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## PLANNING FOR OPTIMUM RECREATIONAL USE OF PUBLIC WATERS

By

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## THE PRESENT; THE POTENTIAL

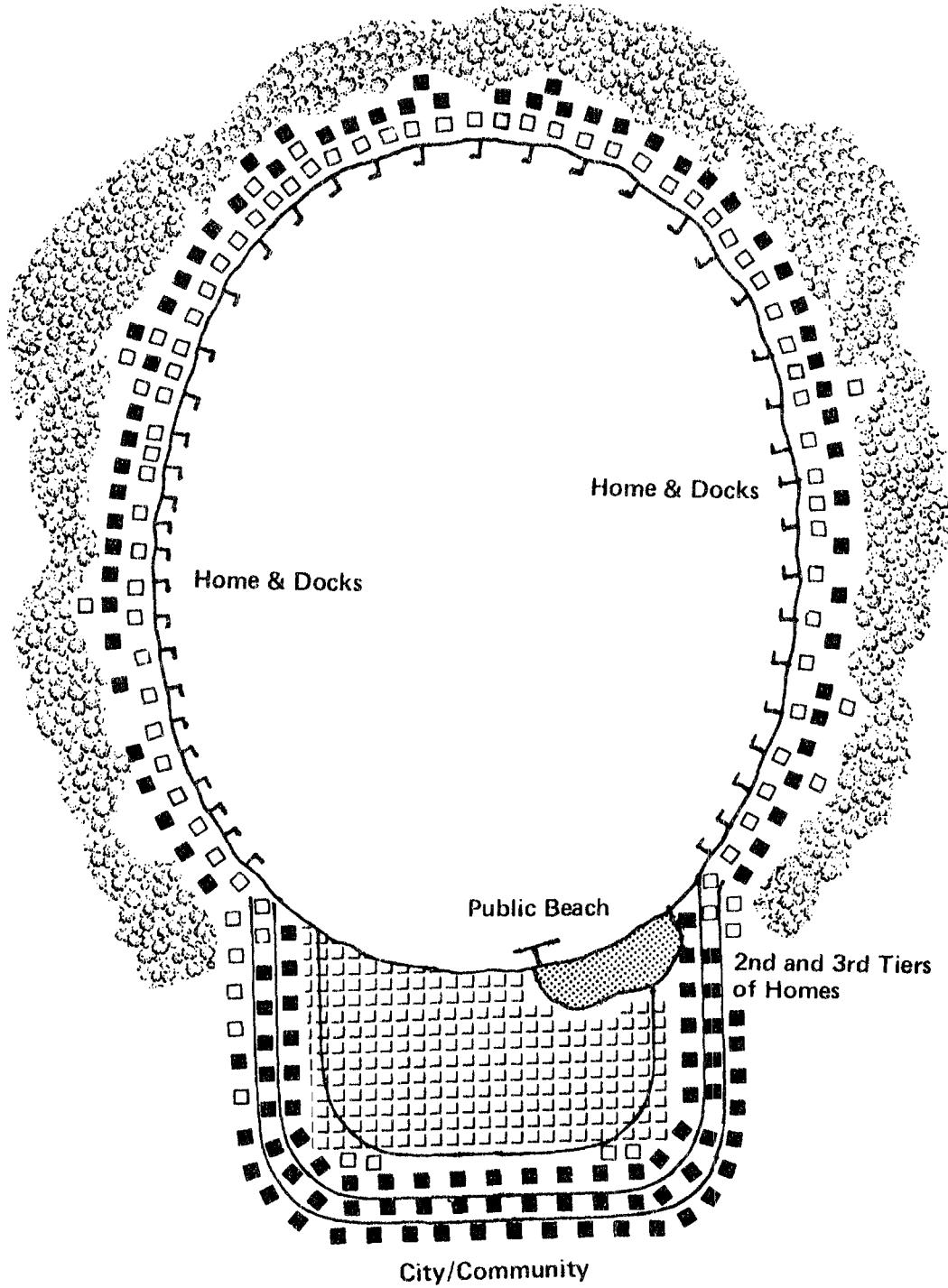
Most Minnesota communities are set like jewels upon water areas. These water areas may be lakes, they could be rivers. We are fortunate in this regard. These water areas contribute enormously to the esthetics, to opportunities for recreational enjoyment and hence to overall living qualities of Minnesota communities. Because of their importance water amenities deserve the best attention that planning and management can give them to maintain their ongoing contribution to the community and to the overall society.

A future scenario based upon present trends in development around water areas is easily prepared. It would consist of a body of water completely surrounded by homes arranged around it like keys on a piano. Each with a dock jutting like bristles out into the water in front of it (Fig. 1). We have discovered that there are important amenity returns to living beside the water in either a permanent residence or a second home. Because of the easy mobility of the automobile, it is possible for increasing numbers to do this, hence we crowd down upon our lakes and now also upon our river areas. Once there something curious happens. We have in Minnesota what appears to be a blue grass syndrome. We must clear out the trees and underbrush and sow grass in order to have something to mow. This presents relatively little problem when the first person on the lake does it, but if the first person

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Adapted from a speech to Minnesota Planning Association Conference, Brainerd, Minnesota, March 30, 1979.

FIGURE 1. MINNESOTA RECREATIONAL WATER RESOURCES:  
SCENARIO EXTENDING THE PRESENT TRENDS



can do it, the second person can do it; the third person can do it, etc. Until the entire lake or river shore is completely denuded. When we add to this the boat houses and docks protruding from the front of each dwelling we find that we have largely destroyed the aesthetic qualities of that feature which we moved out to enjoy!

These developments are moving apace in Minnesota and can compete successfully with commercial forms of development. For a period of ten to fifteen years we have now been annually losing about 100 of our Minnesota resorts. Many of them have been converted to second and residential home development. It simply is not possible for a commercial operator to compete with home development and the prices that private owners are willing to pay. True, there have been reservations of public land, beach fronts, access points, and zoning regulations. Unfortunately these have done relatively little, except in cases of large-scale land acquisition by public agencies, to stop the relentless progression of residences around our prime water areas. If this proceeds as at present, there will only be access to water by those people who own land fronting on it or those who wish to trailer their own boats and equipment. Most of the population falls outside these two categories.

What can be done about the problem? This is an important planning agenda for communities, counties, regions and the state.

In the first place the home, whether a seasonal or year-round residence, need not be sited directly upon the water. In the long run better access and a larger number can be accommodated by a cluster type of development which

sets the homes in an arrangement back from the lake. In such a cluster development each person has access to the whole beachfront allotted to the development, not simply to one hundred or two hundred fifty feet of front which he then defends against all comers. A quarter-mile or more of unbroken frontage may be available to all cluster homeowners. Furthermore, such an arrangement makes it possible to have one well-appointed, common dock for all owners rather than having many smaller docks protruding out into the lake front causing clutter and destroying the beauty. Thus the cluster arrangement facilitates leaving much of the lake front in its natural state so that the aesthetics of the frontage are preserved.

Secondly, there should also be specific plans and programs for developing commercial recreational services. Why commercial development? Because commercial recreational development is the means whereby the community can realize income from its water and related high amenity resources. Further, from the viewpoint of the population in general, commercial facilities provide for democratic access to these resources. Not everyone can nor wishes to own water frontage, nor does everyone wish to trailer in their own boat. It is granted that private commercial development usually can not be directly effected by community agencies, but planning currently almost completely fails to recognize their role or to plan a place for them.

Finally, there should be specific reservation of land for public use. Public access is usually provided but seldom do we arrange for reservation of land needed for preservation of wilderness image and for production of

wildlife and natural plants.

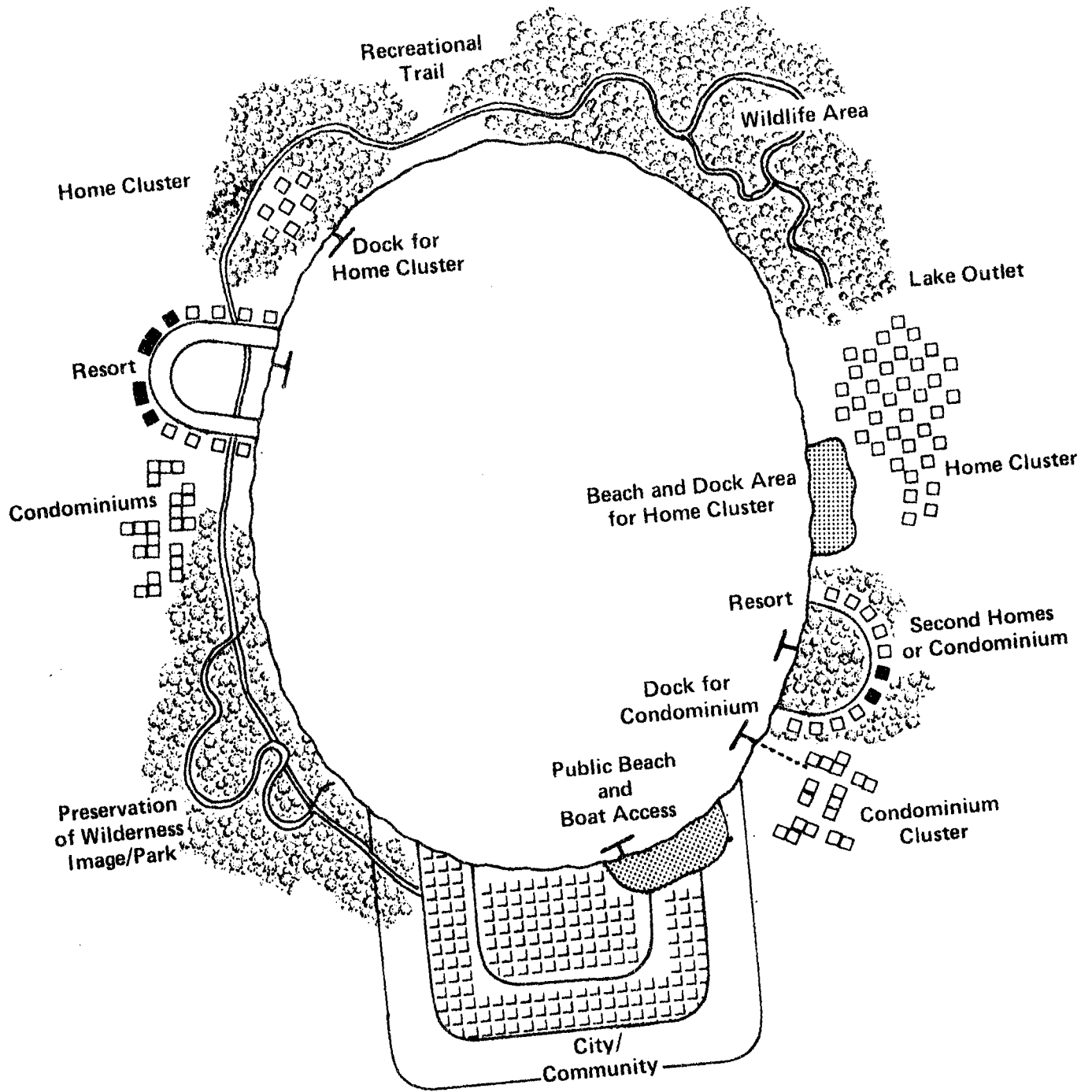
Figure 2 portrays the alternative scenario, by deliberately planning for these kinds of water-related features it would be possible to realize more of the potential from our lakes and to maintain the lakes and lake frontages in better style than present trends will permit.

## RECREATIONAL WATER COMPONENTS

Four water recreation components can be recognized, for analytical purposes, as follows:

1. The water body itself. This is of course where the boating, fishing and swimming take place. The chemical and biological qualities of the water are important to the recreational experience, but the thrust of this discussion is not about water quality.
2. The land-water interface. This is the edge where the water and shore meet. Here is where everyone wants to put their home. Here is where the beach is located, the dock is built, where people sunbathe and where they swim. This is the part that contributes most to aesthetics. Hence the edge, where water and land meet, represents the most important single recreational water component.
3. The land frame. Land forms a frame about the water body. Its various characteristics contribute considerably toward the water recreational experience. The recreational experience differs depending upon whether the land is flat and featureless stretching away from the water body, or whether it is sharply rugged as in the case of the North Shore or Lake Pepin. It makes a difference if the land frame is agricultural and growing agricultural crops or if it is growing trees. It also makes a difference whether or not there are cities, second homes or natural vegetation. Management of the setting affects returns to those who use the water area for recreational purposes.
4. Facilities and services. Except for those who own a piece of the lake shore, facilities and services are the means whereby the access to the water body is provided. They also importantly complement the recreation experience. Recreational facilities may be public, as in the case of a public beach or a boat access.

FIGURE 2. MINNESOTA RECREATIONAL WATER RESOURCES: SCENARIO INCORPORATING ALTERNATIVES FOR USE AND DEVELOPMENT





Facilities may be private, as in the case of a resort or an outfitter of rental boats and other water type equipment. Essential facilities providing supplies, outfitting and hospitality services need not be located directly beside the water. We have previously noted that the private commercial services and facilities are the major means whereby the local community can derive revenue from Minnesota's recreational water resources. This is an important return from water in addition to its contribution to living quality for residents. Recreational businesses provide jobs, profits, and tax base just as any other industry. In many communities the recreational businesses related to water represent the major source of economic base for that community.

## RECREATIONAL WATER ACTIVITIES

Below are listed ten types of recreational water activities. These by no means exhaust the list; there are many different ways to state man's recreational relationships to water. However, these are listed as one approach to indicate some of the types and range in recreational water activities:

1. Looking at water. Water's aesthetic qualities and the qualities of the land-water interface cause looking at it to be by far the greatest recreational use that we make of it. We like to picnic beside it, we like to walk beside it. We like to watch other water activities, we like to simply stand and watch the restless, everchanging motion of the water body itself.
2. Power boating, water skiing and related activities. This type of activity requires a great deal of space and affects those around it on the water body and on the shore more than most other kinds. But it may also have a high return to its participants.
3. Sailing. A small but growing number of people have discovered that sailing is one way to test their skill against the wind and wave. Emphasis on energy conservation may cause this sport to grow.
4. Canoeing. Like sailing, canoeing is a low direct consumer of energy. It allows closer environment involvement than other forms of watercraft, and also requires specific

physical skills.

5. Fishing. There are many types of fishing from seeking the exotic muskulunge, or the elusive walleye to the solitary trout and the (almost) ubiquitous panfish. **Most winter fishing differs sharply from warm weather fishing.**
6. Production of Wildlife. Water areas can be rich in both fauna and flora. Natural areas can add much to the recreational experience as well as to nature's balance.
7. To live beside. This may be in a permanent residence or a second home. Living beside the water makes its amenities more accessible and partly overlaps some of the other activities listed.
8. Swimming. This is the most frequently enjoyed **activity**, aside from "looking at" water. It includes a set of allied activities such as sunning, and beach games.
9. Hunting. Most water-related hunting involves aquatic fowl, **The season is usually limited.**
10. Nature Observation, Nature Photography - can be practiced around the calendar. Unlike hunting and fishing this activity has little impact upon the objects of the search.

The reader is encouraged to use a cross-reference chart such as Table 1 in which water recreational activities are arranged in a horizontal row across the top and down the side. On such a chart each activity can be tested against **all others for its possible conflict** with the other types of activities. It is suggested that each activity arranged across the top of the page be rated subjectively by the user against those listed along the left hand margin. If there is a high amount of conflict between the activity at the top and the one at the side, put an H. If the conflict is medium put an M and if it is low or nonexistent put an L. Try this exercise and see how you rate each of these activities in their effect upon the others.

Table 1. Subjective Water Recreation Conflict Cross-reference

	Look at Water	Power Boating	Sail	Canoe	Fish	Hunt	Swim	Live Beside	Wildlife Production	Nature Observation
Looking at	X									
Power Boat		X								
Sail			X							
Canoe				X						
Fish					X					
Hunt						X				
Swim							X			
Live Beside								X		
Wildlife Production									X	
Nature Observation										X

Instructions: Compare items listed across the top with each of those listed along the left side, as to degree of conflict. Rank the columns one at a time:

- Place an 'H' in each square where the activity at the top interferes or conflicts at a high level with the activity listed on the left side.
- Place an 'M' where conflict is medium.
- Place an 'L' where conflict is low or not at all.

If you are like most groups in which this exercise has been tried by the author, it would be found that two activities stand out as competing and interfering with other activities more than any others. These are power boating where there is a great deal of noise pollution and where large water areas are required; and lake (or river) homes where the natural vegetation, particularly at the land/water interface, is often disturbed. Hunting would conflict except that it is usually done at times when others are not present in large numbers. Surprisingly most of the other seven do not compete with each other or with power boating, hunting or living beside the water. There are, of course, carrying capacity limitations where sailboats, canoes or fishermen get in the way of other activities or other people attempting to enjoy the same activity. Further, any activity can conflict, for example consider the case of canoes disturbing a determined and devoted trout fisherman who longs for solitude in order to outwit the elusive trout.

Listed in table 2 are the participation rates for certain kinds of water related activities. These are data from a national survey conducted in the summer of 1972. You may wish to test your own area against the participation rates listed. The first column gives the percentage of the overall population undertaking the given activity, for example, 34% of the people indicated that they swam out-of-doors. The next column lists the total activity occasions of participation; there were almost half a billion occasions of swimming out-of-doors in the United States in the summer

Table 2. U.S. Water-Related Recreational Activities, Summer 1972.

Activity	Population percentage participating	U.S. activity occasions	Percent taking place on weekends
Swimming Outdoors	34	487	69
Fishing	24	278	68
Outdoor pool Swimming	18	257	52
Other Boating	15	126	74
Water Skiing	5	54	69
Canoeing	3	18	72
Sailing	3	33	75
Camping, developed Campground	11	153	62
Camping, remote area	.5	58	80
Bird watching	4	47	75
Wildlife and Bird Photography	2	20	56

Source: Outdoor Recreation: A Legacy for America

of 1972. The third column shows the percentage of those occasions taking place on weekends. Note, for example, that 74% of the boating, in this case mainly power boating, takes place on the weekends. Hence, another reason why power boat use competes with many other water recreation activities. Also listed in the table are some activity types which may or may not be related to water, such as wildlife photography, bird watching and camping in a remote area.

#### EXAMPLE OF RECREATIONAL WATER AREAS

The following four examples are used to illustrate some of the types of management problems that exist in the Minnesota recreational water area setting.

1. Lake Calhoun in Minneapolis. Sixty years ago steps were taken to reserve and make available all the frontage of the central lakes in Minneapolis for all individuals. It was brought about by a farsighted park director, Theodore Wirth. You may be sure that this was not accomplished without serious problems. The entire frontage around lakes, such as Lake Calhoun, was designated a public area and no private development is allowed. In addition, the water surface is controlled. Power boats are not allowed except for certain kinds of excursion operations or on certain special occasions. Only nonpowered boats such as sail boats or canoes are allowed. The result is that these bodies of water are available to all residents as well as visitors to Minneapolis. They truly represent part of the crown jewels of Minneapolis which is appropriately called the 'City of Lakes.'
2. The Mississippi river. (All the rivers in the state could be considered as well as the Mississippi.) In our past, lakes have been considered sacred and preserved. Rivers have been considered secular and profane. They have served as open sewers. They have served as arteries of commerce. We have not looked upon them as having aesthetic features. Now rivers are being rediscovered as objects of beauty and

recreation. A 1978 "Mississippi river walk" along the Mississippi river frontage highlighted this new appreciation. There are serious efforts to restore the original water quality and the biological and visual qualities of the waterfront. Excursion boats are available on the Mississippi river through the Twin Cities. Amazingly, at points along the river within the Metropolitan core there are no visible man-made structures. There are river drives, parks and an increasing number of apartments that take advantage of river vistas.

3. The Crow Wing River. In the early 1960's a seventy to seventy-five mile stretch of the Crow Wing river which flows along the eastern side of Wadena County was developed for use as a canoeing trail. There are, along this stretch, about 23 public points where canoes may be put in the river. These include 17 campsites that have been established by Wadena County and the State of Minnesota. Their development involved assistance from many private businesses, civic organizations, youth clubs and private citizens. The river is of high quality with beautiful clear water flowing out of a chain of lakes in Hubbard County. Hence, it represents one of the premier canoeing streams in the State of Minnesota. The land along the upper reaches of this stream is largely wooded with a high proportion owned by a timber corporation, by Wadena County and the State of Minnesota. Further down there are farming areas, and river subdivisions. Altogether about 20% of the river frontage is held by public or corporate entities. The rest of the water frontage is owned by about 75 resident owners and about 50 absentee owners. As a recreational feature this river supports about 75,000 to 100,000 activity days of canoeing plus many other types of activity, including hiking, horseback riding, snowmobiling, fishing, inner tubing, and hunting.

A recent survey has been made of riparian owners. Listed below are some of the problems and questions uncovered by this survey that are appropriate to management of river recreation by local and regional bodies.

- a. Litter clutter from solid waste tops the list of complaints. Oddly enough the canoeists seem to impact upon one another and upon landowners to a relatively small extent, but almost all owners complain about the litter that remains behind.

- b. Partying groups. These represent both exuberant canoeists who take with them a case of beer and local young people who not only take with them a case of beer, but who string their hi-fi speakers in the trees at the campsites and turn up the decibels so that their presence is known by many around them. They are annoying to area residents and other recreation groups who are not thus oriented. This latter group often have little interest in the river. They are seeking simply a secluded spot for merrymaking. Discussions with managers in other areas indicate that such groups are also a problem elsewhere.
- c. Campers who are not necessarily interested in using the river. Because the campsites are of good quality and well maintained, many people use the campsites simply because they can park their trailer and enjoy an isolated area at low cost. Because of small capacities this sometimes causes unexpected wear and undesirable crowding in the river campsites.
- d. Policing of the above represents a problem. Funds are limited for maintaining order when partying groups are present and for teaching users to not leave litter.
- e. A major problem is how the local citizens and residents of Wadena County can avoid subsidizing visitors who use the area. It is suggested that the fee for camping should be raised to the point that it returns sufficient revenue and is well enforced so that all those who use the campsites can contribute. (At present a \$2.00 charge is made for overnight camping but enforcement is incomplete.) It might also be desirable to enlist all outfitters to instruct users in proper places to dispose of litter and garbage.
- f. Revenue return to the Community. There are now four outfitters serving the river, and a number of small stores either immediately along the river or close by. It is felt that there is still not a sufficient sales package available to recreational users of the area, thus revenue is well below the full potential that could be generated for the community by the resources.
- g. Who Owns; Who Controls and Speaks for Whom With Regard to Use of the River? The 70 to 75 resident



owners speak eloquently for their rights along the river, as they should. The public managing agencies, especially the Department of Natural Resources, which has responsibility for the waters in this State, speaks primarily for the resource itself, not for the user. The big question, then, is who speaks for the non-land-owning user? The answer is, first, no one, but secondly, basically the outfitter and those people who serve this public. This creates problems. The U.S. over, tourists are disliked. We fail to recognize that most of us now travel a great deal and may be frequently classed as tourists. We expect good treatment when we travel but the other side of the coin of receiving adequate treatment when we are guests in a community, is that we host others adequately when they are guests in our own community. Unfortunately, because of limitation in understanding this fact many local residents act out their resentment of tourists upon the outfitters who serve tourists.

4. Lake Minnewaska; second homes vs. resorts. Lake Minnewaska is a 8,000 acre lake set in the center of Pope County with Glenwood on the northeast and Starbuck on the west. It has 12 resorts, 2 campgrounds, 2 public access points, a nearby state park, plus 381 second homes, 221 private year-round lake residences, and 96 second-tier homes. Lake Minnewaska is used because figures are available from it comparing second homes and resorts. The data are shown in Table 3. Note that second homes return annually to the community \$15 per front foot of lake shore, compared to almost five times that amount, or \$74 returned by resorts. Resorts also use the frontage more intensively, allowing 8.3 person days of use compared to 2.7 person days of use by second homes. Since there are so many second homes, they account for a much higher person days of use in the area. Second home person days of use totals more than twice that of resorts - 91,000 person days annually compared to only 41,000. But resorts provide a facility for 11,000 different people compared to only 3,000 different people provided access by the second homes. This latter supports the contention of democracy of access provided by commercial recreational businesses that was made earlier. Further, resorts draw from a much wider area. More than 40 percent of their guests come from outside Minnesota compared to only 6 percent of the users of second homes. Thus, resort appeal is wider and their

Table 3. Comparisons of Resorts and Second Homes; Annual Use and Returns from Lake Frontage, Lake Minnewaska, 1973.

	Per foot of Lake Front		Total for Lake	
	Returns to Community	Person days of use	Number of different people	Resort days of use
	\$	days	people	days
Second homes	15.10	2.7	3,000	91,000
Resorts	73.90	8.3	11,000	41,000

Source: Minnesota Tourist Travel Notes, Winter 1977

community income is generated, from a wider area. This argument is not in opposition to second homes but rather to point out the often unrecognized merits of commercial recreational businesses such as resorts.

## FACTORS TO PLAN FOR

The following are suggested as overall items to be considered in setting goals and planning for recreational use of water areas.

1. Aesthetics of the water setting. If looking at water is a major recreational use, then maintaining the aesthetics of its setting should become one of the highest priorities.
2. Water quality. This concerns both the biological and chemical purity. It is particularly a factor when recreational use of water must compete with industrial, power generation, transportation and waste disposal water area uses.
3. Public access to recreational water. We need to consider not only physical access such as boat launching and beach areas for swimming, but also provision of vantage points for visual access.
4. Reservation of natural areas; preservation of water wilderness image. Not all public areas should be intensively used by man.
5. Commercial access. Water resources can serve as an important economic base asset to the local community. Recognition of this fact should be included in plans; and commercial services should be deliberately fostered.
6. Lake and river homes including second homes and year-round residences. There is clearly a place for second homes and year-round residences on water. But thought should be given to their arrangement, spacing and densities. Many present practices in home siting on water and in vegetation management have long-run unfavorable consequences. In order to alter present practise a restatement of goals for water areas may be required.
7. Mitigating incompatible uses. Consider regulations governing times and places of uses that conflict badly with many other uses.
8. Overuse and crowding. Sanctions, limitations and zoning regulations may be necessary to avoid over-intensity of water use.

## TOOLS FOR MANAGING RECREATIONAL WATER USE.

1. Zoning. Consider zoning as one of the first tools. This applies to the land edge around the water including density, setback, sanitation rules, vegetation, etc. The Shore Land Zoning Act mandated state wide zoning of riparian water areas, but many jurisdictions have been slow to practise the spirit of the law.
2. Cluster development. This is mentioned separately, although it could be a part of zoning. Some communities in the Metropolitan Area now have developments employing this principle. It is possible to provide access for more individuals and provide better management for the water's edge and the lake aesthetics.
3. Public land reservation. Beaches and boat accesses have been principal concerns up until this point. Consider also fishing docks, areas for wildlife production, areas for wilderness image, and other areas for management such as for sanitation, etc. One means for preventing development on poorly adapted sites, such as swampy areas, is to acquire them for wildlife production or wilderness preservation.
4. Provision for commercial development. If possible deliberately include the commercial development sites and potential in a plan. Follow-up may include development of feasibility plans for the most appropriate types of development and disseminating this information to those investors who are most likely fitted for such kinds of development. The first step, however, is to consider expansion of businesses already serving the area for recreational purposes, including resorts, outfitters, boat storage and rental, and various kinds of food services, lodging facilities, and camping grounds.
5. Special regulations. These may include zoning of the water surface, as to time and place when water skiing and power boating can be used. They may involve regulations concerning noise control, and control of litter and pollution.
6. A charge for public access. The opinion has been expressed that local residents should not be subsidizing those who come from a distance to use local water resources. Hence there should be an adequate charge for campgrounds; possibly also for boat launching, canoeing, use of mooring buoys, docks, and for other facilities that are provided. This revenue should be available to help pay for the upkeep and policing of the area which visitors use.

7. Community Goals for Recreational Water Use. This could be the most effective management tool of all. But it is likely to be correspondingly difficult to effect. The objective would be to secure a broad-based understanding and agreement on future patterns for water recreation resources. This would render the tools suggested above more workable. Consider organizing a two to five year program to set community goals for recreational water use. It should involve all interested community members: land owners, user groups, commercial/business interests, youth, and relevant government agency staff. It might be set up in phases such as:
  - a. Specifying problems in recreational water uses
  - b. Gathering information on resources and potential uses --  
dissiminating this information to all citizens
  - c. Deciding upon management principles
  - d. Deciding upon how to apply the principles to specific  
water bodies

To the extent that widely-agreed upon goals can be determined, such a program can greatly facilitate management for the community's benefit.

The above are suggestions and approaches for use in managing our outstanding water recreational resources. These contribute to living quality of community residents. Recreational water can also be a major tourism attractor in which it contributes to jobs, profits, and tax base in economic support of our communities.