later passed on July 10, 1970, which pertained to the land control and management of the Arlandria section.

On August 15, 1969, the Federal Insurance Administration notified us that Alexandria met with their approval; and since flood frequency studies were already available for the Fourmile Run area, they could be utilized to develop the actuarial rates for coverage thus making insurance available for the Fourmile Run area within a very short time. The FIA official rate table was issued for the area on August 21, 1969, six days after we got the rates. The City worked closely with the Insurance Company of North America, the clearing house company that handled the insurance.

Our big problem was to get this information out to the people, and this is the way it was done. In addition to the newspaper stories on the flood, we used this media to help get the information on flood insurance across to the people. The National Flood Insurers Association and the Insurance Company of North America ran an ad in the local paper, the Alexandria Gazette. In this they spelled out in detail exactly what the insurance program was all about. In addition to that we, the City, published a fact sheet. In the fact sheet we repeated the information that was in the ad, and we went further. We included with the fact sheet a map of the flood area – the land that the insurance pertained to (“A” zone, “B” zone, and “C” zone) – and we also indicated what the rates would be. We utilized the neighborhood workers of the Economic Opportunities Commission, a Community Action agency connected with the City, and members of a flood committee of the Arlandria section, to distribute the 350 or 400 fact sheets. They took them house to house so every person in the flooded area received this fact sheet indicating that insurance was available. The City wanted to make sure that everyone, especially those living in a flooded area, knew that they could get the flood insurance. The responsibility of getting the insurance rested with the home owner or renter and not with the City.

We did one more thing that I think was very helpful. The Insurance Company of North America was responsible for the brokerage’s insurance, but at the same time we requested from them and received all the information that was needed in order to make about 50 insurance kits. The kits contained sample policies, insurance procedures, rates, etc. We made these kits up and then notified all of the local insurance agents (about 25) that the kits were available, and we requested them to pick them up in the

City Manager's office, which they did. The application procedure was very simple. We used this procedure. We told persons who called the City Manager's office to contact the insurance agency that they were currently doing business with and get their policy with them. If the company did not know about the flood insurance, they were asked to call back, and we would give them names of other local insurance agents who did know about it and were interested in writing flood policies. I checked with the National Flood Insurance Company before I came down, and as of this date 120 flood insurance policies have been issued for Alexandria – 95 are regular policies and 25 are small business policies. There was a slight delay in the issuance of policies for the small businessman in the Arlandria area. They did not become available until April 24, 1970.

There are some things that we would like to see considered in any revision of the act. One thing that we don't particularly like is the deductible on the insurance policy. It is possible that a person could not be covered by a minor flood and still could spend in the neighborhood of \$420 a year. We would also like to see some coverage for non-profit organizations, particularly churches. I think that this pretty much covers the problems that we have had.

Incidentally, in order to draw up our land control use program we did things that normally we would have to do anyway. We had to establish a moratorium on building, and we had to establish a procedure that would safeguard the lives of the people in the flood area. We did this by establishing a very elaborate warning system and a system of participation from all of the City departments when a flood is about to take place. I will be glad to answer any questions that you may have.

DISCUSSION

Q: Did you notify all the people in the Fourmile area?

Mr. Holland: We notified all of them – by the newspaper media, by the radio, and we had plenty of TV coverage, by word of mouth, and by the fact sheet that was delivered house to house. I think that the hand delivered fact sheet was probably the most effective. We have copies of our ordinances and anything else that we have available if any of you would like to have copies.

COMMUNITY REACTIONS TO THE PROGRAM (Buena Vista, Virginia)

Frank Person
Councilman and Plant Manager
Modine Manufacturing Company

Buena Vista hasn't, as of this time, made application for the insurance or to join the program. I think one of our big problems in Buena Vista is the fact that, based on the flood caused by "Camille," our flood plain is, for all practical purposes, completely developed. Six of the seven industries in the community are located on the plain. There can really be very little accomplished as far as an ordinance concerning land management in this plain. The majority of the downtown of Buena Vista, the small merchants, are also located right on this plain. There are a few homes, also there are some that were bothered by the runoff from the mountains; but, again, the largest part of Buena Vista that was affected were the industries and the small businesses.

Industry can't get in on this program as I understand it to date. The amount of insurance coverage that small business people can get at this point for their contents doesn't even cover the cost of sweeping the store out after the flood, let alone worrying about the damage to their inventory. The damage to buildings was minimal in most cases. Wilfred [Ramsey], you suffered quite a bit of damage to one building that was not completed, and the Quality Market had some building damage; but, again, most of it was in the contents of all of these small businesses. Many of them will have an inventory of \$50,000 to \$100,000. Five thousand dollars coverage? They just can't see it.

Wilfred [Ramsey] was greatly involved in this flood. He has several stores in that area, and possibly from a small businessman's point of view, he can give you more information as to the feeling of the business community than I can since I am in the manufacturing end, and this insurance wouldn't help me in the least.

W. P. Ramsey
Buena Vista, Virginia

I don't really have much to add to what Frank has said. He covered it pretty well. I was appointed Chairman of the committee that made a slight study on the Flood Insurance Program. As he said, the largest individual loser as far as flood losses in Buena Vista was myself. The big factor against flood insurance, as far as the Council was concerned, was the availability of coverage. As Frank said, there were probably not over 20 homes involved out of the approximately \$30,000,000 in losses. The industries that we have are not eligible because they are not small businesses. We had one that apparently could have qualified after the flood, but before the flood they could not according to assets. So for this reason, the Council and the committee recommended that we not go into it until some more information was available — basically because of the amount of coverage. My total losses were in excess of \$250,000. What good would \$35,000 coverage have been to me? Also, we did get a lot of help from the Small Business Administration in low interest rates, and this would be deductible. It's just not enough to go into it at this point. My findings and the Council's feelings led to our decision. We're interested in insurance if we can buy enough insurance to cover us.

I think the coverage for the homeowner is fairly sufficient, but as pointed out by Hampton, it does take considerable effort on our part for them to come up with the additional premiums. When you add \$5 a month to the payment of the factory worker, as has already been pointed out, it may disqualify him from purchasing a home. The Federal Government is having to subsidize their monthly payment now in many cases. I think this is typical in most communities in Virginia, not only in Buena Vista, because I think our industries are paying along in line with the state. As I said I was on the committee, and my recommendation with what information I could get was that we not make application at this time because we would be putting a handicap on some since we are almost fully developed in the flood plain area. There is very little land left, and it is 90% or better industrial or commercial. I will be glad to answer any questions anyone might have.

COMMUNITY REACTIONS TO THE PROGRAM (Hampton, Va.)

Thomas I. Miller
Planning Department
City of Hampton

It is interesting to note that the communities which are attending have probably already done something in the way of attempting to be certified for this program. I'm not certain about the City of Chesapeake — although I know they have representatives here — I do not know just what their status is, but I believe every other community attending for information purposes is already involved in the program. May I ask a question of the group? Are there communities in attendance who are not involved in the program but who want to become involved in the program? . . . Three communities.

It is going to be interesting to find out from my own standpoint just what some of the procedures of Alexandria were because apparently their ordinances are adopted. This poses a real question of concern to us at this point in time, because we are in the process of adopting an ordinance to control land use in the flood plain area and establish a flood plain district generally. The City of Hampton has been involved in and concerned about flood control and a flood control program since about 1959. In 1959, we were asked by the Corps of Engineers, through a relatively informal type communication, about what we thought should be done relative to the control of land use in the flood plain district along the shoreline within our community. We developed for the Corps a report of what we thought was necessary before we could develop a proper flood plain ordinance and establish a flood plain district. Since we are a coastal community, we have a different situation than those which have already been mentioned. That is, we are subject to tidal flooding and all the conditions that go with tidal bodies of water. Also, there is wind driven water and the wave action that results.

The study done by the City Planning Commission in 1959 resulted in the finding that we could not pursue properly a flood plain ordinance or establish a flood plain district and boundaries unless we had proper maps. Now that has been covered earlier here, I think, by someone from the Geological Survey. There is no question but that proper maps are necessary in order to establish with prudence a flood plain district. The problem in Hampton, which has some 50 square miles of land area and about 70 square miles total, is the low, flat topography. The greatest mountain we have in Hampton goes up 27 feet. We go from 0 to 27 feet, and everything below

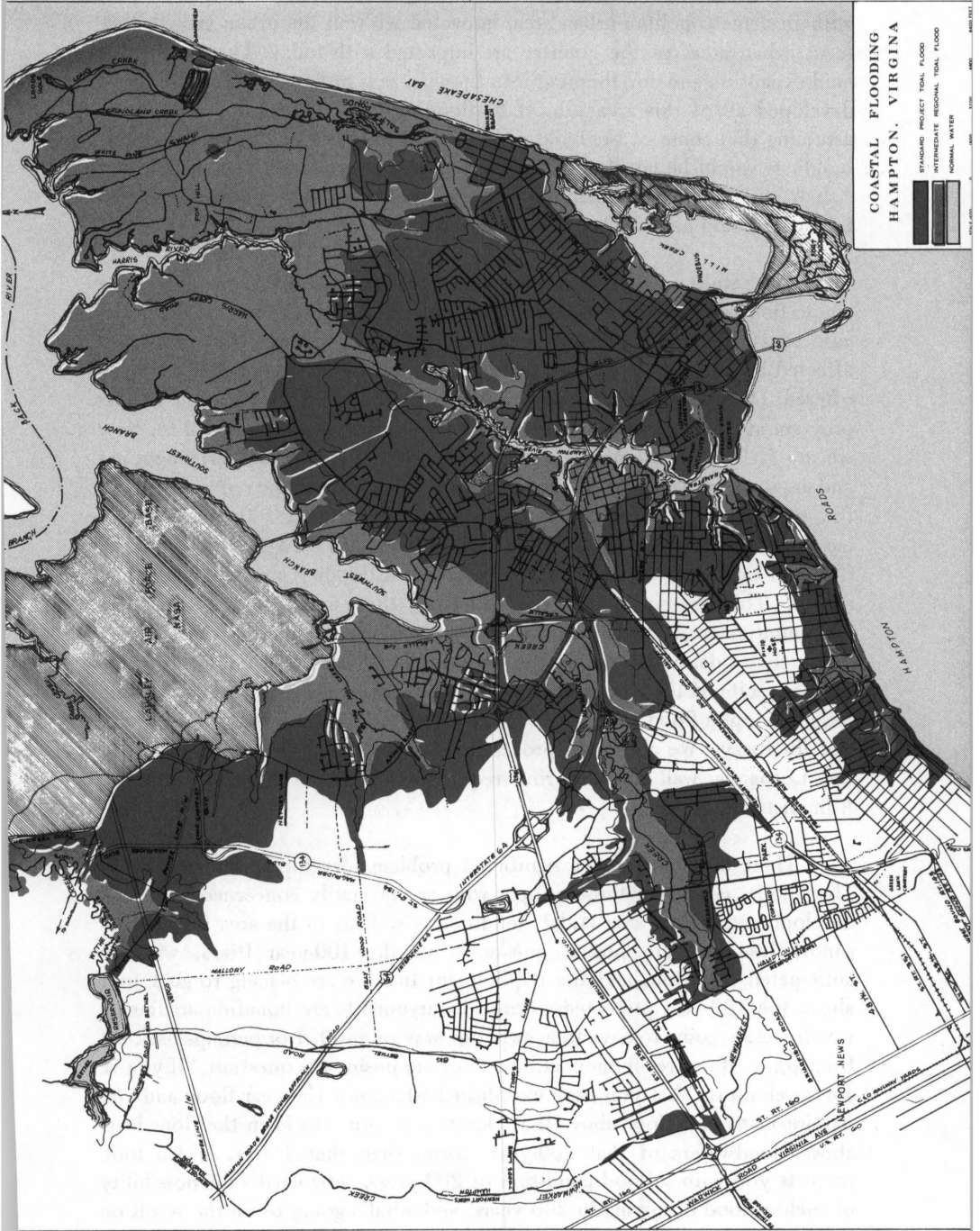
about 10 feet is subject to flooding on the basis of our best knowledge and studies of past conditions.

Obviously, the development of a proper topographic map with contour information on it which would give us the ability to determine flood plain districts would be rather expensive. We attempted at that time to get the Geological Survey and the Corps of Engineers to participate in a mapping project which would give us contour information so that we could act more prudently on the establishment of district boundaries. Using aerial photogrammetric methods, the total cost for a two-foot contour interval was around \$70,000. It is needless to say what happened to that idea.

The next thing that was to occur was for the Corps, with the best information they could obtain, in 1962 – December of 1962, I believe, or thereabouts – to come up with a plan for flood control in the City which in effect said it was economically unfeasible. Placing dikes on the Hampton River, for instance, attempting to place dikes in other parts of the City to hold back tidal flooding was simply an impossible task. The amount of money involved was so voluminous that the project was dropped.

After the 1962 study, which indicated it was economically unfeasible to pursue this any further, the Ash Wednesday storm of 1962 hit and destroyed perhaps 30 to 40% of the buildings on the coastline and created considerable problems. No flood insurance was available, and all these buildings were a total loss. I assume some of that occurred in the eastern shore communities of Virginia, and I know that Virginia Beach suffered equally as bad, and as a matter of fact most all east coast communities up and down the eastern seaboard suffered to some greater or lesser degree. Whatever the case, it pretty well proved the fact that something had to be done positively in our community to consider flood control and storm damage which resulted primarily from wave action.

In 1968, a study was completed by the Corps which delineated most areas of Hampton which were subject to flooding. As Figure 1 shows, the City of Hampton is represented generally by the outer boundaries of this map, the light blue represents the Chesapeake Bay and other water areas, and this shows that a good 50% of our whole community – up to the 27-foot hills – is subject to flooding conditions based on certain situations taking place simultaneously. The light blue areas represent those floods most likely to occur in the 100-year projected storms and the total area would be affected if the project flood, which would be some 13 feet in elevation, were to occur. From Figure 1 you can see the kind of problems that we are faced



**COASTAL FLOODING
HAMPTON, VIRGINIA**

STANDARD PROJECT TOTAL FLOOD
INTERMEDIATE REGIONAL TOTAL FLOOD
NORMAL WATER

with in a metropolitan-urban area, impacted with all the urban growth that most urban areas of the country are impacted with today. The problem of land expansion and development into these areas is rather significant. So if we developed all of this area subject to flooding in some period of 100 years, assuming that some of the buildings we have would last that long or that new buildings would be constructed in there, and we have something like another Ash Wednesday storm; then, obviously, the cost and loss in construction of buildings would be probably 100- or 200-fold.

The results of that storm, I am sure, brought about to some degree the whole flood insurance program because it affected everyone up and down the east coast. A significant loss was brought about because the properties affected had no way to recover that loss through any insurance that had been offered. Obviously the City was prudent in requesting certification of this program under the emergency act, which, of course, we were entitled to. Now we are faced with the problem of getting certified under the permanent act and are in the process of trying to meet the standards and the requirements of the various agencies in order to be totally certified for flood insurance coverage. In addition, in 1963 the City entered into an agreement with the Corps of Engineers to study another situation of flooding primarily caused by runoff. This is typical of the situation that most of the mountain communities are involved with as well as areas of Alexandria, where runoff rather than tidal action causes the flooding. So we have two conditions. One of the results of the New Market Creek drainage project was that we would have to adopt a flood control ordinance and establish districts for flood plains and floodways. We are in the process now of answering that requirement of the Corps as well as answering requirements of the Federal Insurance Administration.

There are some rather significant problems developing out of all this. The public, especially those people who are primarily concerned with land development in this area (tidal flooding) as well as in the area affected by runoff flooding, are posing questions on the 100-year flood, with its anticipated elevation, and the requirement that we are placing to go 1 foot above the 100-year projected storm. The arguments are bonafide arguments which we are going to have to answer one way or another or perhaps back off from some of our recommendations. They are posing the question, "if you've got an elevation that you have established which is a 100-year flood and you require us to go 1 foot above that elevation in order to keep the floor level above floodwaters of that 100-year storm, then that 1 foot or 1.5 foot projects you with a flood condition of 200 years. Now what's the possibility of such a flood occurring in 200 years, and what's going to be the result on

flood insurance rates, etc., as it relates." We came up with two situations, one is how to handle established flood elevations based on the history of flooding in this area – in this case it happens to be about 8 to 8.5 feet above sea level. The other is to take care of floods along what we call the New Market Creek drainage area which has varying elevations. Based on profile, you have to project out to establish the areas that would be affected. Some serious questions are being asked of us in the New Market Creek area, based on the study of that area and more pertinent because of the construction projects along New Market Creek. A flood boundary has been delineated and to some degree extended in this area. There is some prime commercial property selling from \$500 to \$1,000 per foot of frontage, so obviously there are some serious questions about placing the land in a flood plain district and its relationship to value, and its relationship to the cost of construction in that area.

If you are in the position of being forced because of loans backed by the Federal Government to carry insurance, then the question gets ticklish about the amount of insurance you're going to have to pay for if you don't bring your buildings up to a certain level and its effect on a whole development project. It's a very valid question when you are talking about land subject to flooding and it's valued at \$500 to \$1,000 a front foot. In addition, the developer who's building houses out in the expanding area of the City wants to know if he has to fill his land. We have indicated in our ordinance that he should bring his collector streets and major street up to a certain elevation so that it takes care of the movement of people out of the area in the event of a significant flood so that automobiles can move freely out of there. He wants to know what he is going to have to do to bring his property up to a certain elevation and how it is going to relate to his house and what his costs are going to be in land development.

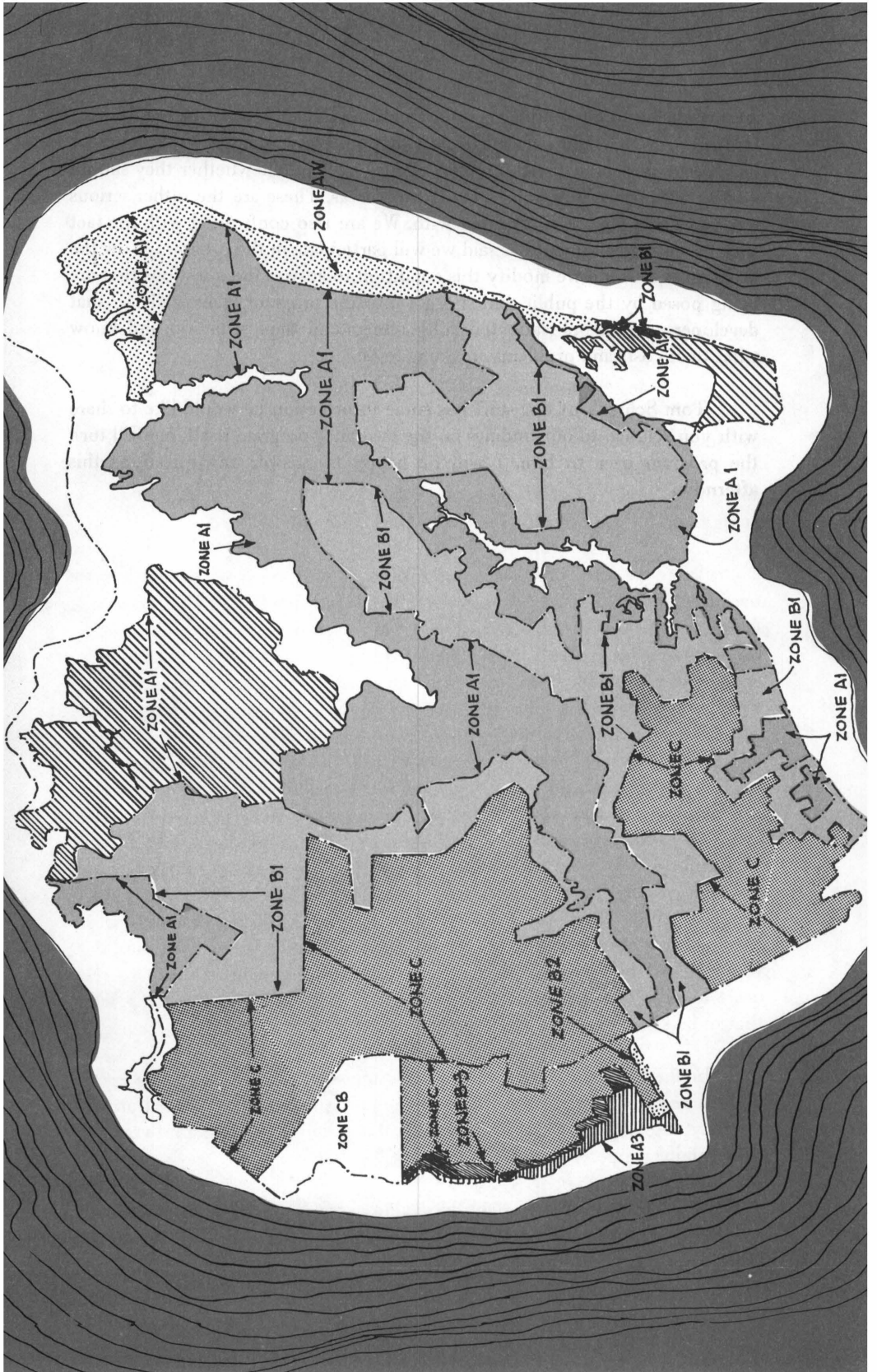
In addition, FHA is going to say, because of the total program, that "you must have insurance on these houses in the flood plain area." Now when you do that he also wants to know what that is going to do to his marketing of property. If he's marketing a piece of property at X number of dollars and the monthly payments are something like \$90 a month, and then you raise the insurance rate because of this flood situation and you are going to have to ask \$93 or \$95 a month, now he's competing with a market situation and wants to know how this is going to affect him. Its a very valid question when you talk about sales, markets, the ability of the buyer to pay for those increased costs on a monthly basis. Five dollars can be very critical to him in marketing houses.

We find today, and again I'm going to ask Alexandria's impression on this, that not only does our flood plain district ordinance have to meet criteria of the Federal Insurance Act, but it has to go through a review process by HUD. A question in the relationship of timing through the legal process and the December 1971 deadline which we are faced with exists — How much time all this is going to take and what are our problems going to be along that line? There are other questions asked by the public relative to these things that I have mentioned, insurance rate, cost of fill, etc., and we have attempted to evaluate these problems and what we might do in bettering our position on recommendations. Based on a 1968 study, I might add, the Flood Insurance Administration, the agency handling the flood insurance, came up with the kind of map (shown in Figure 2) which delineates those areas relatively represented in the blue (Figure 1). In addition, other maps have been given to us by the flood insurance agencies that break down, by categories as mentioned earlier, just what those rates are going to be for each specific section of the community.

There are some interesting questions related to the cost of the insurance over a period of time based on what it would cost to fill the land or what it would cost to raise your building up a foot or so of elevation. We're coming up with questions as to whether or not it might be better for the man to go ahead and raise his building and forget about the insurance in certain parts of the community as against whether or not he should participate in the insurance program. In addition, there is another problem, and it is interesting again, from the Alexandria standpoint, to find out that only 120 people have applied for insurance. Since 1962, some ten years, people are going back into the beach areas and building houses again. Many of them have forgotten about the 1962 storm, but by and large most of them are beginning to build up on pilings. The fact that some new houses have gone up on pilings prompts the man getting ready to build next door to ask him why and the answer is "because of flooding," so he builds up. He never realized, perhaps, that in 1962 a fierce storm demolished a significant area, and of course the man that wants to sell the property doesn't want that to be known so he keeps very quiet about the whole thing and real estate people don't particularly want that to be known either.

In the 1959 study the Planning Commission was called on the carpet and blamed for the possibility of devaluing property in all the flood area of the City and when you show it like that it certainly represents that you may be devaluing property.

So you have these ticklish situations that have to be overcome, especially when you are dealing with a community in which over 50% of the



area could be flooded under certain conditions. It makes no difference how frequently that would occur. The fact that you show it and say that it can or may occur poses the question in the minds of the public whether they should buy or should not buy houses in affected areas. These are the rather serious questions that we are confronted with. We are also confronted with the fact that the city government has said we will participate in the program. Now the problem is, how do we modify this condition to answer the questions that are being posed by the public and still get into the program realistically so that developers and people affected fully understand their situation and know what their costs and problems are going to be.

Tom Schreck of our staff has some information he would like to share with you relative to our findings on the insurance program itself, and I'll turn the program over to him. I will be happy to answer any questions this afternoon.

Tom Schreck
Associate Planner
City of Hampton

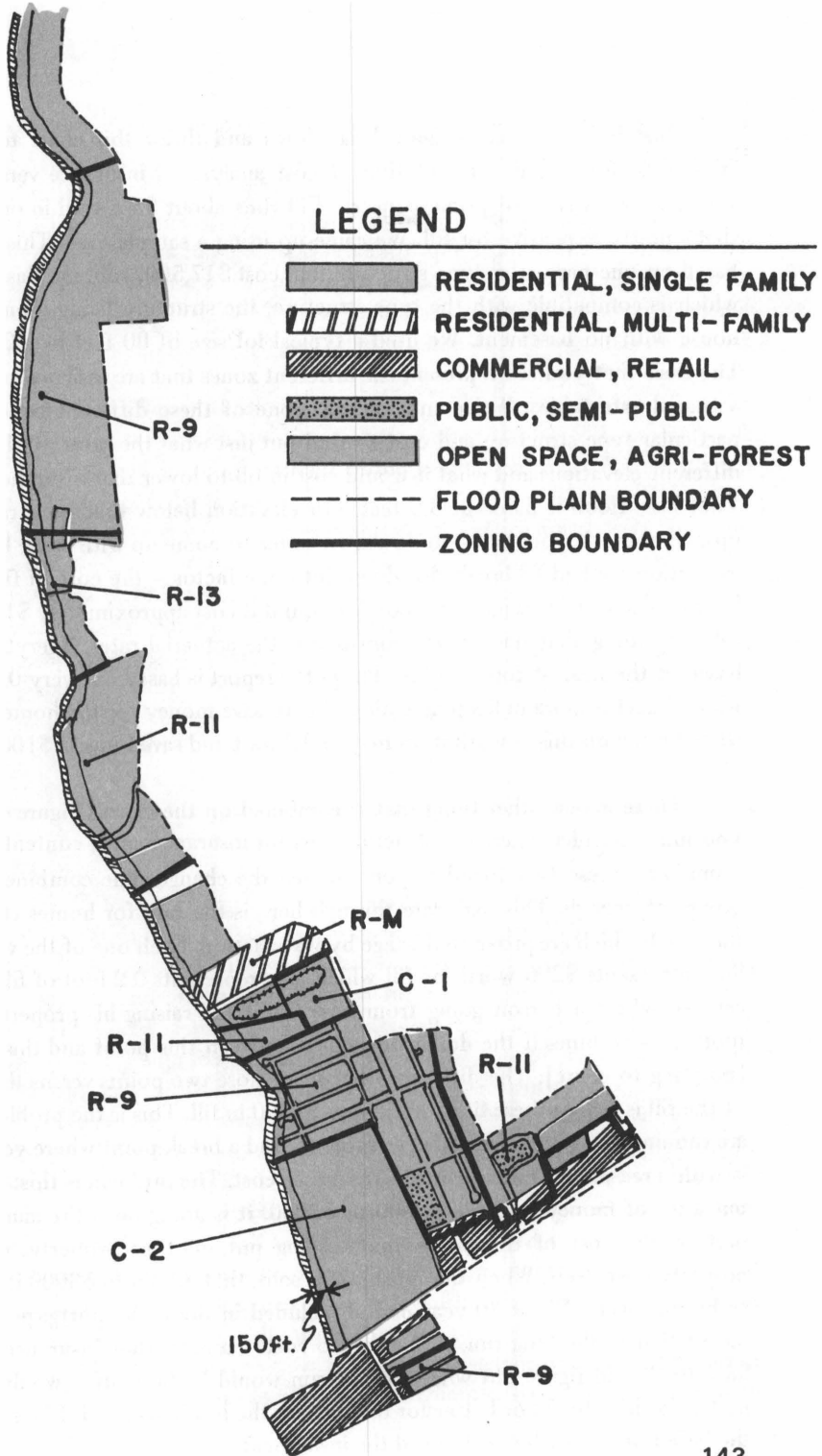
The subject is the reaction of the public or the community. As far as the Flood Insurance Program goes, the reaction is not just the community per se. The Planning Commission, the city fathers, etc., are also the community; so it's an involved thing. Just before we left to come here for this meeting, I had a piece of paper dropped on my desk from an interested party who, prior to this time, was asked to state any problems or questions about the program and how he felt about it. I'll read verbatim what he dropped on my desk. "The problem confronting us pertaining to the Flood Insurance Program is inadequate instructions to clarify the implementation and application in administering the program down to homeowners." This is generally what we have been talking about since we've been here — the problems of implementing.

We are aware of the general policies and purpose of the act, but in receiving piecemeal instructions there is insufficient knowledge of the mechanics of implementing the act. There are confusing instructions on flood levels, rates are not reasonable to aid the homeowners to obtain flood insurance at low cost (which was understood to be the objective), and homeowners could collect insurance through Federal subsistence rather than have the community seek Federal aid in a flood disaster; so the meager info we have received does not seem feasible or practicable. Land developers and site owners for large projects are strenuously objecting to the restrictions set down in implementing the act. VA and FHA are complaining of imposing the programs on their customers, essential to their own protection and, in some cases, creating financial stress on homeowners' payments. To our knowledge there has not been any continuity from HUD to local insurance firms in the administration of the program. Without specific instructions to everyone concerned, there is confusion on how and what is to be done in actual application for insurance as far as the area is concerned. Maps to illustrate flood areas in Hampton have been received, and they are about the best thing that we've gotten that we can lean on for any kind of facts to be given to anyone in any way, shape, or form. Now, true, we do have actuarial rates; we've gotten different flood studies, primarily from Mr. Philpott; and we've gotten into this program so deep that we're starting to realize that there are certain areas which are not clear — not only to us, the people who have been involved in it, but generally to the public. I'll give you some of these examples and when I come up with some of these little discrepancies, things that we or you don't understand, I'd like you to reserve your questions for

the workshop if at all possible. I think we can get more discussion out of it there than here.

This basically is one of the zone maps that came out of our FIA study. This was the result of Mr. Philpott's survey. If you will note the lightly dotted area in Figure 2 (Zone A1V); this is predominantly a serious area for flooding where it gets a tremendous amount of wave action, one of our predominant factors on damage. The area that is in yellow (Zone A1) is the common flood area or the 100-year level flood area. You can see it is pretty comprehensive when you put it in color. The green area is what they call a standard project flood (Zone B1) which means that it is possible that at some time with conditions just right, this area could be flooded. Now the heavily dotted area, which is Zone C, is one that has never had a record of flooding. One of our bones of contention is this: with the rate that we've gotten – the actuarial rate – they have taken Zone C, Zone A1, and Zone B1 and combined them on the same set of tables. I think there should be some further breakdown on that because a person who is in Zone C shouldn't be paying anywhere near the rates that are being paid in A1 and B1. Over in the area where New Market is located, they have broken this thing down into six separate zones. The continuity of breaking it down to that extent is kind of hard to follow in a sense. It's all prone to flooding by pluvial runoff, and there doesn't seem to be any possibility of flood except by elevation. I think this should be the prime consideration, elevation alone, when they are talking about zones and of rates.

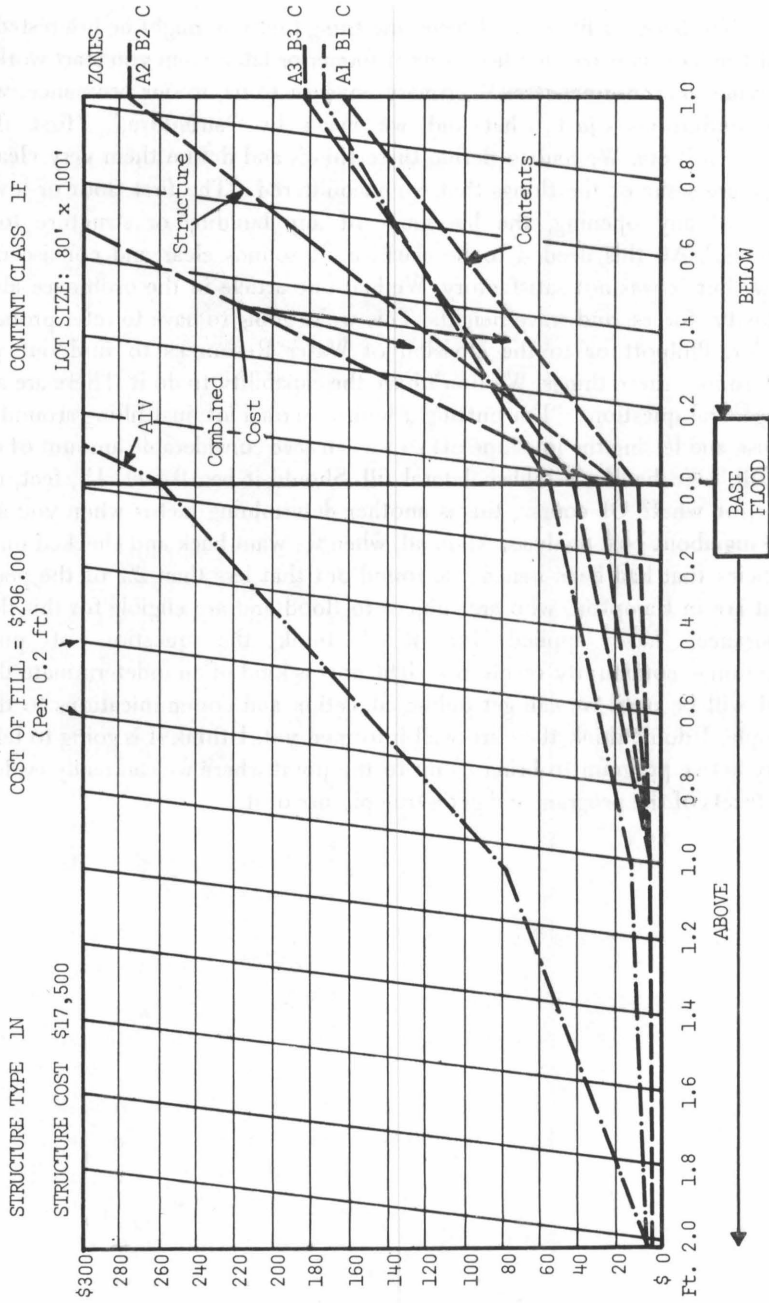
Let's talk about your land use as such. Figure 3 shows New Market Creek and these different colored areas are zoning – zoned areas for different purposes, residential, commercial, what have you. You can see that in land use planning, depending upon what area you are in, the tax rates, of course, are going to be varied as will the flood insurance rates. To hold up construction for reasons of flood ordinance compliance through the commercial area (which is the red area), and knowing that this is prime property, is mighty expensive tax-wise and hurts the job market. This is where people really start getting serious about cost analysis. When we start through the yellow area, which is the residential area, some protective measures can be taken, and we can plan accordingly. The green area primarily is just open space right now, but as you will notice, part of the green area has been classified as commercial. You, therefore, have at least four different factors to consider. They all have to be considered separately and, in many cases, individually by lots or by parcels. So this, in essence, is one type of flooding that we are concerned with, but we also have our tidal flooding and damage by waves. So we actually have three cases rather than two.



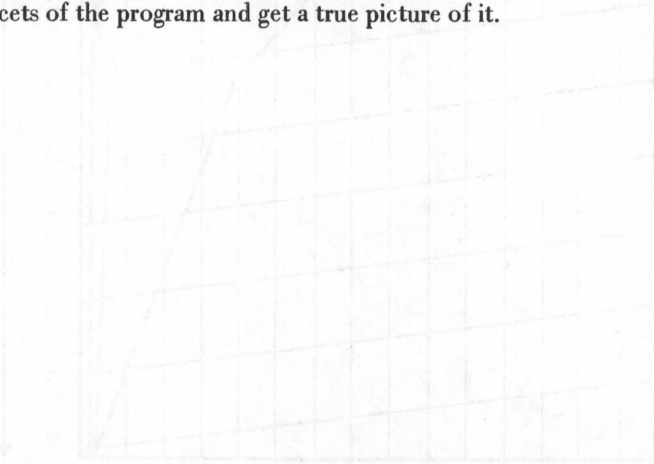
Just before we came here, I sat down and threw this chart together (Figure 4) for graphic presentation of cost analysis of insurance versus fill, which in our area is of prime concern. Fill runs about \$5 a yard in our area; that's pretty expensive for fill. We came up using a sample case. This case is based on one particular type structure that cost \$17,500, content class is 1-F which is compatible with the type structure, the structure being a one-floor house with no basement. We used a typical lot size of 80 feet by 100 feet. The lines that you see represent the different zones that are assigned on your actuarial rate tables. We've run, on each one of these different zones, this particular type structure and cost to find out just what the rates would be at different elevations and what it would cost in fill to lower that insurance rate. Your base flood is based at 8.5 feet. For elevation below that your rates go up and above it your rates go down. In order to come up with some kind of evaluation we had to break this down into one factor – the cost of fill for a lot this size to raise it just one foot. We found it cost approximately \$1500 in fill. The thing that has got me confused is the actuarial rates. Everything is based at the nearest foot, but Mr. Philpott's report is based on every 0.2 foot which I feel is more in keeping with trying to save money for the homeowner when he can do this – work it up maybe 0.2 foot and save himself \$100.

There is one other thing that is combined on the chart (Figure 4) that you must consider. There is a structure cost for insurance and a contents cost. Combining these two together you can see the change. The combined cost gets pretty rough. This high rate through here is the rate for homes close to the beach which are prone to damage by wave action. Each one of the vertical lines represents \$296 worth of fill which also represents 0.2 foot of fill. You can see where a person going from base flood and raising his property one foot can save himself the dollar difference between this point and this point [pointing to chart]. The difference between those two points versus the cost of the fill is five of these lines or close to \$1500 in fill. This is the problem we are running up against. We've been trying to find a break point where your fill is within reasonable cost versus the insurance cost. The problem is this: if you put a lot of money into fill, \$2000 or \$3000, it is going onto the market as part of the cost of the house that's being put on that property, or the property cost itself. When the mortgage is sold, that \$2000 to \$3000 is going to be run over a 25 or 30 year period included in the basic mortgage which means that in the long run, it is going to cost you more than insurance. You have to sit and figure out where the person would be best off – would it be better for him to fill or better for him to buy the insurance, and if he's above the base flood, does he really need the insurance?

FIGURE 4. COST ANALYSIS -- INSURANCE VS. FILL



To digress a little bit, I have one thing that you might be interested in, and I'm sure you will be discussing it sooner or later when you start working on your own ordinances. Of primary concern to us, in our ordinance, were the definitions — just what did we mean by “structure,” “first floor elevation,” etc. We had to define these things and define them very clearly. Here are some of the things that we encountered. “The first floor or lowest level of any opening, the basement of any building or structure to be erected.” All this needed to be clarified. It sounds clear and concise right now, but it was not satisfactory. We had one article in the ordinance about velocity, forces, and wave heights. This we're going to have to refer probably to Mr. Philpott or to the Division of Water Resources to find out who determines these things. We don't have the capability to do it. There are a lot of general questions. “I'm putting a house up on a lot, just filling around the house and letting the lot slope off so we can save considerable amount of cost in fill.” We had to establish lateral fill. Should it be 10 feet, 15, feet, or 5 feet, or what? Of course, this is another determining factor when you start talking about cost analysis. All in all, when we went back and checked on the policies that had been issued, we found out that less than 2% of the people that are in Hampton, who are subject to flood and are eligible for this flood insurance, have applied for it. I think the question of public reaction — community reaction — right now is kind of an indeterminate thing and will be until we can get public education and communications to these people. I don't think they are well informed yet. I think it is going to take a very active program to bring us up to the point where we can really evaluate all facets of the program and get a true picture of it.



VII. PANEL DISCUSSION

PANEL DISCUSSION

Dr. James Hackett, Moderator

Participants

Glenn M. Dunkle
Senior Planner
City of Richmond

Nicholas Lally
Director, Flood Plain Management Division
Federal Insurance Administration
Department of Housing and Urban Development

George F. Mihok
Assistant Vice President
Associated Mortgage Companies, Inc.

Thomas Miller
Planning Department
City of Hampton

Dr. Hackett : We have indicated four subject areas for this discussion. You should not feel restricted to these; they are mainly guides, something to orient around. I have asked participants in the conference to serve as stimulators, to give their own reactions to what has gone on over the past day and a half, and to address themselves to one of these four subject areas. Again, primarily to stimulate discussion.

We hope that the discussion will be lively, and we are grateful to those who have contributed to this conference. They have provided a great deal of information. I believe that they have presented the information in a perspective and scope that adds significantly to our knowledge of the Flood Insurance Program. The presentations should certainly have stimulated some questions – maybe some of the questions you had when you came have been answered, but I hope some new questions and new concerns have developed as well.

I have asked Mr. Glenn Dunkle, Senior Planner for the City of Richmond, to give his reaction along the lines of the program requirements

and data needs. Mr. Nick Lally, Director of Flood Plain Management Division of the Federal Insurance Administration, Department of Housing and Urban Development, will comment in the land use provisions area. Our discussions of this morning must have brought up a number of questions along this line. Mr. George Mihok, Assistant Vice President of the Associated Mortgage Companies, Inc., you already know as a stimulator of free and open discussion. We have asked him to provide some comments on the insurance provision aspects of the program. Finally, Mr. Thomas Miller, Planning Department of the City of Hampton, whom we have heard this morning, has been asked to comment on the question of communication needs. Again, don't feel restricted by these areas and if you wish to direct your questions or comments to speakers of the morning session whom you did not have an opportunity to question at that time, please feel free to do so. Mr. Dunkle, would you mind leading off with your comments?

Mr. Dunkle: I hope that you will forgive me for rambling a little bit on this because Richmond's problems have been quite diversified as far as the insurance question is concerned. We started discussing this a little less than two years ago; and, of course, "Camille" came in and this stimulated further thought and work on the subject. As we started out, the councilmen asked me some questions, and one of them was "Would this program involve the City in an admission of liability on damages that have been brought by various people in the City as a result of the floods during "Camille" and a couple of other rainstorms about the same period?" The Council was a little skeptical on this particular score; and we have discussed this with a number of people, both in the State Division of Water Resources and HUD. They all assured us that there would be no admission of liability. However, the recent court case, as you heard this morning, may shed a little different light on this.

Another problem is that most of our flood plain area has already been developed. At least, most of it before the annexation period was pretty completely developed. Of course, we do have a little bit more now to work with, and since this is the case it seems that measures and flood proofing and building codes might be among the most important considerations. The Council also feels that there might be some restrictions on development as a result of flood plain insurance — they are correct to a certain extent. I don't know just how much it would stop. I think it may also improve the type of development.

We have been confronted with a number of legal problems. First of all, we are a home rule city and, as such, the Council's powers are governed by the charter. Our charter also has very limited powers for the Board of Zoning

Appeals. Of course, in the ordinances that we wish to prepare, special exceptions such as utilities, certain medical institutions, and eleemosynary institutions may be involved, and these special exceptions should go before the Board of Zoning Appeals. The Board can grant parking areas for business in adjoining residential districts. They can permit reconstruction of damaged, non-conforming uses that are in excess of 60% if they see fit, but nowhere in the powers and duties does it state that the Board of Zoning Appeals has the power to grant any special exception on flood control measures. So this would seem to indicate that we have to go another route, or we must amend the charter at the next session of the legislature. Of course, that's going to be after the deadline date. We have considered the possibility of using powers of the Planning Commission, but our attorneys feel that this is an advisory body primarily, and they should not be involved in the granting of these exceptions. In the enabling legislation it states that "the governing body may reserve unto itself the right to issue special exceptions and special uses." Of course, here again this puts the burden back on the City Council, and they would much prefer to have this taken care of by another body – the Board of Zoning Appeals, the Planning Commission, or perhaps some other board of review. The question rises as to the delegation of powers and, as I read the law, the Council could do this, but it appears that our consultant and some of our attorneys disagree with me. They feel that this power cannot be delegated to the Planning Commission, and I personally feel that if it can't be delegated to the Planning Commission it might be equally questionable to delegate it to some other board of review. I might say that several members of our staff are becoming involved in the study of this problem, and most of them seem to favor a sort of a board of review. They feel that it would be more likely to enforce a rigid line on the flooding problems. However, I personally feel as though you need to have some type of a review for a citizen's board.

Another thing that might deter the action of the Council is the amount of development in the flood plain area. I mentioned this once before, but it appears to me, just offhand, that perhaps over 90% of the valuation in the flood plain area is business and industrial, and in these two groups we have very little benefits from this program. From this standpoint, I think that we have a big selling job to do with the City Council in order to convince them that the flood plain program is advisable. I do think they realize as well as the rest of us that a lot of the development in the new annexation area is going to be residential. We do have many subdivisions coming in, but it appears to me that many subdivisions as well as multi-family developments may not be able to reap immediate benefits from this program. I think we have a pretty difficult program to sell. However, I might say that all of us who have worked with the program and studied the problems have agreed that the City should go ahead and attempt to go into this program.

Dr. Hackett: Are there any comments or expansion of the points that Mr. Dunkle has brought up?

Q: We have concerns about Buena Vista much along the same line – industrial development in the flood plain might be the basic problem of what to do in areas that are in the flood plain, areas that are rather poorly developed. What should be done if this flood insurance program is not going to be the practical program in the opinion of the community?

Mr. Sutton: Let me just respond very briefly that we don't expect the program to change everything overnight. We can only hope that over a long period of time the development in the flood plain will be such that the Federal Government will not be required to be involved in flood insurance, meaning that as houses become – or practically become – obsolete, those in high-hazard areas will be replaced by structures that would, in fact, not be subject to flood hazard. So it would seem that in the meantime existing properties can benefit from the subsidized flood insurance, and looking to a long time in the future, transition might take place.

Mr. Dunkle: It appears to me that if we don't get involved in insurance for commercial-industrial properties right away, it may be a long time before actuarial rates for these properties are established. Isn't that your thought on the matter?

Mr. Sutton: I don't think it will be long once we decide to cover other types of property. It won't take long to set rates now that we have the experience that we have. Developing the hydrologic information for a community is the only big job as far as rates are concerned. Hydrologic information applies to all types of property, not just residential and small business properties.

Mr. Dunkle: If I recall correctly, someone said yesterday that it would be 3 to 5 years before these could be established. Is that correct?

Mr. Sutton: Someone made the observation that in the community where no information at all on flood hazard had been collected it might be 3 to 5 years. I think we are coming to the place where we can, for most communities, develop hydrologic information in 1 to 2 years.

Dr. Hackett: Mr. Lally, this seems to come right into the land use provisions. Would you care to comment at this point?

Mr. Lally: I came here as an observer because I wanted to see how a workshop on land use could work. We in the Federal Insurance Administration are proposing to have a series of them in each of our HUD regional offices for just the same purpose as this one is being held today; and this would be a pilot, I suppose, of the type of questions that can come up.

My prime concern is land use and flood plain regulation, or flood plain management. I have been in the field of flood plain management for 20 years. I don't know why you have to have flood insurance to have flood plain management. Any good planner before he even attempts to develop a site at least should have all the facts in front of him so he knows exactly what his risks are going to be. The TVA man [Mr. King] said that back in the early 1950's they were involved in this type of program. So it should not come as a surprise to you that wise flood plain management is good planning — unrelated to the flood insurance program.

Now, what has happened is that the flood insurance program has brought focus on this as a stick to get the carrot. They have to work together. Congress recognizes this; that's the reason Congress had not developed flood insurance until they were satisfied that they could get the comparable and necessary flood plain regulation. They wanted to be assured that the so-called unwise development would not be perpetuated. That's what we're faced with.

Now everybody will say "Well, it is condemnation without compensation. "We develop land at \$500 to \$1,000 a foot." "Developers won't stand for this." "You will drive industry out of our community." "You will never be able to build new homes." "People will go elsewhere." I get this in every community that I talk to, so this is not unique. We have a National program where we're trying to reverse the trend of this annual potential for flood damages. Despite the expenditure of 7 to 8 billion dollars since 1936, we don't seem to be reducing the potential for flood damages. Now something is wrong, because it is your own taxpayers' money that's being spent. So the decisions has been made — let's use our taxpayers' money to develop procedures whereby we'll provide for an economic adjustment. Flood insurance of itself doesn't help the flood situation. All flood insurance does is provide an economic adjustment for the individual. Instead of giving disaster relief, you're giving them some form of procedure which is really what the subsidized insurance is all involved with. But in return for this subsidy, which is taxpayers' money being used, we want to be sure that we are not going to continue to use taxpayers' money to perpetuate unwise decisions. That's basically what the land use regulation is all about as you relate it to the Flood Insurance Program.

We hope in the future, as Mr. Sutton said, to get to the place where the Federal Government will pull out of this program. There will be enough evidence, and new construction will be able to get insurance at premiums that are much less than the subsidized rates because they will all be up high enough. Then a decision will be made by the individual – “Do I or don’t I buy insurance” – based on the economics of the situation. But if he’s forced to build his house up to a certain elevation he may forego the insurance, but yet by having the program we are taking care of the so-called poor victims, who are victims of their own unwise decisions, victims of the unwise decisions of others, or victims of unscrupulous developers, or in many cases ignorant developers. This is basically the whole philosophy of flood insurance programs. As I said, I came here as an observer, but I can become involved and I can talk all afternoon on this subject that I have been so close to for so many years. Are there any questions?

Q: You bring up a point that further discussion is planned. Wouldn’t it be better if with the Flood Insurance Program we had some type of planning to eliminate problems that Buena Vista or some other area has and some community project with the Federal Government whereby funds could be available to eliminate or take these problems out of the flood area. Wouldn’t this be a realistic approach?

Mr. Lally: At the moment you have your 701 Comprehensive Planning from HUD. In fact, you shouldn’t even develop land use regulations until you’ve made a comprehensive plan. You cannot develop land use regulations in a vacuum. You’ve got to know your economic needs, your social needs, and if you yourself can develop those you can work within certain limits. How you develop that comprehensive plan is something else.

Q: There’s no problem in the areas where you restrict the development. I’m talking about where you have flood plains that are built up, like Buena Vista, where you already have the businesses and homes sitting on the flood plain. It would perpetuate spending or paying damages for flooding without providing correction.

Mr. Lally: This becomes an economic decision. You can buy structural measures to protect these properties, or is it cheaper to remove and relocate them. This is purely an economic problem which the COE and other agencies involved in flood protection and structural measures use. They should all be weighed, and I think existing programs are available.

Mr. Dunkle: Of course, this could be aided in flood proofing these buildings and this would come under the building code — flood proofing the buildings that are there and then, of course, considering all these as non-conforming structures that have not been flood proofed which are subject to flood damage. In case they want to improve or add to the building, the building code might require that the existing structure be flood proofed, and on the new one, either flood proof that or perhaps put the main floor above the regulatory flood elevation. Perhaps if there are lower floors, which there most likely will be in these flood plain conditions, they can be used for parking or storage of materials that would not be damaged by flooding. This is one way in which the program could be extended to a city and areas where developments are already in the flood plain.

Mr. Lally: I don't believe there's any Federal program that can make the Federal Government go in and modify individual properties.

Q: What I was thinking — it would seem that the program should incorporate some method of alleviating the existing coding, through planning, Board of Appeals, etc., and through joint financial sharing between the community and HUD and perhaps the individuals involved.

Mr. Lally: I believe you'll find all your Federal programs, SCS, COE, etc., that are trying to provide structural measures have a necessary part of so-called non-structural — of land use regulations on flood proofing — as a part of their study. I think its purely a case of economics which route is taken. I think our existing programs can do what they're trying to do. I may be wrong.

Q: It seems that the insurance program to be effective and to have some ultimate goal or direction . . .

Mr. Lally: The actuarial rates might be a measure of the value of doing this. An individual can see this for himself and take steps or a community can do it as an effort and appeal to us for an adjustment of rates because they have taken certain measures over the above . . .

Mr. Sutton: May I add something? I think the gentleman is in fact talking about structural measures which we hope will complement the non-structural measures to reduce damages to existing properties, or to allow a higher use to be made of land that is now subject to flooding which because of its location has a real high value. I think the Congress did, in fact, say that there already exists enough of those types of programs. In fact, you may

think of the Federal insurance program as being added to and not replacing any other program. I think it was the obvious choice on the part of Congress to let existing flood damage reduction structural programs continue to work. Repeating from yesterday, we do have the authority to negotiate for land or properties that have been damaged. This could be a further complement to encourage subsequent relocation inasmuch as most of the structural programs have not often been able to find relocation as economical. So it is a possibility, but I think we have the existing programs already in being to provide us anything that we're talking about – in fact, HUD has to leave this thing to existing programs, but it's there.

Q: We have an area in Hampton which is a beach area that was damaged during the Ash Wednesday storm. It so happened that the area, because of other deficiencies, qualified as a redevelopment area – not because of the flood damage potential but because of the deterioration of property and that type of thing. Is there any possibility in the future that flood damage potential might be considered as a requirement to allow an area to become eligible for redevelopment rather than waiting for the area to deteriorate?

Mr. Lally: Well, actually this is quite often what would happen in most communities. Your substandard development often is in flood-prone areas for the simple reason that people are hesitant about investing dollars knowing that they have periodically been flooded, and it also affects adjacent areas. So you get these so-called substandard areas that do develop. Now you talk about Urban Renewal – if there's a Federal program involved, Executive Order 11296 requires that the flood hazard be recognized or Urban Renewal won't even talk to you about it unless your plans recognize the flood and have certain minimum regulations. Are you saying that the flood problem should be a reason for redevelopment?

Q: That's exactly my question. The way it is now, what you said is actually what happens. New money is not going into the area even if we passed the ordinance that will further that and say that you can't build in here unless you're going to build up to a certain elevation. This will mean that the area will probably go down, and over a period of time it would become eligible for redevelopment or Urban Renewal. The point I bring up is wouldn't it be a better situation for the community and everyone concerned, particularly in view of its affecting the surrounding areas that you mention, if we didn't have this time lag here. In other words, instead of waiting for the area to go down so it becomes eligible for Urban Renewal because of substandard dwellings or buildings, allowing it to become eligible because it is

a flood area and has to be approached on an area-wide basis like Urban Renewal – almost everything is taken down and, in our case, a sea wall was built and the area was filled to a proper elevation and new type structures brought back.

Mr. Lally: Well, that is comprehensive planning, and I think the Corps goes through this procedure to evaluate any project providing a sea wall is one alternative – the other alternative is go in and remove the structure which is basically what you're suggesting. That's an alternative, and I say its purely dollars. Maybe you ought to provide a sea wall then go back in and spend money bringing all those buildings up to a standard code. You can use Urban Renewal money for that, so that they do retain their value, they do retain their use – to me its just dollars.

Q: It's a possibility, but the problems that we've had so far with Urban Renewal would almost necessitate an approach on a total basis.

Mr. Lally: You'd like to take large parcels – you'd like to have large parcels available.

Q: It's the only way it would seem to work out.

Q: In Alexandria we have three separate flood plains. In the Arlandria section we've gone ahead and passed land management for the Arlandria section, and we have that spelled out by ordinance. If by chance come December 31, 1971, the land management plan for the other plains is not complete, do we qualify for flood insurance in the Arlandria section?

Mr. Lally: The law says that as of December 31, 1971, you must have land use regulations to retain your eligibility. Now this has nothing to do with the Emergency Program – the original program required June 30 and was changed to December 31, 1971. Any community could come in prior to that time. What they promised is that as of December 31, they will have land use regulations consistent with our requirements.

Q: Let me interrupt. We came in on June 10 with an ordinance for your Land Use section to beat the deadline of June 30, 1970.

Mr. Lally: Right. But the law was changed to extend that to December 31, 1971, and I believe our attorneys have taken the position that because of that change they would not insist on the June 30 date even though communities were already involved. They would still give the benefit of the

extended period until December 31, 1971, but that's as far as they would go. Now come December 31, 1971, you must have land use regulations consistent with our requirements. So the question comes up, "What are your requirements?" Well, we are in the process of revising our regulations which will be published shortly. I keep my fingers crossed, because they have been in our legal counsel's office now for about a month. The intent is that if a community has all the information available, there's no reason in the world why it can't meet that date. If for some reason they don't have all the data, we will make certain allowances. In fact, we ourselves may be responsible for not making that data available for them in time as part of our rate study. So we do have revised regulations which will be developed shortly. Primarily we will be requiring you to have all the data available to develop land use regulations – you must have them by that date. You must have something by that date.

Q: For the entire community?

Mr. Lally: Yes, I would presume so. See a flood hazard area – I would say a flood hazard area . . .

Q: We have three flood hazard areas in Alexandria. There is a possibility that we can't come up with a land management program for one or the other of the other two . . .

Mr. Lally: Are you talking about areas above the limits of the 100-year flood?

Mr. Sutton: Excuse me, let me be sure that Nick understands this. He has three areas in Alexandria. He has passed the proper land use control measures for one, but he's worried about those special flood hazard areas.

Mr. Lally: Oh, three special flood hazard areas?

Mr. Sutton: Three special flood hazard areas, Fourmile Run, Cameron Run, and the Potomac River. He has taken care of Fourmile Run, but he hasn't taken care of the other two. The question is, if he doesn't take care of the other two by December 31, does the Fourmile Run area lose its eligibility?

Mr. Lally: What would our attorney say to that? I don't know.

Q: I thought I heard Mr. Krimm say yesterday that the governing body had to pass the restriction for the entire area over which it has control.

Mr. Lally: That was the intent, that the community would assume the full responsibility for all areas. Now I suppose that if there would be some steps taken in the other two areas – minimum building codes, some flood proofing regulations, or some minimum jurisdictional control – even though they aren't too well defined, at least have jurisdictional control over this area, these might satisfy the legal people.

Mr. Sutton: You have to also make note that we (HUD) will be publishing rate studies for these other two areas in the near future. He'll have 6 months before December 31.

Mr. Lally: You've got 6 months as a figure that we've informally talked about. We feel if you have the data for 6 months you should be able to do something with it. In fact, you should be planning it now, not just waiting for us to give you the data to fill in the blanks. You shouldn't be waiting until we give you the data to even think about it. You should be concerned with whatever development is taking place now, just based on available knowledge.

Q: In essence, would you state that there are funds available for rehabilitation, to process flood proofing in redevelopment?

Mr. Lally: Not per se. I raised the question with the other gentleman here. I wasn't sure if there are Federal funds available to flood proof individual properties. There are rehabilitation funds available that will help bring properties up to a certain code. You know the discussion we had the other day about in some communities in North Dakota that the rehabilitation people say they won't permit this rehabilitation to take place in areas that are flood prone, or, let's say, very frequently flooded. In other words, they're not going to invest Federal funds in the area – they can't because of Executive Order 11296.

Q: Again, the concept of the Federal Government has established a control factor on a city ordinance.

Mr. Lally: In what way?

Q: By requiring that an ordinance be established for flood insurance. Some kind of a control factor. So, in essence, the Federal Government has gotten into the ordinance-writing picture in a way. Is it not so that our ordinance has to be approved by HUD before we are acceptable to this program.

Mr. Lally: Well, I would say so. Yes.

Q: In other words, when we get ready for final issue of our ordinance, we send it forward to HUD. HUD approves it as far as their criteria go, and it comes back to us.

Mr. Lally: We haven't actually set up the mechanism for this approval, but you made a promise that by December 31 you would establish land use regulations consistent with our requirements. Now how else are we to determine if they are consistent with our requirements unless you submit them to us?

Q: Well, that's true.

Mr. Lally: We're approving your ordinance, I'm saying minimum – you could go higher, in fact, I wish you would in many cases. We're giving you minimum criteria to retain your eligibility which is part of the package that Congress insists on if they are going to make subsidized insurance available.

Q: There's one other problem in that we have entered into and already have established a comprehensive plan that is working. Now, needing this criteria for flood insurance will have some effect on the comprehensive plan although the plan is good.

Mr. Lally: I would question it. I would question that your comprehensive plan is comprehensive unless you have recognized the flood hazard.

Q: It has been studied and recommended to be studied by the Corps of Engineers, which it was in the past, in the long past. They came back with a "not economically feasible to take any kind of measures."

Mr. Lally: Structurally?

Q: Structurally.

Mr. Lally: But you as planners, or whoever is doing your planning for you, still have the question of the investment of the community's resources. Is it wise to invest the community's resources in flood prone land?

Q: But they have already been invested, before comprehensive planning was ever thought of.

Mr. Lally: So you adjust around existing developments.

Q: But you just can't eliminate a house that sits in the flood . . .

Mr. Lally: No, no. It is an existing non-conforming use. But don't you try to profit from your experience?

Q: But we try to adjust in one respect by building up recreational areas. We've started talking about having large open space and floodways, say similar to a large parking lot. Another thing that our comprehensive plan has had to do was temporize to a certain degree, and no matter how good a comprehensive plan you have, when something new comes along like flood insurance, changes will have to be made. This we are doing. You have to consider the whole plan in conjunction with flood insurance.

Mr. Lally: Right. I made a comment that you can't do any land use planning unless you take into account all your needs and prove to yourself which direction you want to go.

Q: We have a note left over from a planner who looked into this about a year or two years ago. He made the comment to the effect that Federal grants are available to the cities to obtain land from flood plain victims. Is this a fact?

Mr. Lally: Acquisition of open spaces, is that what you mean? There are two open space programs, one in HUD, and I think the Department of Agriculture has one. So you have two Federal programs that do make funds available to you for the acquisition of open spaces.

Q: In flood plains or floodways?

Mr. Lally: Anywhere. In fact, I would recommend that they give priority to the open spaces along the rivers rather than on top of a hill. Instead of developing picnic areas on top of a hill — they may be scenic — if you can get your hands on some money, acquire the flood plain. To me, it has a double value. It achieves this control that you're looking for, and it's a compatible use.

Mr. Dunkle: I believe there is some money available in Outdoor Recreation. I think its a combination of local 25%, state 15%, and 60% Federal government, isn't it? I think it is something like that. This is one area and I know in Richmond in our open space program we have acquired some

river property down along the James, some islands, etc., and I think some of it was acquired under this program. Not only that, but park development funds that are spent for improvements are considered as local contribution and these funds are matched by state and Federal funds.

Q: There is a point that ought to be mentioned relative to Hampton. In talking about land use planning and the prudence of governing these land use controls, that's perfectly valid where you've got specific areas that you can deal with. When you're talking about a city that has 30 to 40% of its land subject to a 100-year flood below that, then this idea of restricting land uses to something like parks and recreation areas and parking lots, this gets sort of absurd. The point is you can make restrictions insofar as your elevation and standard and things of that sort are concerned, and that we have done. But when you're talking about 30 to 40% of your land being subject to that problem, as against a narrow stream bed and areas on either side, you've got a different set of conditions that you've got to deal with. In our ordinance, which you will review, we hope you will recognize the fact that we have had to come up with two types of criteria that deal with the situation where there is water runoff to the situation where we're experiencing tidal flooding and wave action. The difference in those two definitions is why we have control measures. It is a different set of problems when you have that much area.

Mr. Lally: But I've never publicly called zoning restrictive. I call it permissive. It tells you what are wise uses — you permit uses compatible with nature. I mean, regardless of whether it is 10% of your community or 90% of your community, how can you encourage people to invest their money in your town — you're going to create jobs, you're thinking of economic value, but by the same token you are not being fair to the developer or the investor, if he doesn't know exactly what risk he's taking. You are really encouraging him under false pretenses unless you give him all the facts. In my experience I have never found any major investor of commercial-industrial properties, given all the facts, who wouldn't spend money on site preparation and site development to give himself a little insurance. This is independent of the insurance program. So I think it is not a case of restricting or reserving this for open spaces, it is a case of using your imagination and a little architectural ingenuity in finding ways to use it. Well, I wouldn't take the negative approach that you are going to restrict this use. I would say fine, let all industry and commercial people come in who want to come in provided they take certain measures.

Q: I still don't understand or see where we have completely covered the large area of Hampton which is significant and on which there already are

homes built below the elevation. We haven't really come up with a solution for that other than to let it deteriorate and then either redevelop it or get it into the open space some 10 or 15 years from now after it deteriorates. I'm talking about thousands of people that already live in in homes below the flood elevations.

Mr. Lally: They would be non-conforming users. They would be permitted to maintain their structures, but they can't make any major improvements. Isn't that basically what non-conforming regulations normally do?

Q: Then you are going to sit around and wait for 10 to 15 years until that becomes substandard enough that you can come in with some other type of program, either locally financed or federally financed, or whatever it is, and essentially redevelop the whole area.

Mr. Lally: Would you rather not make insurance available at all?

Q: No sir! I'd rather see the fact that those people are below this flood elevation also makes them eligible for the redevelopment now rather than wait for them to deteriorate.

Mr. Lally: You may talk to the redevelopment people about whether they would recognize that as a valid reason.

Mr. Dunkle: I think you are getting involved in a problem of economics there because the value of this structure is so high now that you can't afford to demolish it at this time, but later on, or perhaps after a flood, you might be able to do that.

Q: Well, there's a possibility too — to wait for a flood. But would the mere fact that it was flooded and still repairable, would that, now, repass the ordinance on the rest of the property that is eligible for the insurance. That means if he is flooded it can be repaired back to what it was.

Mr. Lally: But yet you're giving him relief. Otherwise he would be appealing to you for help, or the state, eventually the Federal Government. He would be looking for help somewhere. So isn't it better that he has a program where he actually makes a small contribution himself and, therefore, has a positive interest in this, and he does have an economic adjustment to his hazard.

Q: I still say I think it would be a good idea, and I agree with you on the importance of the flood protection ordinance regardless of the insurance. Now, could those things be a factor that would allow a man to be eligible for some of the redevelopment, rehabilitation, or other programs in order to improve his property?

Mr. Lally: Actually, you are not questioning the insurance program, but you are questioning our requirements of rehabilitation and renewal.

Q: In any area that would allow a person to place his home, or his home is already there and there is nothing you can do about it, it would downgrade the neighborhood, or their home is deteriorated or is subject to flood or subject to rock slides or whatever it be, it should be taken into consideration as a possibility for making these programs available.

Mr. Lally: The insurance might be enough of an incentive to him to keep his property in good shape.

Q: If he can't do anything about it, you're never going to alleviate his problem. You're always going to have him below the elevation.

Mr. Lally: Why is that a concern to you?

Q: If we are going to pass an ordinance to say that all new construction has to be above a certain elevation, I would think that a furtherance of that would be to try whenever possible to get the existing buildings up to elevation. Isn't that what you want?

Mr. Lally: That is a good long-range objective, but as far as zoning is concerned it is pretty hard to do. You can't make it retroactive so you have got to take some urban renewal measures to it.

Q: We said in our ordinance, to which you agreed (it really has nothing to do with the Flood Insurance Program), we felt that this is not only to protect a man's property but to protect his life and limb, and therefore felt that we ought to bring our street elevations up as Mr. Miller mentioned this morning so that if a man has to leave the area, if he gets a flood elevation above what he can take, that he has roads he can get out of the area on.

Mr. Lally: Someone raised a question of fill this morning – filling around a foundation. I'm in favor of requiring that the fill extend 15 feet beyond the foundation limits. I think it is an excellent suggestion. Besides

preventing seepage and the flotation affecting your anchoring, it provides a little island of safety for a family trying to get out. Rather than stepping into 10 feet of water, it gives them a little island of safety.

Q: As a furtherance of your program and in HUD, if this area could be declared a rehabilitation area simply because they are subject to probable flood, and if you allow low rate loans and that type of thing so that if a man says I want to improve my property he gets those Federal benefits, it looks like a tremendous help to be able to improve that situation.

Mr. Lally: I think your concern is with the requirements of Urban Renewal or rehabilitation, and I really can't speak for those people.

Q: Have you (HUD) approached them on considering that?

Mr. Lally: Their only concern is that they don't encourage the use of Federal funds in areas that are frequently flooded. They claim that areas that are frequently flooded – I don't know if its the 100-year flood or what range they use – they are not permitting Federal funds to be used.

Q: Why not encourage them to be used if they are going to improve that situation?

Mr. Lally: It becomes a question of does that property deteriorate or not? I don't know. It boils down to economics no matter which way you look at it.

Q: The Home Builders' Association is concerned also in one respect. Where you have a new requirement where a house has to be built where you bring it up to a certain elevation, and a house that is 5 years old is sitting next to it down below that level – when it comes time to sell those two homes, 9 times out of 10 the one that is sitting higher is going to be sold.

Mr. Lally: Which one would you buy?

Q: Knowing what I know now, I know which one I'd buy.

Mr. Lally: Right! Unfortunately, this is what has happened. Now this question comes up all the time. What happens in individual lots? You have a whole block built up, and you have one block that is left. You are going to have this man set his foundation 5 feet above all his neighbors. Architecturally, that could stand out like a sore thumb. Speaking for myself,

I think I would grant a variance and let the man build comparably – at least let him know what his risks are. Of course, if you permit that, then all you have to do is look at the insurance table and say at some time when you want insurance, though, this is what it is going to cost you. You're not going to get the subsidized rate the way your neighbors are, because they were already there. That old dollar sign creeps in every time you open your mouth on this subject.

Q: Speaking of dollars, they say about half the money the Federal Government has put aside has already been committed in this program. Is that right?

Mr. Sutton: Yes, that's correct, but we think Congress will in fact raise that limit very shortly. I don't think you need to be concerned about the fact that the limit will be reached before your community becomes eligible.

Dr. Hackett: Mr. Mihok, it seems that we are leading right into the area of insurance provisions. Do you care to comment at this time?

Mr. Mihok: Mine deals with existing structures, as you all know. What we need is the cooperation and participation of insurance agents within that area. We're not getting that. In other words, they're not going to sell the insurance because, for one thing, they feel they are not getting enough commission on the premium. Another reason is they feel there will be Government intervention in case something goes wrong, and they are afraid of Government intervention. So they just are wiping their hands of the insurance if at all possible. As a matter of fact, in my solicitation of mortgagors in New Orleans, I received a number of rebuttals from insurance agents. "Why are you demanding this of these mortgagors?" "By what right have you to demand insurance?" They don't even want to sell the insurance. So now if you get such refusal from the agents, how are you going to enforce this insurance. This is my main problem.

Another factor is the economy – the present status of the economy. They are having a hard time making their regular mortgage payments without this additional burden. Now we say that they have to buy an insurance policy – that they have to put out say a minimum of \$90 (if you have to take out \$17,500 at 40 cents that's \$70, plus another \$5,000 contents at 40 cents, that's \$90). Now if they have to put out \$90, they're going to get one month behind in their payments. There's no provisions in their escrow costs to pay this money out.

Q: Are you one of the investors?

Mr. Mihok: No, we service loans for investors, and they have heard about this insurance. They want to be protected on their mortgages, and we have to give them a listing of the properties in the flood zones and obtain flood insurance on these properties. So now we are obligated to the investors.

Q: In a flood prone area isn't there a possibility of flood loss greater than the amount of the mortgage balance?

Mr. Mihok: The point is you are not getting the participation because you are dealing now with low and moderate income people who live in this area. To them it is dollars and cents. Where do they get the money? They pay the premium, and they will fall one month behind with their payment. This is our problem. When you enter into this program you have to have the cooperation of the insurance agent, to go out and sell. And, in view of what Mr. Summers said yesterday, there are fewer and fewer agents available now; they are losing agents. If there are fewer agents, how are you going to sell this insurance?

Mr. Dunkle: Isn't this the cost of the building — as part of the payment?

Mr. Mihok: With any of our existing structures. You're not supposed to build in this area to begin with.

Mr. Dunkle: On the old structures though, when they are resold, can't this be included?

Mr. Mihok: Not a requirement. You have a real estate agent making a sale. He's not going to tell the prospective buyer that the monthly payments are going to exceed the estimated amount one is able to pay.

Mr. Dunkle: What if it is an FHA loan? Can't they require it?

Mr. Mihok: If he has taken a new FHA loan, yes. But if he is just assuming a loan, which many of them are doing, he can't require it.

Q: He can't?

Mr. Mihok: He can't, so our main problem is what can we do on existing structures to get mortgagors to purchase insurance. O.K. The

regulation qualifies them for insurance, but we are not getting cooperation from the insurance agents, because they say the commission is so low they don't want to be bothered with it. So what is your answer to this? Again, as I brought out yesterday, we had 900 policies in New Orleans when the VA required insurance. As soon as the VA rescinded their requirement, I asked the people who had the policy whether they would renew it next year. Five hundred reported no, they would not renew it. Of the remaining 400 who retain it, these are in the C zone and are paying 5 cents on \$100. The ones who really need it, in the low lying areas, are not going to renew it. How can we enforce it? Have you an answer to that?

Mr. Sutton: I would think that this is one of those many questions that we have to try to find answers to. We don't have the answers.

Mr. Mihok: That's why I'm basing this on existing structures.

Q: You basically agree with what we said – is there anything you can arrange to alleviate the problem of the existing structures, through any type of program, Federal or otherwise, one that would be attractive to the people would be a good idea. If you are going to restrict it, and that is considered a good idea, then alleviating what is already there is a good idea.

Mr. Mihok: About this morning where I mentioned the deductible, considering the first \$450 the individual is losing out; but when he's paying 70 to 90 dollars premium plus 2% deductible on \$17,500 which is \$350 and he has a minor damage, he's not collecting anything. So if you're not collecting anything, why carry insurance? They are boiling this down to dollars and cents. And another response I receive – "Why did FHA grant me the mortgage? They know this is a flood area." How are you going to answer that?

Mr. Lally: They weren't supposed to.

Mr. Mihok: That's true, but these problems are what you are faced with. I have no solution for that – it's a problem. To obtain this insurance policy we had incurred very heavy cost in the administration of the insurance program. Right now letters are going out to each mortgagor in these flood areas based on a map which was very difficult to follow to determine what points were in a flood area and which were not. When I looked up Hampton's map I just gave up. When you have streets running through a flood zone, I would have to make a physical inspection of the property. We don't know whether it is in a flood zone or outside a flood zone.

Q: The final map we have in Hampton follows streets.

Mr. Mihok: Do you say that from street number X to street number Y is in a flood zone?

Q: They show lines based on streets rather than cutting across the middle of a lot.

Mr. Mihok: O.K., but my next point is why can't they produce a map of all the streets listed that way? O.K., now here are the streets within this area, an alphabetical street index, because all our records are on an alphabetical street index.

Q: If the Congress would give us the funds and manpower, we'd be most happy to do this.

Q: You've got that through the Bureau of the Census already.

Q: It would be difficult to do on a local level anyway, because it is difficult for us to keep track of what happens on what street because you change numbers, street names, and so on.

Q: That's pretty much available now through this last census through its coding guide which covers the metropolitan areas — rural are not yet available.

Mr. Mihok: L n't they have this "dime" system?

Q: Well, this is what they are trying to work on, but it limits itself to the street coding guide which gives you the same basic thing.

Mr. Mihok: Even though you have that, it's still a matter of selling the policy. And the only way to do it is to have the cooperation of the insurance agent — you realize that. This we are not receiving. In other words, they have not gone out to sell the insurance.

Q: Well, it's supposed to be a voluntary program.

Q: Well, the municipal government doesn't care if you sell one policy as long as it's made available. We don't care whether the first policy is sold as long as it is available.

Q: Our major flood problem, like most localities, exists in the over-developed areas – not from this sort of measure – maybe administrative. . . .

Mr. Miller: The problem that comes of that is when you get two of the biggest mortgage backers, FHA and VA, requiring that insurance be obtained if the loans are in the flood plain area. Then you get right back to the mortgage company that has got to have flood insurance before it can guarantee your loan because pressure is being put on them. Pretty soon you're down to the developer and the realtor who can't make the sale if there is a \$10 differential in insurance premiums. You're right, as far as the citizen is concerned, we want to see the insurance available and see reasonable protective measures in these flood plain districts. I think we've solved our responsibility in that regard, but the ultimate responsibility relates itself to the market and how you affect the market in designating these areas. Then you've got another can of worms to deal with. There it gets really sticky. Some of the things we say about mortgaging today pretty well indicate that this is going to be on us whether we recognize it or not. The impact will be there one of these days – I don't know when it's coming, but I hope we have the ordinance approved before it happens.

Q: You keep referring to the comprehensive plan. What do we do when we have to wait 2 to 3 to 5 years to get an ordinance? We've had an application in for 2 years now and have heard nothing. So what do we do to help develop a comprehensive plan?

Mr. Lally: Do you have a flood problem?

Q: It's a vicious circle – flash floods.

Mr. Lally: How do you know? How do you know you have a flood problem?

Q: We've had residents with three feet of water inside their houses and mud on the wall-to-wall carpet. I guess . . .

Mr. Lally: Have you attempted to locate these on a piece of paper or a map or something?

Q: We've written in regulations in our subdivision ordinances.

Mr. Lally: Then you've made your first leg of your comprehensive plan. To me, the identification of flood hazard areas is the first step to take in a comprehensive plan.

Q: Oh, definitely, but that's not the complete comprehensive plan. That costs money, and we don't have the money to develop it ourselves.

Mr. Lally: I see. You may have to wait till 701 funds become available. In the interim, if you want to take care of your poor victims, you should get involved in the flood insurance program and wait for us to identify the flood hazard areas for you. If you don't already have it, at least get that much of it done, but don't use the delay of 701 planning money as an excuse for putting it off. Get the community involved in the flood insurance program.

Q: I'm talking about qualifying the community for the flood insurance. Are you going to require this comprehensive plan by next year?

Mr. Sutton: Let me step in here a minute if I may. A comprehensive plan is really not comprehensive unless it has included all these considerations. However, it is desirable to have a comprehensive plan before you put a flood plain regulation into effect, but you needn't wait on the comprehensive plan for a school to be built. Let me suggest that you can, in fact, put in a flood plain regulation based on the information that you have now on the basis that this is the best that is available. You don't have to wait for the completion of the comprehensive plan.

Q: That was what was sort of suggested.

Mr. Sutton: It is preferable; it is much more desirable. Let me take cognizance of the fact that we are coming out with a modification of our regulations. What you see now in our regulations is what I call a performance standard, not a design standard, a performance standard which requires community studies to determine the level of restriction. We've found that it would be better to put out what I would call a minimum design standard that you can get by with now, and then make a study to determine what, in fact, the final regulation ought to be.

Mr. Lally: We are coming out with revised regulations which will define what you must do as a minimum to retain the eligibility after December 31. We hope, also, in the interim to come out with a guide book which will help answer a lot of these questions being raised today – sort of a general information type book. You can't say, "Oh, we're going to wait until we get that." You should be taking steps now to do something. But you've already said you have a flood problem. You shouldn't be waiting until you get all the facts in. Do what you can based on the available information.

Q: Our major flood problem, like most localities, exists in the over-developed areas – not from this sort of measure – maybe administrative . . .

Mr. Lally: But you have an obligation to the so-called victims in the older part of town to provide some financial relief for them if it is available.

Q: A moral obligation, if not legal.

Q: Our flood plain is established at Hampton at 8.5 feet. Now we've asked agency people, developers, what have you. One of them suggested that what would be acceptable for them written into the ordinance would be a first floor elevation of 8.0 feet. At the moment we are requiring one foot above the flood plain level or 9.5 feet for the first floor elevation. Suppose the situation came up, or the ordinance came to you and we had established in that ordinance 8.0, would this have a detrimental effect on it being accepted or approved by HUD? Would it be necessary that it be at least 8.5 or above to be accepted?

Mr. Lally: My first reaction is that we would frown on it, but that we would give you a chance to prove your point – to have all the other facts to prove why you went to the 8 feet. Just don't arbitrarily pick 8 feet. You must have some good, sound basis as to why you went to the 8 feet rather than the 8.5 or 9.5, whichever is considered more desirable. Because we're asking, don't forget the 100-year flood, which to some of you sounds like it's way up here. It was not really because the ceiling is perhaps where the upper limit is. They're talking of 13 feet being a standard project flood. Thirteen or 13.5 feet really is sort of an upper limit of probability. It could happen tomorrow, or the next hurricane season. But it's possibility any single year is so remote that we just can't afford to spend money taking care, worrying about that. So, we come down here to the 100-year level which is really, let's face it, a compromise between the extreme case of high catastrophe – high loss of life and limb, too – and then the other extreme which is the more frequent high economic loss rain. The 100-year flood is intended to be a minimum of consideration. Now, if you think the 100-year flood is too severe, I think we will listen to you. We would rather discourage any lower deviation – you can go above that if you like – we hate to see you go below it. You'd better have a pretty good case for its acceptance.

Q: It would be acceptable at the flood plain level of 8.5 feet?

Mr. Lally: At the 100-year level as such. At the moment I would say as a minimum, yes. But I would like to know all the facts. At the 100-year

level we would accept it as minimum. I keep stressing that minimum, but I would like to see you go above it, especially if you have wave action. I am always concerned about wave action. Because we're talking still water elevation now. We've neglected wave action which might affect the first 500 or 1,000 feet of beach area or inland area.

Q: Don't mention the fact that you might accept something less than 8 to 10 feet. We're having a hard enough time with what we're trying to get through now.

Mr. Lally: I don't want you thinking this is big brother pushing something down your throat. We're willing to listen. We've got a national standard, and there are going to be places crop up nationally where it will not be the most desirable, socially or economically.

Q: The Corps of Engineers did our study, and I don't know who could any better represent the 100-year flood elevation than they could have. We don't have the capacity to do that, and I don't know who we could hire.

Mr. Lally: It could very well be that you may have an experienced flood, I would say 8.3 feet or something, and you have already adopted this experienced flood. Then, when you ask how critical are those inches, it's a judgment factor involved there. We wouldn't slam the door completely; we would listen.

Q: You don't mean it would be difficult to get in the door, do you?

Mr. Lally: We may throw a few out!

Q: We had that exact situation you mentioned. We had experienced a flood which the Corps adopted as a 100-year flood of 8.0, and that's what everybody refers to as the worst flood we ever had.

Mr. Lally: Of course, we have to strive to overcome our misfortunes. You have to really experience one of these before the emotional atmosphere can develop and people recognize what they are really faced with.

Dr. Hackett: It seems that reactions or interests in the program seem to be reflected in this conference; sad but true, it depends upon catastrophe. This problem of communications is something I really want to bring in at this point. Mr. Miller, I wonder if you would want to make a few introductory comments.

Mr. Miller: Well, the very fact that we are here today is part of the whole communications process. After being here and listening to everybody talk about it and recognizing some of the problems that are facing us in getting our ordinances through, there is still a question in my mind whether I can really lend myself to communication needs except that I know they are needed and needed badly in order for all of us to understand what the procedure is and how we can get cooperation with the various groups that are going to be involved in it. Now, the indication that a major catastrophe can occur is certainly a basis upon which you can move forward, the basis upon which the Corps of Engineers undertook its specific study to delineate these areas that might be subject of flooding and to evaluate the various types of floods that might exist, either the 100-year or the intermediate or project flood. The fact that it was done gave us at least the ability that we had not had before to define ourselves to a specific area of concern.

The real impetus that caused us to concern ourselves with developing a positive ordinance approach was relative to a commitment to the Corps of Engineers on a project study which I have mentioned earlier. In our case the communications came from the top down, although we worked on this off and on for about 10 years. The City Council, recognizing the early need for insurance in our community, took the action to say "we will participate in the program, and we will adopt a necessary land use control ordinance to satisfy the various criteria and standards by the various agencies involved." Now that comes down to the City Planning Commission. In our case, to coordinate all this activity and bring it together, try to make something useful out of it, and try to contact the various agencies in the community that are going to be affected by it. Herein lies one of the biggest problems we run into because once you put this into effect, especially when you try to delineate the area as we did in Hampton with so much of the area involved in the flood plain zone, the reaction comes almost immediately. To try to communicate our desires and needs to the general public, and specifically to the developers and the business community who are directly affected from an economic standpoint and a marketability standpoint, you've got to be able to tell these people how this can benefit them and how it can be implemented without creating any great problem.

Unfortunately, we haven't seemed to be able to get this communication totally across to the developer. One of the reasons for it is obvious. He is concerned about how much initial investment it is going to take for him as against what his property is going to be marketed for before he is willing to buy the 8.5 or the 13 feet, or the 8.0, or any other category of flood level. And the fact that the Corps of Engineers has already given us the basis for

this flood is the point at which we have to relatively stand pat on. However, when you do that you come up against the communication problem with the general public – specifically the business community that is unyielding – you generate other problems. Those problems might very well get into politics. If you get into the political problem of the thing, it could stymie the program. Now, the difficulty here again is that we are at a place where we want to get our ordinance adopted and get it completed. We are saddled with the problem of how you overcome the political problems that might be involved in this and how you deal with an agency way above the local level who tells you in effect that these are the standards that you must comply with because the Corps has put them in, regardless of the political problems and the small problems you've got dealing with the developer.

Now I find a statement made not too long ago that HUD is already thinking about changing some of its criteria and standards, and I hope they are not so great that when we get this through we don't have to come back and redo our ordinance. The problem is there probably should be some sort of a simplified flow chart that shows the areas of responsibility, easy enough to read that everybody knows who should be involved in what part of the program and what time these things should be forwarded to the various agencies that have to approve it. Now we, right at this point, are taking the full impact of all the discussion coming on us from the general public, from the developers, from finance, from insurance agencies, from real estate, and the general citizenry. We're trying to tell them how these things are or are not going to affect them and what is going to be expected of them if these regulations are adopted. Now that is at best a most difficult job, as anybody who has dealt directly with the program can testify – to try to communicate precisely and without question your ideas and what it is that is going to be involved. I think that the understanding has to come somewhere from those top levels (FHA, VA, state, Federal) as local government struggles with these problems continuously just to get in minimum consideration.

There is a problem here, it is one of apathy, and that is the insurance companies in effect are, as we heard earlier, not interested in writing the policies anyway. And yet the demand is coming down that certain properties have to have this insurance coverage. How do we communicate our ideas precisely to our insurance companies to get them to participate on a local level? It is my understanding that there is one major company in the United States that really underwrites the insurance and every other insurance agency has to go through them to get proper insurance coverage. Now that involves something else in the communication level where we have absolutely no control.

In addition to this, in Hampton, we have really informed the people that you should carry this insurance for your own protection. In some of the areas of the City you're talking about people who have lived there their lifetime, who have seen storms, but who have never had the devastation from storms as in some parts of the City, and have just simply swept out their house and gone about without ever worrying about insurance.

In the area of wave action you have an entirely different kind of problem, so devastating that there's no question but you've got a total loss on your hands and no way to rehabilitate or recover that loss except through total capital expenditure to replace it – or some other method of that sort. These are the people who understand flooding. But the person who lives in the marginal area, where the storm seldom occurs, is very apathetic toward putting himself in the position of paying \$2.50 or \$2.00 per hundred for insurance on a situation that he knows has existed only a few times in his lifetime. We need, probably, some support on how do you really get across to the lay public as opposed to the business community.

In addition, how do you get it across to the business community as well as the insurance, developers, and finance that these things (flood zoning, insurance) are necessary and that they should support this type of regulation as well as an insurance program so that we can get on with the business of it. A communication gap exists probably in every endeavor undertaken, but when you get one as complicated as the involvement of the insurance program relative to local governments, the adoption of ordinances, land use controls, markets, and the economics of the question generally, communication begins to break down all the way along these lines. Somebody on the top level who fully realizes all these problems should develop that critical path procedure with a time element involved that everybody can fully understand. That's what I generally feel are some of the general needs and requirements on communications.

Dr. Ghee: Tom, did I understand you to say that one insurance company handles the business?

Mr. Mihok: [The question of one insurance company in the country underwriting flood insurance was raised. The answer was one for the State of Virginia, but more than one in the country.]

Mr. Miller: I stand corrected. I'm not sure . . .

Dr. Ghee: As I understand the way it works, at the national level about 90 insurance companies are going in and obligating themselves all the way from a very small percentage to a very large percentage. I think the largest company, one company has 10 or 11% of the total obligated. They may have asked from each state for one company to be the distributing agent, and in Virginia it happens to be the Insurance Company of North America. No one company would have control although some obviously would have a larger percentage, but each state has one servicing agent who may or may not push the agents to be actively involved.

Mr. Miller: No, I stand corrected on that, as I indicated earlier, but for the state, there is one company. It is North American.

Dr. Ghee: That's right, there's only one.

Mr. Miller: On the state level at least, for the local and independent insurance underwriters, agents. They would have to know that, and they would have to know how to communicate. I am pretty sure through their own professional organs, one way or the other, they probably get this kind of information. I'm not sure of that, but I would think so. If that's the case, then I guess maybe that's covered.

Q: What is the agent's commission?

Dr. Ghee: 15%. The minimum policy is \$25, which means that the agent makes about \$4 minimum commission. They have to know the flood plain, etc. since the people ask them all the questions. Is that correct? I guess from their standpoint (agents), why waste their time.

Mr. Mihok: Plus the fact that the agents don't want any intervention or deals with the Government.

Mr. Miller: Any time they think they are involved in any kind of process that is going to slow down their operation and they don't have to do it, they're not going to play.

Mr. Philpott: May I ask you one question? Have you made use of your Corps report – have you explained this to civic groups, to various people throughout the community? Have you given a lot of publicity to this report that has been prepared?

Mr. Miller: Well, wide publicity to the extent that it has had full news coverage, and public hearings have been held on it. If you mean a specific

program devoted just to this, no. But the Corps of Engineers has done some background work and has delivered their pamphlets and brochures, given these out and circulated them to civic groups and organizations, and of course the press is always involved in these decisions and the public hearings that have been held. You know this program, of course, is not the only program. If the question is asked, "How much you really put to it," we think we're doing a reasonably satisfactory job.

Q: It has been my experience in public hearings that the "anti's" on any question will show up.

Mr. Miller: These are practical problems on the local level.

Dr. Hackett: What is your feeling about the question that the community might be morally as well as legally responsible to provide the opportunity for this insurance?

Mr. Miller: I don't know just about the insurance. Are you posing the question to the panel, I assume? My only position on that is that we felt that we were not capable on a local level of determining the bounds of this flood plain district unless we had proper maps to do so. The Corps, however, came in and made the study; and we feel that, as it was indicated by Frank Miller here, that we couldn't ask for an organization any better qualified to determine that than the Corps of Engineers. We think this gives us the legal basis to make that decision. When we started on this thing years ago, we wanted to be sure that when we defined our boundaries, we could back them up. Now that the Corps has done it, we feel we can back them up by Corps statements. Whenever we run into that problem, we pull out the Corps of Engineers' report and drag brother Philpott over the coals.

Mr. Philpott: I think in Hampton we have less of a problem than in other places. It is primarily a question of elevation over there rather than extent — one elevation throughout except for the areas exposed to waves, and there is some discussion of whether it should be 8 feet or 8.5. I don't know anything that close really, whether 100-year is 8 or 8.5. We determined that we experienced one in 1962 at 7.5. High water marks in 1933 indicated gage records of anywhere from 8 to 8.5 and possibly a little higher. Again in 1936 it was something in the neighborhood of 7.5 to 8 feet, very possibly. So we have three in about forty years in the neighborhood of 8 feet. We felt that 8.5 was certainly a reasonable elevation, and I feel that it was.

Mr. Miller: We agree with that. Let me explain something briefly. You've heard this morning all of these organizations that can perform this service for you, and my suggestion is have them do it. You can get the Corps or you can get some bonafide Federal agency, properly staffed and with a good expertise, to handle this. You can't really get a better body. We tried to do it as a planning agency, and they would rake us over the coals as to what our ability was to establish these lines (District Boundaries). We would be hard pressed to try to defend it. With the Corps backing us up, we feel we have a pretty good risk. I'd suggest you get in touch with them and make sure they do the job.

Q: Basically the people we have dealt with have done just what Mr. Lally said. They eventually said we are willing to accept and support the minimum to get the insurance.

Dr. Hackett: I guess my question was more general than that. Has this program, the institution of this program, placed a legal responsibility on the community?

Mr. Miller: It is certainly a very interesting question. What has it done? I don't know. I don't know that there is a test case involved. Is Richmond involved in whether or not you provided flood insurance?

Mr. Dunkle: No. It was purely the question of whether they would be responsible for the flood damage and apparently they have made some adjustment.

Mr. Miller: Did you have a flood control ordinance in effect when it occurred?

Mr. Dunkle: No, we did not. But we did have a levee along the north side of the river and a pumping station, and the Department of Public Utilities maintained the pumping station until the walls cracked and the water started seeping through. When that happened, the Mayor went down and said, "Cut it off and come out." So that's what they did and, of course, the area was flooded then.

Mr. Miller: In support of land use analysis for those areas and an ordinance to go with it, it would certainly appear to me that if you did not take the initiative to adopt such an ordinance, the local government could be held liable for not bringing to the attention of the developer or a potential developer of an area that the area was subject to inundation. I think we could

be brought to task for that. That's one reason why we're here. We recognize that we ought to have it and are pushing for it.

Q: We could always take it to a referendum. In case the people decide they don't want it, then that is their decision.

Mr. Miller: The Federal Government and the Supreme Court now frequently don't listen to referendums anyway.

Mr. Philpott: I have an interesting comment in connection with the Corps' current planning for flood control projects. Of course, some of you here know that a project is based not only on existing damages, but damages are projected into the future — on the future growth of development along the flood plains, and credit is taken for that sometimes. I have seen in the past where damages that may be prevented by a particular project, and this is used for project justification in part. So now being in flood plain management, the planners come to me and they say, "What benefits will flood plain management have, flood insurance have? Can we expect now our damages to continue to grow as they have in the past?" They are growing steadily. I can't answer that question, of course, right now. The Corps has only been in this business, or placing a lot of emphasis on it, some few years, but I would hope that the present stage of knowledge would reduce these damages and, of course, you know we can't reduce them unless all communities involved pass some kind of land use controls. They have to be controlled at the local level. Now whether this is done through the insurance program or through just a need for this type thing as was indicated in Henrico County some years ago by the number of floods they have, they didn't wait until the flood insurance program came out before they put these land use measures into effect. I understand they are working very well over there now since the ordinances were accepted because everybody, practically everybody, recognized the need. Unfortunately some of the other communities don't recognize this. But it will be interesting 10 or 15 years from now to find out whether all of these Federal programs are having the effect that we hope they are. I would hope that we get smarter rather than dumber as we go along.

Dr. Hackett: I would like to thank all of you who have attended this workshop conference. It is quite obvious that there is a need to incite the interest of more communities in the State. I imagine the problem is much the same nationally. I also wish to thank the gentlemen who agreed to put themselves on the spot and stimulate the discussion during this general session. We have had two hours of rather progressive discussion. I wish to remind you again that we do intend to compile the information and

discussions that have been generated here, to publish it in a suitable form, and to distribute it widely. It appears that this conference has demonstrated the need for more activity of this type because a large number of communities are not well enough aware of their responsibilities, either morally or legally. Even with rather good efforts at attempting to communicate with communities, there seems to be a definite problem of apathy. I hope it doesn't take local disasters to stimulate action. I would like to bring this conference to a close with a word of gratitude to all of you for participating so actively. Thank you very much.

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