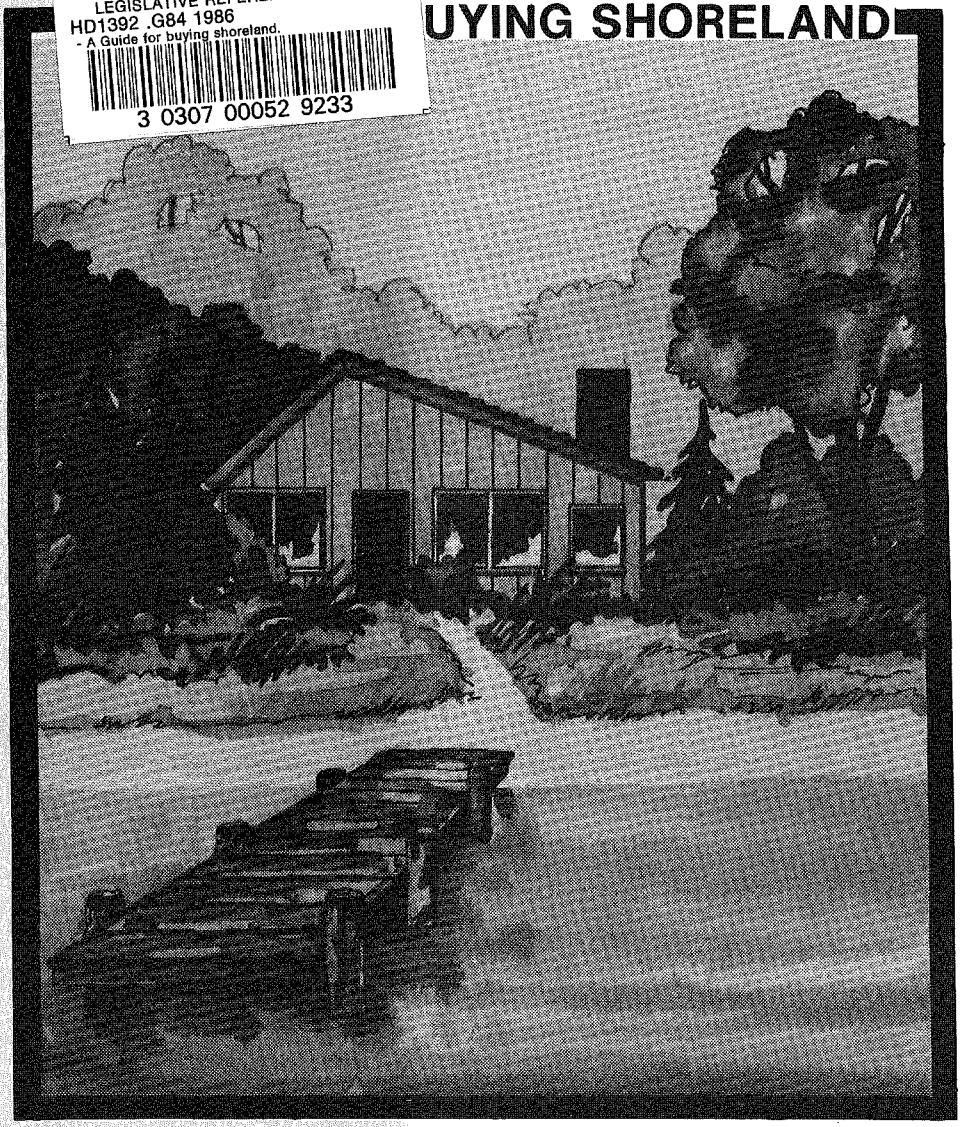
UYING SHORELAND



MINNESOTA

RTMENT OF NATURAL RESOURCES

DIVISION OF ATERS

LOOD PLAIN/SHORELAND MANAGEMENT SECTION

October 1976
Revised Edition, MAY 1986

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATERS

FLOOD PLAIN/SHORELAND MANAGEMENT SECTION

A GUIDE FOR BUYING SHORELAND

Introduction

Lakes and streams are among Minnesota's most valuable natural resources. Nearly 5 percent of our state is covered by water—4,059 square miles of water to be exact. We have 12,034 lakes over ten acres in size and over 25,000 miles of meandering rivers and streams. Our rapidly expanding recreational needs, as well as increased agricultural, residential and industrial demands, must be satisfied from this fixed supply of water. In fact, the economy of many areas of our state is dependent upon the fate of our waters and their shorelands.

The consequences of uncontrolled and unplanned shoreland development can be disastrous to our land and water resources. The increasing demand for shoreland building sites causes land values to rise and land with water frontage to be subdivided into small parcels. Marginal lands with high water tables, severe flooding hazards or steep slopes are improved and put to use in spite of their unsuitability for development. Scattered cottages, homes and resorts merge to form a continuous ribbon of buildings along the shores of lakes and streams, resulting in the destruction of natural vegetation and scenic beauty. A first row of crowded structures may be followed by a second or third until the area far back from the shore is filled with development. Nutrients and other pollutants from improperly designed private sewage treatment systems concentrate in the underground and surface waters. Flood plains are intensely developed for residential and commercial uses, resulting in the placement of structures in areas where flooding threatens life and property and the loss of storage capacity of natural flood plains. Finally, after everyone realizes the folly of uncontrolled development, great sums of money are spent to restore and repair the damage caused to ourselves and our environment.

In recent years the Minnesota Legislature has recognized these problems and has taken action to preserve and protect our irreplaceable water resources. The first step in this process took place in 1969 with the enactment of the Shoreland Management and Flood Plain Management Acts. Additional legislative action came in 1973 with an amendment to the Shoreland Management Act and the enactment of Minnesota's Wild and Scenic Rivers Act.

Statewide Standards

What are these laws that affect shoreland development and how do they work? All of these laws—Shoreland Management, Flood Plain Management, and Wild and Scenic Rivers—are "land use" or "zoning" laws. They required that the Commissioner of Natural Resources prepare minimum statewide development standards for shoreland, flood plain and wild & scenic river areas, and that local units of government (city and county) adopt these standards in the form of local "zoning" or "land use" ordinances.

Why is there a need for three separate laws to handle this problem and how do they differ from each other? Our lakes and streams are individually unique and no single management program could possibly deal with the wide variety of problems they present. The Shoreland Management Program is primarily aimed at preventing overdevelopment of our shorelands and protecting our lakes and streams from pollution by individual sewage treatment systems. The intent of this program is to allow development of our shorelands, but to direct it in a manner that will protect water quality and the future use of shoreland areas. The Flood Plain Management Program is intended to minimize the damage to property and threat to lives resulting from floods. This program controls development in flood plain areas to prevent encroachment on areas which must be left open to pass or store flood waters and to ensure that development which does take place is properly planned and constructed to prevent future flood damage. The Wild and Scenic Rivers Program is essentially a preservation program designed to limit future development and degradation of our most unique and undeveloped rivers and streams. This program not only relies on local zoning ordinances, but also involves the purchase of easements selected by the State for special protection and preservation.

Buying Lakeshore Property

If you are thinking about buying lakeshore property you will be affected by the Department of Natural Resources Shoreland Management Standards. These standards set forth guidelines for the use and development of shoreland property, notably by establishing a sanitary code, minimum lot sizes, building setbacks and subdivision regulations. Under the Shoreland Management Act, all land within 1,000 feet of a lake and 300 feet of a river or stream (or the landward extent of a flood plain) is subject to these standards.

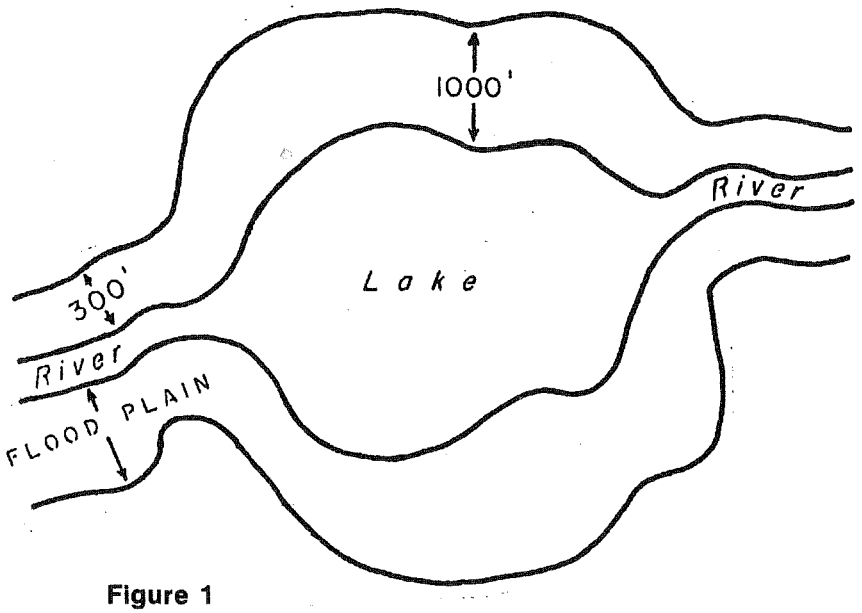


Figure 1

Because lakes and streams are not all alike, a classification system with different standards for development applying to each class, was incorporated into this program. Minnesota's lakes range from the sterile, rock basin lakes of the northeastern part of the state to the naturally fertile, shallow lakes of the southwest prairie region. These different types of lakes require different development standards if an adequate level of protection is to be achieved. In view of these differences, all lakes and streams have been placed into one of three groups: Natural Environment, Recreational Development or General Development. The minimum standards for development apply to each class as follows:

Minimum Development Standards for Unincorporated Areas of the County and Unsewered Areas of Municipalities

	NATURAL ENVIRONMENT	RECREATIONAL DEVELOPMENT	GENERAL DEVELOPMENT
Lot Area (Ft^2)	80,000	40,000	20,000
Water Frontage & Lot Width at Bldg. Line (Ft)	200	150	100
Bldg. Setback From Ordinary High Water Mark (Ft)	200	100	75
Bldg. Setback From Roads & Hwys. (Ft.)	20*-30-50	20*-30-50	20*-30-50
Bldg. Elev. Above Highest Known Water Level (Ft)	3	3	3
Bldg. Height Limitation (Ft)	35*	35*	35*
Total Lot Area Covered by Impervious Surface (%)	30*	30*	30*
Sewage System Setback From Ordinary High Water Mark (Ft)	150	75	50
Sewage System Elev. Above Highest Groundwater Level or Bedrock (Ft)	4	4	4

Additional Minimum Development Standards for for Sewered Areas of Municipalities

	NATURAL ENVIRONMENT	RECREATIONAL DEVELOPMENT	GENERAL DEVELOPMENT
Lot Area (Ft^2)			
Riparian Lots	40,000	20,000	15,000
Other Lots	20,000	15,000	10,000
Water Frontage & Lot Width At Bldg. Line (Ft)	125	75	75
Bldg. Setback From Ordinary High Water Water Mark (Ft)	150	75	50

*Applicable within municipalities only.

These development standards have been adopted by all counties and many cities, in the form of local zoning ordinances. Before you may build a new structure, install or replace a sewage treatment system, or substantially alter the shoreland landscape, you must obtain the appropriate permit from the local zoning administrator (usually located in county courthouse or city hall). If you are considering the purchase of a shoreland lot do **not** accept anyone's claims that the lot is "buildable" or "developable" until you have checked with the local zoning administrator. This is the **only** person who can assure you that the property fully complies with the requirements of the local zoning ordinance and the statewide shoreland management standards.

Besides checking with local zoning officials, what should a person look for when buying a shoreland lot? The first and most important consideration is to ask yourself what do you want from your shoreland property—a wilderness retreat to get away from people or a friendly rural neighborhood to enjoy nature and make new friends. The only way you can decide if a particular lake is really satisfactory for your needs is to spend a day or a weekend getting to know it. You should also check with some of the government agencies which compile information on lakes and their resources. The Department of Natural Resources, Division of Fish and Wildlife has conducted many lake surveys and can often tell you a good deal about the biological features of a particular lake. The Documents Division (117 University Avenue, St. Paul) of the Minnesota Department of Administration sells lake sounding maps which show the size, shape and depth of many of the lakes in Minnesota. The county extension offices of the University of Minnesota and the district offices of the U.S. Soil Conservation Service can also provide useful information on lakes and their surrounding shorelands.

After you have decided upon a particular lake and begin looking at individual lots, you should be concerned with the following features:

Local Zoning Restrictions
Lot Size
Lot Shape
Topography
Soil Conditions
Vegetation
DNR Water Development Permits

Besides establishing minimum lot sizes, building setbacks, etc., **local zoning** ordinances also establish "land use" or "zoning" districts. These are the same types of zoning districts you may already be familiar with in some of our larger cities—residential districts, commercial districts, and so on. Before buying, you should make sure that your intended use of the lot (i.e. seasonal cabin, year round home, resort, marina, etc.) is allowed under the local zoning ordinance.

The **size** of the lot should be large enough to accommodate your intended use, as well as comply with local zoning requirements. Those lots which have been created since the statewide shoreland management standards took effect are large enough to accommodate most residential uses and comply with local zoning requirements. However, there are a large number of lots which were created prior to the shoreland standards that are substantially smaller than the new lot size requirements. These substandard lots may still be bought and sold, but in many cases are too small to be built upon. If you consider buying such a lot, you should carefully review your intended use of the property. If all you want is a place to pitch your tent or park your camper, a small lot may be quite suitable for your needs. However, if you plan on constructing a year round home, a small lot may not be large enough to accommodate your structure and an on-site sewage treatment system. Before purchasing any lot whose dimensions are smaller than those set forth in the statewide shoreland standards, you should check with the local zoning administrator to verify that it is "buildable" for your intended use.

The **shape** of the lot can also pose potential building problems. Long, narrow lots or pie shaped lots can make it difficult to meet road, shoreline or side yard setbacks when constructing a dwelling or sewage treatment system. If you consider buying such a lot you should carefully measure the various setback requirements to be sure there will be a suitable site for your structure and sewage treatment system.

Topography or land surface elevation is important for several reasons. First of all, the lot should be high enough so that your dwelling will not be flooded by fluctuations in lake level. There should be sufficient elevation at the building site so the lowest floor of your dwelling (including basement) is at least 3 feet above the highest known lake level. Secondly, the lot should be high enough and the soil cover thick enough so that the bottom of your sewage treatment system is at least 4 feet above the groundwater table or bedrock. Since drainfield-type sewage treatment systems are usually placed about 2½ feet underground, a simple test for this requirement is to use a post hole digger or soil auger to make a 6½ foot deep "test hole" (4 foot ground water/bedrock elevation + 2½ foot drainfield depth = 6½feet). Several "test holes" should be dug in the area where you intend to place your sewage treatment system. If the "test hole" encounters bedrock, hard or compacted clay, or if ground water seeps into it, the area would not be suitable for a standard drainfield or soil absorption sewage treatment system. To comply with the required sewage treatment system elevation in such an area, it would be necessary to bring in earth fill. In addition to being an added expense, earth fill may not be an approved practice under the local community's zoning ordinance. Finally, the surface of the lot should not be too steep. Many communities have specific restrictions on how steep a slope a structure and/or a sewage treatment system can be placed.

The **soil conditions** on the lot should be suitable for constructing a dwelling and sewage treatment system. As mentioned earlier, areas of wet soil, high bedrock or clay soil are generally unsuitable for the installation of soil absorption type sewage treatment systems. In such areas you may have to resort to an alternative method of sewage treatment—some of which (i.e. holding tanks) can be quite expensive to operate. Areas with wet soils (such as peat soils) and high bedrock can also be difficult places to construct a dwelling. Even if the local community will give you a building permit, it may entail costly and sophisticated construction methods to build a dwelling in such a location.

Finally, you should consider the type and amount of **vegetation** present on the lot. Besides the aesthetic value of natural vegetation you should be aware of several other aspects of botanical interest. First of all, how much vegetation will you have to remove to develop the lot? Local zoning ordinances will regulate the amount of natural vegetation you can remove. In most communities you can remove enough vegetation to give you a view of the lake, as long as you leave enough to screen vehicles and structures when viewed from the water. If you intend to clear away large areas of natural vegetation, you may be required to obtain a special permit from the local community. The natural vegetation may also give you some clues as to the suitability of the lot for your intended use. If you intend to build a lake home with a nice sandy swimming beach but the lot has 50 feet of cattails and rushes before you reach open water, you must consider the added cost of developing a beach as well as the fact that you will need special permits from the Department of Natural Resources before you can begin this work.

Under Minnesota Statutes Chapter 105, you must obtain a **water development permit** from the Division of Waters of the Department of Natural Resources before you can begin any project which affects the bed of a public water. Before you buy a shoreland lot you should know that projects such as creating sand beaches, constructing boat launching ramps, permanent docks, wharves, harbors, boat slips, boat houses in or over the water, and bank erosion protection structures (i.e. retaining walls or rock riprap) **may** require a permit from the Department of Natural Resources. The reason behind this law is that although your shoreland lot is private property, the water in our lakes and streams is public property. Before you undertake any work which might affect this public property the Department of Natural Resources wants to be sure that it will not adversely affect the biological or physical condition of the lake or stream. Questions regarding the procedures for obtaining these permits should be directed to one of the six DNR regional offices listed at the back of this pamphlet.

Buying River or Stream Property

If you are thinking about buying property on or near a river or stream, you should consider all of the points already mentioned about lakeshore property and be aware of several additional points pertaining to the State's Flood Plain Management and Wild & Scenic Rivers Program. These two programs complement the Shoreland Management Program to provide special emphasis on the unique problems associated with rivers and streams.

Without a doubt, the most serious and dangerous of these problems is flooding. It is important to note that land elevation, not distance from a river or stream, determines whether or not an area may be flooded. Under the Flood Plain Management Act, the Department of Natural Resources has established minimum statewide standards for development within flood prone areas. As with the DNR's shoreland management standards, these flood plain development standards are adopted and enforced in the form of local zoning ordinances. Basically, these standards require local communities to ensure that flood plain areas are not obstructed by uncontrolled development and that permitted development is adequately protected against flood damage.

What is a flood plain and what should you know before buying property within it? Under state law the flood plain is considered to be the land adjoining rivers and streams which is covered by the "100-year" or "regional" flood. This flood is considered to be a flood that has a 1 percent chance of occurring in any given year or, has an average recurrence of once every 100 years. Floods of this magnitude occurred throughout the state in 1965 and 1969, and in various parts of the state in 1972,1975 & 1978. Using sophisticated engineering and meteorological techniques it is possible to calculate the magnitude of such a flood along those streams where long-term flood records have not been kept. Various government agencies conduct these studies, and as they become available local communities are required (by state law) to adopt flood plain zoning ordinances. If you are buying property on a river or stream in a community that has adopted flood plain zoning you should be concerned with the following points:

Floodway location
Flood Fringe location
Flood Protection Elevation
Flood Proofing
Flood Insurance

The stream channel and the land immediately adjoining it are the natural conduit for flood waters and are called the **floodway** of the stream (see Figure 2). The floodway must remain open in order to allow flood waters to pass. If the floodway is obstructed by buildings, structures or debris, flood waters will be dammed-up and will flood even greater areas upstream. In addition, large portions of the flood plain store and later slowly release flood-waters, thereby reducing downstream flood stages. Development of these areas could result in an increase in downstream flooding. Under the statewide flood plain management standards, local communities can not allow development in the flood plain which would cumulatively cause more than a ½ foot increase in the height of the 100-year flood. Many communities have delineated the boundary of the floodway on their zoning maps based on this ½ foot increase in flooding. If the property you are interested in lies within this mapped floodway you will **not** be permitted to construct a dwelling or other enclosed structure, place fill material or in any other way significantly change the existing landscape. Since this area must be left open to pass flood waters only open space uses such as farmland, residential yards or gardens, golf courses, parks, playgrounds or parking areas are normally allowed in the floodway.

The remainder of the flood plain lying outside of the floodway is called the **flood fringe.** This area is generally covered by shallow, slow moving flood waters and development of this area will not materially obstruct the passage of flood waters or eliminate needed flood storage areas. Development **is** normally allowed in the flood fringe provided that residential buildings are placed on fill so that the lowest floor (including the basement) is above the elevation of the 100 year flood. This elevation is referred to as the **flood protection elevation.** Local regulations will also require your access road to be **within 2ft. of** the flood protection elevation before you can erect your dwelling.

Under special circumstances it may not be possible to place your building or accessory structures on fill. In such cases the local regulations may allow you to use **flood proofing** techniques. Flood proofing is a variety of construction methods such as watertight doors and windows, bulkheads and watertight walls which can be used to prevent flood waters from entering a structure. Since flood proofing does not provide as sure a deterrent to flood damages as using fill, local communities will only allow it in special cases. Furthermore, the State Building Code requires all flood-proofed structures to be designed by a registered engineer or architect.

In those communities that have **not** delineated a separate floodway and flood fringe area on their zoning map, you will likely be asked to provide certain engineering information before you can place a structure in the flood plain. Your engineer or surveyor will have to evaluate the proposed building site and furnish the local community with the data

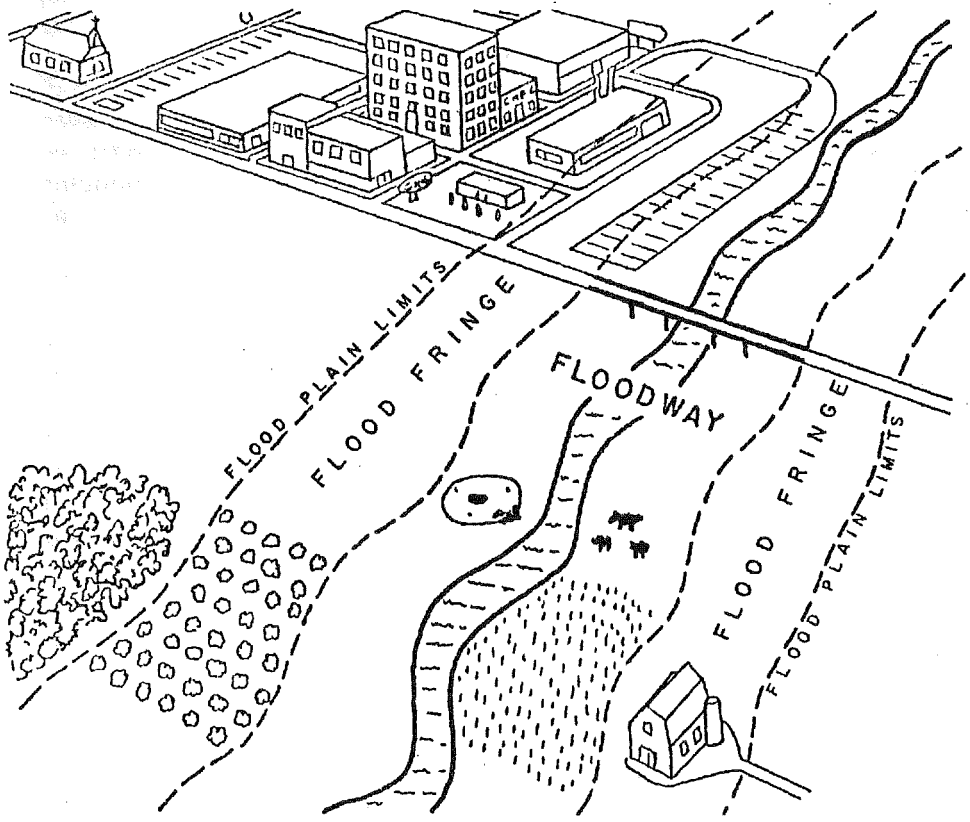


Figure 2

necessary to determine what the flood protection elevation is on your property and whether or not your proposed building is in the floodway. Since these professional services and special construction methods can be a substantial additional expense you should be sure to check with the local zoning authorities **before** you buy property in a flood plain area.

When buying flood plain property you should also be aware of the Federal **flood insurance** program. This program provides federally subsidized flood insurance coverage for structures in flood prone areas. Under this program, federally insured or regulated lending institutions must require flood insurance policies on all new loans for structures in "Special Flood Hazard Areas" designated by the U.S. Department of Housing and Urban Development (HUD). You can determine whether or not a piece of property is located in one of these "Special Flood Hazard Areas" by checking with the local community's building or zoning officials (ask for the "Flood Hazard Boundary Map" or "Flood Insurance Rate Map" furnished by HUD). If you are considering the purchase of flood plain property, your insurance agent can provide information on the cost and availability of flood insurance.

What is a Wild and Scenic River and what should you know before buying property on such a river? As mentioned earlier, the State Legislature has authorized the Commissioner of Natural Resources to designate certain unique or outstanding rivers as Wild and Scenic Rivers. The primary objective of this program is to preserve and protect the outstanding scenic, recreational, natural, historical and scientific values of these rivers for future generations. In order to accomplish this, the Department of Natural Resources has the authority to purchase scenic easements or ownership on some parcels of land adjoining these rivers. In addition, local communities are required to adopt special zoning regulations to preserve their shorelands. At the present time (October 1976) the following rivers have been designated as Wild, Scenic, and Recreational Rivers:

Kettle River in Pine County
Mississippi River from St. Cloud to Anoka
Lower St. Croix River from Taylors Falls to Point Douglas (Federal Wild & Scenic River)
Crow River in Meeker County
Cannon River from Faribault to the Mississippi River
Minnesota River from Lac Qui Parle dam to Franklin
Rum River in Mille Lacs, Sherburne, Isanti and Anoka Counties

Under this program, various portions of a designated river may be managed under three different classifications: Wild, Scenic or Recreational. The *Wild River* classification is applied to those portions that exist in a free-flowing state (i.e. no dams or reservoirs) with excellent water quality and adjacent lands which are essentially primitive. The *Scenic River* classification is for those portions that exist in a free-flowing state with adjacent lands which are largely undeveloped. Finally, the *Recreational River* classification is used for those portions that may have undergone some impoundment or diversion and have adjacent lands which are considerably developed, but that are still capable of being protected and preserved.

On officially designated Wild and Scenic rivers the local community will adopt zoning controls which specify allowable land uses (i.e. seasonal cabins, year round homes, resorts, campgrounds, etc) and require special permits for alterations of the natural landscape (i.e. grading, filling, vegetation removal, etc.). In addition, the local zoning ordinance will include the following minimum dimensional standards for new development:

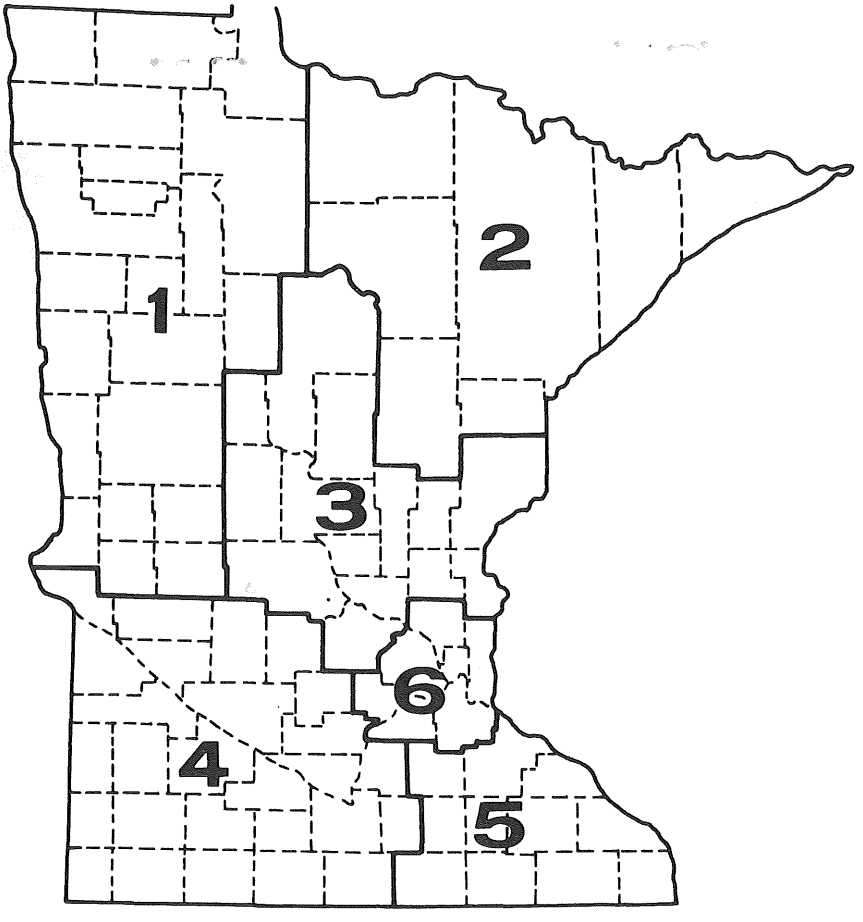
Minimum Dimensional Standards*

	Wild River	Scenic River	Recreational River
lot area (acres)	6	4	2
lot width (feet)	300	250	200
building setback (feet)			
(a) from ordinary high water mark	200	150	100
(b) from bluff line	40	30	20
(c) from designated tributary stream	100	100	100
Slope limitation for building	13%	13%	13%
Building elevation above high water (feet)	3	3	3
Sewage treatment system from ordinary high water mark (feet)	150	100	75
No clear-cutting of vegetation (feet)			
(a) from ordinary high water mark	200	150	100
(b) from bluff line	40	30	20

*(State designated rivers only).

If you are considering buying property on an officially designated wild and scenic river you should consider **all** of the points discussed elsewhere in this booklet and carefully study the above standards. Finally, be sure to check with local zoning officials to verify that the land you want to buy can be used the way you want to use it.

The Department of Natural Resources has many other pamphlets and articles which elaborate on the programs discussed in this booklet. Should you wish to receive additional information on these programs please contact the DNR regional office nearest you.



REGION 1

DNR - Division of Waters
2115 Birchmont Beach Road N.E.
Bemidji, MN 56601
(218) 755-3973

REGION 2

DNR - Division of Waters
1201 East Highway 2
Grand Rapids, MN 55744
(218) 327-1716

REGION 3

DNR - Division of Waters
424 Front St., Box 648
Brainerd, MN 56401
(218) 828-2605

REGION 4

DNR - Division of Waters
Box 756, Highway 15 South
New Ulm, MN 56073
(507) 354-2196

REGION 5

DNR - Division of Waters
2300 Silver Creek Road, N.E.
Rochester, MN 55901
(507) 285-7430

REGION 6

Regional Hydrologist
DNR - Division of Waters
1200 Warner Road
St. Paul, MN 55106
(612) 296-7523

CENTRAL OFFICE

DNR - Division of Waters
Box 32, 500 Lafayette Rd.
St. Paul, MN ~~55155~~ 55146
(612) 296-4800