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REPORT TO THE CONGRESS



National Attempts To Reduce Losses From Floods By Planning For And Controlling The Uses Of Flood-Prone Lands

Multiagency

**BY THE COMPTROLLER GENERAL
OF THE UNITED STATES**

RED-75-327

MARCH 7, 1975

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This is our report on national attempts to reduce losses from floods by planning for and controlling the uses of flood-prone lands.

We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director,
1, 2 Office of Management and Budget; the Secretaries of Defense; 5
2 the Army; the Air Force; the Navy; Agriculture; Health, Edu- 42
5, 6 cation, and Welfare; and Housing and Urban Development; the 22, 23
7, 8 Administrators of General Services and Veterans Affairs; and 17, 16
9 the Chairmen of the Tennessee Valley Authority and the Water 108,
Resources Council. 20

James B. Stacks

Comptroller General
of the United States

3

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ABBREVIATIONS

DOD	Department of Defense
FIA	Federal Insurance Administration
FmHA	Farmers Home Administration, Department of Agriculture
GAO	General Accounting Office
GSA	General Services Administration
HEW	Department of Health, Education, and Welfare
HUD	Department of Housing and Urban Development
OMB	Office of Management and Budget
SCS	Soil Conservation Service, Department of Agriculture
TVA	Tennessee Valley Authority
VA	Veterans Administration
WRC	Water Resources Council

GLOSSARY

Flood	An overflow of water on lands not normally covered by water, which 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.
Flood Frequency	A statistical expression of the probability of recurrence for a flood of a given magnitude. For example, a 100-year flood has a magnitude that may be equaled or exceeded once every hundred years, on the average; such a flood has a 1-percent chance of being equaled or exceeded in any given year.
Flood Hazard	The risk to life or damage to property from flooding.
Flood Hazard Analyses Report	A report prepared by the Soil Conservation Service, U.S. Department of Agriculture, on the flood hazard in a given area.
Flood Insurance Study Report	A report prepared for the Federal Insurance Administration (FIA), Department of Housing and Urban Development, on the flood hazard in a given area. These reports, prepared by any one of several Federal, State, or regional agencies--primarily the Corps of Engineers--or by engineering consultants, under contract with FIA, are used to estimate damages over a period of years and to determine actuarial rates for the Federal flood insurance program administered by FIA.
Flood Plain	The areas adjoining a river, stream, watercourse, ocean, lake, or other body of standing water that have been or may be covered by floodwater.

Flood Plain Information Report	A report prepared by the Corps of Engineers on the flood hazard in a given area.
Flood Plain Management	A program intended to lessen the damaging effects of floods and to make effective use of related water and land resources within the flood plain. It attempts to balance the use of flood plains with potential losses. Some available techniques are controlling land use in flood plains, flood proofing buildings in the flood plain, establishing flood-warning and evacuation systems, and using structural measures.
Flood Proofing	A combination of structural changes and adjustments to new or existing structures primarily to reduce or eliminate flood damages. Some flood-proofing techniques are using landfill to raise the site for a new building, placing a new building on stilts and using the ground level for parking, adding flood shields for windows and doors, and installing sump pumps.
Floodway	That section of a flood plain which is required to convey a selected flood flow without substantially increasing flood heights.
Intermediate Regional Flood or 100-Year Flood	A term used by the Corps of Engineers to designate a flood having an average frequency occurrence on the order of once every 100 years, although it may occur in any year.
Nonstructural Measures	Any measure, other than structural, designed to reduce flood damage and damage potential.
Standard Project Flood	A term used by the Corps of Engineers to designate a flood resulting from the most severe combination of meteorological and hydrological conditions that are considered

reasonably characteristic of the area, excluding extremely rare combinations. Peak discharges for these floods are generally about 40 to 60 percent of the probable maximum floods for the same areas.

Structural
Measures

Flood control projects designed to lower flood heights or provide barriers against flood waters.

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

NATIONAL ATTEMPTS TO
REDUCE LOSSES FROM FLOODS BY
PLANNING FOR AND CONTROLLING
THE USES OF FLOOD-PRONE LANDS
Multiagency

D I G E S T

WHY THE REVIEW WAS MADE

The Federal Government has invested about \$9 billion in flood protection works; however, since the adoption of a national flood control policy in 1936, annual losses from floods have increased steadily and exceed an estimated \$1 billion annually.

In 1966 the Task Force on Federal Flood Control Policy concluded that through planning and by controlling and regulating the uses of flood-prone lands, disastrous flood losses could be largely curtailed.

The task force--established by the President--proposed a unified national program for reducing losses. The President then directed that Federal agencies provide leadership for States, local governments, and others in reducing flood loss potential.

GAO made this review to inform the Congress about the effectiveness of the unified program.

GAO's work covered 11 Federal agencies, 6 States--Missouri, Nebraska, North Carolina, Tennessee, Texas, Virginia--and 44 local governments in those States. (See app. I.)

FINDINGS AND CONCLUSIONS

There has been little progress toward curtailing disastrous flood losses by planning for and controlling the uses of flood-prone lands. Development of such lands has continued, making the program's objective more difficult to achieve. (See p. 42.)

Federal agencies did not evaluate flood hazards adequately

In 1966 the President directed Federal agencies to evaluate flood hazards in their (1) construction and disposal programs and (2) grant, loan, and mortgage insurance programs involving public and private facilities.

He directed the agencies to take such actions as precluding hazardous use of flood plains, applying flood-proofing measures to existing facilities, attaching use restrictions when selling flood-prone Federal properties, and withholding Federal flood-prone properties from disposal. (See p. 8.)

In the Department of Housing and Urban Development, Veterans Administration, and Farmers

Home Administration programs for financing and insuring new and existing houses, the Federal agencies had not adequately evaluated the possible effects of flood hazards for one or more of the following reasons. Policies and procedures (1) had not been established for evaluating hazards for many programs, (2) frequently failed to identify flood frequency criteria, (3) were inconsistent for comparable programs, and (4) had not been adequately implemented.

The General Services Administration, Housing and Urban Development, and Veterans Administration programs for disposing of property likewise had not provided adequate evaluations of flood hazards. (See p. 21.)

Housing and Urban Development did not take adequate action to deal with the flood hazard on 32 of 40 grant, loan, and mortgage insurance projects involving new construction located in or near 100-year flood plains.

In one case, Housing and Urban Development gave preliminary approval in June 1972 for mortgage insurance of \$690,000 on a 60-unit multifamily project in Texas. After GAO discussed the project with Housing and Urban Development officials, they obtained information from the Corps of Engineers which showed that a 100-year flood would cover the first floor of the units with up to 4 feet of water. Housing and Urban Development subsequently withdrew its approval. (See pp. 13 and 14.)

When Federal agencies do not evaluate a flood hazard adequately, they not only endanger the Federal investment but

- subject owners of property to potential personal hardships,
- encourage unwise use and development of flood-prone areas which may be used to justify the construction of flood control projects that would not be necessary if such use and development had not occurred, and
- increase the potential for expenditure of Federal funds for disaster relief. (See p. 11.)

Need for Federal agencies to place greater emphasis on providing technical assistance

The Corps of Engineers, the Soil Conservation Service of the Department of Agriculture, and the Tennessee Valley Authority are responsible for providing localities with information on the scope and nature of flood hazards (flood plain information reports) and technical expertise on how to use this information needed for planning and regulating the use of flood-prone lands.

The Corps of Engineers and the Soil Conservation Service have made limited progress in providing this assistance because of insufficient funding.

The Federal Insurance Administration of Housing and Urban

Development has stated that there are about 21,600 flood-prone communities. As of December 31, 1974, Federal agencies had provided the essential information on the scope and nature of flood hazards to about 3,300 communities. (See pp. 25, 26, 32, and 33.)

The Corps' flood plain information reports are voluminous, containing considerable historical background data. Sometimes, the Corps prepared shorter and less costly versions which appeared to provide the essential data on the flood hazard but did not include historical background. Some of the Soil Conservation Service reports were similar to the traditional Corps reports.

Preparation of the shorter version of the reports would permit the preparation of more reports within available resources. (See pp. 28 and 32.)

The Tennessee Valley Authority has aggressively provided assistance to localities and has provided flood information to most of the localities with identified serious flood hazards in the Tennessee River Basin. (See p. 29.)

Need for better monitoring and leadership for Federal flood control efforts

In 1966 the President directed the Office of Management and Budget to monitor implementation of task force recommendations. However, since 1970 this agency's efforts have been

limited to spot checks of budget requests to determine whether agencies were building in flood plains. The Office of Management and Budget should actively monitor the actions of the agencies. (See p. 38.)

The Office of Management and Budget assigned several major task force recommendations to the Water Resources Council. The Council assumed a leadership role because some of the recommendations called for developing uniform guidelines and standards to aid Federal agencies in evaluating flood hazards. It took the Council many years to accomplish some of the recommendations while others remain still unaccomplished. The Council must be more effective in implementing its part of the unified national program. (See pp. 39 and 40.)

Actions by State and local governments to minimize flood losses

Reduction of flood losses depends upon cooperative Federal, State, and local government efforts.

Of the six States GAO visited, two had enacted statewide flood plain legislation, one had provided more stringent building codes for flood-prone areas, and the other three had not enacted legislation. (See p. 43.)

Many localities had not requested Federal assistance to identify flood hazards and the techniques to reduce flood losses. In some cases where

Federal assistance was obtained, there had been a lack of action to enact State or local land use ordinances that would minimize the effects of flooding. (See p. 44.)

Localities cited these reasons, among others, for not taking action:

- Restricting the use of privately owned land was unpopular.
- Regulating development would hinder the economic growth of the area.
- Lack of awareness of available Federal assistance or of the requirements placed upon them if assistance was requested. (See p. 45.)

Flood Disaster Protection Act of 1973

The National Flood Insurance Program administered by the Federal Insurance Administration allows property owners to buy insurance for protection against flood losses at federally subsidized rates. For property owners to be eligible for such insurance, the localities must adopt and enforce land use and control measures.

The Flood Disaster Protection Act of 1973 requires that localities with special flood hazards participate in the National Flood Insurance Program in order for Federal agencies to approve financial assist-

ance for acquisition or construction of property in the locality after July 1, 1975. (See pp. 3 and 7.)

Flood insurance reports, which differ somewhat from flood plain information reports, are used to estimate actual and potential flood damages and to determine actuarial rates for the flood insurance program. These reports are prepared by various agencies, including the Corps, the Tennessee Valley Authority, and the Soil Conservation Service. (See p. 33.)

GAO believes that the act should provide localities with greater incentives to regulate the development of flood-prone lands. (See p. 47.)

RECOMMENDATIONS OR SUGGESTIONS

The Secretaries of Agriculture and Housing and Urban Development and the Administrators of General Services Administration and Veterans Administration should establish requirements that their field offices evaluate flood hazards for their construction, financing, and disposal programs, including both new and existing properties. These requirements should include the 100-year flood frequency criteria established by the Water Resources Council. GAO also recommends that the agencies establish monitoring systems to insure compliance with the requirements. (See p. 22.)

The Secretaries of Agriculture and the Army should

--allocate additional resources to technical assistance efforts to help State and local governments achieve the objectives of the national program for reducing flood losses and give priority to assisting the Federal Insurance Administration in providing the information required under the National Flood Insurance Program and

--require preparation of shorter versions of the flood plain information reports. (See p. 35.)

The Secretary of the Army should also

--establish procedures for systematically informing localities of assistance available and

--establish more effective procedures for insuring that the results of flood information studies are used effectively. (See p. 35.)

The Director of the Office of Management and Budget should more effectively monitor actions of Federal agencies in considering flood hazards in their programs and in providing technical assistance to State and local governments. The Director of the Water Resources Council should take action to more effectively fulfill its responsibilities. (See p. 41.)

AGENCY ACTIONS AND UNRESOLVED ISSUES

The agencies concerned generally agreed with GAO's conclusions and recommendations and indicated that corrective action would be taken. (See pp. 22, 35, and 41.) While the Departments of Agriculture and the Army indicated that additional funding would be sought for providing assistance to communities, the increase in the number of studies will be minimal. (See pp. 35 and 36.)

GAO asked the Office of Management and Budget for comments on this report but received no response. However, an official told GAO that the information in the report would be used in reviewing the agencies' budget and program requests. (See p. 41.)

MATTERS FOR CONSIDERATION BY THE CONGRESS

In view of the limited progress being made in providing needed technical assistance to localities, GAO recommends that the Congress require that the Corps of Engineers and the Soil Conservation Service budget submissions include information on plans, funding projections, and time estimates for completing needed technical assistance projects. Such information would provide a foundation for the Congress to set meaningful goals and funding levels for completing such projects. (See p. 36.)



CHAPTER 1

INTRODUCTION

Inland and coastal waters have always been a source of well-being for the people of this country. The relatively flat areas and lowlands adjoining the water--flood plains-- have been developed because of the value of the water transportation, power, and lower construction cost afforded by the level terrain. Additionally, many people desiring to live near the water have constructed residences in the flood plains.

These flood plains have also been a source of hardship. Since the adoption of a national flood control policy in 1936, the Federal Government has invested about \$9 billion in flood protection works, but annual losses from floods continue to increase. Average annual flood losses exceed \$1 billion. A study completed by the Water Resources Council (WRC)¹ in 1968 predicted that yearly national flood losses could be as high as \$3.5 billion by the year 2000. Beyond the dollar losses, the toll in personal hardship and loss of life is incalculable. In 1972 Tropical Storm Agnes caused 122 deaths and estimated property losses exceeding \$3.5 billion. More than \$3 billion in Federal loans and grants were provided for flood losses following this storm.

Floods occur when water flowing in a well-defined channel exceeds its banks or when a body of water, such as an ocean or bay, experiences high tides resulting from severe storms. Flood plains are a natural reservoir and

¹WRC consists of the Secretaries of Interior; Agriculture; the Army; Health, Education, and Welfare; and Transportation; and the Chairman, Federal Power Commission. Its purpose is to encourage the conservation, development, and utilization of water and related land resources of the United States on a comprehensive and coordinated basis.

temporary channel for the excess water. Typically, a river uses some portion of its flood plain about once in 2 to 3 years.

Floods are commonly designated by the frequency with which they may statistically be expected to occur. For example, a 100-year flood would be of a magnitude (extent of area covered by a flood) that would have a 1-percent chance of occurring in any given year, or once every 100 years. Nature, however, does not always follow statistical probability. For example, one eastern city has experienced three floods since 1969--all exceeding the previously predicted 100-year flood level.

Historically, the primary method to reduce flood damage has been through structural measures such as dams, reservoirs, dikes, levees, channel improvements, and watershed treatment. In the past decade, however, greater emphasis has been placed on planning and regulating the use of flood plains to curtail flood damages.

There are several ways of regulating the use of flood plains. For example, to avoid flood damage from a 100-year flood level, one of the following techniques could be used

- eliminate construction in the 100-year flood area;
- restrict land use to functions, such as recreation and farming, that will not be severely damaged by floods;
- require the lowest level where water can enter a facility to be above the 100-year flood level; or
- require other flood prevention techniques, such as flood proofing or diking.

The illustration on page 4 shows a flood plain area and examples of how such an area may be used. The photographs on pages 5 and 6 illustrate the effects of unregulated use of flood-prone land.

LEGISLATIVE HISTORY

The Federal Government did not specifically sponsor flood control projects until 1917 when the Congress passed the first Flood Control Act (33 U.S.C. 701-703). This act appropriated Federal funds specifically for flood control on the Mississippi and Sacramento Rivers.

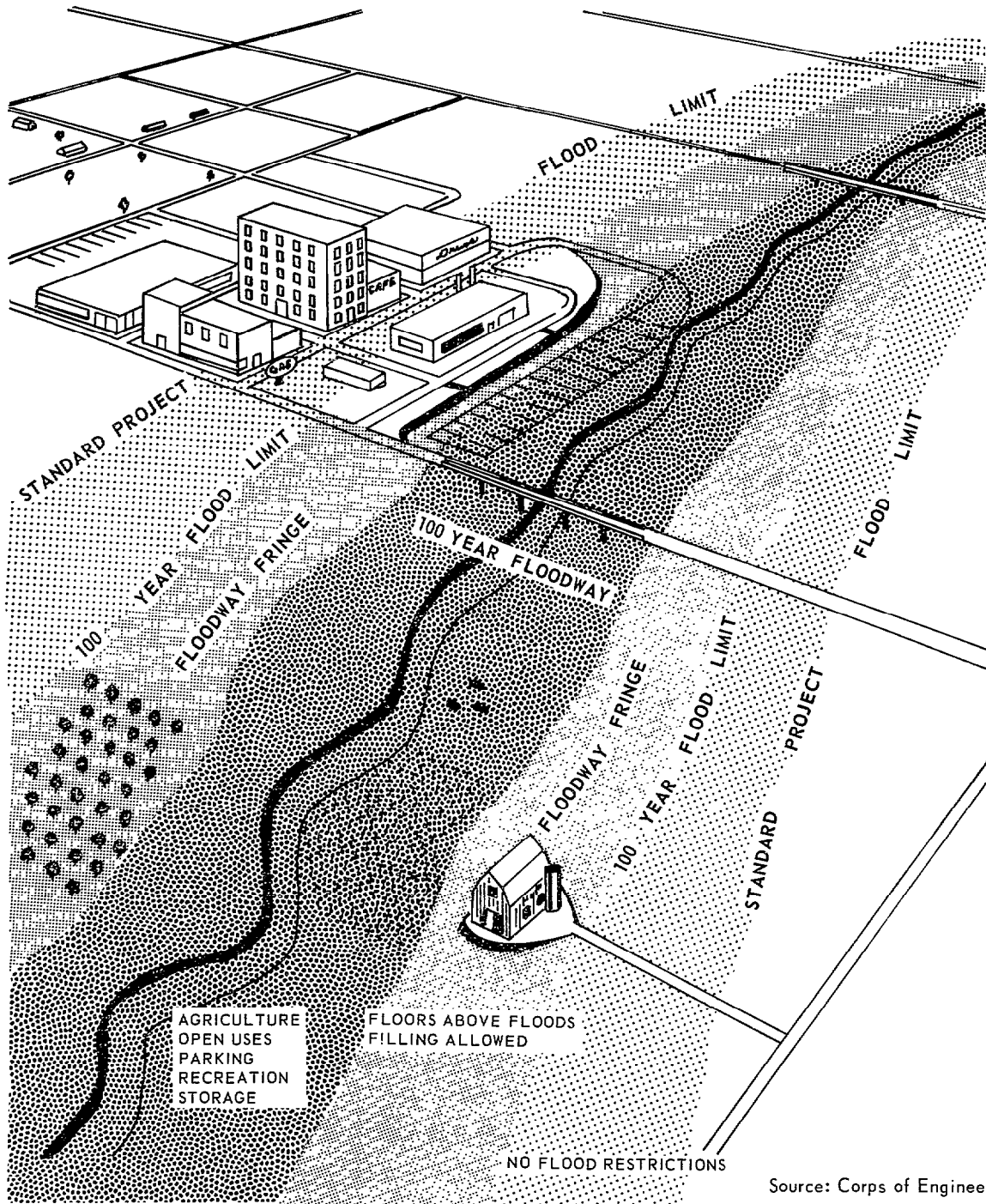
The Flood Control Act of 1936 (33 U.S.C. 701) recognized the nationwide Federal responsibility for flood control on navigable rivers and their tributaries.

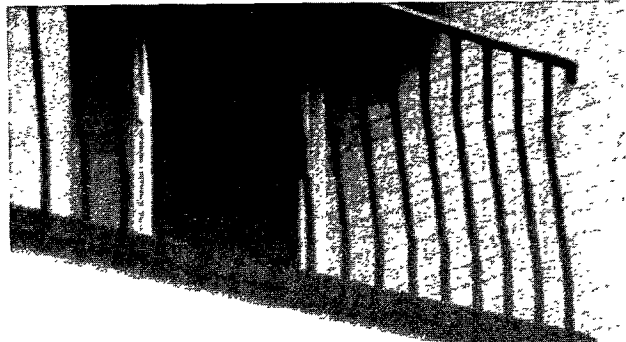
Because of the rapid development of flood plains and the Government's desire to reduce flood losses, the Flood Control Act of 1960 (33 U.S.C. 709a) was intended to begin a new trend in flood control. This act stressed the need for flood hazard information and engineering advice to guide State and local governments in planning and regulating the use of flood-prone lands. The act directed the Corps of Engineers to provide information and engineering assistance to these governments upon request.

In 1968 the Congress enacted the National Flood Insurance Act (42 U.S.C. 4001) which established a program to provide defense against flood losses. It allows owners of property located in designated flood-prone areas to buy federally subsidized flood-loss insurance at reasonable rates. For property owners to be eligible for such insurance, the localities must adopt and enforce land use and control measures to reduce the probability and severity of flood damage. The program is administered by the Federal Insurance Administration (FIA), Department of Housing and Urban Development (HUD). The program's administration was the subject of a GAO report "Actions Needed to Provide Greater Insurance Protection to Flood Prone Communities" (B-178737, July 19, 1973).

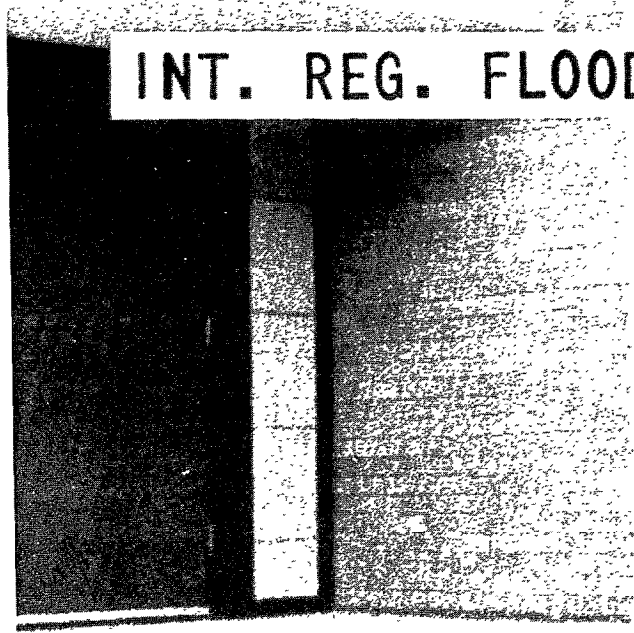
FLOOD PLAIN REGULATIONS

TO ENCOURAGE WISE USE AND AVOID FLOOD DAMAGE





STD. PROJ. FLOOD

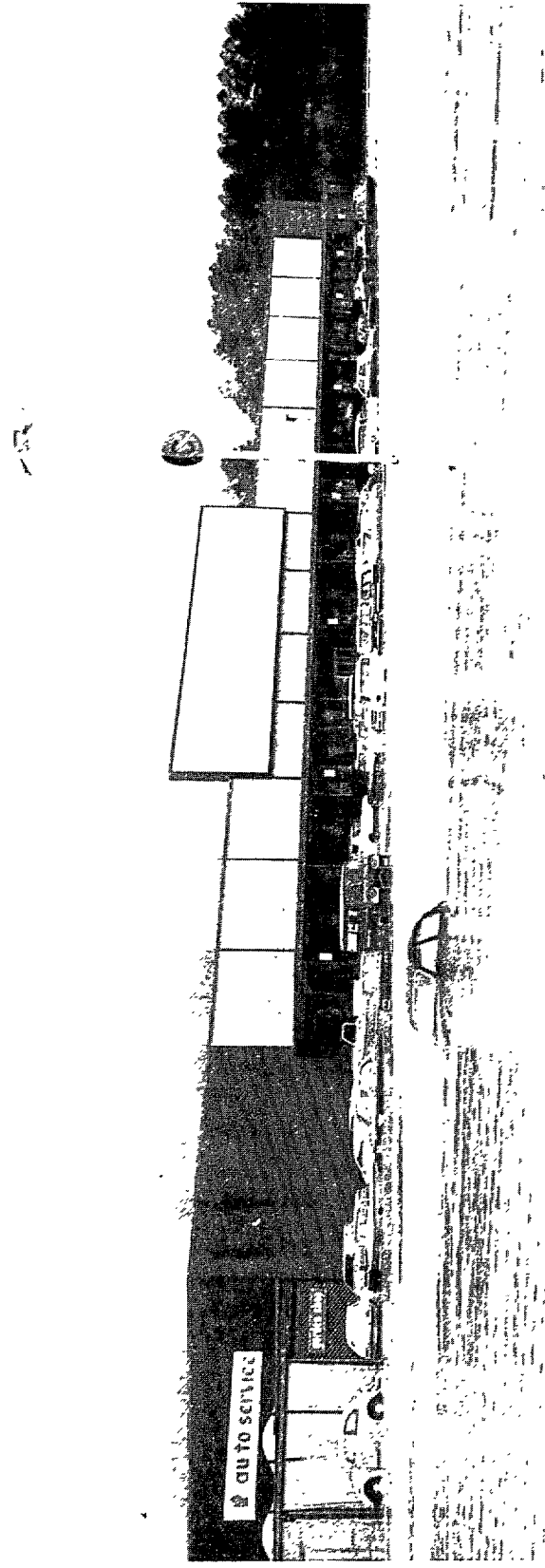


INT. REG. FLOOD



SOURCE: CORPS OF ENGINEERS

**FEDERALLY ASSISTED HOUSING PROJECT FOR THE ELDERLY
IN MISSOURI SHOWING PROJECTED FLOOD ELEVATIONS FOR
INTERMEDIATE REGIONAL FLOOD AND STANDARD PROJECT FLOOD**



SOURCE: CORPS OF ENGINEERS
DISCOUNT DEPARTMENT STORE IN NORTH CAROLINA SHOWING
EFFECT OF A FLOOD OF AN 8- TO 10-YEAR FREQUENCY

In 1973 the Congress enacted the Flood Disaster Protection Act of 1973 (87 Stat. 975), which expanded the flood insurance program to

- substantially increase the limits of coverage authorized under the national flood insurance program;
- provide for the expeditious identification of, and dissemination of information concerning, flood-prone areas;
- require States and local communities, as a condition of future Federal financial assistance for acquisition or construction of property after July 1, 1975, to participate in the flood insurance program and to adopt adequate flood plain ordinances with effective enforcement provisions consistent with Federal standards to reduce or avoid future flood losses; and
- starting 60 days after enactment, require purchase of flood insurance by property owners who are being assisted by Federal programs or by federally supervised, regulated, or insured agencies or institutions in the acquisition or improvement of land or facilities located in flood hazard areas.

EXECUTIVE ACTIVITY

The Task Force on Federal Flood Control Policy, established by the President to consider ways of reducing flood losses, issued its report entitled "A Unified National Program for Managing Flood Losses" in August 1966. The task force concluded that the Nation needed a broader and more unified national program to manage flood losses. It noted that structural measures had helped, but additional measures directed to land use planning were required to promote sound and economic development of the flood plains.

The task force made 16 recommendations stressing the need for actions to

- improve knowledge about the flood plain,
- coordinate and plan for flood plain development,
- provide technical information and assistance to managers of flood plain property,
- move toward a practical national flood insurance program (see pp. 3 and 7), and
- adjust Federal flood control policy to sound criteria and changing needs.

In transmitting the task force report to the Congress in August 1966, the President emphasized that Federal activity in flood control would continue but that a unified program's success in controlling flood loss rested upon State and local governments and upon property owners in hazard areas. The President stated that intelligent planning for, and State and local regulation of, the use of lands exposed to flood hazard were the keys to reducing flood problems.

Concurrent with transmitting the report to the Congress, the President issued Executive Order 11296 directing Federal agencies to provide leadership in preventing uneconomic use and development of flood plains and reducing flood losses. The Executive order provided that:

"(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.

"(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."

The agencies were also directed to issue procedures and regulations for implementing a unified program to reduce flood losses.

The President gave the Bureau of the Budget (now Office of Management and Budget (OMB)) responsibility for coordinating and monitoring Federal efforts to reduce flood losses. (See ch. 4.)

SCOPE OF REVIEW

Our review was concerned with the progress being made in implementing the unified national program for reducing flood losses.

We reviewed the applicable legislation and administrative requirements and the policies, procedures, and activities of Federal agencies assigned major responsibilities for implementing the program.

The Federal agencies covered by our review were the Departments of Health, Education, and Welfare (HEW); HUD; the Air Force; and the Navy; the Corps of Engineers, Department of the Army; the Farmers Home Administration (FmHA) and the Soil Conservation Service (SCS), Department of Agriculture; OMB; WRC; the General Services Administration (GSA); the Veterans Administration (VA); and the Tennessee Valley Authority (TVA). Each agency was given an opportunity to comment on our report, and their comments have been recognized in the report.

We also reviewed the efforts of six States--Missouri, Nebraska, North Carolina, Tennessee, Texas, and Virginia--and 44 local governments to establish programs to reduce flood losses. We discussed with State and local officials the reasons they had or had not established programs. The State agencies were given an opportunity to comment on the material presented in chapter 5, and their comments have been recognized in the report.

The locations where our review was made are listed in appendix I.

CHAPTER 2

FEDERAL AGENCIES DID NOT ADEQUATELY EVALUATE FLOOD HAZARDS IN THEIR PROGRAMS

In August 1966 the President directed Federal agencies to provide leadership in preventing uneconomic uses of flood plains and in reducing flood losses. (See p. 8.) The agencies are involved in several programs which may affect the use of flood plains. These programs include (1) constructing Federal facilities, (2) awarding grants and loans for public and private facilities, (3) providing mortgage insurance for financing of private facilities, and (4) selling or otherwise disposing of Federal properties.

In the HUD, VA, and FmHA programs for financing and insuring new and existing houses and the HUD, VA, and GSA programs for disposing of property, the agencies had not adequately evaluated the possible effects of flood hazards.

We found that

- some agencies had not established policies and procedures for evaluating flood hazards for all their programs,
- some of the established policies and procedures were inconsistent for comparable programs,
- some agencies had not identified flood frequency criteria in their policies and procedures, and
- some agencies had not adequately implemented the policies and procedures which were established.

When Federal agencies do not adequately evaluate the flood hazard, they not only endanger the Federal investment but

- subject property owners to potential personal hardships;

- encourage unwise use and development of flood-prone areas, which may be used to justify the construction of flood control projects that would not be necessary if such use and development had not occurred; and
- increase the potential for the expenditure of Federal funds for disaster relief.

In September 1969 WRC issued proposed guidelines providing that Federal agencies use a 100-year flood frequency in evaluating flood hazards. The guidelines were finalized in May 1972.

We reviewed selected federally funded or insured projects located in or near 100-year flood plains that were approved after January 1, 1970. We determined whether the flood hazard was evaluated and, if so, whether appropriate measures, such as requiring the lowest level (where water can enter the facility) to be above the 100-year flood level or requiring other flood prevention techniques, were taken to minimize the flood hazard.

Details of our findings, by agency, follow.

HUD

HUD (1) awards grants and loans for such programs as urban development, low-rent housing, and college housing, (2) insures mortgages and subsidizes housing construction and rental, and (3) disposes of residences on which mortgages are foreclosed.

HUD had not issued guidelines for evaluating flood hazards in its property disposal program. Guidelines for the other programs were inconsistent and incomplete in identifying the flood frequency criteria to be used.

We found that HUD field activities had not properly evaluated the flood hazard because (1) HUD had not issued

adequate guidelines and (2) where guidelines had been issued they had not been fully implemented.

New construction

In May 1967 HUD directed all organizational units to evaluate flood hazards in grant, loan, and mortgage insurance programs involving new construction. HUD's policy was that HUD should take whatever action might be necessary to minimize the exposure of such construction to potential flood damage and, to the extent practicable, to preclude uneconomic, hazardous, or unnecessary use of flood plains. The policy also stated that no project for which Federal assistance was requested should be located as to be unduly exposed to flood hazard except where the social and economic gains from such locations clearly outweighed the objectives of Executive Order 11296. In areas where flood studies are not locally available, HUD units were directed to obtain data from other HUD offices and other Federal and State agencies.

The flood frequency specified for some programs was the 100-year flood level while for other programs it was generalized, as for example, to be free of water at all times. The results of our review of 40 actions are shown in the following table.

<u>Results</u>	<u>Total</u>	<u>Subdivision</u>	<u>Multi-family dwellings</u>	<u>Single-family dwellings</u>
Flood hazard evaluated and appropriate action taken	8	3	5	-
Flood hazard evaluated but insufficient action	9	-	1	8
No evaluation of flood hazard	<u>23</u>	<u>1</u>	<u>3</u>	<u>19</u>
Total	<u>40</u>	<u>4</u>	<u>9</u>	<u>27</u>

For example, in January 1970 HUD approved a multifamily complex--subsequently constructed--in Texas for mortgage insurance of \$1.2 million. Although a Corps flood plain information report issued in March 1969 showed that part of the development was in the 100-year flood plain, HUD did not adequately evaluate this information. Based on information in the Corps' report for the area and the ground- and floor-level elevation in the grading plans for the complex, 3 of the 10 apartment buildings would have their first floors covered by up to 2 feet of water in a 100-year flood.

In another case, HUD gave preliminary approval in June 1972 for mortgage insurance totaling \$690,000 on a 60-unit multifamily project in Texas. The HUD appraiser certified that the project was not subject to flooding. We discussed this project with HUD officials, and they requested the Corps to provide technical information on the flood hazard. The information showed that a 100-year flood would cover the first floor of the units with up to 4 feet of water. HUD withdrew project approval.

An example of a case in which HUD evaluated the flood hazard and acted to minimize damages involved a subdivision in North Carolina which was approved for mortgage insurance in June 1973. HUD obtained information from the Corps on the projected elevation of a 100-year flood in the area, which was 32 feet, mean sea level. As a condition of approval, HUD required that the minimum elevations in the subdivision be 32 feet, mean sea level, for finish grades and 33 feet, mean sea level, for finished first floors.

Existing houses and disposals

HUD guidance for evaluating flood hazards in insuring mortgages for existing structures was issued in December 1972. This guidance required that the mortgagor and mortgagee obtain and maintain, where available, flood insurance under the National Flood Insurance Program. (See pp. 3 and 7.) HUD had not issued any guidance on evaluating flood hazards in disposing of foreclosed properties.

We reviewed the files for 1 existing house and for disposal actions on 13 houses and found no evidence of flood hazard evaluation. HUD field officials said they did not evaluate the flood hazard on the disposal cases because they were unaware of any requirement to do so. One official stated that he would not tell a property buyer of a flood hazard because it would make the property more difficult to sell. In this connection, Executive Order 11296 enabled Federal agencies to make appropriate allowances for any estimated loss in sales price resulting from the incorporation of use restrictions on properties.

For example, in April 1972 HUD sold a single-family dwelling in North Carolina to a private citizen. An available Corps flood plain information report indicated the house was in the 100-year flood plain. HUD did not evaluate the flood hazard. In another case, HUD in March 1973 sold and reinsured a mortgage for \$10,000 on a single-family dwelling located in Missouri. HUD did not evaluate the flood hazard although a Corps flood plain information report issued in 1970 showed that the dwelling was in the 100-year flood plain.

VA

VA constructs hospitals and related support facilities, finances single-family dwellings by loans and mortgage insurance, and disposes of dwellings acquired through foreclosure.

VA Headquarters approves construction of hospitals and related support facilities. For these structures, VA guidelines required that the 100-year flood frequency be used in evaluating flood hazards. We reviewed six hospital construction projects and found that none were located in a 100-year flood plain.

Review and approval of sites for single-family dwellings were done primarily by field offices. Neither VA Headquarters nor the field offices had issued adequate guidance for evaluating the flood hazard. Although field office officials

told us that they evaluated flood hazards, we found that, generally, hazards were not adequately evaluated.

New construction and existing structures

In September 1966 VA issued a policy statement requiring that flood hazards be evaluated before financing new construction and existing structures. The policy stated that structures be free of hazards--including floods--which might affect the occupants' health and safety, impair structural soundness, or impair the customary use and enjoyment of the property by typical occupants. The policy also stated that the Corps provided VA with flood plain information reports and directed VA field offices to contact the Corps for advice when reports were unavailable. The policy, however, did not give a specific flood frequency to be used in the evaluation.

Field officials told us that they used a 100-year flood level. They said that this information was obtained from technical information on flood hazards provided by Federal agencies and from their contract appraisers. On February 22, 1974, VA issued instructions requiring home buyers to obtain flood insurance if the area has been designated by HUD as having special flood hazards and if flood insurance is available.

We reviewed new construction projects involving 6 subdivisions and 9 individual houses, and 26 existing houses approved for financing by 5 VA field offices. VA had adequately evaluated flood hazards for only three subdivisions and one new house. Following is one example where VA adequately evaluated the flood hazard and one where it did not.

In November 1972 a VA field office approved a guarantee for an \$18,100 mortgage on a new house in North Carolina. Before guaranteeing the mortgage, VA determined that the floor elevation of the house was higher than the elevation of a 100-year flood as obtained from the Corps.

In another case, a VA field office in October 1972 guaranteed a mortgage for \$7,080 on an existing house in Missouri. VA did not evaluate the flood hazard for this property. In the spring of 1973, a flood of less than a 100-year level inundated the house to within 9 inches of the rooftop.

Disposal of properties

VA had not issued guidelines on evaluating flood hazards in the disposal of properties acquired by foreclosures. Field office officials said that they made no attempt to use available information on flood hazards because this was not required, except for dwellings in areas where flood insurance is available. In these areas, VA required the buyer to obtain flood insurance. As of January 24, 1975, only 5,715 of the about 21,600 flood-prone areas identified by HUD were participating in the flood insurance program. The number of communities participating in the program should increase as a result of the passage of the Flood Disaster Protection Act of 1973 discussed on page 7.

We reviewed nine disposal actions in the 100-year flood plain and found that flood hazards had not been evaluated. For example, in March 1970 a VA field office sold a house in Nebraska for \$17,750 and provided a \$16,900 mortgage. Although VA files noted that the house had been damaged by a flood in 1964, VA sold it without restricting its use to minimize future flood damages--such as requiring flood proofing or prohibiting residential use. A VA field office official told us that the buyer was not notified of the flood hazard because the official had received no instructions to do so.

FmHA

FmHA awards grants for community services such as water and sewer programs, insures mortgages for new and existing rural housing, and disposes of properties acquired by foreclosure.

FmHA issued guidelines in June 1972 requiring that flood hazards be evaluated in the community services programs but not specifying the flood frequency. The community services water and sewer program guidelines stated that, insofar as practical, facilities will not be located in flood plains. The guidelines also stated that if it was necessary to locate facilities in a flood plain area, applicants were to evaluate the proposal from the standpoint of special design and additional initial and maintenance costs. State offices used flood frequencies ranging from 25 to 100 years. Officials in FmHA State offices said that in approving sites for sewage facilities they normally relied on State regulatory agencies to evaluate the flood hazards.

February 1973 guidelines issued for the rural housing program provided that no structure shall be located in the 100-year flood plain. The guidelines stated that delineation of flood plain areas could be obtained from agencies such as the Corps and SCS. They did not refer to financing of existing structures and disposing of properties.

We selected one subdivision, six new houses, and three existing houses located in the 100-year flood plain. Three existing houses and one new house were financed before the policy was issued in February 1973. FmHA had not adequately evaluated flood hazards for any of them. For example, in May 1973 FmHA approved five new houses in North Carolina for mortgage insurance averaging \$17,000 each. Even though available information indicated that these houses would be in a 100-year flood plain, FmHA did not evaluate the hazard.

GSA

GSA constructs Federal buildings and disposes of surplus Government property. We reviewed GSA's construction projects in five States and found that none were in the 100-year flood plain.

In December 1966 GSA issued a policy requiring that flood hazards be considered in construction projects. The policy stated that sites having a flood damage potential even with a flood protection structure should be eliminated from further consideration as far as practical. Where it is impractical to locate outside a flood plain, the site inspection report was required to include an evaluation and analysis of flood damage potential, including an estimate of additional costs to provide a flood protected structure. The policy provided that flood hazard information be obtained from the Corps or, in the case of projects in the Tennessee River basin, from TVA. The policy, however, did not provide a flood frequency criteria. One field office official said he did not use any specific criteria; others stated that they used the 100-year flood level or the historical high-water mark.

GSA issued a property disposal policy in March 1970 requiring that flood hazards be evaluated to minimize future Federal expenditures for relief and rehabilitation. The policy required that a 100-year frequency be used and that restrictions be placed on use of the property or that the property be withheld from sale when located in a flood plain. The policy stated that flood hazard information should be obtained from TVA for Tennessee River basin property and from the Corps for all other property.

GSA field offices varied in the way they evaluated flood hazards for disposals. Some offices maintained available technical information on flood plains to use in analyzing sites. Others occasionally requested specific information on particular sites from the Corps or TVA. At least one GSA office used contract appraisers to identify flood hazards even though the office did not provide the appraisers with available flood plain information.

We reviewed eight disposals located in the 100-year flood plain. GSA did not adequately evaluate the flood hazards for five disposals. For example, in 1974 GSA sold property in Virginia containing 21 structures for \$253,000. A flood plain information report issued in 1965 by the

Corps showed that the property was in the 100-year flood plain. In addition, the property had been flooded twice in recent years and was flooded while GSA was in the process of disposing of the property. Yet, GSA sold the property without any use restriction except that the buyer must comply with area zoning. This property is zoned for industrial use and the local government, before the sale, informed GSA that there was no restriction on development of the property for industrial use.

HEW

HEW awards grants to non-Federal activities for construction of various types of facilities such as hospitals and schools.

In November 1971 HEW issued a policy requiring project architect-engineers to identify the provisions incorporated in a project design to minimize possible flood damages, but the policy did not contain flood frequency criteria. In March 1973 HEW issued criteria specifying that a 100-year flood frequency be used and requiring architect-engineers to specifically show whether flood hazards were considered and the source of information used in the evaluation. The HEW policy provided that flood information be obtained from the Corps, except for projects in the Tennessee River basin where the information was to be obtained from TVA.

We reviewed 43 projects and identified 2 that were located in the 100-year flood plain. One project involved construction of a college library in Nebraska. The grant applicant obtained flood information from the Corps. The drawings approved by HEW note that the project is in a flood plain and specify a finish floor elevation higher than the 100-year flood elevation furnished by the Corps. The other project was approved before HEW issued its November 1971 policy. This project was located in Virginia and there was no indication in the project files that HEW evaluated the flood hazard.

DEPARTMENT OF DEFENSE

The Department of Defense (DOD) and its military services construct various types of facilities such as office buildings, hospitals, warehouses, and family housing.

We reviewed six construction projects located in 100-year flood plains and found that adequate consideration had been given to flood hazards in all the projects. In each case the finish floor elevation was higher than the 100-year flood level, as estimated by the Corps.

In March 1968 DOD issued general guidelines requiring that flood hazards be evaluated but not specifying the flood frequency level. DOD amended these guidelines in October 1972 to require that WRC's flood frequency guideline be used (100-year flood level). The guidelines stated that DOD, insofar as practicable, should preclude the uneconomic, hazardous, and unnecessary use of flood plains. With respect to those facilities which had been, or might be, subject to flood damage, DOD required that past and probable flood heights be conspicuously delineated. The guidelines also required that the annual submission of military construction programs by DOD components contain a statement indicating compliance with Executive Order 11296 regarding evaluation and consideration of flood hazards in the siting of facilities.

The implementing instructions issued by the Army, Navy, and Air Force did not comply with DOD instructions to use the WRC flood frequency guidelines. We found that the military services were using varying criteria. Officials at some of the installations we visited said they used criteria such as highest recorded flood level, judgment of project engineer, and architect-engineer's judgment.

CONCLUSIONS

We found that in HUD, VA, and FmHA programs for financing and insuring new and existing houses, and HUD, VA, and GSA programs for disposing of property, Federal agencies had

not assumed a leadership role--as directed by Executive Order 11296--and had not adequately evaluated flood hazards in administering their programs for one or more of the following reasons:

- Policies and procedures had not been established for evaluating hazards for many programs.
- The policies and procedures established frequently failed to identify flood frequency criteria.
- The established policies and procedures were inconsistent for comparable programs.
- The established policies and procedures had not been adequately implemented.

RECOMMENDATIONS

We recommend that the Secretaries of Agriculture and HUD and the Administrators of GSA and VA require their field offices to evaluate flood hazards for their construction, financing, and disposal programs, including both new and existing properties. These requirements should include the 100-year flood frequency criteria established by WRC. The requirements should also suggest types of actions to be taken when properties are located in 100-year flood plains, such as requiring that first floor elevations be above the elevation of the 100-year flood, not financing projects where the flood hazard is severe, notifying buyers of existing houses of known flood hazards, and restricting the use of property made available for disposition.

We recognize that adequate policies and procedures do not insure compliance. Therefore, we recommend that the agencies establish a monitoring system--such as requiring reports from field offices or having the agencies' internal review staff verify compliance--to help insure management compliance with requirements for considering flood hazards.

AGENCY COMMENTS

HUD

HUD advised us (see app. II) that its regulations and procedures had been strengthened to insure that policy and

its application were consistent. HUD stated that property disposition instructions had been issued and implementation was being monitored by regional real property officers. It also stated that minimum property standards now specifically require that floor elevations of all habitable space in new construction be above the 100-year flood level.

HUD said that it is providing its field offices with monthly updated inventories of communities in which flood hazards have been mapped. According to HUD, applications for mortgage insurance, property disposition actions, and other HUD program activities were being screened against the flood hazard maps to insure observance of Federal laws and regulations.

VA

VA agreed with our report. (See app. III.) It said it had adopted HUD criteria which required, among other things, that first floor elevations for new construction be free of water during a 100-year flood and that these requirements were recently distributed to all field stations. VA informed us that it will also issue instructions that the 100-year flood frequency level be used in evaluating flood hazards, along with guidelines to be used where the flood hazard is severe. VA said the flood hazards criteria would also be applied to disposals of property acquired through foreclosure.

VA told us that a monitoring system will be set up to insure that field stations comply with established criteria and guidelines.

FmHA

The Department of Agriculture agreed with our conclusions and recommendations and said that it would strengthen and accelerate its participation. (See app. IV.)

The Department also informed us that FmHA had recently issued additional guidance and criteria regarding facilities in flood-prone areas.

GSA

GSA agreed with our recommendations and stated that it was making a thorough review of existing rules, regulations, and procedures. (See app. V.) GSA also told us that it would establish a monitoring system to insure consistent implementation of established requirements.

HEW

HEW informed us that it had no specific comments.

DOD

The Department of the Army furnished us with comments on DOD activities discussed in the report. (See app. VI.) The Department stated that its criteria required that construction be at or above the Standard Project Flood level, which is more restrictive than the 100-year flood level. The Department believed that the additional cost of the more restrictive criteria was not large. The Department advised us that the Navy plans to emphasize, by letter, the requirements in the DOD manual that WRC flood frequency criteria be used. The Department also stated that the Air Force was publishing revised criteria and standards directing that WRC guidelines be used.

CHAPTER 3

NEED FOR FEDERAL AGENCIES TO PLACE GREATER EMPHASIS ON PROVIDING TECHNICAL ASSISTANCE

Adequate information on flood problems and technical expertise on how to use this information are essential in planning for and regulating the use of flood-prone land. The limited progress made by Federal agencies in providing such assistance to localities indicated a need to assign adequate resources to this function.

The three Federal agencies mainly responsible for providing technical assistance are the Corps, TVA, and SCS. The Corps has the primary responsibility, except in the Tennessee River basin where TVA has the responsibility. The SCS program, while similar to the Corps' was operating only in 28 States as of December 31, 1974. All requests for assistance from localities are processed through one designated State agency in each State. The State agencies forward the request to the Corps or to SCS.

The Flood Control Act of 1960 stressed the need for guidance in reducing flood losses by controlling development of flood plains. The President's task force reemphasized the need for this type of information for managers of flood plains. As discussed in chapter 1, various congressional and executive actions have authorized designated Federal agencies to provide technical information and assistance to Federal and non-Federal activities. The designated agencies have been directed to provide (1) flood plain studies which identify the scope and nature of flood hazards in localities and (2) technical services and guidance relating to the use of flood hazard data, flood plains, and flood prevention techniques.

According to FIA, as of January 24, 1975, there were about 21,600 communities containing one or more areas subject to a 100-year flood. As of December 31, 1974, Federal agencies--Corps, TVA, and SCS--had provided the essential

information on the scope and nature of flood hazards to about 3,300 communities. Yet, the Federal agencies had scheduled only about 210 flood plain studies for fiscal year 1974, indicating that at this rate it will be many years before the extent of the flood hazard nationwide is assessed.

CORPS

Because of a lack of resources, the Corps has made limited progress in fulfilling its responsibilities of providing information on the scope and nature of flood hazards and technical services and guidance relating to the use of flood hazard data.

The Flood Control Act of 1960 assigned the Corps primary responsibility for providing States and localities with information on areas subject to flooding, criteria for use of flood plains, and engineering advice on ways to reduce flood hazards. The services were to be provided upon request and were to aid in the use and regulation of flood plains.

Executive Order 11296 and recommendations of the task force further expanded the Corps' responsibilities. These responsibilities included (1) accelerating and expanding existing programs to collect, prepare, and disseminate information and provide advice on alternative methods of reducing flood losses and (2) providing flood hazard information to other Federal agencies involved in purchasing and disposing of property and subsidizing and insuring construction.

The fiscal year 1974 appropriation for the Corps' flood plain management services function was \$10.3 million, of which \$5.3 million was for preparing flood plain information reports, \$4.8 million was for technical services and guidance, and \$150 thousand was for guides, pamphlets, and supporting studies.

Identification of hazard
in flood-prone areas

The Corps generally has been responsive to requests from Federal agencies for flood information. On the other hand, the Corps has made limited progress since 1960 in responding to the needs of localities. Moreover, the Corps was not encouraging localities to request flood information studies because of the lack of resources assigned to the program. In this connection, some local officials told us that they had not applied for assistance because they were not aware of the services available. (See p. 46.)

There are about 18,000 localities that still need this information. Yet, the Corps' fiscal year 1975 budget request included funds to complete only 190 studies. A Corps Headquarters official told us that additional funds had not been requested for this program because, in his opinion, the field offices were not capable of performing a greater number of studies. He said that the main limitation was the Corps' manpower ceilings. He added that qualified personnel were available and could be hired if the ceilings were raised and more funds obtained.

The Corps and FIA identified about 90 private architect-engineer firms qualified to make flood plain studies. Most of the Corps district offices we visited were contracting some flood plain information work to architect-engineer firms. A Corps official told us that the Corps has been training architects-engineers to enable them to do more flood plain work. Increased use of these firms could be one way to get more studies done without increasing the Corps manpower ceiling.

An OMB official said that the Corps' program for providing flood information had been treated favorably and that funds for this program have continued to increase while funds for other Corps' programs have been reduced. He also said that the Corps was authorized to set priorities for using its resources and that the Corps would have to assign

a higher priority to make the flood plain information studies in a reasonable period.

Opportunity to increase
the number of flood studies

In view of the limits on the Corps' resources, we looked for alternative ways for the Corps to make more studies within the program's allocated resources. One alternative is discussed below.

The Corps flood plain information reports are voluminous and contain considerable data on the background of the locality and descriptions of past storms and floods. At the Corps field offices visited, the cost to prepare these reports averaged about \$21,000. Sometimes the Corps prepared a shorter report which appeared to provide the essential data on the flood hazard but did not include historical background. One district reported that these reports cost about 25 percent of the cost of a regular report.

In this connection, TVA increasingly in recent years has been preparing the shortened version of the traditional flood plain information report. These short reports were prepared in about one-half of the time and cost about one-third of the traditional report. A TVA official told us that TVA would probably not prepare any more traditional reports. This official as well as State and Corps' officials in Nebraska said that the short report contains the necessary information for a community to adopt flood plain regulations.

Assistance to local governments

Flood hazard information alone does not always convince local officials of the need to take action against the threat to life and property from flooding (see ch. 5). We believe the Corps must encourage and assist some localities in formulating flood hazard programs.

The Corps, upon request, provides technical services and guidance for interpreting basic data and preparing flood plain ordinances. Most Corps offices offered these services to the locality when the flood plain information report was presented.

While some followup contacts were made, most field office officials said they lacked the manpower to regularly contact localities after presentation of the reports to encourage them to take action on their flooding problems or to remind them of available Corps assistance.

TVA

TVA generally has been aggressive in pursuing its responsibilities in flood plain management.

Section 22 of the Tennessee Valley Authority Act of May 18, 1933, (16 U.S.C. 831) authorized TVA to make surveys and prepare general plans to aid in the proper use, conservation, and development of the natural resources of the Tennessee River basin and adjoining territory. In 1953 TVA initiated a flood plain management program to avert potential flood damages through proper land use planning and control by local governments. The program provides for a wide range of technical assistance to Federal, State, regional and local agencies, business and professional firms, and individuals. Executive Order 11296 expanded TVA's role to include providing flood hazard information to Federal agencies involved in purchasing and disposing of property and subsidizing and insuring construction in the Tennessee River basin.

Identification of hazard in flood-prone areas

Upon request, TVA makes studies to identify the flood hazard for Federal agencies and localities. TVA generally has been responsive to requests from Federal agencies. In addition, as of December 31, 1974, TVA completed flood hazard studies for 49 percent of the incorporated communities with identifiable flood hazards in the Tennessee River basin. In Tennessee, TVA had completed flood plain studies for 74 of the 153 incorporated communities within the Tennessee River basin which had identified flood problems. According

to TVA officials, all Tennessee localities in the basin with serious flood problems had requested flood hazard studies.

Assistance to local governments

TVA offered various technical services to localities to assist in reducing their potential flood losses, including

- assistance in preparing and administering flood plain regulations,
- technical and limited legal assistance if the regulations are challenged in court,
- assistance in preparing comprehensive flood damage prevention programs,
- provision of floodway maps and flood profile charts,
- interpretation of flood data,
- assistance in preparing plans for local redevelopment programs, where flood hazards must be considered,
- advice on flood-proofing structures, and
- assistance in establishing eligibility for the Federal flood insurance program.

These services were offered by TVA when it presented flood plain information reports to localities. TVA took an active role in encouraging localities to use these services by visits, telephone and written comments, and speeches before local civic and professional groups.

According to TVA, when its program began in 1953, no localities in the Tennessee Valley had flood plain regulations. Through December 1974 TVA had presented 79 of 95 requested flood plain information reports to Tennessee localities (including unincorporated communities and counties) and 63 localities, or 80 percent, had adopted flood plain regulations to reduce flood losses. Localities in other States served by TVA, including Alabama, North Carolina,

Virginia, Georgia, Kentucky, and Mississippi, had not responded as well to the need for flood plain regulations. In these States, only 28 of the 74 localities provided information, or 38 percent, had adopted regulations. According to TVA officials, Tennessee's higher success resulted from the State's more active role in reducing flood losses.

We found that TVA was more comprehensive than other Federal agencies in identifying ways to reduce flood losses. In the earlier years of its program, TVA placed primary emphasis on flood plain regulations and deemphasized flood control works as a partial solution for localized problems in smaller communities. In 1960 TVA broadened its approach to flood damage prevention by helping the twin cities of Bristol, Tennessee-Virginia to implement a comprehensive flood relief program.

TVA had provided flood plain information to Bristol in 1956 and recommended that steps be taken to regulate flood plain uses. After several attempts to get flood plain regulations implemented, TVA concluded that regulations could not be effective because substantial structures were already in the area required for passage of large floods and the major part of the central business district was subject to flooding. At TVA's suggestion, a local flood study committee was appointed jointly by the governing bodies of the two cities to prepare a comprehensive plan for flood damage prevention, using technical services provided by TVA engineers and by State planners. The committee's recommended program called for two flood detention reservoirs, channel improvements, flood proofing, and urban redevelopment, in addition to flood plain regulations. The program's major elements had been implemented as of late 1972.

The comprehensive approach followed at Bristol had a major impact on TVA's planning of local flood control projects. TVA has stated that it will not participate in the construction of flood control structures unless they are a part of an overall flood damage prevention program. TVA advised us that it also included land use restrictions in all of its land sales to prevent unwise development in flood-prone areas formerly owned by TVA.

We believe that TVA's greater success in getting localities to take action to reduce flood losses can be partially attributed to its comprehensive approach to providing flood relief.

SCS

SCS had made limited progress in providing flood information reports and technical assistance to localities.

In response to the task force report's recommendations and Executive Order 11296, SCS established a formal program in fiscal year 1970 to support the Corps by providing flood information studies and associated technical assistance to Federal agencies and localities. As of December 31, 1974, SCS had completed flood hazard analyses reports covering 50 communities.

The program was allocated \$683,000 during its first 3 years. This amount increased to \$740,000 for fiscal year 1973 and \$902,000 for fiscal year 1974. SCS predicted it would be doing 28 studies a year by the end of fiscal year 1978. SCS officials in the States we visited cited the low priority and resulting lack of resources assigned to the studies as the prime reason for limited progress.

The Department of Agriculture said that most SCS flood hazard analyses reports were similar to the shorter flood plain information reports prepared by the Corps. Some of the SCS reports, however, were similar to the traditional Corps reports. Use of the shorter report would permit SCS to provide more technical assistance within the resources assigned to the program. (See p. 28.)

FLOOD DISASTER PROTECTION ACT OF 1973

The National Flood Insurance Program administered by FIA (see pp. 3 and 7) allows property owners to buy insurance for protection against flood losses at federally subsidized rates. Communities must adopt and enforce land use and control measures for property owners to be eligible for such insurance. The Flood Disaster Protection Act of 1973 requires that communities participate in the insurance program in order for Federal agencies to approve financial

assistance for acquisition or construction of property in the community after July 1, 1975.

Communities cannot obtain full benefits until after completion of flood insurance studies to estimate actual and potential flood damages in an area and to determine the actuarial rates for the program. FIA does not make the studies; it contracts with other agencies to prepare studies and reports on a reimbursable basis. Although the Corps is the primary contractor, TVA and SCS also make studies for FIA.

The reports prepared for the flood insurance studies differ somewhat from the Corps, TVA, and SCS flood plain information reports, such as in the type of mapping used in the reports and the extent of narrative material presented. A Corps official told us that the Corps and FIA are working together to make the two types of reports comparable.

The GAO report on the National Flood Insurance Program (see p. 3) noted that many communities were not able to obtain full benefits because the required studies had not been made and that agencies making the studies could not handle the workload because of staffing limitations.

CONCLUSIONS

The need for more rational use of land subject to flooding has been generally recognized since at least 1960 when the Congress enacted the Flood Control Act of 1960. Localities cannot effectively regulate land use to reduce flood losses without adequate information on the scope and nature of the flood hazard and technical advice on how to use the information.

It has been estimated that about 21,600 communities have flood hazards. As of December 31, 1974, the Corps, TVA, and SCS have provided the essential information on the scope and nature of flood hazards to about 3,300 such localities. These agencies had scheduled about 210 studies during fiscal year 1974. As of January 24, 1975, 535 communities had been provided with flood insurance reports and were entitled to full benefits under the National Flood Insurance Program. Some of the communities which had received flood information reports had also received Corps, TVA, or SCS reports. It is

obvious, therefore, that at the present rate, it will be many years before all communities with flood hazards will receive the information needed to regulate the use of flood-prone lands.

The urgent need for flood hazard information was emphasized in the Flood Disaster Protection Act of 1973. The act requires communities with special flood hazards to participate in the National Flood Insurance Program in order for Federal agencies to approve financial assistance for acquisition or construction of property in the community after July 1, 1975. The act directs Federal agencies involved in the identification and delineation of flood hazards to give this function the highest practicable priority in the allocation of resources.

Even though the need has been identified and responsibilities assigned to Federal agencies, we found that, except for TVA, they had made limited progress in meeting their responsibilities primarily because of limited resources.

We believe that funds necessary to provide the needed information and assistance would be minor compared to the potential loss in property and life that could result from continued unrestricted use of flood-prone areas. Therefore, we believe that the Corps and SCS should place more emphasis on (1) providing needed information on the nature and scope of the flood problems particularly with respect to the information required under the National Flood Insurance Program, (2) encouraging localities to use their flood-prone lands more wisely, and (3) providing technical assistance to localities in developing plans and regulations for use of flood-prone lands.

We also believe that the Corps and SCS should consider preparing shorter versions of the traditional flood plain information reports as a way of performing more studies with the funds available.

RECOMMENDATIONS

We recommend that the Secretaries of the Army and of Agriculture

- allocate additional resources to technical assistance efforts to help State and local governments achieve the objectives of the national program for reducing flood losses and give priority to assisting FIA in providing the information required under the National Flood Insurance Program and
- require preparation of the shorter versions of the flood plain information reports.

We also recommend that the Secretary of the Army

- establish a systematic approach to informing localities of assistance available and
- establish more effective procedures for systematic followup to insure that the results of flood information studies are used effectively.

AGENCY COMMENTS

Corps

The Department of the Army agreed (see app. VI) that increased funds and manpower would improve the overall effectiveness of the flood plain management program. It noted that the Corps had increased its fiscal year 1975 budget request to \$11 million and that the authorized annual program funding had been increased to \$15 million. The amount appropriated for fiscal year 1974 was \$10 million and a Corps official told us, however, that the increase in funding would result in only a small increase in the number of flood plain studies during the year.

The Department said that there was sometimes a need for shorter versions of flood plain information reports and that the Corps was preparing the shorter reports for those cases. The Department noted that some local governments required the information in the longer reports and that it would be necessary to continue preparing longer reports for those cases.

After commenting on this report, the Corps issued a detailed pamphlet to be distributed to all levels of government describing the types of services available from the Corps and the procedures for applying for such services. Also, the Department stated that followup procedures for flood plain information studies had been published and stated that the availability of additional resources would result in greater assistance to local governments in implementing flood plain regulations. As noted earlier, we found that most of the Corps' field offices were not regularly making followup contacts.

SCS

The Department of Agriculture stated (see app. IV) that it agreed with our conclusions and recommendations and would strengthen and accelerate its participation in and technical assistance to the program for reducing flood losses. As indicated previously, SCS predicted that it would be doing 28 flood plain information studies a year by the end of fiscal year 1978. The Department stated also that it hoped our report would indicate to the Congress the importance and urgency of proper land use planning.

TVA

Although we made no recommendations concerning TVA's activities, we did obtain TVA's comments on our report. TVA noted that needs were not being fully met even in its region. It noted that not all of the incorporated communities in its region which had received flood hazard information had developed and implemented really comprehensive flood damage reduction programs and that much remained to be done outside corporate limits. TVA stated that to fill recognized needs would require even more resources than it was in a position to apply to flood plain management activities.

MATTERS FOR CONSIDERATION BY THE CONGRESS

In view of the limited progress being made in providing needed technical assistance to localities, we recommend that the Congress require that the Corps and SCS budget submissions

include information on plans, funding projections, and time estimates for completing needed technical assistance projects. Such information would provide a foundation for the Congress to set meaningful goals and funding levels for completing such projects.

CHAPTER 4

NEED FOR BETTER MONITORING AND LEADERSHIP FOR FEDERAL FLOOD CONTROL EFFORTS

Achieving the objective of the unified national program-- to reduce flood losses by planning for and controlling the uses of flood-prone lands--depends largely on the effectiveness of Federal agencies in considering flood hazards in their own programs and in providing technical assistance to State and local governments. As previously discussed, there have been shortcomings in the Federal efforts under the unified program. We believe that these shortcomings indicate the need for more active monitoring of Federal efforts to insure that the agencies' actions implement the program's objectives.

OMB is responsible for monitoring Federal activities, however, our review indicated that OMB needs to be more active in monitoring Federal efforts to reduce flood losses. Also, WRC, which was supposed to assume a leadership role in the program, needs to be prompt in its actions.

OMB

When the President transmitted the task force report to the Congress on August 10, 1966, he directed OMB to monitor the efforts of the Federal agencies in implementing the task force recommendations. OMB assigned the implementation of specific task force recommendations to the Federal agencies.

In the first few years after the task force report was issued, OMB obtained reports from Federal agencies on their progress in implementing the task force's recommendations. However, an OMB official told us that since the last such followup in the summer of 1970, OMB's monitoring had been limited to spot checks of budget requests to determine whether agencies were building in flood plains. In this connection, it should be noted that evaluations of flood hazards were made in projects constructed by Federal agencies. (See ch. 2.)

He agreed that OMB was responsible for monitoring the unified national program, but said that OMB's manpower resources have been too limited to do more than it had been

doing. He thought the program should be monitored by a high-level executive branch agency--which he said should be OMB.

WRC

In 1966 OMB assigned WRC several major task force recommendations for implementing the unified national program. WRC assumed a leadership role among the Federal agencies because some of its responsibilities involved developing uniform guidelines and standards for use by other Federal agencies in evaluating flood hazards. For example, WRC was assigned the tasks of

- issuing guidelines for the Federal executive agencies for use in implementing Executive Order 11296,
- developing a uniform technique of determining flood frequency, and
- developing flood damage appraisal methods to be used by all Federal agencies.

In September 1969 WRC sent "Proposed Flood Hazard Evaluation Guidelines for Federal Executive Agencies" to Federal agencies and States. The publication was to provide uniform guidelines and criteria for Federal agencies to use in implementing Executive Order 11296. The final version of the guidelines was not issued until May 1972--almost 6 years after the date of the task force report and the Executive order.

WRC issued a bulletin in December 1967 setting forth a uniform technique for determining flood flow frequencies. WRC has not yet issued guidelines on uniform flood damage appraisal methods, even though it was assigned this task over 8 years ago.

Other task force recommendations assigned to WRC have major importance for the successful attainment of the unified program's objectives. These assignments include

- preparing model State enabling statutes on flood plain planning and flood plain regulation,

--submitting proposed legislation to authorize the acquisition of flood plain lands as a part of flood control plans, and

--submitting proposed legislation on modifying cost-sharing requirements for federally assisted flood control projects.

WRC issued a two-volume publication on regulation of flood plain areas--one volume in December 1971 and one in December 1972. It was intended to assist State and local governments in developing flood plain management programs. WRC had not developed proposed legislation for land acquisition or for cost-sharing requirements. In this connection, section 80 of the Water Resources Development Act of 1974 (Public Law 93-251) directed the President to make a complete study of principles and standards for planning and evaluating water resource projects, including Federal and non-Federal cost sharing.

In response to section 1302(c) of the National Flood Insurance Act of 1968, WRC prepared a draft report for submission by the President to the Congress entitled "A Unified National Program for Flood Plain Management." The report sets forth a conceptual framework and institutional arrangements for a continuing unified program of planning and action at all levels of government to reduce flood losses through flood plain management.

One of the draft report's recommendations is that coordination of Federal agencies' activities in flood plain management should be vested in one central coordinating organization at the national level. A WRC official told us that coordination is necessary to have a unified national program. He said that the report did not suggest a specific agency to coordinate and monitor activities because the Congress had been considering legislation (Land Use Planning Act of 1974, H.R. 10294) which would provide States with Federal assistance to develop comprehensive plans for regulating land use. He also told us that the report probably will not be sent to the Congress until action has been taken on the proposed legislation because WRC wants to see how the final version of the act deals with flood plains before finalizing its own position on coordination. On June 11, 1974, the House of Representatives voted against a resolution to consider H.R. 10294.

CONCLUSIONS

The unified national program for reducing flood losses was proposed in 1966 and 8 years later the program is still not completely implemented.

We believe that the lack of progress by Federal agencies in considering flood hazards in their own programs demonstrates a need for OMB to take a more active role in monitoring Federal efforts and for WRC to fulfill its leadership role more promptly.

RECOMMENDATIONS

Because effective monitoring of Federal activities under the unified program is essential if the program is to meet its objective of reducing flood losses by planning for and controlling the uses of flood-prone lands, we recommend that

--the Director of OMB more effectively monitor the actions of Federal agencies in considering flood hazards in their programs and in providing technical assistance to State and local governments and

--the Director of WRC act to fulfill its responsibilities in a timelier manner.

AGENCY COMMENTS

WRC said (see app. VII) that it agreed with the general tenor of our report. It stated that it was revising its draft of "A Unified National Program for Flood Plain Management" and that this will provide the basis for proposed legislation for acquisition of flood-prone lands. WRC also said that it believed it would be inappropriate to propose legislation to modify cost sharing until the study under Public Law 93-251 is carried out.

We asked for OMB to comment on our report but it did not respond; however, an OMB official said that the information in the report would be used in reviewing the agencies' budget and program requests.

CHAPTER 5

ACTIONS BY STATE AND LOCAL GOVERNMENTS TO MINIMIZE FLOOD LOSSES

The reduction of flood losses depends upon a cooperative Federal, State, and local effort. Although Federal agencies are responsible for providing localities with technical information, it is the State and local governments that generally have the direct authority to determine and regulate land uses. We found that many States and localities had not actively planned or regulated the development of lands exposed to floods.

The disastrous effects of unregulated flood plain use were emphasized in the National Water Commission's¹ June 1973 report "Water Policies for the Future." The report stated:

"Citizens in all parts of the Nation have been content to see billions of dollars spent to help fellow citizens subject to loss of life or fortune. But, throughout the many years that this benevolent effort has been under way, other individuals have been busily developing other flood plain areas in such ways that the initial goal of rescuing those unfortunate enough to be endangered by floods has become less and less attainable."

We visited 6 States and 44 localities within these States to determine (1) the progress toward regulation of flood plains to reduce damages and (2) the reasons for action or inaction. The comments obtained from local officials indicated that most were not regulating their flood plain lands because of stated political opposition and the threat they felt regulation posed to their economic development.

¹The National Water Commission was established in Sept. 1968 by the Congress to review national water resource problems and requirements and to identify alternative ways of meeting these requirements. The issuance of the report completed the work of the Commission.

ACTION AT THE STATE LEVEL

In the six States we visited, the extent of participation in flood plain management activities varied. Two States had enacted statewide flood plain legislation and one State had provided more stringent building codes for flood-prone areas. The other three States had not yet enacted legislation permitting them to establish restrictions on the use of flood plains.

In 1967 Nebraska enacted the Flood Plain Regulation Act which required

- delineation of floodways,
- establishment of floodway use restrictions, and
- invokement of these restrictions by the State if the locality fails to enact and enforce local restrictions within 1 year of the date adequate flood plain information is received. Nebraska's floodways are defined as the land covered by the 100-year flood.

The act provided the mechanism to insure that localities reduce the potential for flood loss. The problem, however, was that only 29 of 191 localities in Nebraska with flood problems had received flood plain information reports. The Federal agencies made only limited progress in making studies and some localities did not want the studies made. Nebraska officials said the statute would allow the State to have flood plain studies made for all localities whether or not localities requested them. They also stated that up to 1974 the State had been unable to have such studies made because of insufficient State funds. Beginning in fiscal year 1975, funds were obtained and State initiated studies were underway.

In 1971 North Carolina enacted a State Floodway Law. This act, as revised in 1973, was similar to Nebraska's statute in that it enabled the State to impose floodway restrictions.

In September 1973 Virginia amended its uniform state-wide building code to require that new facilities, and major renovations of existing structures, in the 100-year flood plain be protected from flood damages.

Tennessee was conducting a study to determine the need for a State land use policy.

In Texas a bill was introduced proposing the delineation of all flood plains. Missouri had proposed legislation allowing localities to enact land use and flood plain ordinances. The bills were defeated in both States.

ACTION BY LOCALITIES

Some localities had been aggressive in delineating flood plains and passing ordinances to protect their citizenry, while others had ignored their flood problems or denied that they existed.

We visited 44 localities in 6 States to determine why some had taken action and others had not. Of the 44 localities

--16 had passed flood plain regulations or adopted subdivision building codes to regulate construction in flood-prone areas,

--15 had received flood plain information reports but had not enacted flood plain regulations, and

--13 were identified by Federal or State agencies as having flood hazards but had not requested flood plain studies.

Localities that had
taken action

We visited 16 localities that had passed flood plain regulations or had adopted subdivision building codes to regulate construction in flood-prone areas. The reasons most frequently cited for taking action were to

- avoid future flood damages similar to those incurred in recent floods,
- avoid potential damages by regulating the use of lands exposed to floods before they are developed, and
- receive the benefits available through the National Flood Insurance Program. (See pp. 3 and 7.)

Localities that had
not taken action

We visited 15 localities which had received flood plain information but had not enacted flood plain regulations. The reasons cited for not taking action generally touched on politics and economics. Some reasons were

- restricting the use of privately owned land is unpopular,
- land developers had influenced local governments not to take action,
- the locality disagreed with the size of the area identified as being in the 100-year flood plain,
- flood plain regulation would hinder development and therefore the economic growth of the area,
- the only land available for development was in the flood plain, and
- the flood plain was already completely developed and a regulation would have no effect.

In addition, we visited 13 localities that were identified by Federal or State agencies as having flood hazards but which had not requested flood plain information studies. Some reasons cited by local officials for not requesting studies were

- resentment of outside intervention or restrictions being imposed on use of their land,
- unawareness of the local flood problem or belief that the problem was not serious,
- unawareness of Federal and State governments' ability to assist in identifying local flood problems and taking appropriate action, and
- confusion over the requirements imposed upon them if they requested assistance.

ENCOURAGING STATES AND LOCALITIES TO TAKE ACTION

Because so little had been done by some of the States and localities to alleviate their flood problems, we questioned State and local officials on what incentives are needed to elicit action. Most responses emphasized a need for additional action in four areas:

- Publicizing the flood plain management services available from Federal and State agencies.
- Providing technical data through flood plain information studies.
- Providing followup technical assistance to help State and localities formulate regulations and/or building codes.
- Increasing the benefits available under the National Flood Insurance Program. (See pp. 3 and 7.)

Some local officials said that they had not applied for flood plain services because they were unaware of the services available. Federal and State officials said that they had not

been able to actively solicit requests for studies because they lacked the people and funds for publicizing the programs and doing studies. As discussed in chapter 3, there were many flood-prone localities for which studies have not been done and it will take many years to complete these studies at present levels of Federal funding.

There was also additional technical assistance needed to help localities formulate flood plain ordinances and building codes after a study has been completed. Both Federal and State officials told us that they did not have the resources to do an effective followup to encourage localities to take action after studies have been provided. Several Federal officials cited TVA's success in getting localities to take action as an example of what can be done with adequate resources. They attributed TVA's success to its efforts in publicizing its studies and providing extensive followup effort.

CONCLUSIONS

Although the need for reducing flood losses through more rational use of flood-prone lands has long been recognized, we found that only limited progress has been made in achieving this goal. The key to more rational use under present Federal-State relations rests with State and local governments because they have direct authority to determine and regulate land use in their localities. To date these governments have not been as active as desired. The principal obstacles appear to be political and economic constraints which affect State and local governments.

The Flood Disaster Protection Act of 1973, as discussed on page 7, should provide greater incentive to localities to regulate the development of flood-prone lands if FIA (1) properly implements the provisions of the act and (2) monitors the activity of localities to satisfy the requirements of the act. However, as discussed in chapter 3, it will be many years before all the localities with flood problems will get the information needed to regulate land development, at the rate of progress made in recent years by the responsible Federal agencies.

STATE COMMENTS

We obtained the comments of each of the responsible State agencies on the matters discussed in this chapter and their comments have been recognized in this report, where applicable. In addition the State agencies in Missouri, Tennessee, and Texas submitted comments on the progress and problems of their activities. These comments are included in appendixes VIII, IX, and X.

REVIEW LOCATIONS

FEDERAL:

Office of Management and Budget	Washington, D.C.
Water Resources Council	Washington, D.C.
U. S. Department of the Army Corps of Engineers	
--Office of Chief of Engineers	Washington, D.C.
--Division Office	Dallas, Texas
--District Offices	Fort Worth, Texas
	Galveston, Texas
	Kansas City, Missouri
	Omaha, Nebraska
	Norfolk, Virginia
	Wilmington, North Carolina
	Memphis, Tennessee
	Nashville, Tennessee
U. S. Department of Agriculture Soil Conservation Service	
--Headquarters	Washington, D.C.
--State Offices	Nashville, Tennessee
	Temple, Texas
	Columbia, Missouri
	Lincoln, Nebraska
	Richmond, Virginia
	Raleigh, North Carolina
Farmers Home Administration	
--Headquarters	Washington, D.C.
--State Offices	Temple, Texas
	Columbia, Missouri
	Lincoln, Nebraska
	Richmond, Virginia
	Raleigh, North Carolina

APPENDIX I

FEDERAL (cont'd)

Tennessee Valley Authority	Knoxville, Tennessee
U. S. Department of the Navy	
--Naval Facilities Engineering Command	Ft. Myer, Virginia
--Little Creek Amphibious Base	Norfolk, Virginia
--Naval Facilities Engineering Command, Atlantic Division	Norfolk, Virginia
U. S. Department of the Air Force	
--Air Training Command Headquarters	Randolph, Texas
--Facilities Engineering Divisions	Randolph, Texas Kelly, Texas Lackland, Texas Laughlin, Texas Ellington, Texas
U. S. Department of Housing and Urban Development	
--Headquarters	Washington, D.C.
--Regional Office	Fort Worth, Texas
--Area Offices	Dallas, Texas San Antonio, Texas Kansas City, Kansas Omaha, Nebraska Richmond, Virginia Greensboro, North Carolina
U. S. Department of Health, Education, and Welfare	
--Headquarters	Washington, D.C.
--Regional Offices	Dallas, Texas Kansas City, Missouri Philadelphia, Pennsylvania Atlanta, Georgia

FEDERAL (cont'd)

Veterans Administration

--Headquarters

Washington, D.C.

--Regional Offices

Waco, Texas

Houston, Texas

St. Louis, Missouri

Lincoln, Nebraska

Roanoke, Virginia

Winston-Salem, North Carolina

General Services Administration

--Headquarters

Washington, D.C.

--Regional Offices

Washington, D.C.

Fort Worth, Texas

Kansas City, Missouri

Atlanta, Georgia

STATE:

Tennessee State Planning Office

Nashville, Tennessee

Texas Water Development Board

Austin, Texas

Nebraska Natural Resources
Commission

Lincoln, Nebraska

Water Resources Board (duties
and functions transferred to
Department of Natural Resources
on July 1, 1974)

Jefferson City, Missouri

State Water Control Board
Bureau of Water Control
Management

Richmond, Virginia

Office of Water and Air
Resources

Raleigh, North Carolina

LOCALITIES:

Tennessee

Gatlinburg

Red Bank

Dyersburg

APPENDIX I

LOCALITIES (cont'd):

	Sparta
	Cleveland
	Townsend
	Carthage
	Trenton
	Dunlap
	Tracy City
	Gallatin
	Ripley
Texas	Edna
	Arlington
	Kingsville
	Victoria
	Falfurrias
	Eules
Virginia	Albermarle County
	Henrico County
	Richmond
	Norfolk
	Charlottesville
	Farmville
	Lynchburg
	Petersburg
Missouri	Kansas City
	Independence
	Jefferson City
	St. Joseph
	Brookfield
	Trenton
Nebraska	Omaha
	Sarpy County
	Lincoln
	Beatrice
	Crete
	York

LOCALITIES (cont'd):

North Carolina

Greensboro
Durham
Raleigh
Fayetteville
Burlington
High Point

APPENDIX II



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION
WASHINGTON, D. C. 20410

October 30, 1974

IN REPLY REFER TO:

IP

•
Mr. Henry Eschwege
Director
Resources and Economic
Development Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

Secretary Lynn has asked me to respond to your letter of July 12 requesting comments of the Department of Housing and Urban Development on a draft report "National Attempts to Reduce Losses From Floods by Planning for and Controlling the Uses of Flood-Prone Lands, Multi-Agency."

As a result of promulgation of Executive Order Number 11296 in 1966 and more particularly enactment of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973, the Department of Housing and Urban Development is charged with a special interest and special responsibilities in the broad area of flood-plain management.

The National Flood Insurance Act of 1968 requires that the Secretary identify and publish information with respect to all flood plain areas, including coastal areas located in the United States, which have special flood hazards. Identification of flood plain areas which have special flood hazards is a prerequisite to the other benefits of the Federal flood insurance program, inasmuch as such flood insurance can only be made available in areas and communities which have adopted appropriate land-use and land-management measures designed to reduce the losses from flooding.

Administration of the National Flood Insurance Act of 1968 and the Federal flood insurance program has been delegated to the Federal Insurance Administrator. The Administrator has issued, in Subchapter B, Chapter X, Title 24 Code of Federal Regulations, criteria for land management and use (Part 1910). The criteria set forth, for the guidance of local zoning and land-management bodies, the minimum standards which are acceptable for the purposes of the Federal flood insurance program in determining the adequacy of local measures.

As of September 30, 1974, the Federal Insurance Administration will have issued 10,654 maps identifying flood-plain areas which have special flood hazards. To our knowledge, this is the first time that such identification has been undertaken on a nationwide scale under consistent standards. Furthermore, the Flood Disaster Protection Act of 1973 requires the notification of the chief executive officer of each known flood-prone community; the Act further provides that the community must thereafter (a) make application to participate in the flood insurance program, or (b) within six months submit technical data to establish that the community either is not seriously flood prone or the existing flood hazards have been corrected.

The Flood Disaster Protection Act of 1973, among other matters, (1) requires the purchase of flood insurance, where it is available, in connection with any Federal or federally related financial assistance for acquisition or construction purposes in identified flood-plain areas which have special flood hazards, and (2) on and after July 1, 1975, prohibits any Federal or federally related financial assistance for acquisition or construction purposes for use in any area that has been identified as a flood-plain area which has special flood hazards unless the community in which such area is situated is then participating in the National Flood Insurance Program. As may be seen, these provisions provide powerful incentives and sanctions for the local recognition of the extent of flood hazards and the adoption of local measures designed to restrict the use of land in flood-hazard areas.

With 4,776 communities now participating in the National Flood Insurance Program and committed to flood-plain management, HUD becomes a principal Federal agency in the field of nonstructural flood-plain management.

The draft report of the Comptroller General contains several references to projects or activities undertaken by the Department of Housing and Urban Development which have been identified in the report as not being fully consistent with the intent of Executive Order 11296.

Regulations and procedures of the Department have been strengthened and reissued to assure that policy and its application are consistent, especially paragraph 311 of HPMC's Minimum Property Standards (August 1, 1974) and Chapter 2 of the Property Disposition Handbook (June 19, 1974).

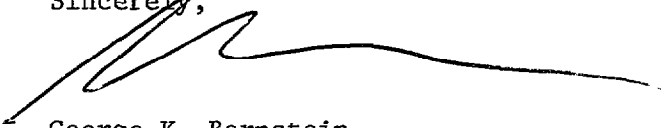
With respect to programs carried out under the direction of the Assistant Secretary for Housing Management, Property Disposition Handbook instructions regarding flood-hazard requirements in accordance with Departmental policies have been issued for implementation by local Area and Insuring Offices. Local office compliance with such instructions is monitored by the respective Regional Real Property Officers as part of their on-going review and monitoring of property disposition activities.

APPENDIX II

With respect to the programs carried out under the direction of the Assistant Secretary for Housing Production and Mortgage Credit-FHA Commissioner, the draft report should be updated to indicate that HUD's Minimum Property Standards now require specifically that floor elevations of all habitable space in new construction be above the 100-year frequency flood elevation. We believe this change has removed any possible misunderstanding of HUD's intent to avoid excessive flood-hazard exposure.

The draft report indicates that needed definitions of potential urban flooding extents and elevations will require many years. HUD each month is providing its field offices with an updated inventory of communities in which flood-hazard areas are mapped. Applications for mortgage insurance, property disposition actions, and other HUD program activities are being carefully screened against such maps to assure that the provisions of Federal law and regulation are carefully observed. These requirements also assure that purchasers will have knowledge of potential flooding risks.

Sincerely,

A handwritten signature in black ink, appearing to read "George K. Bernstein", written over a horizontal line.

George K. Bernstein
Federal Insurance Administrator



VETERANS ADMINISTRATION
OFFICE OF THE ADMINISTRATOR OF VETERANS AFFAIRS
WASHINGTON, D.C. 20420

OCTOBER 3 1974

Mr. Gregory J. Ahart
Director
Manpower and Welfare Division
U. S. General Accounting Office
Room 268, Veterans Administration Building
Washington, D. C. 20420

Dear Mr. Ahart:

We appreciate the opportunity to comment on your draft report on "National Attempts to Reduce Losses from Floods by Planning for and Controlling the Uses of Flood-Prone Lands."

We agree with the draft report. With respect to your recommendation that the VA establish requirements on new construction to be financed with VA-guaranteed or direct loans, we have adopted, as to proposed individual new construction, the criteria concerning flood level frequency prescribed in HUD Circular 4140.1, Land Planning Principles for Home Mortgage Insurance (Chapter 7-3). This criteria reads as follows:

"...minimum street grades should be such that streets will not be adversely affected by high water during runoff equivalent to a 5-year to 10-year frequency. The minimum finished grade at the house should be such that it will not be affected by flooding equivalent to a 50-year frequency and first flood elevations should be such that they will be free of high water during a 100-year frequency flood."

These requirements were recently distributed to all VA field stations. Instructions will be issued to the stations to apply the HUD Criteria to proposed new construction in the interim until the provisions of the Flood Disaster Protection Act of 1973 are fully effective regarding such construction.

We concur in your suggestion regarding the 100-year flood frequency criteria established by the Water Resources Council. Instructions will be issued specifying that the 100-year flood frequency level will be used in evaluating flood hazard on properties located in such areas, along with guidelines to be used in evaluating cases where the flood hazard is severe.

APPENDIX III

Mr. Gregory J. Ahart
Director
Manpower and Welfare Division
U. S. General Accounting Office

In regard to the disposal of properties acquired as a result of foreclosure, the criteria for evaluating flood hazards will be applied. Our Office of Construction excesses real property to the General Services Administration (GSA), which exercises final disposal authority and therefore is responsible for advising the transferee of any flooding hazards. However, in the Report of Excess to GSA, we adhere to the Federal Property Management Regulations which require detailed information regarding any known flooding of the property.

A monitoring system to ensure that field stations comply with the established criteria and Agency guidelines will be incorporated into the ongoing quality control and systematic analysis programs.

Sincerely,



RICHARD L. ROUDEBUSH
Acting Administrator



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

September 4, 1974

Mr. Henry Eschwege
Director
Resources and Economic
Development Division
General Accounting Office

Dear Mr. Eschwege:

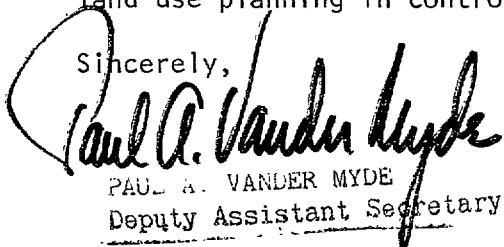
The Department of Agriculture has reviewed the draft of a proposed report to the Congress by the General Accounting Office entitled "National Attempts to Reduce Losses from Floods by Planning for and Controlling the Uses of Flood-Prone Lands, Multiagency." Two agencies of this Department, the Farmers Home Administration and the Soil Conservation Service, have management responsibilities concerning the uses of flood-prone lands which were reviewed and discussed in this draft report.

The Department agrees with the conclusions and recommendations in this draft and will proceed to strengthen and accelerate its participation in and technical assistance to this vital program.

We are enclosing several recommended revisions and other limited comments for your consideration in preparing the final report. Please check with the concerned agencies if you have specific questions regarding these comments.

We appreciate the opportunity to comment on this draft and hope your report will indicate to the Congress the importance and urgency of proper land-use planning in controlling the uses of flood-prone lands.

Sincerely,


PAUL A. VANDER MYDE
Deputy Assistant Secretary

Enclosure

GAO note: The enclosure is not included in this report.

APPENDIX V

UNITED STATES OF AMERICA
GENERAL SERVICES ADMINISTRATION

SEP 17 1974

WASHINGTON, DC 20405



Honorable Elmer B. Staats
Comptroller General of the United States
General Accounting Office
Washington, DC 20548

Dear Mr. Staats:

This is in response to Mr. F. J. Shafer's letter of July 12, 1974, requesting our comments on a draft report to Congress on "National Attempts to Reduce Losses from Floods by Planning for and Controlling the Uses of Flood-Prone Lands, Multiagency."

We have reviewed the report and are in agreement with the recommendations that GSA as well as other departments and agencies establish requirements for the evaluation of flood hazards in acquisition, financing, and disposal of real property; that these requirements include 100-year flood frequency criteria established by the Water Resources Council; and that a monitoring system be established to ensure compliance with requirements.

GSA's Public Buildings Service (PBS), and the former Property Management and Disposal Service (PMDS) now the Office of Real Property in PBS, implemented in part the requirements of Executive Order 11296. For your reference, copies of these documents are enclosed as well as a detailed statement relating to six of GSA's disposals covered in the report. Steps are being taken to correct any deficiencies in Central Office directives to assure that established requirements are met and that consistency throughout GSA's regional offices will prevail.

We anticipate that a thorough review and revisions, as necessary, of existing rules, regulations, and procedures will be completed within ninety days.

We appreciate and thank you for the opportunity afforded this Administration to review, evaluate, and comment on GAO's findings. We welcome any additional comments or suggestions and will be happy to make representatives of GSA available for discussion purposes should the need arise.

Sincerely,

A handwritten signature in cursive script, reading "Allan G. Kaupinen".

Allan G. Kaupinen
Assistant Administrator

Enclosures

GAO note: The enclosures are not included in this report.



DEPARTMENT OF THE ARMY
OFFICE OF THE SECRETARY OF THE ARMY
 WASHINGTON, D.C. 20310

19 SEP 1974

Mr. Henry Eschwege
 Director, Resources and Economic
 Development Division
 United States General Accounting Office
 Washington, D. C. 20548

Dear Mr. Eschwege:

This is in response to your request to the Secretary of Defense for comments on a draft report entitled, "National Attempts to Reduce Losses from Floods by Planning for and Controlling the Uses of Flood-Prone Lands, Multiagency", (OSD Case #3875).

The draft report recommends that the Secretary of the Army allocate additional resources toward providing flood hazard information and technical assistance to assist State and local governments in reducing flood losses.

We concur in the concept that an increased level of funds and manpower would improve the overall effectiveness of the flood plain management program and assist in achieving the objectives of the 1960 Flood Control Act. To meet these objectives, the Corps increased its appropriations request to \$11,000,000 for Fiscal Year 1975, the amount authorized in Section 206b (33USC 709a) as amended through 31 December 1970. Subsequent to the budget submission for FY 1975, PL 93-251, Section 64, 7 March 1974, increased the authorization in any one fiscal year for the compilation and dissemination of flood control information to \$15,000,000. The increased authorization will permit requests for additional funds to conduct future Flood Plain Management activities.

The draft report further recommends that the Secretary of the Army require the preparation of shorter versions of the flood plain information reports, establish procedures for a systematic approach to informing localities of assistance available, and establish more effective procedures for systematic follow-up to insure that the results of flood information studies are used effectively.

APPENDIX VI

Corps experience has indicated that a need does exist, in some cases, for shorter versions of the flood plain information reports. Where this type of report is considered appropriate to serve the needs of local government, the Corps has in fact prepared a "Special Flood Hazard Report" for their use. However, there is also a significant number of study areas where local governments require the information presented in our Flood Plain Information Reports before implementing a flood plain program. Accordingly, we consider it necessary in these cases to continue the practice of preparing the more detailed flood plain report.

With respect to publicizing the Flood Plain Management Service Program, the Corps has prepared a detailed information pamphlet to be widely distributed to all levels of government. It is currently in the process of publication and should be available no later than 15 November 1974. This pamphlet (EP 1105-2-4) describes the types of services available and the procedures for applying for these services.

Systematic follow-up procedures to flood plain information studies are published in Corps regulation ER 18-2-1 dated 15 February 1973. This regulation established a semi-annual report defining the extent to which local interests have made use of Corps reports. Corps follow-up activities are designed to insure that local officials have an understanding of the report and that further assistance is available to them in the interpretation and formulation of measures to guide future flood plain development. The availability of additional resources would result in local governments receiving greater assistance in implementing flood plain regulations.

We also would like to offer comments concerning the use of varying criteria by the military services. The military services have issued or are in the process of issuing implementing directives consistent with DOD instructions which require that the flood frequency guidelines (100-year flood level) of the Water Resources Council be used. More specifically:

a. The Department of the Army implemented the DOD guidelines by issuance of AR 415-2, dated 26 June 1973. That regulation states that, "the DOD manual will govern in all cases of conflict with Army criteria of earlier date; however, Army criteria that impose further restrictions and are not inconsistent with DOD 4270.1-M are not considered in conflict." The Army criteria does require construction to be at or above the Standard Project Flood Level which is more restrictive. However, it provides greater assurance that construction will be kept out of the flood plain area. The construction cost of this more restrictive criteria is not significant, since it only governs the location of the proposed facilities.

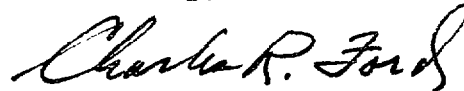
b. The Department of the Navy issued implementing instructions 28 November 1972, to all Navy Facilities Engineering Command Field Divisions and Navy and Marine Corps activities involved in facilities planning, design and construction. Addressees were specifically advised to utilize the subject DOD instructions for planning and design of all Naval shore facilities. To insure that the

responsible Navy Officials are aware of and using the proper criteria, the Navy plans to emphasize, by letter, the requirements in the DOD manual that flood hazards be evaluated utilizing the WRC flood frequency criteria.

c. The Department of the Air Force is publishing a revised AFM 88-15, Criteria and Standards for Air Force Construction, dated 16 September 1974. Paragraph 1-20g of the new manual duplicates language contained in DOD Manual 4270.1M of October 1, 1972, paragraph 4-2.4D, thereby directing flood hazard evaluation using WRC guidelines. The Air Force is also preparing to include, in the next revision of AFR 87-4 and AFR 87-1, provisions addressing flood hazard evaluation in the acquisition and disposition of real property.

Thank you for the opportunity to comment on this draft report.

Sincerely,



Charles R. Ford
Chief
Office of Civil Functions



UNITED STATES WATER RESOURCES COUNCIL

SUITE 800 • 2120 L STREET, N.W. WASHINGTON, D.C. 20037

SEP 10 1974

Mr. Henry Eschwege
Director
Resources and Economic Development Division
General Accounting Office
441 G Street, N.W.
Washington, D. C. 20548

Dear Mr. Eschwege:

The staff of the Water Resources Council has reviewed the GAO draft report National Attempts to Reduce Losses from Floods by Planning for and Controlling the Uses of Flood-Prone Lands. The staff agrees with the general tenor of the report.

The Council's response pertains to those sections of the draft report that deal with the Council's activities. The following points are offered for your consideration:

(1) The Hydrology Committee of the Council is presently revising the report it released in December 1967 entitled Uniform Techniques for Determining Flood Frequency. A draft of the revised report will be finished in October. After review, the revised report should be released in 1975.

(2) In 1973 the Water Resources Council submitted a proposed report to the Office of Management and Budget setting forth a conceptual framework designed to implement a unified national program for flood plain management. Although the acquisition of flood prone lands was not specified in the proposed report, this method of flood damage abatement could have been carried out within the conceptual framework. The Office of Management and Budget returned the report to the Council in August 1973. The Council is presently revising the draft of A Unified National Program for Flood Plain Management that will provide the basis for proposed legislation.

MEMBERS SECRETARIES OF INTERIOR, AGRICULTURE, ARMY, HEALTH, EDUCATION AND WELFARE, TRANSPORTATION, CHAIRMAN, FEDERAL POWER COMMISSION - ASSOCIATE MEMBERS SECRETARIES OF COMMERCE, HOUSING AND URBAN DEVELOPMENT, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY - OBSERVERS DIRECTOR, OFFICE OF MANAGEMENT AND BUDGET, ATTORNEY GENERAL, CHAIRMEN - COUNCIL ON ENVIRONMENTAL QUALITY, RIVER BASIN COMMISSIONS

(3) The Council feels it would be inappropriate to propose legislation modifying cost sharing for federally assisted flood control projects until the study provided for under the provisions of Section 80 of P. L. 93-251 is carried out.

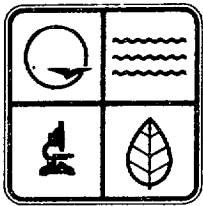
(4) The Council has requested members of the interagency task force revising the draft report A Unified National Program for Flood Plain Management to carefully consider the GAO draft report National Attempts to Reduce Losses from Floods by Planning for and Controlling the Uses of Flood-Prone Lands.

Please contact me for any additional information you may need.

Sincerely,

A handwritten signature in cursive script, appearing to read "Samuel J. Smith".

Director



M I S S O U R I
DEPARTMENT OF
Natural Resources

CHRISTOPHER S. BOND
GOVERNOR

JAMES L. WILSON,
DIRECTOR

P.O. Box 176

Jefferson City, Missouri 65101

314-751-3332

August 14, 1974

Mr. Henry Eschwege
Director
United States General Accounting Office
Washington, D. C. 20548

SUBJECT: Review Comments - Draft Report to Congress of the United States
Regarding 'NATIONAL ATTEMPTS TO REDUCE LOSSES
FROM FLOODS BY PLANNING FOR AND CONTROLLING
THE USES OF FLOOD-PRONE LANDS B'

Dear Mr. Eschwege:

In response to your letter dated July 12, 1974, along with the draft report (subject matter), directed to the Chairman of the Missouri Water Resources Board for review and comment, I am pleased to have this opportunity to introduce myself and advise you of departmental changes in our State Government.

Effective July 1, 1974, and by the authority of the "Omnibus State Reorganization Act of 1974", the Missouri Water Resources Board was abolished; however, the duties and functions of the Board were transferred to the Department of Natural Resources and assigned to the Division of Planning and Policy Development, directed by Mr. Marvin J. Nodiff.

As a whole I concur with the findings of the report. The findings are common knowledge to all those concerned at the state and federal levels and the reasons for the mismanagement of our nation's flood plains at the local level are clearly spelled out in the report. This is truly a grave and serious problem that must be dealt with immediately.

We in Missouri are making some progress with those incorporated communities and counties having the authority to adopt effective land use controls and regulations to qualify those remaining communities and counties having the authority to adopt regulations to qualify for the insurance program.

Mr. Henry Eschwege

August 14, 1974

The major problem in Missouri lies in the counties and unincorporated areas not having the power to adopt regulations. We have 114 counties in our State and only 22 counties have the power by referendum vote to adopt planning and zoning. Of these, only half actually have adopted a comprehensive plan and zoning regulations. As you can see, we are facing real problems that can only be solved by state or federal legislation.

The report concurs that we have made attempts in the past two years through state legislation to give these counties and unincorporated areas the authority to zone only the identified flood hazard areas in our state. It was defeated both times. We are planning to continue this effort again in the 1974 session of the General Assembly. The Flood Disaster Protection Act of 1973 may be meaningful enough to our General Assembly to facilitate passage of this legislation.

Thank you again for allowing me the opportunity to review this report and make my comments for your consideration. If I may be of future service please feel free to call on me.

Sincerely yours,

DEPARTMENT OF NATURAL RESOURCES



James L. Wilson
Director

JLW:mnd



Local Planning Division

Tennessee State Planning Office

Winfield Dunn
Governor

Donald G. Waller
Director of Local Planning

660 Capitol Hill Building
301 Seventh Avenue, North
Nashville, Tennessee 37219

615-741-2211

August 6, 1974

Mr. Henry Eschwege
Director
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

I have reviewed the draft report to the Congress of the United States entitled, National Attempts to Reduce Losses From Floods by Planning for and Controlling the Uses of Flood-Prone Lands B.

I offer the following comments for your consideration in finalizing the report:

Tennessee has for decades had enabling legislation which allowed municipalities and counties within the state to regulate development in flood plain areas. Several localities have utilized this authority and have adopted flood plain regulations within their land use controls. See the attached report, "A Report on the Status of Land Use Controls Within the State of Tennessee (pp 25 and 27), for the exact number.

The Local Planning Division (LPD) of the Tennessee State Planning Office (TSP0) has a staff of 75 planners and other professionals to assist local governments in their planning programs by preparing comprehensive plans and to assist them in developing and administering land use controls (including flood plain regulations). The LPD is the agency primarily responsible for drafting the regulations in Tennessee. TVA, The Corps of Engineers and SCS cooperate with the LPD and the local governments by preparing the technical charts and maps of floodable areas on which land use controls are based.

In the last paragraph of page 52, a statement is made that the states do not have the resources for adequate follow up. While more could be done with additional resources, the State of Tennessee is making progress in this area with currently available resources. In our state, the LPD staff

Mr. Henry Eschwege
August 6, 1974
Page two

follows up in most cases by assisting the locals in preparing and adopting flood plain regulations. In most cases, the requests for technical data go to TVA and other agencies from the local area and not vice versa as the paragraph implies. Numerous requests are generated out of an identification of flooding problems through comprehensive planning efforts undertaken by our staff in conjunction with localities. In the last sentence on page 52, the Local Planning Division should be given equal credit for follow up in this area as well as some mention being made of the cooperative efforts that are undertaken between our agency, the TVA and others in Tennessee.

The LPD of the TSPD has been designated coordinators of the National Flood Insurance Program in Tennessee. All areas in the state which have been identified as flood prone by HUD have been notified both by letter and personally by our staff of their responsibilities and the opportunities available under the National Flood Insurance Program. As a result of these efforts 65 communities are currently participating in the Flood Insurance Program in Tennessee and numerous others are in the process of applying.

I hope that this information will be of benefit to you in completing the subject report. If I can be of further assistance, please do not hesitate to call.

Sincerely,



George E. James
Community Planner

TEXAS WATER DEVELOPMENT BOARD

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AUSTIN, TEXAS 78711

August 9, 1974

HARRY P. BURLEIGH
EXECUTIVE DIRECTOR

AREA CODE 512
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1700 NORTH CONGRESS AVENUE

IN REPLY REFER TO
TWDBE-SS

Mr. Henry Eschwege
Director
United States General
Accounting Office
Washington, D. C. 20548

Dear Mr. Eschwege:

This is in response to your letter of July 12, 1974 inviting our review and comment of Chapter 5 of your proposed report to the Congress on National attempts to minimize flood losses.

It appears that the conclusions drawn in this chapter are valid and quite fairly presented. Reasons cited on page 51 to explain the lack of action by State and local government are, we believe, those most generally expressed by the responsible officials.

However, a very important reason for non-action by State and local governments, at least here in Texas, was not included in the draft of Chapter 5. In much of our State, both on the coast and inland, continuing development within flood-hazard areas persists because prospective buyers prefer lush, wooded, well-grassed, riverine home sites, and actually are willing to pay a premium to acquire them. Buyers purposely close their eyes to the flood hazard, make up their minds to acquire the sites and build on them, and resent being informed of existing flood hazards. Until these attitudes are changed by general public awareness and

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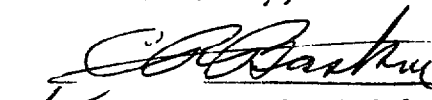
Mr. Henry Eschwege
Page 2
August 9, 1974

appreciation of inherent hazards and, perhaps, until development is mandatorily redirected away from flood plains, we expect progress by State and local governments toward more rational use of flood prone lands will be rather slow.

With respect to the last sentence of CONCLUSIONS, page 53, the Texas Water Development Board has recognized that it will be a very long time before Federally-funded and prepared flood plain studies are available for all localities which require them for adequate flood plain management and regulation. We recognize the likelihood that the present level of Federal funding for this work to be increased is poor. Therefore, we are urging that State and local technical resources be utilized to supplement Federal efforts to provide the needed information.

It is also apparent that if uniformly acceptable results are to be achieved, a great deal of emphasis must be placed on coordination and standardization of procedures for making the necessary flood plain studies. To this end, the Texas Water Development Board is cooperating with the University of Texas at Austin in planning two engineering short courses on flood plain hydrology and flood plain hydraulics. These courses will be offered this fall to local government engineers, engineering consultants, architects, etc., to assist them in developing the capability to perform studies to produce adequate basic flood plain delineation data.

Sincerely,


for Harry P. Burleigh

APPENDIX XI

PRINCIPAL MANAGEMENT OFFICIALS
OF FEDERAL DEPARTMENTS AND AGENCIES
RESPONSIBLE FOR THE ACTIVITIES
DISCUSSED IN THIS REPORT

Tenure of Office

From

To

DEPARTMENT OF DEFENSE

SECRETARY OF DEFENSE:

James Schlesinger	June 1973	Present
William P. Clements Jr. (acting)	May 1973	June 1973
Elliott L. Richardson	Jan. 1973	Apr. 1973
Melvin Laird	Jan. 1969	Jan. 1973

DEPARTMENT OF THE ARMY

SECRETARY OF THE ARMY:

Howard H. Calloway	May 1973	Present
Robert F. Froehlke	July 1971	May 1973
Stanley R. Resor	July 1965	June 1971

CHIEF OF ENGINEERS:

Lt. Gen. William C. Gribble, Jr.	Aug. 1973	Present
Lt. Gen. Frederick J. Clarke	Aug. 1969	July 1973

DEPARTMENT OF THE NAVY

SECRETARY OF THE NAVY:

J. William Middendorf	June 1974	Present
J. William Middendorf (acting)	Apr. 1974	June 1974
John W. Warner	May 1972	Apr. 1974
John H. Chafee	Jan. 1969	May 1972

DEPARTMENT OF THE AIR FORCE

SECRETARY OF THE AIR FORCE:

Dr. John L. McLucas	July 1973	Present
Dr. John L. McLucas (acting)	June 1973	July 1973
Robert C. Seamans, Jr.	Jan. 1969	May 1973

OFFICE OF MANAGEMENT AND BUDGET

DIRECTOR:

James T. Lynn	Feb. 1975	Present
Roy L. Ash	Feb. 1973	Feb. 1975
Caspar W. Weinberger	June 1972	Feb. 1973
George P. Shultz	July 1970	June 1972
Robert P. Mayo	Jan. 1969	June 1970

WATER RESOURCES COUNCIL

DIRECTOR:

Warren D. Fairchild	Sept. 1973	Present
Reuben Johnson (acting)	Apr. 1973	Aug. 1973
W. Don Maughan	Mar. 1970	Mar. 1973
Reuben Johnson (acting)	Sept. 1969	Feb. 1970
Henry P. Caulfield	Dec. 1965	Aug. 1969

TENNESSEE VALLEY AUTHORITY

CHAIRMAN:

Aubrey J. Wagner	July 1963	Present
------------------	-----------	---------

VETERANS ADMINISTRATION

ADMINISTRATOR OF VETERANS AFFAIRS:

Richard L. Roudebush	Oct. 1974	Present
Richard L. Roudebush (acting)	Sept. 1974	Oct. 1974
Donald E. Johnson	June 1969	Sept. 1974

APPENDIX XI

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

SECRETARY:

Casper W. Weinberger	Feb. 1973	Present
Frank C. Carlucci (acting)	Jan. 1973	Feb. 1973
Elliott L. Richardson	June 1970	Jan. 1973
Robert H. Finch	Jan. 1969	June 1970

GENERAL SERVICES ADMINISTRATION

ADMINISTRATOR OF GENERAL SERVICES:

Arthur F. Sampson	June 1973	Present
Arthur F. Sampson (acting)	June 1972	June 1973
Rod Kreger (acting)	Jan. 1972	June 1972
Robert L. Kunzig	Mar. 1969	Jan. 1972

DEPARTMENT OF AGRICULTURE

SECRETARY:

Earl L. Butz	Dec. 1971	Present
Clifford M. Hardin	Jan. 1969	Nov. 1971

ADMINISTRATOR, SOIL CONSERVATION SERVICE:

Kenneth E. Grant	Jan. 1969	Present
------------------	-----------	---------

ADMINISTRATOR, FARMERS HOME ADMINISTRATION:

Frank B. Elliott	Aug. 1973	Present
Frank B. Elliott (acting)	Mar. 1973	Aug. 1973
Vacant	Feb. 1973	Mar. 1973
James Smith	Jan. 1969	Feb. 1973

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

SECRETARY:

James L. Mitchell (acting)	Feb. 1975	Present
James T. Lynn	Feb. 1973	Feb. 1975
George W. Romney	Jan. 1969	Feb. 1973

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