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PUBLIC ACCESS TO THE GREAT LAKES

BY

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INTRODUCTION

On a national scope, the Office of Coastal Zone Management has identified public access to the shoreline to be one of the most important issues in coastal recreation. It has recognized that "problems arise not from a diminution of the shoreline itself, but from the maldistribution and misallocation of coastal resources. An overriding objective of the Coastal Zone Management Program consists of improving the process for allocating these resources to alternative uses, including recreation....The access question extends beyond physical presence and participation in recreational activities--it encompasses visual, legal, social and economic access, the barriers that inhibit them, and the tools that are available to enhance them" (Ditton and Stephens 1976b). The Coastal Zone Management Program has given Wisconsin "the opportunity to formulate and implement planning approaches and management strategies designed to deal with these challenges from a statewide perspective on a continuing basis" (Ibid.).

The state of Wisconsin has a concern with the needs for public access. Wisconsin's water law is governed by the Public Trust Doctrine which is derived from the Wisconsin Constitution, the English common law and the Northwest Ordinance of 1787. Under the Wisconsin trust doctrine the state holds title to the beds of navigable lakes in trust for all of the citizens.

There are several Wisconsin court cases that identify the nature of this trust and the kinds of public rights held in trust. Conclusions of the leading cases are: in Meunch vs. Public Service Commission the court held that the trust doctrine includes the rights to recreational enjoyment of our public waters; and in Just vs. Marinette County the court said the trust duty of the state of Wisconsin "...requires the state not only to promote navigation, but also to protect and preserve those waters for fishing, recreation and scenic beauty." Diana Shooting Club vs. Husting found the public trust doctrine to be a multi-facet doctrine:

"The wisdom of the policy which, in the organic laws of our state, steadfastly and carefully preserved to the people the full and free use of public waters, cannot be questioned. Nor should it be limited or curtailed by narrow constructions. It should be interpreted in the broad and beneficent spirit that gave rise to it in order that the people may fully enjoy the intended benefits. Navigable waters are public waters and as such they should inure to the benefits of the public. They should be free to all for commerce, for travel, for recreation, and also for hunting and fishing, which are now mainly certain forms of recreation. Only by so construing the provisions of our organic laws can the people reap the full benefit of the grant secured to them therein...." (MacDonald and Beuscher 1973).

Public access is a necessary ingredient for recreational use of Wisconsin's navigable waters. However, the public cannot make use of Wisconsin's navigable waters unless it can legally gain access to them. The Wisconsin legislature has specifically found by adopting Wisconsin Statute 23.09 (2d, 8 and 9), which authorizes acquisition for public access, that providing access to navigable waters is in the public interest and furtherance of the public trust. Other

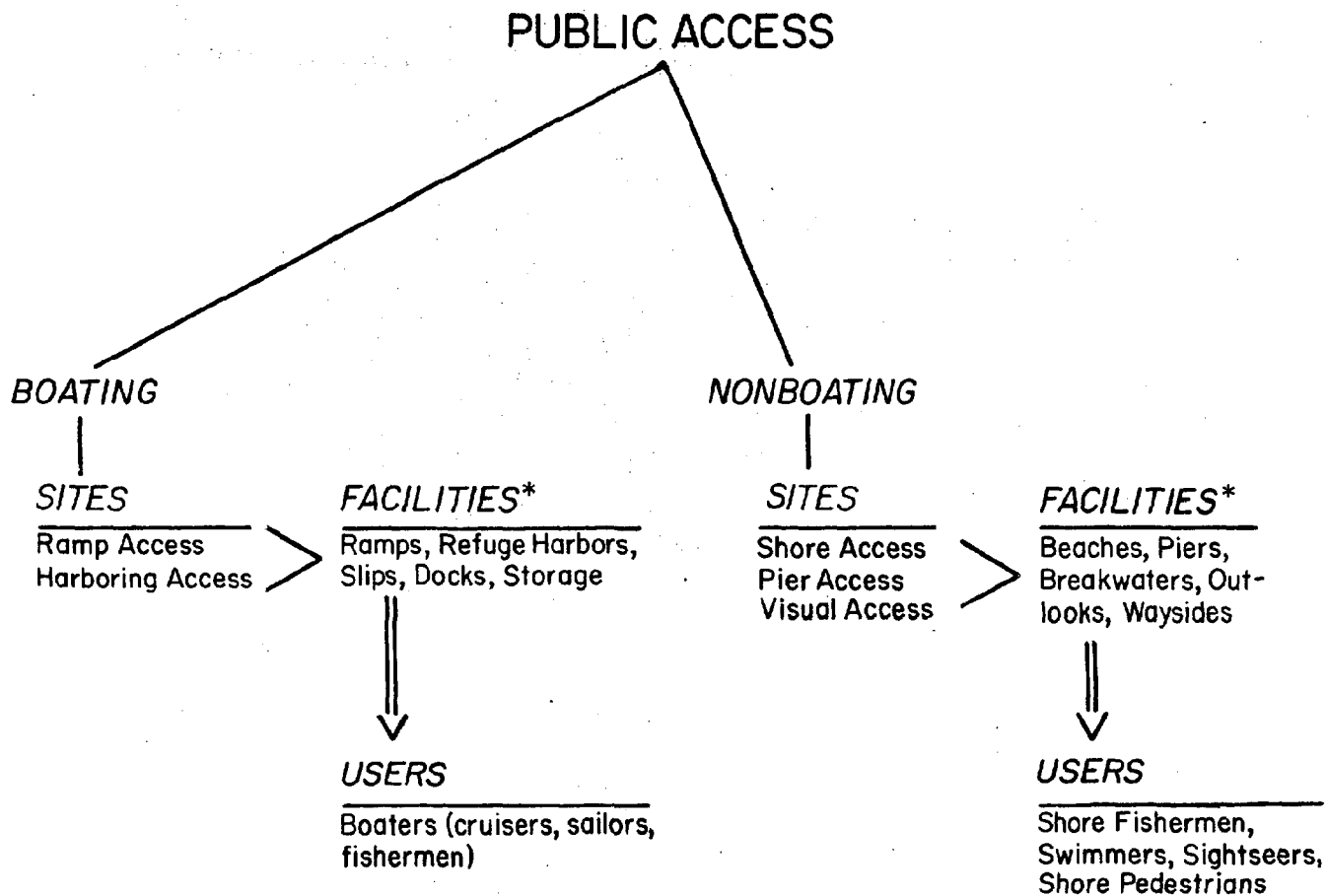
evidence of Wisconsin's concern for public access to its waters is the state's decision to fund an Access Aid Program and public access roads to navigable waters and to adopt a public access subdivision requirement.

The Wisconsin Department of Natural Resources has indicated that "pressure for access will surely increase....needs for access are greatest on lakes within 'day use areas' of major population centers...and that a viable statewide access program is needed" (Cornellus 1974). Public access is particularly important for Wisconsin's Great Lakes. Some major facts that illustrate the need for specific attention to the Great Lakes include:

- 1) Recent improvements in the Great Lakes fisheries has been a major factor leading to increasing demands for public access to Wisconsin's Great Lakes.
- 2) Forty-three percent of Wisconsin's population lives in the Great Lakes' counties making the Great Lakes shoreland highly urbanized. Over eight percent of urban shoreland in Wisconsin is located on the Great Lakes, whereas the Great Lakes shoreland is only 1.4 percent of the total shoreland in Wisconsin. Problems arising from this fact include high cost of shoreland and conflicts due to density of development.
- 3) The Great Lakes are extremely large bodies of water. Users of these waters have distinct facility needs. Safety factors are especially important for the Great Lakes due to the vast acreage of water for open use, the rapidity of storm uprising, and the severity of storms. These factors make the need for harbors of refuge and access sites for rescuing operations especially significant. However, erosion of land complicates this problem by making many land areas unsuitable for facilities and types of public use.
- 4) Inland waters in the Lake Michigan area are presently being used beyond desirable capacity. Needs for water activity could be transferred to areas of the Great Lakes, which do not suffer from overuse (Great Lakes Basin Commission 1975).

Among Wisconsin water resources the Great Lakes possess unique size, quality and use characteristics which result in some specific, particular public access problems. For these reasons, specific attention should be given to the Great Lakes within a broader state policy which would cover access to all Wisconsin's water since factors such as safety, water quality, multiple use, demand, conflicts and public access opportunities affect inland as well as boundary waters.

To avoid confusion in dealing with public access, it is necessary to have a clear and consistent understanding of what public access to water is: the Natural Resources Board defines public access to navigable water as a way to such waters, publicly owned or under public control, reasonably direct and available to all by means of water, road, trail, or otherwise through the privilege of crossing public or private lands without involving trespass. Public access, in this report, includes privately owned facilities which are open to the public (for definition of other terms, see Appendix A). There are two major types of public access--boating and nonboating--and each type has different users who require different kinds of facilities and sites (Fig.1).



* All access sites require land and sanitary facilities. Boating access requires roads and available parking; nonboating access requires either trails and/or roads with available parking areas.

FIGURE 1. Public Access Facilities and Users.

SUPPLY AND NEEDS

An indication of the supply and additional needs for public access to the Great Lakes is the topic of this section. Most of the discussion, for readability's sake, is in the form of regional analysis. The Lake Superior region includes the counties of Douglas, Bayfield, Ashland (excluding the Apostle Islands) and Iron. The upper Lake Michigan region includes the counties of Marinette, Oconto, Brown, Door, Kewaunee, Manitowoc and Sheboygan. Ozaukee, Milwaukee, Racine and Kenosha constitute the lower Lake Michigan counties. Specific county supply information is provided in Appendix D.

Geographical distribution of some public access sites is given in Figures 2-4. For the purpose of this section, the facilities are classified into boating and nonboating facilities.

BOATING FACILITIES

Harbors of Refuge and Marinas

SUPPLY: The distinction between marinas and refuge harbors is that there is often more than one marina in a harbor area. The distribution, by region, of harbors, marinas and slips along Wisconsin's coast is shown in Table 1.

TABLE 1. Wisconsin Coastal Distribution of Harbors, Marinas and Slips.*

| Region | Harbors | Marinas | Slips |
|---------------------|---------|---------|-------|
| Lake Superior | 7 | 9 | 576 |
| Upper Lake Michigan | 31 | 31 | 1,220 |
| Lower Lake Michigan | 6 | 7 | 1,394 |

*Harbors of refuge identified in Great Lakes Basin Commission (1975a)

Harbors of refuge are particularly important for boaters who travel along the coast of the Great Lakes. Storms come up fast and furious on the lakes and boaters must find places of safety during these times.

An approximation of the harbors of refuge per mile along the coasts can be calculated by dividing regional shoreland miles by the number of harbors of refuge. This calculation shows that there is an average of one harbor of refuge every 30 miles for Lake Superior, every 13 miles for upper Lake Michigan and every 12 miles for lower Lake Michigan.

NEED: Indicators of increasing needs for more and improved harbors and marinas are prevalent in recent recreational boating studies. Selected examples of needs are provided below (see Appendix D for greater detail).

- 1) Somersan's "Economic Impact and Needs of Wisconsin's Great Lakes Boaters"

(unpub.) states that during the summer of 1975, 1,031 boaters were on waiting lists for marinas and that present Great Lakes' marina users express a need for improved facilities and services, more docks, more and cleaner toilets and showers, repair services, boating supplies, food and pumpouts.

- 2) Boating participation is projected to increase at 5.5 percent per year in the upper Great Lakes region between 1972 and 1980 (Somersan et al. 1974).
- 3) Citing improvements in the salmon-trout fishery, Fassbender (1971) stated that existing public access and public use facilities along Lake Michigan in Wisconsin were proving to be inadequate to support present and projected future needs. Based on a survey conducted in the spring of 1971, Fassbender found that refuge harbors are needed between Racine-Milwaukee-Port Washington-Sheboygan-Manitowoc, Two Rivers-Kewaunee, Algoma-Sturgeon Bay, Sturgeon Bay-Green Bay, and Oconto-Marinette.
- 4) Green Bay could accommodate many recreational boats but is largely unused partly due to a lack of access facilities and harbors of refuge (Bertrand et al. 1975).
- 5) There will be a shortage of 598 docking spaces for recreation boats in the Duluth-Superior harbor by 1980 (Seaway Engineering Co. 1975a).
- 6) The St. Paul District Corps of Engineers (1976) found that "a need exists in the Chequamegon Bay area for additional berthing spaces for small boats. Increasing leisure time and the development of the Apostle Islands National Park are expected to cause an increase in boating and an even greater future need for berthing areas. There is also a need for harbors to provide protection against storm damage to the boats."
- 7) In the total Wisconsin Lake Michigan area, the existing boating facilities are inadequate for present and future needs. The Chicago District Corps of Engineers (1974) identified the number of boating facilities needed to eliminate present and future excess demand on the Wisconsin shores of Lake Michigan (Table 2). Excess demand is defined by the Corps to be the number of potential boaters that would likely appear if the supply of harbor facilities were not fixed at the present level and if the price or cost of using these facilities were fixed at its present level.

TABLE 2. New Facilities Needed to Eliminate Excess Demand.

| Facilities | Present Needs | | Projected Future Needs | |
|--------------------|---------------|-------|------------------------|-------|
| | 1974 | 1980 | 1990 | 2020 |
| Launch Lanes | 14 | 57 | 91 | 177 |
| Storage Facilities | 525 | 1,265 | 2,220 | 4,105 |
| Berths | 455 | 1,740 | 3,080 | 6,415 |
| Moorings | 80 | 565 | 1,115 | 2,285 |

ESTIMATED HARBOR FACILITIES AND COSTS: The Chicago District Corps of Engineers is presently revising a report on harbors between Kenosha and Kewaunee. It will contain a recommendation for continued investigation at nine harbor sites: Manitowoc, Racine, Sheboygan, Kenosha, Algoma, Bender Park, Grant Park, South Shore Park and Sheridan Park. These sites will be investigated for the possibility of building new or improving old harbor projects. If it is assumed that the average cost of each harbor project is the same as the average cost (\$3,010,210) derived from the Corps of Engineers (1975), then the first cost of these nine sites would be \$27,091,890 for general navigation facilities.

The Great Lakes Basin Commission (1975) recommends that the following sites be studied in the interest of refuge for or basing of small boats: Baileys Harbor, Northport, Gill's Rock, Ellison Bay, Sister Bay, Eagle Harbor, Fish Creek, Egg Harbor, Dyckesville, and the Peshtigo River, and that the possibility of improving Oconto, Detroit and Jackson Harbors be studied. A harbor at Port Washington has been studied and authorized but not yet funded. If one applies the Corps' cost assumptions to all the above suggested harbors of refuge on Lake Michigan, the first cost would be \$69,234,830 for general navigation facilities.

The St. Paul Corps of Engineers identified three principal means of meeting the small boat harbor needs of the Chequamegon Bay area--to do nothing, to provide nonstructural measures or to provide structural measures. The do-nothing alternative was nonacceptable because boating safety and insufficient berthing spaces would become more intense. The nonstructural measures could not provide additional berthing spaces and there would be only limited improvement in boating safety which is necessary for projected use of the area. The proposed structural alternative encompasses the Ashland Project which would be the construction of a new harbor at one of three sites, the Bayfield Project which would improve the existing harbor, and the projects at Washburn and La Pointe would provide new harbors.

Table 3 is a summary of estimated costs. The Corps states that "The benefits were calculated from the additional recreational boating and charter operations that would occur; however, the benefits for safety and damage reduction have not been estimated and would increase the benefit-cost ratio somewhat" (U.S. Army Corps of Engineers 1976).

TABLE 3. Summary of Costs (\$1,000) For Harbors Along Lake Superior.

| Area/Site | Total Cost (First) | Federal | Nonfederal* | Benefit-Cost Ratio |
|------------|--------------------|---------|-------------|--------------------|
| Ashland: | | | | |
| Site I | \$1,202 | \$ 745 | \$457 | 2.3 |
| Site II | 874 | 539 | 335 | 2.1 |
| Site III** | | | | |
| Scheme 1 | 1,733 | 1,080 | 653 | 1.6 |
| Scheme 2 | 1,733 | 1,080 | 653 | 1.6 |
| Scheme 3 | 2,157 | 1,342 | 815 | 1.3 |
| Bayfield | 635 | 409 | 226 | 1.6 |
| Washburn | 912 | 581 | 331 | 4.1 |
| La Pointe | -- | -- | -- | -- |

* Cost include land, easements, rights of way and 50 percent of the cost allocated to recreation.

** These three schemes refer to three different planning projects at Site III.

If the LaPointe harbor costs \$3,010,210 (avg. cost for Lake Michigan harbors), the estimated first costs to develop new and improved harbor facilities on Lake Superior would be \$6,961,210 (assuming harbor Site I in Ashland is chosen). Thirty-seven and one-half percent of the cost of the suggested Lake Superior harbor projects would need to be borne by nonfederal interests. If this percent is assumed for all harbor projects suggested on the Great Lakes, the total non-federal share for Lakes Superior and Michigan would be \$2,575,647 and \$25,616,887, respectively.

The local share given above does not include other facilities such as docks, slips and ramps as well as land for supporting facilities and marina dredging and disposal areas that must be financed to make the harbor areas fit for recreational purposes. The above cost estimates, although very rough, are an indication of how much money would be needed for financing harbors of refuge on the Great Lakes.

Boat Ramps

SUPPLY: Boat ramp information is aggregated by region in Table 4. It should be noted that many ramps are probably in need of repair due to wave action and winter ice cover break-up. Additionally, deposits of sand and debris impair the ramps. An approximation of the distribution of boat ramp sites along the coast, by region, can be calculated by dividing recreational shoreland miles by the number of ramp sites. This calculation shows that there is an average of one ramp site every 7.1 miles for Lake Superior, every 3.5 miles for upper Lake Michigan and every 6.3 miles for lower Lake Michigan (Fig. 2-4). The harbors in these figures are from a study by the Great Lakes Basin Commission (1975) and many were cited as needing improvements.

TABLE 4. Access Sites and Boat Ramps in Coastal Areas*

| Facilities | L. Superior | Upper L. Michigan | Lower L. Michigan | Total |
|----------------------------------|-------------|-------------------|-------------------|----------|
| No. access sites | 30 | 117 | 13 | 170 |
| Total boat ramps | 48 | 161 | 36 | 245 |
| No. surfaced ramps | 27(56%) | 120(75%) | 33(91%) | 180(69%) |
| No. car-trailer spaces** | 835 | 3,958 | 954 | 5,747 |
| Avg. trailer space/ramp | 17 | 24 | 26 | 19 |
| Percent ramps, publicly owned*** | 33 | 51 | 91 | 53 |

*Includes sites on Great Lakes tributaries within one township from the Great Lakes.

**Includes parking areas near the site (some are open fields).

***Townships and cities in the L. Superior and Upper L. Michigan areas provide most of the ownership; cities provide it in the Lower L. Michigan area except for Milwaukee where the county provides most of the boat access facilities.

REGION 1

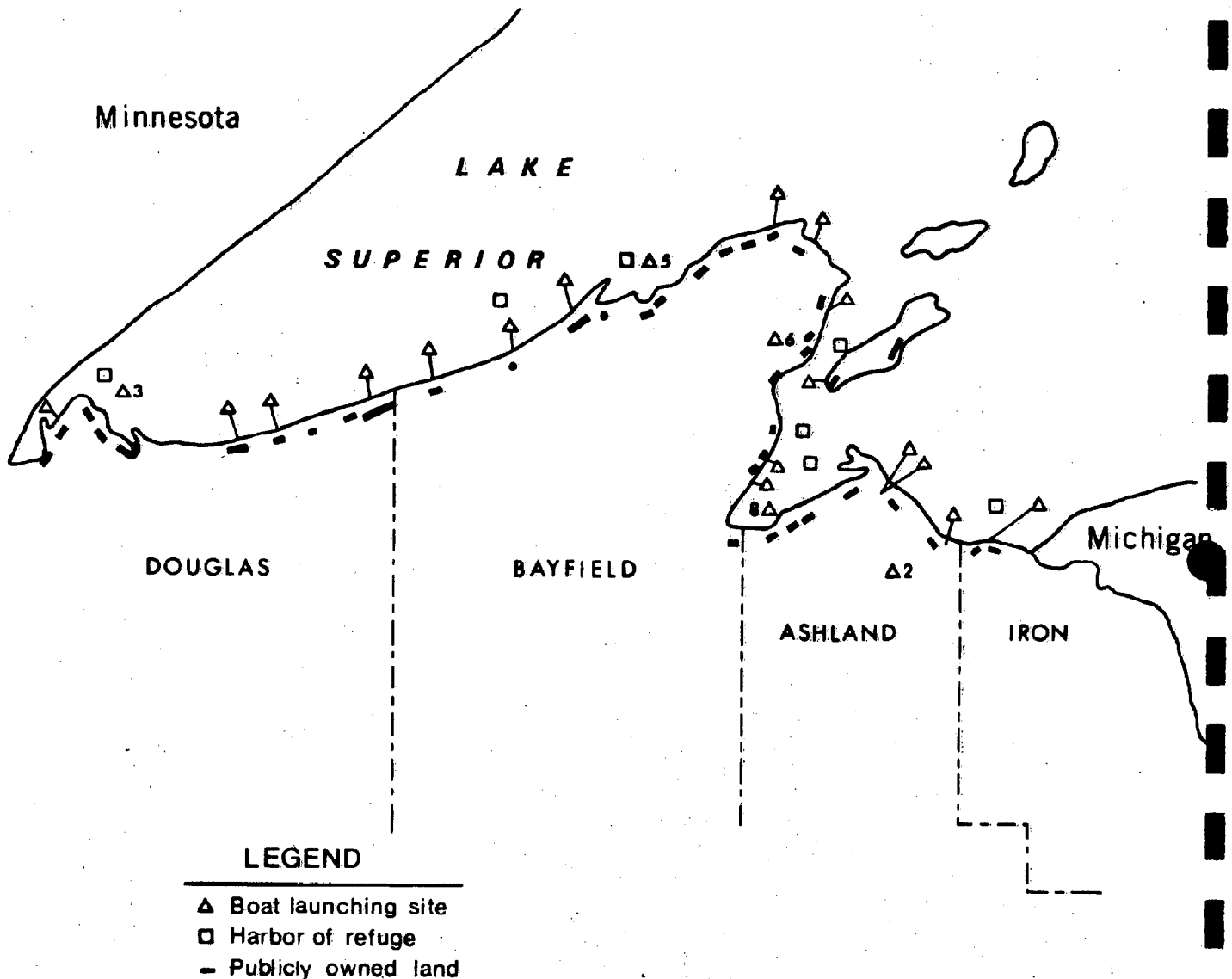
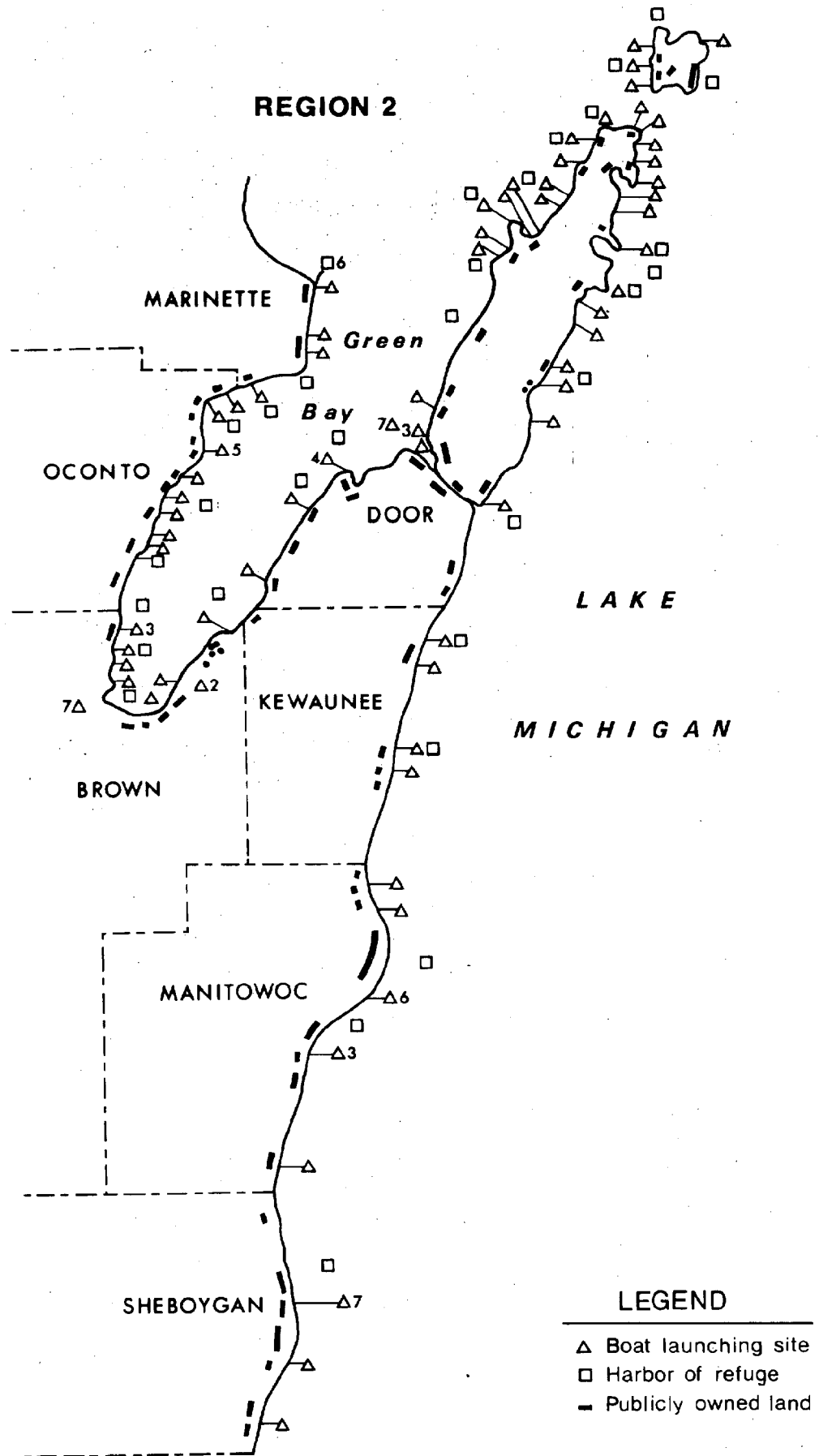


FIGURE 2. Distribution of Public Access Sites along Lake Superior.

FIGURE 3. Distribution of Public Access Sites along upper Lake Michigan.



REGION 3

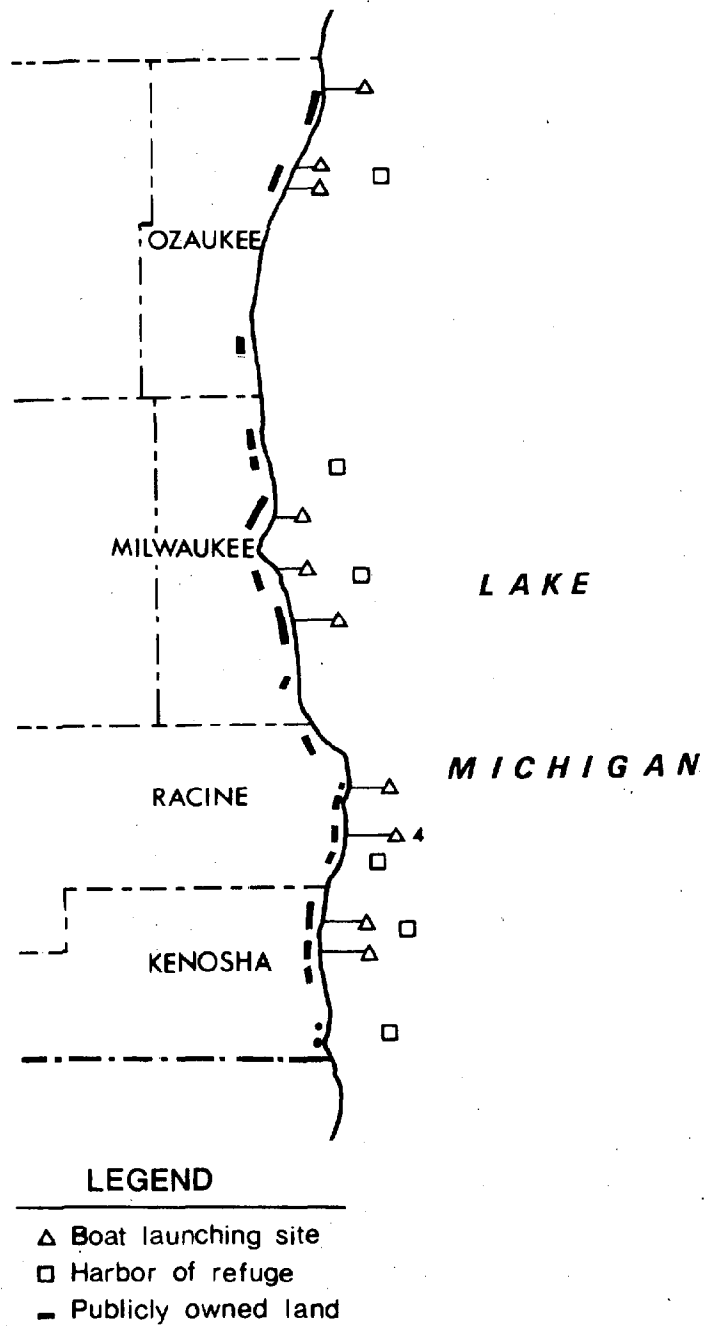


FIGURE4. Distribution of Public Access Sites along lower Lake Michigan.

- NEED: 1) Somersan and Neuman's "Demand and Supply of Recreation in Wisconsin's Coastal Counties" (unpub.) states that local officials of 10 out of 13 communities surveyed on the Great Lakes cited overcrowding and congestion of their recreational boating facilities. Officials of Kenosha, Racine, Milwaukee, Port Washington, Manitowoc, Kewaunee, Sturgeon Bay, Green Bay, Marinette and Superior cited these problems.
- 2) Somersan found in "Economic Impact and Needs of Wisconsin's Great Lakes' Boaters" (unpub.) that the boaters surveyed during the summer of 1975 and especially those boating on Lake Michigan overwhelmingly expressed a need for more and improved launching facilities. Overnight docking facilities and ramp assistance and supervision were also mentioned frequently by the boater as being needed. A large number of the boaters found parking facilities inadequate, especially on weekends.
- 3) Fassbender (1971) identified 12 areas on Lake Michigan lacking boat access facilities and suggested specific development sites. Fassbender also suggested the need for specific improvements at 46 access sites on Lake Michigan. The need for expanded parking areas and improved ramps appeared most frequently.
- 4) Boating participation in the coastal counties is expected to increase by about 115 percent between 1970 and 1980 (Somersan and Neuman, "Demand and Supply of Recreation in Wisconsin's Coastal Counties", unpub.).
- 5) The number of trolling trips to Lake Michigan has continuously increased from 33,070 in 1969 to 380,571 in 1974 (Wis. Dep. Nat. Resour., in press).

ESTIMATED RAMP FACILITIES AND COST: The Chicago District Corps of Engineers (1974a) estimated a need for 177 launch lanes on Lake Michigan in Wisconsin by 2020. If a lane costs \$8,000 the cost would be \$1,416,000.

The need for ramps on Lake Superior cannot be quantified from existing demand studies. Fishing trip counts do not indicate any increasing need for more ramps. However, officials of Superior did cite overcrowding and congestion of their recreational boating facilities. The Apostle Island National Lakeshore will probably influence the demand for more ramps since many island visitors might travel by private boats, which need to be launched on the mainland.

Charter-Fishing

SUPPLY: Charter-fishing services are provided at numerous cities throughout the coastal areas of Wisconsin. These services provide boat-fishing opportunities to those people who do not own boats. In 1975, the number of charter services along Lake Michigan was approximately 142. It is difficult to quote an exact number of charter-fishing enterprises since the supply fluctuates constantly.

NEED: It appears that the charter-fishing industry is responding to the increase in demand of their services (see Strang and Ditton 1974).

NONBOATING FACILITIES

Public access to the Great Lakes requires either public or private land which is open for public use. An inventory of all private lands open to the public would require an extensive survey and has not been undertaken for this publication. Table 6 identifies the amount of public shoreland and recreational areas that are available for persons interested in access to water for purposes other than boating. Recreational activities requiring nonboating access are possible wherever this access is provided; however, these activities (e.g., swimming) are desirable primarily where other facilities are provided (e.g., changing houses, sanitary facilities).

TABLE 6. Shoreland Distribution for Non-Boating Access.*

| Miles | L. Superior | Upper L. Michigan | Lower L. Michigan | Total (Miles) |
|------------------------|-------------|----------------------|----------------------|---------------|
| Total Shoreland | 214.18 | 415.30 | 82.01 | 712.4 |
| Public-Owned Shoreland | 29.4 (14%) | 43.7 (10%) | 26.0 (31%) | 99.1 (14%) |
| Parks Shoreland | 4.1 | 35.4 | 19.0 | -- |
| Forests Shoreland | 123.9 | 82.7 | 0.6 | -- |
| Beach Zone Shoreland | 100.8 | 127.1 | 70.7 | -- |

*Data from the U.S. Army Corps of Engineers (1971) which used 620 miles as the total Great Lakes Shoreland and from the Wisconsin DNR.

State Parks and Forests

SUPPLY: Parks presently provide the majority of nonboating facilities. There are nine state parks located in the Great Lakes counties and each park contains facilities for many types of recreation; state forests also provide recreation facilities with access to the Great Lakes. The Wisconsin Department of Natural Resources provided the data for the regional inventory, Table 7.

TABLE 7. State Parks and Forests, Coastal Counties.*

| Facilities | L. Superior | Upper L. Michigan | Lower L. Michigan |
|--------------------------------|-------------|-------------------|-------------------|
| Area (sq. ft.) | 40,137 | 10,956 | 536 |
| Parking (spaces) | 1,270 | 1,262 | 320 |
| Nature & Hiking Trails (miles) | 16.1 | 75 | 1.8 |
| Snowmobile Trails (miles) | 38.5 | 49.5 | 1.5 |
| Coastal Frontage (miles) | 2 | 39 | 1 |

*Derived from Wisconsin DNR data.

The state also provides fish and wildlife areas in several areas throughout the coastal counties, most of which lie in the upper Lake Michigan region. These lands are open to the public for fishing and hunting purposes.

NEED: Visitations to state parks and forests on the Great Lakes provide an indication of the need for Great Lakes recreational areas (Table 8). Visitation for Great Lakes' parks and forests between 1970 and 1975 increased 29 percent compared to 19 percent for all state parks and forests in Wisconsin.

TABLE 8. Increase in State Parks and Forest Visitation
on the Great Lakes, 1970-75.

| Parks and Forests | 1970 | 1975 | Percent Increase |
|----------------------------|-----------|-----------|------------------|
| <u>LAKE SUPERIOR</u> | | | |
| Big Bay | 4,336 | 38,909 | 793 |
| Apostle Islands | 3,354 | 11,118 | 231 |
| Brule River | 51,312 | 64,182 | 25 |
| Total | 59,002 | 114,209 | 93 |
| <u>UPPER LAKE MICHIGAN</u> | | | |
| Rock Island | 15,125 | 18,337 | 21 |
| Newport | 50,718 | 99,612 | 96 |
| Peninsula | 851,637 | 981,865 | 15 |
| Potawatomi | 202,139 | 232,140 | 15 |
| Kohler-Andrae | 274,027 | 312,958 | 14 |
| Point Beach | 151,529 | 256,293 | 69 |
| Total | 1,545,175 | 1,901,205 | 23 |
| <u>LOWER LAKE MICHIGAN</u> | | | |
| Harrington Beach | Not Known | 59,975 | Not Known |
| TOTAL | 1,604,177 | 2,075,389 | 29 |

Beaches and Shorefishing Areas

SUPPLY: Swimming and shorefishing are possible in any areas where access can be obtained. However, swimming is usually desirable where there is a public beach with facilities and shorefishing is desirable where there are piers, bridges, docks, breakwaters, etc.

The Army Corps of Engineers (1971) identified 12 public beaches on Lake Superior shoreline, 27 on the upper Lake Michigan and 13 on public beaches on the lower Lake Michigan shoreline. An accurate inventory of shorefishing areas in the coastal regions is not available from existing sources because although fishing takes place on public lands, there are some private enterprises, particularly resorts and campgrounds, which allow the public to fish on their lands.

NEED: According to Somersan and Neuman's "Demand and Supply of Recreation in Wisconsin's Coastal Counties" (unpub.), the total number of swimming occasions is projected to increase by about 60 percent in most coastal counties between 1970 and 1990. Although Somersan et al. (1974) determined that swimming is the most popular recreation activity in the Midwest (58 percent of households have one or more persons engaged in the activity); the study's projections indicate a .25 percent decline per year in the outdoor swimming rate between 1972 and 1980. Somersan and Neuman (unpub.) attribute this slight decline to the increased availability of indoor swimming facilities, increased competition from numerous other recreation opportunities and changing attitudes toward water quality. Nevertheless, there is a substantial population who presently and in the future will continue to use outdoor swimming facilities, and the number of participants is projected to increase.

Recent data indicates that shorefishing activity is increasing in the Lake Michigan area. The DNR's "Report on Anadromous Fish Research and Inventory, July 1971-June 1974" (unpub.) stated that Lake Michigan fishing trips along the shores, streams and on piers and breakwaters jumped from 126,313 trips in 1969 to 581,695 trips in 1974. Most of the shorefishermen fished on piers and breakwaters in 1974 (343,737). There were 40,179 shorefishing trips (including stream-fishing) in the Lake Superior area in 1972, in 1973 there were 55,787 trips and 48,243 in 1974. There appears to be no increase in shorefishing activity on Lake Superior.

Fassbender (1971) stated that "major concern is presently being directed at providing adequate boating facilities along Lake Michigan and Green Bay with an apparent lack of concern given to the more abundant bank fishermen," that bank-fishing areas are needed almost everywhere along the shoreline and that walk-in access sites or road endings could easily be converted into bank-fishing areas by adding a small parking area and a small pier. Road endings or walk-in access sites where this type of facility could be developed are common in Door, Sheboygan and Ozaukee Counties. Piers could also be developed along park lands and state wildlife areas in Marinette, Oconto, Brown, Manitowoc, Milwaukee and Racine Counties. Fassbender concluded that development of bank-fishing areas should be a high priority and suggested a cost-sharing program involving local units of government as a means of providing additional bank fishing.

Visual Access and Trails

SUPPLY: An accurate inventory of visual access cannot be obtained from the existing sources of data. It is questionable whether such an inventory could be made with any degree of accuracy or completeness since some locations provide visual access during the winter but not in summer because of the leaves on the trees. All Great Lakes frontage sites available to the public provide visual access but any further identification of visual access would be questionable.

Units of government and civic organizations have promoted scenic areas and routes. The Wisconsin Coastal Management Development Program has published Wisconsin Coastal History Trails (Purinton 1976 a, b) which points out many scenic sites along the Great Lakes. Historical commercial storefronts, church steeples, residential architecture, waterfronts and museums are some of the scenic sites inventoried. In the coastal counties, the major scenic routes include the south shore of Lake Superior (Superior to Ashland), the Door County peninsula and the Milwaukee County parkways. This selection of scenic routes serves as a guideline in developing the state scenic easement program. Wisconsin, through help from the Transportation Department, is considered a pioneer in the use of scenic easements.

The National Scenic Highway Study has found that the routes along the Great Lakes that are considered scenic are: Superior to Ashland, Marinette to Oconto, Green Bay to Egg Harbor, Fish Creek to Sheboygan and Cedar Grove to Thiensville. These routes sporadically provide visual access to the Great Lakes. Visual access can be obtained from the above roadways when physical access is not available (i.e., outlooks); but consideration also must be given to the visual aesthetics of looking at the shoreline from the water.

For the purposes of this section, trails will include biking, hiking, snowmobile and cross-country ski trails.

Table 9 provides trail supply data, aggregated by region, from the DNR's "Wisconsin Trail System Plan" (unpub.). The number of trails or miles which provide public access to the Great Lakes cannot be obtained from existing inventory sources.

Table 9. Trails in the Coastal Counties.

| Region | Hiking (mi) | Biking (mi) | Snowmobiling (mi) | Cross-Country Skiing (mi) |
|---------------------|----------------|----------------|----------------------|------------------------------|
| L. Superior | 73 | -- | 84 | 36 |
| Upper L. Michigan* | 156 | 93 | 154 | 128 |
| Lower L. Michigan** | 84 | 351 | 84 | 35 |

*Includes Shawano and Menominee Counties.

**Includes Waukesha, Washington and Walworth Counties.

NEED: According to the Wisconsin Outdoor Recreation Plan (1972b), recreational trails in the state are neither abundant in number or adequately distributed. A problem with many of the trails is that they are too short and are not close enough to major population areas. The plan states that every opportunity to acquire and/or develop such trails should be pursued by state, county and local units of government. Private enterprises also engage in providing these facilities. Trails running parallel to the Great Lakes can provide continuous opportunities for public access. Visual access could be an especially important consideration in planning trail development.

If one objective is to increase bikers' public access to the Great Lakes with the least amount of inconvenience, then several stretches along the coast are clearly in need of bike trails. From an analysis of Purinton's (1976 a, 1976 b) publication on Wisconsin coastal trails and from consultation with the author, certain problems can be identified based on the criteria-- road layouts, road conditions and safety considerations. In the Lake Superior area, problem areas include a way to bike from Superior to the mouth of the Bois Brule River, from Bayfield to Ashland and through the Bad River Indian Reservation. In the upper Lake Michigan area, problem areas include Edgewater Beach to County Hwy. K (near Sugar Creek), Fish Creek to Egg Harbor, Ephraim to Sister Bay, Bailey's Harbor to Jacksonport, Cedar Valley Campgrounds past the Point Beach nuclear plant and from Port Washington to Sheboygan. Problem areas in the lower Lake Michigan area are the stretches from Port Washington to Fox Point and from Kenosha to Racine. These identified areas along the Great Lakes need to be developed. Presently, they are extremely unsafe because of heavy traffic flow and little or no shoulder. With more and more Wisconsinites hiking, biking, skiing and snowmobiling, it's a necessity to continue developing more and better facilities.

Islands

SUPPLY: There are two major groups of islands off the Wisconsin coast: the Apostle Islands and the Grand Traverse Islands. Efforts are currently underway to preserve their natural beauty and increase their availability for recreational use. Federal acquisition is currently underway to complete a 20-island chain off the Bayfield peninsula to be called the Apostle Islands

National Lakeshore (AINL). Stockton, Oak, Michigan and Basswood Islands (area totaling 16,609 acres) were transferred to the federal government by Governor Lucey on February 2, 1976. Also included in the lakeshore will be 2,500 acres on the Bayfield peninsula. Madeline Island will not be acquired as part of the lakeshore.

The Grand Traverse Islands is a chain of 16 islands between Wisconsin's Door County peninsula and Michigan's Delta County peninsula, which is scattered across the entrance to Green Bay. Montgomery (1976) found that by excluding Washington Island, 47 percent of the remaining 15 islands is in public ownership (2,835 acres). Including Washington Island reduces the amount to 14 percent of publicly owned land in this island chain of 20,040 acres. Although these islands would be a great asset to Wisconsin and Michigan citizens, they would also be a financial burden since island parks are so expensive to maintain. Chambers Island is not considered as part of those islands.

NEED: Statements by Governor Lucey illustrate Wisconsin's interest in these islands. In regard to Door County's Rock Island, the Governor has said that the federal government should transfer 129 acres to the state of Wisconsin for use as a park and concerning the Apostle Islands, Governor Lucey cited the transfer of land rights to the Apostle Islands National Lakeshore as essential to the future preservation of the area's environment as well as a protection of the recreation benefits to Wisconsin's citizens. Regional planning commissions, local governments, and a number of organizations and area residents have also expressed concern about preservation and recreational use of the islands off Wisconsin's shore.

ESTIMATED COST OF NON-BOATING FACILITIES: It would be exceedingly difficult to place a monetary value on all non-boating facilities. The exact amount and cost of facilities such as piers, picnic tables, sanitary units, pump-outs, parking spaces, etc., cannot be determined without a detailed feasibility study. This study seeks to give a rough estimated cost for broad decisions not for precise financial projections. A very rough approximation of money needed for providing total access, with no allowance for facilities, can be obtained by multiplying the total length of shoreline, not in public ownership, by the cost of a frontage foot (Table 10).

TABLE 10. Cost of Wisconsin's Coastal Frontage Land

| Location | Frontage (ft) | Cost |
|--------------------------------|----------------|-----------------------------------|
| L. Superior | 975,638 | \$ 34,147,344 (\$35 per ft.) |
| Marinette Co. to Brown Co.* | 202,118 | 7,074,144 (\$35 per ft.) |
| Brown Co. to Sheboygan Co. | 1,759,930 | 131,994,720 (\$75 per ft.) |
| Sheboygan Co. to Illinois | <u>295,733</u> | <u>29,573,300 (\$100 per ft.)</u> |
| TOTAL | 3,233,419 | \$202,789,508 |

* Does not include the Apostle Islands.

The option to purchase land at less than fee simple prices also exists. However, the rights that must be purchased -- privacy and subdivision -- are basic rights that are almost as expensive as direct acquisition (fee simple). Perhaps 25 to 50 percent might be saved if easements rather than the shorelands were acquired.

PROBLEMS IN PROVIDING PUBLIC ACCESS

Public access policy should be based upon the issues that arise out of concern for the natural, economic and social environments. These issues become conflicts when the public has differing opinions about the effects of providing or not providing public access to Wisconsin waters.

THE NATURAL ENVIRONMENT

Providing Access

Development and use of public access facilities can adversely affect the natural environment. Development of land to accommodate recreational use can cause short-term environmental problems such as erosion and runoff. Irreversible long-term damages can result when development occurs within unique, sensitive ecosystems such as sand dunes and fish/wildlife areas. Particularly acute problems can arise from the construction of boating facilities. Coastal construction work can disrupt bottom biota, cause turbidity during excavation operations, create temporary adverse impacts on water quality, plant and fish resources. The movement of sand particles along the shores may be affected, resulting in the deposition of beach sand in different areas. Disposal of sediments dredged from the harbor areas can also have serious effects on the natural environment. Adverse environmental effects can also result from the public use of access sites. Previously undisturbed natural areas could be disturbed by public use. Recreational activities such as camping, trail motor biking, shorefishing, snowmobiling and boating can increase noise levels, gasoline emissions and littering.

Not Providing Access

The natural environment is adversely affected when there are insufficient public access facilities. Overuse of existing facilities causes rapid deterioration of the access site (e.g., shorefishing area) and can lead the site users to stray away from the managed areas to areas not environmentally capable of supporting public recreational activity. A lack of sanitary facilities such as pump-outs causes many boaters to dump wastes into the water.

THE ECONOMIC ENVIRONMENT

Providing Access

One cause of conflict arises from belief of nearby property owners that the public access facility will lower their property values, yet increase their taxes for various services in the area. There are many studies which attempt to analyze the impact of public ownership and development on the local community, but the results are overwhelmingly influenced by combinations of variables which are unique to particular sites and uses. A study recently completed by Cohee (1974) on Department of Natural Resources acquisitions found very little or no economic losses due to removing land from tax rolls, except where the department had purchased prime agricultural lands. Six DNR ownerships were analyzed and it was found that had the farmland not been sold, the net income would have ranged from \$2,200 to \$11,700 on five of the ownerships.

However, for the six ownerships, gross incomes for local business establishments from goods and services sold to recreationists using DNR facilities ranged from \$3,652 to \$54,104. In addition, the DNR pays fees to local governments in lieu of real estate taxes -- \$4,009,626 since 1964 to 664 towns and municipalities in 70 counties.

Following is the revenue received from Great Lakes boaters according to Somersan's "Economic and Needs of Wisconsin's Great Lakes Boaters" (unpub.):

"Wisconsin's Great Lakes boaters spent approximately \$12.7 million during the 1975 boating season. Seventy-three percent of this spending (\$9.3 million) occurred directly in the coastal communities. This estimate does not include the spending by the fishermen using charter-fishing services and boaters using private launch facilities. The cost of the boat and annual maintenance expenditures are also not included in this figure. Of the total direct spending of \$12.7 million, boaters using public ramps accounted for \$6.6 million and the marina users accounted for \$6.1 million. The primary beneficiaries of the daily spending by boaters were restaurants, food stores, service stations, sporting goods stores and overnight lodging establishments" (Abstract).

Mueller and Sharp, "Economic Impact of Recreation - Tourism" (unpub.) have also appraised the local economic benefits of providing goods and services to tourists and access facility users (Table 11).

Table 11. Estimated Recreation - Tourism Impact Upon Coastal Regions.

| Region | Business Sales (dollars) | Employment (persons) |
|-------------------|--------------------------|----------------------|
| L. Superior | 95,110,000 | 21,057 |
| Upper L. Michigan | 304,519,000 | 81,517 |
| Lower L. Michigan | 1,174,076,000 | 424,288 |

Not Providing Access

Increased cost to the local community may result from having insufficient public access facilities. Overcrowded facilities often lead site users to stray away from managed areas to other areas not open for public use which could cause an increase in police protection and other community services.

THE SOCIAL ENVIRONMENT

Providing Public Access

The quality of the social environment, on land and on water, may be lowered due to several reasons. There is usually increased noise levels associated with a public access facility. Traffic in the area often is temporarily or permanently increased due to initial development and eventual public use. Recreationists may not stay within the confines of the public property, especially along the beaches, resulting in an invasion of nearby property owner's rights. This may become an acute problem in highly residential shoreline areas. Ditton and Stephens (1976 a) describe this social conflict:

"An increasing number of recreation participants and activities are competing for a relatively fixed amount of shore areas. With public shoreline access limited, coastal use tends to be concentrated around these access points. Without a comprehensive access system, it is difficult to disperse users, and hence avoid many conflicts. Many coastal bays and areas are simply too small to support intensive use; many areas like marshlands are unsuited to a wide variety of uses. Length of available shoreline, type of access, and density of development are all involved with use conflicts . . . Multiple use conflicts in coastal areas are due to intensity, mixing and incompatibility of uses. Shoreland uses are directly related to the presence and extent of multiple use surface water conflicts. Conflicts involve physical competition for space, psychological incompatibility and destruction of resource-related values " (pp. 3-7).

Not Providing Access

A basic social concern arises from the public's attempt to reach the water (to which they have rights of recreational use). Many times their attempts are in violation of private rights (e.g., trespassing) since riparian owners have exclusive rights of access. Once access has been gained, the public must also remain in the water to avoid trespassing on private riparian land. A continuous strip of dry land for public use along the shore does not exist. Consequently, shore pedestrians often violate riparian owners' rights by trespassing.

MEANS OF REDUCING PROBLEMS

Existing federal, state and local licensing requirements, permit programs, orders and approvals are some of the regulatory measures to control adverse effects. State measures require that before land is purchased or before development of certain public facilities begin, it is necessary to obtain written approval from state agencies having the responsibility to protect the public interest.

Wisconsin Environmental Policy Act (WEPA)

This act requires detailed impact statements on all proposals for legislation and other major actions which significantly affect the quality of the human environment. All new projects which will result in the issuance of a DNR license, permit, order or approval must be evaluated to determine if an environmental impact statement is necessary. The Natural Resource Board Policy for the implementation of WEPA gives specific attention to the Great Lakes.

Planning Processes

Planning occurs at all levels of government and private interests. Steps and precautions are taken by many agencies and individuals to curtail adverse effects upon the natural, economic and social environments. The Department of Natural Resources in its policy on planning illustrates the state's role in the planning process: "The Department of Natural Resources has a direct responsibility for the management of many of Wisconsin's natural resources, and an interest in the wise use of all of them. Chapter 23 of the Wisconsin Statutes requires that, 'The department shall establish long-range plans, projects and priorities for conservation.' Chapter 83 directs the department to develop plans . . . for the prevention, abatement and control of air pollution. Chapter 144 requires the department to formulate . . . a long range comprehensive state water resources plan."

Regional planning commissions "may conduct all types of research studies. . . make plans for the physical, social and economic development of the region... provide advisory services. . . and act as a coordinating agency for programs and activities" (Chapter 66.945(8a), Wis. Stats.). The state has delegated authority to the counties "to promote the public health, safety, convenience and general welfare; to encourage planned and orderly land use development; to insure adequate. . . recreational facilities. . . to encourage uses of land and other natural resources. . . to preserve wetlands; to conserve soil, water and forest resources; to protect the beauty and amenities of landscape. . ." (Chapter 59.97(1), Wis. Stats.). Cities and villages also make and adopt master plans for the physical development of the municipality through planning commissions (Chapters 61.35 and 62.23(1), Wis. Stats.). Wisconsin also has broad waste treatment planning and management programs which assist regional, local and state governments in carrying out land management decisions. Wisconsin's Coastal Management Program is currently coordinated with these programs. The state, along with some organizations and individuals, works toward preserving natural areas and resources and developing aid requirements which will deter adverse effects upon our environment.

Public Access Opportunities

Policy aimed at increasing public access should be concerned with all individuals' needs. Even though public access facilities exist in someone's immediate area, that person may not have the opportunity to use those facilities. Constraints such as income, mobility and leisure time may preclude their ability to use the public access facilities. Low-income persons may not have an automobile to travel to public access areas that are located outside of walking distances. Enosh et al. (1975) have shown that low-income, inner-city residents located near the Great Lakes seldom participate in boating and swimming activities. A comparison of participation in activities by individuals of a midwest sample and an inner-city sample shows a large discrepancy in recreational activity participation. In the midwest sample, participation was much greater in the water-related activities of swimming, fishing and boating. Basketball, pool, movies and bowling were the recreational activities most often participated in by low-income urban residents. This study suggests that the difference in the recreation patterns of these two groups is partially explained by the differences in socioeconomic characteristics of which the most important is race. They found that black households were less apt to take trips and participate in outdoor recreation activity-oriented trips than the white households. The inner-city sample was 80% black whereas the midwest sample was only 10% black.

Additional factors for the differences in recreational patterns between the two groups might be the result of differing incomes, education, mobility, traditions and recreational interests, age, family size; but race is probably the most important factor. Racial characteristics interact with many other factors and account for an important portion of differences in recreational behavior. The study concluded that the average inner-city household is less outdoor recreation-oriented than the average midwestern household and that more emphasis should be given to local recreational facilities such as parks and playgrounds.

Williams et al. in Characteristics and Recreational Participation Patterns of Low-Income Inner-City Residents (1974), identified recreation activity patterns based on changes in leisure time and income. Six hundred and fifty-six low income, inner-city residents responded to the following questions: (1) If your family had a few days or a week extra of free time this year, what would you do with the leisure time? (2) If your family had an extra \$500 this year, would you use any of it for recreation? Sixty-five percent indicated they would either travel, visit their hometown and relatives, take a vacation, stay at home and relax or go camping. Activities requiring public access to water accounted for 13 percent of the total with fishing indicated by 9 percent of the respondents. Swimming, going to the beach and boating, were indicated by only 2, 1 and 1 percents respectively. When asked what they thought were the obstacles restricting family participation in all recreational activities, 40 percent indicated either not enough time or lack of money.

From the results of the above surveys it appears that low-income, inner-city residents are very interested in shorefishing but not very interested in swimming, boating and walking along the beach, even if they had time and additional money. Nonparticipation in these activities cannot be explained by income and leisure time alone; nevertheless, providing shorefishing areas where needed, as well as pier-fishing facilities, would provide for these persons' immediate needs.

One question for future public access policy is -- should the public sector try to increase low-income, inner-city residents' participation in favor of Great Lakes boating, swimming, and shorewalking by creating and developing new programs and facilities. One means of implementing such a policy might be to apply for funds, buy boats (sailing, cruising or fishing) and then rent them out at a low fee. These activities could be centered around clubs for low-income urban residents, and training and technical assistance programs could aid in these endeavors. The City of Milwaukee is presently trying to advocate such a program with assistance from the Wisconsin Coastal Management program. This type of project has succeeded in Boston. Another means of implementing the above policy would be to provide local transportation programs for low-income persons who wish to go to the beaches on the Great Lakes. Funds could be applied to renting or buying buses to transport low-income persons to beaches not accessible by foot.

EXISTING PUBLIC ACCESS POLICY

At the present time, policies for the provision of public access to Wisconsin's waters do not pay specific attention to the Great Lakes. Policy for public access to all Wisconsin waters exists at two levels -- explicit and implicit. Explicit pertains to policies which clearly speak of providing public access to water. Implicit pertains to policies for public access which are identified or inferred from general policy statements with broad purposes. The general policy statements imply the importance of public access by mentioning recreational or educational activities -- many of which depend upon public access to water.

EXPLICIT POLICY

1. WAYS TO WATER: Any county board may condemn a right-of-way for any public highway to any navigable stream, lake or other navigable waters (Chapter 23.09(8), Wis. Stats.).
2. PUBLIC ACCESS TO WATER: The governing body of any county, town, city or village which, by resolution, indicates its desire to acquire or improve lands for the purpose of providing public access to any navigable lake or stream may make application to the department (DNR) for the apportionment of funds for state aid (Chapter 23.09(9), Wis. Stats.).
3. WATER FRONTS, GROVES, OUTLOOKS, HISTORIC SITES AND WOOD LOTS: To authorize the town board to acquire . . . tracts of land for reservation for public use of river fronts, lakeshores . . . (Chapter 59.99(15), Wis. Stats.).
4. LAKES AND RIVERS: The city may improve lakes and rivers within the city and establish the shoreline thereof (Chapter 62.23(18), Wis. Stats.).
5. LANDS MAY BE GRANTED OR EXCHANGED TO PROMOTE BOATING: (1) Any city, however incorporated, or any county, which has . . . title to any submerged land, constituting the bed of any lake . . . may grant and convey to any incorporated yacht club of this state . . . part of such lands . . . by resolution . . . (Chapter 27.115(1), Wis. Stats.).
6. TRANSPORTATION FACILITY DEVELOPMENT AND IMPROVEMENT: (a) Acquisition of scenic easements, development of historical markers, overlooks, waysides . . . (qb) access to navigable waters . . . provide public access roads to navigable waters . . . (Chapter 20, 395(4), Wis. Stats.).
7. ACQUISITION OF LAND: Any county in which there does not exist a county park commission . . . may acquire . . . land . . . for public use of river fronts, lake shores, picnic groves, outlook points . . . (Chapter 27.015(10), Wis. Stats.).
8. LAKE AND STREAM SHORE PLATS: All subdivisions abutting a navigable lake or stream shall provide public access at least 60 feet wide . . . at no more than one-half mile intervals . . . (Chapter 236.16(3), Wis. Stats.).

9. PROVIDING VEHICULAR ACCESS TO LAKES AND STREAMS: (1) Access to waters. Access to waters is a variable requirement which must be based on the qualities to the waters, the space available, and the levels of use experienced. The department shall provide such public access, consistent with the quality of the resource and respecting private rights and developments, when approved by the natural resources board. State boating laws (Chapter 30.77, Wis. Stats.) authorize local units of government to charge reasonable fees for the use of access sites. Reasonable fees shall be deemed to be those currently charged for daily entrance to state parks and forest areas and shall be stipulated prior to the granting of state aid . . . (Wis. Dept. of Nat. Resources., NR 1.32).
10. DISCONTINUING WAYS TO WATERS: No resolution or ordinance of any town board or county board or committee thereof discontinuing any highway, street, alley or right-of-way which provides public access to any navigable lake or stream shall be effective until such resolution or ordinance is approved by the Department of Natural Resources (Chap. 80.41, Wis. Stats.).

IMPLICIT POLICY

1. CONSERVATION ACT: The purpose of this section is to provide an adequate and flexible system for the protection, development and use of forests, fish and game, lakes, streams, plant life and other resources in this state. The DNR may: acquire . . . lands or waters . . . for . . . providing public recreation (Chapter 23.09, Wis. Stats.).
2. OUTDOOR RECREATION PROGRAM: (1) Purpose. The purposes of this section is to promote, encourage, coordinate and implement a comprehensive long range plan to acquire, maintain and develop for public use those areas of the state best adapted to the development of a comprehensive system of state and local outdoor recreation facilities and services in all fields, of and to facilitate and encourage the fullest public use thereof. (2) Established. The outdoor recreation program is established as a continuing program to financially assist the state and local agency outdoor recreation program, including . . . public access, state park and forest recreation areas . . . highway scenic easements, state aids for local governmental parks and other outdoor recreational facilities, acquisition and development, state aids for county forest recreation areas development . . . (Chapter 23.30, (1) and (2), Wis. Stats.).
3. CONSERVATION EASEMENTS AND RIGHTS IN PROPERTY: The DNR may acquire any and all easements in the furtherance of public rights, including the right of access and use of lands and waters for hunting and fishing and the enjoyment of scenic beauty . . . (Chapter 23.09 (10), Wis. Stats.).
4. ACQUISITION OF RECREATIONAL LAND: In the acquisition of recreational lands, the department shall place principle emphasis on the acquisition of lands in the heavily populated areas of the state and in places readily accessible to such areas . . . (Wis. Dept. of Nat. Resour., NR 1.40).
5. ACQUISITION OF FISH AND GAME LANDS ADJACENT TO WATER: Lands on certain streams and lakes have been designated for acquisition by the Natural Resources Board. Adequate land area, associated with the water, shall be acquired in connection with the acquisition of water frontage for preservation of recreational purposes (Wis. Dep. of Nat. Resources., NR 1.43).

6. TRESPASS: The Natural Resources Board may cure unintentional trespasses by purchase or sale . . . (Wis. Dep. Nat. Resour., NR 1.49).
7. STATE-OWNED ISLANDS: The department shall maintain state-owned islands in a natural and undisturbed condition consistent with controlled public use on islands suited for recreational purposes . . . (Wis. Dept. Nat. Resour. NR 1.31).
8. ACQUISITION OF LANDS AND INTERESTS THEREIN: The highway commission may acquire . . . any lands for . . . improving and maintaining highways, streets, roadside parks . . . obtain easements . . . (Chapter 84.09 (1), Wis. Stats.).

POLICY DISCUSSION

The Natural Resources Board has public access policies which are largely concerned with access on waters greater than 1,000 acres and which treat the inland and Great Lakes as similar resources with the same problems and remedies. The emphasis in these policies is that public access should be provided where there is public interest and need with the primary objective of providing public access "where needed and none exists." Where access exists but is inadequate, improvement is considered as a minor objective. Providing public access is legislated as the joint responsibility of state and local governments and where public interest and need warrants the provision of public access facilities, there is an emphasis on respecting private rights and the quality of all resources. (Wis. Dep. of Nat. Resour., NR 1.32).

Existing public access policies are largely concerned with vehicular access to waters (Wis. Dept. of Nat. Resour., NR 1.32). Policies for walk-in access exist for lakes less than 50 acres, but no reference is made for waters of 50 or more acres. Vehicular access can, however, accommodate pedestrians if there are safeguards constructed. The Natural Resources Board does have a policy for acquisition of fish and game lands adjacent to water for preservation and recreational purposes (Wis. Dept. of Nat. Resour., NR 1.43); however coastal lands are again treated as similar resources. This policy has the amount of public use as a criteria. Similar board policies exist for acquisition of recreational land in general. Policy NR 1.40 (Wis. Dep. of Nat. Resour.) places major emphasis on acquiring lands in heavily populated areas of the state and in locations readily accessible to such areas; the coastal zone encompasses many such areas.

The Wisconsin legislature through the Wisconsin Statutes (Chapter 236.16(3)) requires that public access for all subdivisions abutting navigable lakes or streams is necessary to provide for the public interest. Interpretation of this law has caused some controversy. It is not always practical to provide public access every one-half mile. High slope and/or highly erodible lands often prevent development and use of public access sites. Another problem arises when subdivisions are less than one-half mile across. As the law presently reads, access 60 feet in width must be provided within the plat.

There is no explicit policy for providing visual access specifically to the Great Lakes, although a policy exists which grants easements on state-owned land (Wis. Dep. of Nat. Resour., NR 1.485). The Wisconsin Outdoor Recreation Plan (Wis. Dep. of Nat. Resour., 1972b) does recommend scenic

roadways for access and the DNR has authority to purchase scenic easements for access to the Great Lakes in Chapter 23.09(10) of the Wisconsin Statutes. There is also policy statutory authority to control roadside usage which could help protect the scenic integrity of the Great Lakes shorelands (Chapters 23.11 and 59.07, Wis Stats.). The Wisconsin Department of Transportation also has a scenic easement program for easement acquisition, development of historical markers, overlooks, waysides and related functions (Chapters 20.395(4) and 84.09(1), Wis. Stats.).

The cost of acquiring shoreline, exclusive of facilities, could be reduced by pursuing an approach to provide access that asserts existing public rights. The States of Texas, California and Oregon have already relied on recognized public rights in order to increase public access: "In 1959, the Texas Legislature passed the first Open Beaches Act in the U.S. This Act simply recognized and reinforced the public's prescriptive rights to use the beach. Basically, there are two presumptions involved: (1) the State (of Texas) never divested itself of its protection of the people's right to use the beach by the grant in the beginning, and (2) that even if it did, in certain instances, and it can be shown there is a presumption that the people have obtained a prescriptive right in the use of the beach by long usage. The Open Beaches Act in Texas is important because it places the burden of proof on the littoral owner to show the two presumptions can be overcome, i.e., that under this land grant, the owner is entitled to exclusive use, or that it is clear to the public that they do not enjoy a prescriptive right to use the beach (and do not use same) While prescriptive right provided the theoretical underpinnings for one of the presumptions in the Texas Act, three other theories support the public use of beaches elsewhere. The theory of implied dedication provides the basis for California cases -- the dedication doesn't have to have the real consent of the littoral owner; it may even take place with landowner opposition.

"The theory of ancient right and custom was the basis of the Oregon case, Kay vs. Thornton. Lastly, the city of Long Beach (New York) case, a theory of public trust emerged. Here Long Beach sought to restrict a beach previously used free by the public at large to free use only by local residents. Those not living in Long Beach were to pay a use fee. The court rejected this practice because the city of Long Beach held the beach in trust for the public because of a previous public dedication.

"The public rights to beach access are reflected in the National Open Beaches legislation now before Congress Congressman Robert Eckhardt of Texas, a chief proponent of 'open beaches' has introduced a National Open Beaches Bill (H. R. 1676). This legislation, which is modeled after the Texas Open Beaches Act of 1959 which was authorized by Eckhardt, would establish a national policy for beach resources in the U.S., affirm public rights to beach access, and provide funds to assist in carrying out the Act. . . . (Ditton and Stephens 1976a).

The legal assertion of rights would do much to alleviate public acquisition costs, although there would still be the cost of all site facilities. The existing policies for the provision of public access exemplify the government's recognition of the importance of public access. The goal implicit in the policies is to ensure the amount and type of public access consistent with the public interest.

FUTURE CHOICES

Wisconsin has three basic futures regarding public access to the Great Lakes to choose from: maximum public access, minimum public access and the public access that would result from continuing present efforts (status quo). State and local governments are charged with adopting policies that will provide for the attainment of the access future which is chosen.

If the status quo alternative is chosen, then no new programs are necessary. The needs for access will continue to increase with population growth and development and with the increased interest in Great Lakes recreation. Present access programs would continue.

The maximum and minimum public access futures are realistic futures in that they account for restrictions such as economic, social and environmental costs which would prevent total access to the Great Lakes (e.g., 100 percent public shoreland) or no access to the Great Lakes (e.g., exclusive private riparian use of the entire shore). The maximum public access future is particularly restricted by the availability of public funds. The implication is that a total access or a no access future are extremes which cannot be attained whereas realistic futures of maximum (increased) or minimum (decreased) access do not ignore restrictions. Governmental roles under the maximum alternative would be to accelerate the provision of access whereas under the minimum alternative, governments would be charged with reducing access to the Great Lakes by curtailing existing public access provisions and thereby limiting access.

Following are discussions on each of these three alternative futures in public access -- their advantages, disadvantages and the various means to implement each alternative.

FIRST FUTURE: STATUS QUO ACCESS

If Wisconsin chose the present level of public access, the existing public access policies and programs would remain in effect and no additions would be added. Increased funding levels would also not be necessary. However, there are also disadvantages to pursuing this future. The increasing recreational activity on the Great Lakes and along its shores have pointed to an unmistakable need for all types of public access facilities. Present and future needs for public access to the Great Lakes are not and will not be satisfied with the existing facilities. Another disadvantage is that overcrowding and overuse of existing public access areas and facilities may cause degradation of the recreational experience, resource deterioration, and use and behavior that violates people's rights (e.g., vandalism or trespassing).

Implementation

There are no new means of implementing this future, however existing funding levels must be maintained. The existing state programs which provide for public access to the Great Lakes also provide public access to other waters in the state. A brief description is given below with funding levels specific to the Great Lakes where possible. Information on current efforts to create additional state programs and some information on federal programs which affect the Great Lakes is provided in Appendices B and C.

LAND ACQUISITION AND DEVELOPMENT: The Department of Natural Resources has acquired about one million acres of land in the entire state. The department's eventual goal is 1.35 million acres, with no specificity given to the Great Lakes projects. There are seven state parks and three state forests on the Great Lakes. Facilities at these sites include picnic tables, beaches, trails, some boat ramps and other recreational facilities. The parks and forests also provide open space and scenic enjoyment. The Land Acquisition Program utilizes federal funds to the maximum extent. The federal funding programs that are used for recreational land acquisition and development include: Land and Water Conservation Fund (LAWCON) Act of 1965, as amended; Federal Aid in Wildlife Restoration Act (Pittman-Robertson); Federal Aid in Sport Fish Conservation (Dingell-Johnson); Anadromous Fish Conservation Act; and the Open Space Land Program under Title VI of the Housing Act of 1961.

Estimated federal funds for outdoor recreation acquisition and development in Wisconsin for 1976-77 are \$7,380,000 with the state matching funds which brings the total to \$15,760,000. In the revised 1975-77 expenditures plan for Land Acquisition and Development, \$587,557 is estimated for water access. In addition to federal and DNR funds, the Wisconsin Department of Transportation provides \$100,000 of state highway funds annually for water access development, primarily for roads. Park and road funds totalling \$700,000 annually are allocated for roads on state-owned lands.

OUTDOOR RECREATION AID PROGRAMS (ORAP): The responsibilities of administering state aid programs and of providing DNR liaison with federal grant programs is delegated to the Bureau of Aid Programs. The bureau serves essentially as a clearinghouse for federal program procedures and development. Three programs administered by the bureau presently provide 50 percent cost-share funding for the majority of public access facilities near the Great Lakes: The Land and Water Conservation Funds (LAWCON) -- the Bureau of Aid Programs provides liaison with the U.S. Bureau of Outdoor Recreation to administer the aid program for outdoor recreation; the Local Park Aids -- the Bureau of Aid Programs administers state aid for outdoor recreation; and Public Access to Water -- the Bureau of Aid Programs administers state aid for public access to waters, with DNR district assistance.

The Local Park Aids have a funding level of \$1,000,000 annually (4 percent for administrative cost) and it is used with LAWCON funds to help units of government in acquiring and developing land for outdoor recreation purposes. The majority of projects funded through LAWCON and the Local Park Aids have been parks. Many of the parks providing public access to the Great Lakes have beaches and boating facilities such as ramps and piers.

Any lands for public outdoor recreation including new areas or additions to existing parks, forests, wildlife areas, beaches and other similar areas dedicated to outdoor recreation may be eligible for assistance. Acquisition can be fee simple title or by whatever lessor rights will insure the desired public use. Development projects may consist of improvements that contribute directly to outdoor recreation and provide basic facilities for outdoor recreation including access, safety, health and protection of the areas as well as the facilities required for the use of the area. Development project proposals may include construction or renovation, site planning, demolition, site preparation and architectural services. Careful consideration must be given each proposal to insure that it is an integral part of official comprehensive land and water use plans for the area. All project proposals must also relate to similar projects on other public lands.

THE PUBLIC ACCESS TO WATER PROGRAM: This program is funded at \$35,000 annually. These monies are used primarily for ramp access site developments. Local units of government use the funds to acquire lands which provide public access to navigable waters by means of water, road, trail or through the privilege of crossing public or private lands without involving trespass. Acquisition can be by fee simple title or by whatever lessor rights will insure the desired public use for long periods of time. Site development project proposals generally include parking areas, boat launching ramps and may include safety, health and protection of the area as well as the facilities required for area use. Development project proposals may include construction or renovation, site planning, site preparation and engineering services.

Tables 12 and 13 illustrate a number of Great Lakes and the associated costs of public access projects where state aid was given to local governments. In addition to these DNR state-funded projects, county fish and game project aids (funded at \$180,000 annually) have been used to provide a limited amount of access to Wisconsin waters.

Pricing policies for public access facility use particularly boat launching ramps are currently controversial and the subject of concern. "Somersan (unpub.) has recently stated that policies relating to fees charged by local governments for the use of access sites need to be reevaluated and clarified by the Department of Natural Resources." Evidently, "the policy necessitates charging much lower rates for season passes than currently considered reasonable by most coastal communities." She suggests that local governments could provide for boater demands for supervision at launch sites, increased services and improved facilities provided that the cost be recovered through user fees. Reasonable rates should be flexible, based on a percentage of revenues (10%) over and above maintenance and operation costs. However, local adoption of such policy may be difficult to check, without increasing administrative and enforcement costs. Nevertheless, a policy that satisfies the majority of Wisconsin citizens should be adopted or maintained.

Table 12. DNR Coastal Projects--Water Access Aid Program, 1960-76.

| County | Applicant | Aid Given | Water Body | Date Pd. |
|-----------|-------------------------|-----------|-----------------------------------|----------|
| Door | Village of Ephraim | \$ 3,425* | Green Bay/L. Michigan | -- |
| Racine | City of Racine | 3,765* | Lake Michigan | -- |
| Door | Door County | 8,000* | Green Bay/L. Michigan | -- |
| Iron | Iron County | 1,705* | Lake Superior | -- |
| Door | Village of Egg Harbor | 4,792** | Green Bay/L. Michigan | 75-76 |
| Sheboygan | City of Sheboygan | 6,255 | Lake Michigan | 75-76 |
| Sheboygan | City of Sheboygan | 8,876 | Sheboygan R./L. Michigan | 75-76 |
| Kewaunee | City of Kewaunee | 7,079 | Kewaunee R./L. Michigan | 75-76 |
| Brown | City of Green Bay | 26,832 | Fox R./Green Bay/L. Michigan | 74-75 |
| Door | Town of Liberty | 2,765 | Ellison Bay/Green Bay/L. Michigan | 72-73 |
| Ozaukee | City of Port Washington | 25,000 | L. Michigan | 72-73 |
| Manitowoc | City of Manitowoc | 33,586 | L. Michigan | 71-72 |
| Brown | Brown County | 1,500 | Suamico R./L. Michigan | 71-72 |
| Manitowoc | Manitowoc County | 2,501 | L. Michigan | 70-71 |
| Manitowoc | City of Two Rivers | 5,913 | L. Michigan | 70-71 |
| Kewaunee | City of Kewaunee | 13,370 | Kewaunee River | 70-71 |
| Kewaunee | City of Algoma | 8,978 | Ahnapee R./L. Michigan | 70-71 |
| Marinette | City of Marinette | 9,544 | Green Bay/L. Michigan | 70-71 |
| Door | Town of Jacksonport | 1,331 | L. Michigan | 70-71 |
| Door | Town of Baileys Harbor | 1,582 | L. Michigan | 70-71 |
| Bayfield | Town of Bell | 2,301 | L. Superior | 70-71 |
| Iron | Iron County | 83 | L. Superior | 64-65 |
| Door | Town of Jacksonport | 1,506 | L. Michigan | 68-69 |
| Door | Town of Sevastopol | 1,019 | Lilly Bay/L. Michigan | 66-67 |
| Door | Town of Sevastopol | 1,260 | Whitefish Bay/L. Michigan | 67-68 |
| Kewaunee | City of Algoma | 669 | L. Michigan | 67-68 |
| Manitowoc | City of Manitowoc | 4,233 | Manitowoc R./L. Michigan | 68-69 |
| Manitowoc | City of Manitowoc | 6,250 | L. Michigan | 67-68 |
| Manitowoc | Manitowoc County | 3,079 | Two Creeks/L. Michigan | 64-65 |
| Brown | Brown County | 5,699 | Green Bay/L. Michigan | 64-65 |

* Encumbered, not yet paid.

** Will be changed to \$6,000.

Table 13. DNR Coastal Projects--Land and Water Conservation Fund, 1960-76.

| County | Applicant | Aid Given | Water Body | Date Pd. |
|-----------|---------------------------|-----------|-----------------------|----------|
| Iron | Iron County | \$ 3,750 | L. Superior | 1975 |
| Iron | Iron County | 43,839 | L. Superior | 1968 |
| Iron | Iron County | 15,688 | L. Superior | 1973 |
| Brown | Brown County | 45,592 | Green Bay/L. Michigan | 1968 |
| Brown | Brown County | 77,417 | Green Bay/L. Michigan | 1972 |
| Door | Door County | 17,283 | Green Bay/L. Michigan | 1967 |
| Door | Town of Washington Island | 90,000 | Green Bay/L. Michigan | 1972 |
| Kenosha | City of Kenosha | 30,386 | L. Michigan | 1972 |
| Manitowoc | City of Manitowoc | 4,576 | L. Michigan | 1967 |
| Manitowoc | City of Manitowoc | 10,000 | L. Michigan | 1973 |
| Marinette | City of Marinette | 24,997 | Green Bay/L. Michigan | 1975 |
| Milwaukee | Milwaukee County | 25,820 | L. Michigan | 1966 |
| Milwaukee | Milwaukee County | 90,400 | L. Michigan | 1968 |
| Milwaukee | Milwaukee County | 5,250 | L. Michigan | 1972 |
| Ozaukee | City of Port Washington | 5,547 | L. Michigan | 1972 |

SECOND FUTURE: MAXIMUM ACCESS:

If Wisconsin chose maximum public access to the Great Lakes, it would be the responsibility of state and local governments to provide, directly or indirectly, the maximum access. The Wisconsin legislature by authorizing state aid to local units of government for public access has supported the idea that public access is in the public interest. Providing access is a legitimate public purpose and serves the public interest by generating social benefits. In Wisconsin, the public has a right to use navigable lakes for recreational purposes and for the enjoyment of scenic beauty. Providing maximum public access allows for total exercising of those rights.

The major disadvantages in attaining maximum public access involve costs. Providing public access may entail external costs to society such as environmental degradation and conflicts of interest. To minimize these costs, the state has developed several preventative measures that have been built into the recreational development process -- the Wisconsin Environmental Policy Act, permit programs, environmental assessments, etc. In addition, the federal and state aid programs discourage any developments that may have any adverse environmental or social effects. Another disadvantage is the financial cost. Providing public access usually entails public expenditures that come from the taxpayers. This money, if not used for access, could be invested in another area or it could be returned to the public.

Implementation

Following are broad program choices for implementing maximum public access. They should not all be viewed as mutually exclusive since many could be used simultaneously. The Boating Access and the Harbor Improvement programs are means of increasing boating access only. The Multiple Use Incentive program is suggested for nonboating access. These new programs would require funding for purposes of providing public access which would include administrative planning costs.

Another alternative is to increase the funding level of already existing programs which would provide public access to all waters with a specific reference to providing more public access to the Great Lakes. The section on resetting of priorities suggests that access to the Great Lakes should be provided at a higher rate than that of inland waters. It does not suggest any new programs, but changes in existing programs. An additional alternative is implicit in each program for either boating and/or nonboating.

The final alternative, a Public Access System, is a consistent planning process for public access to the Great Lakes. This might be most effective if the system is for all Wisconsin waters with specific attention to the Great Lakes. This system could also have acquisition and development functions, although these would not be imperative. The implicit choice in this alternative is to include boating and/or nonboating access.

BOATING ACCESS PROGRAM: This program's function would be to finance development and improvement of boating access facilities. The Department of Natural Resources would coordinate and finance all new projects for construction of public access facilities. Criteria would be established to determine those projects eligible for financing and priorities would have to be determined among these projects.

A similar program (Bill S. 277), supported by DNR, was introduced to the Legislature in 1975 by the Committee on Natural Resources but no action was taken. Its funding level was set at about \$3.5 million annually. This amount would be sufficient to begin implementing the policy of maximum public access to the Great Lakes; however, the long-term cost (including harbors of refuge and boat ramp access sites finances) is over 70 million dollars. This program would also have to increase boating safety. In addition to navigational needs (e.g., radio beacons), boating safety education programs and boating patrols would have to increase with the increased recreational use of the Great Lakes. It would be necessary to coordinate funding for boating safety with that for increased boating access.

One advantage of this program is that efforts have already been made by the state to promote such a program. The program, under the administration of the DNR, could integrate elements of outdoor recreational access with boating safety planning. The primary disadvantage of this program is the funding costs, particularly if harbors of refuge are eligible.

HARBOR IMPROVEMENT PROGRAM: This program's purpose would be primarily the improvement and development of public access facilities at existing harbors. Boating projects would be implemented by the Department of Natural Resources or the Department of Transportation. Consistent policy between each department would be accomplished by full coordination and cooperation. The program would provide the potential for integrated planning of recreational and commercial facilities. Another advantage is that problems of providing access on non-harbor shores would not occur. Disadvantages include: the unavailability of shoreland at existing harbors (e.g., Manitowoc), the continued need for refuge between existing harbors (e.g., Milwaukee to Port Washington) and crowding of the channel and harbor entries.

MULTIPLE-USE INCENTIVE PROGRAM: The function of this program would be to provide financial incentives for allowing the public to gain access to the Great Lakes across private lands. The DNR would initiate a program, similar in nature to the Forest Cropland program, which gives tax incentives and state contributions to those persons who manage forestland and who allow the public to hunt and fish on these lands. A similar law for all riparian landowners could provide multiple-use areas, including public access to the Great Lakes. One advantage of this program is that the Forest Cropland law is an existing model from which to draw experience. This program also serves several public needs and makes the most of land as a resource through the promotion of multiple use. However, there are disadvantages such as multiple-use conflicts due to incompatible uses, costly, cumbersome and perhaps ineffectual management of the multiple-use areas, and the increased expense of providing financial incentives. Although preferential taxation appears relatively inexpensive to the state, it must be kept in mind that tax breaks mean less tax revenues implying the need for tax increases. This program is also limiting since it does not include any development of facilities.

INCREASE FUNDING LEVEL OF EXISTING PROGRAMS: The functions of this program would be to provide more public access to the Great Lakes by increasing the funding levels of the existing programs with specific reference to the Great Lakes. It could include programs for boating and nonboating access. The advantage of this program is that no new programs would need to be developed and time delays would be kept to a minimum. However, financing some facilities (e.g., harbors

of refuge) would be difficult under the existing programs; and if present programs were to receive more funding, there would still not be any comprehensive planning process for increasing public access of all types and in all locations along the Great Lakes.

RESETTING PRIORITIES IN FAVOR OF GREAT LAKES ACCESS: The function of this program would be to reallocate finances in order to provide public access to the Great Lakes at the expense of reducing efforts to provide access to other waters of the state and to provide other types of public projects. A priority for LAWCON and ORAP aid, as well as land acquisitions, would be to provide public access to the Great Lakes. Local governments could establish similar priorities. This could be implemented through the existing programs and could include boating and nonboating access. The major advantages of this approach are that there would be no need for additional funding and there would be no need for legislation (all other choices require some legislation). However, most inland waters of the state today do not have sufficient access either (Cornellus 1974), and other types of public investments would be reduced.

PUBLIC ACCESS SYSTEM: This program choice would be a system which would be implemented through a section in a state bureau which would designate public access lands adjacent to the Great Lakes and/or other waters into a system for resource management and planning which would meet long-term objectives of preservation, restoration and enhancement. This bureau's function would be to provide a framework for implementing Wisconsin's public access policies, to serve as a guide for allocating public funds for the development of access areas, and to serve as a guide to coordinate efforts of public agencies, clubs, non-profit organizations and individuals who are interested in public access provisions.

All riparian lands, with the owners' consent, would be eligible for inclusion within this framework and the Department of Natural Resources could prescribe regulations for the management of lands. A priority hierarchy would have to be developed to rank the priorities accordingly. To assist in development of this plan a Public Access to Water Resources Advisory Council, consisting of persons representing all types of interests and geographic areas in Wisconsin, could have the responsibility of obtaining public participation and advice. This bureau could have acquisition rights and development functions, although this would not be necessary. The previous programs discussed in this section could also be coordinated within this bureau, including the existing programs that provide access. Priorities of these programs could be based on the Public Access System's priorities. This effort could be a continuing part of the comprehensive statewide water resources planning process, currently a responsibility of the DNR. Cooperation between federal and state agencies (especially the Department of Transportation), local governments and the private sector would be essential, especially if public access planning is to be coordinated with other related land use planning processes (state, regional, local). Cooperation between this bureau and the Outdoor Recreation Plan, the Wild Resources System, and the Trail System Plan would also be very important. Specific attention could be given to beach and bike trails along the Great Lakes in conjunction with the efforts of Coastal Management Programs. Coordination with the Office of Coastal Management could be accomplished through the Wisconsin Coastal Management Program. Designation and management of all lands and other public access facilities on the Great Lakes could be handled under the Wisconsin

program and potential funding might come from proposed amendments to the Coastal Zone Management Act. Other federal agencies who could aid Wisconsin public access programs are the Corps of Engineers, Departments of Interior, Commerce, Agriculture and Transportation and the Upper Great Lakes Regional Commission. The Corps is presently doing feasibility studies for small boat harbors on the Great Lakes. These studies are being undertaken in cooperation with local governments and the DNR. The Department of the Interior has provided extensive funds that have been used for providing public access to water. Through its programs dealing with outdoor recreation and fish restoration, the department has aided state and local governments in developing parks, forests and other public lands for public use. The Department of Commerce also has public programs (in addition to Coastal Management) that have a significant effect on the extent of public access to water, such as the available funding through Economic Development grants.

Regional planning commissions could aid this Public Access Bureau (Section) by providing a regional planning structure for public access and aid in designation of areas. They could coordinate local efforts as well as provide an advisory service to local governments, interest groups and private owners. More specific functions would be to technically assist in the development and management of public access facilities, to develop local awareness, to collect data, and to research related issues. Local governments and the private sector could identify where the needs for access lie in their area, estimate future needs and help to promote the needed access sites and facilities with their own funds and the aid of other public programs. All of the above federal, state and local groups could strive to develop a statewide access system, administered by a bureau, which would coordinate efforts, priorities, plans and funding.

One advantage of the Public Access System as a means of implementing a policy of maximum public access is that it allows for comprehensive and coordinated planning at all levels and allows for orderly development of public access lands and facilities in appropriate shoreland areas. It would integrate many water resource management objectives into a system. Another advantage is that a priority system would provide a framework for administering public funds in coordination with existing acquisition, development and aid programs. A disadvantage of this program is that participation by public agencies and private interests entails planning and implementation costs because of the numerous agencies, groups and individuals that would be involved.

FUNDING: Following are several means that may be used singly, or in combination, to fund programs which appeared in the previous section on increasing public access. All funding measures would require legislation. The Marine Fuel Tax Transfer would not directly involve tax increases but would use present Department of Transportation funds. They would most likely be used for boating and ancillary facilities such as roads and parking areas. The taxes presently collected from motor fuel used in boats are currently placed in the highway fund. A reallocation of these funds from the highway fund to a specific program providing funds for protected access facilities would enable access sites to be funded by boaters who use the facilities. Public access for the nonboating public would not be a primary objective of this program. This funding arrangement would be based on the assumption that 2 percent of the motor fuel tax does not exceed the amount of tax collected from the sale of marine fuels; the 2 percent is an estimate of total gas taxes coming from

"The federal government can provide construction and maintenance of general navigation facilities, which may include a safe entrance channel, protected by breakwaters or jetties, if needed; protected anchorage basin; protected turning basin; and a major access channel leading to the anchorage basin or locally provided berthing area.

"Docks, landings, piers, berthing areas, boat stalls, slips, mooring facilities, launching ramps, access roads, parking areas, and any interior access channels needed for maneuvering into berths are entirely a local responsibility and are constructed and maintained at non-federal expense. Local interests also provide all lands, easements, rights-of-way, dredge disposal areas, utility alterations, as well as all servicing facilities, including policing and other services. Local interests must also assure availability of a public landing or wharf...the present basis for cost sharing in recreational navigation projects provides that non-federal cost participation will be one-half of the first costs of general navigation facilities serving recreational traffic. All costs of operation and maintenance of the general navigation facilities are borne by the federal government. Operation and maintenance costs for all other facilities are a local responsibility.

"Formal assurances of local cooperation similar to those required for regularly authorized projects must be furnished by the local sponsoring agency. The local sponsor must be a municipality or public agency fully authorized under state laws to give such assurances and financially capable of fulfilling all measures of local cooperation" (Vol. IV, pp.74-75).

The choices involved in the state's development and assistance in financing public access facilities entails a decision on the kinds of facilities eligible and on the percent of facility types that should be publicly financed. The present cost-sharing policy is provided by the Wisconsin DNR (1972a), "a combination of federal and state aids may not exceed 75 percent of the total cost of land acquisition projects. Cost sharing for development projects may be up to 50 percent state or federal aids and not less than 50 percent local funds unless otherwise specified by law. Proposals submitted for aids assistance may also be submitted to other public or private organizations for aid. If other aid is anticipated, the department must be informed. Federal funds cannot be matched against other federal funds with the exception that projects in the specified upper Great Lakes region may receive up to 30 percent supplemental federal funding through the Upper Great Lakes Regional Commission bringing the total federal share to 80 percent." The word "aid" was used in a general sense in the above discussion. The Wisconsin DNR's programs primarily aid local units of governments. The federal aid programs, particularly Land and Water Conservation Funds and the Corps' Small Boat Harbor Grants, extend the aid to local governments as well as state agencies.

Below is a listing (Wis. Dep. of Nat. Resour. 1972a) of types of recreational facilities that are available for state aid. It has been condensed to encompass only water-related facilities:

- a. Observation and sightseeing facilities such as overlooks, turnouts and trails.

- b. Boating facilities, such as launching ramps and docks.
- c. Picnic facilities, including tables, fireplaces, shelters and paths.
- d. Camping facilities, including tent and trailer sites.
- e. Swimming, bathing and water sports facilities, including beaches, swimming areas and swimming pools, guard towers and bathhouses.
- f. Fishing and hunting facilities, such as trails, safeguards to public health and safety, fishing piers.
- g. Winter sports facilities.
- h. Urban recreation areas, such as neighborhood playgrounds, bicycling paths, walking or riding trails.
- i. Supporting facilities, including entrance and circulation roads, utility and sanitation systems, erosion control work, parking areas, toilet buildings, and interpretive facilities.
- j. Renovation or redevelopment of an existing facility.
- k. Beautification of an area, such as landscaping to provide a more attractive environment, the cleaning and restoration of areas which have been exploited, polluted, littered.
- l. Fences for the protection of park users.

It appears that basic nonboating access facilities are eligible under the existing requirements. Boat ramp access sites, separate from the marina facilities, are also eligible but marinas are not. Dredging expenses except for beaches and boat launching ramps at new sites are also not available for state funding. Rough cost estimates for many of the above facilities are in Table 13. The public should decide which facilities in this section would be eligible for development.

Table 13. Public Access Facility Costs

| Facility | Cost | Source |
|--------------------------|---|--|
| GREAT LAKES SHORELAND | | |
| Lake Superior | \$35/frontage ft. | Wis. Dept. Nat. Resour., Land Acquisition (pers. comm.) |
| Marinette and Oconto Co. | \$35/frontage ft. | |
| Brown to Ozaukee Co. | \$75/frontage ft. | |
| Ozaukee to Illinois | \$100/frontage ft. | |
| SMALL BOAT HARBOR | | |
| First cost | \$3,010,210/harbor | Army Corps of Engineers, <u>Preliminary Feasibility Report, Harbors Between Kenosha and Kewaunee, Wisconsin</u> (1975) |
| Average annual cost | \$28,220/yr. per harbor (50 yrs.) | |
| BOAT ACCESS SITE | \$20,000 | Beall (1976) in <u>Proceedings of the Ninth Natl. Conf. on Access to Recreational Waters</u> |
| GRAVEL ROAD | \$50,000/mi. | Wis. Dep. Nat. Resour. Engineering (pers. comm.) |
| TRAILS | | |
| Hiking | \$1,000-1,500/mi (flat) \$2,000-2,500/mi (hills & rocks) | Wis. Dep. Nat. Resour. (pers. comm.) |
| Biking | \$2,200/mi (limestone) | Wis. Dep. Nat. Resour. (pers. comm.) |
| BEACHES | | |
| Natural | Cost of Land | Wis. Dept. Nat. Resour.(pers. comm.) |
| Unnatural | \$35,000/300-500ft. | Wis. DNR Parks |
| BATHHOUSE | | |
| Sanitary Only | \$12,000/house | Wis. Dep. Nat. Resour. (pers. comm.) |
| Other | \$50,000-70,000 | Wis. Dep. Nat. Resour. (pers. comm.) |
| PIER (floatation) | \$1,000/12 ft. | Wis. Dep. Nat. Resour. (pers. comm.) |
| WAYSIDE | \$40,000 | Wis. Dep. Transp. (pers. comm.) |

MANAGEMENT OF FACILITIES: State funding can be allocated to state, local or private ownerships and state, local or private operations. Combinations of the ownership and operation functions provide several additional choices. Advantages and disadvantages are given below to serve as an aid in decision-making; they do represent the author's viewpoint to some degree.

State ownership of public access sites and facilities is advantageous when there is a large sum of money invested since states have special bonding powers and are eligible for some federal funds. Local government ownership is advantageous when there is a smaller investment with returns that will economically benefit the local community. Local governments are also eligible for some federal funding. And private

ownership is advantageous when money or time is a constraint on the state or local community. Privately owned access sites and facilities must be competitive with today's market; thus, the profit motive might inspire higher quality, more efficient facilities. State and local governmental operation is beneficial when economies of scale can be realized and when the prevention of and compensation for inequities is necessary. Private operation is beneficial when efficiency is increased because of the profit motive.

Integration of the above types of ownerships and operations is advantageous when coordination and cooperation exist. Presently, state and local governments are providing access with public funds; however, financial aid is not available to the private sector. This is based on the assumption that the private sector usually provides public access only if there is a profit; therefore, no financial assistance would be necessary. Local governments, however, could be allowed to distribute their funds for public access to private interests for a cooperative and planned effort between the public and private sector and a model for contracts and cooperative management could be developed by the state to facilitate this cooperative effort. Under these cooperative arrangements, private owners could work together with the local governments in insuring that public access facilities and opportunities exist for the public to use the public waters. It is, however, up to the public to give their opinion on the management allocation that appears most beneficial.

PRIORITIES: It is necessary when discussing an increase in public access to also refer to the priorities involved. Below is a listing of present priorities defined in existing access programs:

1. Priority to acquire land in heavily populated areas and in locations readily accessible to such areas (Land Acquisition Program);
2. Priority to lakes with more than 1,000 acres of surface water and to important stream systems (Public Access to Water Aid);
3. Priority to meeting urban needs and those of the handicapped, aged and underprivileged (ORAP);
4. Priority to improve existing sites to enable people to make use of available sites with minimum maintenance (ORAP);
5. Priority to acquire land where there is a scarcity of recreational land and immediate action is imperative to preserve such lands for public use (ORAP); and
6. Priority to projects with multi-seasonal use and participant (vs. spectator) facilities (Outdoor Recreation Aids (ORAP)).

Other priorities for consideration might be to acquire areas having exceptional scenic beauty or to manage areas that have fragile ecosystems; and the priority to develop public access projects that enhance, restore or improve access on existing public lands. Priority might also be given to multiple-use projects which serve different user groups.

THIRD FUTURE: MINIMUM ACCESS

The state of Wisconsin could choose to have minimum public access to the Great Lakes. Under this future, it would be the policy of state and local governments to decrease public access to the Great Lakes. One advantage of pursuing this future is the cost associated with providing access. Curtailing existing access programs would mean a monetary savings to be used for other programs or to be returned to the public. A second advantage, primarily for riparian owners, involves the tranquility associated with decreased public use of the Great Lakes. Riparian owners today pay premium prices for shore property and if public access decreased, they could be assured of less adverse environmental effects (e.g., noise, trespassing). Decreasing public use could also decrease costs of safety programs and law enforcement costs. If recreational use decreased as a result of limited access, conflicts between commercial and recreation users would decrease, as well as conflicts among an increasing number of recreation users. The primary disadvantage of limited public access to the Great Lakes is that the recreational benefits associated with public use will not be generated. Mueller and Sharpe in "Economic Impact of Recreation-Tourism" (unpub.) estimated that 60.3 percent of the employment in the coastal area is recreation--tourism oriented. As noted previously, in Somersan's "Economic Impact and Needs of Wisconsin's Great Lakes Boaters" (unpub.), boaters spent approximately \$12.7 million during the 1975 boating season. A second disadvantage is that limiting public access may violate the public's right to recreational use of the Great Lakes. Kusler (1973) suggests that any attempt to prohibit public use of waters (by limiting access or some other means) but to permit riparian use would encounter strong legal attacks in Wisconsin. Provisions in the Northwest Ordinance of 1787 which were later incorporated in the Wisconsin Constitution provide that navigable waters shall be "forever free." Kusler states that both riparians and other individuals would probably use this provision in attack if use of Wisconsin waters were to be severely restricted.

Implementation: The basic means of obtaining minimum public access is to curtail existing programs which provide access and limit the amount of access possible. Legislation would be necessary so that public access facilities would not be eligible for any funding and the subdivision requirement (Chap. 236.16 (3), Wis. Stats.) would have to be repealed. Public access facilities at parks, forests and other public lands on the Great Lakes would be discouraged and increased police surveillance and fences might be needed to prevent public use of the shoreland area. On the regulation side, access control devices, as noted by Kusler (1973), could be used including: large lot zoning, restrictions on commercial shoreland users (marinas), dredging and filling restrictions, subdivision regulations which prohibit access, controls on docks or piers, or public acquisition. Most of these access controls apply primarily to boat access. The DNR's permit program, which requires permits for alteration to shores or beds of navigable waters, WEPA and the planning processes would also be effectual in limiting public access to the Great Lakes.

The state of Wisconsin has the responsibility of ensuring the amount and the type of public access to the Great Lakes, consistent with the public interest. The public can indicate whether it wants more, the same or less public access by choosing one of the basic futures discussed above (Fig. 5). It will then be the policy of the state and local governments to implement programs to reach the chosen future. However, before a decision is made a problem referred to as "uncertainty"

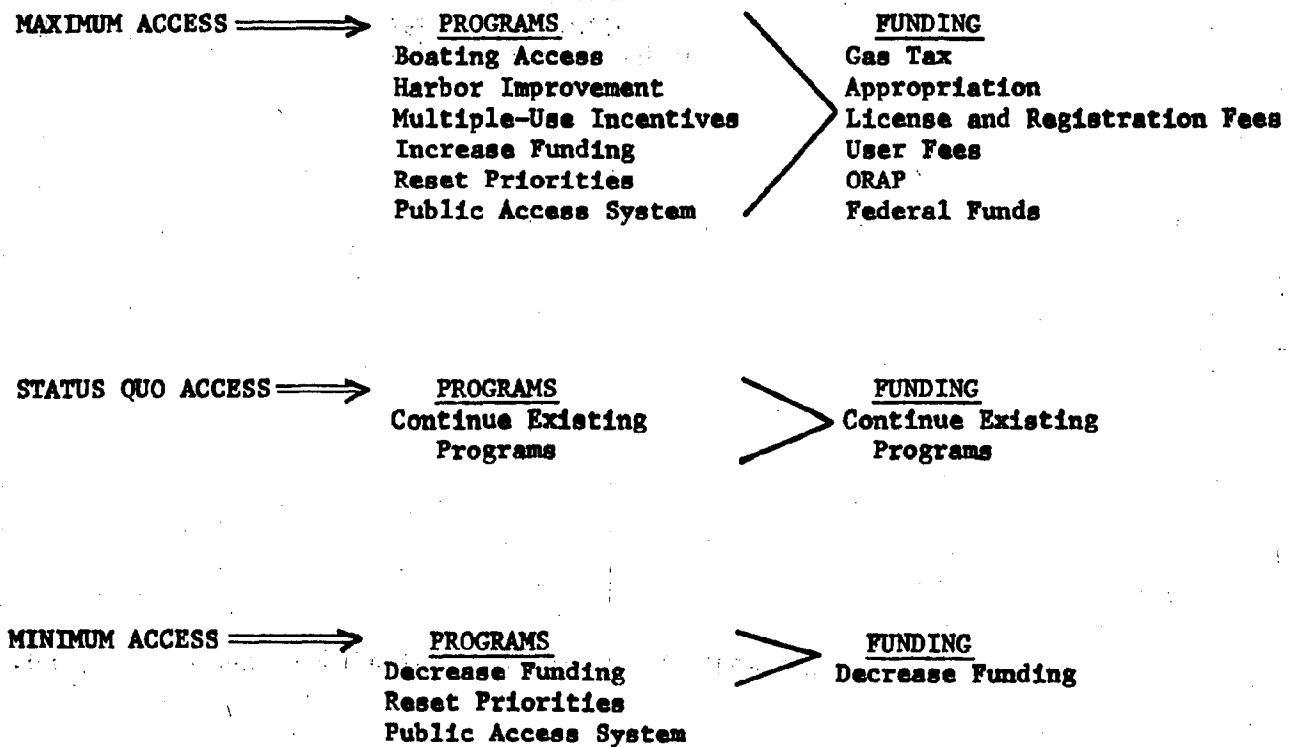


FIGURE 5. Future Public Access Policies, Program Choices and Means of Funding.

must be acknowledged. There are many uncertainties associated with the public sector's role regarding access to the Great Lakes and some of these are: future population growth, future recreational preferences, future technology and the future economy. Perhaps an uncertainty that is of utmost importance to recreational use of the Great Lakes concerns the Great Lakes sport fishery. This uncertainty lies not only in the supply of fish resources but also in its value as a future food source (increase in PCB's as a contaminant). All of these "uncertainties" will be interdependent upon the public access policy chosen and it is essential that the public keep them in mind when determining future policy.

CONCLUSIONS

A clear and distinct policy for public access to Wisconsin's waters with some special provisions for the Great Lakes and its particular access problems is of the utmost importance. In regards to any access policy that is chosen--minimum, maximum or status quo--all effects of the chosen policies and programs upon the natural, economic, and social environments must be weighed. Once the policy direction has been chosen, then decisions such as facility type, funding measures, and management practices will follow.

The concept of public access has been defined very generally as a way or a means of getting to and using the Great Lakes. Three future choices in public access directions have been discussed; however, there is also a fourth alternative. This choice is a combination of increasing some types of access (e.g., ramp access) and at the same time decreasing or maintaining the present level of others (e.g., shore access, harboring access). This recombination of access directions is the actual future access choice implemented by most communities and state policy makers since it serves the particular needs of each particular situation.

Public access to the Great Lakes should serve the recreational, commercial and navigational uses of Wisconsin waters. Any new or improved access projects should fulfill an apparent need, be accessible to a large number of people including low-income city-dwellers, provide multiple types of facilities for different users, be compatible with the interests of nearby property owners and not result in the overuse of particular water areas. These sites should be properly maintained and protected so that abuses such as littering and trespassing can be deterred, and the public should be informed of available facilities, as well as how to appropriately use them without creating adverse effects or unsafe conditions.

This paper has provided background information and alternative futures for public access to the Great Lakes. It is suggested that there be broad public discussion in order to gain a statewide perspective on policy choices. After these discussions, the Coastal Coordinating and Advisory Council will incorporate the received information into recommendations to the Governor, Natural Resources Board and other state policy makers.

The future of public access to the Great Lakes in Wisconsin will affect all of its citizens, and therefore it is up to them to voice their needs, wishes, and constructive recommendations. This discussion has outlined possible alternative policies, programs and means of implementation; but irregardless of what public access policies are chosen, it is imperative that the coastal environment be enhanced, restored and preserved.

Edited by Rosemary FitzGerald

APPENDIX A: DEFINITION OF TERMS

Access - a way or means of approaching, getting, using, etc.

Accessibility - the number of people able to reach a specified point (i.e., the water's edge) within a specified time.

Access Site - a site where one can physically and legally reach the water.

Harbor of Refuge - a protected body of water used by boats as a place of safety.

Marina - a facility providing slip rentals, supplies and services for recreational crafts.

Mooring - a buoy to which a boat is attached so that it may move freely in all directions. The buoy is either anchored or tied to a structure in the harbor.

Navigable Lakes - all lakes wholly or partly within this state which are navigable in fact are declared to be navigable and public waters, and all persons have the same right therein and thereto as they have in and to any other navigable public waters (Chap. 30.10, Wis. Stats.). "Navigable waters" means Lake Superior, Lake Michigan, all natural inland lakes within Wisconsin and all streams, ponds, sloughs, flowages and other waters within the territorial limits of this state (Chap. 144.26 (2) (dl), Wis. Stats.).

Participation Rate - the percent of the individuals sampled who participated in the activities during the previous year.

Public Access - to navigable waters is defined as a way to such waters, publicly owned or under public control, reasonably direct and available to all by means of water, road, trail or otherwise through the privilege of crossing public or private lands without involving trespass (Wis. Dep. of Nat. Resour., NR 1.32 (2)).

Public Access Facilities - lands and structures that are necessary means of obtaining access.

Public Access Opportunities - a combination of favorable circumstances which make it easier to obtain public access (e.g., mobility, income, time).

Public Lands - embraces all lands and all interests in lands owned by the state either as proprietor or as trustee (Chap. 24.01 (1), Wis. Stats.).

Resident - any person who has maintained his place of permanent abode in this state for a period of 6 months.

Riparian Owner - an owner of land adjacent to the water who has exclusive use of the exposed lakebed bordering his/her property. The public may use water area as long as their feet remain in the water.

Slip - a space between two piers, wharves, etc., for the berthing of vessels.

Transient Boats - boats that use the harbor facilities of more than one or two harbors on a single trip; other boats are assumed to remain in the lake area near their departure site.

Waters of this State - any waters within the territorial limits of this state, including the Wisconsin portion of boundary waters (Chap. 30.50(4), Wis. Stats.). "Waters of the state" includes those portions of Lake Michigan and Lake Superior within the boundaries of Wisconsin (Chap. 144.01(1), Wis. Stats.).

APPENDIX B: FEDERAL ACCESS POLICIES AND PROGRAMS

Most policies involving recreation deal with public access to water. Ditton and Stephens (1976a) identify federal recreational responsibilities in the coastal zone:

"The Coastal Zone Management Act of 1972 authorizes the Secretary of Commerce to provide grants-in-aid to coastal states to encourage the establishment of management programs for uses of land and water in coastal areas, and to require consistency of Federal programs with approved state plans. The CZM Act is administered by the Office of Coastal Management (OCM), National Oceanic and Atmospheric Administration.

"Section 305 (of the CZM Act) provides guidance as to what should be included in a management program; specifically, six elements are required in the central development of a state coastal zone management program. While all six are pertinent to management of recreation as a coastal use, some are especially relevant.

1. Boundaries of the coastal zone subject to management program must be identified...
2. Permissible land and water uses within the coastal zone having a direct and significant impact on coastal water need to be defined...
3. The management program must include an inventory and designation of areas of particular concern...
4. The management program must identify the means by which the state proposes to exert control over coastal zone land and water uses...
5. The management program must include broad guidelines on priority of uses in particular areas including specifically those uses of lowest priority...
6. The management program must include a description of the organizational structure proposed to implement the management program...

"Once a coastal state has developed a management program, it is submitted to the Secretary of Commerce for approval, and if approved, the state is then eligible under Section 306 to receive annual grants for administering its management program (administrative grants)."

The Department of the Interior has several agencies whose purpose is to manage land and water. These agencies include Bureau of Outdoor Recreation, National Park Service, U. S. Fish and Wildlife, and the Bureau of Land Management. Other federal organizations which have an impact on determining recreational resource management are: the Army Corps of Engineers, National Marine Fisheries Service,

Office of Sea Grant, U. S. Forest Service, Soil Conservation Service, U. S. Department of Transportation, Water Resources Council and the Department of Housing and Urban Development. For a specific description of each of these above agencies, see Ditton and Stephens' Coastal Recreation: A Handbook for Planners and Managers (1976a). This is an updated listing, although not totally comprehensive, because of constant changes in funding and management sources.

Following is a list of the federal agencies which sponsor programs which may provide aid and assistance in developing recreational facilities, particularly small craft harbors. The list was compiled by the St. Paul District Corps of Engineers (1976).

Information Staff
Farmers Home Administration
Department of Agriculture
Washington, D. C. 20250

Director
Office of Business Economics
Department of Commerce
Washington, D. C. 20230

Information Service
Department of Housing and
Urban Development
451 Seventh Street SW
Washington, D. C. 20410

Conservation Education Office
U. S. Fish and Wildlife Service
Department of the Interior
18th and C Streets NW
Washington, D. C. 20240

Division of Information
National Park Service
Interior Building
Washington, D. C. 20240

Commissioner of Reclamation
Department of the Interior
Washington, D. C. 20240

Division of Information and
Education
Forest Service
Department of Agriculture
Washington, D. C. 20250

Department of Transportation
400 Seventh Street SW
Washington, D. C. 20590

Office of Administration and
Program Analysis
Economic Development Administration
Main Commerce Building
Washington, D. C. 20230

Environmental Protection Agency
1626 K Street NW
Washington, D. C. 20460

Office of Information
Bureau of Land Management
Department of the Interior
Washington, D. C. 20240

Organization Division
Bureau of Outdoor Recreation
Interior Building
Washington, D. C. 20240

Office of Water Resources
Department of the Interior
Washington, D. C. 20240

U. S. Coast Guard
400 Seventh Street SW
Washington, D. C. 20590

Office of Public Affairs
National Oceanic and
Atmospheric Administration
6010 Executive Boulevard
Rockville, Maryland 20852

Corps of Engineers
Department of the Army
Washington, D. C. 20314

Two federal-state-local partnership programs of importance to coastal areas in Wisconsin are the Upper Great Lakes Regional Commission (UGLRC) and the Ice Age National Scientific Reserve. In addition to northern areas of Minnesota and Michigan, the UGLRC serves 36 counties in northern and central Wisconsin with the goal of stabilizing and enhancing economic development. The Commission can supplement grants from other federal agencies to cover up to 80 percent of total cost of a project. The Ice Age National Scientific Reserve is a cooperative venture of federal, state and local governments to preserve and interpret the outstanding evidence of continental glaciation in Wisconsin. Ice age units in the coastal area extend from Sheboygan to Milwaukee Counties.

APPENDIX C: STATE ACCESS POLICIES AND PROGRAMS

This section identifies state legislation and other state policies which implicitly deal with public access to Wisconsin's coastal waters that were not identified in the "Existing Public Access Policy" chapter.

Wisconsin Statutes

AIDS TO COUNTIES FOR THE DEVELOPMENT OF RECREATIONAL FACILITIES: The county board of any county which, by resolution, indicates its desire to develop outdoor recreation on county lands entered under s. 28.11 may make application to the department for the apportionment of funds for such purposes...For the purposes of the subsection outdoor recreation shall mean the development of picnic and camping grounds, nature trails, snowmobile trails and areas, beaches and bath houses, toilets, shelters, well and pumps, and fireplaces...The department in making its deliberations shall give careful consideration to whether or not the proposal is an integral part of an official comprehensive land and water use plan for the area as well as the relationship of the project to similar projects on other public lands (Chap. 23.09 (11a, b, e), Wis. Stats.).

COUNTY FISH AND GAME PROJECTS: The county board of any county which, by resolution, indicates its desire to plan out a program of coordinated fish management projects...may make application...for state aids...Fish management projects and game management projects and county bounty payments include but are not limited because of enumeration to...construction, natural trails...Recreational facilities developed under the assistance of this subsection shall not be converted to uses which are inconsistent with the purposes of this subsection without the approval of the department (Chap. 23.09 (12)(a)(b)(e), Wis. Stats.).

LOCAL PARK AIDS: The department shall receive applications for state aid in such manner and subject to such limitations as the department prescribes for park and other outdoor recreational facilities development...and allocate funds in accordance with priorities based on comprehensive plans submitted with the application and consistent with the state comprehensive outdoor recreation plan of the department (Chap. 23.09 (20), Wis. Stats.).

RECREATION RESOURCES FACILITIES: To provide and develop facilities within this state, the natural resources board, with the approval of the governor...may direct that state debt be contracted for providing recreation resources facilities or making additions to existing recreation resources facilities...It is the intent of the legislature that state debt not to exceed \$6,055,000 in the 12-year period from 1969 to 1981 may be incurred for the comprehensive provision of outdoor recreation facilities as provided by s. 23.30. (Chap. 23.31, Wis. Stats.).

STATE PARKS: ...The purpose of the state parks is to provide areas for public recreation and for public education in conservation and nature study...The department may (i) Establish and operate in state parks such services and conveniences

and install such facilities as will render such parks more attractive for public use and make reasonable charges for the use thereof. (Chap. 27.01, Wis. Stats.).

LIABILITY: An owner, lessee or occupant of premises owes no duty to keep the premises safe for entry or use by others for . . . recreational purposes . . . (Chap. 29.68(1), Wis. Stats.).

DECLARATION OF NAVIGABILITY: LAKES. All Lakes wholly or partly within this state which are navigable in fact are declared to be navigable and public waters, and all persons have the same rights therein and thereto as they have in and to any other navigable or public waters (Chap. 30.10 (1), Wis. Stats.).

ESTABLISHMENT OF BULKHEAD LINES: Any municipality may, subject to the approval of the department, by ordinance establish a bulkhead line and from time to time reestablish the same along any section of the shore of any navigable waters within its boundaries. Establishment of a bulkhead line shall not abridge the riparian rights of riparian proprietors. Riparian proprietors may place solid structures or fill up to such line (Chap. 30.11 (1)(4), Wis. Stats.).

STRUCTURE AND DEPOSITS IN NAVIGABLE WATERS PROHIBITED: Unless a permit has been granted by the department pursuant to statute or the legislature has otherwise authorized structures or deposits in navigable waters, it is unlawful to: deposit any material or to place any structure upon the bed of any navigable water where no bulkhead line has been established; or to deposit any material or to place any structure upon the bed of any navigable water beyond a lawfully established bulkhead line...The department may...grant to any riparian owner a permit to build or maintain for his own use a structure...A riparian owner may place a layer of sand or other similar material on the bed of a lake adjacent to his property for the purpose of improving recreation use upon obtaining approval...(Chap. 30.12 (1a, b)(2a), Wis. Stats.).

REGULATION OF WHARVES AND PIERS; ESTABLISHMENT OF PIERHEAD LINES: Riparian proprietors may construct wharves or piers in navigable waters in aid of navigation without obtaining a permit...provided such wharves or piers do not interfere with public rights in navigable waters or with the rights of other riparian proprietors...(Chap. 30.13 (1), Wis. Stats.).

PENALTY FOR UNLAWFUL OBSTRUCTION OF NAVIGABLE WATERS: Any person who does any of the following shall forfeit not more than \$50 for each offense:

- (a) unlawfully obstructs any navigable waters and thereby impairs the free navigation thereof;
- (b) unlawfully places in navigable waters or in any tributary thereof any substance that may float into and obstruct any such waters or impede their free navigation;
- (c) constructs or maintains in navigable waters, or aids in the construction or maintenance therein, of any boom not authorized by law; and
- (d) constructs or places any structure or deposits any material in navigable waters in violation of s. 30.12 or 30.13 (Chap. 30.15 (1a, b, c, d), Wis. Stats.).

ZONING FOR CERTAIN LAKE BED REMOVALS: When any lake area, either through siltation or because of a lowered water level, becomes unfit for recreational use, the department may establish zones within which the owners of developed riparian lands adjacent thereto may at their own expense remove material from the lake bed to restore the area to recreational use (Chap. 30.205, Wis. Stats.).

MUNICIPAL AUTHORITY TO MAKE HARBOR IMPROVEMENTS: Every municipality having navigable waters within or adjoining its boundaries may exercise the following powers ...proper filling or excavating or dredging and coking, create or improve any inner or outer harbor and such turning basins, slips, canals and other waterways within its boundaries as it determines necessary (Chap. 30.30 (1), Wis. Stats.).

BOARDS OF HARBOR COMMISSIONERS AUTHORIZED: Any municipality situated on a navigable waterway may create a board of harbor commissioners...(Chap. 30.37, Wis. Stats.).

REGULATION OF BOATING: "Waters of this state" means any waters within the territorial limits of this state including the Wisconsin portion of boundary waters (Chap 30.50 (4), Wis. Stats.).

ADDITIONAL FUNCTIONS OF DEPARTMENT (DNR): In addition to other powers and duties conferred upon the department relative to boating safety and the regulation of boating, the department shall create comprehensive courses on boating safety and operation...and by rule establish uniform marking of the water areas of this state through the placement of aids to navigation and regulatory markers (Chap. 30.74 (1a)(2a), Wis. Stats.).

LOCAL REGULATION OF BOATING: Sections 30.50 to 30.71 (Regulation of Boating) shall be uniform in operation throughout the state...Any municipality may enact ordinances which are in strict conformity with ss. 30.50 to 30.71...and any town, village or city may, in the interest of public health, safety or welfare, adopt local regulations not contrary to or inconsistent with this chapter... Notwithstanding the prohibition in sub. (1) against local regulations which exclude any boat from the free use of the waters of the state, any municipality may charge reasonable fees for the use of public boat launching facilities owned or operated by it and any town, village or city may regulate the operation, equipment, use and inspection of those boats carrying passengers for hire which operate from a base within its jurisdiction and charge reasonable fees for such inspection (Chap. 30.77 (1)(2)(3a,b), Wis. Stats.).

PLANNING AND ZONING AUTHORITY: It is the purpose of this section to promote the public health, safety, convenience and general welfare; to encourage planned and orderly land use development; to insure adequate...recreational facilities... to encourage uses of land and other natural resources...to preserve wetlands; to conserve soil, water and forest resources; to protect the beauty and amenities of landscape...To accomplish this purpose the county board of any county may plan for the physical development and zoning of territory within the county...and shall incorporate therein the master plan pursuant to s. 62.23 (2) or (3) and the official map adopted pursuant to s. 62.23 (6) of any city or village therein. The county

board of any county may create a planning and zoning committee...to act in all matters pertaining to county planning and zoning...The committee shall direct the preparation of a county development plan or parts thereof for the physical development of the unincorporated territory within the county and areas within incorporated jurisdictions whose governing bodies by resolution agree to having their areas included in the county's development plan...The county board of any county may by ordinance determine, establish, regulate and restrict: (a) the areas within which...recreation may be conducted, (f) the location of buildings and structures designed for specific uses...(i) building setback lines (Chap. 59.97 (1)(2a)(3a)(4a,f,i), Wis. Stats.).

ZONING OF SHORELANDS ON NAVIGABLE WATERS: To effect the purposes of s. 144.26 and to promote the public health, safety and general welfare, counties may, by ordinance...zone all lands (referred to herein as shorelands) in their unincorporated areas within the following distance from the normal high-water elevation of navigable waters 1,000 feet from a lake, pond or flowage and 300 feet from a river or stream to the landward side of the flood plain, whichever distance is greater (Chap. 59.971 (1), Wis. Stats.).

CITY PLANNING (ALSO APPLIES TO VILLAGES): The council of any city may by ordinance create a "City Plan Commission"...to make and adopt a master plan for the physical development of the municipality...The council of every city may by ordinance or resolution establish an official map of the city declared to be established to conserve and promote the public health, safety, convenience or general welfare...and the council may by ordinance regulate and restrict...the location of buildings, structures and land (for the community's general welfare) (Chap. 62.23 (1)(2)(6a)(7a), Wis. Stats.).

PUBLIC WORKS PROJECTS: For financing purposes,...parks, playgrounds, golf links, bathing beaches, bathhouses,...and all other necessary public works projects undertaken by any town, village, city, county, other municipality, or a commission,...(Chap. 66.07, Wis. Stats.).

CREATION, ORGANIZATION, AND DUTIES OF REGIONAL PLANNING COMMISSIONS: The regional planning commissions may conduct all types of research studies...make plans for the physical, social and economic development of the region, and may adopt by resolution any plan or portion of any plan so prepared for the development of the region,...provide advisory services...act as a coordinating agency for programs and activities of such units and agencies as they relate to its objectives. In general, the regional planning commissions shall have all powers necessary to enable it to perform its functions and promote regional planning. The functions of the regional planning commission shall be solely advisory to the local governments and local government officials comprising the region...The master plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the region which will, in accordance with existing and future needs, best promote public health, safety, morals, order, convenience, prosperity or the general welfare, as well as efficiency and economy in the process of development (Chap. 66.945 (8a)(10), Wis. Stats.).

FOREST CROPLAND: It is the intent of this chapter to encourage a policy of protecting from destructive or premature cutting of forest growth in this state, and of reproducing and growing for the future adequate crops through sound forestry practices of forest products on lands not more useful for other purposes...with public hunting and fishing as extra public benefits...

The owner...may file with the Department of Natural Resources a petition stating that he believes the lands therein described are more useful for growing timber and other forest crops than for any other purpose, that he intends to practice forestry thereon, that all persons holding encumbrances thereon have joined in the petition and requesting that such lands be approved as "forest Croplands"...The owners by such contract consent that the public may hunt and fish on the lands, subject to such rules as the Department of Natural Resources prescribes regulating hunting and fishing...

No tax shall be levied on forest croplands except the specific annual taxes as provided, except that any building located on forest cropland shall be assessed as personal property...the Department of Natural Resources shall pay to each town treasurer on each description as above certified...the sum of 20 cents per acre (Chaps. 77.01, 77.02 (1), 77.03, 77.04 (1), 77.05 (2), Wis. Stats.).

STATE PARK ROADS: The appropriation made by s. 20.395(4)(qa) (\$700,000 annually) may be expended for construction, maintenance...parking areas...marking scenic routes in state parks, state forests, state fish hatcheries, other public used areas under the jurisdiction of the Department of Natural Resources (Chap. 84.28, Wis. Stats.)

FLOOD PLAIN ZONING: If a county, city or village does not adopt a reasonable and effective flood plain zoning ordinance by January 1, 1968, the department (DNR) shall, upon petition...or upon its own motion...determine and fix by order the limits of any or all flood plains within such county, city or village within which serious damage may occur (Chap. 87.30 (1), Wis. Stats.).

DECLARATION OF POLICY: It is declared to be the policy of the legislature to provide for the conservation of the soil and soil resources of this state, and...assist in maintaining the navigability of rivers and harbors, preserve wildlife, protect the tax base, protect public lands, and promote the health, safety and general welfare of the people of this state (Chap. 92.02, Wis. Stats.).

ADOPTION OF LAND-USE REGULATION: (1) The supervision of any soil and water conservation district may formulate proposed regulations for the use of lands lying within the district but outside of the limits of incorporated cities, and villages, or for any parts of such lands, in the interest of conserving soil and water resources and controlling erosion, runoff and sedimentation (Chap. 92.09 (1), Wis. Stats.).

Natural Resource Policy

PROVIDING VEHICULAR ACCESS TO LAKES AND STREAMS: (1) Access to waters is a variable requirement which must be based on the qualities of the waters, the space available, and the levels of use experienced. The department shall provide such public access, consistent with the quality of the resource and respecting private rights and developments, when approved by the natural resources board.

(2) Public access. Public access to navigable waters is defined as a way to such waters, publicly owned or under public control, reasonably direct and available to all by means of water, road, trail or otherwise through the privilege of crossing public or private lands without involving trespass.

(3) Land acquisition. Subject to approval of the natural resources board, the department shall:

(a) Acquire boat launching access to important stream systems.

(b) Actively pursue acquisition on lakes having more than 1,000 acres of surface water.

(c) Pursue acquisition on smaller lakes when the importance for recreational activities to the general public are such that the board determines it is desirable for the state to take action.

(d) Provide assistance to local units of government through state or federal aids administered by the state on waters when public access is desirable.

(4) Aid programs for access to waters. Providing access is the joint responsibility of the state and local governments. The secretary is authorized to approve qualified aid projects in compliance with the rules set forth in Wis. Adm. Code Section NR 50.

(5) Access in plats. Under Chapter 236.16 (3), Wis. Stats., the department has authority to recommend wide access at less frequent intervals than prescribed in the statutes. The department shall:

(a) Consider waiver of the 60-foot access requirement only where it will be advantageous to the public to do so;

(b) Assure adequate space for users and adequate buffering for private property, with access wider than 60 feet where possible;

(c) Assure adequate access to the body of water upon approval of accessway abandonment.

(6) Guidelines for public access. In state acquisition for access, in granting state or federal aids administered by the department to local governmental units, and in reviewing plats under Chapter 236.16 (3), Wis. Stats., the following guidelines shall apply.

(a) Each project, whether an aid project or state development, shall have a demonstrable public interest and need.

(b) Lakes of less than 50 acres in size shall not be considered for improved boat launching developments or vehicular access. Walk-in and trail access will be encouraged for lakes of less than 50 acres. Parking for not more than 5 cars may be provided at the entry to trail accesses.

(c) For lakes of 50 or more acres and river, the parking capacity of an access site shall be in accord with the size of the lake or river. The general rule to be applied for lakes shall be not more than one parking unit for each 10 acres of water.

(d) The minimum width of an accessway to assure adequate buffering between public and private sites shall be 60 feet, but the department shall attempt to obtain a width of at least 100 feet.

(e) The primary objective of the state access aid program is to provide

public access where needed and none exists. When access exists but is inadequate, improvement will be considered as a lower priority.

(f) State boating laws (Chapter 30.77, Wis. Stats.) authorize local units of government to charge reasonable fees for the use of access sites. Reasonable fees shall be deemed to be those currently charged for daily entrance to state parks and forest areas and shall be stipulated prior to the granting of state aid. Fees shall not be increased without the written approval of the department (Wis. Admin. Code, NR 1.32).

ACQUISITION OF AN "APOSTLE ISLANDS WILDERNESS AREA": Due to the continuing interest of many citizens and organizations in the public ownership of some of the Apostle Islands in Lake Superior and because the Legislative Council's Conservation Committee is in favor of purchase by the state of several of these islands, the Natural Resources Board deems it advisable to adopt a general policy regarding an acquisition program of this nature. Because of the importance of the Apostle Islands' unusually historical, geological, plant and animal resources, its unique research opportunities, and for its specialized recreational values, the Board has established an acquisition unit to be known as the "Apostle Islands Wilderness Area." This policy has been adopted to encourage all citizens and organizations to work toward the acquisition and preservation of these islands.

LIAISON WITH INDIVIDUALS OWNING LANDS WITHIN PROJECT BOUNDARIES: To improve liaison with persons owning land within the boundaries of DNR projects and to promote better public relations, it is the policy of the Natural Resources Board that whenever a new project is proposed for establishment or a major project boundary change is recommended for adoption, all landowners directly affected will be contacted and informed accordingly; and that periodically, landowners located within project boundaries shall be informed of the project's status. The interval between contacts shall be determined by such factors as availability of funds, biennial acquisition plans, landowner attitudes, market conditions, etc.

MANAGEMENT OF THE GREAT LAKES FISHERIES: It is the policy of the Natural Resources Board in Wisconsin to maintain, restore, improve and manage the waters and fish populations in the Great Lakes and Green Bay recreationally, esthetically and economically. These objectives are to be sustained in balance with the needs for inland water management. Commercial harvest of native species of fish is warranted only on wild, self-sustaining stocks not needed in the sport fishery and shall be regulated to prevent exploitation while permitting utilization of any available surplus. The aim shall be to provide a reasonable livelihood for a limited number of full-time commercial fishermen, operating efficiently; although, precedence will be given to sport fishing. Fish and water management in the Great Lakes is a matter of interstate and international concern. Cooperation is to be sought in the development and regulation of the fishery and in the encouragement of an aquatic environment in the Great Lakes and their tributaries suitable for the natural reproduction of desirable fish species.

WILD RESOURCES SYSTEM: The Natural Resources Board finds that the designation of certain lands in various classes of a Wild Resources System is in the public interest. Therefore, it is the policy of the Board to periodically evaluate department properties and their qualification for such designation. In addition,

the department shall cooperate with other public agencies and interested private landowners to determine how their lands and waters might become a part of or complement this wild resources system, including methods of equitable compensation. A summary of progress in implementing this system shall be included in the annual land acquisition report.

HARBORS OF REFUGE: The state of Wisconsin's interest in the development of harbors of refuge has been illustrated by the DNR's efforts over the last few years. In 1974, the Ad Hoc Harbors of Refuge Committee, appointed by the Secretary of the Department of Natural Resources, analyzed what the state should do to solve the problem of lack of Great Lakes harbors of refuge and access. The committee found that at the present time, there is a lack of Great Lakes harbors of refuge or protected access sites with adequate support facilities. The problem of providing facilities for the larger craft is complicated by their special needs and at this time, there is also a growing boating demand because of renewed Great Lakes fisheries. Facilities for all types of craft are expensive and state monies have not been available for the magnitude of expenditure necessary.

It was generally agreed by committee members that the best answer lay in having the user pay and that the obvious source of funds would be gas taxes. The conclusion reached by the committee was the recommendation to combine an access and harbor of refuge program and ask for gas tax funds to support it. The alternatives recommended by the Department of Natural Resources were that the DNR could coordinate existing programs into a comprehensive and planned effort toward a common objective of more access, harbors and better facilities; and that the state could allocate gas taxes collected from boating to initiate and sustain a continuing harbors of refuge and access program that would meet demands of the water recreation public. In addition, the Department recommended requesting assistance from the Coastal Management Program for the planning and construction of demonstration harbors of refuge, if funds became available for such purposes.

On August 18, 1975, the Chicago District, U. S. Army Corps of Engineers released its preliminary feasibility study on small craft recreational harbors on Lake Michigan between Kenosha and Kewaunee. The DNR's Ad Hoc Harbor of Refuge Committee reviewed this study and concluded that harbors at Manitowoc, Racine and Sheboygan should have top priority for detailed feasibility analysis. The Natural Resources Board also recognized that Wisconsin's needs will not be satisfied by these harbors alone. However, because of a lack of local support and funding constraints, detailed feasibility analysis of other harbors identified in the preliminary feasibility report must be delayed. Wisconsin, with help from the Corps, will continue to study the possibility of constructing additional harbors and access facilities.

WISCONSIN ENVIRONMENTAL POLICY ACT: "This act known as WEPA requires that all state agencies prepare detailed environmental impact statements on all proposals for legislation and other major actions significantly affecting the quality of the human environment. These statements are to follow the issued U. S. Council of Environmental Quality guidelines, DL 91-190...All new proposed actions which will result in the issuance of a Department license, permit, order or approval will require the preparation of an environmental impact statement by the Department prior to the issuance of the license, permit, order or approval, if the proposed action satisfies at least three of the following criteria:

1. Highly controversial.
2. Substantial effect on the public rights in the waters of the state.
3. Substantial land use and terrain alteration.
4. Significant effect on air quality in the area.
5. The Project will cause a substantial change in existing esthetic, social, cultural, natural, or environmental conditions without corresponding replacement or improvement.

Provided, however, if the proposed action involves any activity affecting one of the Great Lakes, an environmental impact statement shall be required if two of the foregoing criteria are satisfied. In addition, the Department may prepare an environmental impact statement when it deems it in the public interest..." (Wis. Dep. Nat. Resour., Manual Code 1603).

RECREATION AID PROGRAM: Wisconsin Statutes require that before land is purchased or construction or development of certain public facilities starts, it is necessary to obtain written approval from state agencies that have the responsibility to protect the public interests. These approvals must be obtained whether the acquisition or development involves Recreation Aid funds or not. Before undertaking construction or acquisition, specified approvals must be obtained. A copy of the approval letter issued by the appropriate state agencies must be filed with the Department of Natural Resources, Bureau of Aid Programs. Some of these approving agencies are: Dep. of Industry, Labor and Human Relations; Dep. of Health and Social Services; Bureau of Environmental Health; Plumbing and Related Services Section; Bureau of Water Regulation and Zoning; and the Bureau of Aid Programs. In addition to obtaining the necessary approvals, it is the responsibility of project sponsors to insure that all other applicable state and local codes and ordinances are complied with.

APPENDIX D: SUPPLY AND DEMAND

A number of studies have been done in the Great Lakes region which identify the extent of existing recreational use, project further recreational activity and relate their analysis to the resource base. These studies identify problems that must be dealt with in any planning for recreational use on the Great Lakes. The following very brief summaries of particularly relevant studies provide general and specific information relating to present and future needs for public access facilities on the Wisconsin Great Lakes.

Recreational Boating, Appendix R9 (1975) by the Great Lakes Basin Commission. This is one of 25 appendices to the Report of the Great Lakes Basin Framework Study and was prepared at field level under the auspices of the Great Lakes Basin Commission to provide data for use in the report. River basin groups are delineated by county boundaries that approximate groups of drainage basins. This study suggests that an updated small boat harbor program on Lake Michigan is essential to the expansion of recreational boating on these waters. It states that the present programs do not provide for adequate facilities to meet the existing demand and it suggests that harbors, marinas, and additional access on Lake Michigan and Green Bay be developed. Since the existing inland waters in the Lake Michigan area are being used beyond desirable capacity, the study states that the remaining needs be transferred to Lake Michigan areas not suffering from overuse. The study also recommends that small boat harbors be constructed on Lake Superior, particularly along the Wisconsin shore, as well as improvement of public access.

Wisconsin Outdoor Recreation Plan (1972b) by the Wisconsin Department of Natural Resources, is a periodically updated document which determines, promotes and implements a statewide program that will provide high quality recreational opportunities. Throughout formation of the plan, a determined attempt is made to solicit information, suggestions, review and criticism from as many agencies as possible; needs in the county and other local plans are given full consideration throughout the planning process. The 1972 plan predicts increasing demands for public access facilities, particularly those necessary for fishing. Additional fishing facilities are advocated because of the dramatic improvement of fishing in the Great Lakes and the increasing interest in boating. Actions suggested relating to the coastal region include acquisition of lakeshore suitable for swimming on the basis of availability; development of a shoreline preservation and protection program; acquisition of access on lakeshore presently unavailable to the public; and protection of scenic resources on the Great Lakes.

"Aerial Flight 1971, 1973-1975" (unpub.) by the Wisconsin Department of Natural Resources is an aerial survey of the number of boats and pier fishermen at 13 checkpoints along the shores of Lake Michigan and Green Bay on an ideal Saturday during the summer. The number of boats at the checkpoints increased from 977 to 2648 (110%) from 1971 to 1975. The number of pier fishermen decreased from 806 to 431 between 1971 to 1975.

A Feasibility Study for a Marina at Barkers Island, Superior, Wisconsin (1975b) by Seaway Engineering Company. The report is a site selection and economic feasibility study for construction of a marina on Lake Superior. The study

estimated that 1,817 docking spaces will be needed by 1980. Presently only 910 spaces exist according to this study. Additionally, the study estimated that there will be 4,500 small boats which are stored in private yards or trailers and hauled to launching ramps. The study recommends two schemes for project development. Grants in excess of 70 percent would have to be used to aid the City of Superior for either scheme. Grants of \$828,000 or \$1,469,000 would be needed for each respective project. The Wisconsin Coastal Zone Coordinating and Advisory Council Meeting on December 2, 1975 moved to grant available local assistance funds to the City of Superior to conduct a "feasibility study for a Superior shoreline usage plan."

An Evaluation of the Needs and Demands for Access to Public Waters in Wisconsin (Cornellus 1974) by the Wisconsin DNR Fish Management Section. The intention of the report was to identify the magnitude of user demands placed on public access sites in Wisconsin. This study found that needs for access are greatest on lakes within "day use areas" of major population centers. It suggested that there is a viable need for a statewide program if the recreational demands for access are to be satisfied.

Somersan and Neuman in "Demand and Supply of Recreation in Wisconsin's Coastal Counties" (unpub.) projected demands for 1980, 1985, and 1990 for boating, swimming, fishing, hiking, camping, and sightseeing. The percent total change from 1970-1990 in boating, fishing and swimming in the coastal counties on an average summer weekend day is in Table D-1; non-resident participation is in Table D-2 (data is taken from the above manuscript).

SHORELAND USE: Studies undertaken by the DNR as part of the State Water Resources Management Plan, identified the type of shoreland use and ownership along all Wisconsin Great Lakes shoreland. Shoreland use was categorized into four use types: urban, low-intensity development, agricultural and undeveloped. The degree of development was not a measure of the degree of public accessibility but a useful broad conceptual base. Table D-3 contains use type information for each coastal county for: county shoreland miles, state shoreland miles, percent of county shoreland miles in each use type, and county use type as a percent of the total number of coastal counties. An interesting summary statistic that was calculated in the study is 8.8 percent of urban shoreland in Wisconsin, including streams and inland lakes, is located on the Great Lakes; whereas the Great Lakes shoreland is only 1.4 percent of the total shoreland in Wisconsin.

Table D-4 and D-5 were derived from numerous data sources and show the shoreland distribution of public-owned land and public access facilities.

Another important demand study (Table D-6) is Somersan's "Economic Impact and Needs of Wisconsin's Great Lakes Boaters" (unpub.). For a more specific profile breakdown, refer to the publication.

TABLE D-1. Percent Increase in Recreational Demands, 1970-90.

| County | Boating | Fishing | Swimming |
|-----------|---------|---------|----------|
| Ashland | 210.8 | 151.4 | 61.0 |
| Bayfield | 213.0 | 153.0 | 62.2 |
| Brown | 209.9 | 150.5 | 60.9 |
| Door | 210.5 | 151.2 | 60.9 |
| Douglas | 212.4 | 152.9 | 62.0 |
| Iron | 209.5 | 150.8 | 60.5 |
| Kenosha | 209.4 | 150.2 | 61.8 |
| Kewaunee | 210.4 | 151.3 | 61.0 |
| Manitowoc | 211.0 | 151.8 | 61.8 |
| Marinette | 212.9 | 152.9 | 62.4 |
| Milwaukee | 210.4 | 151.0 | 60.9 |
| Oconto | 211.4 | 154.3 | 61.9 |
| Ozaukee | 194.5 | 144.9 | 54.5 |
| Racine | 210.7 | 151.2 | 61.0 |
| Sheboygan | 209.9 | 151.0 | 60.8 |

TABLE D-2. Non-resident Recreational Participation as a Percent of Total Participation in 1970.

| County | Boating | Fishing | Swimming |
|-----------|---------|---------|----------|
| Ashland | 69.6 | 71.0 | 69.6 |
| Bayfield | 47.0 | 41.9 | 48.2 |
| Brown | 37.8 | 42.0 | 13.7 |
| Door | 45.4 | 40.9 | 45.1 |
| Douglas | 43.3 | 49.3 | 48.9 |
| Iron | 74.3 | 44.7 | 67.8 |
| Kenosha | 86.7 | 88.3 | 77.5 |
| Kewaunee | 33.4 | 17.9 | 8.6 |
| Manitowoc | 4.0 | 6.8 | 27.7 |
| Marinette | 26.1 | 22.5 | 31.8 |
| Milwaukee | 16.4 | 17.9 | 12.3 |
| Oconto | 11.8 | 23.7 | 33.5 |
| Ozaukee | 29.5 | 14.5 | 22.9 |
| Racine | 42.1 | 56.6 | 39.3 |
| Sheboygan | 52.3 | 35.4 | 33.4 |

TABLE D-3. County Shoreland Use Summary: Great Lakes.*

| County | Urban (mi) | Low-Intensity Development (mi) | Agricultural (mi) | Undeveloped (mi) | Total |
|-----------|---------------|--------------------------------------|----------------------|---------------------|--------|
| Ashland | 5.91 | 24.68 | 5.02 | 158.66 | 194.27 |
| Bayfield | 2.14 | 25.52 | 9.09 | 68.15 | 104.89 |
| Brown | 5.35 | 14.27 | .93 | 21.16 | 41.71 |
| Door | 31.45 | 107.53 | 7.54 | 93.88 | 240.41 |
| Douglas | 16.22 | 6.94 | .63 | 24.92 | 48.71 |
| Iron | .00 | .41 | .00 | 6.55 | 6.96 |
| Kenosha | 6.83 | 4.81 | .00 | .82 | 12.46 |
| Kewaunee | 2.76 | 10.30 | 10.78 | 1.79 | 25.63 |
| Manitowoc | 3.76 | 9.48 | 14.25 | 6.80 | 34.28 |
| Marinette | 3.13 | 6.67 | .00 | 8.61 | 18.40 |
| Milwaukee | 15.63 | 11.87 | 1.90 | .00 | 29.40 |
| Oconto | .94 | 11.99 | .00 | 15.84 | 28.78 |
| Ozaukee | .84 | 14.81 | 4.27 | 5.82 | 25.73 |
| Racine | 8.19 | 4.94 | .91 | .39 | 14.42 |
| Sheboygan | 5.62 | 14.00 | 3.62 | 2.84 | 26.09 |
| TOTAL | 108.77 | 268.21 | 58.92 | 416.25 | 852.14 |

* Data from the Water Resources Planning Sec., Wis. Dept. Nat. Resour.

TABLE D-4. Shoreland Distribution in Coastal Counties, 1975.

| County | Shoreland (mi) | Publicly Owned Shoreland (mi) | Publicly Owned Shoreland As A Percent of County Shoreland Miles (%) | Number of Public Beaches |
|-----------|-------------------|----------------------------------|---|-----------------------------|
| Kenosha | 12.46 | 3.7 | 30 | 4 |
| Racine | 14.42 | 4.5 | 31 | 2 |
| Milwaukee | 29.40 | 15.5 | 55 | 6 |
| Ozaukee | 25.73 | 2.3 | 9 | 1 |
| Sheboygan | 26.09 | 4.8 | 18 | 5 |
| Manitowoc | 34.28 | 8.6 | 25 | 10 |
| Kewaunee | 25.63 | 1.4 | 5 | 3 |
| Door | 240.41 | 17.1 | 7 | 6 |
| Brown | 41.71 | 2.9 | 7 | 2 |
| Oconto | 28.78 | 3.9 | 13 | 0 |
| Marinette | 18.40 | 5.0 | 27 | 1 |
| Iron | 6.96 | 0.8 | 11 | 0 |
| Ashland | 54.27 | 4.1 | 8 | 3 |
| Ashland* | 194.27 | 144.1 | 74 | 4 |
| Bayfield | 104.89 | 11.3 | 10 | 1 |
| Douglas | 48.71 | 13.2 | 27 | 8 |
| TOTALS | 712.14 | 99.1 | 14.0 (avg.) | 52 |

* Includes Apostle Islands.

TABLE D-5. Distribution of Ramps and Harbors in Coastal Counties, 1975.

| County | No. Ramps | Ramp Capacity* | No. Marinas | No. Slips |
|-----------|-----------|----------------|-------------|-----------|
| Kenosha | 5 | 60 | 2 | 242 |
| Racine | 10 | 160 | 1 | 224 |
| Milwaukee | 15 | 600 | 3 | 893 |
| Ozaukee | 6 | 134 | 1 | 35 |
| Sheboygan | 11 | 515 | 1 | 61 |
| Manitowoc | 18 | 537 | 2 | 134 |
| Kewaunee | 12 | 400 | 2 | 111 |
| Door | 60 | 1,251 | 18 | 716 |
| Brown | 26 | 530 | 3 | 145 |
| Oconto | 18 | 221 | 3 | 53 |
| Marinette | 16 | 504 | 2 | 25 |
| Iron | 2 | 20 | 1 | 32 |
| Ashland** | 17 | 300 | 2 | 231 |
| Bayfield | 19 | 324 | 5 | 288 |
| Douglas | 10 | 191 | 1 | 0 |
| TOTAL | 245 | 5,747 | 47 | 3,190 |

* Based on number of car-trailer parking spaces.

** Includes Apostle Islands.

TABLE D-6. Socioeconomic Profile of the Great Lakes Boater by Percent.

| Characteristic | L. Superior | Upper L. Michigan | Lower L. Michigan | Total |
|------------------|-------------|----------------------|----------------------|-------|
| AGE: | | | | |
| 24 yrs or less | 2 | 4 | 5 | 4 |
| 25 - 34 yrs | 20 | 22 | 24 | 23 |
| 35 - 44 yrs | 36 | 33 | 29 | 31 |
| 45 - 54 yrs | 22 | 21 | 26 | 23 |
| 55 - 64 yrs | 14 | 13 | 12 | 12 |
| 65 + yrs | 4 | 3 | 2 | 2 |
| not known | 2 | 4 | 2 | 5 |
| FAMILY INCOME: | | | | |
| \$ 5,000 or less | 4 | 1 | 1 | 1 |
| \$ 5,000- 9,999 | 20 | 9 | 5 | 8 |
| \$10,000-14,999 | 16 | 31 | 26 | 28 |
| \$15,000-24,999 | 36 | 41 | 48 | 44 |
| \$25,000 + | 20 | 11 | 18 | 14 |
| not known | 4 | 7 | 2 | 5 |

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