IMPACT OF STATUS C LAND USE REQUIREMENTS FOR FLOOD INSURANCE ELIGIBILITY IN SELECTED MISSISSIPPI COMMUNITIES

by

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INTRODUCTION

The National Flood Insurance Act of 1968 included as one of its objectives the encouragement of state and local governments to enact and implement land use measures to constrict the development of flood plain lands as a means of minimizing flood losses. The act prevents an area from being eligible for flood insurance unless "an appropriate body shall have adopted adequate land use and control measures which the Administrator (Federal Insurance Administration) finds are consistent with the comprehensive criteria for land management."

Any type of political subdivision which wishes to become eligible for flood insurance under the National Flood Insurance Program must enact and implement flood plain land use regulations which meet the minimum criteria specified in the **Code of Federal Regulations,** Chapter 24, Part 1910. Compliance determination is made by the Federal Insurance Administration (FIA) which is also the enforcement authority. The 1968 Act provides an indirect method for enforcement of federal land use regulations. Flood insurance legislation involved the federal government for the first time in this type of legislation which had previously been the exclusive domain of state and local governments.

Local governments with identified flood hazards can choose to not participate in the insurance program and, consequently, will not have to enact flood plain ordinances. However, the consequences can be severe. First, no individual in the locality will be able to purchase flood insurance. Second, no victim of a flood disaster in the locality can receive any type of federal disaster assistance for any loss that could have been covered by flood insurance. Third, no federal offices or agencies can approve of aid or assistance for construction in flood zones of non-participating communities.

In spite of the fact that the National Flood Insurance Program has been in effect since 1969, and FIA land use criteria have been applied to communities acquiring insurance, flood losses have continued to increase. Taxpayers have been forced to bear a major portion of the loss burden through disaster relief and through subsidization of the insurance program. Between 1953 and 1977 over 90% of all Presidentially declared disasters in the United States involved flooding. Federal expenditures for the insurance program, as shown in Table 1, have surpassed $100 million annually.

The continuing increases in flood losses and the resulting increases in government expenditures have raised questions as to the effectiveness of the land use requirements for flood insurance eligibility. A study was conducted by the Division of Business Research for the Water Resources Institute at Mississippi State University to examine the problem. The study was funded in part by the U.S. Department of the Interior through OWRT as authorized under the Water Resources Research Act of 1964.

MINIMUM REQUIRED LAND USE CRITERIA

Minimum land use criteria for a community's eligibility vary depending on the status of flood boundary and base flood elevation data compiled by FIA. There are five different lists of minimum criteria ranging from Status A through Status D. Exhibit A contains summaries of these criteria lists. The basic objective of all lists is to prevent localities from allowing construction of new structures which will add to the flood hazard exposure. Theoretically, over a period of time, this course of action will result in a reduction in losses because there will be fewer structures which will sustain flood damages as the older existing structures are abandoned or replaced by structures not subject to flooding. Improvements equal to over 50% of the appraised value of existing structures are also forbidden.

Review and evaluation of Status A and Status B requirements revealed them to be virtually ineffective at forcing localities to regulate flood plain construction. The language sounds adequate, but there are too many loopholes enabling communities not wanting to enact and enforce effective regulations to do so. A basic loophole is provided in another part of the Code which specifies that only FIA flood hazard boundary and base flood elevation data can be used in determining compliance with minimum requirements. This data is not available when Status A or B apply.

Status A and B exist because of the emergency program of flood insurance. This program permits communities to enroll prior to completion of FIA studies required for regular program eligibility. Completed Flood Insurance Rate Maps (FIRM) are required for entrance into the regular program. Once the FIRM is finalized a community must enter the regular program. However, a prerequisite for entering

the regular program is to enact and enforce flood plain ordinances complying with Status C requirements which are applicable after completion of the FIRM. Since the FIRM provides the hazard boundary and elevation data necessary for determining if a construction site is in a flood hazard zone and the level required for that site to be at the base flood elevation, the earlier limitations that prevented FIA from requiring communities to enact and enforce flood plain ordinances are eliminated.

Status D and E apply with a later stage of mapping. Status D applies to riverine flood plains. Maps delineate the specified floodway. Status E applies to flood plains on standing bodies of water. Maps for this status identify locations of tidal flows.

The MSU study revealed that a major reason why exposure to flooding and consequent flood losses were continuing to increase in spite of the land use requirements was the fact that a very large percentage of participating communities were enrolled through the emergency program and came under Status A or B land use regulations. In practice all that has been required is the passage of a local resolution saying that the community would comply with the minimum criteria and would enact land use control measures by some future date. No flood plain ordinances are required to be eligible under Status A or B.

EVIDENCE OF STATUS C EFFECTIVENESS

Investigations were conducted to determine if Status C requirements were having any flood hazard exposure reduction effect in Mississippi communities. Findings indicate active enforcement of ordinances and a potential to eventually reduce flood losses. This observation was evident in data compiled from a survey of building officials in regular program communities, a survey of realtors in regular program communities, and construction figures for selected regular program communities.

Detailed analyses of construction trends in Columbus and Hattiesburg revealed new construction rates in flood plains have been less than in other areas since the flood plain ordinances. During the period of time since Columbus adopted a flood plain ordinance to comply with Status C FIA requirements, average monthly total construction in Zone A1-30, shown in Exhibit B, has declined 58.1%, while construction in areas outside the regulated flood plain declined only 16.6%. During the period of time since Hattiesburg adopted a flood plain ordinance, average monthly total construction in Zone A1-30 in that municipality has declined 3.2%, while average monthly total construction in areas outside the regulated flood plain increased 14.1%. In both municipalities that differences between rates of change in areas outside the flood plain are sufficient to conclude that there were factors common to the flood plain that reduced construction which were not present in the other land areas. Data in Tables 2, 3, and 4 summarize these differences. Surveyed building officials and realtors almost unanimously attribute the differences to the ordinances.

The fact that there was some new construction on urban flood plains indicates that required flood plain ordinances have not halted community growth and development in the flood zones as some opponents have conjectured. In order to determine if FIA criteria were applied by building officials, it was necessary to check for structure elevation and/or floodproofing where applicable, in the new structures. Verification which indicated full compliance was obtained from observation, from structure occupants, from realtors, and from building officials. With all new structures elevated to the base flood elevation, there had been virtually no increase in exposure to the flood hazard in these two communities.

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Table 1

National Flood Insurance Fund Expenditures (amount in thousands of dollars)

Fiscal Year	Non-Federal Sources	Federal Government	Total Program Costs	Federal Funding As % of Total
1969	$ 0	$ 935	$ 935	100.0%
1970	125	1,593	1,719	92.7
1971	1,018	4,883	5,901	82.7
1972	1,010	10,927	11,937	91.5
1973	1,546	28,693	30,239	94.9
1974	2,889	54,625	57,515	95.0
1975	4,348	67,744	72,092	93.0
1976	6,807	123,029	129,836	94.8
1977	9,935	81,691	91,626	89.2
1978 (est.)	83,708	123,485	207,193	59.6
1979 (est.)	133,695	166,992	300,687	55.5

Source: The Budget of the United States Government, 1969-1979.

Table 2

Average Monthly Construction in Zone A1-30 During Stages Relative to Insurance Eligibility in Columbus

Period	Commercial Zoned Construction Per Month	Non-Commercial Zoned Construction Per Month	Total Construction Per Month (Actual)	Total[a] Construction Per Month (Price level adjusted)
		(Amounts)		
Pre-insurance eligibility (January 1967-February 1972)	$ 95,398	$20,923	$116,321	$104,380
Emergency Program (March 1972-June 1976)	153,157	36,989	190,146	111,719
Regular Program[b] (July 1976-June 1977)	66,168	13,593	79,761	38,908
		(Percentage Change from Previous Period)		
Emergency Program	60.5%	76.8%	63.5%	7.0%
Regular Program	-56.8	-62.2	-58.1	-65.2

[a]Average monthly total construction figures are adjusted using averages of U.S. Department of Commerce Composite Indexes for the respective periods.

[b]Regular program figures are still being compiled since the community is presently in the program.

Table 3

Average Monthly Construction in Areas Outside Zone A1-30 During Stages Relative to Insurance Eligibility in Columbus

Period	Commercial Zoned Construction Per Month	Non-Commercial Zoned Construction Per Month	Total Construction Per Month (Actual)	Total[a] Construction Per Month (Price level) adjusted)
		(Amounts)		
Pre-insurance eligibility (January 1967-February 1972)	$156,936	$154,938	$311,874	$272,617
Emergency Program (March 1972-June 1976)	165,025	316,561	481,586	282,953
Regular Program[b] (July 1976-June 1977)	137,243	264,371	401,614	195,909
		(Percentage Change from Previous Period)		
Emergency Program	5.2%	104.3%	54.4%	3.8%
Regular Program	-16.8	-16.5	-16.6	-30.8

[a]Average monthly total construction figures are adjusted using averages of U.S. Department of Commerce Composite Indexes for the respective periods.

[b]Regular program figures are still being compiled since the community is presently in the program.

Table 4

Average Monthly Construction During Stages
Relative to Insurance Eligibility in Hattiesburg

Period	Commercial Construction Per Month	Non-Commercial Construction Per Month	Total Construction Per Month (Actual)	Total[a] Construction Per Month (Price level adjusted)
		(High Hazard Zone A1-30)		
Emergency Program (Apr. 1970-Aug. 1974)	$ 38,239	$ 18,849	$ 57,088	$ 39,810
Regular Program[b] (Sept. 1974-June 1977)	40,496	14,735	55,231	27,657
Percentage Change	5.9	-21.8	-3.2	-30.5
		(all other zones)		
Emergency Program (Apr. 1970-Aug. 1974)	550,741	202,199	752,940	525,063
Regular Program[b] (Sept. 1974-June 1977)	441,652	417,383	859,035	430,163
Percentage Change	-19.8%	106.4%	14.1%	-18.1%

[a]Average monthly total construction figures are adjusted using averages of U.S. Department of Commerce Composite Indexes for the respective periods.

[b]Regular program figures are still being compiled since the community is presently in the program.

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Exhibit A

Summary of FIA Minimum Land-Use Requirements for Insurance Eligibility

Status A Requirements	Status B Requirements	Status C Requirements	Status D Requirements	Status E Requirements
1. Building permits on all construction, including mobile homes. 2. Review of proposed developments for compliance with various gov't agency regulations. 3. Review of permit application to determine if site is "reasonably" safe from flooding. New buildings on flood-prone land designed and constructed to minimize flood damage. 4. Review of subdivision proposals to determine safety from flooding. If in flood-prone area, review to assume that proposed is consistent with need to minimize flood damage. 5. Require new and replacement water systems in flood-prone areas to be designed to minimize infiltration of flood waters. 6. Require new and replacement sewage systems in flood-prone areas to be designed to minimize infiltration of flood-waters.	All Statue A requirements apply with the exception that permits are only required in Zone A* of the FHBM. The following are in addition to the status A requirements: 1. Base flood elevation data included in subdivision proposals. 2. Residential new construction and substantial improvements required to have lowest floor on or above base flood elevation. Non-residential has option of floodproofing. Base flood elevation data used from any source. 3. For insurance rate determination in Zone A, obtain elevation data on level of lowest floor of construction, floodproofing information, etc. 4. Notification of alteration of a waterway. 5. Assure that capacity maintained in altered waterways. 6. Require anchoring of mobile homes in Zone A. 7. Require evacuation plans for Zone A mobil home parks.	All Status B requirements apply. The following additional requirements also apply: 1. In Zones A1-30,* all new construction and major improvements on residential structures must have lowest floor at or above base flood elevation. (Basements included except when FIA exception permitted). 2. Non-residential requirements in Zone A1-30 same as above but option of floodproofing available. Floodproofing requires attendent utility and sanitary facilities. Certified professional engineer approval required as evidence of adequate floodproofing. 3. In Zone A1-30, require new mobile home parks and 50% remodeled parks to elevate homes at or above base flood elevations, provide adequate drainage and hauler excess, verify stability of pilings, etc. 4. In Zone A1-30 require mobile homes not in parks to meet same requirements as for parks stated above. 5. In Zone AO,* require new residential structures to have lowest floor elevated number of feet above crown of nearest street at specified on FIRM. 6. In Zone AO, new non-residential structures to comply with same regulations as residential with option of floodproofing accompanied by attendant utility and sanitation facilities. 7. In Zones A1-30, prohibit any construction which would increase base flood elevation more than 1 ft. at any point in the community.	All Status C requirements apply except item 7. The following apply in lieu of item 7 of Status C: 1. Floodway selection capable of carrying floodwaters without causing more than a 1 ft. rise. 2. Prohibit any kind of floodway encroachment which would increase water levels during flood discharge. 3. Prohibit placement of any mobile home on the floodway, except in existing parks.	All Status C Requirements plus the following apply: 1. In Zone V1-30,* for insurance rate determination, obtain elevation of lowest floor on new and substantially improved structures, obtain floodproofing information, elevation of floodproofing, etc. 2. In Zone V1-30, all new construction located landward of reach of mean high tide. 3. In Zone V1-30, new construction and substantial improvements elevated on adequately anchored pilings to level on or above base flood elevation with construction certified by professional engineer. 4. In Zones V1-30, space below lowest floor free of obstruction which would impede movement of tides. 5. In Zone V1-30, prohibit use of fill for structure support elevation. 6. In Zone V1-30 prohibit placement of mobile homes, except in existing parks. 7. In Zone V1-30, prohibit alteration of dunes and mangrove stands which will increase potential flood damage.

*Explanation of Zone Designations

Zone	Explanation
A	Areas of 100 year flood, base flood elevation undetermined.
AO	Area of 100 year shallow flooding.
A1-A30	Areas of 100 year flood, base flood elevation determined.
V1-V30	Areas of 100 year coastal flood with velocity, base flood elevation determined.

Exhibit B
Location of FIA Flood Zones in Columbus