FLOODPLAIN MANAGEMENT

NEWSLETTER

VOLUME 7, No. 22 **WINTER 1989**

NOAH WAY *(ERA-Journal of Eastern Region of the Royal Institute of British Architects)*

And the Lord said unto Noah: " Where is the ark which I have commanded thee to build?"

And Noah said unto the Lord: " Verily I have had three carpenters off ill. The gopher-wood supplier hath let me down—yea, even though the gopher-wood hath been on order for nigh upon 12 months. What can I do, O Lord?"

And God said unto Noah: "I want that ark finished even after seven days and seven nights."

And Noah said: "It will be so."

And it was not so. And the Lord said unto Noah: "What seemeth to be the trouble this time?"

And Noah said unto the Lord: "Mine subcontractor hath gone bankrupt. The pitch which Thou commandest me to put on the outside and on the inside of the ark hath not arrived. The plumber hath gone on strike. Shem, my son who helpth me on the ark side of the business, hath formed a pop group with his brothers Ham and Japheth. Lord, I am undone."

And the Lord grew angry and said: "And what about the animals, the male and the female of every sort that I ordered to come unto thee to keep their seed alive upon the face of the earth?"

And Noah said: "They have been delivered unto the wrong address but should arriveth on Friday."

And the Lord said: "How about the unicorns, and the fowls of the air by sevens?"

And Noah wrung his hands and wept, saying: "Lord, unicorns are a discontinued line; thou canst not get them for love nor money. And fowls of the air are sold only in half-dozens. Lord, Lord, Thou knowest how it is."

And the Lord in His wisdom said: "Noah, my son, I knowest. Why else dost thou think I have caused a flood to descend upon the earth?"

ADDRESS CORRECTIONS

Has your address changed recently? Have you added a new Floodplain Administrator? Is the name and address on your Flood Management Newsletter inaccurate? Want another person to receive a copy? If the answer to any of these questions is "YES", then please contact us immediately and we will update our files so you won't miss a single issue. Just call 512/463-8000!

VARIANCES: GENERAL PRINCIPLES AND NFIP CRITERIA

Community participation in the National Flood Insurance Program (NFIP) is based upon a mutual agreement with identified flood-prone communities. In return for the local adoption and enforcement of floodplain management regulations that meet the minimum criteria of the NFIP, the Federal Emergency Management Agency (FEMA) provides the availability of flood insurance coverage within that community. Participating communities in which the local floodplain management regulations meet the minimum criteria of the NFIP are responsible for administering and enforcing their local floodplain management requirements pursuant to their own authority and through their own procedures. However, FEMA periodically evaluates the administration and enforcement of local floodplain management programs in relation to the NFIP regulations and has the authority to impose sanctions against those communities whose overall floodplain management programs are found to be inadequately administered or enforced.

In circumstances where compliance requirements set out in the local floodplain management regulations pose an exceptional hardship, the community may, after examining the applicant's hardship, approve or disapprove a request for a variance. Although FEMA does not set forth absolute criteria for granting variances from the provisions of Section 60.3, 60.4, and 60.5, the following general standards have been established in Section 60.6 (a) (1)-(4):

(1) Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result;

(2) Variances may be issued by a community for new construction and substantial improvements to be erected on a lot of one-half acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level in conformance with the procedures of paragraphs (a)(3), (4), (5) and (6) of this section;

(3) Variances shall only be issued by a community upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variances would result in exceptional hardship to the applicant, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances;

(4) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief;

Additionally, in Section 60.6 (a)(5)-(6) variances require specific documentation of the administrative process and notification to FIA.

(5) A community shall notify the applicant in writing over the signature of a community official that (i) the issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as $25 for $100 of insurance coverage and (ii) such construction below the base flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions as required in paragraph (a) (6) of this section; and

(6) A Community shall (i) maintain a record of all variance actions, including justification for their issuance, and (ii) report such variances issued in its annual or biennial report submitted to the Administrator.

And finally, variances may be granted based on functionally dependent uses under Section 60.6(a)(7):

(7) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that (i) criteria of paragraphs (a)(1) through (a)(4) of this section are met, and (ii) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

NATURE OF VARIANCES

The NFIP variance criteria are based on the general principle of zoning law that variances pertain to a piece of property and are not personal in nature. Though standards vary from State to State, in general, a properly issued variance is granted for a parcel of property with physical characteristics so unusual that complying with the ordinance would create an exceptional hardship to the applicant or the surrounding property owners. Those characteristics must be unique to that property and not be shared by adjacent parcels. The unique characteristic must pertain to the land itself, not to the structure, its inhabitants, or the property owners.

Examples of the kinds of characteristics that might give rise to a hardship that might justify a variance to certain other building or zoning ordinances would include an irregularly shaped lot, a parcel with unstable soils, or a parcel with an unusual geologic condition below the ground surface. It is difficult, however, to imagine any physical characteristic that would give rise to a hardship sufficient to justify a variance to a flood elevation requirement. A frequently encountered example is the case of a very small undeveloped lot completely surrounded by lots on which buildings have been constructed at grade, and an ordinance that requires that new buildings be constructed at a level several feet above grade. If the owner were to elevate the house on fill, the lot might drain onto the neighbors' property. In this case, the size of the lot and its status as the only undeveloped lot in the vicinity are the characteristics that could result in a hardship. However, this situation still probably would not warrant a variance because, as is discussed below, the owner does not face an exceptional hardship since there are many other ways to alleviate the drainage problem (elevation on pilings or crawl space, grading the fill to drain away from adjoining properties, etc). The FEMA manual, *Elevated Residential Structures* and the Corps of Engineers' *Floodproofing Systems and Techniques* reports illustrate ways in which various site-specific problems can be overcome when designing and building houses that must be elevated.

INDIVIDUAL HARDSHIP VS. COMMUNITY GOALS

In determining whether or not an applicant has established an exceptional hardship sufficient to justify a variance, the local board weighs the applicant's hardship against the purpose of the ordinance. In the case of variances from a flood elevation requirement, this would mean asking which is more serious: the hardship that this individual applicant would face, or the community's need for strictly enforced regulations that protect its citizens from the dangers and damages of flooding? Only a truly exceptional, unique hardship on the part of an individual property would persuade local officials to set aside provisions of an ordinance designed with the whole community's safety in mind. The hardship might not have to be so severe if the applicant were seeking a variance to a setback ordinance, for instance, which was intended merely to simplify street repair and modifications. In the course of considering variances to flood protection ordinances, however, local boards continually must face the more difficult task of frequently having to deny requests from applicants whose personal circumstances evoke compassion, but whose hardships are simply not sufficient to justify deviation from community-wide flood damage prevention requirements.

HARDSHIP [SECTION 60.6 (a)(3)(ii)]

The hardship that would result from failure to grant a requested variance must be exceptional, unusual, and peculiar to the property involved. Mere economic or financial hardship alone is not exceptional. Inconvenience, aesthetic considerations, physical handicaps, personal preferences, or the disapproval of one's neighbors likewise cannot, as a rule, qualify as exceptional hardships. All of these problems can be resolved through other means, without granting a variance. This is so even if the alternative means are more expensive or complicated than building with a variance, or if they require the property owner to put the parcel to a different use than originally intended, or to build his or her home elsewhere.

For example, a situation in which it would cost a property owner several thousand dollars more to elevate a house to comply with the ordinance and an additional several thousand to build a wheelchair ramp or an elevator to provide access to that house for a handicapped member of the family might at first glance seem like the sort of problem that could be relieved by a variance. However, while financial considerations are always important to property owners and the needs of the handicapped person certainly must be accommodated, these difficulties do not put this situation in the category of "exceptional hardships" as they relate to variances. This is because, first, the characteristics that result in the hardship are personal (the physical condition and financial situation of the people who propose to live on the property) rather than pertaining to the property itself. Second, the problem of day-to-day access to the building can be alleviated in any one of a number of ways (going to the additional expense of building a ramp or an elevator) without granting a variance. Third, the situation of handicapped persons occupying flood-prone housing raises a critical public safety concern. If a variance is granted and the building is constructed at grade, it will be absolutely critical that the handicapped or infirm person evacuate when flood waters begin to rise, yet he or she may be helpless to do so alone. Not only does this pose an unnecessary danger to handicapped persons but it places an extra demand on the community's emergency services personnel who may be called upon during the early stages of the flood to rescue them. In contrast, if the building is properly elevated, the handicapped person can still be evacuated if there is sufficient warning and assistance available. If there is not, that person can, in all likelihood, survive the flood simply by remaining at home safely above the level of the flood waters.

(Continued on page 4)

More simply, the property owner's difficulties would not really be relieved by the variance, but likely only postponed and perhaps ultimately increased. It would be more prudent over the long run both for the property owner and the community, if the variance were denied and the home built at the proper elevation with handicapped access. This would ensure the safety of all family members when flood waters rise and also protect individual and community investment in the property, as discussed below.

PUBLIC SAFETY AND NUISANCES [60.6 (a)(3)(iii)]

Variances must not result in additional threats to public safety or create nuisances. As mentioned above, local flood damage prevention ordinances (including elevation requirements) are intended to help protect the health, safety, well-being, and property of the local citizens. This is a long-range community effort usually made up of a combination of approaches such as adequate drainage systems, warning and evacuation plans, keeping new property—especially homes—above the flood levels, and participating in an insurance program. These long-term goals can only be met if exceptions to the laws are kept to a bare minimum.

FRAUD AND VICTIMIZATION [60.6 (a)(3)(iii)]

Properly granted variances must not cause fraud on or victimization of the public. In examining this requirement, local boards should consider the fact that every newly constructed building adds to local government responsibility and remains a part of the community for fifty to one-hundred years. Buildings that are permitted to be constructed below the base flood elevation are subject during all those years to increased risk of damage from floods, while future owners of the property and the community as a whole are subject to all costs, inconvenience, danger, and suffering that those increased flood damages bring. In addition, future owners may purchase the property, unaware that it is subject to potential flood damages, and can be insured only at very high flood insurance rates.

MINIMUM NECESSARY TO AFFORD RELIEF [60.6 (a)(4)]

The variance that is granted should be for the minimum deviation from the local requirements that will still alleviate the hardship. In the case of variances to an elevation requirement, this means the board need not grant permission for the applicant to build at grade, for example, or even to whatever elevation the applicant proposes, but only to that level that the board believes will both provide relief and preserve the integrity of the local ordinance.

INSURANCE RATES

While the building standards in a local ordinance may be altered by means of a variance, the flood insurance purchase requirement, which must be enforced by lending institutions, cannot be waived and thus may create severe financial consequences for the property owners. Insurance rates for structures built below BFE can be substantially higher than those for elevated structures. In many instances the rates will be so high as to make the structure essentially uninsurable because the owners cannot afford the premium. This may not matter to the original owner who applied for the variance in the first place, but it may matter a great deal to subsequent potential owners who must forego purchase of the property, or to subsequent owners who cannot find buyers because of the high insurance rates, or to the community that finds itself with large numbers of unsellable houses. In addition, if the property is not insured and cannot be insured due to high actuarial rates, there may be no funds available to repair the structure if it is seriously damaged by a flood. Even disaster loans may not be obtainable if the flood insurance coverage required as a condition of the loan was available only at very high rates. The result may be that the present owner or a future owner may choose to abandon the damaged house rather than repair it since the damages may exceed the equity in the house. The local government and/or the holder of the mortgage are then left with the problem of one or more vacant, flood-damaged, and essentially uninsurable houses.

DOCUMENTATION

The granting of a variance is a reasoned compromise of the objectives of the floodplain management program, in unusual circumstances. Therefore, it is important to properly document the decision making process and to notify FIA of variances granted.

SUMMARY

Because the duty and need of local governments to help protect their citizens from flooding is so compelling, and the implications of the cost of insuring a structure built below food level are so serious, variances from the flood elevation or from other requirements in the flood ordinance should be quite rare. This is why the NFIP variance guidelines at Section 60.6 are so detailed and contain multiple provisions that must be met before a variance can be properly granted. The criteria are designed to screen out those situations in which alternatives other than a variance are more appropriate. It is not surprising that, when guidelines are followed, very few situations qualify for a variance.

SINGLE LOT LOMR REQUEST *(North Dakota Floodplain Management Newsletter, September, 1988)*

A Letter of Map Revision (LOMR) is a mechanism under the NFIP where the placement of compacted fill on property in the floodplain can be recognized by the Federal Emergency Management Agency (FEMA) as no longer being flood-prone. A successful LOMR removes property from the identified 100-year floodplain along with the mandatory flood insurance purchase requirement from federal-backed financing sources if a structure is included as part of the LOMR request.

A LOMR allows property to be removed from the identified floodplain if it is placed on fill above the base flood elevation (BFE) after the date of the effective map. Technical data forms the basis for any LOMR request sent to FEMA. When FEMA issues a LOMR, it acknowledges that the physical change in the floodplain is consistent with sound floodplain management practices.

All LOMR requests must be submitted through the community, be it an elected official or designated employee or representative.

Specific guidelines set forth by NFIP regulations for a single lot/single structure LOMR requires submission of this specific technical information:

- a copy of the recorded deed indicating the legal description;
- a plat map indicating property location;
- a topographic map indicating ground elevations and the date(s) of fill placement including a description of how much the parcel in question is elevated on fill;
- if structure is involved, the elevation of the lowest floor in addition to the adjacent ground elevation must be included;
- data to substantiate the BFE (i.e. flood insurance study);
- fill placement must not be in the regulatory floodway; proof of fill placement to avoid settlement, erosion, or scour which must:
  - meet fill compaction standards
  - have acceptable vertical to horizontal slopes
  - have adequate protection from floodwater velocity by vegetative cover or riprap
- the fill placement must not be in the regulatory floodway; and
- must be certified by a registered professional engineer.

Using fill is the only way property can be physically removed from an identified floodplain other than a major structural flood protection project.

Single lot/single structure LOMRs can be sent directly to the FEMA regional office.

For more information on LOMRs, FEMA has published a booklet entitled *APPEALS, REVISIONS, AND AMENDMENTS TO FLOOD INSURANCE MAPS: A GUIDE FOR COMMUNITY OFFICIALS.* This booklet discusses guidelines and procedures for obtaining LOMRs and is available by writing to the Texas Water Commission, Flood Management Unit, P. O. Box 13087, Capitol Station, Austin, Texas 78711 or calling 512/463-8000.

NEW FACES AT THE FLOOD MANAGEMENT UNIT

After 17 years with the Texas Water Commission and the National Flood Insurance Program and two years as NFIP-State Coordinator, Roy Sedwick has resigned from the Texas Water Commission to go into private business. His many friends involved in floodplain management across the State will be pleased to know that Roy's new venture is still associated with floodplain management at the local level and he will continue to be very active in the newly formed Texas Floodplain Management Association. We wish him well in all future endeavors.

New faces in the Flood Management Unit are David P. Terry, R.M. Airey, Jr., P.E., and Sharon K. Jones. David recently received a Masters Degree in Environmental Science from Miami University of Ohio. Rick has been with the Dam Safety Unit of the Texas Water Commission for four years, is a Civil Engineer and an "Aggie." Sharon is new to Austin after completing eight years in the U.S. Air Force and requirements for a Bachelors Degree in Environmental Science.

We are glad to welcome David, Rick and Sharon, they will serve you well.

COMMUNITY RATING SYSTEM, *(The Idaho Waterlog, July 1, 1988)*

The Federal Insurance Administration (FIA) of the Federal Emergency Management Agency (FEMA) is investigating developing a Community Rating System for the National Flood Insurance Program (NFIP). By implementing activities that go beyond the minimum NFIP requirements, a community can reduce flood insurance premiums charged to its residents and businesses.

The success of the Community Rating System will depend on how well it can encourage local floodplain management activities.

To develop this system, Administrator Harold T. Duryee appointed a Community Rating Task Force composed of representatives of FIA, the insurance industry,and the Association of State Floodplain Managers. The task force has drafted a preliminary list of community activities that could be recognized by the system, including:

***MORE RESTRICTIVE STANDARDS FOR NEW DEVELOPMENT** - enforce floodplain regulations more restrictive that the minimum NFIP requirements.

***MORE RESTRICTIVE STANDARDS FOR EXISTING DEVELOPMENT** - enforce more restrictive "substantial improvements" regulations for improving existing buildings or repairing damaged buildings.

***FEMA ELEVATION CERTIFICATES** - provide completed Elevation Certificates or approved equivalent forms and make them readily available for flood insurance rating purposes.

***DISCLOSURE REQUIREMENTS** - a local ordinance or a state law would require sellers of property or realtors to advise prospective purchasers that a property has a flood hazard.

***PROGRAM TO REDUCE REPETITIVE DAMAGES** - prepare and implement a comprehensive mitigation plan that deals with local repetitive flooding or drainage problems.

***MAINTENANCE OF EXISTING STRUCTURAL FLOOD PROTECTION PROJECTS** - a community with an existing levee or reservoir (not already credited as providing base flood protection) would demonstrate that it is properly maintained and operated.

***CHANNEL MAINTENANCE PROGRAM** - get credit for ensuring that obstructions and potential obstructions to flood flows are removed or prevented.

STORMWATER MANAGEMENT PROGRAM - enforce an ordinance to ensure that new developments account for increased stormwater runoff.

***FLOOD WARNING AND RESPONSE PROGRAM** - prepare a comprehensive flood warning and response plan.

***HIGH RISK FLOOD HAZARD MITIGATION PROGRAM** - prepare and implement a comprehensive mitigation plan which addresses a community's special hazard (those not currently mapped or regulated under the NFIP, such as alluvial fans, rising lake levels, flash floods, and ice jams).

Over the next year, FIA will review these activities and select which ones should be recognized and what standards would be appropriate. FIA will evaluate whether the activities will indeed prevent or reduce flood damages and whether they can be observed and measured.

You or your community may have had experience with these activities or may be considering implementation. There may be other flood loss reduction activities that are not listed that should be considered. FIA is searching for more input. Copies of ordinances or other documents that describe what you do and your opinions on their effectiveness should be sent to the Texas Water Commission, Flood Management Unit, P. O. Box 13087-Capitol Station, Austin, Texas 78711 and Francis V. Reilly, Deputy Administrator, Federal Insurance Administration, 500 "C" Street, SW, Washington, D.C. 20472

"ESTIMATING BASE FLOOD ELEVATIONS,' *(The Idaho Waterlog, July 1988)*

On many Flood Insurance Rate Maps (FIRM) and all Flood Hazard Boundary Maps (FHBM) there exist approximately delineated Special Flood Hazard Areas (SFHA) designated as zone "A". These areas represent 100-year frequency flood hazards which the Federal Emergency Management Agency (FEMA) believes should be recognized, but do not have the magnitude of development or hazard potential to warrant a more detailed analysis. These areas do not show designated Base Flood Elevations (BFE's) since the engineering studies needed to produce these BFE's were determined to be unwarranted.

FEMA believes that it is consistent with the goal of wise floodplain management for a community to make an effort to secure an estimate of flooding potential before issuing a development permit even though FEMA has not done so and it is not strictly required by regulation. What is recognized is that all permit applications, at a minimum, be reviewed to determine ". . . whether proposed building sites will be reasonably safe from Flooding" [Section 60.3(a)(3)] and, where some kind of data exists, that the community "Obtain, review and reasonably utilize any Base Flood Elevation and Floodway data available from a Federal, State, or other source . . ." [Section 60.3 (b)(4)].

While it is not intended that a community be compelled to generate or have generated BFE data comparable to that on the FIRM, it is required that some effort be made to utilize existing knowledge. This data runs a broad spectrum of accuracy, ranging from historical knowledge of local officials to detailed studies produced by sources other than FEMA. The effort expended should usually be commensurate with the potential for loss of life or economic loss as a result of buildings proposed to be placed in the floodplain. A single isolated residence, an agricultural structure, or relatively insignificant non-residential structure might warrant only a quick perusal of in-office knowledge. Past flooding history, documented by photos, newspaper articles, high water marks, and verbal accounts not only supplies readily observable criteria, but is often more believable for developers than are elevations which are "predicted" or "forecast" by synthetic means.

Beyond the use of historical flood data, there are several degrees of flood elevation data that may be generated. Existing elevations produced by any type of engineering methods should be utilized. Where none exist, they may be required, depending on the type of development proposed. Section 60.3(b)(3) requires such information be obtained for subdivisions and other developments greater than 5 acres or 50 lots. This is usually easy since this type of development is most likely to already involve the services of an engineer or surveyor.

Where elevation data is to be generated, several options are available. Fairly sophisticated (and commensurately expensive) methods requiring the assistance of an engineer may be justified. Where an engineering analysis is justified, FEMA recommends at least the normal depth calculation method. FEMA staff can suggest other appropriate methods depending on circumstances.

Some of the less accurate but still adequate methods may include using the relative elevation of an identifiable flood boundary, visually inspecting geologic and vegetative evidence of past inundations, and using high water marks from previous events. Here ingenuity, creativity, and logic should guide the responsible community official.

Bear in mind that where a FIRM does not give elevations in Special Flood Hazard Areas (i.e., unnumbered A-Zones), the estimation of BFE's is both recommended in the community's ordinance and is rewarded with a lower insurance rate for the property owner. It certainly is in the best interest of both the community and property owner to make an effort to estimate the extent of the hazard.

THE GOLDEN AGE OF WARNING SYSTEMS *(Natural Hazards Observer, September, 1988)*

Warning systems are attracting the attention of Federal agencies, state and local officials, and vendors. Communities are turning to warning systems for protection against floods, landslides, and other hazards. While the relatively inexpensive technology in personal computer packages offers communities unprecedented access to real-life data on precipitation and stream heights, too much dependence on these systems holds potential dangers. If personal computer-based flood warning systems are to realize their specified goals for reducing loss of life and property, communities will need guidelines on the range of warning system choices, but with each agency providing different guidelines, clear choices are not apt to emerge. In addition, communities also need assurances that they will get the data they need both immediately and over the years as the political climate and personalities shift. Can such assurances be made at this time?

Because drainage basins frequently span political boundaries, both the collection of data about them and the maintenance of the data bases require cooperation among several Federal, regional, and state agencies. If the data bases are flawed, the computer programs which utilize them will yield inaccurate results. For some idea of the complexities involved, consider that the Bureau of Reclamation and the Federal Energy Regulatory Commission are investigating the utility of early warning systems for reducing the threat to public safety posed by dam failures. Other federal agencies involved in related tasks, particularly the Federal Emergency Management Agency and the Corps of Engineers, are in a policy formulation stage similar to that of the Bureau of Reclamation. Also, the National Weather Service is re-evaluating its policy for technical assistance to communities with ALERT systems. The specific roles of the various agencies, the appropriate technical and institutional standards for automated systems, and the nature of the cooperative agreements between agencies are all still being worked out.

Continuous communication among agencies is essential in this policy formulation stage. Officials should pick up their phones and talk to personnel in other agencies as well as those in their own. National meetings and interagency conferences offer the opportunities to discuss progress and success stories, to ask questions and solve problems. The increased activity of the federal Interagency Committee on Local Flood Warning Systems is a good indication that we're moving in the right direction.

Although warning systems and services are supposed to reduce loss of life and property, few pay much attention to getting the warning message to the population at risk. In most cases, the systems can more aptly be termed "detection systems" since no element providing for response is included. There are several vendors of the technical upstream prediction elements of warning systems; however, no companies specialize in determining how a community or regional government can best incorporate that information in public awareness and preparedness. It matters little how sophisticated the upstream technology is if awareness and warning dissemination programs are medieval.

In addition, warnings must be viewed as only part of an integrated and comprehensive flood loss reduction program. Some communities find flood warning systems to be inexpensive alternatives to politically unpalatable long-term solutions that call for restricting floodplain uses or enforcing existing regulations. In fact, it has been said that reliance on a warning system indicates the community's failure to manage its floodplain land. It will take more years of experience with the warning system, and some floods, before we can determine whether a community's strategy of developing a "detection system" protects it from either flood losses or legal liability for them.

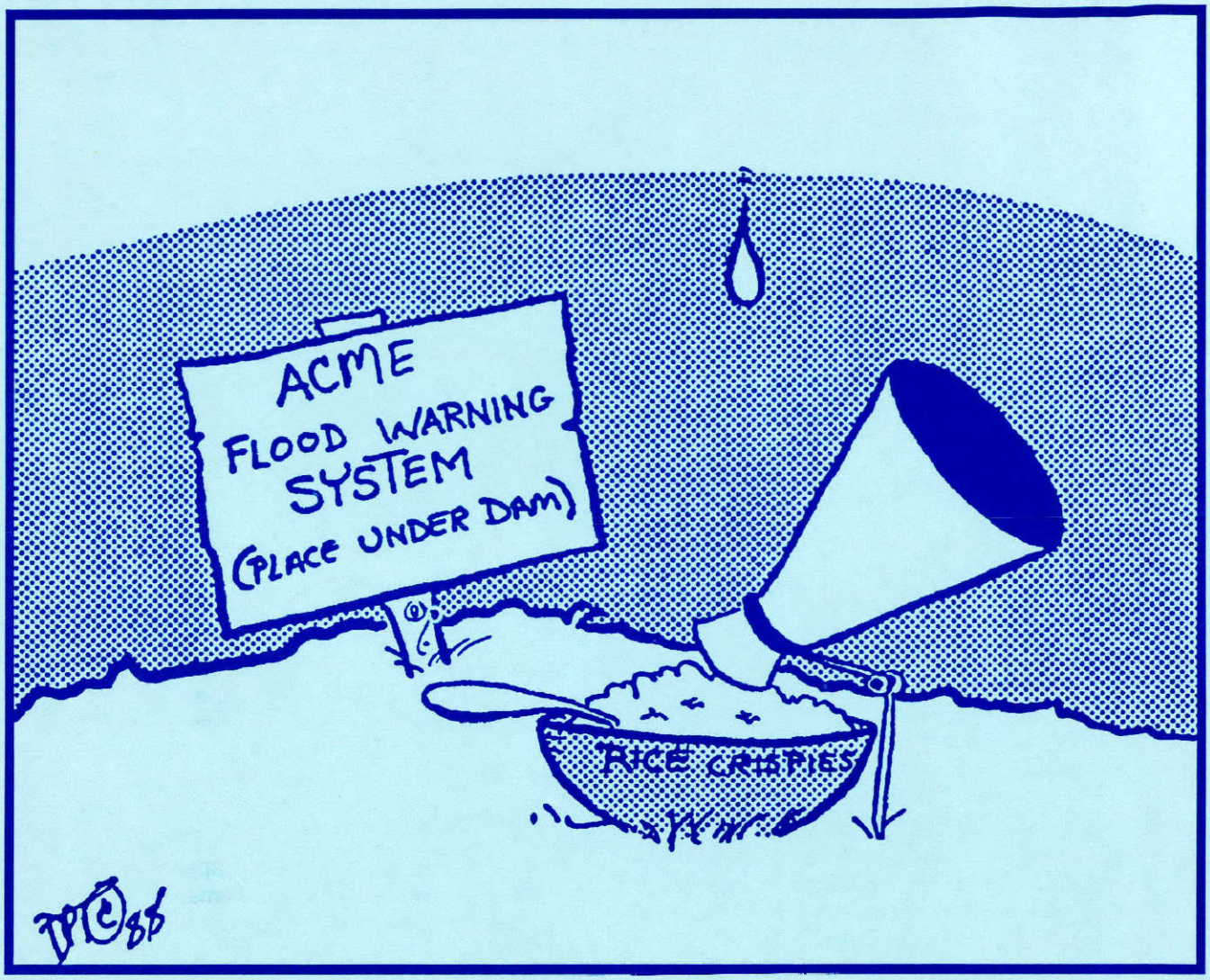
Instead of warning systems being political solutions with some technical merit, we must aim for systems that are balanced blends of technical capability and politically responsible policy. Such systems rely on continuous communications among all government agencies, and consistent assistance from federal agencies for communities attempting to mitigate their flood hazards.

MANUFACTURED HOME RULE SUSPENSION EXTENDED

The Federal Emergency Management Agency (FEMA) has extended the June 1987 suspension of the October 1, 1986 manufactured housing rule until August 1, 1989. This action by FEMA extends the suspension of revisions made to the NFIP regulations regarding the elevation of new, replacement, and substantially improved manufactured homes placed in existing mobile home parks and subdivisions in special flood hazard areas.

These suspensions will allow another evaluation of the potential impacts of the rule on manufactured housing industry. The evaluation is to be completed by January 1, 1989 and the final rule making complete by August 1, 1989.

FLOOD FOLLIES ***By David P. Terry***



COMMUNITY RATING SYSTEM UPDATE,

(ASFPM News and Views, August 1988) EDITED VERSION

In April, the Association prepared a draft report on the activities and circulated it for comment to over 400 floodplain and stormwater managers. Following lengthy discussions of these activities at the Policy Committee meetings during the Nashville conference in May, a committee of seven policy committee chairs and seven other technical advisors reviewed and approved the final report.

The Association's report was submitted to FIA and the Community Rating Task Force reviewed recommendations on which activities should be pursued. The Task Force commended the Association for the fine work and accepted most of our recommendations.

The next step will be the field survey. Communities that are already implementing the proposed activities will be asked to allow a survey team to spend 2 to 3 days with their staffs. The team will be looking at ways the activities are administered and how they can be observed, measured and credited. The surveys will be conducted during the coming winter.

Any community that is undertaking two or more of the activities listed in the draft Association report that was distributed to all members in April is invited to assist in the development of this new program. Interested locals should contact French Wetmore, 153 Nanti, Park Forest, IL 60466, (312)747-5273.

KNOW YOUR FLOODPLAIN MANAGEMENT ORDINANCE *(North Dakota Floodplain Management Newsletter, September, 1988)*

To participate in the National Flood Insurance Program (NFIP), communities enact a local floodplain management ordinance in return for flood insurance being made available to community residents. This ordinance must meet minimum floodplain management standards established by the NFIP, regulating all construction and development in the community's identified flood hazard areas. In Texas, the floodplain management ordinance is usually not incorporated into other zoning ordinances, but stands as a separate ordinance. In order for these ordinances to be effective they must be read and understood by the community floodplain administrator.

The floodplain management ordinance sets forth construction standards and establishes a development permit system if a building permit system does not already exist within the community. The development permit system enables the community to review all proposed development taking place in the floodplain to ensure compliance with the local floodplain management ordinance. Development is defined by the NFIP as "any man-made change to improved or unimproved real estate, including but not limited to building or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operation." Permits are required for all floodplain development unless it is clear that the development is insignificant. The floodplain administrator needs to be familiar with the development permit system and the citizenry knowledgeable about the necessity of a permit before development begins. The floodplain management ordinance contains specific standards that must be met during construction. The result of misinterpreting these standards could prove to be very costly to the community and property owner in terms of flood damage, flood insurance costs and lawsuits.

Technical professional help is mandatory to ensure the development meets floodplain standards. The vast majority of floodplain development must have a registered surveyor or engineer certify that floodplain standards have been met. All structures constructed in the floodplain must have the lowest floor elevated to or above the BFE or higher, if specified in the local ordinance. A registered surveyor or engineer must certify that the building's lowest floor is to or above this elevation. The use of registered surveyors or engineers should be routine procedure accompanying all development permits.

Recordkeeping is another important part of a community's responsibility in administering the floodplain management ordinance. Records must be kept to verify compatible floodplain development. The lowest floor elevation of all new or substantially improved buildings must be obtained, certified and kept on file along with supporting information such as engineering data and project description. Communities need to organize and maintain a recordkeeping system to document all building and development activities.

Proper administration of the floodplain management ordinance is the key to an effective floodplain management program in a community. The community administrator needs to be knowledgeable about the floodplain management ordinance requirements to do a good job in helping development be floodplain compatible.

LIGHTNING STRIKES AGAIN

The lightning bolt may be a much more capricious force of nature than was previously thought, according to recent research. That is because lightning strikes may be considerably more numerous than the frequency indicated in historical weather records.

For years the incidence of lightning has been estimated by weather observers throughout the country trained to detect the sound of thunder, a by-product of lightning. But new research suggests that as much as a third of all lightning flashes fail to generate thunder loud enough to be detected by the ears of observers strategically placed over the U.S.

A significant miscalculation of lightning occurrence can lead some to believe they are not as vulnerable as, in fact, they really are to damage wrought by electrical storms. "Those who have to worry about the risk of lightning damage (for example, nuclear power plants) have had to use data based on records (of thunder) to develop their risk analysis," says Stanley A. Changnon of the University of Rochester. "It's very clear that thunder rather dramatically underestimates the frequency of lightning near a given point.

Changnon performed a series of elaborate measurements of actual cloud-to-ground bolts of lightning using electromagnetic detectors. He found between 22 and 40 percent of all lightning flashes occur in the absence of discernible thunder.

There were 86 fatalities traceable to lightning in the U.S. in 1987, while lightning-induced injuries totalled 365. Eleven people were injured while in open fields, ball parks, and other open spaces, and most of the remainder were engaged in water sports when lightning struck. According to National Weather Service records, Florida led all states with 11 deaths attributable to lightning. Remarkably, Texas sustained none last year. In a normal year, however, the Lone Star State ranks near the top of the list of states suffering lightning casualties.

Remember

Your community receives one copy of this Newsletter. Please circulate to all key personnel with responsibilities in Floodplain Management or Emergency Management.

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