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MN DEPT OF NATURAL RESOURCES  
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**FLOOD PLAIN MANAGEMENT**  
**Informational Brochure No. 2**  
**December 1981**

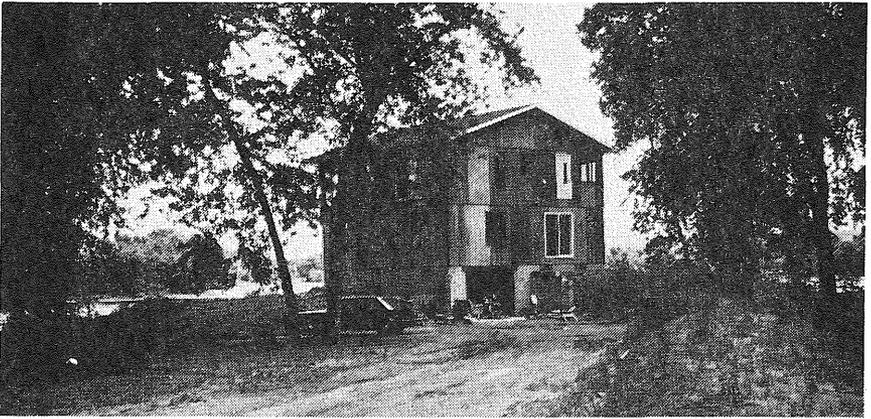
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**Before  
You Buy  
Or Build In  
The Flood Plain:**

**WHAT  
YOU  
SHOULD  
KNOW**

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1981

**Prepared by**  
**Minnesota Department of Natural Resources**  
**Division of Waters**  
**Land Use Management Section**



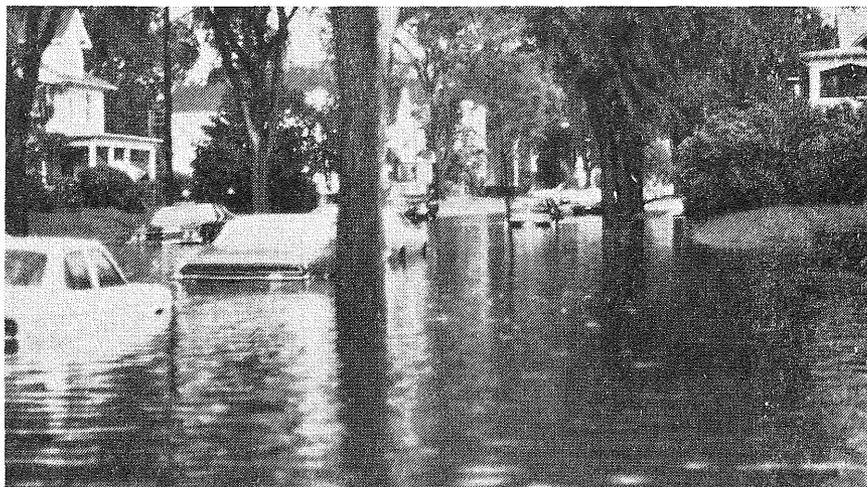
Minnesota has approximately 95,000 miles of streams and rivers and over 10,000 lakes. These lakes and watercourses are confined within their banks throughout most years. Periodically, these waterbodies reclaim the valley bottoms resulting in the flooding of low-lying lands. This flooding normally occurs during heavy summer thunderstorms, or a combination of snowmelt and spring rains.

Historically, people have developed these low-lying areas adjacent to lakes and watercourses without taking the flood threat into account. The end result, in Minnesota, is an average annual flood loss of 60 million dollars to private structures, (residential, commercial, industrial), government services (roads, power plants, sewage treatment plants, etc.), and agricultural interests. There are also indirect losses to the community due to flood prevention costs, transportation detours, loss of business, loss of employment and loss of life.

Until the late 1960's, the primary method of reducing flood damage consisted of building structural projects such as dikes, levees, and floodwalls. In spite of these structural projects, average annual flood losses in Minnesota continued to increase because of unwise flood plain development. To combat these flood losses, the Minnesota Legislature enacted a comprehensive Flood Plain Management Act in 1969. The Flood Plain Management Act states that the policy of the state is to reduce flood damages principally through nonstructural methods such as flood plain zoning regulations, flood insurance, disaster planning and flood warning systems.

In 1973, the Flood Plain Management Act was amended to include a provision which requires Minnesota's flood-prone communities to participate in the National Flood Insurance Program (NFIP). With entry into the NFIP, the people of Minnesota have the opportunity to insure themselves from future flood losses through the purchase of flood insurance. The Minnesota Department of Natural Resources is the State Coordinating Agency for the NFIP.

One of the goals of a community flood plain management program is to educate the general public and local officials about the potential risks to life and property that exist in flood plain areas. Flood plain management regulations and flood insurance availability through the NFIP should not be viewed as a regulatory framework that encourages development in flood-prone areas. The ideal approach to flood plain management is to avoid developing flood-prone lands if at all possible. However, flood plain regulations are a regulatory tool to provide for the wise use and development of flood plain areas when development pressure occurs.



## **QUESTIONS AND ANSWERS**

### **What is “Flood Plain Management”?**

“Flood Plain Management” means the operation of an overall community program of corrective and preventive measures for reducing flood damage. These measures can include (but are not limited to): emergency preparedness plans, local zoning and subdivision regulations, building codes, flood insurance, flood warning systems, or structural projects, such as levees, dikes or floodwalls.

### **What are “Flood Plains”?**

Under Minnesota state law, the flood plain is the land adjoining rivers and streams that will be inundated by the 100-year frequency flood. Flood plains can be relatively flat areas several miles wide, as along the Red River of the North, or they may be very narrow, as along small streams with steep banks.

## **What is a “100-year Frequency Flood”?**

The “100-year Frequency Flood” is a flood, which over a long period of time, can be expected to be equaled or exceeded on the average, of once in each 100-year period (hence the term 100-year flood). A flood of this magnitude may occur in consecutive years or it may not occur for several hundred years. Floods approaching this magnitude have occurred in Mankato in 1952, 1965, and 1969. In the summer of 1972, Duluth suffered two 100-year floods. In the lifetime of a 30-year mortgage, a house built in the 100-year flood plain has more than a one-in-four chance of being inundated by the 100-year flood.

## **What is a “Probability of Occurrence”?**

The “Probability of Occurrence” is the percent chance that a flood of a given frequency will be equaled or exceeded in any given year. The commonly used flood frequencies and percent chance of occurrence comparisons are:

<b>Frequency</b>	<b>% Chance of Occurrence per year</b>
10-year frequency flood	10.0% chance per year
50-year frequency flood	2.0% chance per year
100-year frequency flood	1.0% chance per year
500-year frequency flood	0.2% chance per year

## **What are “floodway” and “flood-fringe” areas?**

The floodway includes the channel of the watercourse and those portions of the adjoining flood plain which are reasonably required to carry and discharge a “100-year” flood. The flood-fringe is that portion of the flood plain outside the floodway.

## **What is “flood proofing”?**

Flood proofing involves a number of construction methods which, when applied to structures or properties, will prevent or reduce flood damages. Flood proofing measures may be included in the design and construction of new structures or with the modification to existing structures. Typical flood-proofing measures include: anchoring structures to resist flotation and displacement; the use of reinforced concrete and masonry walls and floors to resist water pressure; the installation of water-tight doors and bulkheads; the sealing of basement windows and other openings; and locating electrical, heating, and plumbing systems in a manner so as to reduce or prevent flood damage.

## What is the “Regulatory Flood Protection Elevation”?

The “Regulatory Flood Protection Elevation” (RFPE) is the elevation to which new structures and additions to existing structures in flood plain areas must be elevated on fill or flood proofed. The RFPE is commonly defined as the elevation of the 100-year frequency flood (in feet above mean sea level datum) plus one-foot of freeboard (safety factor) plus the stage increase (rise in the 100-year flood water surface elevation) caused by encroachment in the flood plain.

## Where can I find out if a piece of property is within the flood plain?

You can determine whether or not a piece of property is located in a designated flood area by checking with the local community’s building or zoning officials (ask for the “Flood Hazard Boundary Map” or “Flood Insurance Rate Map” published by the Federal Insurance Administration). These maps are also available from the Regional offices of the Minnesota Department of Natural Resources.

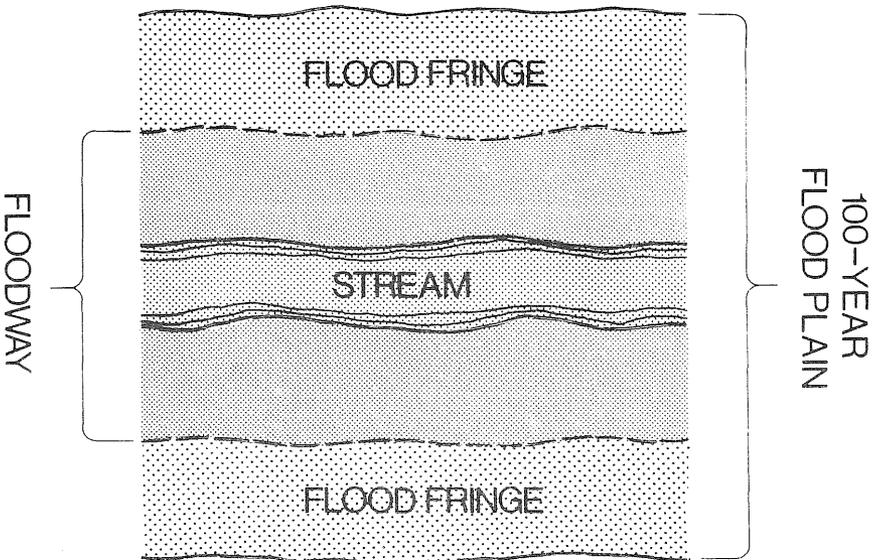


# FLOOD PLAIN REGULATIONS

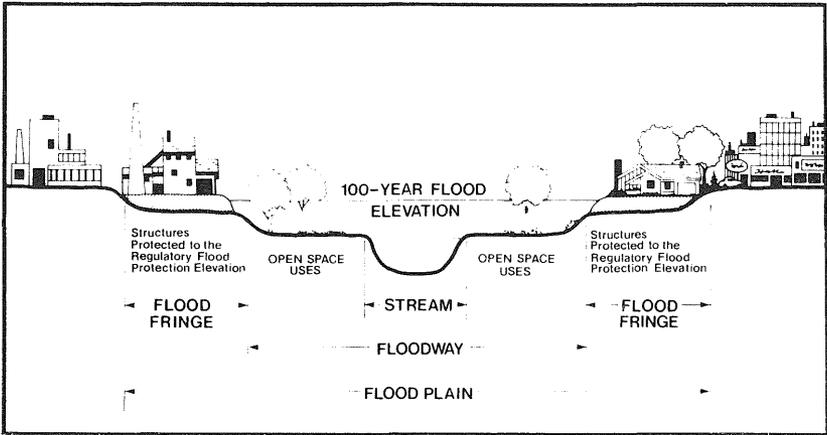
Flood plain regulations are adopted and administered by county government for the unincorporated areas of a county and by municipal government for incorporated areas of the county. Local units of government in Minnesota must adopt comprehensive flood plain regulations when the Commissioner of Natural Resources notifies the community that adequate technical data are available to define areas subject to flooding. A community must also adopt flood plain regulations to maintain eligibility in the NFIP when notified by the Federal Insurance Administration that a flood insurance study has been completed for the community.

Flood plain regulations adopted by local units of government must be in compliance with state standards for flood plain management. The existing state standards are contained in the Department of Natural Resources' regulations entitled "Statewide Standards and Criteria for Management of Flood Plain Areas of Minnesota." State standards and local regulations specify the allowable land uses within floodway and flood fringe areas and when structural development is allowed, these regulations specify the flood protection standards that must be met.

The "floodway zone" is a high hazard area adjacent to the stream channel which is considered the minimum area necessary to carry flood waters downstream and is generally subject to faster flowing water velocities and greater flood depths. Generally, open space uses (agriculture, residential lawn areas, daytime recreational uses, nature areas, etc.) that do not require structures, fill or storage of materials or equipment are permitted uses within the floodway zone. Other uses that require fill, accessory structures to open space uses, or the storage of materials or equipment may be permissible within a floodway zone if the proposed activity does not cause an increase in flood heights and adequate safeguards are taken to prevent flood damage.



The “flood fringe zone” is a lower-hazard area within the 100-year flood plain outside of the floodway zone. It generally consists of flood storage and backwater areas and is characterized by lower water depths and velocities than the floodway zone. It is usually on the outer part of the flood plain. Local units of government may, if they so choose, allow new residential, commercial and industrial structures or additions to existing structures within the flood fringe zone. This development must be properly elevated on fill or flood proofed to the regulatory flood protection elevation.



In addition, most local ordinances specify a special administrative review procedure (called a conditional use permit) for those activities which require: 1) fill, storage of materials or equipment, or accessory structures to open space uses in the floodway district, or 2) flood proofing in lieu of elevating a building on fill in the flood fringe district. Once it is determined that a proposed development is located within the 100-year flood plain, the local building inspector or zoning administrator should be contacted immediately to determine if the proposed use is permissible and what flood protection standards must be met.



# FLOOD INSURANCE

The National Flood Insurance Program (NFIP) is administered by the Federal Insurance Administration in Washington, D.C., and by the Federal Emergency Management Agency's (FEMA) Regional Offices throughout the country. The FEMA Regional Office for the State of Minnesota is located in Chicago, Illinois. Flood insurance is available in those communities in Minnesota participating in the NFIP.

## QUESTIONS AND ANSWERS\*

### **What is the National Flood Insurance Program?**

It is a Federal program enabling property owners to buy flood insurance at a reasonable cost. In return, communities carry out local flood plain management measures to protect lives and new construction from future flooding.

### **Why is the National Flood Insurance Program important to property owners and taxpayers?**

For a reasonable cost, people purchasing or owning property in a flood plain can insure against flood losses. With local regulations of flood plains, new construction will be better located and built to withstand flooding or be located in an area without flooding. As a result, taxpayers will not be required to provide costly relief for flood disasters as often. The Federal Emergency Management Agency (FEMA) estimated that by the year 2000, the flood insurance program will save the taxpayer and property owners \$1.7 billion a year.

### **How is the National Flood Insurance Program structured?**

A community qualifies for the Program in two separate phases - the "Emergency" and "Regular" Programs. During the initial Emergency phase, limited amounts of flood insurance becomes available to local property owners. A community's efforts to reduce flood losses are general, in many cases guided only by preliminary flood data. The map FEMA provides the community at this stage is called a Flood Hazard Boundary Map and it outlines the flood-prone areas within the community. Subsidized rates are charged for all structures regardless of their flood risk. Under the Regular Program, the full limits of flood insurance coverage become available locally. The premiums charged for new construction vary according to its exposure to flood damage. A structure's exposure is based upon the elevation at its lowest floor above or below the "100-year flood elevation". The community's flood plain management efforts become more comprehensive: new buildings are elevated or flood proofed above the 100-year flood elevation. These building elevations are derived from FEMA's detailed on-site engineering survey in the community. The community is issued a detailed map called a Flood Insurance Rate Map which shows flood elevations and risk zones used for insurance purposes.

## **Who may purchase a flood insurance policy?**

Any owner of property (a building or its contents) located in a community participating in the NFIP. Under the program, tenants in eligible communities may also insure their personal property against flood loss.

## **How can people find out if they are eligible for flood insurance?**

You can find out by checking with community officials, local insurance agents, the Federal Emergency Management Agency (FEMA) or the State Coordinating Agency. The FEMA toll-free number is 1-800-638-6620.

## **When is flood insurance required by law?**

In order to get financing to buy, build or improve property located in the FEMA-identified flood prone areas ("A" zone) in a community where flood insurance is available, flood insurance must be purchased. The law applies to any mortgage loan, grant or other funding that in any way is federally connected—either direct financing from a Federal agency (FHA, VA loans, EPA grants, etc.) or a conventional mortgage from a bank or savings and loan that is regulated or insured by the Federal government. In short, flood insurance is required if: 1) the community is participating in the flood insurance program, 2) a FEMA flood map is in effect for the community in question, 3) the improved real estate which is a security for the loan or the subject of a federally insured or guaranteed loan is located in a FEMA designated, flood-prone area, and 4) the financing is through the Federal government or a federally-connected lender.

## **What is a State Coordinating Agency?**

Each Governor has designated an agency of State government to coordinate that State's flood insurance program activities. These agencies assist communities in defining and adopting the Program's required flood plain management measures. In Minnesota, the Department of Natural Resources is the State Coordinating Agency for the NFIP.

## **How does one buy flood insurance?**

If you are considering the purchase of property which is located within the flood plain, your insurance agent or broker can provide you with the cost and availability of flood insurance and identify the kind of policy you require.

## **What types of property can be insured against flood loss?**

Buildings and their contents only. Almost every type of walled and roofed building that is principally above ground can be insured. This would include a mobile home on a foundation. Also eligible are the contents of a fully enclosed building.

## **What kinds of property are not insurable under the Program?**

Gas and liquid storage tanks, wharves, piers, bulkheads, growing crops, shrubbery, land, livestock, roads, motor vehicles, etc.

## **Can condominiums be insured?**

Yes. A condominium unit which is a traditional townhouse or rowhouse is considered for flood insurance purposes as a single-family dwelling and the individual units may be separately insured. When the condominium unit is situated in other types of residential condominium structures, flood insurance on the insurable interest of the condominium owners' association should be purchased through a general property flood insurance policy. Also, individual condominium units in these other types of residential condominium structures may be treated as single-family dwellings and unit owners may purchase insurance for their units.

## **What types of losses are covered?**

All direct losses by "flood" are covered. "Flood" is defined in the policy as a general and temporary condition of partial or complete inundation of normally dry land areas, from overflow of inland or tidal waters, or from the unusual and rapid accumulation or runoff of surface waters from any source, or from mudflows. Mudflow is a river or flow of "liquid mud" down a hillside. The flood insurance policy will not cover damage caused by a loss in progress.

## **What is a "loss in progress"?**

A "loss in progress" is a situation where flood damage to a structure or its contents had started prior to inception of the policy.

## **Are losses from water seepage, sewer back-up or hydrostatic pressure covered?**

Only when directly caused by a general condition of flooding.

## **How does one file a claim before flood loss?**

A policy holder reports the flood loss immediately to his insurance agent who in turn notifies the Program's servicing agent. An adjustor is then assigned to the case. The toll-free number for reporting flood claims is 1-800-638-6580.

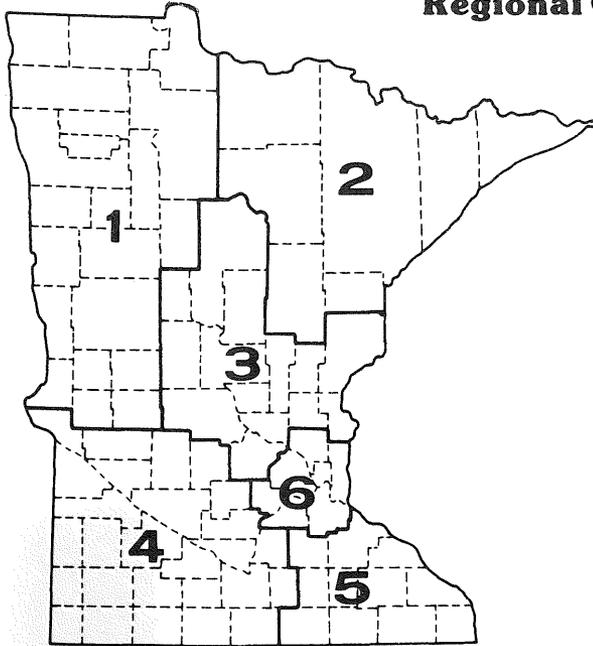
## **Where can insurance agents, lenders and real estate agents go to get flood plain maps?**

Call FEMA toll free 1-800-638-6620. Insurance agents can also order insurance forms and get assistance at this number in filling out insurance forms.

\*Taken from: "Questions and Answers - National Flood Insurance Program", published by Federal Emergency Management Agency, June 1980.

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## Department of Natural Resources Regional Offices



### REGION 1

2115 Birchmont Beach Rd. N.E.  
Bemidji, MN 56601  
(218) 755-3973

### REGION 5

P.O. Box 6247  
Rochester, MN 55903  
(507) 285-7430

### REGION 2

1201 East Highway 2  
Grand Rapids, MN 55744  
(218) 327-4416

### REGION 6

1200 Warner Road  
St. Paul, MN 55106  
(612) 296-7523

### REGION 3

1601 Minnesota Drive  
Brainerd, MN 56401  
(218) 828-2605

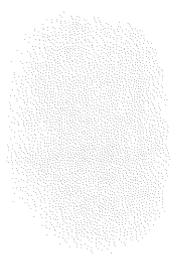
### CENTRAL OFFICE

DNR Building  
Box 32, 500 Lafayette Rd.  
St. Paul, MN 55155-4032  
(612) 296-4800

### REGION 4

Box 756, Hwy. 15 South  
New Ulm, MN 56073  
(507) 354-2196

RETURN ADDRESS:



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**FLOOD PLAIN MANAGEMENT**  
**Informational Brochure No. 2**