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# NATIONAL FLOOD INSURANCE PROGRAM

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The Federal Emergency Management Agency (FEMA) recently announced plans to revise the Flood Insurance Rate Maps (FIRM) for the cities of Fargo and Grand Forks. The proposed revisions are a result of the flood of 1997 and will place many homes in both cities within the 100-year floodplain. Property owners in those areas would then be required to maintain flood insurance if their lending institution is federally regulated. In Grand Forks, the projected floodplain will include an estimated 6,000 to 8,000 properties (approximately 50% of the city)(Christina Stonecipher, pers. comm., November 9, 2000).

The following is a summary of information that may be obtained from the Federal Emergency Management Agency website located at <http://www.fema.gov/nfip/>.

## The Facts

Each year floods throughout the United States cause over \$2 billion in property damage. Floods are the most common natural disaster, resulting in 61% of Presidentially declared disasters. Additionally, one out of four flood-insurance claims is from an area thought to have a low to moderate risk of flooding. According to FEMA, a house has a 26% chance of being flooded during the life of a 30-year mortgage - considerably higher than the 4% chance of fire over the same time. Moreover, losses due to flooding, unlike fire, are not covered by the average homeowner policy. The National Flood Insurance Program (NFIP) was created to provide the necessary insurance to protect homeowners who live in areas with the greatest risk of flooding. It currently insures 4 million policyholders in 19,000 communities throughout the country.

Loans from lending institutions that are federally regulated or insured require flood insurance on buildings in the Special Flood Hazard Area (SFHA). Flood insurance may save the policyholder as much as \$3700 per year (<http://www.fema.gov/nfip/compar.htm>). After a flood, available disaster assistance is usually issued in the form of low interest loans that must be repaid. Data from FEMA shows that the average length of a \$50,000 Small Business Administration disaster home loan is 20 years and has an average monthly payment of \$311 (in comparison, \$100,000 of flood insurance coverage is an average of \$306 per year). Also, a community must be declared a Federal disaster area before it is eligible for disaster assistance. This declaration is issued in less than 50% of flooding incidents. Flood insurance claims are paid even if there is no declared disaster.

The principal benefit of the NFIP is to insure property

owners of participating communities against flood losses at reasonable rates. Secondly, flood insurance is still available even if the home, apartment, or business has been previously flooded. Thirdly, besides disaster coverage, reimbursements are available for actions taken to prevent flood damage. And finally, the program requires active community involvement resulting in wise floodplain-management and construction practices that reduce losses.

## The Program in General

The NFIP was established by Congress in 1968 (National Flood Insurance Act of 1968) to reduce flood losses and the escalating costs of disaster relief. Previously, the national response to flood disasters was limited to the construction of flood-control works such as dams and levees and to providing disaster relief to flood victims. This did not reduce the losses or discourage unwise development. The NFIP combines the concept of insurance protection with hazard mitigation.

A community is required to participate in the NFIP before insurance is offered to its residents. Community participation reduces disaster-relief costs by practicing adequate flood-hazard mitigation. A flood-prone community is given one year to participate without consequences. Federal monies are withheld from a community that fails to participate in the NFIP. Loans guaranteed by the VA or FHA or secured by the Rural Housing Services are prohibited.

A community that does not enforce the floodplain-management ordinance can be placed on probation or suspended from the program. The penalty for probation is an additional \$50 charge on the premium of each policy sold. A community is suspended when it fails to solve its compliance problems or fails to adopt an adequate ordinance. When suspended, a community is considered non-participating, and flood insurance policies cannot be written or renewed.

The purchase of flood insurance was voluntary until 1973. The Flood Disaster Protection Act of 1973 mandated lending institutions to require flood insurance for loans secured for improved properties within the SFHA. Financial institutions could not increase, extend, or renew any loan not covered by insurance. This coverage was to be maintained for the life of the loan.

To encourage the purchase of flood insurance outside of the SFHA, in January 1989, the NFIP began offering the "Preferred Risk Policy", a low cost insurance policy for buildings located in Zones B, C, and X (Table I). The

program was modified by the National Flood Insurance Reform Act of 1994 after the devastating floods in the Midwest during the summer of 1993. After the flood, it was discovered that there was a low level of subscription to flood insurance among eligible property owners. The Reform Act tightens the 1973 Act by imposing new obligations on both mortgage originators and servicers. Flood insurance must now be obtained and maintained for the life of the loan. Flood insurance is required even if the SFHA designation is determined after the settlement of a loan.

### Community Rating System

The Community Rating System (CRS) was implemented in 1990 with three goals: to reduce the amount of flood losses, to facilitate accurate insurance ratings, and to promote awareness of the flood-insurance program. The cost of participation is related to the implementation of a creditable floodplain-management program. Benefits for participation are in the form of discounts for flood-insurance premiums. Participation by the community beyond the minimum requirements may result in rate reductions for policyholders of 5% to 45%.

The program is based on a point system of local mitigation, outreach, and educational activities by the

community. There are 10 classes with credit points earned from 18 activities in four categories: public information, mapping and regulations, flood-damage reduction, and flood preparedness.

Currently, 900 communities participate in the CRS on a nationwide basis. Grand Forks has belonged to the program since 1990 and is the only community within the state to do so. Because of the active work by the City of Grand Forks in this program, property owners currently have a 20% reduction in their insurance premiums. In the fall of 2001, this reduction will increase to 25% for properties in Zone A and 5% for properties in Zone B (*Grand Forks Herald*, April 26, 2001). Grand Forks is one of three communities within the country to achieve these reductions.

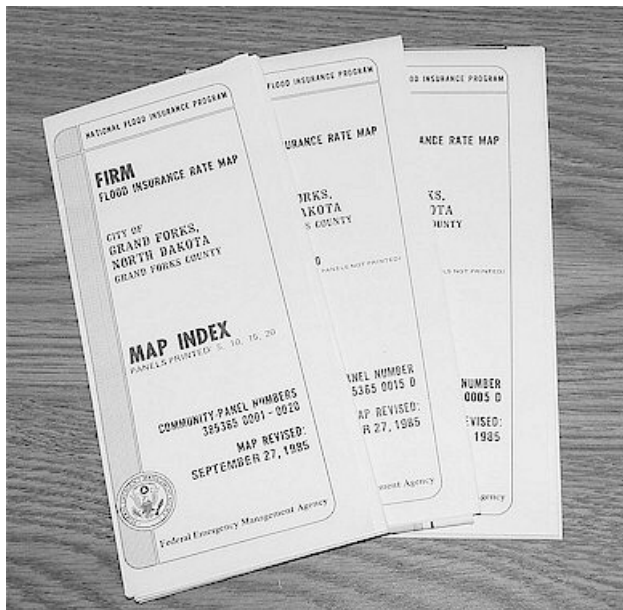
### Special Flood Hazard Area (SFHA)

A series of maps, Flood Hazard Boundary Map (FHBM), Flood Insurance Rate Map (FIRM), Flood Boundary and Floodway Map (FBFM), identifies and defines the flood-hazard zone for insurance purposes (Figure 1). The Special Flood Hazard Area (SFHA) is defined as an area of land that would be inundated by a flood having a 1-percent chance of occurring in any given year (i.e., the 100-year flood) (Figure 2). Flood insurance is required for structures located within

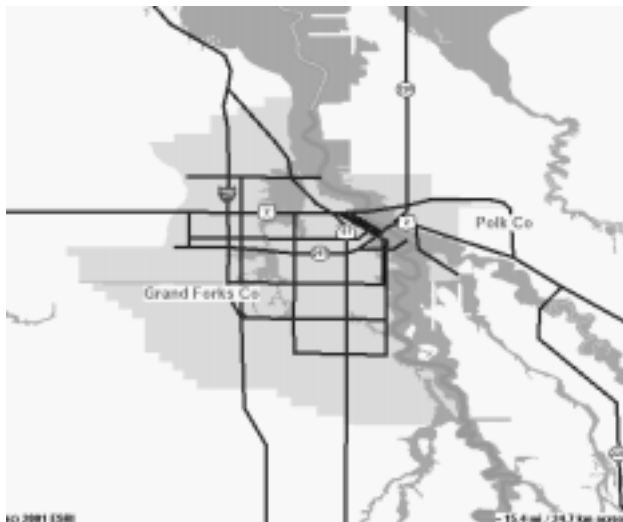
**Table 1. Flood Zone Designations**

|                          |   |
|--------------------------|---|
| <b>Zone A</b>            | Areas subject to inundation by the 100-year flood event. Mandatory flood insurance purchase requirements apply.   |
| <b>Zones AE; A1-A30</b>  | Areas subject to inundation by the 100-year flood event determined by detailed methods. Base flood elevations are shown within these zones. Mandatory flood insurance purchase requirements apply. (Zone AE is used on new and revised maps in place of Zones A1-A30.)  |
| <b>Zone AH</b>           | Areas subject to inundation by 100-year shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base flood elevations derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements apply.  |
| <b>Zone AO</b>           | Areas subject to inundation by 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown within this zone. Mandatory flood insurance purchase requirements apply.  |
| <b>Zone A99</b>          | Areas subject to inundation by the 100-year flood event, but which will ultimately be protected upon completion of an under construction Federal flood protection system, such as dikes, dams, and levees. Mandatory flood insurance purchase requirements apply.   |
| <b>Zones B, C, and X</b> | Areas identified with moderate or minimal hazard from the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems. The failure of a local drainage system creates areas of high flood risk within these rate zones. Flood insurance is available in participating communities but is not required by regulation in these zones. (Zone X is used on new and revised maps in place of Zones B and C.) |
| <b>Zone D</b>            | Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.   |

(from: <http://www.fema.gov/nfip/fhamr.htm>)



**Figure 1.** Flood Insurance Rate Maps issued by the National Flood Insurance Program.



**Figure 2.** Example of a FIRM map for the City of Grand Forks. Map was generated online for requested area as part of “Project Impact - Hazard Information and Awareness,” a combined effort by Environmental Systems Research Institute, Inc. (ESRI) and FEMA (<http://www.esri.com/hazards/makeup.html>).

the 100-year floodplain to protect federal financial investments. These maps are on file in a local repository in the community (e.g., city engineering offices).

### Hazards Assessments and Mapping Requirements

FEMA assesses the community’s degree of flood risk and development potential, and if appropriate, arranges for a study of the community to determine Base Flood Elevations and flood-risk zones (Table 1). FEMA provides the studied community with a Flood Insurance Rate Map (FIRM) delineating Base Flood Elevations and flood-risk zones. The

community is given six months to adopt Base Flood Elevations in its local zoning and building-code ordinances. Adoption by the community of these more stringent ordinances results in FEMA converting the community to the NFIP’s Regular Program. The regular program allows policy holders to purchase insurance at a higher rate of coverage. The actuarial rates, based on the risk zone designations shown on the FIRM (Table 1), are then applied for newly constructed, substantially improved, and substantially damaged buildings.

### Method

The flood-hazard map is developed from a statistical analysis of precipitation and discharge data. Information obtained from consultation with the community is also considered. Additionally, topographic surveys of the floodplain as well as hydrologic and hydraulic analyses are used.

The above items are used to determine the SFHA, the “100-year” or “base-flood elevation,” which includes Zones A, AO, AH, AI-A30, AE, and A99 (Table 1). The Moderate Flood Hazard Area is between the limits of the base flood and the 0.2-percent-annual-chance (500-year) and is designated on the maps as Zone B or X (shaded). The Minimal Flood Hazard Area is the area outside the SFHA and above the 0.2-percent-annual-chance level and is designated on the maps as Zone C or X (unshaded).

Also included on the map is the regulatory floodway adopted by the community as part of the floodplain-management ordinance. The regulatory floodway is the area that includes the stream and its overbanks that is necessary to discharge a 1-percent flood. Development may occur in the floodway provided it does not raise the flood level more than 1 foot. The community is responsible for prohibiting encroachments unless it can be proven that flood levels will not be increased.

If a flood control-project is partially completed, provides an adequate level of protection, and involves federal funding, then FEMA will revise the FIRM to show changes in the floodplain. This is only done if the critical features of the project are under construction, 50% of the total cost has been expended, and 100% of the funding is authorized.

### Procedures for Correcting the Maps (FIRM - FIS)

Physical change to a map is referred to as a Physical Map Revision. It is the official re-publication of a community’s NFIP to effect changes to Base Flood Elevations, floodplain-boundary delineations, regulatory floodways, and planimetric features. Only FEMA can amend an official flood map. The community’s Chief Executive Officer submits scientific and technical data to FEMA to support the request.

When a project is proposed within the SFHA, FEMA may be asked to comment or review the proposed project to

see if it meets the minimum floodplain-management criteria. This results in a Letter of Map Change. The letter involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a designated SFHA. Lenders are bound by the FIRM unless a valid letter has been issued. Even then, it should be noted that the lending agency determines whether or not they will waive the requirement for flood insurance.

## Flood Insurance

### General Information

There are two phases of flood insurance once a community chooses to participate in the NFIP. The first is the Emergency Phase that allows policies to be written for a limited amount of insurance at less than actuarial rates (Table 2). Insurance rates are determined from the Flood Risk Boundary Map. The second phase, Regular Program, occurs after the FIRM is finished and a detailed engineering study is done. The Regular Program allows policyholders to purchase higher amounts of flood-insurance coverage.

Owners of insurable property within the community are eligible to purchase flood insurance provided the community participates in the program. Flood insurance is available even if the property has been flooded. This means any walled or roofed building that is principally above ground and not entirely over water may be insured if it is in a participating community. Contents and finishing materials located in a basement or in enclosures below the lowest elevated floor of an elevated building constructed after the FIRM became effective are not covered. Again, insurance is mandatory if the structure is in the SFHA, it is prudent outside of the SFHA.

Property owners within the SFHA who received disaster assistance must purchase and maintain flood insurance for as long as they live in the dwelling. They must also notify the buyer of the house to do the same. If the insurance is not maintained, future disaster assistance will

be denied.

### Cost

The average cost of a flood insurance policy is \$353 per year. The average amount of insurance coverage purchased is \$124,089 (as of April 30, 2000). Premiums typically range from \$700 annually in "A Zones" to \$201 for a \$100,000 single family home (Table 3).

A Preferred Risk Policy is available for owners of 1- to 4-family residential buildings and provides the same coverage as the standard flood-insurance policy but at a lower rate. The Preferred Risk Policy cannot be written if: (1) there have been two loss payments, each more than \$1000, or three or more loss payments, regardless of amount; or (2) two Federal Disaster Relief payments, each more than \$1000, or three Federal Disaster Relief payments, regardless of the amount, one flood-insurance claim payment and one flood-disaster relief payment each more than \$1000.

The standard minimum deductible on subsidized rate insurance (Preferred Risk Policy) is \$1000. The minimum deductible for all other policies is \$500. The maximum deductible is \$5000. There is a premium discount for deductibles higher than the standard \$500 and \$1000, however the lender can dictate the amount of the deductible.

### Coverage

Direct physical losses by flooding are covered by the Standard Flood Insurance Policy. It does not provide additional living expenses. The most complete insurance includes coverage of both building and contents for the broadest protection. Coverage for the building includes sump pumps, well water tanks, oil tanks, pumps, furnaces, hot water heaters, air conditioners, heat pumps, electrical junctions, circuit breaker boxes, foundation elements, stairways, drywall, ceilings, including fiberglass insulation, and cleanup.

A basement is considered by the NFIP to be any portion of a building with a floor below ground level on all sides. Coverage for basements includes foundation elements, utility

**Table 2. Flood Insurance Coverage Available Limits of Liability (as of March 1, 1995)**

| Coverage Category        | Emergency Program | Regular Program |
|--------------------------|-------------------|-----------------|
| <b>Building Coverage</b> |                   |                 |
| Single Family Dwelling   | 35,000            | 250,000         |
| 2-4 Family Dwelling      | 35,000            | 250,000         |
| Other Residential        | 100,000           | 250,000         |
| Non-residential          | 100,000           | 500,000         |
| <b>Contents Coverage</b> |                   |                 |
| Residential              | 10,000            | 100,000         |
| Non-residential          | 100,000           | 500,000         |

(from: [http://www.fema.gov/nfip/c\\_cov.htm](http://www.fema.gov/nfip/c_cov.htm))

**Table 3. Examples of Flood Insurance Premiums for a \$100,000 Single Family Home**

| Pre- or Post-FIRM | Zone              | Other Rating Factors  | Premium    |
|-------------------|-------------------|-----------------------|------------|
| Pre-FIRM          | Zone A1-30, AE    | No Basement           | \$595.00   |
|                   |                   | With Basement         | \$700.00   |
| Post-FIRM         | Zone A1-30, AE    | At BFE*               | \$431.00   |
|                   |                   | 1 Foot above BFE*     | \$301.00   |
|                   |                   | 1 Foot below BFE*     | \$1,251.00 |
| Pre-FIRM          | Zone AO, AH       | With Certification**  | \$201.00   |
|                   |                   | Without Certification | \$585.00   |
| Post-FIRM         | Zone B, C, X, A99 | No Basement           | \$351.00   |
|                   |                   | With Basement         | \$441.00   |

(from <http://www.fema.gov/nfip/premium.htm>)

\*BFE - Base Flood Elevation found on Flood Insurance Rate Map.

\*\*Certification is determined by an Elevation Certificate completed by a licensed engineer, surveyor, or architect.

Pre/Post FIRM is determined by the date of the initial Flood Insurance Rate Map. Premium values are based on total written premium plus Expense Constant, Federal Policy Fee and Increased Cost of Compliance premium. Effective date: May 1, 2000

connections, mechanical equipment (furnaces, hot water heaters, clothes washers and dryers, food freezers, air conditioners, heat pumps, electrical junctions, and circuit breaker boxes) only. Basement improvements such as finished walls, floors, ceilings, or personal belongings are not covered. However, some of these items may be covered by building or contents coverage. This is why the NFIP encourages the purchase of both, so policyholders have the broadest protection.

There is coverage for preventative measures taken when a building is threatened by flooding. Reasonable costs regarding the removal and return of insured contents to a safe location are covered up to \$500 with no deductible. Additionally the purchase of sandbags and sand, plastic sheeting, pumps, fill for temporary levees, and wood may be reimbursed up to \$750 with no deductible.

### **Implications of the Revised Flood Insurance Rate Map**

#### **Grand Forks**

Following the procedure outlined by FEMA and the NFIP, representatives from FEMA and the U.S. Army Corps of Engineers met with the Grand Forks City Council in an informational meeting ("Time and Cost") on September 7, 2000. The purpose was to inform the City of Grand Forks about the revision of the Flood Insurance Rate Map and its implications. This meeting also presented the administrative time line that FEMA has set for this revision.

The FEMA representative reported that FEMA had met previously with the U.S. Army Corps of Engineers, the U.S. Geological Survey, and other parties to determine the administrative discharge for the Red River. Currently the discharge used to determine the 100-year floodplain for the

City of Grand Forks is 89,000 cubic feet/second. The parties at this meeting agreed on a new discharge value of 110,000 cubic feet/second. FEMA estimates that this value will equate to a 1 to 1.5 foot increase in the Base Flood Elevation in the city.

The size of the flood-insurance study area to be included in the upcoming study was requested from the Grand Forks City Council by the FEMA representative. He also stated that a \$40,000 contract had been awarded to the U.S. Army Corps of Engineers in St. Paul, Minnesota, to study the hydraulics and hydrology of the city and determine the new Base Flood Elevation. This study is to be finished by September 30, 2001. The area examined by this study does not include the English Coulee. The completion of the English Coulee portion of the new flood control project under contract to the U.S. Army Corps of Engineers is scheduled for the same time as the FIRM map; therefore that area of the city is protected and would not be assessed flood insurance. Unlike the ring dikes around portions of East Grand Forks, and the English Coulee projects that will preclude those areas from having to purchase flood insurance as they are completed, Grand Forks will not be fully protected from flooding until the proposed dike project is finished. The completion of this study is three to four years before the completion of the dike project.

It is estimated that the new Flood Insurance Rate Map for the City of Grand Forks will be published sometime between September 2002 and January 2003. At that time, approximately 50% of the homes in the City of Grand Forks will be required to carry flood insurance. Houses are included in the 100-year floodplain if their first floor elevation (in most cases the basement slab) is below the Base Flood Elevation. Flood insurance will have to be maintained on their properties until the completion of the dike project two

to three years later. The combined cost of this flood insurance for city residents is estimated to be 3 to 4 million dollars.

If flood insurance is purchased prior to the completion and publication of the new Flood Insurance Rate Map, it may be obtained at the lower current rate. It would have to be the Standard Flood Insurance B Zone policy. As long as the insurance is maintained, this rate will not increase with the new map. Therefore, residents that may be in the new projected 100-year floodplain would be wise to check with their insurance agent and purchase flood insurance prior to September 2002 at a cost between \$200 and 400 per year.

### **Fargo**

FEMA is also re-evaluating the Flood Rate Insurance Map for Fargo as a result of the flood of 1997. The FIRM currently in use was published in 1979 and had a Base Flood Elevation of 38.3 feet. The adjusted discharge for the Red River of the North in Fargo has been set at 30,000 cubic feet per second. This will equate to a proposed Base Flood Elevation of 40.8 feet.

After the map revision, it is estimated that 40% to 60% of the homes in the Fargo area will be placed in the floodplain and will be required to have flood insurance. These would include the majority of the homes south of I-94. The City Engineer of Fargo estimates that the cost of flood insurance for a \$100,000 home in the floodplain would be between \$500 and \$1500 per year (*Fargo Forum*, October 27, 2000).

### **Additional Information**

<http://www.fema.gov/>  
<http://www.state.nd.us/dem/>  
<http://www.crh.noaa.gov/fgf/index.html>  
<http://nd.water.usgs.gov>  
<http://www.riverwatchonline.org>  
<http://www.rrbdinl.org>  
<http://www.ijc.org/ijcweb-e.html>  
<http://www.rwic.und.edu/flood>  
<http://www.swc.state.nd.us/>