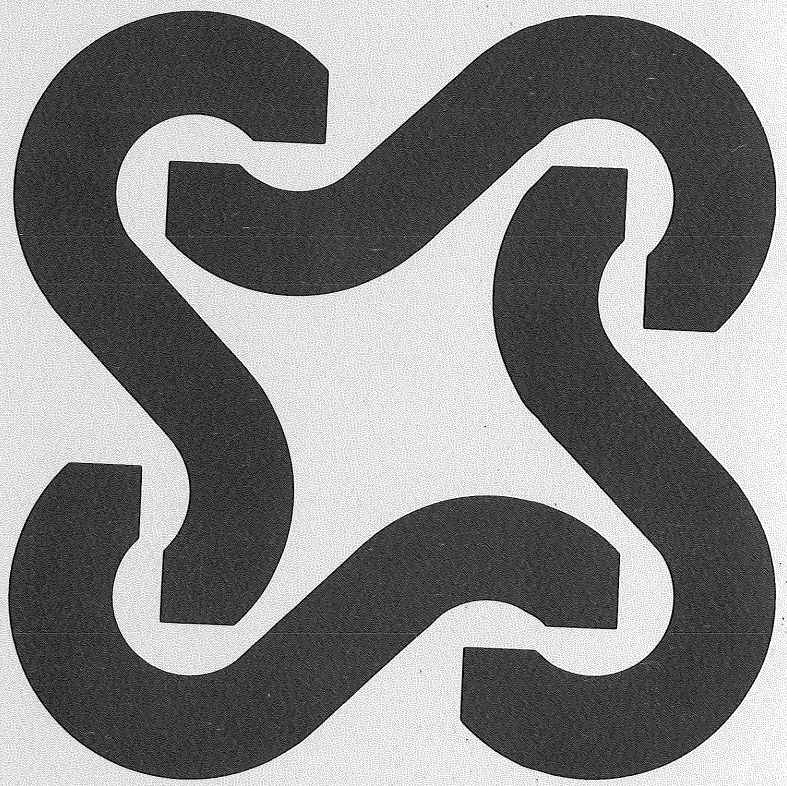
The Minnesota DNR Trail Plan

...a discovery process



Prepared by the
DEPARTMENT OF NATURAL RESOURCES
in consultation with
the citizens of Minnesota

The Minnesota DNR Trail Plan: A Discovery Process

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of the Trails and Waterways Unit
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ABSTRACT

The DNR trail program, which began in 1967, includes 9,700 miles of grants-in-aid, state, and DNR unit trails. Survey results indicate that more trails are desired, but awareness of existing opportunities is low. A process is established whose aim is to provide the public with an appropriate level of trail opportunities utilizing existing trails and public land wherever possible. A period of intensive use-monitoring is proposed to ensure greater cost-effectiveness and user satisfaction. The DNR's role in a comprehensive trail system is defined. Recommendations are presented to eliminate or minimize design, development and management problems. Funding, access for disabled persons, off-road vehicles, youth hostels and other concerns are discussed.

"We shall not cease from exploration,
and the end of all our exploring
will be to arrive where we started
and know the place for the first time."
T. S. Eliot

Table of Contents

* Not included. Available through DNR Trails and Waterways Unit.

List of Figures

List of Figures (cont'd)

List of Figures (cont'd)

List of Figures (cont'd)

List of Figures (cont'd)

Executive Summary

I. The Need for a Plan

The Minnesota Department of Natural Resources administers a recreational trails program which includes about 9,700 miles of grant-in-aid, state and DNR unit trails. Although the program is extremely popular with trail users, opposition to trail proposals from other groups has emerged in recent years. The specter of government land grabs, the belief that money going into trails would be better spent on something else, and trailside landowners' concerns over vandalism and invasion of privacy have contributed to this opposition. However, trail users continue to demand more trails, and their elected representatives have directed the DNR to satisfy that demand.

A careful balancing of needs and concerns is necessary. The DNR must comply with the popular mandate for trail-oriented recreation in ways which minimize conflicts with other affected parties. The problem which the DNR trail plan must address is:

> What are the appropriate levels and types of recreational trail opportunities for the DNR to provide for present and future generations, that can also have benefits to host communities?

This plan sets forth what appears to the DNR the most efficient, cost-effective method of providing for trail-oriented recreation needs of Minnesotans, while recognizing and being guided by the needs and concerns of other affected parties.

II. Objectives

Four objectives have been identified. If they are met, the proper balance of trail user needs and the needs of other interests will be achieved. The objectives are:

1. to determine the trail-related needs and desires of Minnesota's residents;
2. to determine the extent to which the state should be involved in satisfying them;
3. to determine the extent to which available resources can meet these needs; and
4. to provide for the appropriate development, operation and maintenance of additional necessary facilities.

The plan substantially achieves the first two objectives, and specifies the procedure by which objectives three and four will be achieved.

The plan identifies the need for more research prior to developing a statewide procedure for reallocating (i.e., changing) trail uses on DNR administered trails. Until that occurs, the reallocation of trails from one user group to another will be dealt with during the master planning process for individual recreational units.

III. Public Involvement

Natural resource planning was, at one time, essentially an in-house function. The DNR has learned, however, that the public is often a valuable source of information and ideas, even when it is opposed to a government action. Moreover, the public has a right to be involved.

The DNR has moved to institutionalize public involvement at appropriate points in the trail program. Some examples of the public's opportunities to be heard and to be involved in the development of this plan:

1. The DNR has a toll-free telephone number which can be used to offer comments, criticisms and suggestions for the trails program.
2. A 14,000-name mailing list is used by the DNR to keep interested members of the public informed on DNR trail activities.
3. Fifteen public forums were held around the state late in 1980 to seek public input into the DNR trail plan.
4. Trails program staff undertook 15 statewide speaking engagements before civic groups to explain the program and solicit comment.
5. Twenty-eight open house meetings were held statewide to solicit opinions on a full range of alternatives for future trails program administration and direction.
6. There has been extensive opportunity for the public to review this plan in draft form.
7. Five thousand copies of a newspaper formatted summary were distributed to those who indicated an interest in this process and copies of the entire plan were sent to every public library in the state.
8. Eight meetings were held statewide for the purpose of soliciting final comments.

The DNR feels quite strongly that public involvement can only improve the service it provides. Public participation in DNR trail activities will continue to be sought and encouraged in the future.

IV. Minnesota DNR Trail Plan Recommendations

A. Development

Overall, Minnesotans' interest in trails remains high, and significant numbers feel a need for more trails--particularly for bicycling, skiing, and hiking/backpacking trails. However, the majority of people are unaware of currently existing trails.

Therefore, a short term recommendation is to identify and improve existing suitable trails and public land which will satisfy long-term goals . . . and make them known to the public.

For the long term, the DNR should:

1. Work with other trail providing agencies to plan and develop a system of quality trails of sufficient length and of statewide significance that satisfy public needs.
2. Continue to provide shorter day-use trails as necessary as integral parts of state parks and forests.
3. Encourage and support the provision of more close-to-home trails under local initiative and control, possibly through an expanded grant-in-aid trail program.

Pursuit of these long-term goals is recommended to be contingent upon the success of present and future user-fee systems, and on the results of a stepped-up use-monitoring program.

In addition, a system of trails for use by people with physical disabilities is recommended, as is cautious implementation of steps aimed at serving the needs of off-road vehicle owners.

B. Management

Experience on existing trails has shown that a significant portion of the problems that result in opposition to new trail development can be dealt with effectively through well-planned and -executed trail management. The following are recommendations which, if followed, can considerably alleviate the concerns of trail user and adjacent landowner alike.

The DNR should:

1. Work with adjoining landowners to provide for access across state trails, to ensure privacy for those who require it, to minimize trespass, to minimize land-use conflicts and to deal with encroachments in a consistent and timely manner.
2. Develop a landowner's handbook containing policies, vegetation management information and appropriate phone numbers.
3. Seek to minimize user conflicts.
4. Further interpretative efforts on trails.

5. Make the maintenance of environmental quality, including the protection of rare, unique, and endangered species, a prime consideration.
6. Develop procedures for dealing with litter and fire on trails.
7. Seek to develop mutually beneficial relationships with host communities.
8. Develop user maps and handbooks dealing with trail information and interpretation and trail manners.
9. Develop an active trail volunteer program.
10. Develop an effective monitoring program, which will include user preferences and concerns as well as numbers of users.
11. Develop a promotional program for existing trails.
12. Assign trail management to a specific individual based in the trail area.
13. Investigate the role that hostels might play in future trail use.
14. Investigate the relative advantages and clienteles of bicycle trails and on-road bikeways.
15. Cooperate with federal trail initiatives within Minnesota.
16. Develop a directional routing system for snowmobile trails.
17. Establish an on-going trail rehabilitation and maintenance account.
18. Expand its right-to-occupy to more lands presently used by State Trails.

In several cases, the above recommendations describe procedures which are already part of DNR trail activities. All of them would contribute materially to the program if implemented.

V. Conclusion

The DNR's goal is to offer this state's residents as well as tourists from throughout the Midwest the opportunity to explore Minnesota on trails that are safe, enjoyable and cost-effective, and which are harmonious parts of their natural and cultural environments.

This plan will serve as the DNR's guide in meeting that goal.

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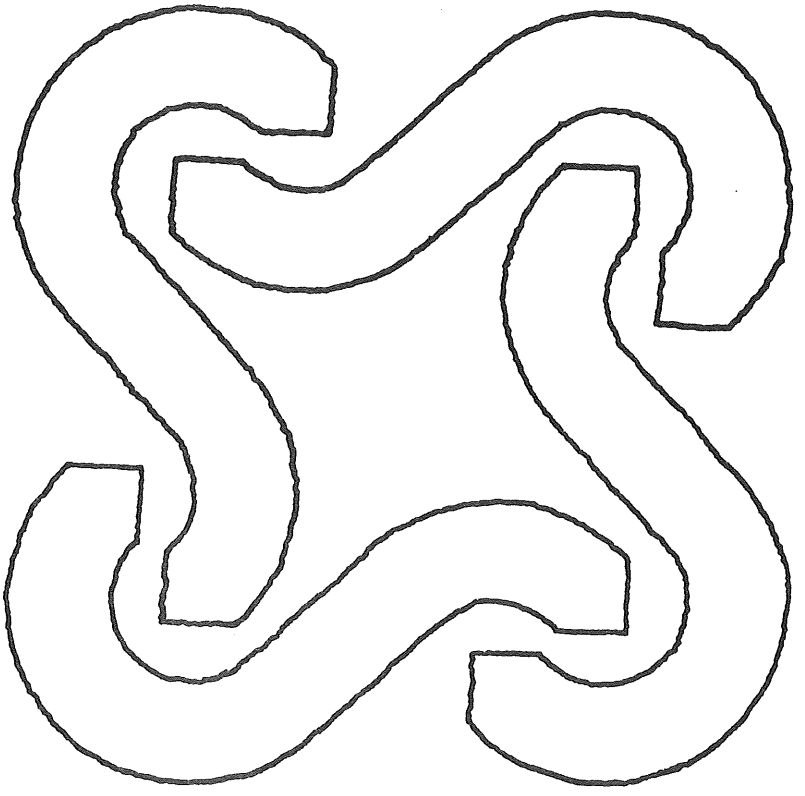
The Minnesota Trail Scene



A. Why Trails?

The pursuit of recreation is relatively new in human society. Until fairly recently, merely making a living occupied the vast majority of people's time, and even as late as the last century recreation for most people tended to be relegated to the odd Saturday night when time could be spared from other, "more important," activities.

The Industrial Revolution provided at once the leisure time which could be spent in recreation and the need for the recreation. On one hand, while people have always sought ways to make their work easier (e.g., by developing tools), since the 1880s there has been an explosion in the creative use of technology to serve human needs. The result has been increased leisure time: the fruits of the Industrial Revolution gradually (but very rapidly in historical terms) began to allow one worker with a machine to do the work of many.

On the other hand, this profusion of new technology has also resulted in increased stress on the individual. While the individual formerly was responsible primarily to himself for his own well-being, and thus could generally proceed in his own direction at his own pace, technology has increased the interdependence of people in meeting their everyday needs. People do not do all things for themselves anymore; they work together in offices and factories and they hire others with specialized skills, both of which create correspondingly greater potential for interpersonal conflicts and stress. The technology which created leisure time has thus also created the need to "get away from it all."

People still have a need to spend time doing things for which they are answerable only to themselves. At the same time, the "work ethic," an attitude that available time must be filled with some kind of productive activity, is deeply ingrained in the Minnesota character--Minnesotans tend to feel somewhat guilty if they allow

themselves to be totally idle. Even during leisure time they generally feel a need to be "doing something." Structured recreational pursuits fulfill both of these needs.

Some recreational pursuits involve the use of facilities which can best be provided by government. These facilities include parks and similar areas of publicly owned land which everyone can use.

That public recreational lands are highly valued by the public they serve is evident--the historical use of parks, forests, monuments and wilderness areas speaks for itself. And, as daily life in an increasingly complex society becomes more burdensome, the need for such recreational facilities can only grow. The public recognizes that government is uniquely qualified to provide for these needs. Few private citizens have the resources or time to provide their own outdoor recreation facilities.

In the late 1960s the Minnesota Legislature recognized the need of Minnesota residents for trail-oriented recreation. As a result of subsequent legislative action, Minnesota law (MN Stat. 85.015) directs the Commissioner of Natural Resources to "establish, develop, maintain and operate" trails for the recreational use of Minnesota residents. Later, passage of the Outdoor Recreation Act (MN Stat. 86A) established an outdoor recreation system in order, among other things, to ". . . accommodate the outdoor recreational needs of Minnesota's citizens." Components of this system include such units as state forests, natural and recreational state parks, state rest areas and state trails. The aim of this legislation is to recognize the importance to Minnesotans of outdoor recreational facilities, and to provide an adequate supply of such facilities.

One such facility is the recreational trail, a relatively recent phenomenon. Trails historically functioned in the way that streets, railroads or highways function now, as facilities to transport people and goods from place to place. As the country's

transportation system matured many of them were abandoned. They were not, however, forgotten.

Americans are a forward-looking people, but they are also quite conscious of their past. This country's history, the underpinnings of which are hard work, rugged individualism and the pioneering spirit, is a source of pride to its people. Trails are an integral part of this history. They were the travel lanes by which the pioneers moved on to build new lives and in so doing build a nation. Later, trails were the avenues of commerce and the sinews which bound together the far-flung communities of the new republic. The Wilderness Road, the Natchez Trace, the Oregon and Santa Fe trails all served their purpose, and then disappeared from the scene as their utility faded.

Although most of our historic trails have fallen into disuse, they have been kept alive in people's minds through song, book, movie and folklore. It is no surprise that people enjoy searching out these old routes to make contact with a part of their past. To stand, walk or camp along a long-abandoned thoroughfare and imagine the way it was when the pioneers passed by is, for many, a stirring experience.

The key to understanding the present need for trail opportunities may be found in the notion that modern-day trail use demands such traits as endurance and resourcefulness, much as did trail use in pioneer days. The difference is one of degree only. The personal reward at recreational trail's end can be one of difficulties met and overcome, hardships experienced and endured, and skills tested and found equal to the task. The potential for user satisfaction speaks for itself.

While people's historic attachment to trails may be the root of their modern day need for them, the trail itself need not be historically significant. The fact that it is a trail, universally acknowledged as such, is sufficient. For people's attachment to

trails stems from many causes, not only historical significance. Trails enhance physical fitness; they allow close observation of natural phenomena; they improve mental health by providing a degree of solitude and separation from the complex, technological side of modern-day existence; and for the time people use them they are free to set their own pace and direction to an extent that generally is not feasible in their everyday lives. Trails offer an additional advantage over other recreational facilities: use of a trail implies travel from point to point, and results in a sense of accomplishment at trail's end. The need to "do something productive" has been satisfied.

Why trails? Because for a variety of reasons people enjoy them and derive satisfaction from their use. And as a result, Minnesota's residents have seen fit, through the legislative process, to provide trails for themselves.

B. History of the DNR Trail Program

Until the advance of technology rendered them obsolete, a network of trails in Minnesota provided the means by which people, goods and information were transported from point to point, a function now performed by the highway, railroad, pipeline, telephone and power line systems which crisscross the state. While modern means of transportation have, in some cases, made use of parts of the old trail rights-of-way, the majority of trails were abandoned.

One example is the Point Douglas-St. Louis River Road, one of the military roads constructed in Minnesota in the mid-1800s. Originally built in response to public demand for a transportation route between the heads of navigation of the Mississippi River and the Great Lakes, it connected the junction of the St. Croix and Mississippi rivers with Superior, Wisconsin, and saw heavy use by travelers and commerce until the construction of a rail line between Duluth and St. Paul caused the road's through traffic to cease almost overnight. The pioneers had found a better way. Nonetheless, portions of this old route are still in use as segments of several county, state and U.S. highways.

Minnesota's first recreational trail was designated after development of the first state park in 1889 (Camp Release). However, the formal beginnings of Minnesota's trail system were not until the late 1960s. Rapid growth in the popularity of the snowmobile during this period created a need to provide trails and, sometimes, regulate trail use.

Legislation was enacted to require snowmobilers to pay registration fees for trail development. In 1967, the DNR Division of Parks and Recreation was assigned the responsibility for promoting, developing and managing recreational facilities for snowmobile users (MN Stat. 84.83).

Until 1969, DNR trails were developed only in state parks and forests. However, the 1969 legislature authorized the DNR to "establish, develop, maintain, and operate recreation areas" (MN Stat. 85.015). In 1973, the legislature further provided the means for a statewide recreational trail system with acquisition, development and maintenance funds and authorization of a temporary DNR trail staff.

From 1969 to 1975 13 "state trails" were authorized by the Legislature. State trails* are recreational or commuter routes that connect outdoor recreational facilities, or have significant scenic, historical, scientific or recreational qualities. These trails now form the backbone of the state recreational trail system (Figure 1). Appendix G includes a summary of development status of existing trails.

Figure 1: Authorized State Trails and their Planning Status.

Trail	Authorization	Status
Minnesota Valley	1969	Draft Plan complete
Casey Jones	1967	No plan
Countryview	1971	NA
Douglas	1971	Plan complete
Glacial Lakes	1971	No plan
Root River	1971	Plan complete
Sakatah Singing Hills	1971	Plan complete
Luce Line	1973	Plan complete
Minnesota-Wisconsin Boundary	1973	Plan complete
Heartland	1974	Plan complete
Taconite	1974	Plan complete
Tower to International Falls	1975	Plan complete
North Shore	1975	Plan complete
Ely to Grand Marais	1975	No plan

* This plan's authors have attempted to only use the words "state trails" when referring to a Legislatively authorized trail. That is to say, "state trails" in this document do not mean the more generic and all-inclusive category of trails provided through any involvement by the state.

The Minnesota Trails Assistance (grant-in-aid) Program was initiated in 1971 (Laws of MN 1971, Chap. 3, Sec. 36, Par. C). The program provides for a system of trails which are planned, aligned and constructed by local user groups (primarily snowmobiling clubs), and funded by grants from the DNR. The program is formally structured as a cost-sharing arrangement between the DNR and a local government unit which serves as the sponsor for a local user group. The state will pay up to 65 percent of the acquisition, development and maintenance costs and up to 90 percent of the grooming costs. Grants-in-aid trails are generally (though not always) sited on private land through year-to-year easements, permits or other agreements. No lands are acquired by the DNR for such trail purposes.

Begun as an experiment in 1971, the grant-in-aid program soon proved popular with the trail-using public. Funding for the first year of the program was $100,000. Seven counties and one city were approved for this funding and they developed 479 miles of snowmobile trail. The program was made a permanent part of the DNR's trail responsibilities in 1974. In the initial years of the program, development costs accounted for most of the program's funding. However, the vast majority of funding is now being allocated to maintenance and grooming of these trails.

A recent development in the grant-in-aid snowmobile program was Laws of MN 1982, Chap. 580. This legislation accomplished fund dedication for snowmobile trail activity. Previously, the grant-in-aid program was funded by legislative appropriation from two general revenue sources. The first of these was the snowmobile registration fee (increasing from $12.00 to $18.00/3 yrs. on 8-1-82), and the second source was the 0.75 percent portion of the unrefunded state gasoline tax (17¢ per gallon as of 1-1-84) attributable to snowmobile use (MN Stat. 296.16, subd. 1). The new legislation places both of these revenue sources into a dedicated account (the snowmobile trails and enforcement account) beginning July 1, 1983. Snowmobile registration increased

under MN Stat. 84.82, subd. 3, and funds were dedicated under MN Stat. 84.83. The dedicated account can be used only for the following purposes:

1. For a grant-in-aid program to counties and municipalities for construction and maintenance of snowmobile trails;
2. For acquisition, development and maintenance of state recreational snowmobile trails;
3. For snowmobile safety programs; and
4. For the administration and enforcement of MN Stat. 84.81 to 84.90.

Another recent development in the grants-in-aid program was Laws of MN 1983, Chap. 325. This legislation established a user-fee for publicly designated and promoted cross-country ski trails. This fee is $5.00 for an annual single and $7.50 for an annual husband/wife combination. A $1.00 daily single fee is also available. An additional 50¢ agent's fee is charged outside parks and DNR offices. The receipts from this program are deposited into the general fund and are disbursed under the laws regulating the grant-in-aid program.

C. The DNR Trail Program Today

Of the 13,000 miles of recreational trails that exist in Minnesota, about 9,700 miles are either funded or directly administered by the DNR. Over 7,000 miles are grants-in-aid trails, primarily for snowmobiling. Of the remainder, over 2,600 miles are DNR unit trails, located in units of the outdoor recreation system such as state forests, parks and wayside rests, and more than 450 miles have been developed as state trails. These trails are used primarily for bicycling, hiking, snowmobiling, cross-country skiing and horseback riding. Figure 8 (page 38) shows where these trails are located. DNR unit and state trails are located on public land administered by the DNR. For a more complete listing of trail mileages, see Appendix L.

In September, 1979, the DNR Commissioner by Appointment and Delegation Order No. 352, created a new Trails and Waterways Unit and a new Special Assistant to the Commissioner position to head it. The existing trails programs were transferred into this unit, which is now responsible for coordinating all DNR trail development and maintenance.

The Trails and Waterways Unit's ultimate goal is to provide high-quality trail recreation opportunities in an efficient and cost-effective manner for all Minnesotans.

D. Other Trails in Minnesota

In addition to the approximately 9,700 miles of DNR-administered trails in Minnesota, there are about 3,100 miles of recreational trails in the state which are administered by other agencies of government and by private concerns. Recreational trails exist in county, regional and municipal parks, county forests, the Boundary Waters Canoe Area, private resort developments and the Superior and Chippewa national forests.

In addition, the federal North Country National Scenic Trail is now in the planning/development stages. It will extend between

Crown Point, New York and Lake Sakakawea State Park in North Dakota, and eventually may connect the Appalachian Trail in the eastern United States with the Lewis and Clark National Scenic Trail in the west. It is projected to enter Minnesota in the St. Croix State Forest, traverse generally north to the Duluth area, west to the White Earth State Forest, then generally south and west to Breckenridge, and into North Dakota. This trail is authorized by an Act of Congress [Public Law 96-199, Sec. 101 (b)], which amended the National Trails System Act. Overall administration of the trail is the responsibility of the National Park Service. See page 219 for a more complete discussion of this topic.

In 1976 the Legislature created the State Bicycle Trail Program (Laws of MN 1976, Chap. 199), to be administered by the DNR. The bikeway program was transferred to the Minnesota Department of Transportation (Mn/DOT) by the 1977 Legislature (Laws of MN 1977, Chap. 421). The main thrust of this program has been to evaluate the suitability of roadways for bicycle travel based on road design and traffic volume. This evaluation, as well as depiction of all off-road bikeways, are indicated on the Minnesota Bikeways Maps (Figure 7, page 37, is based on these maps). Mn/DOT has also constructed bikeways, both on-road and off-road, along public road rights-of-way, both trunk highways and local roads. (The 13,000-mile estimate of recreational trail mileage in the state does not include bikeways identified and provided by Mn/DOT.)

The question of whether bicycle trails are more appropriate than on-road bikeways is addressed on page 210.

E. Trail-Related Organizations

The activities of several government agencies and private groups which have trail-related functions in Minnesota can and often do influence DNR trail planning.

1. Federal Agencies

A. U.S. Department of Agriculture

The U.S. Forest Service provides over 600 miles of trail in Minnesota. These trails include over 500 miles of trail in Superior National Forest (including Boundary Waters Canoe Area) and nearly 100 miles of trail in Chippewa National Forest. The primary trail uses include hiking, cross-country skiing, hunting and snowmobiling. The U.S. Forest Service considers outdoor recreation to be a major component of its balanced multiple-use management of federal lands.

B. U.S. Department of the Interior

The National Park Service provides over 40 miles of trail in Minnesota. These include trails in Voyageurs National Park, Grand Portage National Monument, and Pipestone National Monument. These trails are for hiking and/or cross-country skiing. In addition to these trails, the National Park Service partially manages those portions of the Minnesota/Wisconsin Boundary Trail which pass through the St. Croix National Scenic Riverway.

The National Park Service also coordinates and oversees the development and long-term administration of the North Country National Scenic Trail through Minnesota. The Special Assistant to the Commissioner for MN/DNR Trails and Waterways has been appointed to serve as chairman of an advisory council to guide the development and administration of this trail.

C. U.S. Department of Defense

The U.S. Army Engineers (Corps of Engineers, or COE), in its commitment to promoting recreation opportunity, has provided some trail opportunity at certain of its Minnesota reservoir projects.

D. U.S. Department of the Interior

The U.S. Fish and Wildlife Service (USFWS) has provided over 30 miles of trail in Minnesota. These are primarily hiking or cross-country skiing trails. These trails are found in certain of the 700 Waterfowl Production Areas and 9 National Wildlife Refuges in the state. The trail use of these lands is provided only when it does not interfere with fish and wildlife management. The USFWS is cooperating with the DNR in acquisition and development of the Minnesota Valley State Trail and National Wildlife Refuge.

2. State Agencies

At the state level a number of agencies have trail responsibilities and coordination is desirable (Figure 2). The DNR must cooperate with Mn/DOT, the State Planning Agency (SPA), the Department of Energy and Economic Development and the Metropolitan Council to plan and provide for statewide trail-oriented recreation. The 1977 Legislature created a variety of trails programs to be administered by these agencies and the DNR, and at the same time directed the SPA to review and coordinate state-level trail activities (Laws of MN 1977, Chap. 421). The agency heads involved subsequently established a staff-level interagency committee for this purpose. The interagency committee published the Minnesota Trails Policy Plan (see Appendix O), the documentary basis for interagency cooperation. Cooperation between state agencies is essential to insure that:

1. duplication of effort is avoided;
2. all funded trails fit into a statewide system;
3. there is a demonstrable need for each facility;
4. opportunities for interagency cooperation are fully explored; and
5. state-operated trails are coordinated with existing and proposed local trails.

3. Counties and Other Local Units

The primary contact between local government units and the DNR has been through the grant-in-aid program. Under this program, the county sponsors a local user group which wants a trail. The county formally requests assistance from the DNR and is accountable to the DNR for all expenditures. The DNR sets policies, processes forms, provides technical assistance, and monitors and audits the program. The local user group contacts all the landowners along the trail and arranges easements or permits. They also provide all the labor for any

Figure 2: Summary of State Agency Roles.

Source: Adapted from Minnesota Trails Policy Plan, prepared by the Inter-Agency Trails Committee, May 26, 1981, pp. 3-5.

Minnesota State Planning Agency

LEGISLATIVE AUTHORITY:	M.S. 4.35, 86A
TASKS:	.Coordination of trails planning, acquisition, development, and grants for all state-funded trails. .Review of master plans for state trails and other units of the state outdoor recreation system which may contain trails.
ADMINISTRATIVE OFFICES:	Intergovernmental Division

Department of Energy and Economic Development

LEGISLATIVE AUTHORITY:	M.S. 4.36, 86.71, M.L. 1969 ch. 1139, sec. 48, M.L. 1971 extra session ch. 3, sec. 48, M.L. 1977 ch. 421
TASKS:	.Cost sharing for acquisition and development of local and regional parks, which includes development of certain trail facilities.
ADMINISTRATIVE OFFICE:	Division of Community Development, Parks and Recreation Grants Section

Minnesota Department of Transportation

LEGISLATIVE AUTHORITY:	M.S. 160.265, M.L. 1977 ch. 421, M.L. 1979 ch. 333
TASKS:	.Comprehensive statewide bikeway transportation planning .Bikeway construction fund administration along trunk highway and local road rights-of-way .Road-related construction review and critique for highway purposes .Bikeway registry (mapping) .Bikeway design guidelines and standards development .Administration of trail construction and grants along the Mississippi under the Great River Road Program .Issuance of permits for snowmobile routes on certain trunk highway rights-of-way
ADMINISTRATIVE OFFICES:	Office of Environmental Services, Bikeway Unit and Environmental Studies Unit District offices (for snowmobile permits)

Minnesota Department of Natural Resources

LEGISLATIVE AUTHORITY	M.S. 85.015, M.S. 84.029, M.S. 86A.01 to 86A.11, M.S. 86.75, and M.S. 1979 Chapt. 333, Sec. 26
TASKS:	.Establishment, maintenance, and operation of recreational trails on state owned or leased land under its jurisdiction. .Establishment, maintenance, and operation of recreational travel routes which connect units of the Outdoor Recreation System or the National Trail System, or provide access to or passage through areas which have significant scenic, historic or recreational qualities or commuter routes. .Distribution of appropriated funds to local units of government for seasonal recreational trails.
ADMINISTRATIVE OFFICE:	Trails and Waterways Unit

Metropolitan Council

LEGISLATIVE AUTHORITY:	M.S. 473.122; 473.145; 473.147; 473.171; 473.181, subd 2; 473.301-473.341
TASKS:	.Planning of a regional trail system in the Twin Cities Metropolitan Region as part of the Recreation Open Space Development Guide/Policy Plan. .Review of regional trail and regional park master plans for consistency with the Recreation Open Space Development Guide/Policy Plan. .Creation and annual revision of a five-year capital improvement program for the acquisition and development of regional trails and the development of trails in regional parks and park reserves. .Administration of grants to regional implementing agencies to acquire and develop regional trails and to develop trails in regional parks and park reserves. .Review and recommendations for funding priorities on grant-in-aid trail projects administered by the State Planning Agency (LAWCON/LCMR grants) and the Minnesota Department of Transportation (Mn/DOT Bikeway Program and Mississippi Great River Road Program) for projects in the Twin Cities Metropolitan Region.
ADMINISTRATIVE OFFICE:	Physical Planning and Development Department, Parks and Open Space Division

necessary construction as well as the maintenance and grooming of the trail.

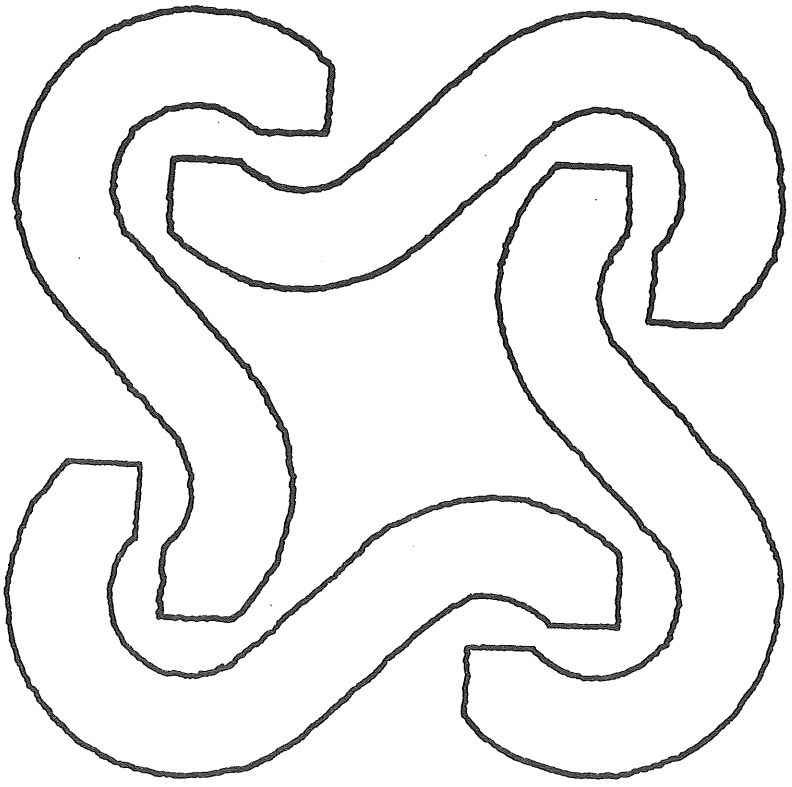
Through the Department of Energy and Economic Development, local governments can apply to a cost-sharing program for acquisition and development of local and regional parks, which can include development of certain trail facilities.

4. Private Groups

The DNR Trails and Waterways Unit has had many dealings over the years with private organizations; some support the trails program and others do not. By and large, the supportive groups are made up of trail users who may provide labor, public support and information to the DNR to help its trail-related activities. There also have been several groups whose purpose has been to oppose specific trail proposals. The DNR regards as essential the maintenance of close contacts with both of these types of organizations to be able to remain responsive to the will of the public in trail-related matters. The Department has been well-served not only by supporters, but also, in several cases, by those having concerns and doubts regarding its activities and proposals.

2

Scope of Plan



A. Purpose and Scope

This plan has been written because the provision of trail-oriented recreation requires a careful balance between satisfying the needs of trail users and satisfying the needs of others who find themselves affected by trail use. A number of considerations must be weighed in that balance. (Figure 4 illustrates major contributing factors within Minnesota and Appendix P contains a synopsis of state trail system plans from other states.)

One of the most important of these considerations is land use--determining the best use to which available land can be put. With its increasing population, Minnesota's land base is under pressure from various, often conflicting, segments of society who advocate the use of land for the production of food, fiber, energy and metals, for housing, industry and transportation. Nonetheless, Minnesota's residents have also expressed, and the legislature has recognized, a need for trails and other outdoor recreation facilities. The problem is how to provide enough land for our recreational needs without slighting our other needs. Controversy is inevitable, as various groups with strong opinions on the feasibility and desirability of various trail projects seek to advance their causes.

Another important consideration is the availability of funding. Even in the best of times the state does not have enough money to supply all of the recreational opportunities desired by all Minnesotans. It's the DNR's responsibility to recommend to the legislature which opportunities are most desired and feasible, and which available land and revenue resources are capable of providing them. The state, in other words, must prioritize--and to do that, it must have a plan. The objectives of this plan are:

1. to determine the trail-related needs and desires of Minnesota's residents;

2. to determine the extent to which the DNR should be involved in satisfying them;

3. to determine the extent to which available resources can meet these needs; and

4. to provide for the appropriate development, operation and maintenance of additional necessary facilities.

The Minnesota DNR Trail Plan, the culmination of the DNR's trail planning efforts to date, is the DNR's set of guidelines for the administration of its trail program. It is intended to be in effect for 10 years, however, the appropriateness of this estimate is subject to a number of externalities, not the least of these being the public's response to implementation of its basic concepts. As such it conforms to the letter and intent of the interagency Minnesota Trails Policy Plan (see Appendix O). Its applicability extends from freestanding state trails, to unit trails developed in state parks and state forests and, finally, to volunteer-assisted grants-in-aid trails.

The purpose of the plan is to assure that the DNR through its programs provides desirable, feasible, and cost-effective trail recreation opportunities for Minnesota residents. It attempts to achieve this by incorporating all three elements into a comprehensive trail program that is easily understood and meets the needs of a wide variety of trail users.

The purpose of the plan is not to dictate priorities for other trail-providing entities. Ultimately each agency has to determine the role it will play in satisfying trail needs of its clientele. The Statewide Comprehensive Outdoor Recreation Plan (SCORP) has identified recreational trail deficiencies and has made appropriate recommendations to a variety of agencies. One of SCORP's recommendations deserves reiteration here: that, in general, local units of government should provide desired local, close-to-home trail opportunities. Given SCORP's findings that the majority of trail recreation occurs within 30 miles of home, local governments have an important role to fulfill. The Minnesota DNR Trail Plan encourages programs and funding mechanisms which give local government the means to carry out these responsibilities.

The degree to which it impacts future trail development varies with the three types of trails. Most importantly, the plan is aimed at state trails. Trails and Waterways has direct responsibility to develop and maintain this program. This plan is intended to give qualitative, quantitative, and even limited site-specific direction to those trails. For unit trails this plan is intended to institutionalize a rational planning process and to outline a way of prioritizing development. As such, it gives only implicit qualitative and quantitative direction. Finally, for grants-in-aid trails, the plan simply outlines an equitable and fair way of prioritizing allocation of funds.

What are appropriate levels and types of recreational trail opportunities for the DNR to provide for present and future generations, that can also have benefits to host communities?

A word regarding the obvious appears in order. This plan relates to a world, country and state in transition. Emerging technologies, changing demographic patterns, governmental philosophies, etc. all contribute to perhaps our only absolute, that is, "that there will be change." Therefore, the recommendations found in this plan must be implemented with an element of common sense. It could be said that agencies are rarely served well by a servile dependence on procedure. So it is with this plan. Undoubtedly situations will arise which require flexibility and accommodation. The authors of this plan recognize the potential for such exceptional circumstances. To the extent that decision makers are motivated by the general principles found here an isolated departure could be considered appropriate and in fact perhaps desirable.

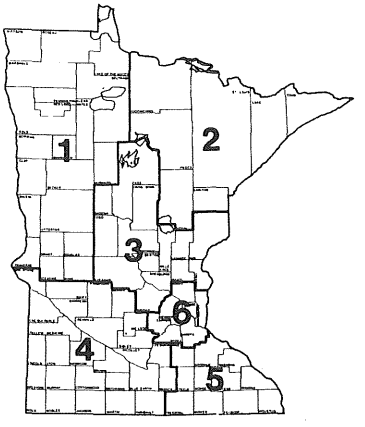
B. Development of the Plan

The DNR recognizes that making wise trail-related decisions depends on an accurate assessment of the trail needs and desires of the public, as complete an inventory as possible of feasible trail siting opportunities and an appreciation of how the availability of funding affects, and is affected by, the public's need for trails. Because these factors change, the plan must be open to reconsideration and revision if necessary to remain sensitive to the needs of the people it serves.

The best way to gauge the state's trail needs is through communication--with the trail users themselves, and with other groups whose members are affected by the DNR's trail activities. The DNR has, accordingly, made a strong commitment to the process of public review and comment in its trail-related activities. State trail master planning includes a significant number of public informational meetings, public hearings and other less formal contacts, whose aim is to take the pulse of public opinion on the project. The DNR Trails and Waterways Unit publishes a periodic newsletter to inform the public of the Department's trail activities.

Development of this plan marks one of the largest citizen participation efforts undertaken by the DNR. A full list of meetings is included in the appendix. To ensure efficient and effective communication between the state's residents and the Department, a mailing list of nearly 14,000 individuals and organizations both positively and negatively affected by trails was developed. Complemented by media releases, the mailing list was used first to invite participation in a series of 15 public forums held around the state in December 1980 to define issues for this plan (Figure 3).

Figure 3: Minnesota Trails: What People Want.
A Summary of Comment from 15 Public Forums. January 1981.



Map of DNR Regions

KEY

●	Major Issue
o	Minor Issue
No Code	Not Raised

DESIGN AND DEVELOPMENT

ISSUE	DNR REGION 1	2	3	4	5	6
Multi-Purpose Trails	●	o	o	o	o	o
Separate Treadways	o	●	●	o	o	o
Local Government Choose Alignment	o	o	●	o	o	
Access for Handicapped		o	o		o	o
More & Better Signage	o		o	o		o
Compatibility-Horses & Others			o		o	o
Variation in Length & Difficulty		o	o			o
Export Sportsmen Do Design		o				o
Railroad Not Exciting Skiing			o			o
Heartland Trail-Waste of Money	o		o			
Consider People Pressure			o	o		
Possible Ski Marathon Use		o				
Consider Environmental Impacts		o				
GIA Consider Non-Organized User						o
Trail Crossings-See DOT						o
Ski Trails-Groomed & Challenging						o
Limestone Poor For Bicycling						o
Trail Use For Health & Education					o	

MANAGEMENT

ISSUE	DNR REGION 1	2	3	4	5	6
More Maintenance Funding	●	●	o	o	o	o
Volunteer Labor-Develop & Maintain		o	o	o	o	o
Vandalism/Litter	o		o	o	o	
No Hunting On Some Trails		o	o			o
Do Not Groom All Ski Trails	o					o
DNR Provide 100% Fencing	o			o	o	
4x4s Help Develop & Maintain						o
Low Travel & Logging Roads-Trails		o		o		o
User Credibility-Stealing				o	o	
Casey Jones-No Use/Maintenance				o		
Inspection of GIA Trails			o			
Metro-Coop Equipment Use-Parks						o
Research Costs First				o		
Eliminate In-Kind Work	o					
Better Policing	o					
Quality Not Quantity	o					
Snowmobiles Stay On Trail	o					
Ski Grooming Equipment Funds		o				

LOCATION

ISSUE	DNR REGION 1	2	3	4	5	6
More Ski Trails	o	o	●	●	●	●
More Hiking Trails	o	o	o	●	●	●
More Snowmobile Trails	●	●	o	●	o	o
Comprehensive System-Snowmobile	●	o	●	o	o	o
Comprehensive System-Cross Country Ski	o	●	o	o	o	●
More Bicycle Trails	o	o	o	o	●	●
More Horseback Trails	o	o	o	●	o	●
Complete Trail System	o	o	o	o	o	o
Trails For 4x4s	o	o	o	o	o	●
Trails For Dogsleds	o	o	o	o	o	o
Trails For Motorcycles		o	o	o	o	o
Connections to Services-Gas	o	o	o	o		o
Use of Railroad Right-Of-Way	o		o	o	o	o
Connect County & State Parks	o			o	o	o
Use Public Land	o		o	o	o	
Enough Trails Already	o		o	o	o	o
Trail-Impact On Landowner			o	o		o
Year-Round Trail Not On Ag Land	o		o	o		
Trail-Spur To Scenic Areas	o	o	o			
Use Natural Trail-River, Powerline				o	o	o
Will Travel To Long, Well Serviced, Scenic Trail	o			o		
Trail Access Near Public Transportation			o			o
Bikeways-Follow Freeway-Major Route			o			o
No Trails In Wildlife Management Areas						o
Scenic-Not State Trails				o		
Solve Problems-Then More Trails				o		
Old Vermillion Trail-State Trail		o				
Hike/Bike Trail In BWCA & North Shore						o
1-500 Race Trail-State Snowmobile Trail	o					
Guided Historic Trail In Cities						o
Trails On Great River Road						o
Horse Trail-Fort Snelling-MN Valley						o
Bike & Ski-Hut To Hut-MN Valley						o
Expand Park Rapids-Riverton-North Shore			o			
Trail Hennepin County Park Reserve To St. Bonifacious						o
Metro-Need Scenic Trails In						o
Connect Mounds View & Rum River						o
Trail On Railroad-Danbury Across St. Croix			o			
Mississippi River Trail-St. Cloud/Clearwater			o			
Snowmobile Trail-Metro/Brainerd			o			
Minnesota River Snowmobile Trail-Ortonville To Granite Falls				o		
Redwood River Trail-Ski/Snowmobile				o		
Des Moines River Trail-Jackson/Kilen Woods				o		
Luce Line Into South Dakota				o		
Mississippi Lookout-Top Priority					o	
Trail Owatonna/Rice Lake State Park					o	
Continue MN Valley Trail				o		
Resort Drive Trail-Cass Lake/Bemidji					o	
Luce Line To Hutchinson				o		
Hiking Trail-County Road 8/Lake Lillian				o		
Passive Trails & Canoeing	o					
Trails Across State	o					
Sakatah-Mankato/Redwood Falls				o		
Hut To Hut-Ski Trail-Ely/Itasca Park						o

JURISDICTION

ISSUE	DNR REGION 1	2	3	4	5	6
Expand GIA Program	o	o	o	o	●	o
DNR Only Connect GIA Trails	o	o	o	o	o	o
Cooperation-Govt./Govt./Private		o	o	o	o	o
DNR Major Trail Developer	o		o	o	o	o
GIA Connect State Trails & Communities		o		o	o	
Acquire No More Land		o	o	o	o	o
Fund Private Trail Development	o					
GIA For 4x4s						o

OTHER CONCERNS

ISSUE	DNR REGION 1	2	3	4	5	6
All Users Pay Fees-Tax	●	●	o	o	o	o
Dedicated Funds-Snowmobile Trail	●	o	o	o		o
Need Promotion/Influence/Education	o	o	o	o	o	o
Discontinue/Restrict Motor Use	o		o	o	o	o
No Liability-GIA Sponsor/Landowner	o	o	o	o		
All Users Unite/Cooperate	o			o	o	o
User Priority By Who Pays	o	o	o			o
Increase State/GIA Funding	o		o	o	o	o
Trails Enhance Local Economy	o				o	o
No Trail Planning	o				o	o
One Individual Covers Acquisition, Plan, Development & Maintenance	o	o		o		
Built With Local Support			o		o	
Otter Tail Co.-Drop Case/Build Trail	o			o		
GIA Funds Easier To Obtain	o		o			
Build Trails Not Buildings						o
Stop Killing Wilderness			o			
MN Valley Trail-Open Soon						o
Do Not Sod Along Sakatah				o		
More GIA Money-General Fund & Fee Revenue						o
Reduce Planning Time	o					
Snowmobiles Not Energy Wise				o		
DNR-Sneaky Luce Line Acquisition				o		
Fund Schools/Roads First				o		
Develop Groundswell Support				o		
Tax Credit-GIA Landowners			o			
Cannon River-No Trail Thru Scenic Easement					o	
Implement Plans	o					

The issues generated at these forums were organized into a full range of trail alternatives and presented to the public in "open houses" in 28 cities, often in shopping centers, in June of 1981 (see Appendix H). The mailing list and media releases were once again used to invite participation. The final use of the mailing list was to identify individuals wishing to review this plan in its "draft" form.

Trail planners also spoke before a variety of civic and sport groups to collect information on Minnesotans' desires.

The expertise and experience of DNR personnel are a fundamental part of this plan. Recreation professionals throughout the department met with trail planners in the fall of 1980 to discuss the potential problems of providing trail-oriented recreation. The results of those meetings are reported in the appendix.

In August 1981, a draft of this plan was discussed in each of the DNR regions and in St. Paul with representatives from most disciplines in attendance. Several subsequent drafts were prepared and reviewed throughout 1982 and 1983 with Departmental personnel.

The DNR Office of Planning contributed survey data through the Statewide Comprehensive Outdoor Recreation Plan (SCORP). Published in 1978, SCORP contains information on demand and level of need for trail recreation opportunities, and estimates of future trail use. This information, presented as weighted data and based on user surveys and projections of age and sex groups, is considered with the forum data, which were tabulated and used in their raw form.

In addition, the DNR has sought and will continue to seek the expertise of other professionals in the field of recreation and resource planning. Information from pertinent literature and personal contacts has also been incorporated into the plan.

As might be expected, especially at a time when questions are being raised regarding the proper role of government in American society, not all of the public input has been favorable to trail development. In several cases individuals and groups have voiced concern about the prospect of a trail being sited next to their land. Others feel that acquisition of land by government must be closely reexamined in light of prevailing economic and land use conditions. Still others question the propriety of public expenditures for recreation at a time when inflation and unemployment are having their effect on day-to-day survival.

Recent trail proposals have generated controversy in some areas of the state. Along the Root River in southeastern Minnesota, for instance, residents who feared negative impacts associated with trails banded together in 1980 to oppose a DNR trail proposal. Although on the surface there appeared to be only hostility, both sides were learning from the experience. Root River residents learned to make government work for them by questioning its every move, and by demanding genuine reactions to their proposals. Planners were forced to consider less than "ideal" solutions, and learned that several more options were open to them than they had thought. In the end, this learning created compromise--a considerably shorter trail with a commitment to resolve problems during its planning.

It is the DNR's intention to carefully weigh all available comments and opinions, pro and con, in the planning and administration of its trail program. To the extent that those with opinions avail themselves of the opportunity to be heard, the plan will reflect the desires and needs of those affected by its provisions.

C. DNR Trail Policies and Guidelines

The DNR has already published some guidelines for trail development. These are the trails policies, the trail manual and the Natural Resources Rules and Regulations (N.R. 20). These documents provided guidelines for this plan. The policies are summarized below. N.R. 20 is in Appendix E. Because of its size, the trail manual will not be included in the Appendix, but copies are available for review in DNR Trails and Waterways offices.

1. DNR Policy

The portion of the statewide trail system administered by the DNR comprises three types of trails: state trails, trails in DNR units, and grants-in-aid trails. The trail types differ in purpose, design, use, management and administration.

State trails are units of the state outdoor recreation system. They include trails authorized by the Legislature (MN Stat. 85.015) and trails established by the Commissioner (MN Stat. 84.029). The Outdoor Recreation Act establishes an outdoor recreation system which will: preserve an accurate representation of Minnesota's natural and historic heritage for public understanding and enjoyment; and provide an adequate supply of scenic, accessible and usable lands and waters to accommodate the outdoor recreation needs of Minnesota's citizens.

In keeping with the legislative mandate of the Outdoor Recreation Act (MN Stat. 86A), it is the Department's goal to provide recreational or commuter travel routes which connect units of the outdoor recreation system or the national trail system, or provide access to or passage through areas which have significant scenic, historic, scientific or recreational qualities.

DNR unit trails have been established pursuant to legislative authorization. MN Stat. 84.029 authorizes the Commissioner of Natural Resources to establish, maintain and operate recreational trails on state-owned or -leased land which is under his jurisdiction. DNR unit trails are found in units of the outdoor recreation system, such as state parks and state forests.

To ensure consistent management of these trails, it is the Department's goal to provide a variety of recreational trails and trail facilities in a manner which enhances the visitor's experience and is consistent with the purposes and objectives for which the administrative unit was established.

The grants-in-aid trails program has been established in keeping with MN Stat. 86.75, which authorizes the Department to distribute appropriated funds to local units of government for recreational purposes, including trails.

To ensure consistent administration of this program, it is the Department's goal to provide assistance to user groups and local units of government to establish, develop and maintain recreational trails to meet local and regional trail needs.

2. Trails Manual

   In 1981, the DNR Trails and Waterways Unit developed the trails manual to provide guidelines for trail layout, development and maintenance so that all trails would be uniformly constructed and upgraded. It is the Department's objective to standardize construction and maintenance, while still maintaining the uniqueness of each trail.

3. N.R. 20 - Trails Rules and Regulations

   Developed in 1975, N.R. 20 outlines the rules and regulations for state trails. N.R. 20 provides that:

   a. except for snowmobiles, all other motorized uses are prohibited;

b. horses are allowed only in designated areas;
c. the commissioner may establish hours for lawful use;
d. camping is restricted to designated areas;
e. except for the trail treadway hunting is allowed within the trail right-of-way between September 15 and March 30;
f. the commissioner may make exceptions to rules on a case-by-case basis.

4. Other Guidelines

a. Quality over quantity is preferred

Should a large number of trails be mass-produced or should a small number of higher-quality trails be developed? In weighing quality against quantity, quality will be favored.

b. A full spectrum of opportunity is a goal

Because the DNR funds nearly 10,000 miles of trails, far more than any other government agency, it appears desirable for the Department to help in fulfilling a broad variety of recreational trail desires where possible.

c. Duplication of effort should be avoided

The DNR should recognize the role that other units of government play in satisfying trail-related needs and attempt to build upon their efforts.

d. Existing public ownership should be capitalized on

Because land acquisition is often expensive, it should generally be regarded as a final alternative. Utilizing DNR-administered lands is of primary importance. The DNR should use grants-in-aid trails and Mn/DOT bikeways to supplement and expand state and unit trail opportunities.

e. State-funded trails need to be marketed

Marketing reflects how an organization interacts with its clients and customers. An organization with an effective

marketing program has as its primary goal meeting the needs of its clientele. From this basic goal flow a number of benefits that strengthen and sustain the organization itself. Thus both the client and the agency benefit. Steps include: analysis, strategy development, implementation and evaluation.

f. Trails must be provided adequate staffing

In Appendix D, staffing needs for state trails are estimated using the following criteria: potential agency assistance, total mileage, projected level of use, maintenance needs, local needs, and total use.

g. Increased volunteerism is a goal

Limited trail funding can be extended dramatically through the use of matching funds and volunteers. This can be accomplished as an aspect of the Trail Assistance Program (see Chap. 6) or volunteer programs as outlined on pages 229-230.

h. Serving a wide range of trail user groups is a goal

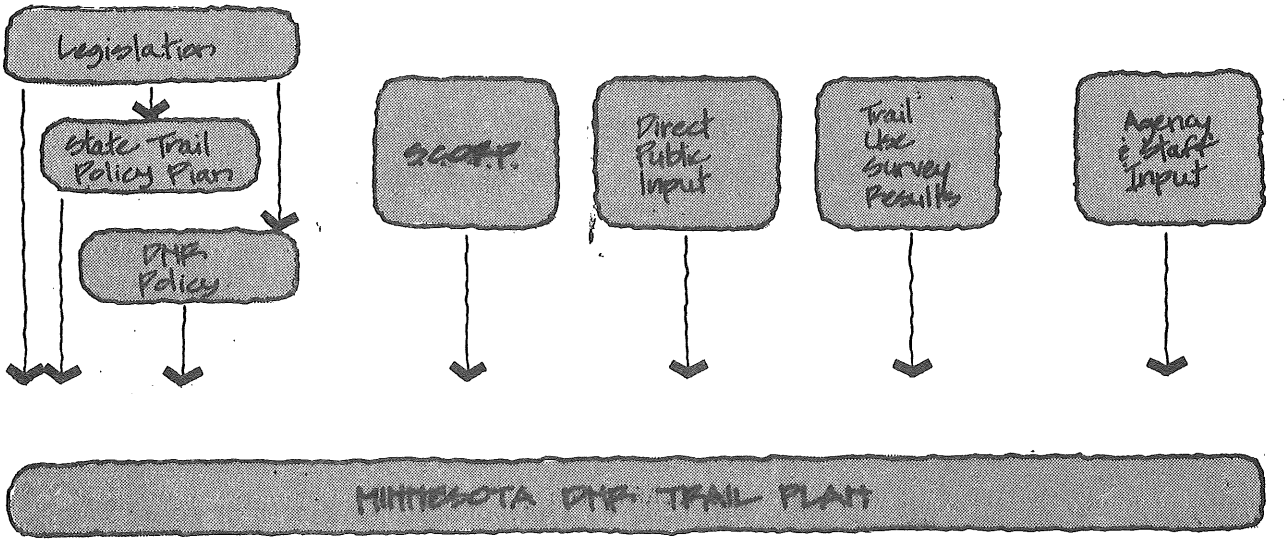
Currently five major trail user groups have been identified: hikers, bikers, horseback riders, snowmobilers and cross-country skiers. The Department should attempt to allocate its resources equitably so as to provide a basic level of service to each group.

D. Other Applicable Constraints

As is any other entity within Minnesota, the DNR is bound by a host of other applicable laws, rules, policies and guidelines in the development of trails. These range from land-use regulations, to protected waters permits, to guidelines for highway crossings and requirements for archaeological surveys.

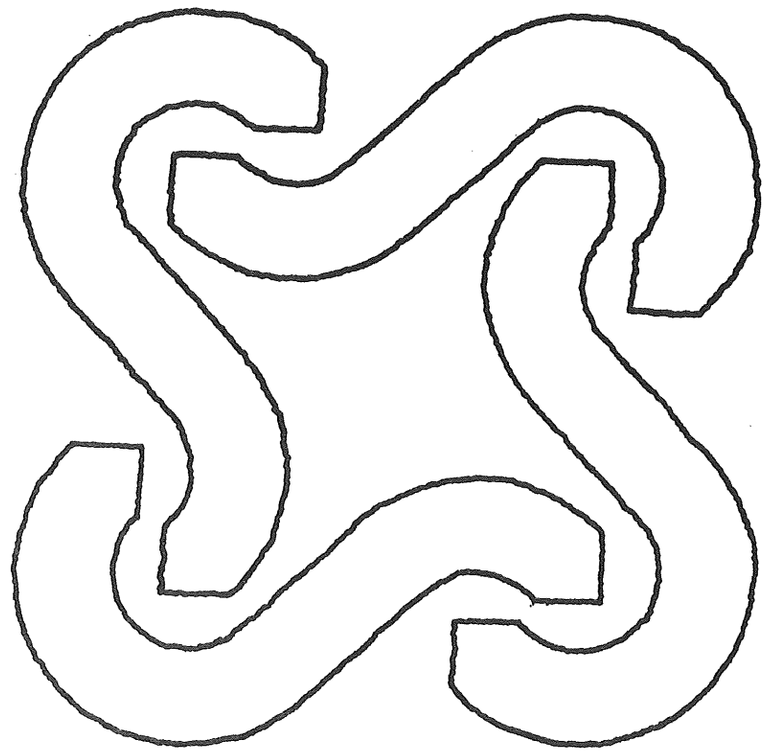
These (as are specified in the Trails Manual) will be complied with as necessary in all DNR-funded trail development.

Figure 4: Determinants of the Plan.



3

Supply & Demand

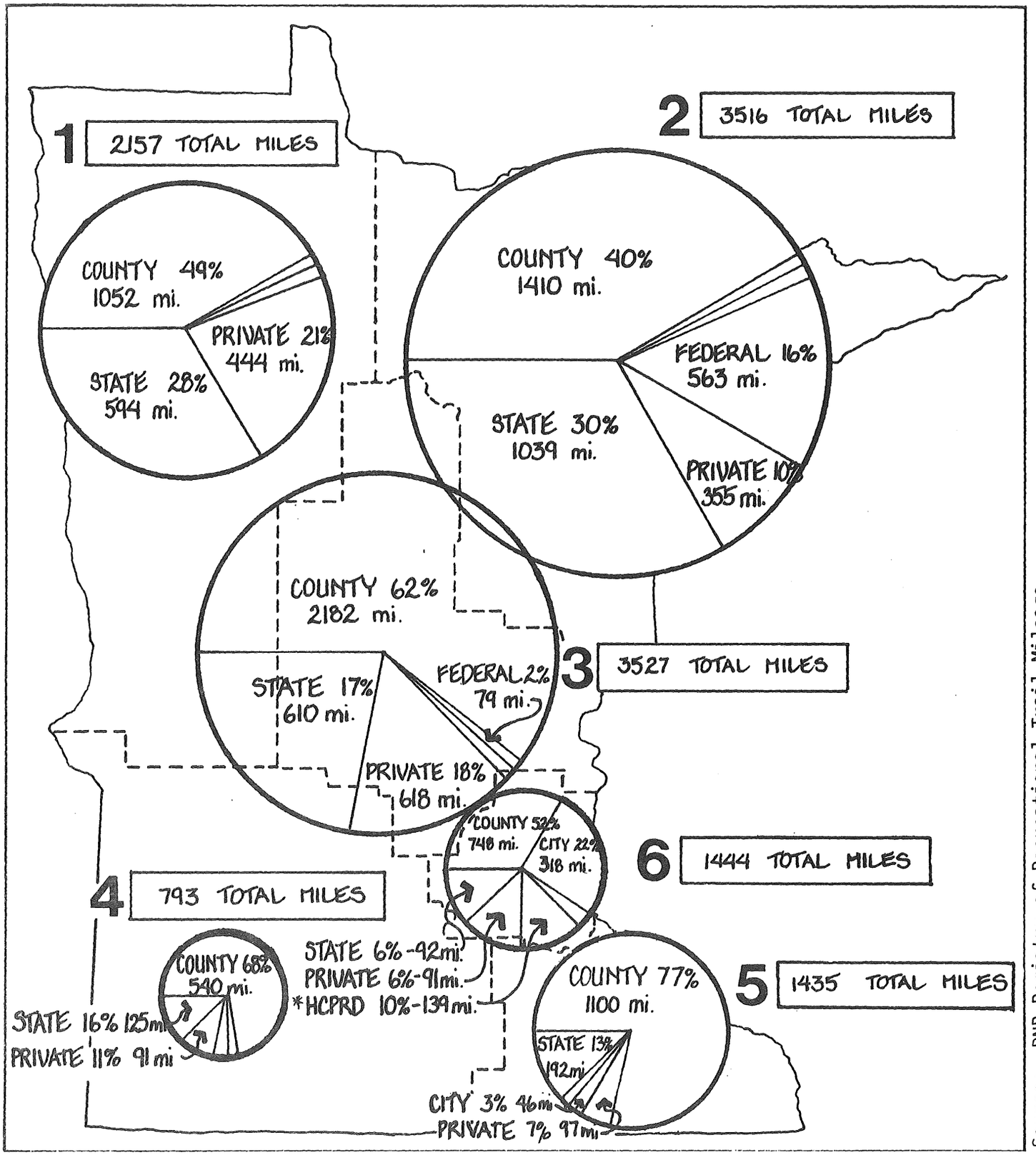


A. Trail Distribution

The state's distribution of trail mileage can be looked at several ways as shown in the next four figures. These trails are listed in summary form in Appendix K.

First, over half of Minnesota's nearly 13,000 miles of trails are found in central and northeastern Minnesota. And although northwestern Minnesota occupies roughly 30 percent of the state's area, it has less than 20 percent of the state's total trail mileage. The largest disparity, however, appears to be in the southwestern corner of Minnesota. With approximately 25 percent of the state's total acreage, it has only 6 percent of the state's total trail mileage.

If one were to consider population as the basis for distribution of trails, a different kind of disparity would emerge. Although the Twin Cities metropolitan area contains approximately one-half of the state's population, only 11 percent of its total trail mileage is found there.



Source: DNR Registry of Recreational Trail Mileage

PRIMARY CONTRIBUTORS OF TRAIL MILEAGE by DNR Regions 1-6

*Hennepin County Park Reserve District

Figure 5.

Second, contributions to the trail system by levels of government vary statewide. Cities, for instance, generally provide relatively short trails associated with their municipal parks. In Minneapolis, however, a bicycle/parkway system of national renown has been developed in conjunction with the city's lakes.

Third, counties, primarily in conjunction with the DNR Trail Assistance (grant-in-aid) Program, provide the largest share of the state's total mileage. Over one-half (55%) of all mileage is administered by county governments; 99 percent of that originates from DNR grants. As providers, counties in southeastern Minnesota play the largest role. There, approximately 77 percent of all existing trails are administered by counties. The role of the grant-in-aid program is further discussed on page 212.

Fourth, the DNR provides most of its trail mileage north of the Twin Cities, where public lands are concentrated. In northwestern Minnesota the DNR provides nearly a third of all trail opportunities through its state trails and DNR unit trails.

Fifth, when source of funding is considered, the DNR is instrumental in providing for 76 percent of all trail mileage in the state. This includes grants-in-aid trails. However, when only DNR-administered state and unit trails are considered the source of funding dips to 21 percent.

Sixth, the private sector plays a strong role throughout Minnesota, providing approximately 13 percent of total trail mileage. Ranging from a low of 7 percent in the southeast to a high of 21 percent in the northwest, trails are provided by local resorts, amusement areas and private camps.

Seventh, the federal government's trail opportunities are concentrated in northeastern Minnesota. The Chippewa and Superior National Forests are found there, as is Voyageurs National Park. Development of the proposed Minnesota Valley National Wildlife

Figure 6. Distribution of Trail Miles by Administrative Unit**

	Total***	Hike	Bike	X-Ski	Horse	Snow-mobile
City						
GIA	155	65*	0	99	6*	49
Other	450	319	203	179	10	30
County						
GIA (+ HCPR-GIA)	6,972	296*	32*	386	65*	6,536
Other	244	160	33	120	37	46
DNR						
Forestry	1,256	273	0	154	165	1,093
Parks & Rec.	919	760	19	446	198	347
Fish & Wildlife	16	16	0	0	0	0
Trails and Waterways	456	415	106	77	205	445
Private Sector	1,695	1,087	248	0	325	658
U.S.						
Forest Service	616	386	1	366	81	156
Wildlife	35	35	1	28	1	0
National Park System	42	33	0	24	0	0
Others	14	3	6	2	0	0
Total	12,870	3,848	649	1,881	1,093	9,360

Source: TRAILS & WATERWAYS REGISTRY OF RECREATIONAL TRAIL MILEAGES (see Appendix L).

* GIA funding for winter use only. Summer use is only incidental to the purposes of the funding.

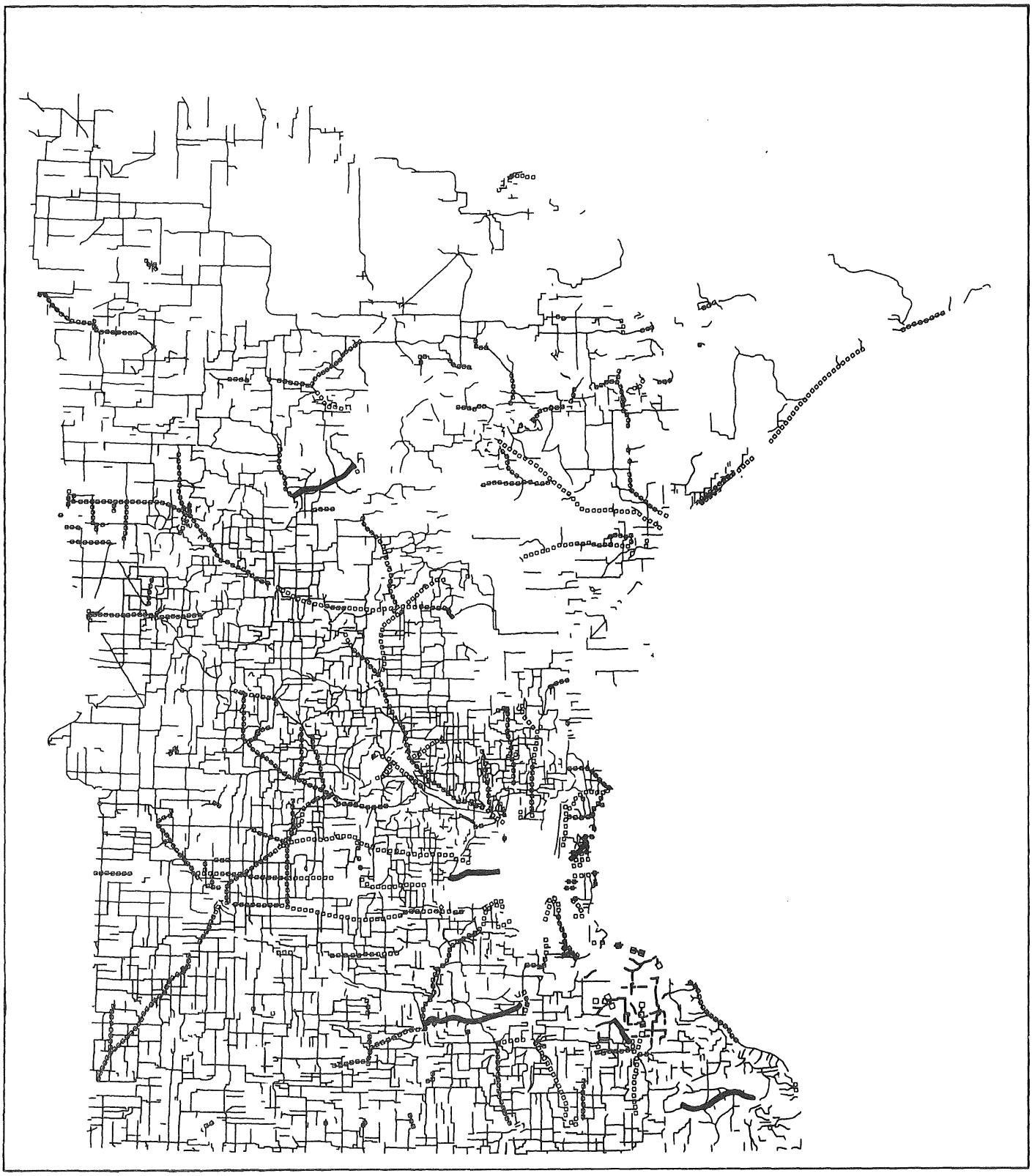
** All mileage figures have been rounded to the nearest mile.

*** The total reflects the actual number of miles "on the ground", rather than the sum of all the columns. They are not the same due to multiple use of some trails.

Refuge, as well as continued construction of the North Country National Scenic Trail, may provide additional mileage in the future.

Eighth, all trail users do not have access to all of the nearly 13,000 miles of trails in Minnesota. Recorded on the current Registry of Recreational Trail Mileages (7-1-83) are over 9,300 miles designated for snowmobile use, and nearly 1,900 miles of trail for ski-touring. Minnesota has about 1,100 miles of trail for horseback riding, 3,800 miles for hiking and approximately 650 miles of off-road trails for bicycling. Many of these trails are multiple-use trails as discussed more fully on page 202.

Ninth, although there are approximately 11,000 miles of trail for winter users, most of these are not available for summer use. This is because approximately 7,000 miles are provided almost exclusively on private lands with winter easements or permits through the Trail Assistance Program. In addition, the Mn/DOT Bikeway Program has identified approximately 18,000 miles of the state's roads that are judged good or fair for bicycling (Figure 7).

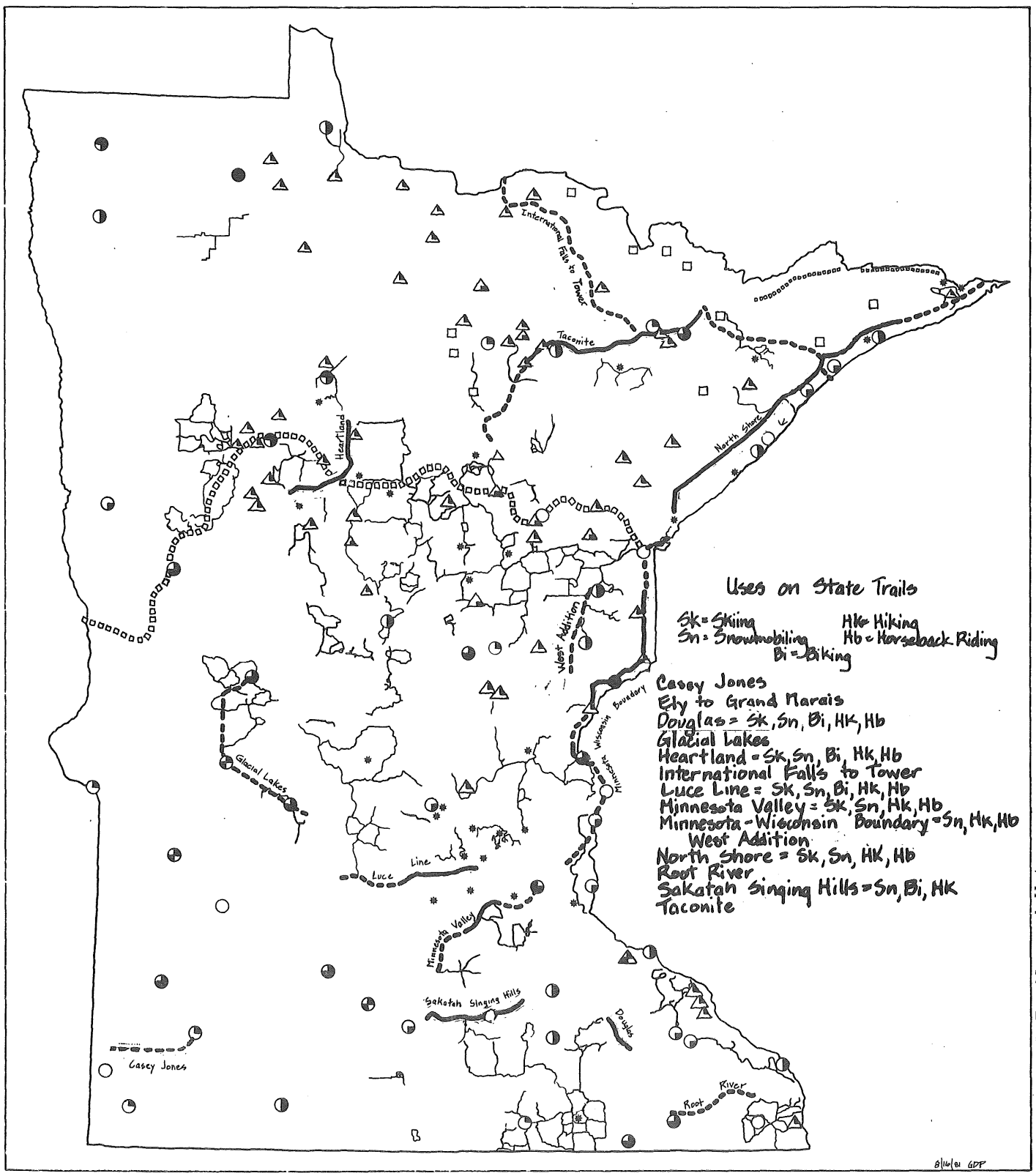


Source: Mn/DOT

MINNESOTA BIKEWAYS

DNR Trail
R.O.W. Trail (off road)
Good/Fair Road with Shoulders
Poor Road with Shoulders
Good/Fair Road

Figure 7.



Source: DNR Trails and Waterways

RECREATIONAL LAND TRAILS

1981: Grants-in-Aid Trails, State Park and Forest Trails
1983: State Trails

AUTHORIZED STATE TRAIL
Proposed | Developed

STATE PARK TRAIL | STATE FOREST TRAIL
- Hiking Only
- Snowmobiling
- Ski Touring
- Horseback Riding
- Bicycling

GRANT-IN-AID TRAIL
- Snowmobile
- Ski Touring
- Horseback Riding

NATIONAL FOREST TRAIL

PROPOSED N. COUNTRY TRAIL

Figure 8.

0 10 20 30 / 10 20 30 40M

MINNESOTA DNR TRAIL PLAN

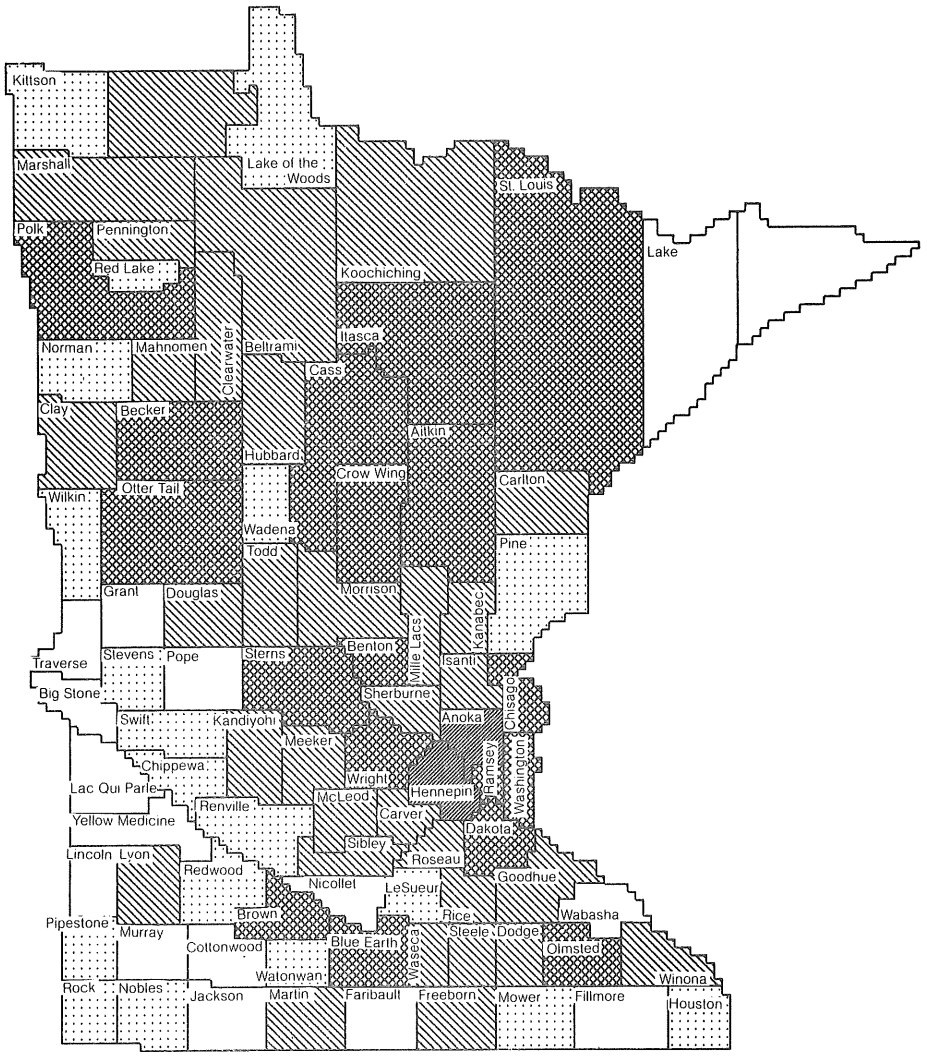
inventory · analysis · alternatives

B. Trail Use

The following five figures show the county-by-county distribution of trail uses, based on derivations from SCORP data by the MN State Planning Agency. For a more complete understanding of how these maps were developed, see the following source:

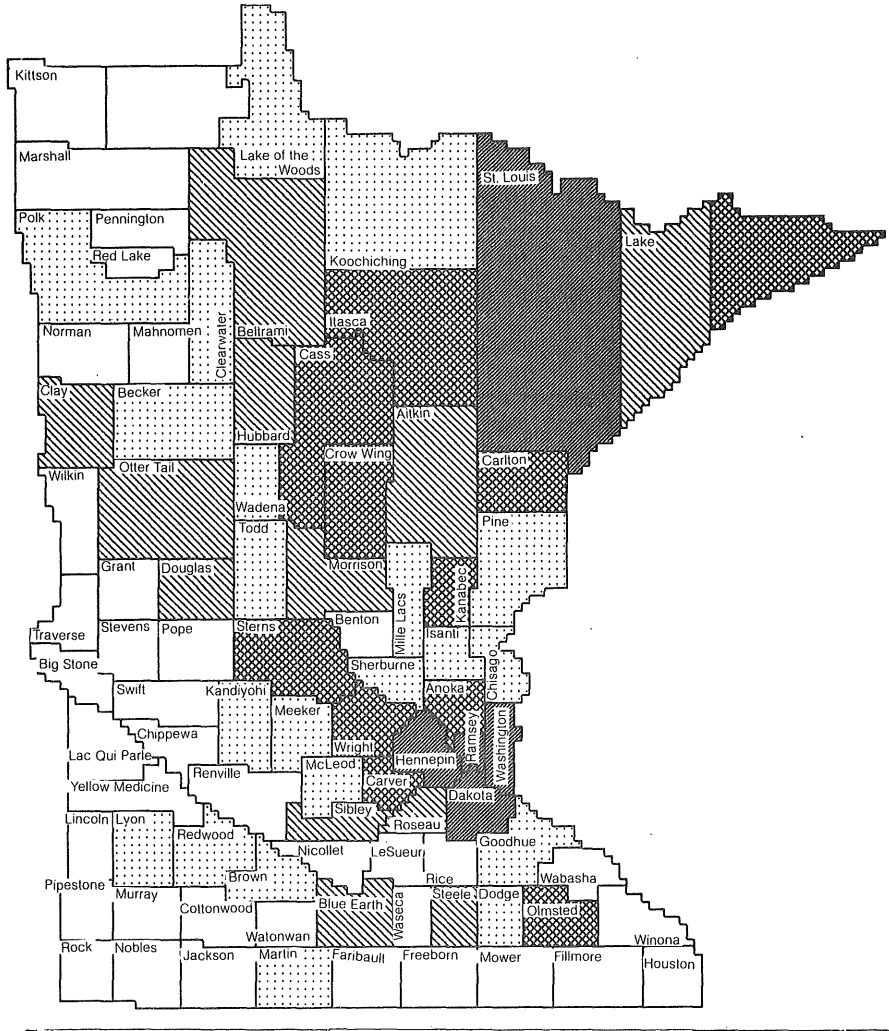
Minnesota State Planning Agency, May 1980. Trails Demand Base Data Report. St. Paul, MN., 50 pages.

For snowmobiling (Figure 9) the counties with the greatest concentration of use are Hennepin and Anoka, according to SCORP. Other counties with high use are also in the Metro Area, including Ramsey; counties in the areas where snowmobiling is promoted as a tourist activity such as Crow Wing, St. Louis, Cass, Aitkin and Itasca; and other urban counties such as Blue Earth (Mankato) and Olmsted (Rochester). Counties with low snowmobiling activity form a band around the western and southern perimeter of the state. The lowest use is in southwestern Minnesota, where snow conditions are not as conducive to snowmobiling. Interestingly, there is very little snowmobiling in Lake or Cook counties.



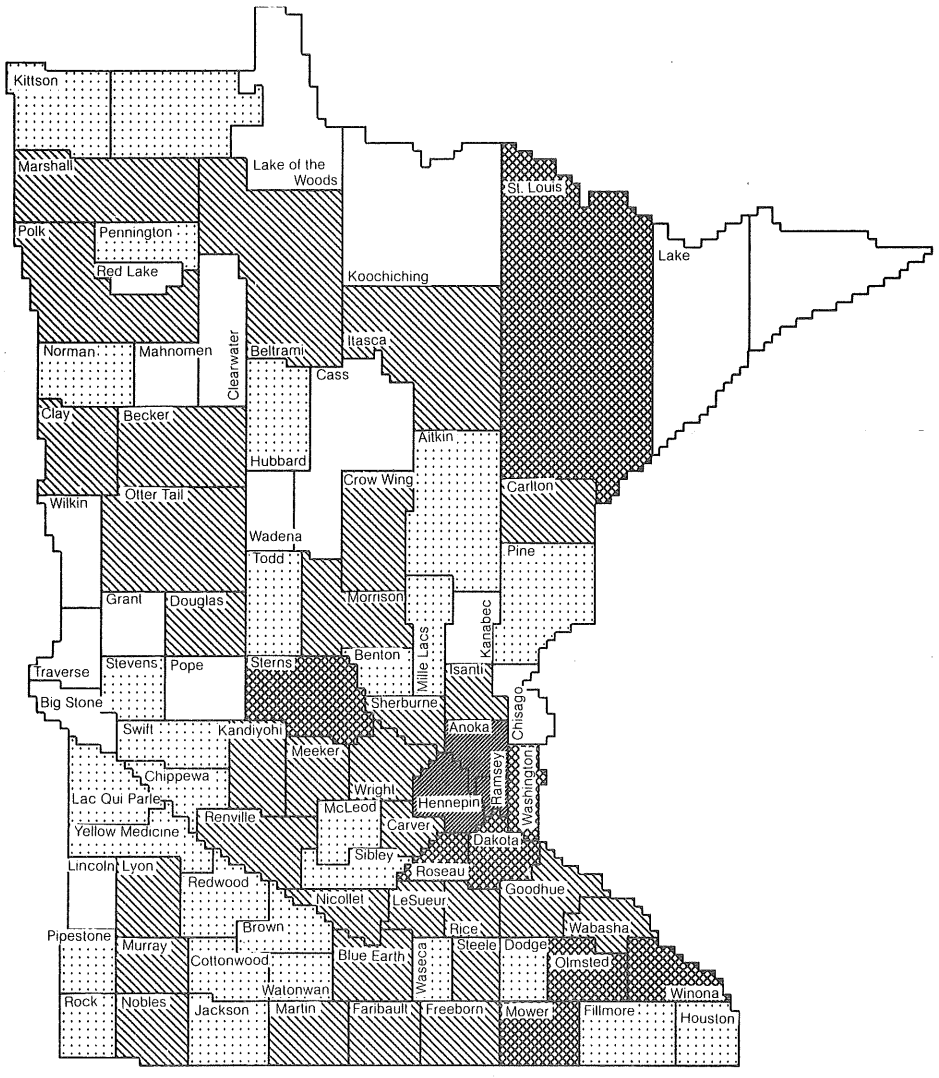
Source: Trails Demand Base Data Report
State Planning Agency 1980

For cross-country skiing (Figure 10) Hennepin County has, by far, the greatest amount of use. Next highest are the other metropolitan area counties and St. Louis County (Duluth and the Iron Range cities). The lowest level of skiing activity occurs in the agricultural areas of western and southern Minnesota. This is due, in part, to both a general lack of places to ski and a lack of interest in this activity. SCORP shows that in RDC 1 (northwest) 6.0% of the population wanted more skiing opportunities and in RDC 8 (southwest), 5.6% did. However in RDC 3 (northeast), and 11 (metro), the figures were 13.1% and 11.9% respectively.



Source: Trails Demand Base Data Report
State Planning Agency 1980

Bicycling (Figure 11) is spread across the state more evenly than any other trail activity. More bicycling occurs in Hennepin County than any other county. Most other urban counties are also high; Anoka, Dakota, Ramsey, Scott and Washington, but not Carver; Stearns (St. Cloud), St. Louis, Mower (Austin), Winona (Winona) and Olmsted. Generally, the counties with the lowest level of use correspond to the counties with low population. There is no apparent correlation between resource quality and intensity of bicycle use. For example, Cass, Cook, and Lake counties, which are usually considered to be high amenity areas, fall into the level of lowest use.



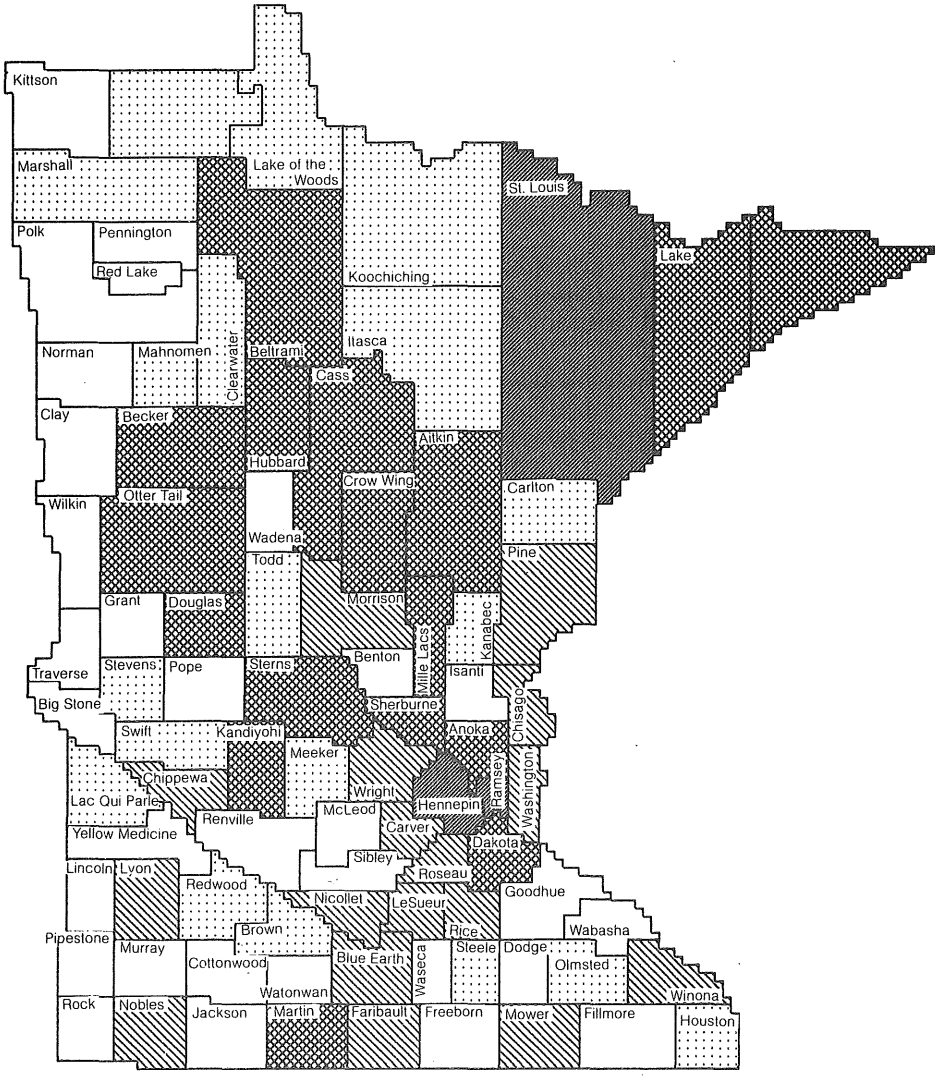
Source: Trails Demand Base Data Report
State Planning Agency 1980

DISTRIBUTION OF BICYCLING
Recreation & Transportation

High Trail Use
Slightly Above Average Trail Use
Near Average Trail Use
Below Average Trail Use
Least Trail Use

Figure 11.

Hiking and backpacking activity (Figure 12), however, does correspond to areas with high-quality resources. The most urban counties, Hennepin, Ramsey and St. Louis, have the highest use. There are, however, state and regional parks with quality hiking trails in these counties. Outside of the urban counties, almost every county with a high level of hiking activity is in a part of the state with quality resources such as: Lake, Cook, Hubbard, Beltrami, Cass, Crow Wing, Aitkin, Mille Lacs, Ottertail and Becker. Most of the western half of the state had very little hiking activity. The counties with predominantly wet terrain in the northern part of the state also had little hiking use.



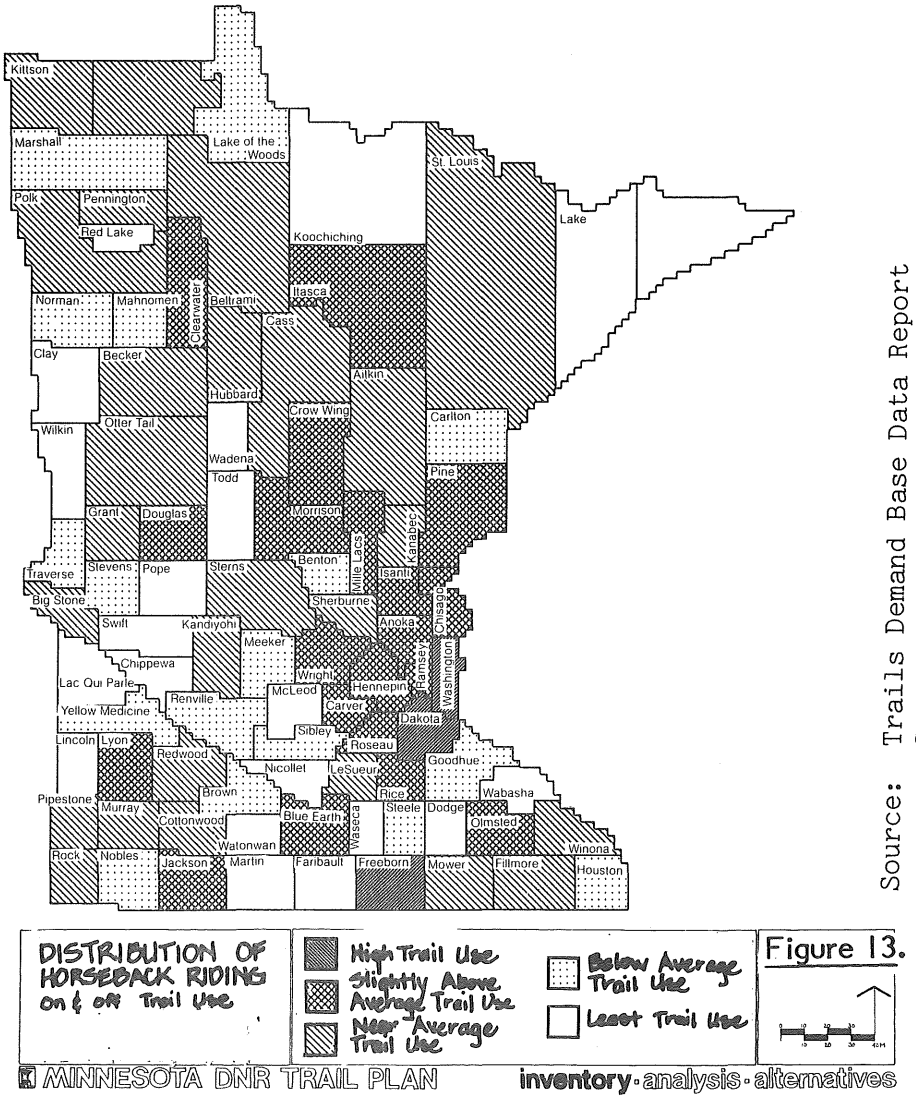
Source: Trails Demand Base Data Report
State Planning Agency 1980

DISTRIBUTION OF HIKING AND BACKPACKING On & Off Trail Use

High Trail Use
Slightly Above Average Trail Use
Near Average Trail Use
Below Average Trail Use
Least Trail Use

Figure 12.

Statewide distribution of horseback riding (Figure 13) use shows a different pattern than the other activities. Use is highest in Washington, Dakota and Freeborn (Albert Lea) counties. There is a cluster of counties with fairly high use near the metro area. These counties include Hennepin, Ramsey, Anoka, Scott and Carver and also Wright, Rice, Chisago and Isanti. Other counties with high use are scattered across the state. These include Blue Earth, Olmsted, Jackson, Lyon, Pine, Mille Lacs, Crow Wing, Morrison, Itasca, Clearwater and Douglas. Counties with very low use also are scattered across the state and include: Lake, Cook and Koochiching in the northeast; Clay, Wilkin and Red Lake in the Red River Valley; Wadena and Todd in the center of the state; and Watonwan, Martin and Faribault in the southern part of the state. Few conclusions can be made about horseback riding activity based upon this first map.



Source: Trails Demand Base Data Report
State Planning Agency 1980

C. Discussion: How Much Is Enough?

Some observers have suggested that the DNR's land acquisition activities be curtailed, at least for a time. They cite the state's recent economic slump, the resulting cutbacks in government spending, the fact that many of the DNR's authorized state trails have not yet been completed, and the fact that there are already nearly 13,000 miles of trail within the state.

Some public comments suggest that the DNR should complete the trails it now has underway, and carefully observe trail use to assess the need for any additions to the trail system. Others have stated that there is still a need for additional trails, because some trails are too crowded, because some areas of the state still have few trails while other areas have many, and because some user groups, such as bicyclists, the physically handicapped and off-road vehicles, users still are not adequately provided for. Allocating trail need by user type is discussed on page 205. The recreation needs of the physically impaired are addressed on page 214 and those of the off-road vehicle user are addressed beginning on page 240.

This chapter examines the related questions of whether sufficient trails are now in place and of where additional trails, if any, should be sited. The degree to which the DNR can properly answer these questions and subsequently provide the services desired by the public ultimately depends on how accurately the DNR can assess the public mood and predict what that mood will be in the future. Before deciding where to build new trails, it is necessary to determine whether new trails are a wise public investment, and to what extent the state should be involved.

An assessment of the demand for (or sufficiency of) recreational trails in Minnesota is a complex undertaking. It could be stated that some uses are now adequately provided for, while others are not. It could be said that some trails are too crowded (on the heaviest use days) for an enjoyable trail experience. But it could

also be said that some of Minnesota's trails receive very little use. And it is evident that the bulk of Minnesota's recreational trail mileage is located in the northeast and central portions of the state (Figure 8), indicating to some that the remainder of the state needs more trails.

Trail forums conducted by the DNR in December 1980 were intended to give members of the public an opportunity to air their opinions on the proper course for the DNR to follow in administering its trails program. In the course of these meetings, calls for more of particular types of trails were common. Yet these meetings also brought forth comments to the effect that, "The DNR should concentrate on better management of what it has," or, "There are enough trails already."

At what point can it be said that Minnesota has enough trails for present and foreseeable future needs? There are several variables to consider in answering this question. The Outdoor Recreation Act specifies that units of the outdoor recreation system should, as a whole, "preserve an accurate representation of Minnesota's natural and cultural heritage." Recreational trails can be sited on historic travel routes or may link historic areas. They can also be sited to display and interpret Minnesota's unique natural resources. Conceivably, the DNR's acquisition program will not be complete until this statutory mandate has been satisfied.

Another important factor to consider is crowding on trails. Most Minnesota trail users enjoy trails for their natural qualities and the opportunity they offer to escape for a time the pressures of everyday living. A trail containing too many other users becomes the very thing the user goes to a trail to avoid. Trail crowding levels during peak day use are shown in Figure 14. The methodology for these computations is found in Appendix J.

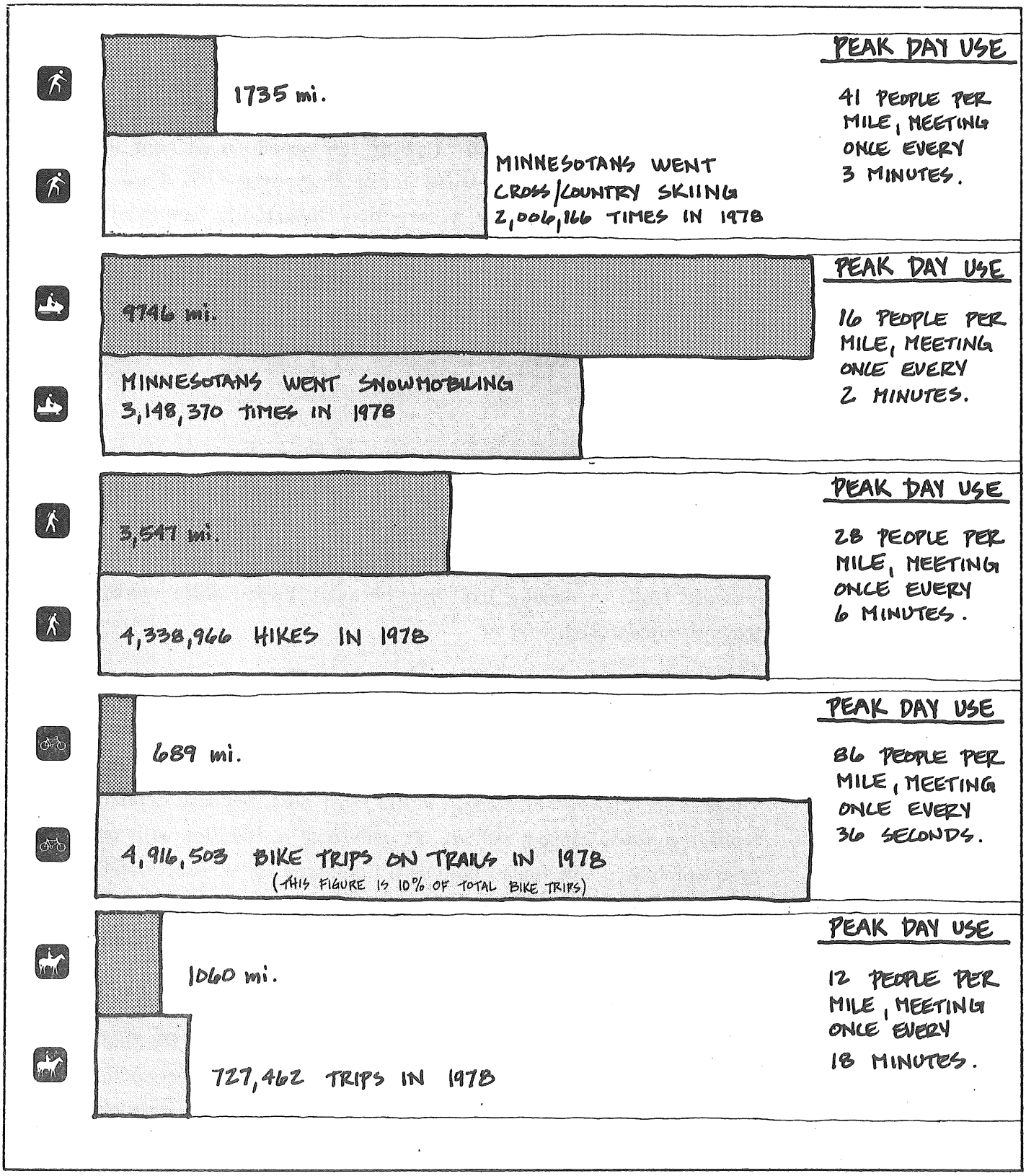
The difficulty for trail planning is in defining exactly how many users are "too many," and in deciding what to do about it. A trail

user's feeling of how crowded a trail is probably changes from day to day and from region to region. The same person to whom a rather congested metropolitan area trail is quite acceptable may feel crowded if he meets only five or ten people in an hour in northeastern Minnesota. Along these lines, the U.S. Forest Service has worked with the "Recreation Opportunity Spectrum" which recognizes the important role that the setting plays in defining user expectations. It is conceivable that the DNR will not have built enough trails until the "crowding level" (or number of encounters) on trails is acceptable to those who use them, whatever this level is.

Defining acceptable crowding levels will likely be increasingly important in the future. However, merely building another trail near a crowded trail may not solve the problem, especially if the new trail does not have qualities as desirable as those of the crowded trail. A popular trail may be overcrowded while nearby trails are underused.

Finally, the public may simply want trails in certain areas, regardless of crowding conditions elsewhere. Specific alignment proposals received from the public usually involve a favorite area. These proposals are not made, for the most part, because certain trails are too crowded; rather, an individual is familiar with an area which he or she feels would be a fine place for a recreational trail. Conceivably DNR will not have helped to fund enough trails until suitable proposals enjoying the most public support have been completed.

Of course, the legislature, through its appropriations, has the final word on how many trails DNR will build. Present economic conditions suggest that any future additions to Minnesota's recreational trail system will require considerable public support before the legislature will finance them.



Source: Derived by DNR Trails and Waterways Unit using S.C.O.R.P. figures.

1980 TRAIL MILEAGE AND 1978 LEVELS OF USE · MINNESOTA

Based on methodology described in Appendix

Figure 14.

D. Supply and Demand Indicators

To explore the question of trail supply and demand, several sources of information were used:

1. public response to questions posed at a statewide series of meetings and displays in the spring of 1981;
2. 1978 SCORP data and projections;
3. documented use of four existing state trails;
4. multi-seasonal use of existing DNR trails;
5. snowmobile registration trends;
6. bicycle sales and surveys; and
7. additional observations and recommendations by the public and by DNR field staff.

This investigation of trail supply and demand as shown in Figure 14 considers all trails in the state, whether operated by federal, state or local governments, or by private groups.

1. Public Response

At the spring 1981 series of meetings and displays, information was presented on trail mileage, trail use, crowding on trails, and 1985 crowding projections for each of the five major trail uses (see Figure 14). For a listing of these meetings, see Appendix H.

The public was asked to indicate whether more trails, fewer trails, or no change was desired for each type of trail use, based on crowding or other factors. The results have been tabulated in Figure 15.[1]

(Keep in mind that this survey did not use a random sample of Minnesotans. The results represent the opinions of a self-selected group of people who have some interest in trails, either positive or negative.)

---

[1] The survey instrument, with statewide tabulations, is included in Appendix N.

The public response to the trail supply question indicated that, on a statewide basis, Minnesotans interested in trails need or want more trails. Overall, 62 percent opted for more trails, 30 percent said there are enough, and 8 percent said some trails should be eliminated. Response on individual trail types was generally the same with the exception of snowmobile trails, of which most people thought there were already enough (Figure 15).

Figure 15: Responses to Questionnaire on Supply and Demand for Statewide Trails, 7/16/81.

Trail Demand	Total # of Responses	More Trails		No Change		Fewer Trails	
		# of responses	% of user group	#	%	#	%
All Uses	2413	1489	62	716	30	208	8
Bicycling	585	417	72	136	23	32	5
XC Skiing	578	435	75	117	20	26	5
Hiking	581	409	70	154	27	18	3
Horseback*	80	51	64	19	24	10	12
Snowmobiling	589	177	30	290	49	122	21

* Write-in only -- not on questionnaire.

This general pattern was repeated in the response to the question, "What trail activity should the DNR emphasize?" Sixty-three percent opted for expansion-related activities (planning, 9%; acquisition, 19%; and development, 35%), while 35 percent recommended maintaining the status quo (management and maintenance).

Written (and some verbal) comments offered by those attending the meetings also reflect a pro-expansion stance. Although strong anti-trail feelings were exhibited by some (e.g.,

"Trails are a foolish waste of money," and "Sell the Root River Trail"), they were outnumbered nearly 4-to-1 by those urging cautious expansion (e.g., "Develop land already owned," and "Connect trails already built"), and were outnumbered more than 10-to-1 by those advocating the development of new trails (e.g., "Want horseback trails in southwestern MN," and "Why aren't there any finished biking and hiking trails . . . older people are biking more and more.").

2. SCORP Indicators

One of the functions of SCORP is to predict the future of recreation in Minnesota so that agencies charged with providing it can set future goals and objectives. Based on surveys both of the general population and of identified trail users, two basic indicators were derived: (1) expressed desire/level of need for trails, and (2) predicted changes in participation levels in the future.

Two cautions are in order in using these data. First, the data represent averages, which can be misleading because they may mask important variables. Rigid interpretation of the data may provide a picture of the "averaged" user rather than the "average" user. Furthermore, a determination to provide for the average user may effectively eliminate a sizeable portion of the clientele from the consideration to which their numbers would otherwise entitle them. This problem is discussed further on page 208. Second, SCORP was written before the current economic slump. The same surveys might yield different results if taken today. Nonetheless, these data are the best that have been available for recreation planning in Minnesota.

(a) Expressed Desire/Level of Need

Analysis of the data on expressed desire for more trails (Figure 17, p. 55, column 2) indicated that more trails were desired by 2 to 19 percent of Minnesotans, depending on

the type of trail. Additional bicycle trails were most desired (19%); additional horseback trails were least desired (2%).

Respondents who requested more trail opportunities were asked to rate how strongly they felt the need for the additional opportunities on a scale of 1 (low) to 5 (high). As can be seen in Figure 17, column 3, responses ranged from 2.9 to 3.3 for the selected uses. SCORP regards any reading of 3.0 or above as an indication that a high level of need exists.

(b) Predicted Changes in Participation Levels

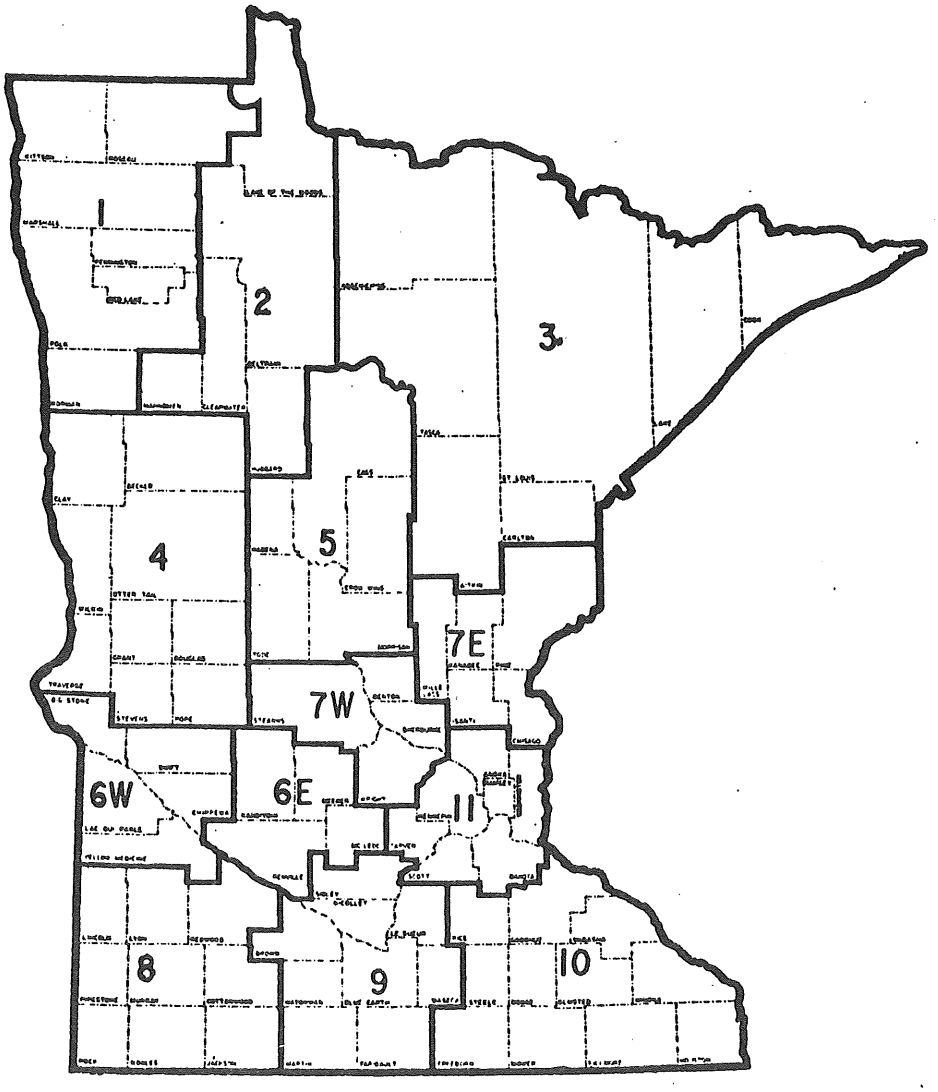
In the SCORP process, predictions of future needs for recreational trails were based on demographic characterizations of current Minnesota trail users, and demographic forecasts to determine what proportions of the state's population would compose these user types in the target years. If a given age-sex group were found in 1978 to contain the bulk of a particular type of trail user, demographically predicted changes in the size of this group over time were hypothesized to be in direct proportion to changes in the amount of trail use in the same period.

Figure 16 shows the regional variations in predicted participation in trail uses within Minnesota's Economic Development Regions. It is obvious that considerable variation exists. Only 5 regions reflected statewide trends for each of the uses that were considered. Three regions differed in 3 of the uses.

Figure 16: SCORP Projections of Recreation Occasions Occurring within Economic Development Regions between 1978 and 1990.

	1	2	3	4	5	6E	6W	7E	7W	8	9	10	11	Statewide
Bicycling	-	+	-	+	-	+	-	+	+	-	+	+	+	+ 2.5%
Cross-Country Skiing	+	+	+	+	-	-	-	+	+	-	+	+	+	+ 11.4%
Snowmobile	+	+	NC	+	+	+	-	+	+	-	+	+	+	+ 6.6%
Hiking	+	+	+	+	+	+	NC	+	+	+	+	+	+	+ 10.5%
Horseback Riding	-	-	-	-	+	-	+	+	+	-	-	-	-	- 1.4%

+ = Increase
- = Decrease
NC = Stay approximately the same



Columns 6 and 7 of Figure 17 show the SCORP-predicted changes in participation levels by 1985 and 1990. A decline in horseback and bicycle use are projected by 1985, but a rebound for bicycle use is expected by 1990. The implications for planning are not clear. One uncertainty involves use of these SCORP projections, which were not designed to detect new users who might be added due to enhanced program emphasis, technological improvements, or other changes in the world which would influence use (e.g., energy availability). It is also uncertain whether the projected decline in use would eliminate the need for more trails, if there is a significant lack of trail opportunities for current users.

In summary, two observations about the SCORP data can be made:

- Additional bicycle trails are the most desired trail type, though some desire was expressed for more of all kinds of trails.
- Age-sex group projections indicate long-term growth in all trail activities, with the most growth occurring in cross-country skiing and hiking and the least in horseback riding.

Figure 17: 1978 SCORP Indicators of Relative Need for Trail Activities.

	(1) 1980 Per Capita Participation Rates	(2) % of Total Respondents Desiring More Trail Opportunities	(3) Expressed Level of Need 1-5 scale	(4) Utility Index*	(5) Mean Age (years)	(6) Age-Sex Group Projected Changes in Participation Levels 1978-1985	(7) 1978-1990
Bicycling	11.9	18.9	3.3	62	NA	- 3.6%	+ 2.5%
X-C Skiing	1.1	10.5	3.0	32	31.4	+ 4.8%	+11.4%
Snowmobiling	2.7	8.7	2.9	25	33	+ 1.7%	+ 6.6%
Hiking	1.2	7.1	3.1	22	NA	+ 5.8%	+10.5%
Horseback Riding	0.2	2.1	3.2	7	NA	- 4.6%	- 1.4%

Source: 1978 SCORP

* "Utility index" is derived by multiplying column 2 by column 3, and is defined as the relative public benefit that could be achieved by increasing the opportunity for an activity.

3. Use of Existing Trails

The DNR has monitored summer use on four state trails through on-site counting and surveys of users. Two trails, the Luce Line which runs from suburban Minneapolis to Winsted, and the Heartland which connects Park Rapids and Walker in northern Minnesota, have been monitored since the summer of 1980. The other two, the Sakatah Singing Hills which connects Faribault and Mankato, and the Douglas just outside of Rochester, have been monitored since the summer of 1981.

The preliminary findings of the monitoring program show that during the summer:

- approximately 54,000 user occasions took place on the Luce Line State Trail;
- approximately 37,000 user occasions took place on the Heartland State Trail;
- approximately 5,000 user occasions took place on the Sakatah Singing Hills State Trail;
- approximately 13,000 user occasions took place on the Douglas State Trail;
- approximately 58 percent of all summer use was by bicyclists.

For comparison, 40,000 people every year are estimated by the Wisconsin DNR to bicycle the well-known Sparta-Elroy Trail near La Crosse, Wisconsin.

It should be noted that 1981 was the first year that the Sakatah Singing Hills State Trail was completely developed. As trails become better known over time, they typically experience proportionate increases in use.

4. Multi-Seasonal Use of Existing Trails

While most state and unit trails are for multiple uses, many are now used during only one season. The SCORP inventory of

trails shows that at least 9 percent* of the state's estimated total trail mileage is unusable during the winter months. During the summer, at least 45 percent** of the total mileage is unavailable for use.

5. Snowmobile Registration Trends

Records of snowmobile registrations are valuable for planning purposes: registration is mandatory and thus can be assumed to be a fair indicator of the number of machines in Minnesota; and records have been kept since 1968.

Figure 18 shows that a peak in first-time snowmobile registrations occurred in 1972, with a leveling off and slight downward trend to the present. Total cumulative registrations for 1981 had also declined somewhat to approximately 227,000 snowmobiles.

This downward trend continued to 207,000 current registrations by July 1, 1983. Figure 92 (Appendix A) shows the distribution of these registrations across the state.

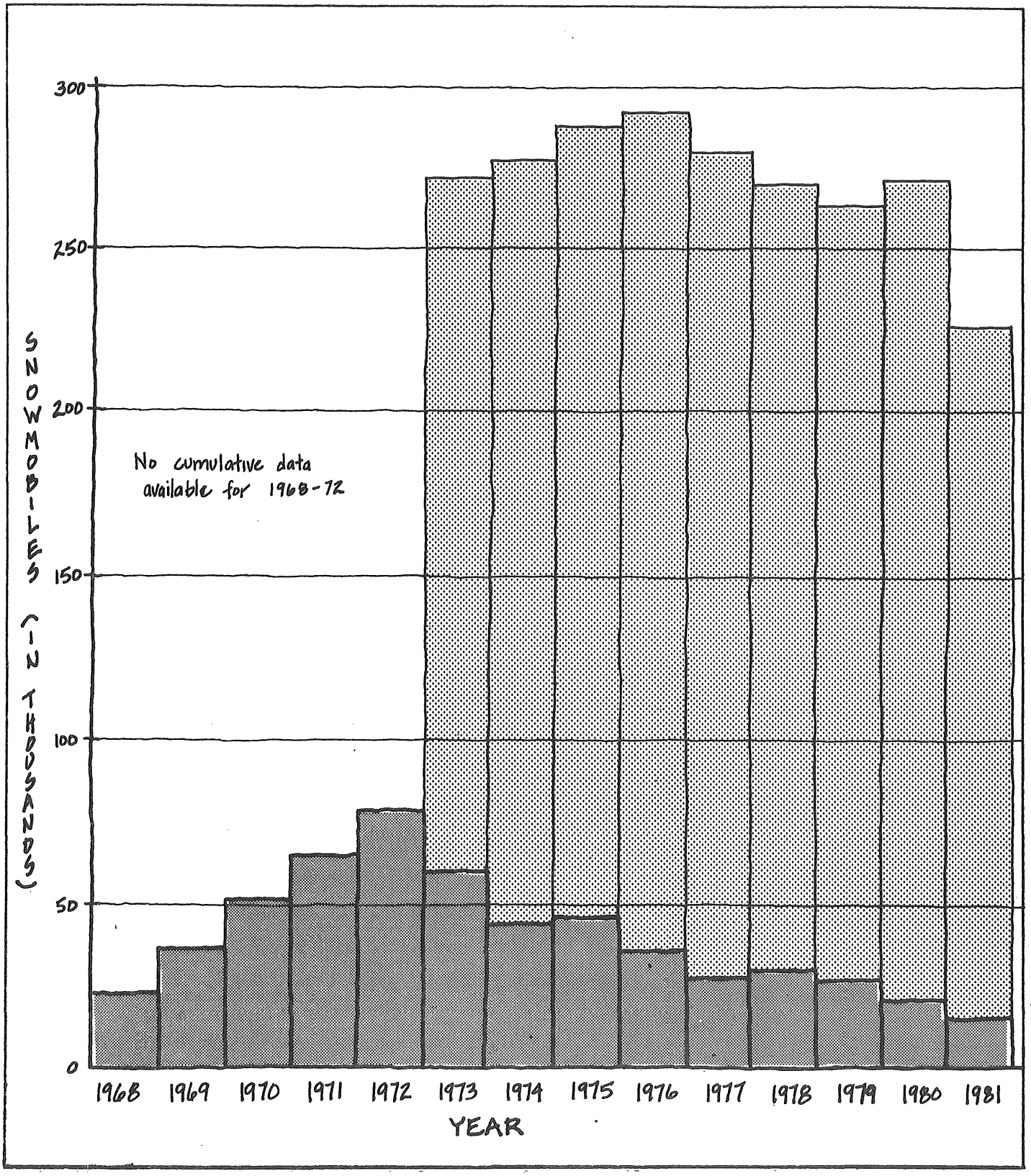
6. Bicycle/Equipment Sales

Bicycle sales figures indicate that the sport of bicycle touring has grown significantly in the past few years. According to figures from the Bicycle Manufacturers Association, bicycle sales rose steadily in the late 1970s and are now leveling off nationwide at approximately 10 million per year. Fifty-nine percent of sales are of the lightweight type of bicycle used in touring.

Bicycle touring equipment sales volume is also up. In the early 1980s touring equipment sales volume rose from 20 percent to 100 percent per year, depending on the manufacturer. Major

* non-skier, non-snowmobiler mileage.

** cumulative total of all summer use, less total mileage.



Source: DNR License Bureau

YEARLY SNOWMOBILE REGISTRATIONS IN MINNESOTA

Note: for Fiscal Year ending June 30

First year registrations (estimated)
Cumulative current 3 year registration

Figure 18.

bicycle manufacturers, who expect touring to compose a large share of the 1980s market, are gearing up for the young adult market, which does the majority of touring.

The number of commercial bicycle touring organizations in this country has also increased. In the early 1970s only a few such organizations existed; now there are well over 100. Subscriptions to Bicycling Magazine have also doubled from 1979 to 1981, to 184,500.

Results of Bicycling Magazine's 1980 subscriber survey indicate an increasing interest in bicycle touring. Sixty-seven percent of the magazine's subscribers use bikes for short-distance touring. A substantial number of them camp overnight. A majority of subscribers own touring equipment, and almost half planned to buy touring equipment in the next year.

7. Public and DNR Staff Observations

A substantial number of people, both at the spring 1981 meetings and displays and at other meetings with interest groups, indicated that they were unaware of the existence and location of available trails. The same concern was voiced by DNR trails staff, who identified more effective information dissemination to the public as a high-priority task (see Appendices H and I).

DNR staff also recommended more monitoring of actual trail use before launching any major new trail initiatives as the single most important need of the DNR Trails and Waterways Unit.

E. Conclusions

At a general statewide level, most of the information presented so far seems to support expansion of bicycle, ski and hiking trails, and not to support additional snowmobile or horseback trails. In specific local areas, of course, these conclusions would not necessarily hold.

Figure 19: Summary of Supply and Demand Indicators.

	Trail Type Indicator	Bike	Ski	Snow-mobile	Hike	Horse
a)	June '81 public mtg response	1	1	-1	1	1
b-1)	SCORP: utility index	1	0	0	0	-1
b-2)	SCORP projections	-1	1	0	1	-1
c)	Use of 4 existing trails	0	0	0	0	0
d)	Multi-seasonal use of trails	0*	-1	0**	-1	-1
e)	Other observations	0	0	0	0	0
	TOTAL: General relative support for additional trail devel.	1	1	-1	1	-2
f)	Registrations/equip. sales	1	NA	-1	NA	NA
TOTAL: including registrations/sales data		2	NA	-2	NA	NA

1 = evidence tends to support the development of more trails
0 = indicates uncertainty; need to proceed with caution
-1 = evidence tends not to support development of more trails

* Any existing trails would require a considerable investment in surfacing in order to be suitable for bicycling.

** There may be some existing trails that could accommodate snowmobile use, but not many, due to restrictions on their use in some areas.

Note: Interpretations of the SCORP figures are provided by Bill Becker to Tom Balcom memo, "State Trail Plan Comments," Sept. 10, 1982.

The implication seems to be that there are not enough trails. However, a number of factors cloud this conclusion:

- With the possible exception of those for bicycling, the SUPPLY AND DEMAND INDICATORS ARE INCONSISTENT--for any given use, some indicate a need for expansion, others imply just the reverse. And because of the possibility of roadways removing the need for many bicycle trails (see page 210) some caution is in order here as well.
- The LACK OF PUBLIC AWARENESS of existing trails suggests that people expressing a desire for more trails may simply not know of trails already in existence.
- With the exception of four state trails, the DNR DOES NOT KNOW, WITH ANY DEGREE OF CERTAINTY, HOW MUCH USE individual trails are receiving.
- While SCORP projects increases in participation levels for most trail uses through 1990, it is likely that EXISTING TRAILS CAN HANDLE ADDITIONAL USE.

The above considerations, the supply and demand indicators, and questions as to the appropriateness of the locations of existing trails, combine to make one of three different conclusions possible:

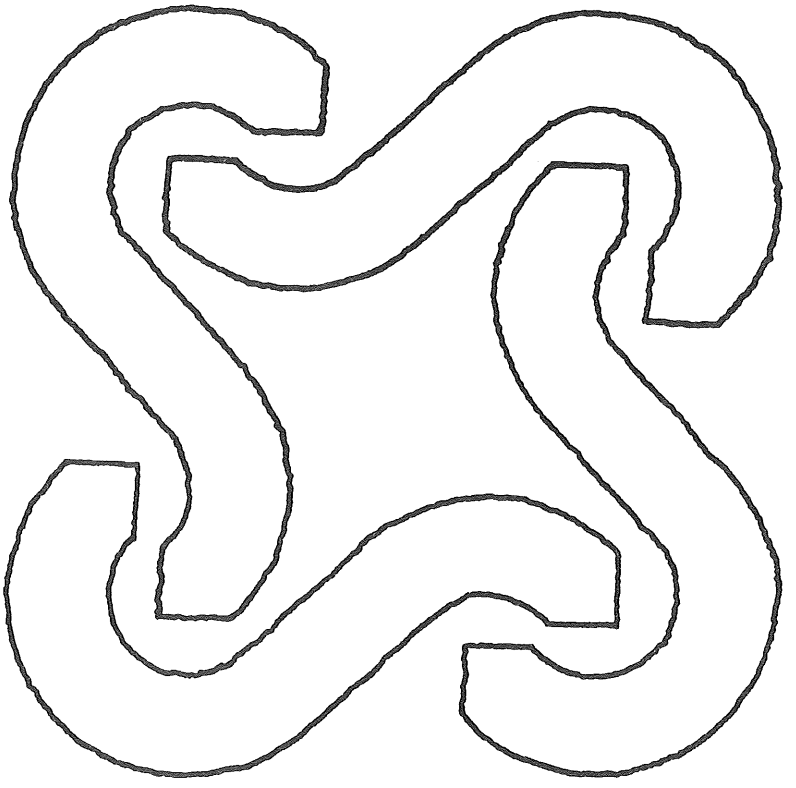
1. There are not, in fact, enough trails (therefore more should be built); or
2. there are enough trails, but not in the right locations, and/or not of the appropriate type or quality (therefore appropriate modifications should be made); or
3. there are enough good trails, but people are not aware that they exist (therefore information should be more effectively disseminated to the public).

Particularly in view of current economic constraints and the DNR's desire to stress quality over quantity, it seems wise to give the benefit of the doubt to the third, and to a degree, the second, conclusions. Therefore, a period of limited growth and extensive use monitoring appears indicated.

Dramatic views of the Bluffiands from the Mississippi Valley floor characterize this bicycle trail developed by the city of Winona.

4

Trail Location

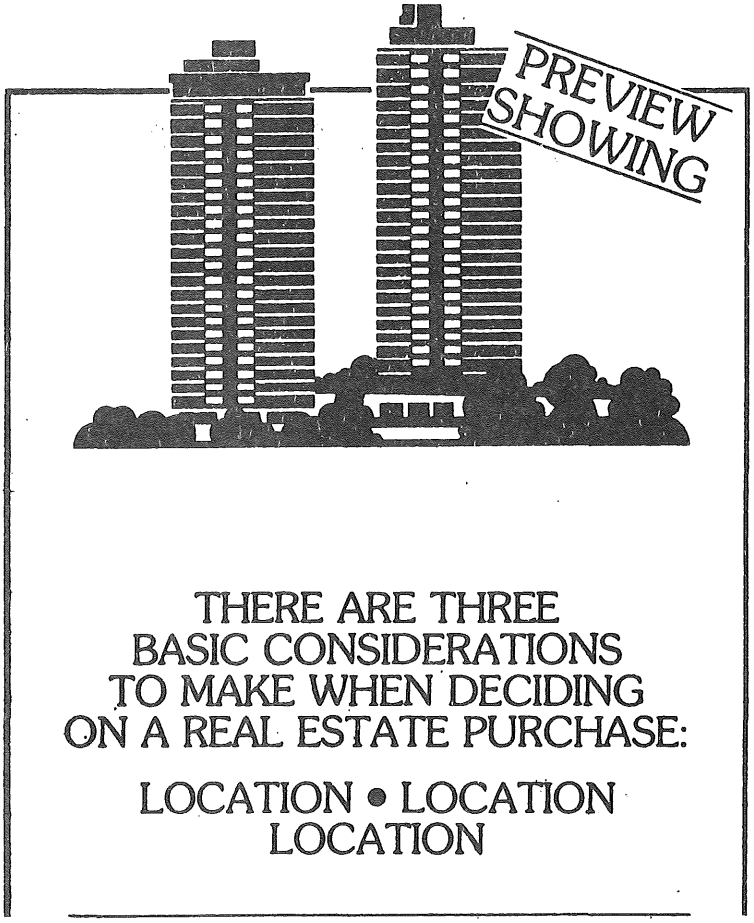


If you were to ask a realtor what the three most important factors are in determining the value of a piece of real estate, he or she would likely say, "Location, location, and location"--location vis-a-vis the markets, location vis-a-vis amenities and location vis-a-vis services.

So it is with trails. No matter how much effort is put into a trail, if the state has to acquire new land it will have only marginal value as a public investment unless it is in a good location to start with.

This section identifies criteria and a process to determine optimum locations for trails in general. The criteria will later be combined with other factors in the detailed siting of trails.

Figure 20: Importance of Location.



A. Location Criteria

Based on recommendations by the public, SCORP survey data, professional literature, DNR trail policies and the Outdoor Recreation Act (MN Stat. 86A), nine primary trail location criteric were formulated and mapped. The criteria were:

a. topographic roughness;
b. vegetative diversity;
c. proximity to water;
d. (lack of) agricultural suitability;
e. historic travel routes;
f. proximity to resorts and campgrounds;
g. proximity to, and frequency of, public transportation services;
h. proximity to population; and
i. location of public land.

Only raw data maps, not intermediate scoring and overlay maps, are included in this draft. Other maps useful in discussing location criteria have been included in Appendix A.

Since the scale at which mapping was done was very small (1:1,056,000) and since trails are relatively small (narrow), mapped areas are only search areas most likely to contain optimum trail locations. These and other location criteria must be subsequently applied to, and satisfied by, any specific proposed trail.

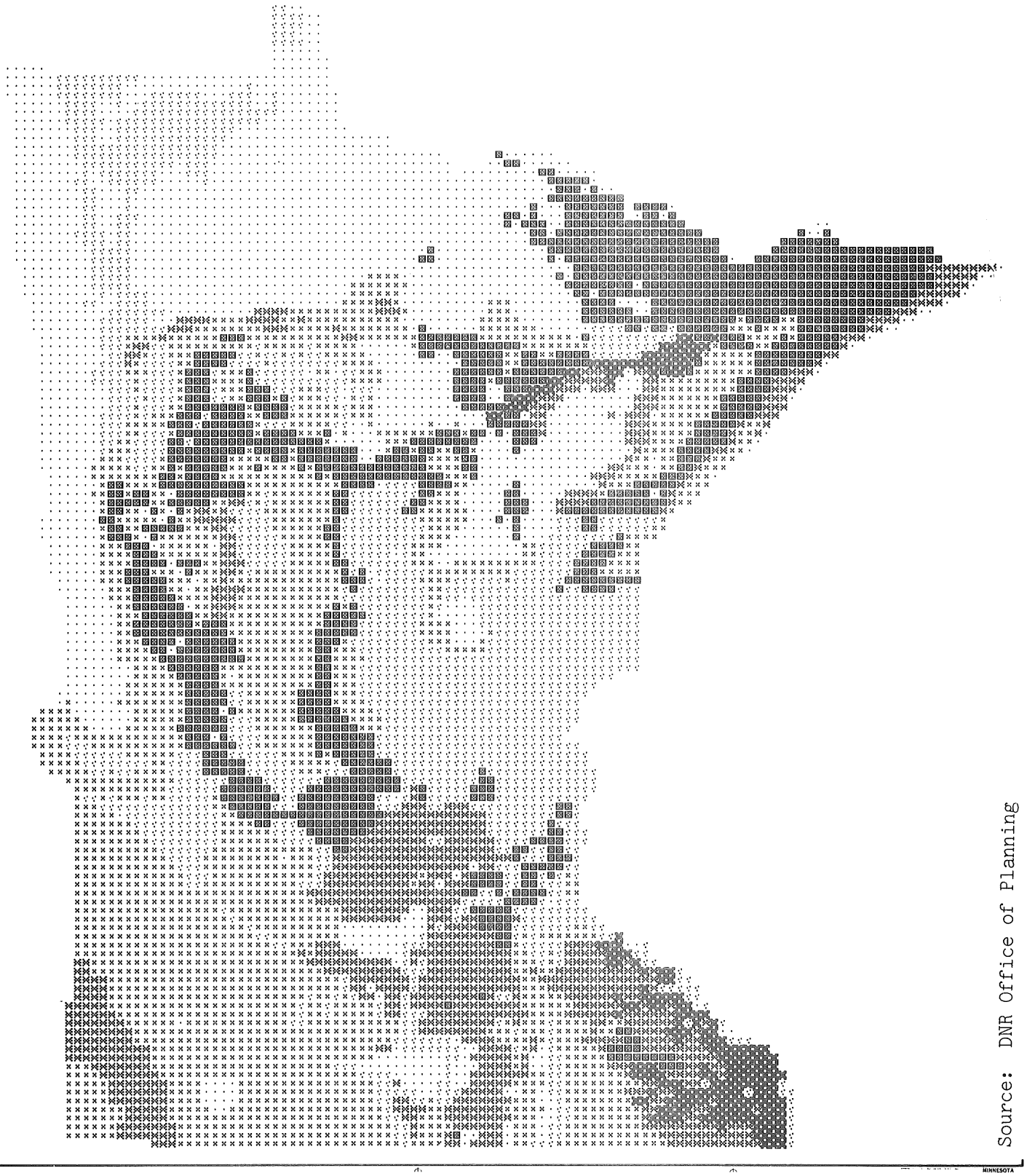
I-3 Topographic Roughness, Proximity to Water and Vegetative Diversity (Figures 21, 22, 23)

a. Background

These three criteria have been shown by numerous researchers to be important contributors to scenic quality (see Visual Inventory for Potential Trails, DNR Trails and Waterways Unit, Schomaker, April 1980 draft, p. 10). Scenic trails were requested by the public both in the December 1980 forums and in several subsequent meetings with user groups. SCORP data also show that scenic quality is important. Ski-tourers, for example, felt "trails should pass along rivers, through woods and open areas, through hilly terrain." The Outdoor Recreation Act (ORA) states that possession of "outstanding scenic beauty" is one way for a trail to qualify as a state trail. DNR trail policy interprets this as "a variety of viewing opportunities, vegetation, topography, views of water . . . river valleys, lakeshore ridges . . . ."

b. Approach

Topographic roughness and proximity to water were computer-mapped by the SPA Land Management Information Center (LMIC) through the DNR Office of Planning and Research. For topographic roughness, areas of the state were assigned scores ranging from 5 points for slopes greater than 7 percent, to 0 points for slopes less than 1 percent. For proximity to water, areas received from 5 to 0 points based on a visual identification and mapping of areas with high (5 points) and low (1 point) concentrations of water. All water was included, on the assumption that "non-recreational" waters, such as marshes, while not directly usable by trail users, were likely to compensate by having good wildlife viewing opportunities.



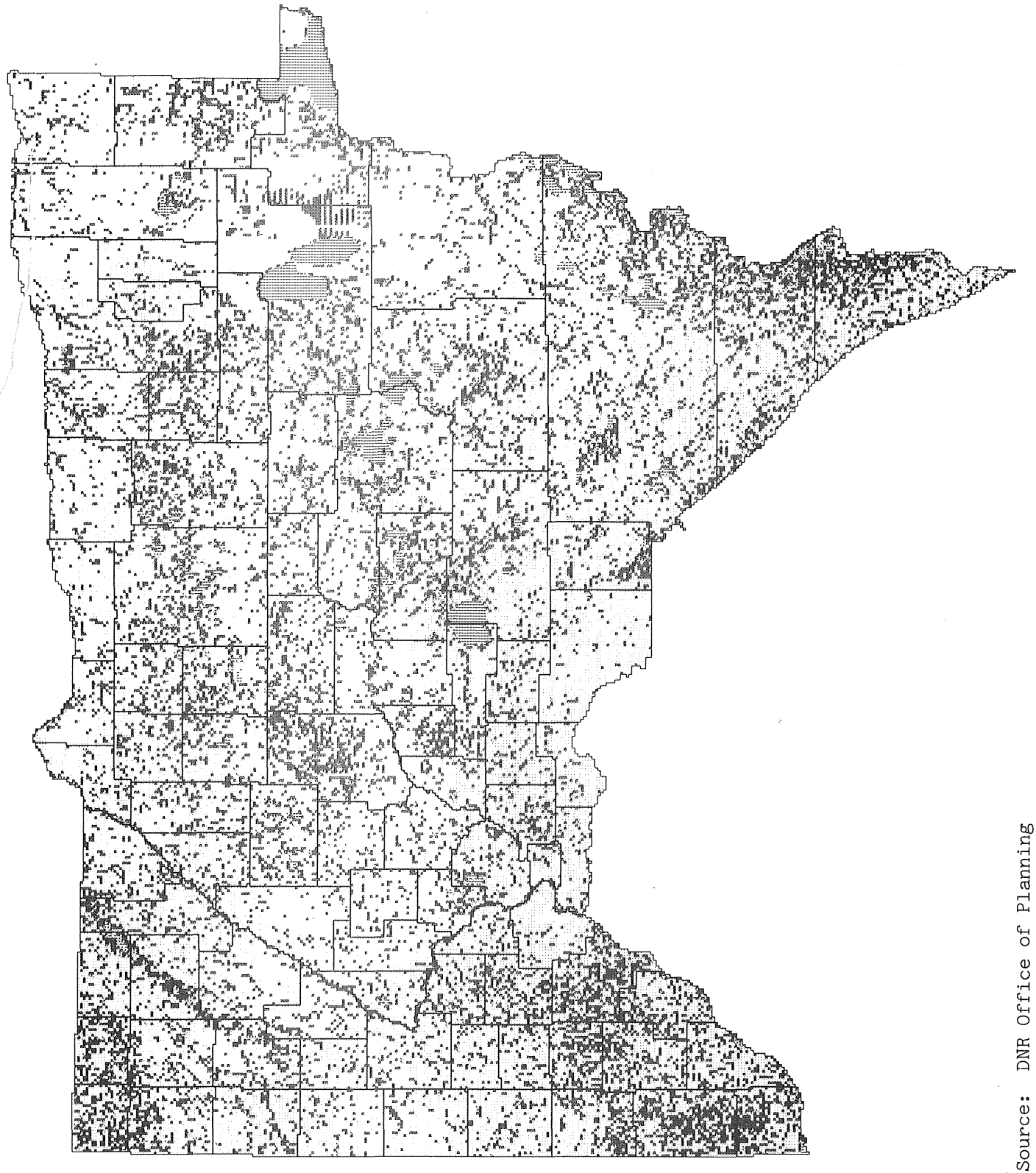
Source: DNR Office of Planning

TOPOGRAPHIC ROUGHNESS

Average Slope within each 5 Kilometer square cell

Average Slope				
	Less than 1%	2147 cells	23.7%	85880 acres
	1-2%	1800 cells	19.8%	72000 acres
	3-4%	2425 cells	26.7%	97040 acres
	5-6%	1005 cells	11.1%	40240 acres
	7-10%	1484 cells	16.4%	59360 acres
	11% and above	207 cells	2.3%	8280 acres

Figure 21.



Source: DNR Office of Planning

PROXIMITY TO WATER

Number of 40 acre cells per section with water

- None · 13,370 cells · 15.7% · 534,800 acres
- 1-8 · 50,151 cells · 59.0% · 2006,040 acres
- 9-13 · 17,568 cells · 20.7% · 702,720 acres
- 14-15 · 1,751 cells · 2.1% · 70,040 acres
- 16 · 2215 cells · 2.6% · 88,600 acres

Figure 22.

MINNESOTA DNR TRAIL PLAN **inventory · analysis · alternatives**

Source: DNR Office of Planning

VEGETATION BY FOREST COVER TYPE

...by dominant type within a one mile section

- Coniferous
  - Pine
  - Spruce-Fir
- Deciduous
  - Oak
  - Elm-Ash-Cottonwood
  - Maple-Basswood
  - Aspen-Birch
- Open
  - Unproductive Forest Land (Swamp Conifers)
  - Non-Forest Land

Figure 23.

Areas of vegetative diversity were identified and scored, based on analysis of the LMIC state forest cover type map, as follows:

- coniferous and deciduous with openings = 5 points
- deciduous and coniferous without openings, or deciduous with openings = 3 points
- deciduous without openings = 1 point
- all open = 0 points

4. (Lack of) Agricultural Suitability (Figure 24)

   a. Background

      The public has suggested at several recent trail planning meetings, including the December 1980 forums, that trails avoid agricultural land. ORA requires that trail development take into consideration "other multiple land use activities."

   b. Approach

      Four of the location criteria (topographic roughness, proximity to water, vegetative diversity and proximity to resorts and campgrounds (Figure 26), in total accounting for 73 percent of the location score--see page 84) all tend to result in low scores for agricultural areas. However, in order to ensure that this was the case, an additional factor, agricultural productivity, was also used.

      Using an LMIC computer-generated map of five classifications of agricultural productivity, areas were scored for trail suitability from 5 points for lowest agricultural productivity to 1 point for highest agricultural productivity.

Source: Land Management Information Center

AGRICULTURAL PRODUCTIVITY

... generalized to 5 Kilometer square cells

	# of Cells	Acres	Productivity Group
Greatest Productivity	1204	48,150	1
	1457	58,280	2A, 2B
	2074	82,950	3A, 3B, 3C, 3D, 3E
	1836	73,440	4A, 4B, 4C
Least Productivity	2499	99,950	5A, 5B, 5C, 5D, 5E, 5F

Figure 24.

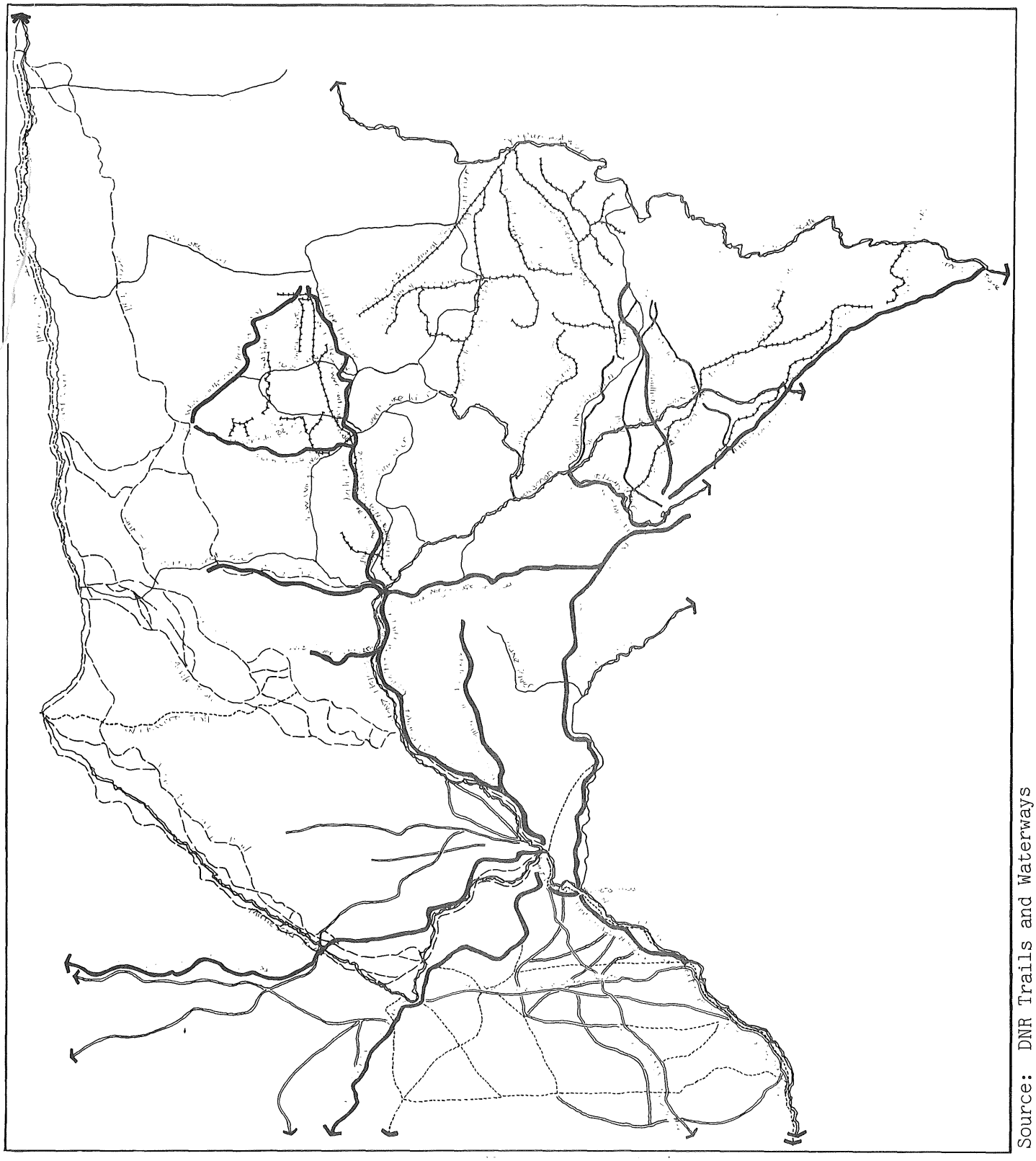
5. Historic Travel Routes (Figure 25)

a. Background

People at several interest group meetings felt that historic trails were of special value. ORA states that "travel along a route which is historically significant" is one way for a trail to qualify as a state trail.

b. Approach

The locations of historic trails were researched and mapped with the help of the Minnesota Historical Society. Areas on the map were then scored according to density of historic routes, from 5 points for high density to 1 point for low density.



Source: DNR Trails and Waterways

HISTORIC TRAVEL ROUTES

- Major Voyageur Routes
- Minor Voyageur Routes
- Red River Oxcart Trails
- Early Settler Trails
- Stage Routes
- Early Government Roads
- Mining Routes
- Logging Railroad Routes

Figure 25.

0 10 20 30 10 20 30 40M

6. Proximity to Resorts and Campgrounds (Figure 26)

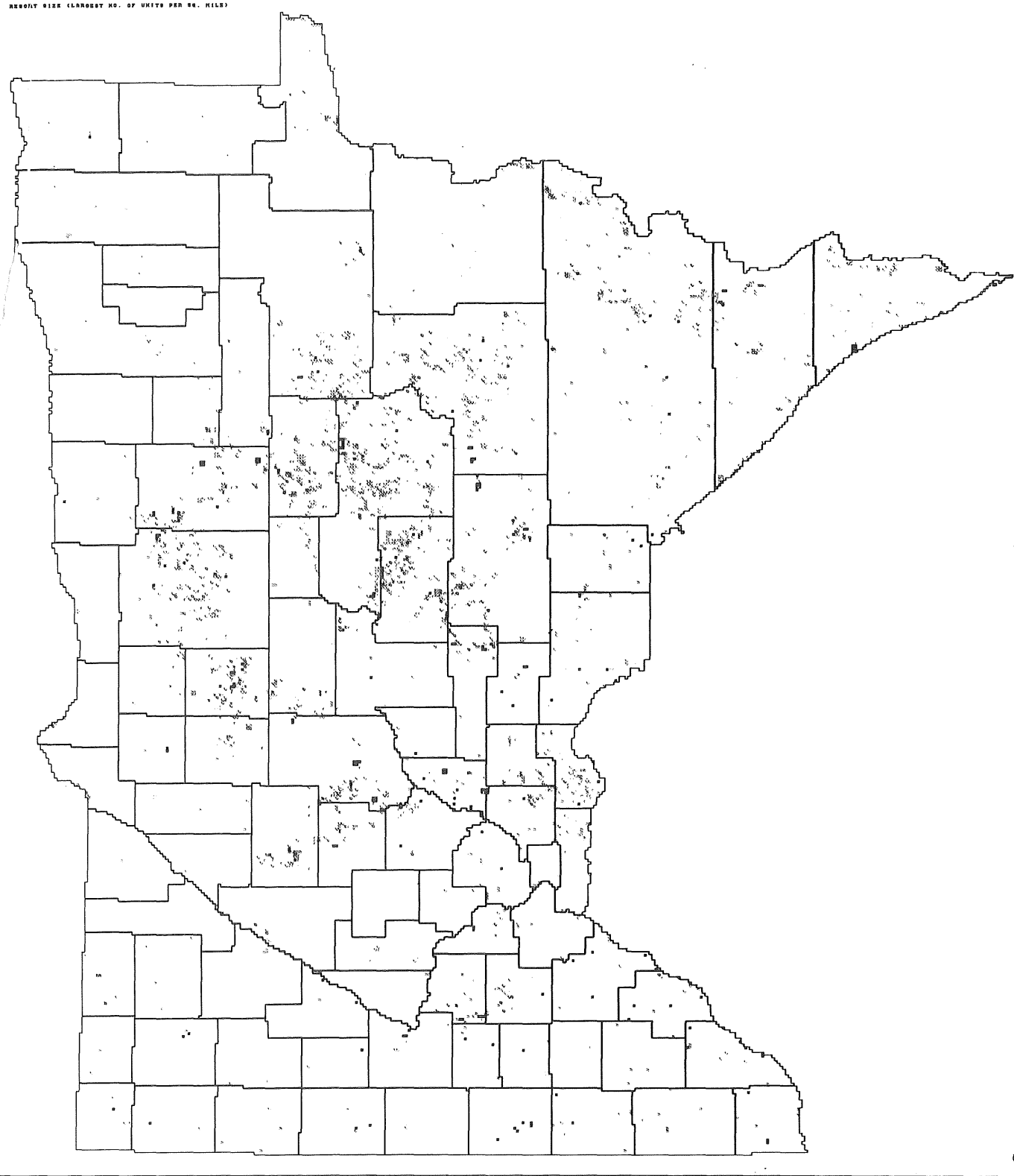
a. Background

Suggestions that trails be located in resort areas were made both at the December 1980 forums and at subsequent interest group meetings. SCORP data show that approximately 28 percent of cross-country skiers agreed or strongly agreed that tent sites, cabins or resorts should be available along trails. ORA specifies that trails which allow "travel between units of the outdoor recreation system" can qualify as state trails. State parks and state forests that have campgrounds are included on this map. DNR trail policy also identifies "major vacation areas" as priority areas for state trails.

Trails located in areas of resorts and small towns could benefit the economies of these areas. Moreover, the high seasonal population of these areas constitutes another trail-user market that is not reflected in the normal statewide population distribution.

b. Approach

Computer maps were generated to show locations and size of resorts and campgrounds. Areas of the state were scored on density of resorts and campgrounds, from 5 points for high density to 1 point for low density.



Source: DNR Office of Planning

Location of Services:
RESORTS AND CAMPGROUNDS
(Both public and private)
...by the # of units in the largest resort/campground within a 1 mile section

SYMBOL	NO. OF UNITS	COUNT	PERCENT	ACRES
□	None	88320	98.0	333280.0
⋮	1-3	231	.3	9240.0
⋮	4-6	510	.5	20400.0
▒	7-20	879	1.0	35160.0
▒	21-50	87	.1	3480.0
■	51-100	28	0.0	1120.0

Figure 26.

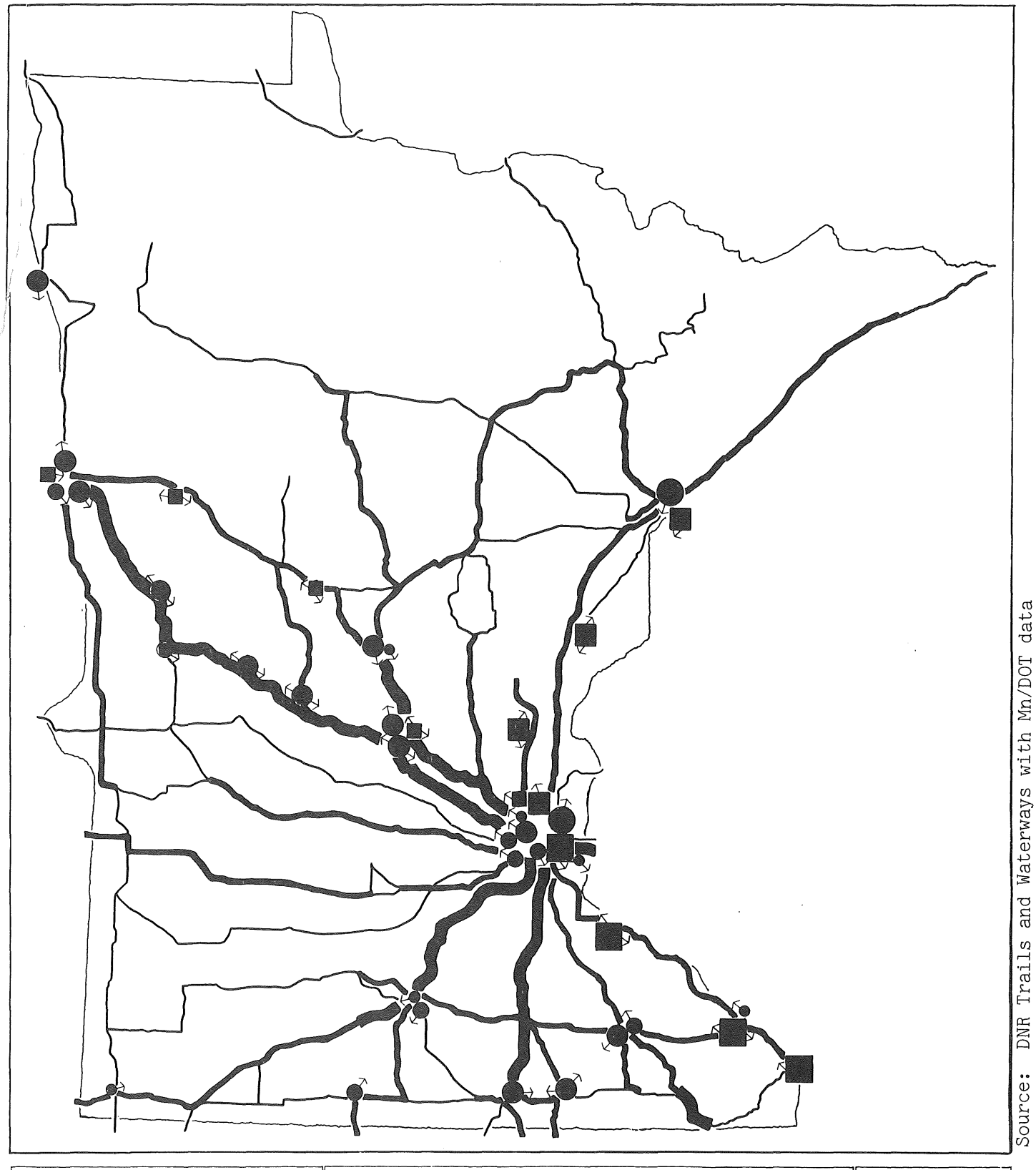
7. Proximity to Public Transportation (Figure 27)

a. Background

At the December 1980 forums and subsequent interest group meetings people suggested that trails be accessible by public transportation. ORA states that Minnesota's significant recreation opportunities "should be made available to all citizens of Minnesota, now and in the future." The DNR trail policy partly interprets this to mean that "priority shall be given to proposed state trails which . . . are served by mass transit . . . ."

b. Approach

Using bus and train schedules provided by Mn/DOT, routes and schedules were studied to determine frequency of service on all routes. Areas of the state were mapped and scored based on frequency of service and density of routes, from 5 points for the best-served areas to 0 points for areas without service.



Source: DNR Trails and Waterways with Mn/DOT data

PUBLIC TRANSPORTATION

Location and Frequency of Service

Amtrak	Express Bus	Regular Bus serving towns along the route
	4+ Round trips/day	4+
	2-3 Round trips/day	2-3
	1 Round Trip/day	1
	<1 Round trip/day	

Figure 27.

0 10 20 30 40M

8. Proximity to Population (Figure 28)

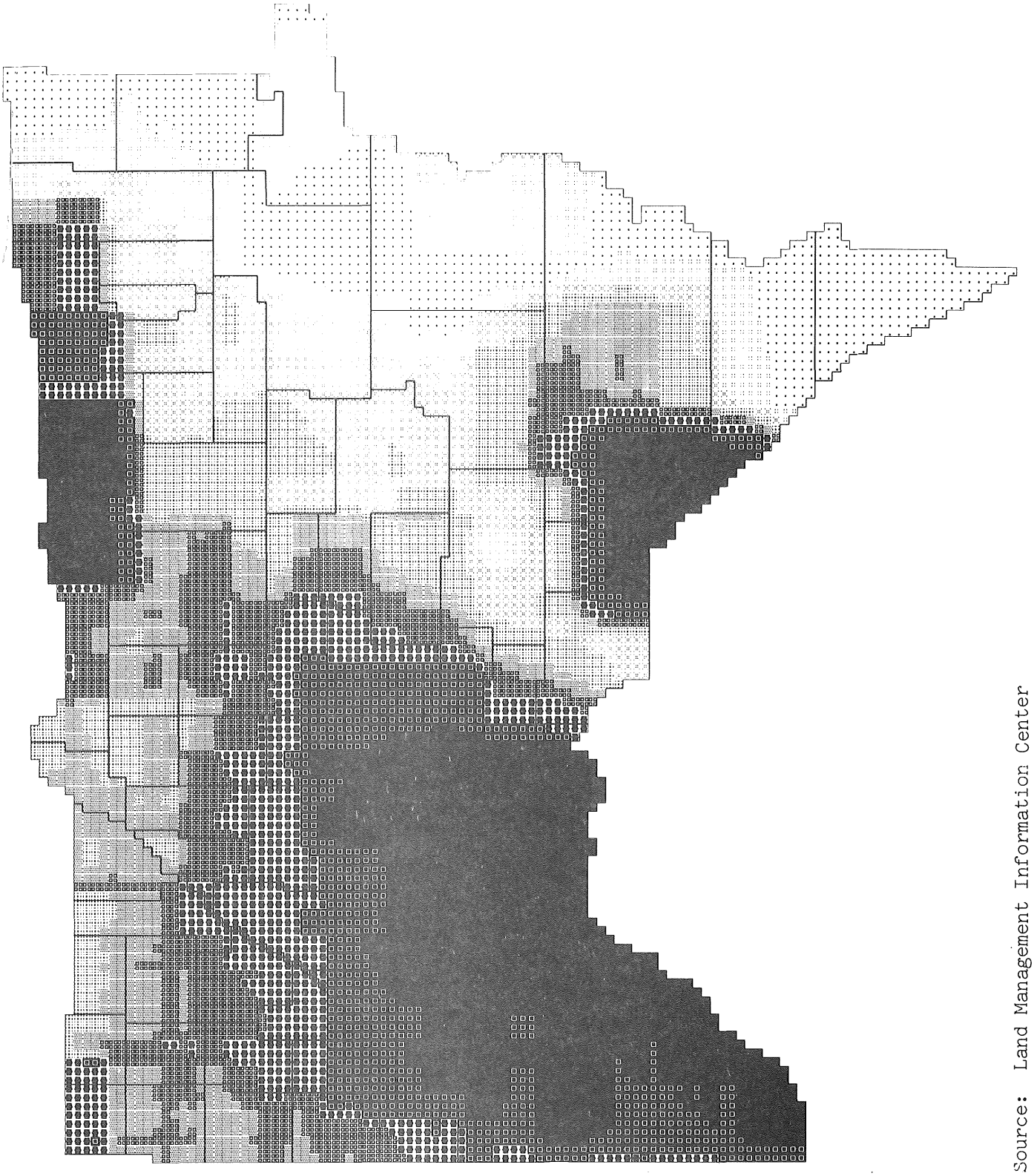
a. Background

People at the December 1980 forums and related meetings requested that trails be "close to home." SCORP data show that nearly 85 percent of all trail use occurs within 30 miles of home. ORA requires that state trail proposals "take into consideration predicted public demand and future use." DNR trail policy further specifies that proposed trails which "connect, originate in, or are near population centers (or major vacation areas)" should be given high priority.

b. Approach

LMIC generated a computer map which showed the number of people within 30 miles of each 5-square-kilometer cell in the state. Cities in adjoining states and provinces were included if they were within 30 miles of the Minnesota border and had more than 25,000 people. The cells were then scored as follows:

290,000 - 2,160,000 people within 30 miles of cell	5 points
140,000 - 290,000 people within 30 miles of cell	4 points
75,000 - 140,000 people within 30 miles of cell	3 points
16,000 - 75,000 people within 30 miles of cell	2 points
less than 16,000 people within 30 miles of cell	1 point



Source: Land Management Information Center

POPULATION

(within 30 miles of a 5 Kilometer cell)

0-16200 people	::	88501-101,300 people	
16201-38100 people		101301-139,400 people	
38101-55000 people		139401-211500 people	
55001-74300 people		211501-286000 people	
74301-88500 people		286001-2,157,100 people	

Figure 28.

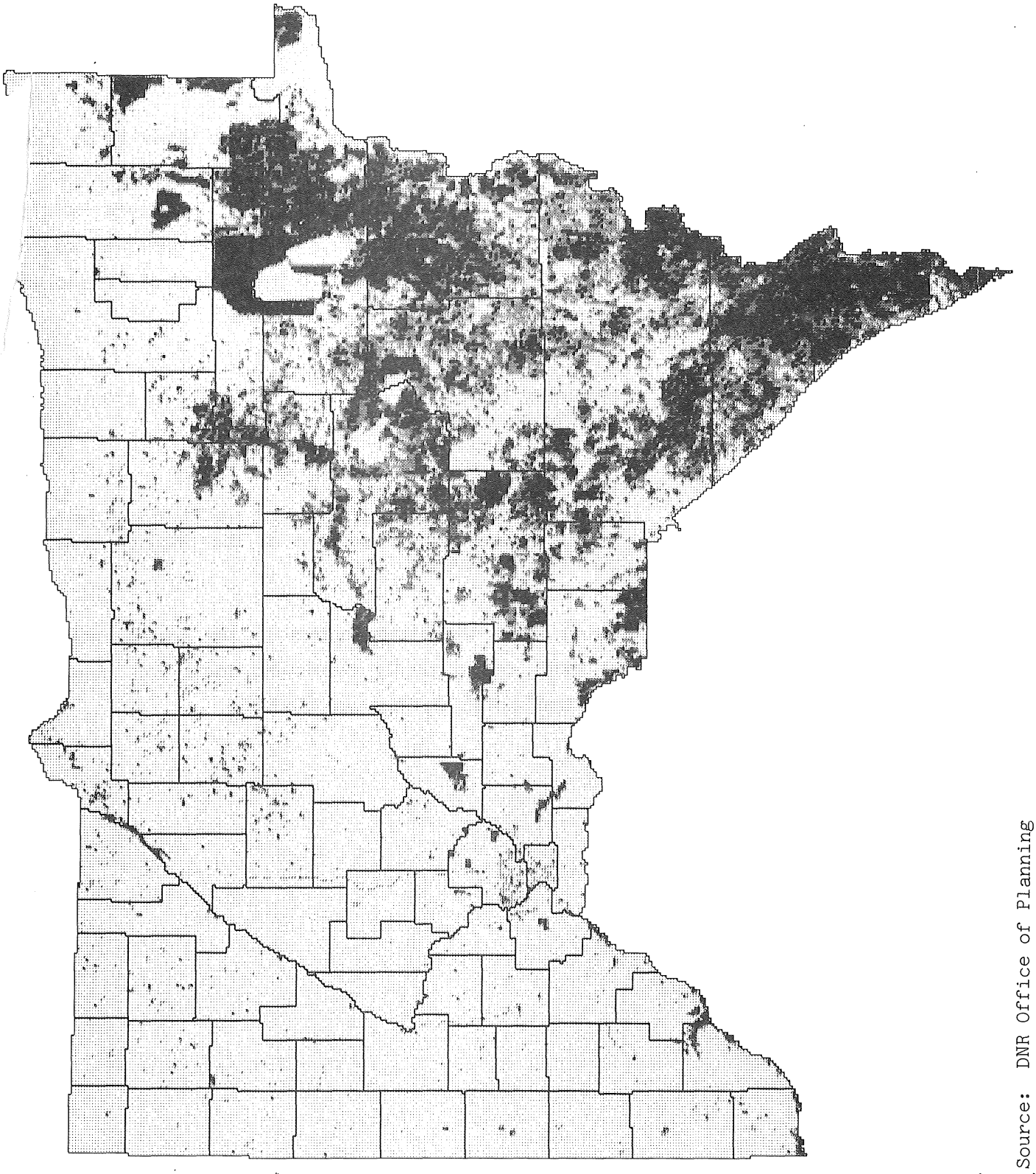
9. Location of Public Land (Figure 29)

a. Background

Many people at the December 1980 forums and related meetings said the DNR should build trails only on existing public land. ORA requires that trails utilize "to the greatest extent possible, consistent with (other requirements), public land, rights-of-way, and the like." DNR trail policy reiterates the legislature's directive. Of course, some public lands in the outdoor recreation system, such as wildlife management areas, are by law not currently eligible for state trail use and some public lands may not be used without appropriate compensation (such as in the case with Trust Fund Lands).

b. Approach

Based on a computer map showing the number of 40-acre cells of public land within each one-square-mile section, areas of the state were scored, from highest density of public land ownership (5 points) to no public land ownership (0 points).



Source: DNR Office of Planning

PUBLIC LANDS

Note: Use of public land for trails is subject to the laws & policies of each managing agency

Number of 40 acre cells (within each 1 mile square section) with some public ownership.

0-4	::	11761 sections - 32.1% - 470440 acres
5-8	⁘	5603 sections - 15.3% - 224120 acres
9-15	▒	9692 sections - 26.5% - 387680 acres
16	■	9567 sections - 26.1% - 382680 acres

Figure 29.

0 10 20 30 40M

5/21/81

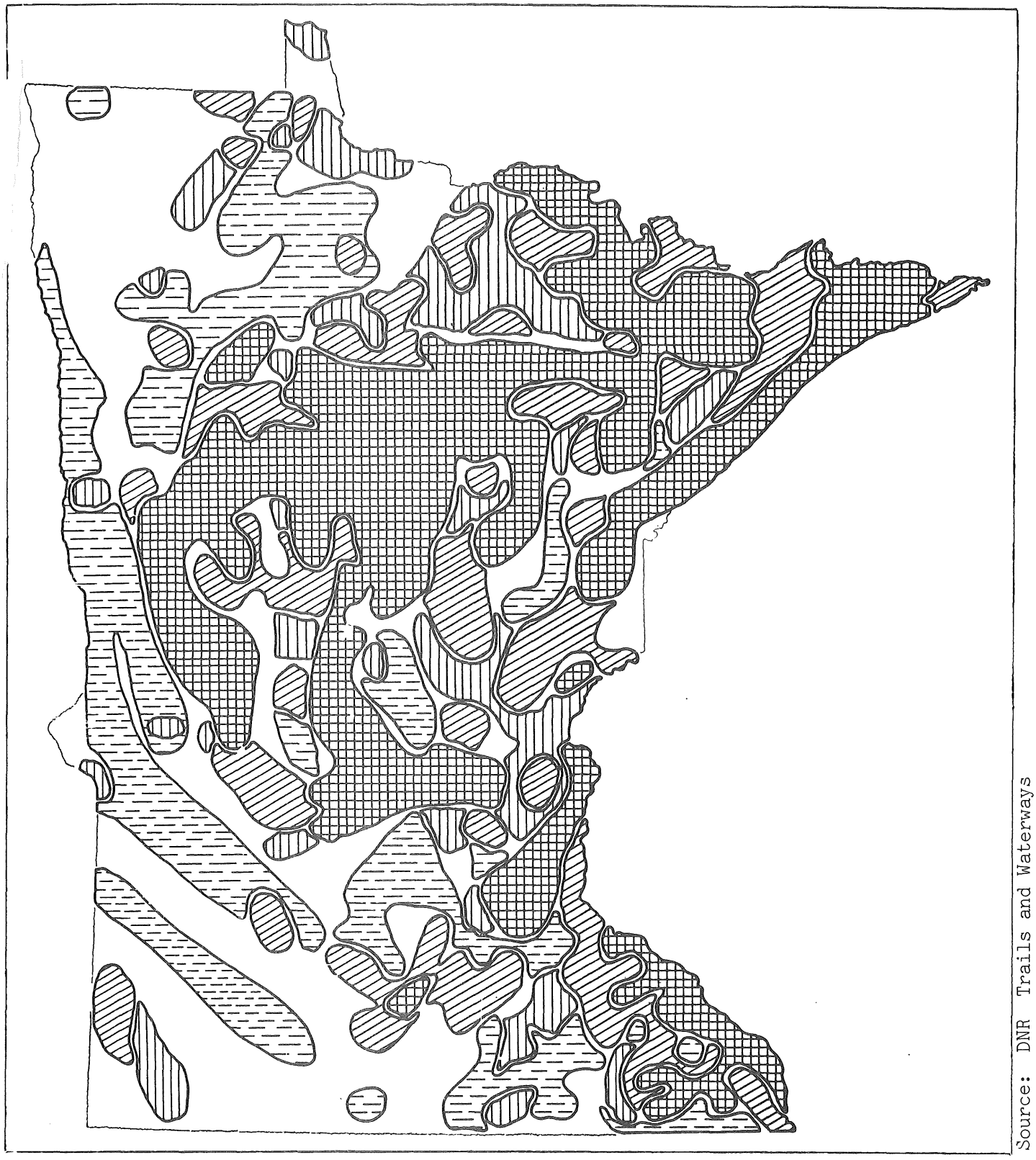
B. Trail Suitability Map (Figure 30)

To determine which areas of the state are likely to be mo suitable for trails, without taking into consideration proximity population or location of public land, the first seven locatic criteria were weighted in importance by 35 DNR and other agenc staff as follows (percentages refer to the percent of the decisio which should be based on individual criteria):

- topographic roughness 22%
- location of resorts and campgrounds 19%
- proximity to water 17%
- vegetative diversity 15%
- historic travel routes 11%
- proximity to public transportation 9%
- lack of agricultural productivity 6%*

* Although this figure appears low, the first four criteria, which account for 73 percent of the decision, tend to eliminate agricultural land.

By applying these weighting factors to the scored individual criterion maps and manually overlaying them and combining scores, the trail suitability map was produced.



Source: DNR Trails and Waterways

GENERALIZED LEVELS OF RELATIVE
TRAIL SUITABILITY

Note: Does not consider population distribution on public land

High Suitability

Low Suitability

Note: Because of the highly general nature of this map, all good areas for trails will not show up. Ranking of areas reflects the probability that good trails exist.

Figure 30.

0 10 20 30 10 20 30 40M

9/2/81

C. Generating Location Alternatives

Using the trail suitability map and scored population and public land maps, three maps were generated to illustrate three alternative methods of determining location priorities for trails in general. All alternatives give substantial weight to trail suitability.

Alternative A (Figure 31) was based on suitable areas within public ownership; Alternative B (Figure 32) was based on suitable areas near high population densities; Alternative C (Figure 33) was based on suitable areas within areas that had the highest scores for both population density and public land.

These alternatives were presented at the June 1981 series of open houses for public comment (listed in Appendix H). Alternative C was far and away the most favored. Sixty-six percent of those who responded favored C; 15 percent favored A; and 7 percent favored B.

Of those who volunteered additional written comment, slightly more favored close-to-home locations than favored public land locations (e.g., "Put trails near population centers--those are the people who want them."). A number of comments requested that trails be in scenic and historic areas. As one person stated, "A trail has to be worth walking on." DNR Trails and Waterways staff favored high-use potential locations (population centers and vacation areas) over categorical use of public land.

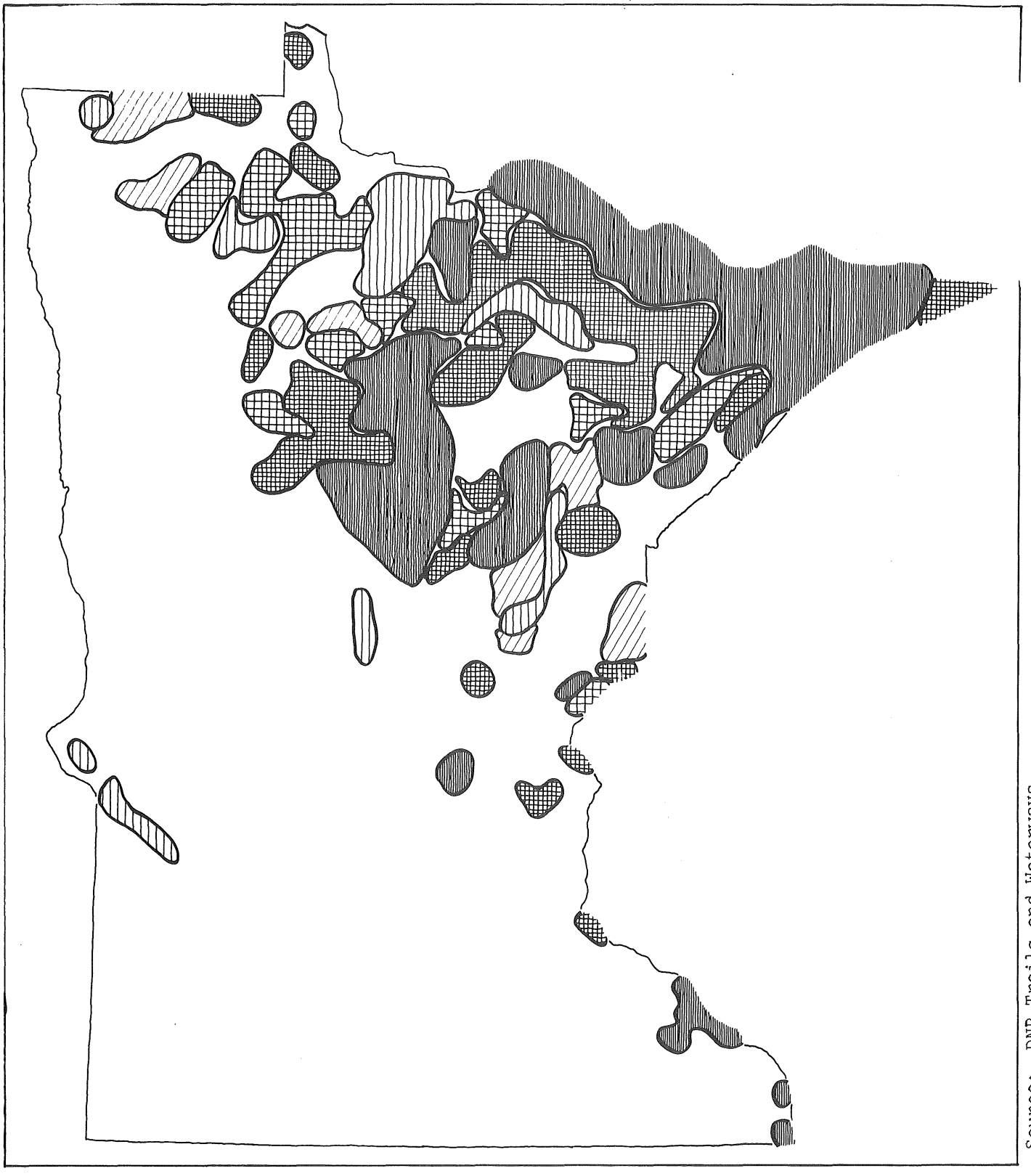
Alternative C, then, represents the public's opinion* of how trail monies should be allocated, on a statewide basis--that is, that the trail system as a whole, not necessarily individual trail types, should reflect these priorities.

---

* While this poll of public opinion may not be randomized across the population, it is the best available.

The people respond...

...through questionnaires keyed to a display of options for the future of trails that were presented at 28 shopping centers and public buildings across the state.



Source: DNR Trails and Waterways

ALTERNATIVE A

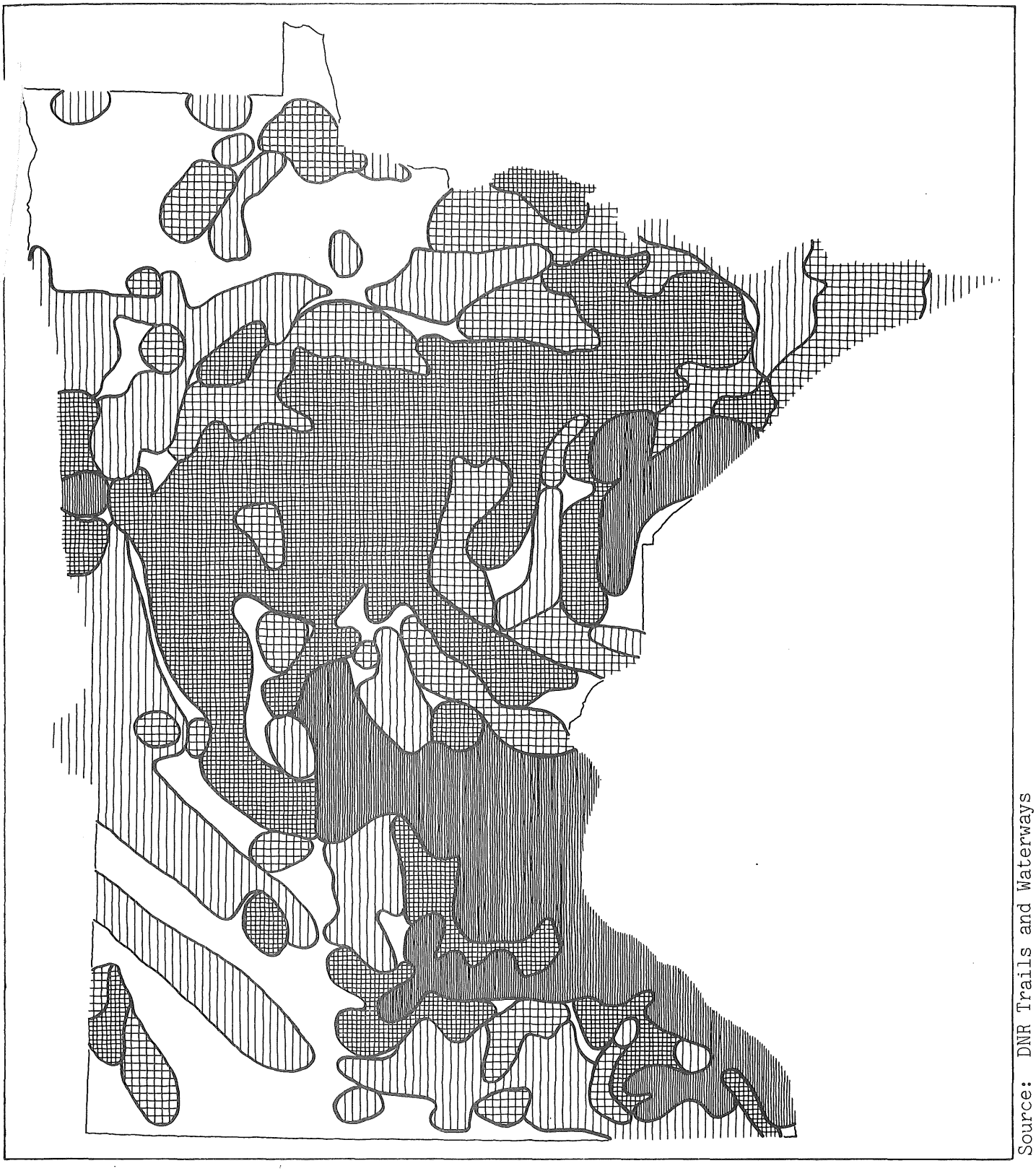
Trail priorities based on
PUBLIC LAND 50%
TRAIL SUITABILITY 50%

High Priority

Low Priority

Figure 31.

0 10 20 30 40M



Source: DNR Trails and Waterways

ALTERNATIVE B

Trail Priorities based on
POPULATION 50%
TRAIL SUITABILITY 50%

High Priority

Low Priority

Figure 32.

0 10 20 30
10 20 30 40M

MINNESOTA DNR TRAIL PLAN inventory · analysis · **alternatives**

Source: DNR Trails and Waterways

ALTERNATIVE C

Trail Priorities based on
PUBLIC LAND 25%
POPULATION 25%
TRAIL SUITABILITY 50%

High Priority

Low Priority

Figure 33.

0 10 20 30
10 20 30 40M

D. Recommendations

- Development by various trail-providing agencies in total should reflect priorities reflected in Alternative C.

- Each trail-providing agency should strive to institutionalize the contributing factors of Alternative C into the types of trails it provides.

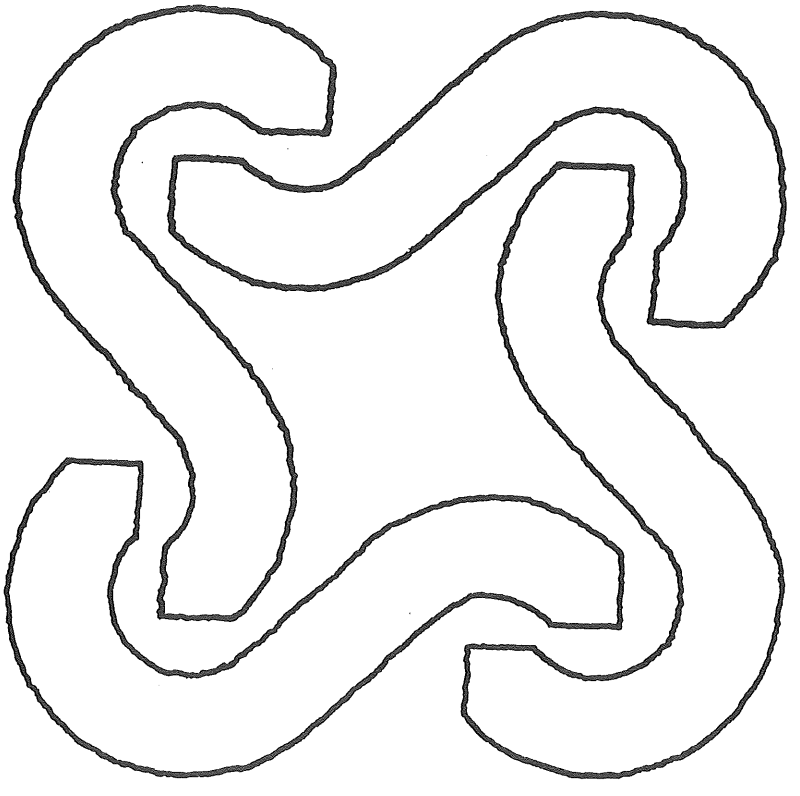
- The DNR should use Alternative C to prioritize development of its state trails.

- The DNR should use factors contributing to Alternative C in ascertaining potential usefulness of unit trails.

- Alternative C should help guide funding of locally initiated grant-in-aid trails.

5

State Trails: Role & Recommended Allocation



NOTE: State trails are to be distinguished from unit trails (chapter 6) and grants-in-aid trails (chapter 7.)

A. Policy Perspective

Law and policy are the overall framework against which individual trail proposals will be judged. Most applicable is the Outdoor Recreation Act (MN Stat. 86A) and DNR Policy on State Trails (revised April 23, 1982, see Appendix M).

The Outdoor Recreation Act (ORA) incorporates all state-managed recreation lands into a State Outdoor Recreation System consisting of 11 different kinds of areas each with its own role. They include: state trails; historic sites; state forest and state forest subareas; wild, scenic and recreational rivers; scientific and natural areas; water access sites; wildlife management areas; highway rest areas; natural state parks; recreational state parks; and state wilderness areas. A state trail is defined by the ORA as follows:

Subd. 4. **State trail; purpose; resource and site qualifications; administration; designation.** (a) A state trail shall be established to provide a recreational travel route which connects units of the outdoor recreation system or the national trail system, provides access to or passage through other areas which have significant scenic, historic, scientific, or recreational qualities or reestablishes or permits travel along an historically prominent travel route or which provides commuter transportation.

(b) No unit shall be authorized as a state trail unless its proposed location substantially satisfies the following criteria:

(1) Permits travel in an appropriate manner along a route which provides at least one of the following recreational opportunities:

(i) travel along a route which connects areas or points of natural, scientific, cultural, and historic interest;

(ii) travel through an area which possesses outstanding scenic beauty;

(iii) travel over a route designed to enhance and utilize the unique qualities of a particular manner of travel in harmony with the natural environment;

(iv) travel along a route which is historically significant as a route of migration, commerce, or communication;

(v) travel between units of the state outdoor recreation system or the national trail system; and

(2) Utilizes, to the greatest extent possible consistent with the purposes of this subdivision, public lands, rights-of-way, and the like; and

(3) Provides maximum potential for the appreciation, conservation, and enjoyment of significant scenic, historical, natural, or cultural qualities of the areas through which the trail may pass; and

(4) Takes into consideration predicted public demand and future use.

(c) State trails shall be administered by the commissioners of transportation or natural resources as specified by law in a manner which is consistent with the purposes of this subdivision. State trails established by the commissioner of natural resources shall be managed to provide a travel route through an area with a minimum disturbance of the natural environment and recognizing other multiple land use activities. Trail markers shall be limited to those providing safety information and interpretation.

(d) Facilities for the rest and comfort of trail users shall be provided primarily within units of the outdoor recreation system through which the trail passes. When additional facilities are required to insure the rest and comfort of the traveler, the managing agency may develop such facilities along the trail and shall designate the facilities as trail waysides. In addition to the foregoing purpose, trail waysides shall be developed for the preservation and interpretation of the trail's natural, historic, or scenic values, and may include facilities for primitive camping, picnicking, sanitation, and parking for access to the trail.

The DNR has developed policies for state trails following law, rules and regulations, and past administrative actions. The following is the overall goal and the general evaluation criteria (see Appendix M for complete document):

DNR STATE TRAIL POLICY GOAL

TO PROVIDE RECREATIONAL OR COMMUTER TRAVEL ROUTES WHICH CONNECT UNITS OF THE OUTDOOR RECREATION SYSTEM OR THE NATIONAL TRAIL SYSTEM OR WHICH PROVIDE ACCESS TO OR PASSAGE THROUGH AREAS WHICH HAVE SIGNIFICANT SCENIC, HISTORICAL, SCIENTIFIC, OR RECREATIONAL QUALITIES.

General Policy

It is the objective of the Department of Natural Resources to ensure that state trails are consistent with the policies and procedures of the MN Trails Policy Plan (Appendix O) and meet the following criteria:

A. Trails shall have significant cultural, historical, recreational, or scenic attributes or connect or have the potential to connect units of the outdoor recreation system, the national trail system, or other recreational trails.

B. Trail location shall take into consideration public needs.

C. Trails shall utilize, to the greatest extent possible, public lands and rights-of-way.

D. Trail rights-of-way should be acquired for long-term use.

How do these laws and policies which guide individual trail proposals give guidance to the overall trail system? After all, Minnesota with its bountiful resources potentially contains a multitude of trail alignments which could qualify as state trails under existing law and policy.

Within the state there are: numerous state parks and state forest recreation areas, a nationally designated trail, two national forests complete with numerous recreation facilities, a national wilderness area, a number of major federal wildlife refuges and a national park. In addition, there are countless other scenic, historic and scientific resources that might be connected or utilized as part of a state trail.

It is assumed that lawmakers and policy makers never intended that the state designate the entire list of potential state trails. Therefore, the purpose of the following section is to identify the organizing principles for a cohesive, desirable, cost-effective and appropriately-sized system of state trails that follows from existing law and policy.

B. Determining the Complexion of the State Trail System

Upon review of applicable law and policy and considerable citizen input as well as professional judgment, the following are offered as underlying organizational principles to be used in developing the optimum system of state trails (as opposed to the evaluation of an individual trail proposal).

PRINCIPLE I

The proposed state trail system should enhance Minnesota's tourism potential.

DISCUSSION

The Minnesota Restaurant, Hotel and Resort Association estimated that tourism is a more than $2 billion dollar industry statewide. In its role of encouraging investments within Minnesota, the state should reinforce existing private sector development. One way of doing this is to accelerate state recreational development within areas of high tourist appeal. In its role of encouraging tourism within Minnesota, the state should concentrate its efforts on facilities capable of capturing the attention of midwestern and national markets.

Not surprisingly, areas important for tourism are also those designated as having high priority for trail development on the map presented as Alternative C (page 90). After all, scenic indicators, recreation services, access and population distribution were among the important criteria for that map. Therefore, the proposed system should be based upon Alternative C to ensure that tourism interests are represented.

PRINCIPLE 2

The proposed state trail system should consider existing statewide patterns of trail use.

DISCUSSION

Considerable trail use already occurs throughout the state. SCORP estimates that, for example, over 55,000,000 bicycling occurrences took place in Minnesota in 1978. Over the years, regional patterns of use have developed for each of the different user groups. These patterns are important indicators of trail user desires. Therefore, the proposed system of trails should consider these patterns in developing the optimum system of trails. The Trails Demand Base Data Report reformats SCORP information from Economic Development Regions to counties and can serve as an appropriate source for such information (pages 39-44).

PRINCIPLE 3

The proposed state trail system should consider projections of additional trail demand.

DISCUSSION

Based upon 1978 participation in trail-related activities that were categorized by age and sex, SCORP projects future recreational use based upon future age/sex profiles. SCORP estimates between 1978 and 1990: bicycling occasions will increase 2.5%; cross-country skiing will increase 11.4%; snowmobiling will increase 6.6%; hiking will increase 10.5%; and horseback riding will decrease 1.4%. However, there is considerable regional variation to these overall patterns (Figure 16). To the extent possible, the system should be sensitive to projected statewide and regional trends in use.

PRINCIPLE 4

The proposed state trail system should be presented and promoted in a way which makes it very easy for the public to understand and use its trails.

DISCUSSION

In the course of developing this plan, it became obvious that the general public is not aware of trail opportunities presently available. Moreover, some of those that were aware felt that myriad opportunities now provided by various agencies could limit the use of trails as effectively as by not providing trails. Too much information can be confusing, especially to someone new to trail use who doesn't know how to begin. The proposed system then should have an element of consistency in approach and in delivery of services. The best trail opportunities should be highlighted. The result should be simple to understand and easy to use. In this way the effectiveness of state expenditures are maximized.

PRINCIPLE 5

The proposed state trail system should complement and capitalize on other trails.

DISCUSSION

The general public is not concerned with what agency is providing a particular service. What is important is that the service is provided.

Federal agencies, counties and local units of government all provide trail opportunities. In Minnesota approximately 3,100 miles of trails are provided by other than state agencies. If the 7,100 miles of locally sponsored trails funded through the state's grants-in-aid trail program were included, the total would rise to over 10,000 miles. The proposed system should build upon and tie together the efforts of other agencies rather than duplicate them.

PRINCIPLE 6

The proposed state trail system should capitalize on the unique contribution of all elements within the State Outdoor Recreation System

DISCUSSION

The Outdoor Recreation Act (MN Stat. 86A) organized state-managed outdoor recreation facilities under an overall umbrella.

The Legislature found that the outdoor recreation system, in serving as a vehicle for making "the unique natural, cultural and historical resources of Minnesota" available to its citizens, should (1) preserve an accurate representation of Minnesota's natural and historical heritage for public understanding and enjoyment, and (2) provide an adequate supply of scenic, accessible and usable lands and waters to accommodate the outdoor recreational needs of Minnesota's citizens.

Each system of facilities has a role to play which complements that of the others and therefore it is important to examine the roles of those other units.

The law speaks to several different functions for the Outdoor Recreation System: preserving and portraying the natural, cultural, and historical elements of the state as well as satisfying recreation demand.

It is obvious that no two units fulfill the above functions in the same way. Some units, such as state rest areas, promote enjoyable and safe passage while going to a destination, while others, such as recreational state parks, provide specific destinations to satisfy recreational needs. Some units, such as scientific and natural areas, are firmly committed to preserving areas of exceptional value for future study. Others, such as state wilderness areas and natural state parks, preserve such areas for the purpose of meeting specific outdoor recreational needs. Finally, some units, such as state historic sites, rely on interpretation of our society's rich heritage to

satisfy recreational demand. In short, each unit of the Outdoor Recreation System has a unique and important role to play.

It would seem that state trails excel in two ways within the context of the Outdoor Recreation Act. First, although they may not preserve a phenomenon as well as others units within the system, they have the ability to incorporate the strengths of other units into their own when they serve a connecting role. And, second, they have the ability to utilize and portray these strengths against the backdrop of the existing cultural landscape. Natural and historic phenomena are seen in the context of their surrounding areas with today's land use and societal phenomena. In short, the proposed trail system should recognize the unique ability of Minnesota's state trails to portray natural and historical heritage with respect to the present-day cultural context in which they lie.

PRINCIPLE 7

The proposed state trail system should complement locally provided trail opportunities.

DISCUSSION

Currently state trail funding is provided by taxpayers from throughout the state. It follows, therefore, that taxpayers have a right to expect that, at the very least, the proposed trail system should either provide a relatively large number of short, locally accessible opportunities, or a relatively small number of longer-distance, high quality trails capable of attracting use from throughout the state.

A popular theme in government is that the smallest unit of government capable of accomplishing a task should be given the responsibility to do it. Following this logic, local trails should be the responsibility of local units of government with the state concentrating on facilities having statewide importance. (However, a system capable of supplying a measure of local utility while directly serving a statewide clientele would even be better!)

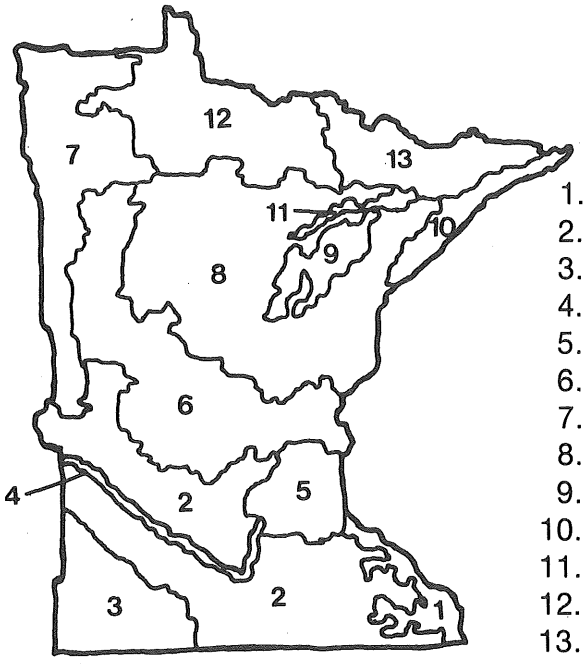
Therefore the state trail system should strive to provide a relatively small number of trails of statewide significance. One obvious way of insuring statewide significance is to insist on high quality siting and development standards. Another way would be to follow recommendations mapped out in Alternative C (Figure 33). This map pinpoints the areas most likely to have the highest appeal for trail users that are feasible for trail development.

But to ensure significance that translates into statewide use, the system should first provide opportunities significantly different from those available locally. After all, traveling to a trail does require expenditure of time and money. Secondly, individual elements of the system should be distinctive rather than duplicative of other trails.

One way of guaranteeing that these two concerns are taken into account is to provide trails which portray a wide variety of opportunities within Minnesota. This would also have the additional benefit of showing the interlocking nature of our state's resources.

In 1984, DNR's Trails and Waterways Unit modified the "Landscape Region System" (DNR, 1977) to more closely approximate existing vegetational and cultural patterns. Thirteen distinct recreational landscapes for trails have been identified (Figure 34).

Figure 34: Minnesota's Recreational Landscapes for Trails



1. Southeastern Blufflands
2. Southern Farmbelt
3. Highland of the Prairies
4. Minnesota River Valley
5. Twin Cities Metropolitan Area
6. Central Hills and Lakes Country
7. Red River Lake Plain
8. Northern Pine and Lakes
9. Tamarack Lowlands
10. North Shore Highlands
11. Iron Range
12. Agassiz Lowlands
13. Border Lakes

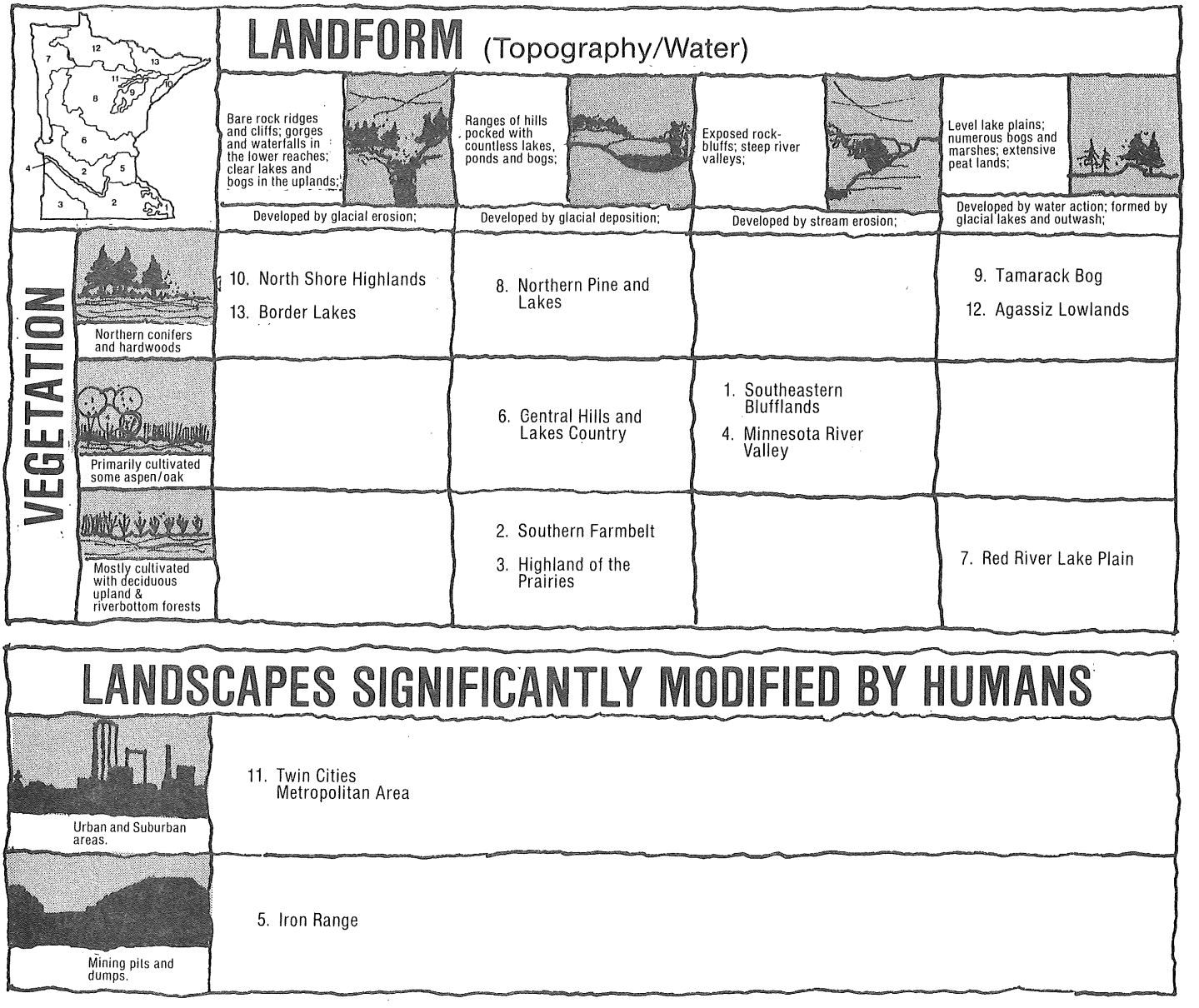
Source: DNR Office of Planning

As such, each recreational landscape represents a combination of factors which give it a more or less unique identity when compared with other regions of the state.

Figure 35 provides a thumbnail sketch of each region's components.

Another way of insuring discrete opportunities different from those locally available would be by providing a range of trail environments in which each type of trail enthusiast (e.g., ski-tourer) can use trails. Such a system would have the potential to challenge and fulfill a wide range of personal needs, many different from those available near home.

Figure 35: Essential Characteristics of Minnesota's Recreational Landscapes for Trails.



Source: DNR Trails and Waterways

The United States Forest Service has helped develop and adopt the Recreation Opportunity Spectrum (ROS). The ROS delineates environments along a spectrum beginning with a very undeveloped, primitive environment and ending at the other extreme with an intensely developed environment. Stages of development along this spectrum range from crude trails and roads, to highways and permanent dwellings, to activity centers such as playgrounds and golf

courses. In terms of fulfilling personal needs, solitude and autonomy are more likely to be elements of an experience in a primitive environment, while security, orientation and affiliation are more likely in an intensely developed environment.

A final way of insuring discrete opportunities different from those locally available would be by providing longer trails than day-use opportunities, which are more typically available close-to-home. Incidentally by adding the potential for lodging - be it by motel, youth hostel or campground - another different dimension is brought into the trail experience. One must hasten to add that due to construction costs, these lengths should not be so excessive as to be cost prohibitive, but rather they should be just long enough to be significantly different from local opportunities.

Bicycling Magazine's 1980 reader survey showed that 25 percent of respondents took weekend tours, while only 10 percent took one- to two-week tours. One can assume for all trail users, a similar phenomenon - weekends are more popular than longer periods and are less popular than day use only. If one can assume that the bulk of day-use occasions can be satisfied with local facilities, as might be implied by the low willingness-to-travel mileages reported in SCORP, then what remains is to determine the most maximum popular length.

Figure 36 indicates that length of trail needed for a two-day experience depends on the trail user's average speed, which in turn depends on a) mode of travel, b) level of proficiency, and c) recreational objectives.

Figure 36: Guidelines for Minimum Trail Length.

Mode	Average Beginner-Intermediate Speed (mph)*	Leisurely Paced One-Day Range (3 hours actual travel)	Min. Length of a Two-Day Trail	
			Point to Point Trail	Loop Trail
Hike	2 mph	6 mi	6 mi	12 mi
Ski	3 mph	9 mi	9 mi	18 mi
Horse	4 mph	12 mi	12 mi	24 mi
Bike	9 mph	27 mi	27 mi	54 mi
Snowmo	18 mph	54 mi	54 mi	108 mi

* based on informal survey of DNR trail personnel.

By designing facilities which incorporate a single overnight accommodation (with two days of travel), it can be expected that they will be more apt to be used than those requiring an entire week or more.

PRINCIPLE 8

The proposed state trail system should be flexible enough to respond to a wide range of economic scenarios for the state.

DISCUSSION

Regardless of the state's economic condition, the amount of recreational opportunities provided should correspond with user demands. Over the past decade, through legislative action, significant acquisition, development and rehabilitation have taken place. This was largely due to the disparity between opportunities and demand.

Presently the state finds itself in a financially troubled period. As a result, future trail gains may not be as dramatic as in the past. Predictably, existing facilities will be expected to accommodate additional use. This may be possible by increasing the number of

allowable uses (multiple use) or by altering trail development so that additional use can be accommodated. However, additional acquisition will still be necessary.

Therefore, it seems necessary to focus acquisition and development on a rather discrete list of prioritized potential state trails. In this way, the DNR can proceed as quickly (or as slowly) as conditions warrant. This prioritizing also guarantees that in times such as these, limited funds will be concentrated on only the most important of projects.

C. State Trail System Recommendations

The preceding principles form the basis for the overall trail system recommendations outlined below, and influence greatly the allocation priority formula outlined subsequently in this chapter. These system recommendations do not take the place of existing law and policy, which are the ultimate measures in determining whether or not a specific trail proposal qualifies for state trail status. Instead, they are intended to encourage concentration of Departmental efforts on the optimum mixture of trails to be included within the trails system.

System Organization

The DNR should promote a relatively small collection of high-quality recreational travel routes throughout the state that are sufficiently long to allow for two days of use. They should consider existing use patterns and projected recreational demand.

Each trail should concentrate on a distinct aspect of the state. In total, the trails should heighten the user's awareness of Minnesota's diverse natural, historical, and present-day cultural resources and, as such, provide each user group a rather comprehensive portrayal of the state. The system should capitalize on the efforts of other trail-building entities.

Additional System Diversity

The DNR should use the Minnesota Recreation Opportunity Spectrum (presently in draft form within the DNR) as a framework for encouraging a wide range of trail use environments.

System Marketing/Promotion

The DNR should encourage accelerated promotion of the resulting high-quality trail system by its Bureau of Information & Education (I&E) and Department of Energy & Economic Development--Division of Tourism (see pages 223-225).

System Monitoring

Perhaps most importantly, the DNR should accelerate the monitoring of trails it administers. The amount of use, as well as user satisfaction, are key ingredients in determining future choices. Consideration of the current stage of a trail's development is also critical. Monitoring is discussed further on page 222.

System Refinements

Only after the system has been largely completed should the DNR advocate additional state trails in a particular area of the state. In any case, the DNR should only consider opportunities which: disperse use away from trails where heavy use significantly threatens user satisfaction or resource values; or represent no financial burden in their development and management.

D. State Trail Allocation

Presently, a demand exists for additional trail opportunities (page 50). However, it is unclear whether this is because there indeed is a shortage of trails, OR because present opportunities are not in desirable locations or of appropriate size or design, OR because people are not aware of existing trail opportunities.

Particularly in view of current economic constraints and the DNR's desire to stress quality over quantity, it seems wise to give the benefit to the third and, to an extent, to the second conclusions. After all, it would be fiscally imprudent to undertake large-scale expansion in the absence of more concrete information on use, crowding, and public awareness. An accelerated monitoring effort is necessary to more precisely identify trail use patterns (see page 222), and an accelerated promotion program is necessary to alert potential trail users of existing opportunities (see page 223).

Thus, for DNR trails, it seems prudent to proceed slowly with future trail acquisitions. It is recommended that during the next five years the DNR concentrate on continued improvement of its "trail stock" by:

- realigning or otherwise improving existing trails;
- encouraging appropriate multiple trail uses;
- replacing inadequate trails with better ones;
- promoting existing opportunities;
- encouraging local initiative; and
- monitoring trail-use patterns.

It is hoped that, by signaling a period of limited growth, the DNR may encourage user groups to examine ways of sharing trail rights-of-way (see page 202). Thus, usable miles for different groups could rise significantly during this period. There may also be ways for the public to be more effectively informed of existing opportunities provided by the various governmental agencies.

This plan proposes a major new effort for accomplishing more effective interagency coordination. "Explore Minnesota Trails" packages many of DNR's existing trails* with trails provided by other public agencies. It is an outgrowth of the concerns cited above and is appropriate because the DNR's goals overlap somewhat with other agencies, especially on the state and national level. "Explore Minnesota Trails" would be a collection of high-quality trails of similar length, that portray to the user Minnesota's varied resources (see page 199, Figure 86 and Appendix L). To the extent that the delineation of recreational landscapes for trails provides a convenient tool in identifying Minnesota's natural diversity, it should be used with other historical and cultural considerations to organize the collection of "Explore Minnesota Trails."

Admittedly all of the elements (i.e., trails) do not presently exist to provide comprehensive statewide coverage of equal quality. But enough trails do exist to perhaps provide a framework which can be marketed and serve as a basis for identifying future state trail acquisition priorities.

Figure 37 lists the number of sufficiently long trails within each region that could qualify as its designated "Explore Minnesota Trail" for a particular use. However, they need to be field checked for quality prior to this determination.

* including state trails, unit trails, and grants-in-aid trails.

Figure 37: Number of Existing Long-distance Trails in each Recreational Landscape for Trails

	Hike	Horse	Off Road Bike[2]	Ski	Snowmobile	TOTAL[3]
minimum point to point trail mileage	6 mi.	12 mi.	27 mi.	9 mi.	54 mi.	
Number of trails:						
Southeastern Blufflands	9	1	0	3	4	17
*Southern Farmbelt	12	2	1	1	8	24
Highland of the Prairies	3	0	0	0	0	3
Minnesota River Valley	3	0	0	0	0	3
*Twin Cities Metropolitan Area	20	3	1	12	2	38
Central Hills and Lakes	9	3	0	5	11	28
Red River Lake Plain	3	0	0	2	1	6
*Northern Pine and Lakes	45	11	1	33	17	107
Tamarack Bog	2	0	0	3	7	12
Northshore Highlands	11	0	0	9	1	21
Mesabi Iron Range	0	0	0	0	0	0
Agassiz Lowlands	1	0	0	0	1	2
Border Lakes	22	0	0	12	1	35

* Regions with at least one trail for each use.

Footnotes:

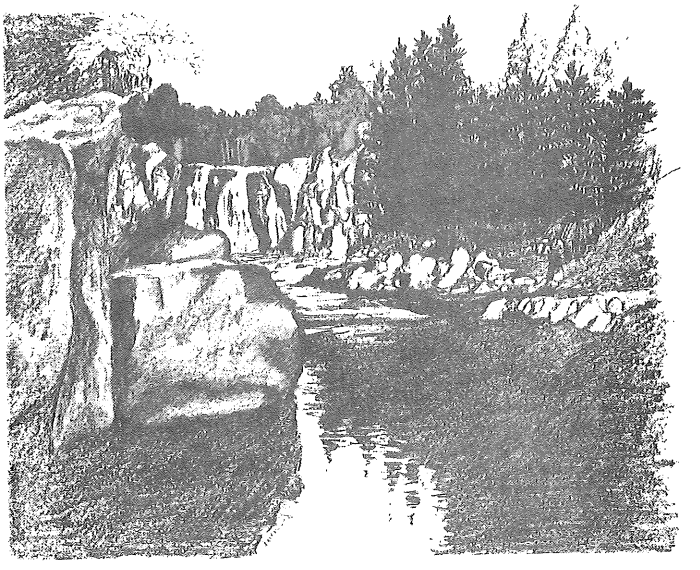
1. Trails extending into more than one landscape may be considered 2 trails for purposes of this table if in each landscape minimum mileage criteria are met.

2. All landscapes exceed the minimum mileage with on-road bikeways (roads rated good or fair for bicycling by Mn/DOT).

3. The "total" column does include more than the number of individual trails due to multiple use.

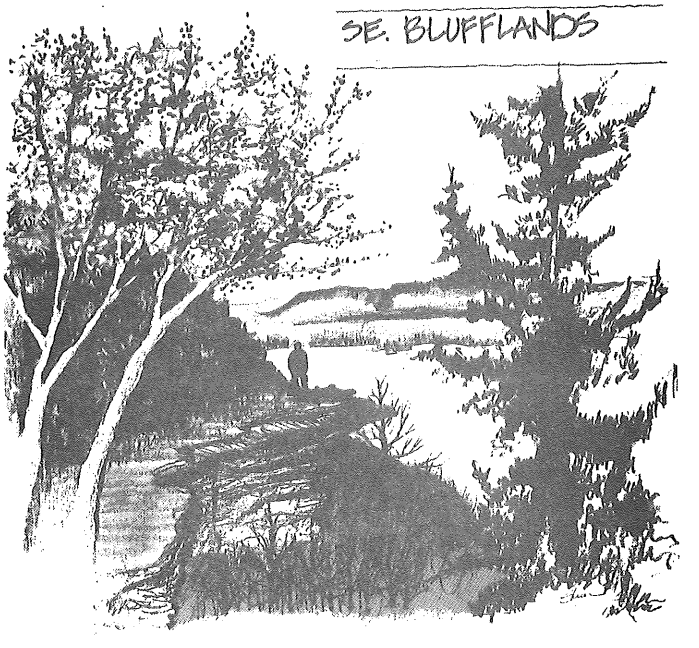
Figure 38: Three Recreational Landscapes for Trails Portrayed.

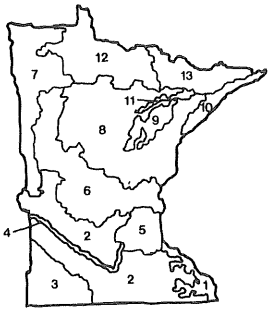
NORTH SHORE HIGHLANDS



TAMARACK BOG

SE. BLUFFLANDS





1. Southeastern Blufflands
2. Southern Farmbelt
3. Highland of the Prairies
4. Minnesota River Valley
5. Twin Cities Metropolitan Area
6. Central Hills and Lakes Country
7. Red River Lake Plain
8. Northern Pine and Lakes
9. Tamarack Lowlands
10. North Shore Highlands
11. Iron Range
12. Agassiz Lowlands
13. Border Lakes

In those regions where no acceptable "Explore Minnesota Trails" can be found, it may be necessary for the DNR to intervene. Resulting proposals for new state trails will be evaluated according to resource characteristics as well as other service factors which help determine a proposed trail's attractiveness and/or accessibility. The Outdoor Recreation Act and Departmental policy will serve as the ultimate basis for determining whether or not a proposed facility qualifies as a state trail. Demand, as reported in SCORP and other documents, will primarily determine how much the DNR can reasonably consider investing in an individual trail proposal. However, in order for the Department to become an advocate for a candidate state trail, it is proposed that it also satisfy certain other important "Explore Minnesota" considerations which guarantee that the candidate trail complements existing trails in a desirable and cost-effective way. It will also insure appropriately sized trails. It is further proposed that the scope of existing policy be enlarged so as to more explicitly include such a system-wide context. Figure 39 summarizes the criteria by which presently operated and future trails would be evaluated.

Figure 39: Proposed Evaluation Framework for Candidate State Trails

PRIMARY TRAIL CONSIDERATIONS* (If considerations are satisfied, meets minimum criteria for designation as a state trail)	ADDITIONAL SYSTEM CONSIDERATIONS (Considerations which should also be satisfied if DNR is to advocate state trail action)
A. Trails shall have significant cultural, historical, recreational, or scenic attributes; or connect or have the potential to connect units of the outdoor recreation system, the national trail system, or other recreational trails.	A. Trails shall be suitable for use over at least a two-day period.
B. Trail location shall take into consideration public needs.	B. Trail alignment is such that it would heighten awareness of essential characteristics of that particular landscape region.
C. Trails shall utilize, to the greatest extent possible, public lands and rights-of-way.	C. Corresponds with priority needs as indicated in Figure 45.
D. Trail rights-of-way should be acquired for long-term use.	D. Trail proposal would provide a significantly different experience from other trails in that landscape region.
	E. Trail proposal is in the proximity of lodging, public transportation and other tourism-related facilities.

* Taken directly from State Trail Policy - revised 4/23/82 (see Appendix M).

To improve the likelihood of cost-effective trails, Minnesota's landscape regions have been grouped into three priorities based upon their potential for use. Three interrelated factors were used in this determination:

- Site considerations contributed 40% to each region's total priority. Considerations included a regional inventory and analysis of natural and cultural features typically associated with successful trails. The regional availability of forest cover, open water and varied terrain were all evaluated. Additionally, each region was evaluated as to its orientation to population clusters and whether or not there was considerable public land on which successful trails might be built. Chapter 4 contains the entire rationale for this factor.

- Existing trail use of regional facilities by horseback riders, hikers, bikers, snowmobilers and cross-country skiers contributed 40% to each region's total priority.

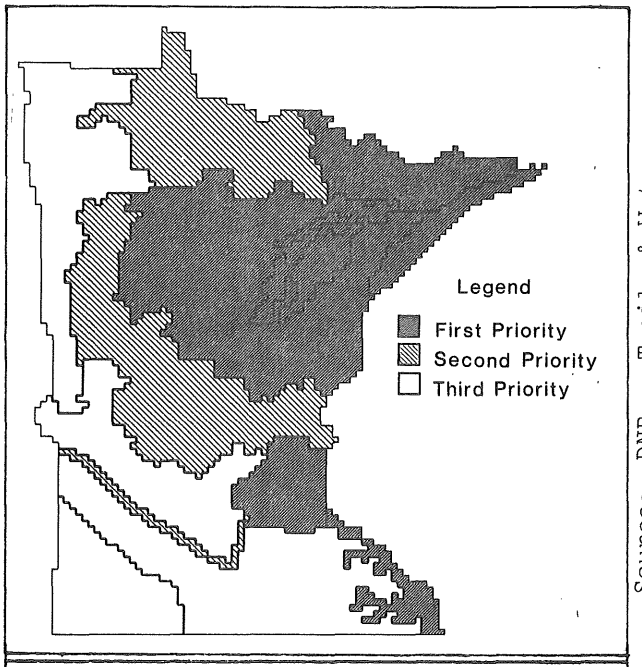
- Projections of additional regional demand by each use contributed the final 20% to each region's total priority.

The expected outcome of this process is the identification of scenic regions having the greatest likelihood of use. Figures 40 through 44 reflect the results. As might be expected, some variation between user groups exists. Results are summarized in Figure 45.

It is proposed that these priority groupings be used to determine the appropriate level of effort to secure a trail within a given region. Obviously, the Department should be most concerned in regions having the greatest likelihood of use. As projections of use lessen, so too should the Department's commitment to trail acquisition/development.

HORSEBACK RIDING

Figure 40: A-D.

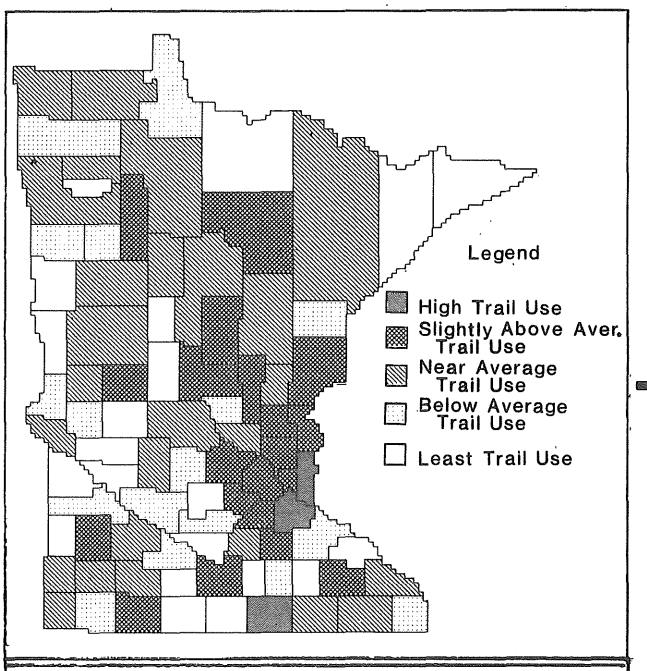


Source: DNR Trails & Waterways

SITING CONSIDERATIONS FOR EACH LANDSCAPE
(Based on Alternative C)

A.

+



DISTRIBUTION BY COUNTY OF STATEWIDE HORSEBACK RIDING
On & Off Trail Use.
Source: Trails Demand Base Data Report. S.P.A. 1980

B.

+

40% +

- **TRAIL SUITABILITY**

Topography
Location of resorts & campgrounds
Proximity to water
Vegetative diversity
Etc.

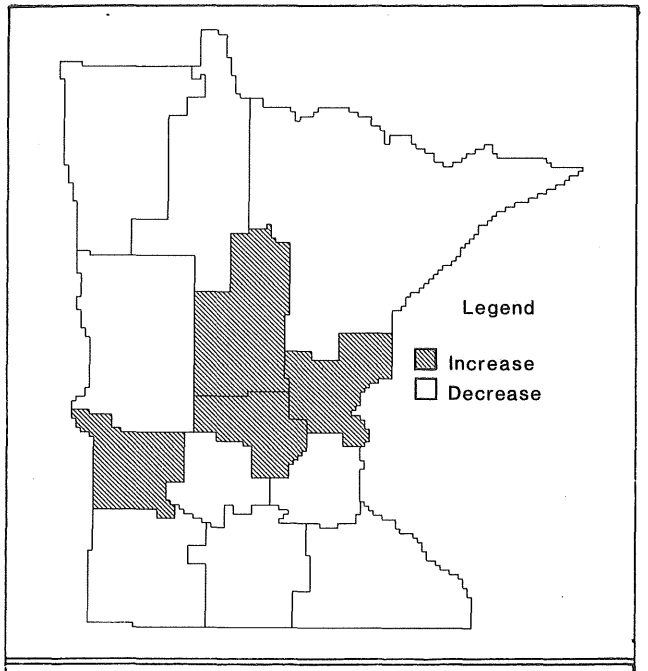
- **POPULATION DISTRIBUTION**
- **PUBLIC LAND**

40% +

EXISTING USE

DERIVED FROM S.C.O.R.P. SURVEYS (1978)

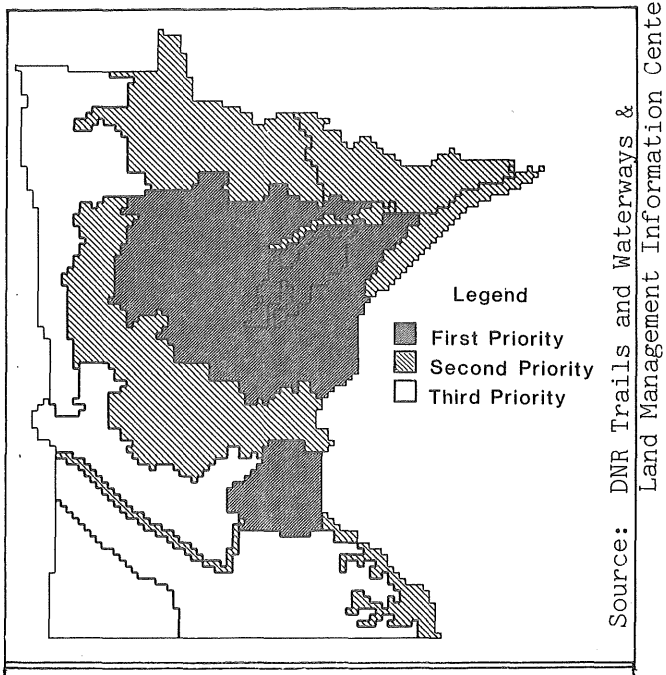
BASED ON ALTERNATIVE C



PROJECTIONS OF ADDITIONAL HORSEBACK RIDING DEMAND BY 1990 BY DEVELOPMENT REGION Source: 1980 Minnesota S.C.O.R.P.

C.

=



Source: DNR Trails and Waterways & Land Management Information Center

COMPOSITE PRIORITY FOR HORSEBACK RIDING

D.

20% = 100%

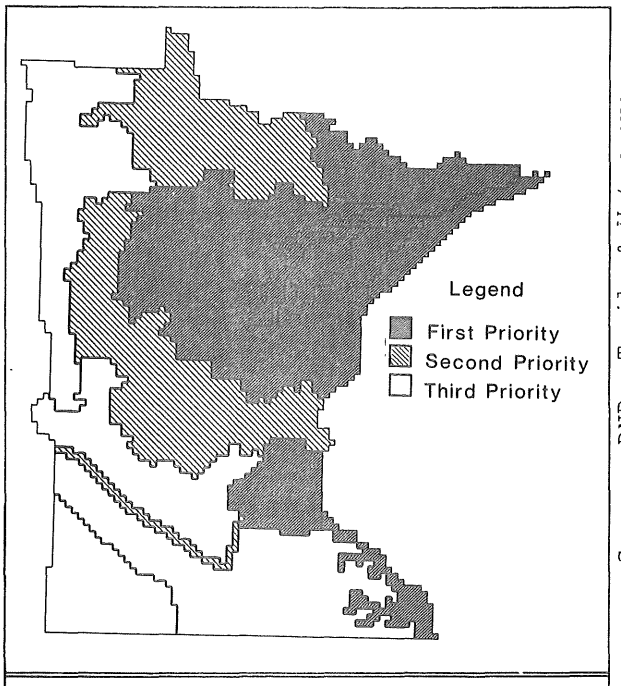
PROJECTED ADDITIONAL DEMAND = PRIORITY GROUP

BASED ON MINNESOTA S.C.O.R.P. (1980)

FIRST = ENSURE EXISTENCE OF HIGH QUALITY TRAILS
SECOND = CONSIDER PROVIDING HIGH QUALITY TRAILS ON A CASE BY CASE BASIS
THIRD = IDENTIFY THE BEST EXISTING TRAILS

SNOWMOBILING

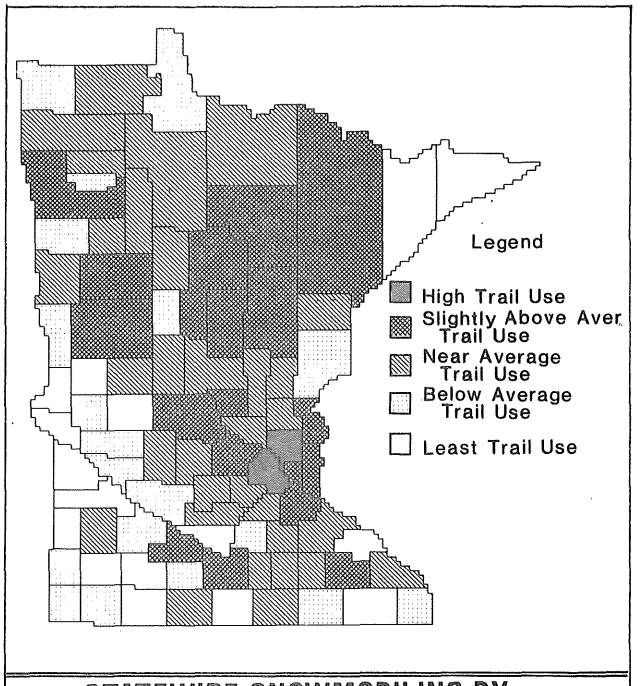
Figure 41: A-D.



SITING CONSIDERATIONS FOR EACH LANDSCAPE
(Based on Alternative C)

A.

Source: DNR Trails & Waterways



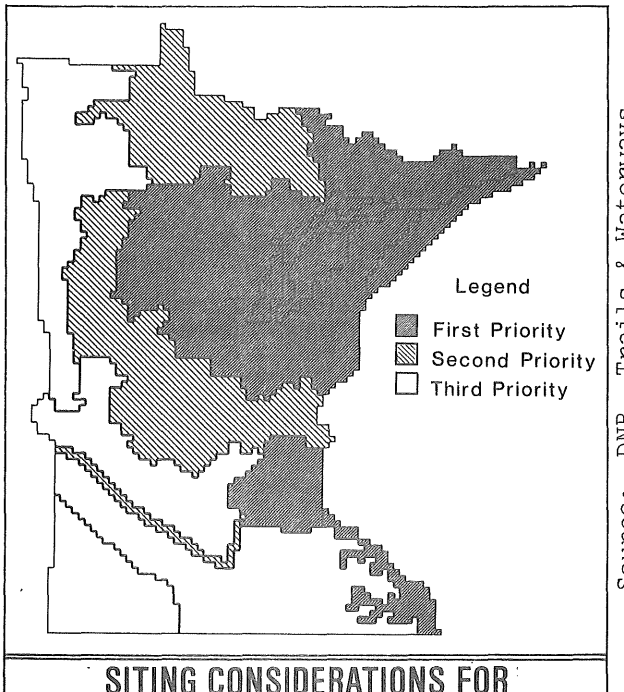
STATEWIDE SNOWMOBILING BY COUNTY DISTRIBUTION
On & Off Trail Use.
Source: Trails Demand Base Data Report. S.P.A. 1980.

B.

SUITABILITY (40%) + EXISTING USE (40%) +

CROSS-COUNTRY SKIING

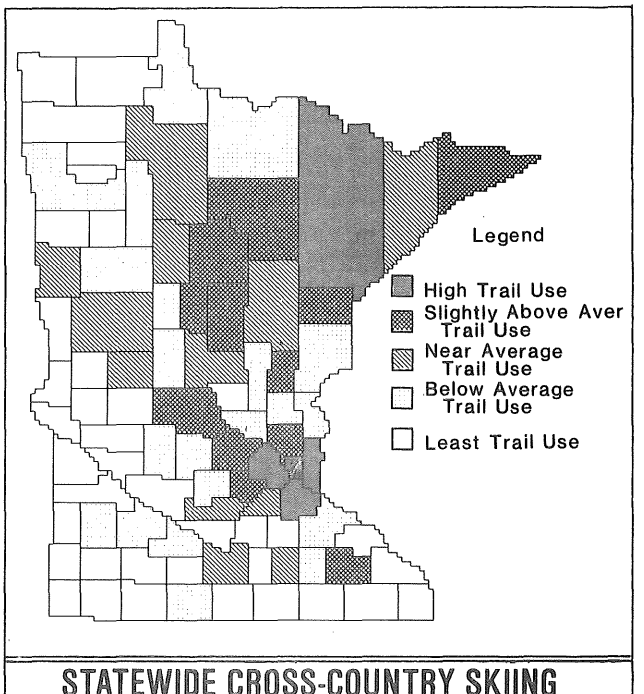
Figure 42: A-D.



SITING CONSIDERATIONS FOR EACH LANDSCAPE
(Based on Alternative C)

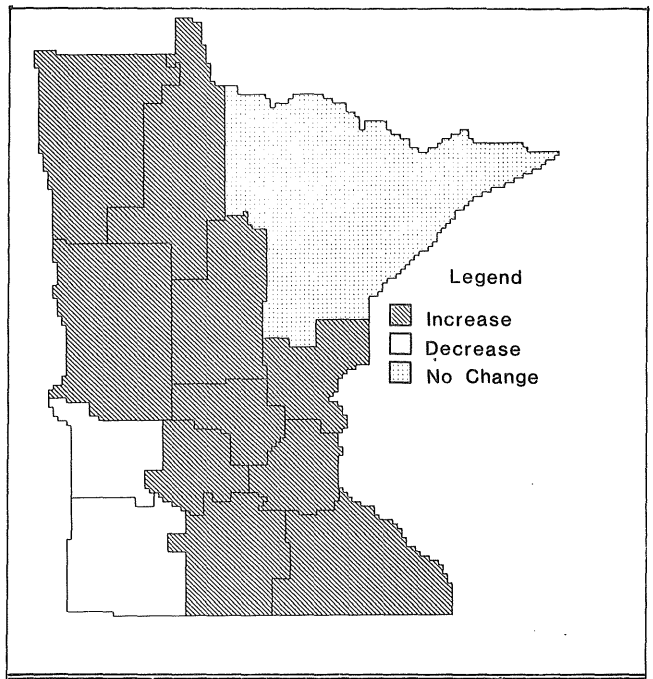
A.

Source: DNR Trails & Waterways



STATEWIDE CROSS-COUNTRY SKIING BY COUNTY DISTRIBUTION
On & Off Trail Use.
Source: Trails Demand Base Data Report. S.P.A. 1980

B.



PROJECTIONS OF ADDITIONAL SNOWMOBILING TRAIL DEMAND BY 1990 BY DEVELOPMENT REGION Source: 1980 S.C.O.R.P.

C.

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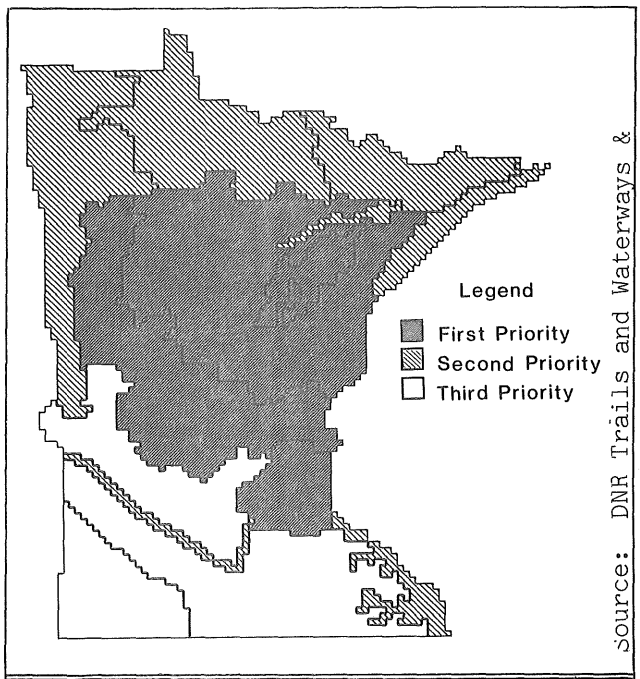
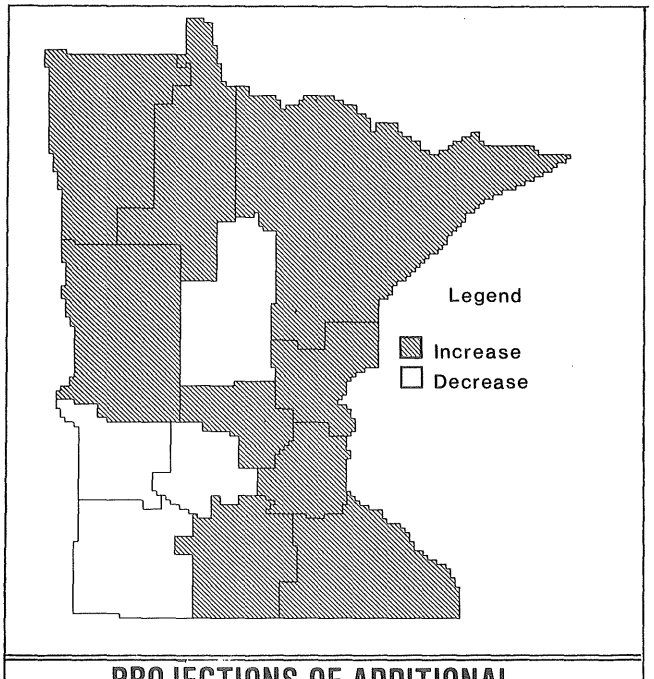


Source: DNR Trails and Waterways & Land Management Information Center

SNOWMOBILING COMPOSITE PRIORITY

D.

PROJECTED ADDITIONAL (20%) DEMAND = PRIORITY GROUP (100%)



PROJECTIONS OF ADDITIONAL CROSS-COUNTRY SKI TRAIL DEMAND BY 1990 BY DEVELOPMENT REGION
Source: 1980 Minnesota S.C.O.R.P.

C.

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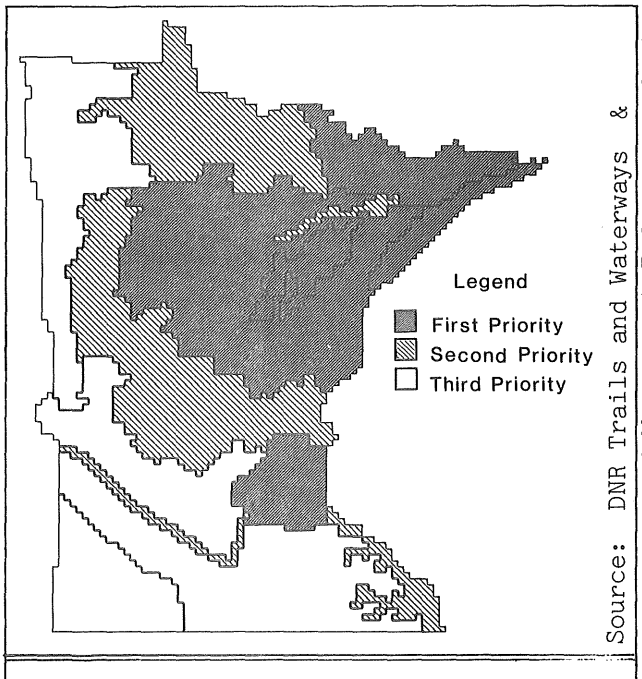


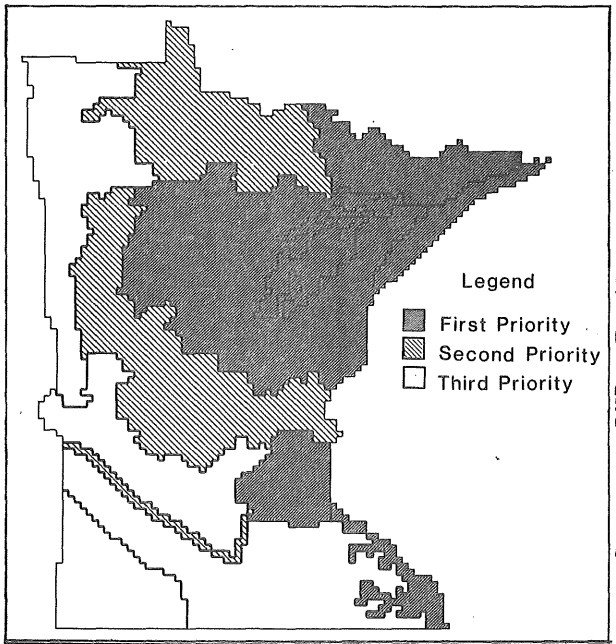
Source: DNR Trails and Waterways & Land Management Information Center

CROSS-COUNTRY SKIING COMPOSITE PRIORITY

D.

HIKING & BACKPACKING

Figure 43: A-D.



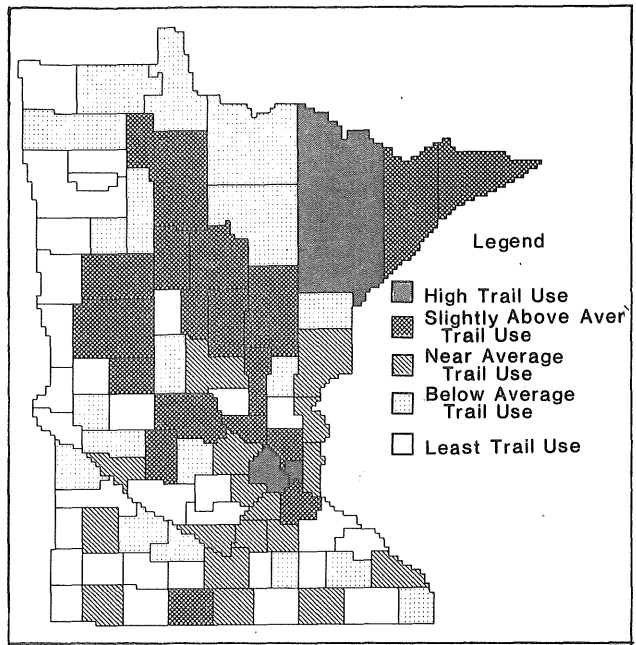
Source: DNR Trails & Waterways

SITING CONSIDERATIONS FOR EACH LANDSCAPE

(Based on Alternative C)

A.

+



STATEWIDE HIKING & BACKPACKING BY COUNTY DISTRIBUTION

On & Off Trail Use.

Source: Trails Demand Base Data Report. S.P.A. 1980

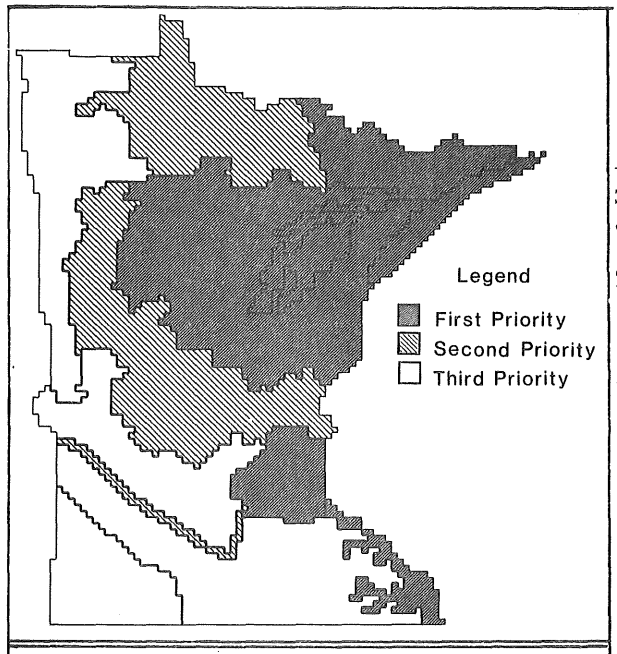
B.

+

SUITABILITY (40%) + **EXISTING USE (40%)** +

BIKING

Figure 44: A-D.



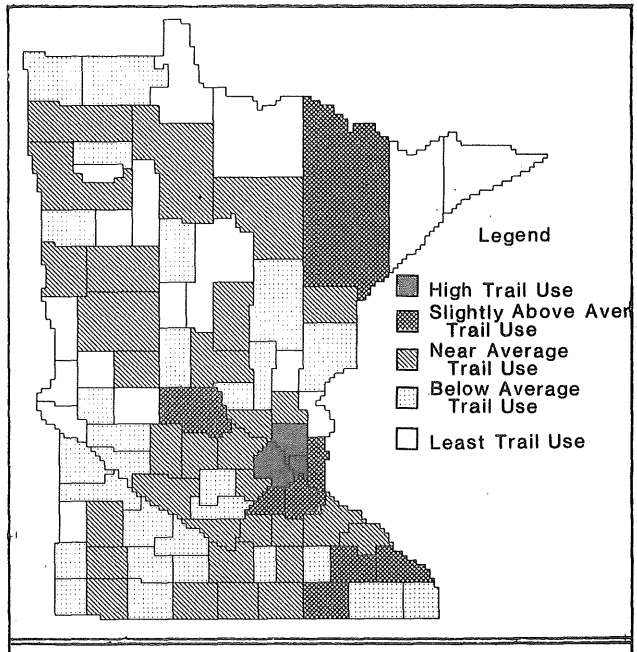
Source: DNR Trails & Waterways

SITING CONSIDERATIONS FOR EACH LANDSCAPE

(Based on Alternative C)

A.

+



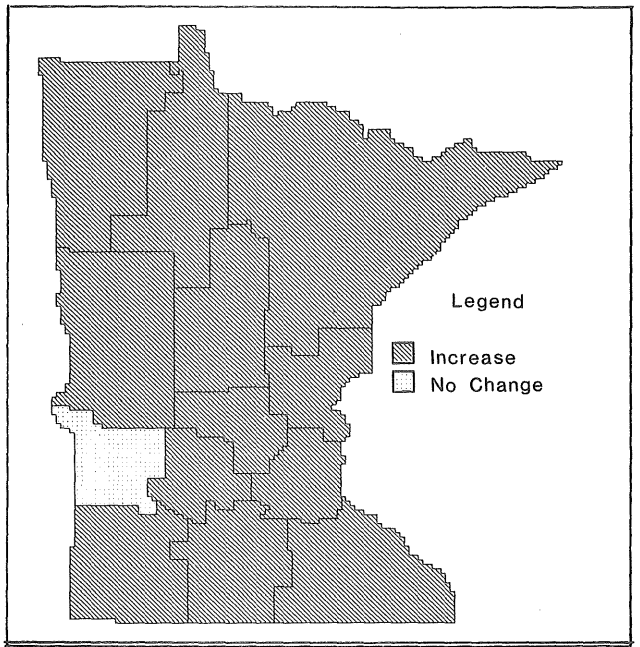
STATEWIDE BICYCLING BY COUNTY DISTRIBUTION

On & Off Trail Use.

Source: Trails Demand Base Data Report.

B.

+



PROJECTIONS OF ADDITIONAL HIKING AND BACKPACKING TRAIL DEMAND BY 1990 BY DEVELOPMENT REGION Source: 1980 S.C.O.R.P.

C.

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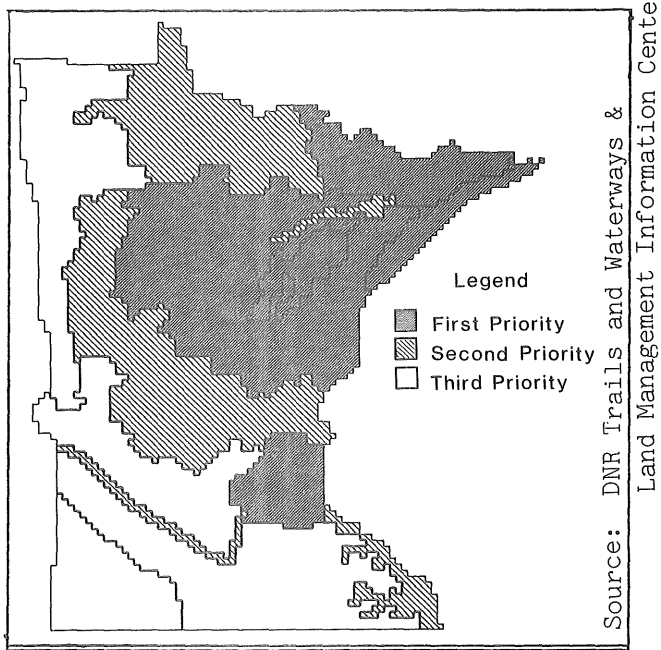
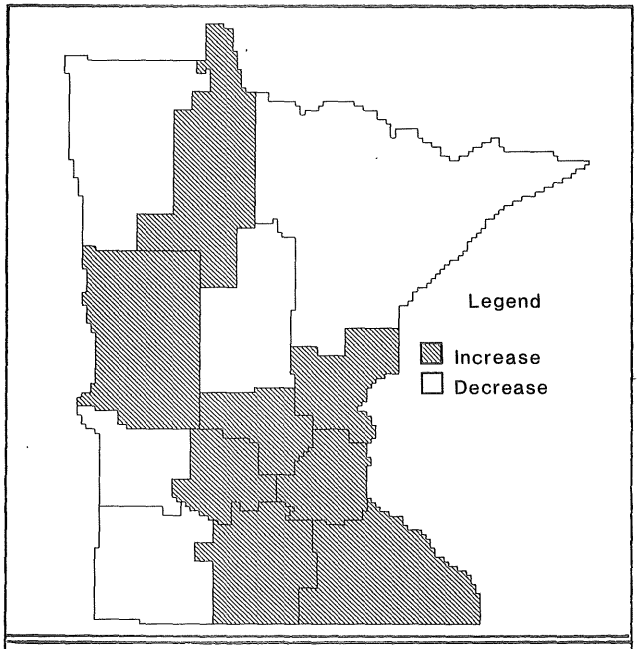


Source: DNR Trails and Waterways & Land Management Information Center

HIKING AND BACKPACKING COMPOSITE PRIORITY

D.

PROJECTED ADDITIONAL (20%) DEMAND = PRIORITY GROUP (100%)



PROJECTIONS OF ADDITIONAL BIKING TRAIL DEMAND BY 1990 BY DEVELOPMENT REGION Source: 1980 Minnesota S.C.O.R.P.

C.

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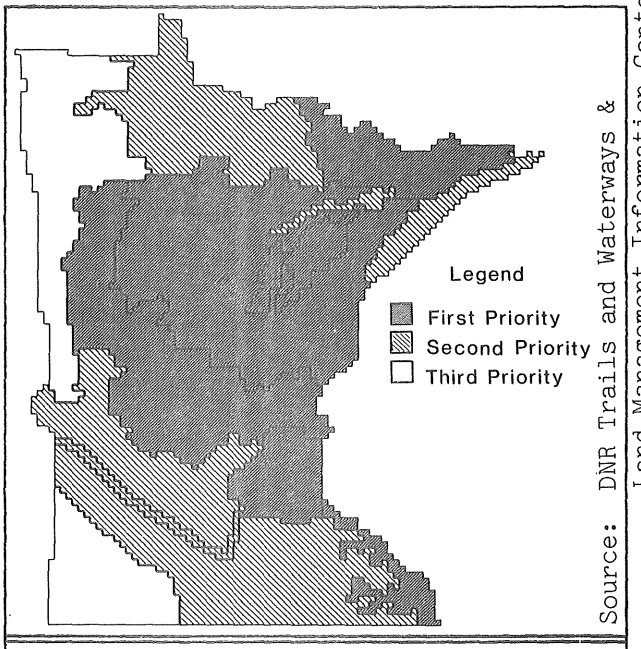


Source: DNR Trails and Waterways & Land Management Information Center

BIKING COMPOSITE PRIORITY

D.

Figure 45: Trail Priority of Recreational Landscapes for Trails (independent of existing trail opportunities).

1 = high priority
2 = intermediate priority
3 = low priority

Number in parenthesis indicates region number as per Figures 34 and 35.

		Hiking	Cross-Country Skiing	Horseback Riding	Bicycling	Snowmobiling
*1.	Twin City Metropolitan Area (5)	1	1	1	1	1
*2.	Northern Pine and Lakes (8)	1	1	1	1	1
3.	Tamarack Bog (9)	1	1	1	1	1
4.	Border Lakes (13)	1	1	2	1	2
5.	Central Hills and Lakes (6)	2	2	2	1	1
6.	Northshore Highlands (10)	1	1	2	2	2
7.	Southeastern Blufflands (1)	2	2	2	1	2
8.	Minnesota River Valley (4)	2	2	2	2	2
9.	Mesabi Iron Range (11)	2	2	2	2	2
10.	Agassiz Lowlands (12)	2	2	2	2	2
*11.	Southern Farm Belt (2)	3	3	3	2	3
12.	Red River Lake Plain (7)	3	3	3	3	2
13.	Highlands of the Prairies (3)	3	3	3	3	3

* Regions least likely to require new trails (based on Figure 37). However, all regions' trails will be put through a field assessment prior to determining the adequacy of existing opportunities.

Recommendations for Additional State Trails Within PRIORITY ONE Regions

The DNR should complete development of state trails having master plans, but before major redevelopment of these trails occurs, consideration should be given to their effectiveness or "track records" in serving the needs of trail users.

The DNR should identify for each user group a high-quality trail experience in each Priority One region which is capable of being enjoyed over a two-day period. Where no such opportunity exists, the DNR should identify and secure a new alignment for state trail purposes.

In conjunction with this recommendation, the DNR should immediately examine the suitability of existing trails (provided by the DNR or other public agencies) to provide such experiences.

Where deficiencies exist, the DNR should first examine the suitability of public land to accommodate state trail development. Secondly, the DNR should determine whether existing rights-of-way (such as abandoned railroad grades) would appropriately meet the needs of trail users. Only after determining that no suitable cost-effective alternatives exist, should the DNR consider acquisition of totally new trail rights-of-way.

Recommendations for Additional State Trails Within PRIORITY TWO Regions

As in Priority One regions, the DNR should complete development of state trails having master plans but before major redevelopment of these trails occurs, consideration should be given their effectiveness or "track records" in serving the needs of trail users.

And similarly, the DNR should identify for each user group a high-quality trail experience in each Priority Two region which is capable of being enjoyed over a two-day period. However the similarity with Priority One region's recommendations ends where no such opportunities exist. In those Priority Two regions the DNR should consider state trail proposals on a case-by-case basis, utilizing user-demand information, local support, projected cost of development and the suitability of potential alignments.

Recommendations Within PRIORITY THREE Regions

State trail acquisition and development is generally not recommended.

The DNR should simply identify the best trail experiences capable of being enjoyed over a two-day period through the Mn/DOT Bikeway Program, the DNR grant-in-aid program and on existing federal, state and local recreational trails.

This plan recommends that, in general, the DNR concentrate its efforts on completing the proposed system of trails as quickly as possible, and that this be done prior to entertaining additional state trail proposals beyond one high-quality opportunity for each user group in any of the landscape regions.

However, there always exists the possibility of an exceptional trail opportunity or demand surfacing that should be met. In these cases, judgment is necessary to balance between the plan's objective of completing the trail system, and seizing a particularly attractive trail opportunity. Relevant factors to consider include demand, resource quality, and cost.

The thrust of the DNR, as presented in this plan, is to meet today's needs by completing those trails having master plans, and to fulfill future needs by exploring, identifying, and coordinating a system which ties together existing elements and fills in with additional trails where necessary and/or desirable.

As such this system will not in general be in conflict with existing state trail development plans. Most will simply be incorporated into the "Explore Minnesota" system. Appendix G identifies work remaining to be completed on existing trails. There is one notable exception to this. Because of its limited acquisition and development status, as well as its third priority status, it is recommended that legislative de-authorization of the Casey Jones State Trail in the far southwestern corner of the state be sought.

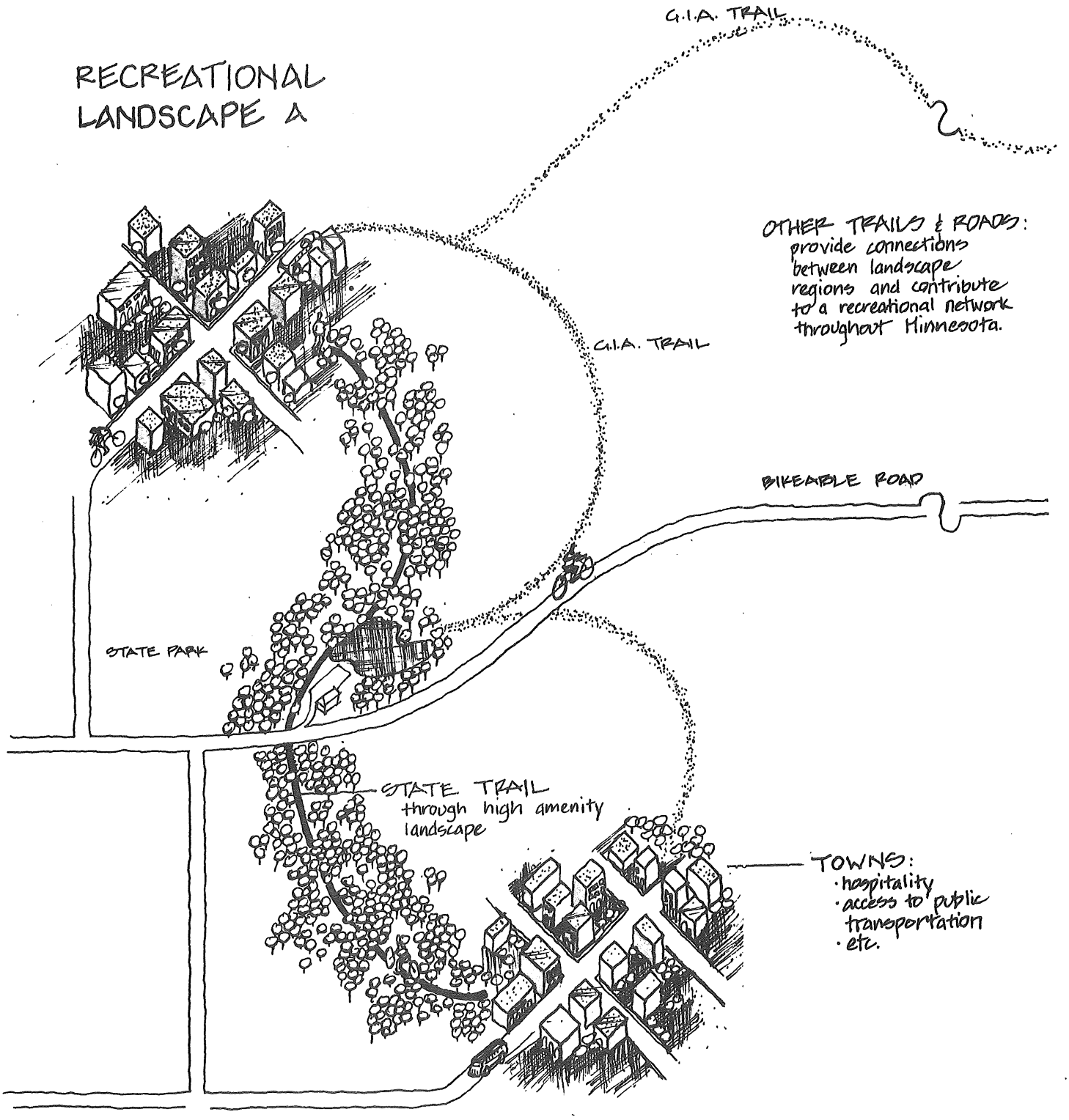
The system should be monitored regularly to determine whether it is achieving desirable results. Perhaps the most important question is, "Is this the best way to serve Minnesota's state trail users?" A special emphasis of the monitoring program should be to evaluate the public's receptivity to state trails as "translators of landscape regions." DNR should conduct a formal strategy evaluation to review, and potentially revise, acquisition guidelines, development standards, promotional techniques and other

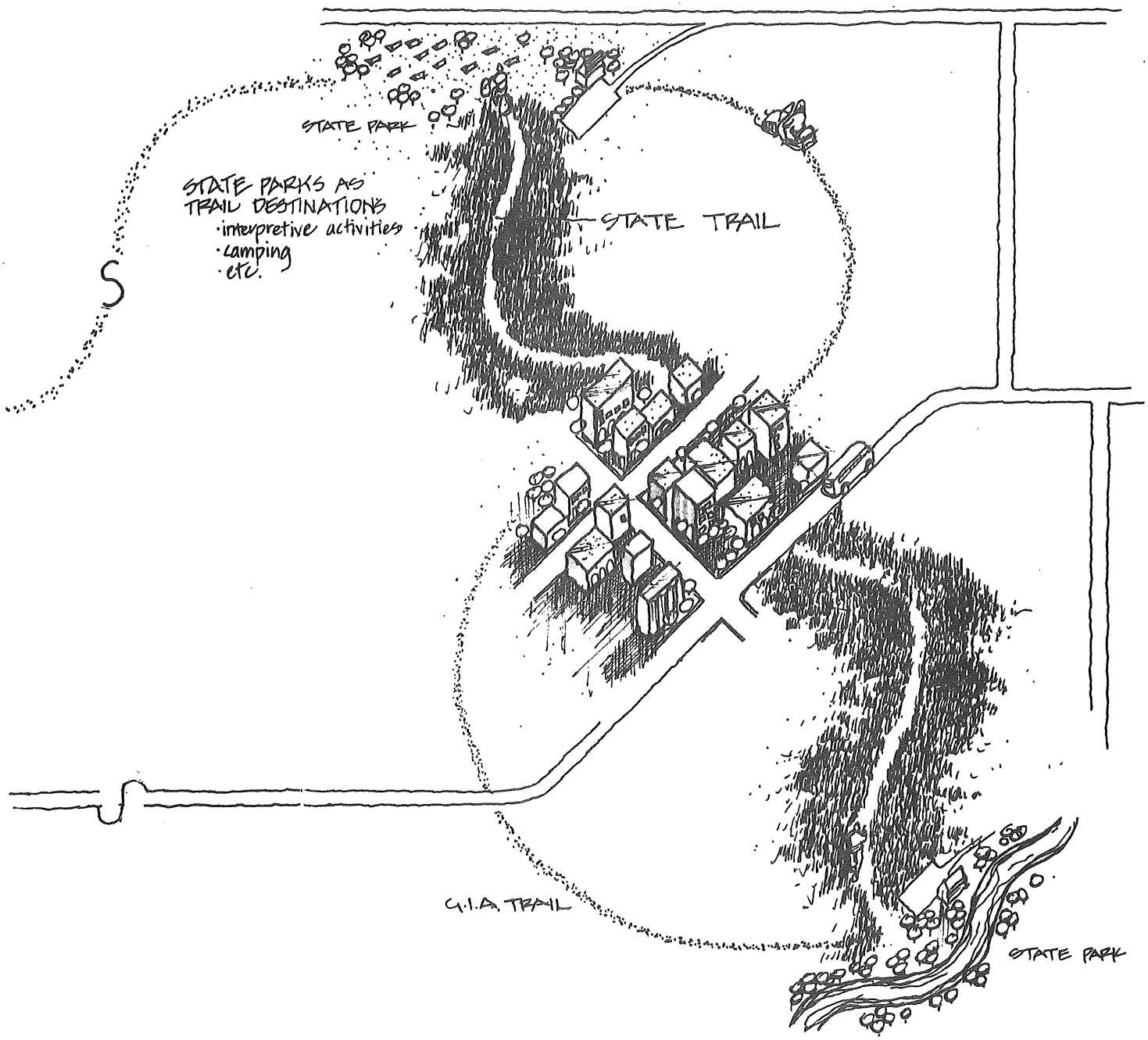
issues surrounding the provision of state trails after a skeletal system which encompasses the entire state has been in operation for two years. An appropriate decision at that point will be whether this plan requires little or no concept enhancement, or whether major modification or a substantial reformulation of the state trail system concept is called for.

E. How State Trails Contribute to Larger Trail Systems

The following figure (Figure 40) shows how state trails, grants-in-aid trails and bikeways can work together to create extended trail opportunities. It shows state trails acting as recreational travel routes that connect towns and state parks while located in distinctive, high-amenity landscapes which take advantage of hospitality and public transportation services.

Figure 46: State Trails may serve as Building Blocks for a Larger Minnesota Network.

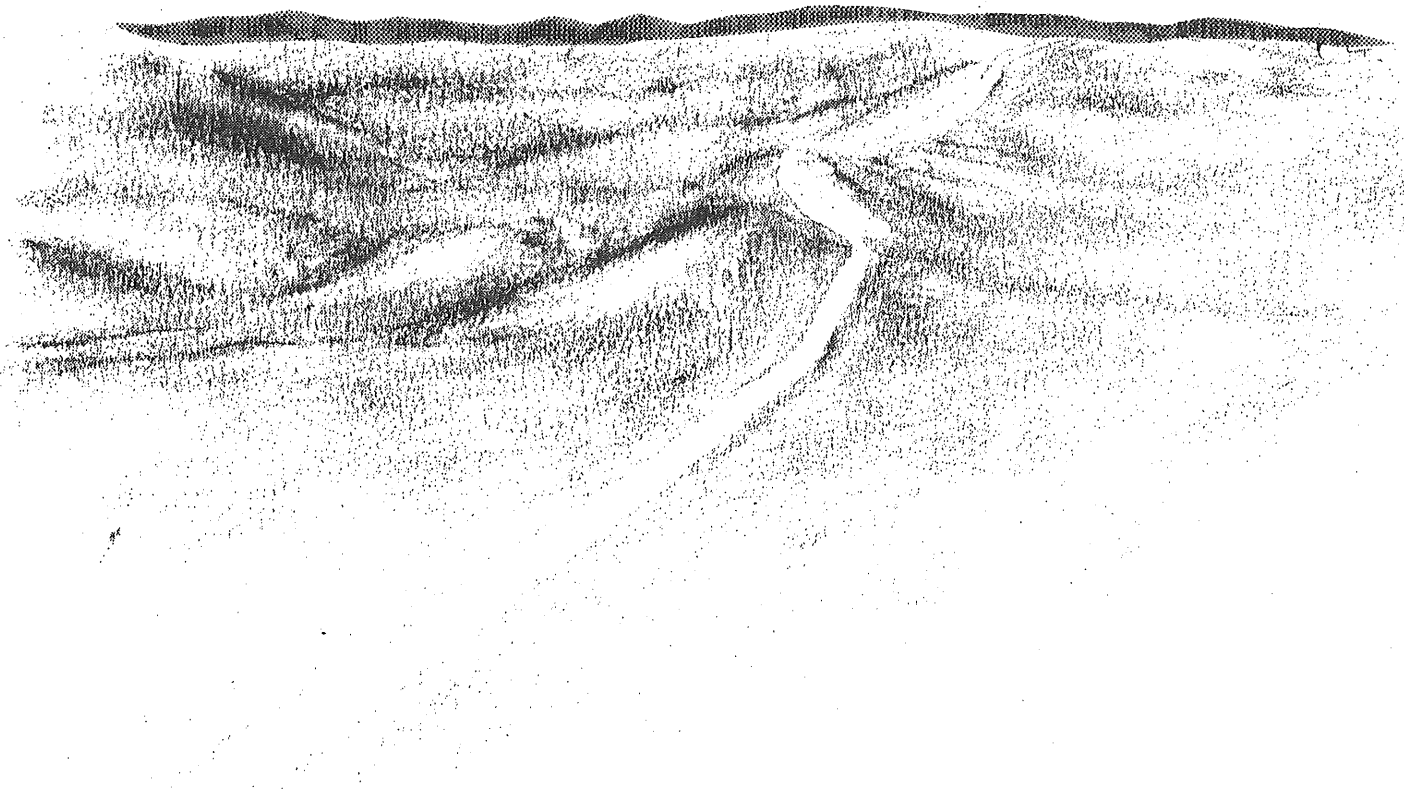




RECREATIONAL LANDSCAPE B

HIGHLAND of the PRAIRIES

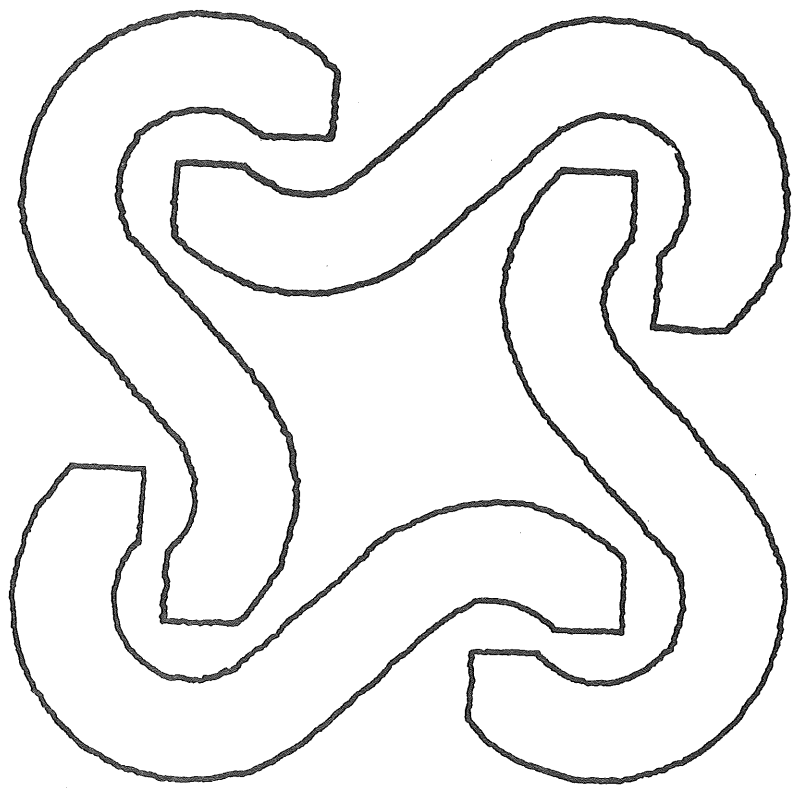
RECREATIONAL LANDSCAPE



...the rolling divide which separates the Missouri and Mississippi watersheds... was once a treeless prairie with small hardwood stands along the major riverways...

6

Grants-in-Aid Trails: Role & Recommended Allocation



A. Role of Grants-in-Aid Trails

The public has also expressed a need for trails which are "close to home and not necessarily of statewide significance." In fact, SCORP estimates that an average of 85 percent of trail use occasions occur within 30 miles of the user's residence. While some state trails will also be close-to-home trails for some users, state trails alone cannot meet this need. Construction of some trails which are not of statewide significance will be necessary to respond to the need for close-to-home trail recreation.

Grants-in-aid (GIA) trails, an important ingredient in the DNR's trail program since 1971, help meet this need. GIA trails are single-use trails built by local people, generally on privately owned land, sponsored by a local government, and funded by the DNR through its Trail Assistance Program.* They serve the needs of local users whose desire for a trail may not, for various reasons, fit into DNR state trail priorities. However, these local trails contribute to the overall quality statewide system.

Since this close-to-home trail market is also served by local units of government, their efforts and the DNR's should be coordinated. While increasing local government responsibility for providing close-to-home trails may be philosophically and administratively attractive, the relative ease of collecting revenue at the state level is likely to be sufficient incentive for continued, significant state/DNR involvement in funding local trails.

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* The proportion of trail mileage which should be owned by the state through its state trail program is an issue of importance for future trail use in Minnesota. The pros and cons of public and private trail ownership are considered in Chapter 9, page 212.

The grant-in-aid program now serves primarily snowmobilers, and some skiers. It is recommended that the grant-in-aid program be expanded to include other DNR-designated trail uses. If that occurs, the DNR should tailor program guidelines to meet the needs of specific groups.

Grant-in-aid trail mileage developed for each trail use should be related to the funds generated by each user group. Currently only snowmobilers and cross-country skiers pay special taxes: snowmobilers' unrefunded gas taxes* and a snowmobile registration fee; cross-country skiers -- a license to ski on designated and promoted public ski trails. (It is recommended that a comprehensive funding/fee system be instituted for other user groups as well (see page 231).

While satisfying local needs, the GIA program has in some cases served regional and statewide needs as well. Neighboring counties have found that by connecting their independent trail systems, they can have a mutually beneficial regional trail system. And, in resort areas (where resort owners make up a significant part of area club membership), the GIA program has provided an inexpensive method of creating a winter attraction. This has been good both for local economies and for Minnesota tourism as a whole. However, the program's current tourism function was apparently not part of the intent of the original legislation, and care should be taken that the GIA program is not compromised.

Many GIA trails can serve users interested in overnight outings as well as those interested in scenic day trips. And in some areas, because of land use and other constraints, they comprise the only acceptable alignment opportunity. In those cases, consistent with the DNR's desire to beneficially integrate trails into communities,

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* A portion of the gasoline tax normally earmarked for highway purposes is used for snowmobile trails. The amount is based on the estimated volume of gasoline consumed by snowmobiles.

funding GIA trails and not proposing state trails is the DNR's preferred action. Trails meeting state trail standards will be investigated for inclusion in the "Explore Minnesota" Trail Collection (see page 197).

DNR GRANT-IN-AID TRAIL GOAL

TO PROVIDE ASSISTANCE TO LOCAL UNITS OF GOVERNMENT TO ESTABLISH, DEVELOP AND MAINTAIN RECREATIONAL TRAILS TO MEET LOCAL AND REGIONAL TRAIL NEEDS.

In addition, GIA trails should, where possible, be located so as to connect to or extend state and unit trails, and may serve as segments of the Explore Minnesota Trail System in select landscape regions.

B. Recommended Allocation of Grants-in-Aid Trails

It is not the role of the DNR to determine how much money the Trail Assistance Program should distribute--the Legislature is responsible for funding this program. But it is the DNR's responsibility to ensure that the trail users get the best possible return on the money that is appropriated. It also is not DNR's role to aggressively promote development of GIA trails in any or all parts of the state. The intent of the program is for local user groups to show their initiative and come to the DNR with a reliable proposal. It is the DNR's role then to work with the club to secure the funds so that the club can develop and maintain their trail.

1. Snowmobiling

In general, maintaining existing GIA trails is more cost-effective than developing and maintaining new trails. Providing trails which connect existing trails also seems to be more beneficial to users than developing new "independent" systems. Therefore:

The first priority for funding will continue to be existing trails that are receiving acceptable use and do not require rerouting.

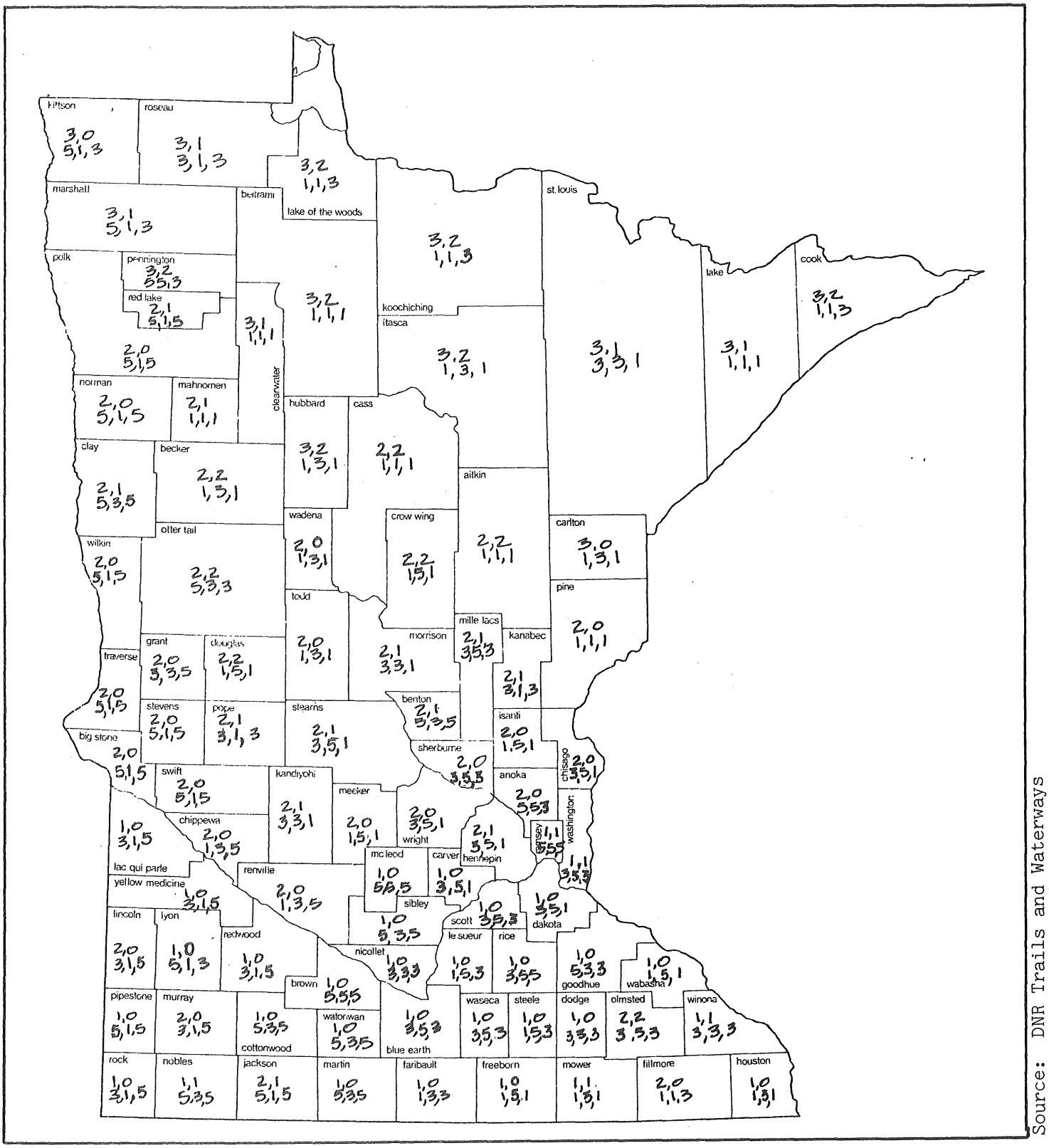
The second priority will be trails which (will) connect population centers, and recreation and service facilities and which (will) connect and/or expand other trail systems.

The third priority will be new trail systems or significant additions to currently funded mileage.

To ensure a fair and equitable statewide distribution of funds for new trails, a map (Figure 48) has been developed which establishes the funding order within each priority. It incorporates the following (see Figure 47):

Factor	Reason	Approximate Weight
-Existing county use per mile of trail	to reinforce systems with high use	25%
-Registration density (registrations/area)	to promote the equitable distribution of funding	25%
-Trail Mileage	to account for existing development	25%
-Ability to hold snow	to maximize benefit for cost incurred	15%
-Hotel/Motel receipts	to recognize regional dependence on tourism and use from outside the region	10%

Because there is a dynamic relationship among the different factors, the map should be updated annually. Seventeen counties have been identified in the highest category for new development. Typically, these are counties which have very few miles of snowmobile trails but whose trails are used on a per mile basis more than in other counties. But because of their small snowmobile mileage, little is known about their appeal to users. Therefore, although they may be of the highest priority, a reasonably modest grant should be given and then use should be monitored to determine the appropriate next step. Thirty-one randomly distributed counties fall within the high category and twenty-one in the medium to high category. Finally, eighteen counties fall into the medium category. Typically these are counties with a higher than average amount of snowmobile trails but a less than average use per mile of trail.



Source: DNR Trails and Waterways

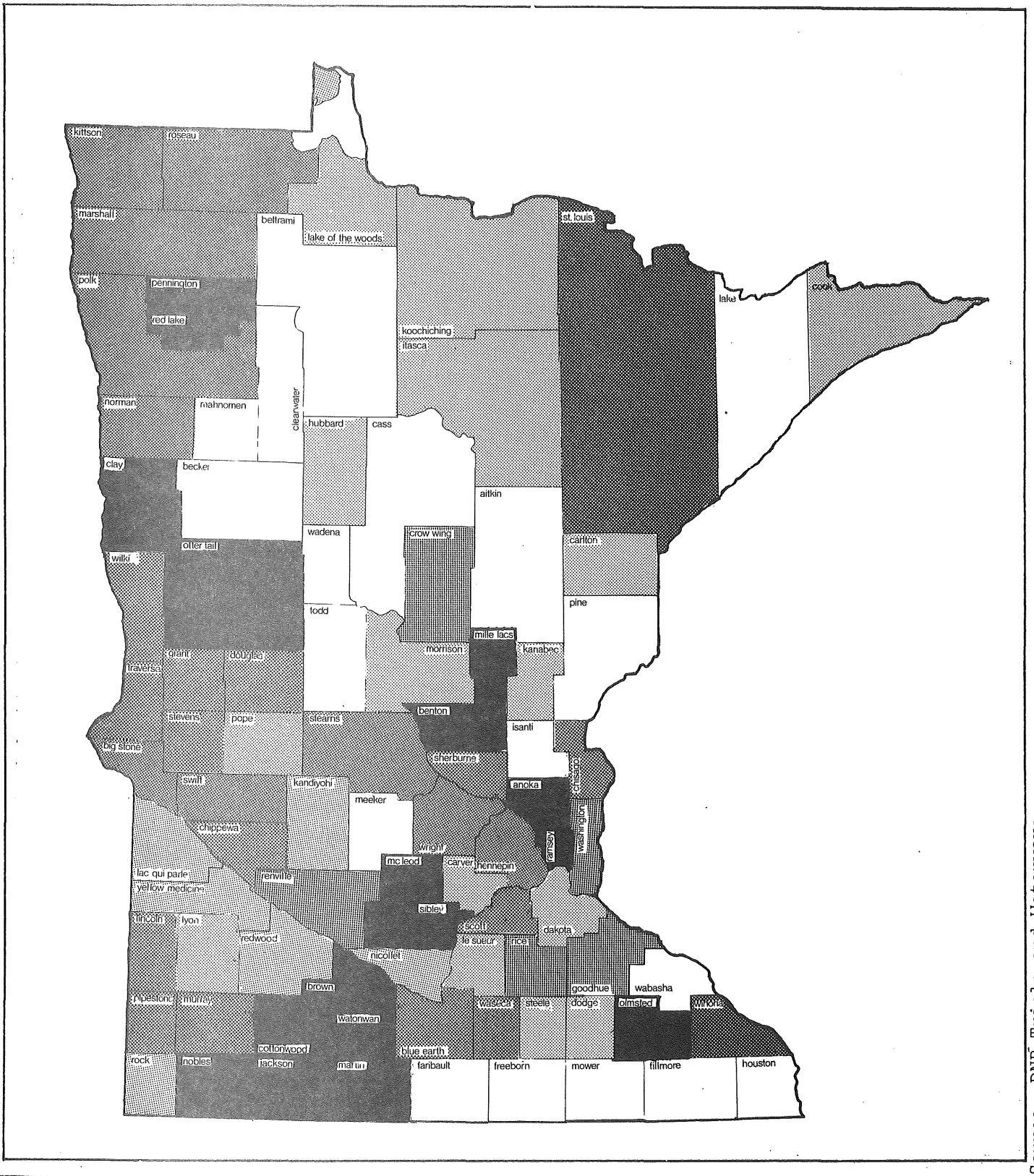
ELEMENTS CONTRIBUTING TO THE FUNDING PRIORITIES OF GRANT-IN-AID DEVELOPMENT

... Elements are added together to give a total used in determining priority

- Length of Snowcover (1-3)
- Hotel/Motel Receipts (0-2)
- Trail Mileage (1-5)
- Snowmobile Registrations (1-5)
- Use per Mile of Trail (1-5)

Note: the lower the number given an element, the lesser its importance in determining funding priority

Figure 47.



Source: DNR Trials and Waterways

FUNDING PRIORITIES FOR GRANT-IN-AID DEVELOPMENT OF SNOWMOBILE TRAILS FOR 1983-1984

Based on a weighting of 5 elements (Figure 47)

	Sum of Elements (Fig. 47)
Highest Category	14-16
High Category	11-13
Medium-High Category	10
Medium Category	5-9

Figure 48.

MINNESOTA DNR TRAIL PLAN inventory · analysis · alternatives

In comparing proposals within or between DNR regions there should be an awareness of potential data deficiencies and extenuating circumstances which would indicate the wisdom of diverging from the plan recommendations. As an example, consideration should be given to those GIA trails which (will) best meet and capitalize on the criteria used in developing the trail suitability map (Alternative C, Figure 33, page 90).

Furthermore, all procedures outlined in the GIA Program Manual must be complied with. However, to take maximum advantage of priorities shown in Figure 48, it is recommended that where GIA proposals do not conform to the priority system, written justifications supporting a variance be forwarded to the central office by regional personnel. The GIA coordinator will determine the final outcome of requests.

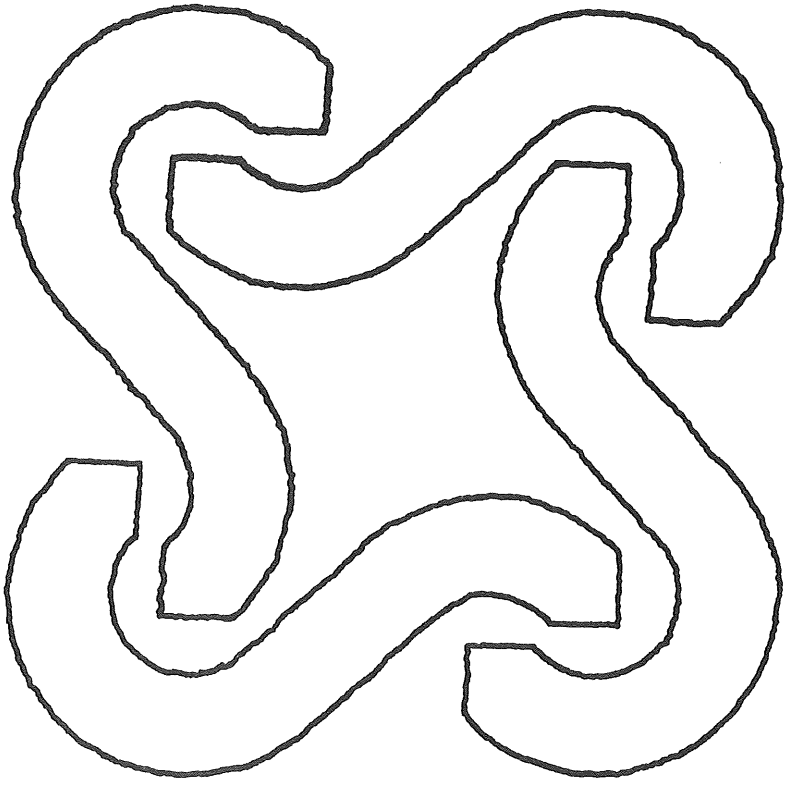
2. Cross-Country Skiing

Until recently, cross-country skiers did not contribute directly to funding ski trails. However, Laws of MN 1983, Chap. 325, provided that users of public ski trails that are designated and promoted must have on their person a license. It provided that a portion of the fee be returned to the ski club or organization that sold the license. Additionally, it provided that a task force be established to advise in the development of guidelines to be used in this program's administration.

Therefore, in respect of that legislative direction, this trail plan will not make any recommendations other than to reaffirm the Department's intention of working with the task force. However, in the event that consideration is given to amending this legislation, it is recommended that due consideration be given to the provisions of the funding priority system proposed for snowmobilers (Figure 48). With a minimum of modification, that formula could also be utilized for prioritizing cross-country ski development.

7

DNR Unit Trails: Role & Recommended Allocation



A. Role of Unit Trails

As discussed earlier (page 105), most people use trails for short periods of time - less than an entire weeklend. Therefore, the provision of quality scenic day-use opportunities is an important part of the Department's trail program. With the size and variety of the land base within its management units, DNR is well equipped to provide a variety of scenic day-use trails.

DNR unit trails in particular satisfy day-use trail needs. The size of most DNR units is admirably suited to the length of day-use trails. And day-use trails have been a successful element of DNR unit recreation and resource management for some time.

Because the DNR uses revenues generated from throughout the state to fund unit trails, statewide appeal is also an important consideration. This is not to say that they cannot serve local needs - they do that as well; it just means that their purpose is broader than only service to the local community. This plan recommends that, in general, locally generated money be used to erase local trail deficiencies and revenues collected from throughout the state be used to erase statewide trail deficiencies.

In addition to their obvious ability to serve day uses, unit trails can qualify as trails under the "Explore Minnesota" program (see page 197) where they combine exceptional scenic appeal, desirable destinations and appropriate length and tie-ins to other qualifying trails.

DNR UNIT TRAIL GOAL

TO PROVIDE A VARIETY OF RECREATIONAL TRAILS AND TRAIL FACILITIES IN A MANNER WHICH ENHANCES THE VISITOR'S EXPERIENCE AND IS CONSISTENT WITH THE PURPOSE AND OBJECTIVES FOR WHICH THE DNR UNIT HAS BEEN ESTABLISHED.

Specifically, priorities for DNR Unit Trails should incorporate regional or statewide appeal in their provision. They should emphasize the provision of outstanding day-use trail opportunities but may also provide scenic overnight opportunities.

B. Recommended Allocation of Unit Trails

As with the state trails, a period of limited growth is recommended for unit trails. Therefore, similarly, a period of use monitoring is recommended to better determine the effects of crowding, design, and management efforts and to identify trails which are receiving insufficient use to warrant continued maintenance.

As provided for in the Outdoor Recreation Act (ORA), only trails that are part of approved management plans will be developed. Prudent construction of unit trails requires that the number, type, distribution, and preferences of trail users (local, regional and statewide) be analyzed to assess the need for the trail. In this way, it is hoped that the state's limited financial resources will have a maximum impact.

By and large, the Trails and Waterways Unit administers legislatively appropriated unit trail funds. As such, it has certain responsibilities related to the appropriateness of the distribution formula. But because DNR unit trails are located within (and, indeed, are a part of) the context of state parks or forests, unit managers have primary authority in their exact location and operation. Clearly, a cooperative process is called for which meets the needs of all concerned.

This plan recommends a two-stage process to help ensure quality unit trails on lands managed by the Division of Parks and Recreation and the Division of Forestry. The first step insures that each unit trail will be appropriately screened for location, design, compatibility with unit resources, etc. The second step orders each of these proposals into a priority system to insure that the best trail proposals receive available funds.

Figure 49: Allocating Unit Trails: A Two-step Process

STEP ONE: PLANNING

Develop ORA unit management plans which identify proposals meeting criteria for maintenance, rehabilitation or development of trails.

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STEP TWO: FUNDING

Select trail proposals from Step One and blend them into DNR's overall statewide funding request to the Legislature occurring each biennium.

Specifically, STEP ONE consists of a thorough review of proposed ORA management plans during the PERT* process by Trails and Waterways utilizing existing unit and unit trail policies. Comparing those policies with the documented design objectives for a unit's trail system, proposed trail alignments, and development specifications, each plan will be reviewed to ensure that it:

1. has projected use which is consistent with anticipated development and maintenance costs;
2. complements but does not duplicate other recreation facilities within the area (including other trails);

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* "PERT" is the acronum for the DNR's Planning Environmental and Review Team which routinely evaluates many of the Department's plans.

3. provides for appropriate variety of skill levels;
4. avoids sensitive resource areas;
5. provides for appropriate multiple use;
6. will be surveyed as part of an on-going monitoring program;
7. is designed to promote maximum user appreciation;
8. is accessible for the designated user group(s);
9. considers to the greatest extent possible the needs of the disabled;
10. provides interpretive opportunities;
11. creates no unmanageable enforcement problems;
12. considers the health and safety of users; and
13. considers potential use of public transporation.

Having established a list of good candidate trails in step one, what remains in STEP TWO is to integrate these proposals into a statewide funding mechanism.

In general, maintaining existing unit trails is more cost-effective than developing and maintaining new trails. Overall, therefore:

The first priority for funding will be to maintain existing trails that are receiving acceptable use and do not require rerouting.

The second priority will be to rehabilitate trails through upgrading or rerouting to improve them and/or to make them suitable for multiple use.

The third priority will be to develop new trails as identified in unit or sub-area plans.

Within each of these priorities there is a further need to rank the project proposals that originate in the field. Statewide and regional appeal will be factors in determining the unit trails development and rehabilitation budget. Part of this appeal may be the way in which the unit trail interlocks with other components of the Explore Minnesota Trails System (see page 197).

*Procedure for Determining Unit Trail Budgets

Because of the Intra-Departmental nature of unit trails, it is of utmost importance to coordinate their funding between and among the appropriate Divisions. What is needed is a careful balancing between individual unit needs and statewise thrusts.

Project proposals will be prepared by the park manager or district forester based on approved recreation unit management plans or rehabilitation needs as determined by field inspection. Park project proposals will then be sent to the regional park supervisor and forestry project proposals to the area forest supervisor. Once the list is approved by the area forest supervisor, it will be sent to the regional forest supervisor.

The regional park supervisor and regional forest supervisor will then meet with the regional Trails and Waterways coordinator on an individual basis to discuss the project proposals and rank them in order of priority. These priority lists will be submitted to the regional administrator with copies forwarded to the appropriate division director.

Regional administrators will review each project proposal and make recommendations to the special assistant to the commissioner for Trails and Waterways.

Once all regional trail priority lists for park or forest trails have been sent to the central office and reviewed by appropriate personnel, trail operations staff will set up meetings to discuss the need for revisions with park staff and forestry staff. Once this review has been completed, the unit trail program budget will be prepared for submission to the Legislature. Disagreements that cannot be resolved at the division director's level will be immediately referred to the commissioner's office for a decision.

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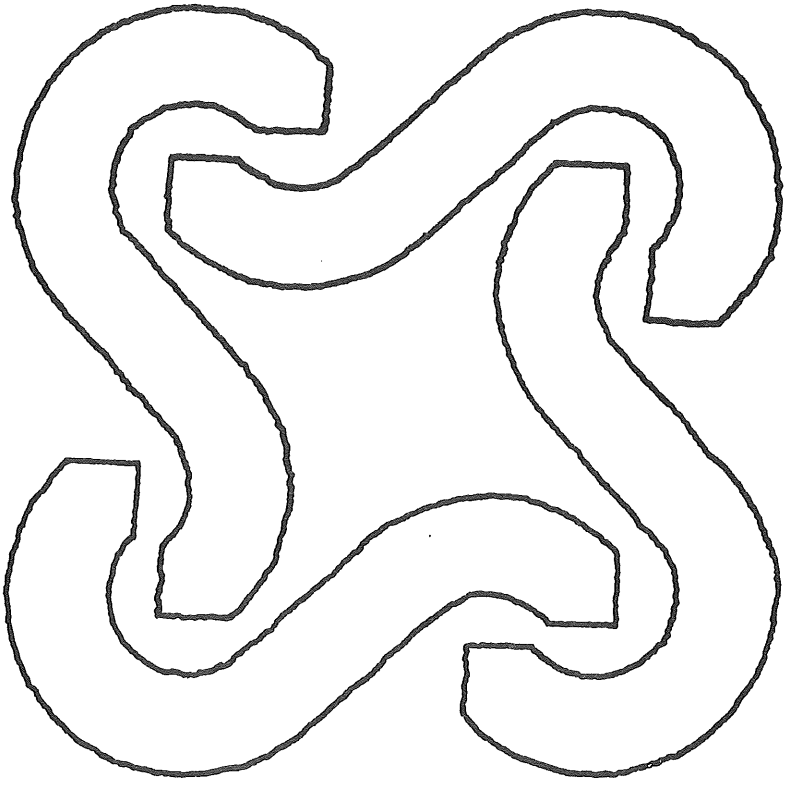
* This section is admittedly more detailed than much of what is found in the plan. It has been included because of the intra-departmental nature of the task and the resulting need to orchestrate a wide variety of personnel.

The commissioner's office will determine whether trail proposals will be submitted as a total package or divided up as part of each recreation unit's individual budget request.

In the event that the Legislature does not fund all of the proposed trail projects, reductions will be guided by the 13 factors and three priorities specified on page 143.

8

Design, Development, and Management Options & Recommendations



A. Design, Development and Management Issues and Concerns

The construction and operation of any recreational trail will affect trail users, adjacent landowners, communities and the natural environment. These effects can be immediate or can develop over a long term, and can be favorable or unfavorable, depending on local circumstances. The extent to which unfavorable effects are minimized or avoided and favorable effects are maximized determines to a considerable degree the success of the managing agency in siting a recreational trail.

The DNR's purpose in managing its trail program is to comply with the popular mandate for a system of recreational trails, while assuring to the maximum extent possible that negative trail-related impacts are minimized or avoided altogether.

Therefore, as part of solving the trail planning problem--How can the DNR supply trails which benefit host communities as well as provide an appropriate level of recreation and commuting opportunities for present and future generations?--considerable effort has been put into improving details of designs on new trails and management of existing trails. Some of these design aspects have been addressed on pages 207-209.

Many trail-related problems and concerns have been identified in public meetings and in meetings of the trails planning staff. They are grouped below by general area of concern. Those which are addressed further in this section are marked by a minus (-).

1. Concerns about trail access and support facilities:

- a. Trails should include adequate and convenient water, restroom and other support facilities.
- b. Trails should benefit the communities through which they pass.

c. The DNR should provide for access to trails by the handicapped (see page 214).

- d. Trails should be accessible by public transportation.
- e. Trails can present obstacles to landowners moving farm machinery and livestock.

f. Trails may block from view fields and livestock.

g. The DNR should provide ski huts or warming shelters.

h. The DNR should provide camping opportunities on trails.

2. Concerns of adjacent landowners about invasion of privacy and crime:

- a. Trail users who approach houses to use the phone, bathroom, tools, etc., could be annoying to adjacent landowners.
- b. Trails which pass too close to homes and other buildings can invade the privacy of adjacent landowners.

c. Hunting on trails can cause problems for adjoining landowners (see page 234).

- d. Trails may serve as convenient access to private property for vandals, burglars, cattle thieves, etc.
- e. Trail users may trespass on private property.
- f. The fear alone of problems, even if they don't arise, can cause psychological discomfort.

3. Concerns relating to other possible land uses for the trail right-of-way:

- a. Adjacent landowners may want to use the right-of-way for non-trail purposes (e.g., crops, buildings, storage, yard extension).

b. Adjacent landowners may wish to acquire the right-of-way to eliminate the potential for trail-related problems.

- c. In the case of an existing right-of-way (e.g., an abandoned railroad grade), adjacent landowners may already lease or otherwise encroach upon it.
- d. A trail may contribute to weed problems on adjacent private land.

4. Concerns about trail layout, maintenance and management:

a. Trails should be better maintained (see page 251).
- b. User conflicts can occur. Some uses are not compatible on the same treadway at the same time (see page 202 and page 234).
c. Who is liable for damages if a trail user has an accident while trespassing on adjacent private property?
- d. More and better signs are needed.
- e. What are the DNR's responsibilities regarding new fencing and fence maintenance?
f. Some users feel a trail surface material better than limestone should be used.
g. Some feel the need for better policing on trails.
h. Some users want lighted, one-way ski trails with challenging hills.
i. Trails should be aesthetically pleasing.
- j. Unauthorized trail use (use of a snowmobile trail by four-wheel drive vehicles, for example) can render the trail unfit for its intended use (see page 240).
k. A consistent signing system is needed for snowmobile trails to allow for long distance touring (see page 249).

5. Concerns about disturbance of natural and economic resources:

- a. Trail users may disturb farm animals and wildlife, crops and other desirable vegetation.
b. Who is responsible for extinguishing wildfires?

- c. Camp or cookout fires on the trail are a potential threat to the trail and its facilities and to adjacent landowners.
- d. Some trail construction can impound water or otherwise cause flooding problems on adjacent lands.

It is important to note that many of these concerns have been around since DNR started its trail program. The Trails and Waterways Unit and its predecessors have dealt with these concerns many times in the past and have successfully resolved them using many of the alternatives listed in the following tables (those covered by the shading). It is also important to note that these issues do not occur often or on every trail and very seldom achieve problem status. This section broadens the alternative field for each concern so that DNR can better serve its public.

While experience has shown that such negative impacts as littering, vandalism and trespass sometimes do occur along trails, experience has shown that these concerns are thought to be much more serious than they really are (Figure 50). On the other hand, some concerns expressed will only improve the experience. Such issues as public access, waysides and integration into the communities will enhance the user's experience.

Some of the concerns listed above are not addressed in this section. Some, such as the desire for better snowmobile trail maintenance, might be satisfied merely by providing for an appropriate level of funding. Others, such as the liability questions, are matters for legal interpretation. The concerns addressed in this section are generally those which can be solved through proper design, development and management.

The trail-related concerns and alternatives for their solution are presented below in a series of tables. The alternatives are arranged on horizontal and vertical axes to illustrate their relative cost and effectiveness.

Figure 50: Living Along Trails -- What People Expect and Find.

The following is a comparison of responses given by landowners adjacent to two proposed trails and two existing trails. The proposed trails are; the Root River Trail in southeastern Minnesota and the Soo Line Trail in Washington County. The existing trails are the Douglas Trail near Rochester and the Heartland Trail between Park Rapids and Walker, Minnesota.

Two types of surveys were conducted during the summer of 1979. A private consultant interviewed landowners whose properties are adjacent to the abandoned Milwaukee Road right-of-way between Spring Valley and Hokah, Minnesota (the proposed Root River Trail). The Department of Natural Resources (DNR), Trail Planning Staff interviewed landowners along the active Douglas and Heartland trails in Minnesota. In June, 1980, they also surveyed landowners whose properties are adjacent to the abandoned Soo Line right-of-way in Washington County (part of the proposed Minnesota-Wisconsin Boundary Trail).

These survey results showed that opposition to proposed recreational trails in Minnesota is widespread among rural and urban landowners, with some variability in different geographic areas. Landowners along existing trails reported fewer actual problems than those reportedly anticipated by residents along the proposed Root River Trail and the proposed Soo Line Trail. Expected problems reported by residents adjacent to the proposed trails are more in the category of apprehensions than real negative experiences. Residents surveyed along the proposed Root River Trail were generally more apprehensive towards trail related problems than residents surveyed along the proposed Soo Line Trail.

Many of the problems anticipated by landowners near the proposed Root River Trail and the proposed Soo Line Trail are perhaps also rooted in mistrust of the DNR as well as in a belief that railroad related problems will be compounded if a trail is established on the right-of-way. Underlying this opposition, especially in rural areas, is a belief that land, as it becomes available, should be evaluated as farm land before it is considered for other uses -- especially public uses.

COMPARISON	% AGREE	
• EXPECTED "If there were a trail in this area local people would use it."	ROOT RIVER 34%	SOO LINE 65%
FOUND "Local people use and enjoy this trail."	DOUGLAS AND HEARTLAND 95%	
• EXPECTED "If a trail were built, it wouldn't be long before my land would be full of weeds."	ROOT RIVER 25%	SOO LINE 44%
FOUND "DNR does an excellent job of weed control."	DOUGLAS AND HEARTLAND 52%	
• EXPECTED "Trail would mean more vandalism and other crimes."	ROOT RIVER 75%	SOO LINE 72%
FOUND "Trail users steal."	DOUGLAS AND HEARTLAND 3%	
"DNR patrols the trail enough to control users."	52%	
"Winter users trespass."	30%	
"Summer users trespass."	5%	
• EXPECTED "A trail would be a bonus for local business."#	ROOT RIVER 15%	
FOUND "Having a trail has benefited local economy."	DOUGLAS AND HEARTLAND 69%	
• EXPECTED "DNR could be trusted to manage a trail."	ROOT RIVER 16%	SOO LINE 28%
FOUND "DNR does an excellent job of managing the trail."	DOUGLAS AND HEARTLAND 90%	
• EXPECTED "I trust DNR to maintain fences."	ROOT RIVER 12%	SOO LINE 41%
FOUND "DNR keeps up its end of the bargain about fencing."	DOUGLAS AND HEARTLAND 46%	
• EXPECTED "Right-of-way should be kept for railroad."	ROOT RIVER 52%	SOO LINE 39%
FOUND "Loss of railroad service has hurt community."	DOUGLAS AND HEARTLAND 20%	

Question was not asked of residents along the Soo Line.

Some of the solution alternatives would require legislative or DNR policy changes. Such changes, while not impossible, are difficult to make without considerable public support. Of course, future funding levels, also dependent on public support, will ultimately determine whether various solution alternatives can be implemented. For example, present policy states that DNR will build and/or maintain fencing according to the good neighbor 50/50 statute (MN Stat. 344). Any fencing recommended in this plan will be based on that policy. If, however, a situation arises where there is enough public support to secure a policy change and adequate funding, then DNR may contribute more towards a section of fence. For example, the citizens along the Root River Trail successfully pushed through legislation requiring DNR to fence along the trail wherever an adjacent landowner wants one. Finally, if a specific problem area develops, the DNR, at its option, may build a segment of fence to solve the problem.

B. Alternatives and Recommendations for Resolving Trail-Related Concerns

1. Concerns About Trail Access and Support Facilities

a. Alternatives

Trail users want trails that are accessible from public transportation and that have convenient and accessible rest facilities; adjacent landowners, on the other hand, are concerned that trails not block them from access to their fields and livestock areas. The trail users' concerns are addressed in Figure 52.

There are two basic ways to make trails accessible from public transportation terminals. The most expensive is to actually build a spur connecting the trail with the depot. Whether this is practical or possible depends on the distance involved, the landownership, and topographical and manmade obstacles. A less expensive alternative is to sign the route from the depot to the trail or to distribute brochures which give directions to the trail from the depot. Trails on abandoned railroad grades are generally easier to access from public transportation depots because the grade passes through the communities.

Figure 51: Signing of Support Facilities.

Figure 52: Public Access - Alternatives.

PUBLIC ACCESS - ALTERNATIVES

The first concern is to provide access to a trail via public transportation. The second is to provide comfort facilities for users. These include toilets, benches, water supply. The party most affected by this concern is the user.

COST ↓	EFFECTIVENESS: MOST → LEAST
HIGH	*Construct a spur trail from public transportation depots to the trail.* The cost for this solution varies, depending on where the trail is in relation to the depot. In some cases the trail may have to be on city streets.
	Provide comfort stations at necessary intervals. There will be two classes of stations. Major stations will contain a water supply, rest benches, toilets, and sometimes a shelter. Minor stations will occur at more frequent intervals and will contain rest benches and sometimes toilets.
LOW	*Sign an access route from public transportation depot to the trail.* *Provide a brochure at all major trailheads and DNR offices, listing trails accessible by public transportation.* This brochure should have all the other information provided in the User Handbook (i.e., encroachment, user conflict and vandalism). This brochure should also note those trails that are barrier-free.

*Solution requires legislation to develop the spur trail or to realign a trail.

Figure 53: Access Crossings - Alternatives.

The most common problem vis-a-vis crossings occurs when a trail severs someone's property. The property owner must be able to get cattle and farm or other equipment across to use the rest of the property. Another concern, particularly on trails in densely populated areas, is an adjacent landowner subdividing property and then needing a trail crossing to reach a road. Also, the user's reaction to the crossing can be a problem if users feel inconvenienced by gate crossings temporarily interrupting their travel. Landowners, users and the managing agency can all be affected.

EFFECTIVENESS

COST	MOST		LEAST
HIGH	*Construct a vehicular under or over pass.* This would provide access to new developments. Such a development must conform to DNR Trails and Waterways policies and be funded by the developer.		**Hire a trail manager.* The trail manager could work with the landowners to establish and develop crossings. The manager could also monitor crossings and close them if there is abuse.
	Construct an on-grade vehicular crossing. This would provide access to the development but will cause increased conflict with the user.	*Construct a cattle underpass.* This solution is very effective for cattle because trail traffic is not affected by the underpass. It does not address equipment, however, and therefore it is not always the most effective solution.	
	Maintain or develop an open, on-grade crossing, plus construct a cattle underpass. This solution provides for both equipment and cattle.		
	Maintain or develop a fenced, on-grade crossing. This access could work for cattle and equipment.	*Sign all crossings and underpasses, warning users to act responsibly in the area.*	*Meet with the landowners to discuss DNR's crossing policy and determine landowners' needs.* From this meeting, solutions to the landowners' needs can be carried out.
LOW	*Show prospective landowners a slide presentation of successful crossing solutions.* This "documentation" of DNR's efforts on other trails will help convince landowners of DNR's efforts.	*Maintain or develop an open, on-grade crossing.* This solution works well if cattle are not involved. *Close all crossings except those that are absolutely necessary.*	*Write a section in the User Handbook which explains the necessity for crossings.* The discussion should also tell the user to be prepared to stop at a crossing at certain times of the day for cattle to cross.

**Solution requires authorization of additional complement position.

Presently Being Implemented:

Of course, the possibility of a community losing its public transportation must be considered before any expensive access solutions are implemented.

However, making nearby resources accessible to trail users is an important part of trail access (Figure 52). The trail's ability to illustrate and interpret local or regional history, unique landscape features and other items of interest is lost if the points of interest are not accessible (see pages 227-228). A need to leave the trail temporarily includes the need to purchase supplies, seek repairs to equipment, seek overnight lodging or participate in events in trailside communities.

The opposite side of the access question involves adjacent landowners whose access to part of their own land can be cut off by a trail. Several alternatives for solving this problem exist; the limiting factors are severity of the problem and funding levels (Figures 53, 54, 55, 56).

Figure 54: How Trails Might Limit Access of a Landowner to Adjoining Property.

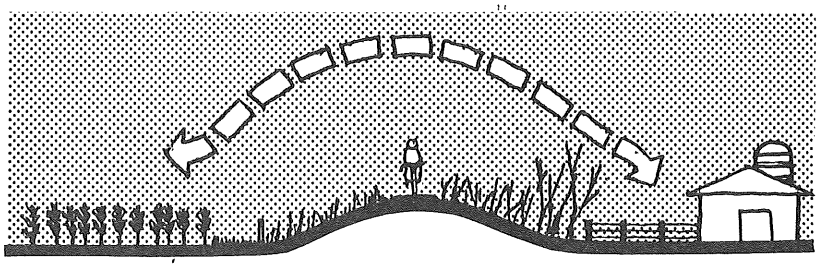
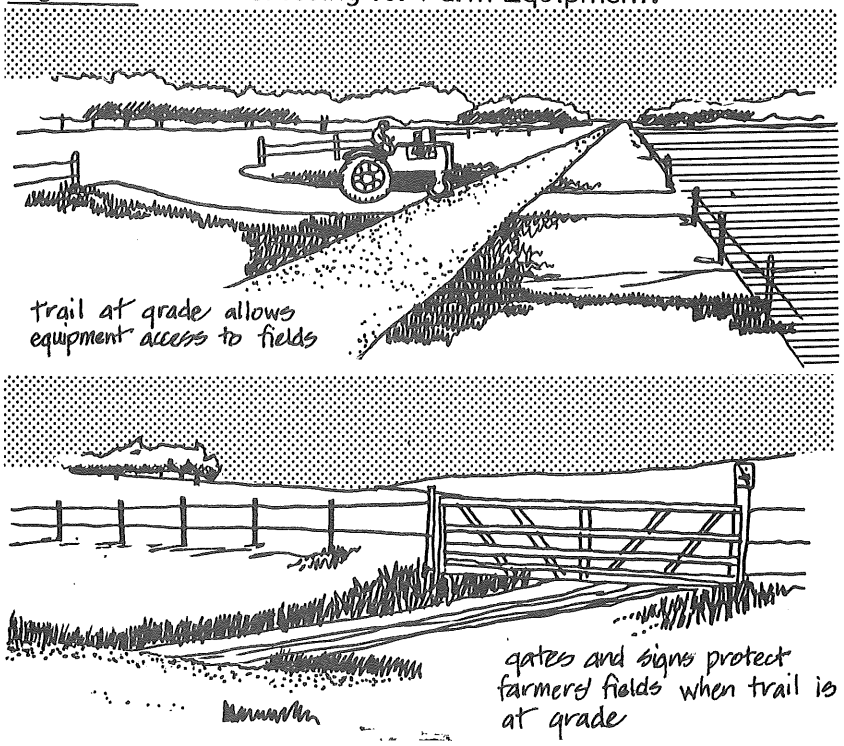
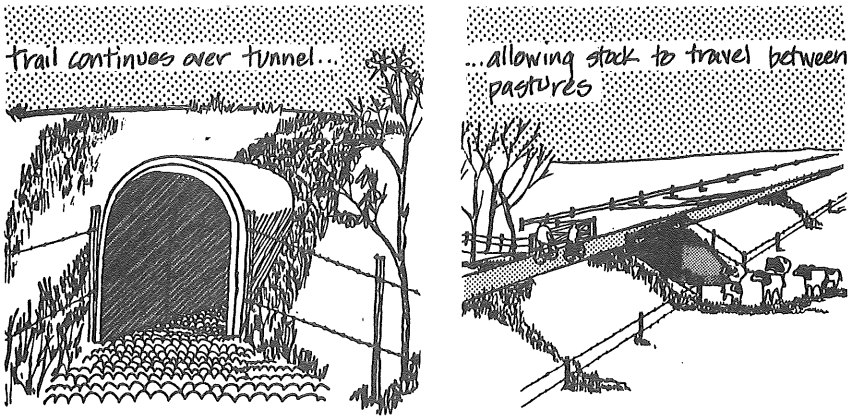


Figure 55: Trail Crossing for Farm Equipment.



The DNR does have a responsibility to provide crossings for landowners whose property is severed by a trail. However, prior arrangements a landowner may have had with a railroad would not automatically carry over with DNR ownership. The adjacent land use would greatly affect the type of crossing the DNR would allow.

Figure 56: Trail Underpass for Cattle.



b. Recommendations:

(1) The DNR should work with communities that have public transportation depots to sign and designate routes, particularly bicycle routes, to appropriate state trails. Supplies of route maps should be on hand at these depots.

(2) The DNR should work with adjacent communities and other recreation service providers to provide access from the trail to these services.

(3) The DNR should continue to provide rest areas at regular intervals. However, spacing and scale should be determined by the character of each trail.

(4) The DNR should continue to provide major trail waysides. In general they should be placed every 15 miles and could include toilet facilities, a few picnic tables, a small shelter, a water supply, fire rings, perhaps campsites and even horse tie bars where appropriate. For trails that are designated only for snowmobiles, waysides could be at 30-mile intervals. In planning for specific trails, the rest area intervals and components should be modified to take advantage of opportunities to tie into community, county or other public recreational facilities and to reflect the purposes and character of the particular trail.

(5) Minor rest area facilities should be in place before any state trail is officially open to the public (see page 226).

(6) The DNR should make an effort to show adjacent landowners who would need crossings over proposed trails slides or photos of a successfully operating trail to see how the crossings were established.

(7) The DNR should continue to work individually with adjacent landowners to develop on-grade crossings, both open and fenced.

(8) Crossings to allow access to land being subdivided may be granted but only under the following guidelines. The subdivision must have no other reasonable access possibility and only one crossing for the entire subdivision will be granted.

(9) Cattle underpasses should be built only if the terrain is acceptable, the trail crosses a permanent pasture or access to it, and a double gate, on-grade crossing would put an undue hardship on the landowner. They should be built according to DNR policies.

(10) A landowner's handbook should be developed and distributed to all adjacent landowners (see Appendix C).

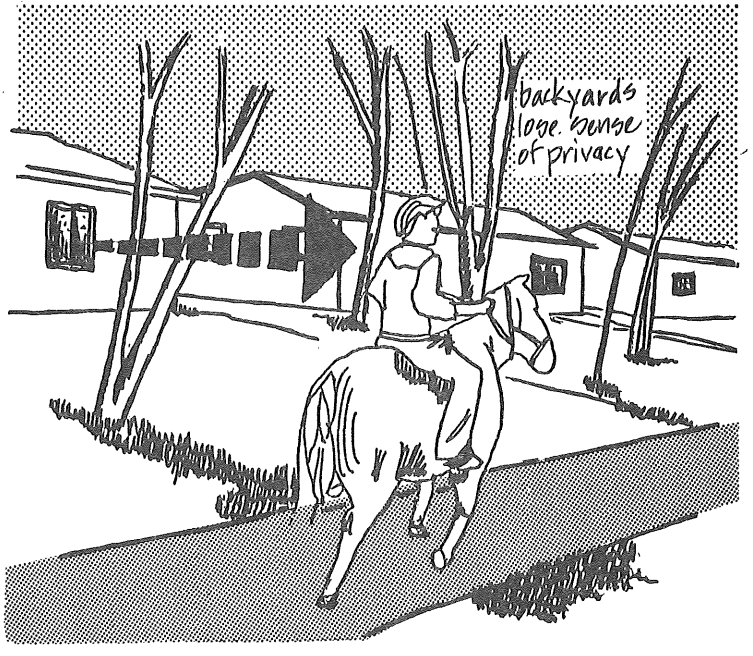
(11) A trail users' handbook should be developed to encourage users to respect the property of adjoining landowners (see Appendix B).

2. Concerns of Adjacent Landowners About Invasion of Privacy and Crime.

a. Alternatives

Privacy is important to most people. Even if trail users are not noisy (and some, such as motorized users, are), the prospect of a steady stream of people past one's backyard can be unsettling. People relaxing in their backyards may never actually be addressed or approached by trail users, but the concern that they might be can be nearly as upsetting. Figure 57 illustrates the concern.

Figure 57: How Trail Use Might Invade Privacy.



People tend to take the privacy problem quite seriously and want to be relieved of it entirely, regardless of cost. This presents something of a dilemma for the DNR, since solutions to this problem can be very costly indeed. The cost of fencing an entire trail, for example, is quite expensive, as is relocating the trail. However, these solutions may be indicated, depending on the situation. A less costly solution involves fencing only certain "trouble spots" along the trail. Reducing the visibility and accessibility of nearby homes with vegetation and posting signs are also possible solutions (see Figures 58, 59, 60).

Figure 58: Invasion of Privacy - Alternatives.

This issue includes perceived as well as actual occurrences. Concerns include close proximity to buildings, annoyances, psychological discomfort, property visibility plus increased potential for break-in, theft and/or vandalism. The landowner is the party most affected.

EFFECTIVENESS

MOST → LEAST

COST

HIGH

Arrange land exchanges and reroute trail along property lines. This solution would move the trail away from the buildings of adjacent landowners.

Fence between the trail and private property if buildings are close. This solution is in the medium-cost range, assuming that few fences of moderate length will be built. A large number of fences and/or long segments of fence will move this solution into the high cost level.

Move the treadway to the far side of the right-of-way and plant vegetative screen between the treadway and the private property.

Bring landowners from an operating trail to a meeting with landowners from a proposed trail. An exchange of this sort goes a long way to relieve the landowners' fears.

LOW

*Solution requires legislation or DNR policy change.

Hire a trail manager and create a volunteer citizens' patrol. The manager will patrol the trail regularly to reassure the landowners and to talk with users, reminding them to stay on the trail. The manager could meet with adjacent landowners, privately or as a group, to air problems and work out solutions. The manager will also speak at schools, churches and civic groups reminding them to stay on the trail and not disturb the adjacent landowners. The citizens' group can also patrol the trail.

Plant vegetative screen along trail if buildings are close. The vegetation should be a mixed variety of trees and shrubs with thorny species included. The vegetation will create a feeling of privacy.

*Hire a trail manager.

Write section in the User's Handbook discussing adjacent landowners' privacy rights. The section should say that except in emergencies, good trail etiquette calls for the user to stay on the trail.

Post a sign at all accesses. The sign should reiterate the material from the handbook.

Have DNR regional Trails & Waterways coordinator meet with adjacent landowners to air problems and discuss solutions.

Request local sheriff and DNR conservation officer to patrol the trail.

Presently Being Implemented:

The public strongly supported the concept of moving the treadway farther away at areas where invasion of privacy was a concern.

Figure 59: Locating a Trail to Preserve Privacy.

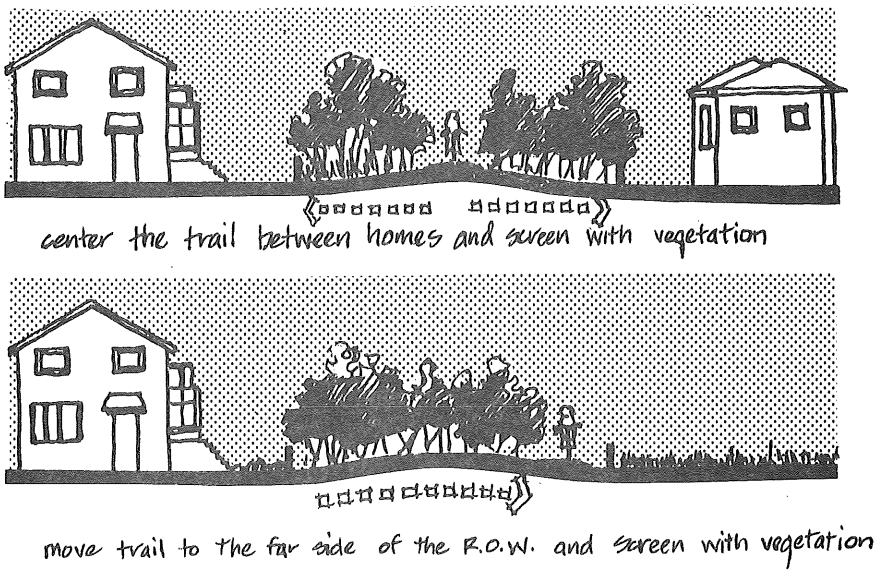


Figure 60: One Homeowner's Solution: A Privacy Fence.

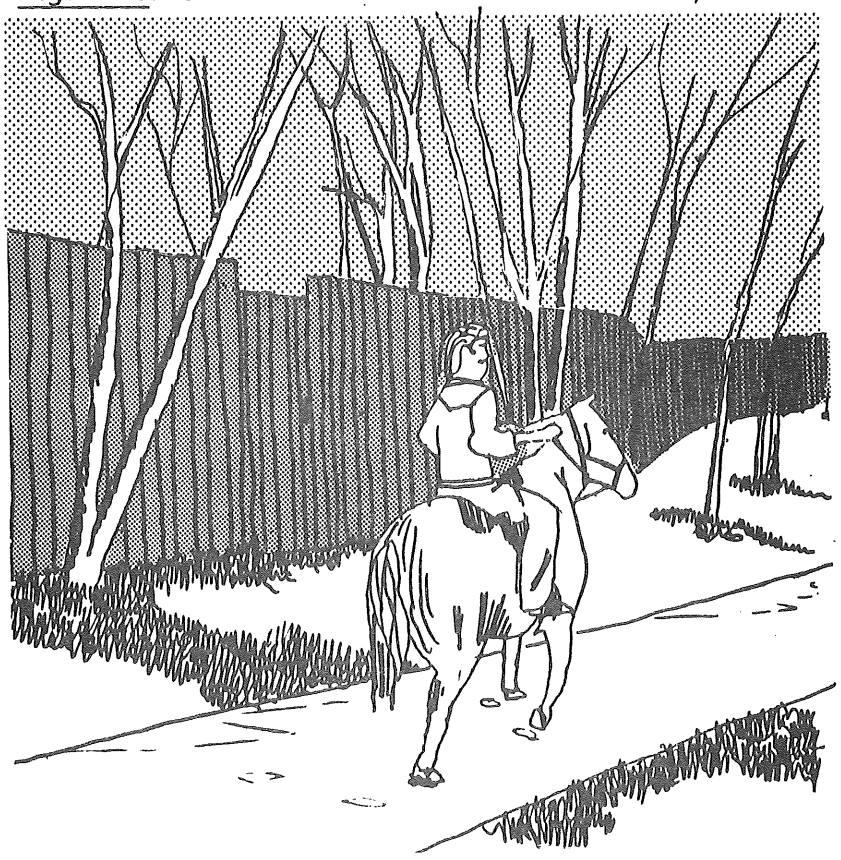


Figure 61: Vandalism/Trespass - Alternatives.

Potential solutions to these problems overlap. Trespass often leads to vandalism. Vandalism comes under two categories--vandalism to the trail itself and vandalism to adjacent lands. Common forms of vandalism include: compaction damage to fields; fence cutting; sign damage/theft; toilet damage; and farm equipment damage. Trespassing is defined as a trail user leaving the trail right-of-way and entering private adjacent land. Both the adjacent landowner and the managing agency are affected.

COST	EFFECTIVENESS: MOST		LEAST
HIGH	*The combination of the following actions--fence entire right-of-way, hire trail manager, create citizens' patrol and write section in User's Handbook. The fencing will help keep users on the right-of-way. The manager and citizens' patrol will provide a deterrent to vandalism. The citizens' patrol will report incidents to the manager or local sheriff. The manager can ticket and prosecute violators. In addition, the manager will speak at schools and civic organizations explaining that it is good land stewardship to stay on a trail and treat it and the adjacent property with respect. The handbook will discuss the same topics that the trail manager will address.	**Hire a trail manager. The manager will patrol the trail to enforce rules and will speak to groups concerning vandalism and trespass. Also, user handbooks will be distributed. Interpret attraction causing trespass. If an attraction is causing the trespass, an interesting interpretive display may be enough to deter potential trespassers.	Fence the entire right-of-way
	*The same combinations as above except only trouble spots are fenced.		
	*The same combination as above except a vegetative screen is substituted for fencing.		
	Fence trouble spots and create a citizens' patrol and patrolling by the local sheriff		Fence the trouble spots along the right-of-way.
LOW	Plant a vegetative screen, create a citizens' patrol and request local sheriff and DNR conservation officer to patrol the trail.	Create a citizens' patrol, ask the local sheriff and area DNR conservation officer to patrol the trail and make user's handbook available at access points.	Plant a vegetative screen at trouble spots along the trail. Provide copies of the user's handbook at all trail access points. Place signs at all access points reminding users to stay on the trail and to treat the trail and adjacent property with respect. Place signs on the backs of the trail boundary signs. These signs should say, "Beyond this sign is private property, please stay on the trail."

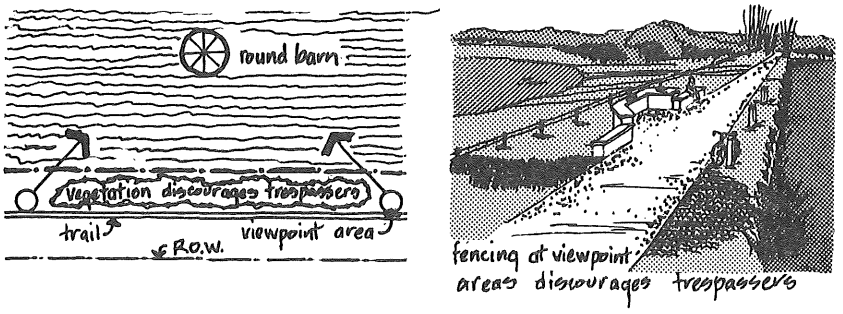
*Solution requires legislation to fence the entire R-O-W with state funds and requires authorization of additional complement position.

**Require authorization of a position.

Presently Being Implemented

Trespassing by trail users, even when the purpose is entirely innocent (for example, to get a closer look at an interesting building or landscape feature), is of serious concern to adjacent landowners. Landowners fear vandalism and rightly feel that people have no right to be on their land unless prior permission is given. Figure 62 shows ways to solve this concern.

Figure 62: Two Solutions to Keep Trail-Users on the Treadway.



Vandalism is a problem for DNR. Signs are the major victim; however, toilets, picnic tables and even shelters have suffered damage at the hands of vandals. The treadway itself has been damaged by unauthorized use.

The Trails and Waterways staff supported hiring trail managers to patrol the trails and enforce regulations. The public indicated little support for hiring trail managers, though they did urge the DNR to improve its enforcement on trails and to increase fines for transgressions.

b. Recommendations

(1) If a privacy problem occurs on only one side of a trail, the DNR should first plant a vegetation screen between the treadway and the landowner's property (i.e., yard, buildings). If the trail has more than one treadway, the closer one should be closed where it passes the landowner's property. In the event the screen does not solve the problem, the treadway should be moved to the

far side of the right-of-way and additional screening planted.

(2) If a privacy problem occurs on both sides of a treadway, dense vegetative screening should be planted along the right-of-way boundaries. If that does not solve the problem, moving the entire right-of-way away from the problem area should be attempted.

(3) A notice should be posted on trailhead signs telling users where services, supplies, etc., are available and telling users not to approach private landowners except in emergency situations.

(4) A trail user handbook should be developed and distributed along the trail at access points (see Appendix B).

(5) For trespass problems, a dense vegetative screen should be planted along the right-of-way boundary at problem spots. If the vegetation fails, is inappropriate or is inadequate, a section of fence should be built at the problem site.

(6) The regional Trails and Waterways coordinators should work with local user groups and other citizens to establish citizen trail patrols. The presence of these patrols, acting as additional eyes for DNR, will serve as a deterrent.

(7) If vandalism and trespass become a problem, the regional coordinators should meet with the county sheriffs and area conservation officer to urge them to patrol the trail.

(8) If these actions do not sufficiently reduce or eliminate the problems, and the DNR's funding improves, then a trail manager should be hired to coordinate and supplement the actions above.

3. Concerns Relating to Other Possible Land Uses for the Trail Right-of-Way

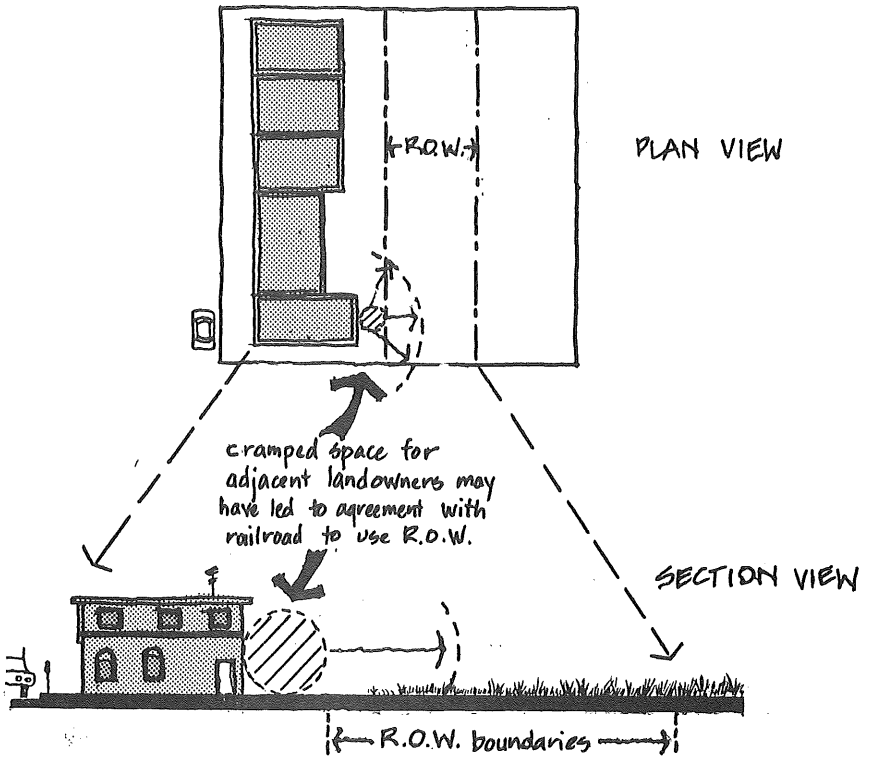
a. Alternatives

The "highest and best" possible use of land is usually preferable, but there often is disagreement over what the highest and best use is.

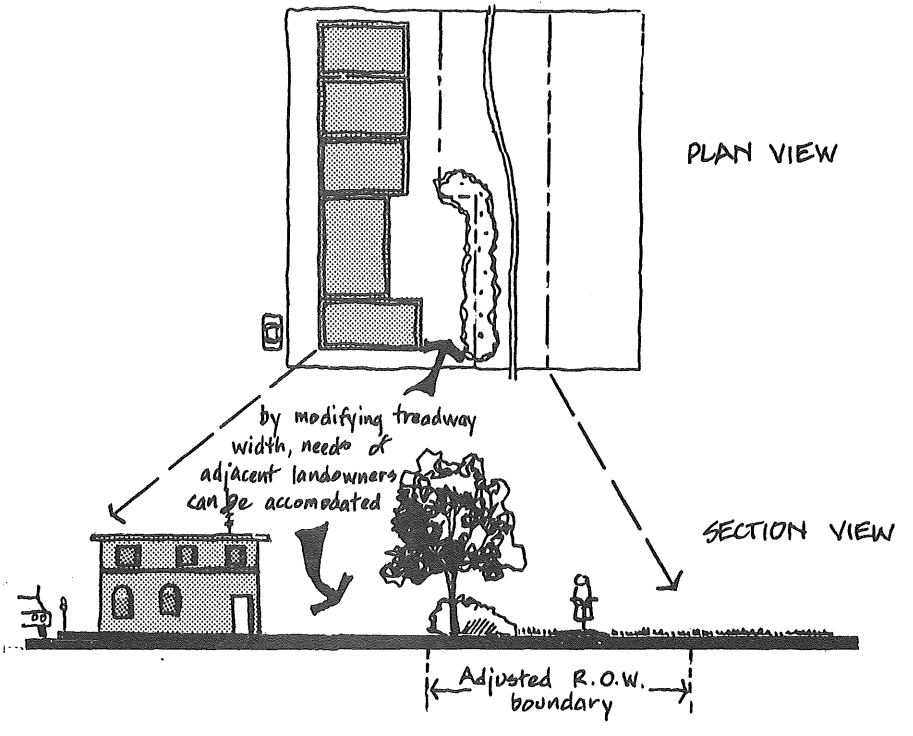
Trail land-use conflicts can be the result of legal agreements for rightful use of the land. Legal use of the land may be by lease, permit or negotiated agreement. These conflicts occur most often where abandoned railroad grades are proposed as trail alignments. An adjacent landowner or commercial enterprise may have a written or unwritten understanding with the railroad which provides for use of part of the right-of-way. When the grade is abandoned by the railroad, these agreements may be in conflict with the potential trail use. It is often possible to resolve these conflicts on a site-specific basis by modifying the width of the right-of-way (Figure 63).

Figure 63: Reducing Land Use Conflicts: Modifying Width of Right-of-Way.

A. Existing Conditions.

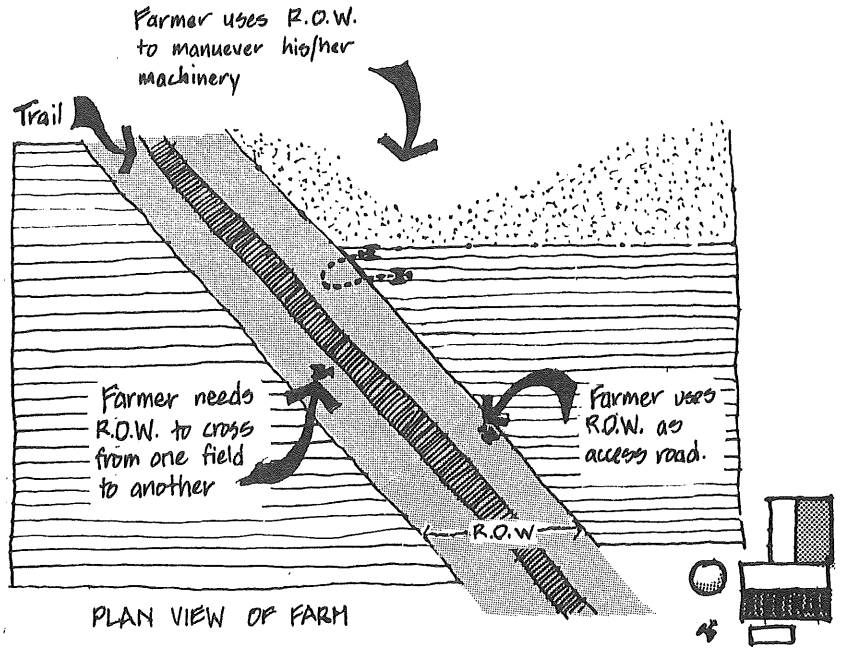


B. Possible Solution to Reduce Land-Use Conflict.



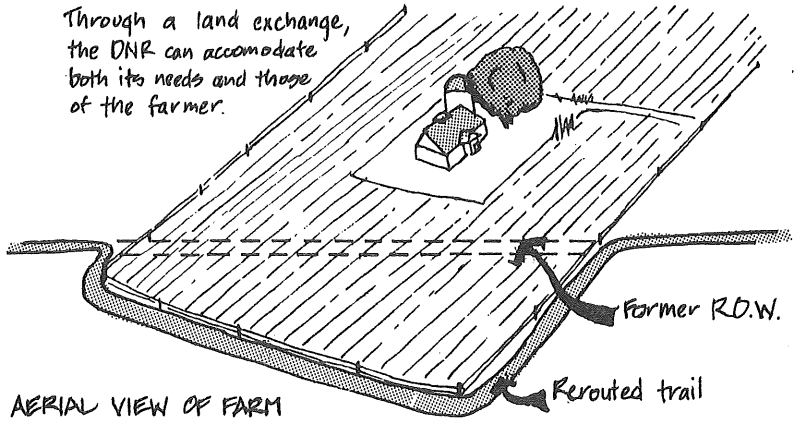
Another trail conflict may be encroachment upon the trail. The problems shown below may be resolved by shared use agreements.

Figure 64: Trail Conflicts with Agricultural Land Use.



When the right-of-way has created a field too small to cultivate economically, the DNR can consider a land-use exchange (Figure 65).

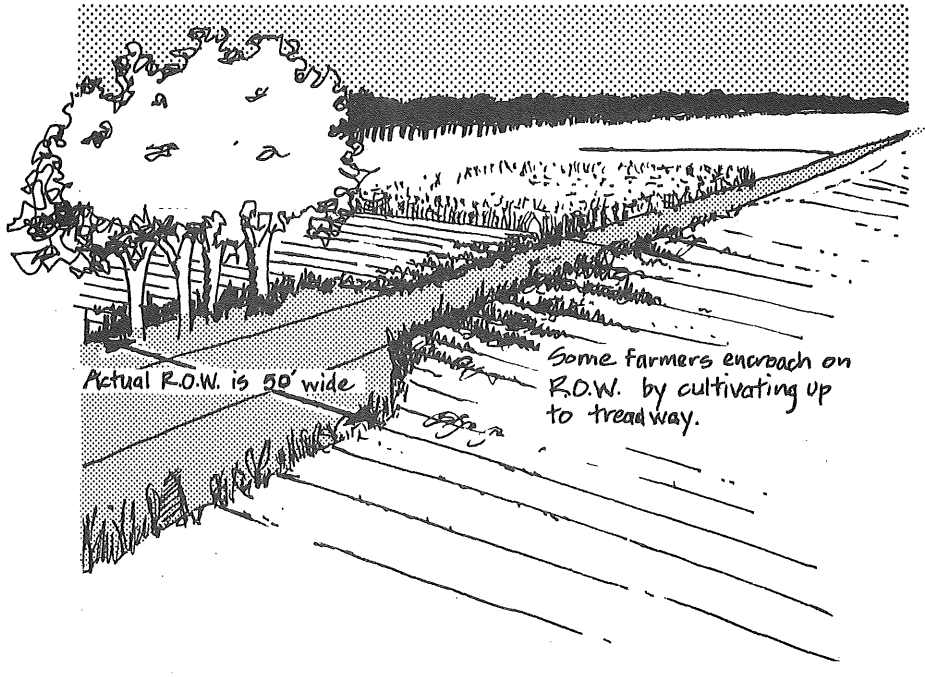
Figure 65: Trail Land Exchange.



A number of other alternatives to solve agricultural land-use conflicts are presented in Figure 68.

Sometimes when railroad grades fall into disuse, adjacent landowners may gradually appropriate the right-of-way for private use. In some cases the landowners may have even built a structure on the right-of-way and feel this constitutes rightful occupancy. In acquiring the grade for trail use, the DNR inherits the problem of how to deal with this encroachment.

Figure 66: Encroachment of Field onto R.O.W.

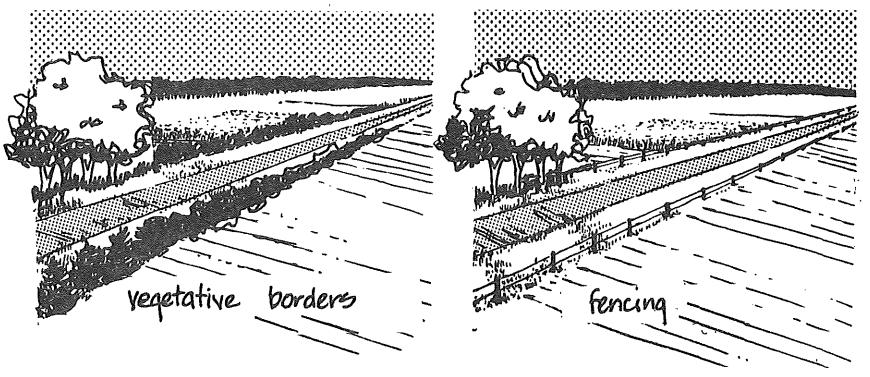


Resolving such problems is difficult. The DNR, as legal owner, may have every right to use any legal means necessary to eject encroachers, but exercise of that right can cause serious local problems which can put a trail proposal in jeopardy. Encroachers who raise the specter of big government picking on the "little guy" often find a sympathetic audience.

The DNR's policy in such cases is to resolve such conflicts in an amicable manner: there often are ways of resolving the conflict with little serious alteration of the status quo. However, the DNR has a statutory mandate to provide trail-oriented recreation for the people of Minnesota, and legal action, if warranted, will be taken (Figure 69).

Alternatives range from putting physical barriers on the right-of-way boundary (Figure 67) to selling the land to the adjacent landowner (Figure 65). The public strongly supported using vegetation as a live barrier along the right-of-way boundary. There was also some support for the DNR to adjust the right-of-way width around encroachments.

Figure 67: Physical Barriers Installed along Right-of-Way.



Another land-use conflict may be that a trail contributes to weed problems on nearby cropland. This concern can be relieved by better trail management.

Land-use conflicts may arise in northeastern Minnesota because of logging and mining operations. Since few trails in this area will be surfaced, rerouting the trail may be a relatively inexpensive solution. Such conflicts generally appear during the early stages of trail planning so that solutions may be written into the trail development plan (Figure 70.)

Figure 68: Land Use Conflict in Agriculture: Alternatives.

The most common conflict is when the trail is an abandoned railroad grade that cuts diagonally across a farm field. The diagonal severance creates some difficult corners for farm equipment to negotiate. Use of the right-of-way makes it easier for the farmer to till his land. Landowners and the DNR can be affected by these conflicts.

EFFECTIVENESS

MOST → LEAST

HIGH	*Hire Trail Manager. The manager can work with farmers and monitor agreements or leases they have with DNR. Manager can cancel leases if violations occur.		
↓	*Construct a fence between the treadway and the agricultural use.* The fence will act as a deterrent to keep users off the fields and farm equipment off the treadway.	*Give adjacent landowners a tour of an operating trail to show them that DNR can work with neighbors.*	*Move treadway to far side of right-of-way away from agricultural use.*
	Arrange a land exchange. The exchange will move the right-of-way to follow the field or property line.		
	Plant vegetation between treadway and agricultural use. The vegetation will act as a barrier.	*Establish regulations for allowable agricultural permits.* These will be provided to the landowners as a part of the Landowner's Handbook.	*Request local conservation officer or have regional Trails and Waterways coordinator check trail periodically to ensure agreements are not being violated.*
LOW	*Solution requires authorization of additional complement position.	*Prepare brochure interpreting agricultural use.* The brochure can be part of a User's Handbook and/or Landowner's Handbook. It should describe the similarities and differences between agricultural and recreational land use and stewardship.	

Presently Being Implemented:

Figure 69: Encroachment - Alternatives.

Encroachment falls into three categories: agricultural, commercial and residential. Agricultural encroachments include extension of fields and farm field accesses into the right-of-way. Commercial encroachments range from storage and parking on the right-of-way to buildings completely or partially within the right-of-way. Residential encroachments include homes, garages, gardens or yards partially or completely in the right-of-way. The managing agency is the primary affected party; however, the user's experience also can be affected.

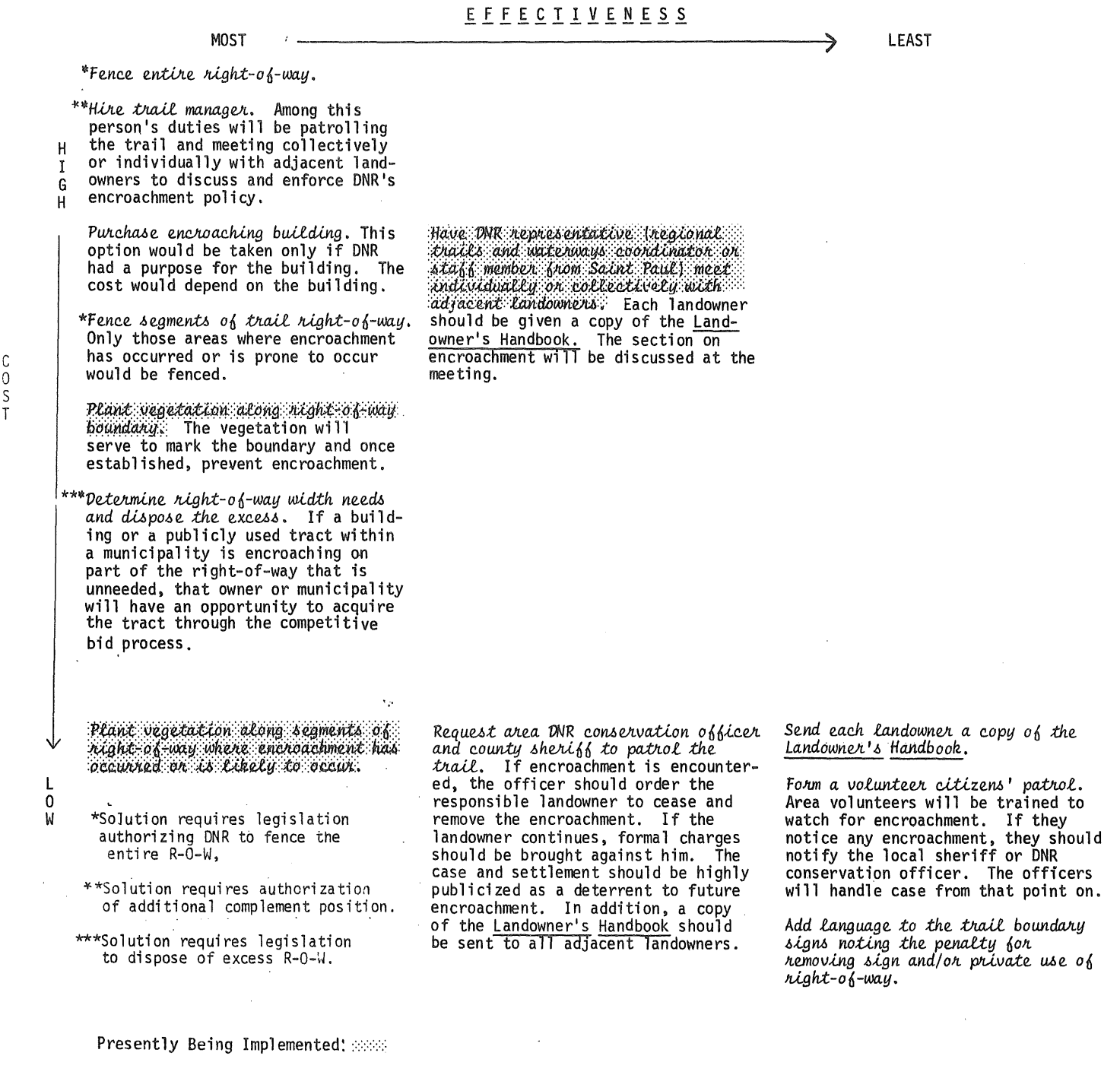


Figure 70: Land Use Conflict in Logging and Mining: Alternatives.

This is an issue primarily in northeastern Minnesota when the DNR needs to cross large tracts of timber or mining company lands. Landowners, users and the DNR are affected by this conflict. The companies will often not sell a right of way across their property but will grant leases or easements for passage. The conflict develops when areas near the trail are logged or mined and the operation requires use of the trail.

EFFECTIVENESS

MOST → LEAST

COST

HIGH

*Hire a trail manager. The trail manager can monitor closely the actions within and/or the movement of the right-of-way to protect the public's interest. Violations of leases and agreements can lead to cancellation

*Give tours of operating trails. During planning and development, adjacent landowners could be given a tour of an operating trail to see first-hand that the trail can work.

*Place interpretive sign at nearest access point and along trail. The sign should describe the operation and the reason for it.

*Jointly with adjacent landowners develop an action plan and regulations. The plan should include smaller cuts, longer rotations and discussion on treadway screening. The regulations should discuss types and times of logging/mining operations.

*Include a section in the User's Handbook interpreting the logging or mining operation. This book would be available at all access points near the operation.

*Request local sheriff or area conservation officer to periodically check the operation for violations and take appropriate action.

*Develop a floating, unsurfaced right-of-way. This solution would allow segments of the right-of-way to be periodically moved to facilitate the adjacent use. This solution would work primarily on winter and hiking trails. The logging/mining company would be expected to at least partially fund the alternate route construction. An agreement should be reached prior to acquisition and development of the first treadway, or a requirement to provide a temporary alternate treadway during the sale must be part of the sale contract.

LOW

*Locate right-of-way through areas least likely to be mined/logged in the near future or ever, provided the areas are suitable for trail development

*Solution requires authorization of additional complement position.

Presently Being Implemented:

b. Recommendations

(1) If the conflict or potential conflict involves field or cattle lanes, a minor land exchange should be negotiated to adjust the right-of-way. This adjustment should not affect the main treadway.

(2) If the conflict is such that an established treadway is affected or the treadway goes near farm buildings, a land exchange to move the treadway should be considered. If the landowner is unwilling to negotiate an exchange or it is unfeasible for other reasons, then DNR should plant a vegetative screen between the treadway and the buildings. In the event that a vegetation screen would block the farmer's view across the treadway to his cattle or other buildings, then the exchange route should be pursued.

(3) If possible during the planning process, adjacent landowners should be taken on a tour of a successfully operating trail to see how the DNR has worked out conflict problems.

(4) A landowner's handbook should be developed and distributed to all adjacent landowners (see Appendix C).

(5) If at all possible trails through logging or mining areas should be aligned where mining or logging is least likely to occur. Individual trail plans and development should be coordinated with the Divisions of Forestry and Minerals to make use of the information they have on hand.

(6) Except where the trail would be surfaced for bicycling, the floating right-of-way concept should be used in logging and mining areas. This would allow the managing agency/company to work one area and then shift the trail to work the area where the trail was. It could leave the trail in one spot and work around it, provided it maintained that segment in a safe, usable condition. Any logging or mining activity along trail must follow DNR operations policies or a specific, written land management agreement between the operator and DNR.

(7) If the trail remains in an active logging/mining site, a sign explaining and interpreting the activity should be erected at each entrance to the area.

(8) In areas where the potential is great for encroachments, native vegetation should be planted along the right-of-way boundary to mark the boundary and eventually prevent encroachment.

(9) Where a non-building encroachment exists, the encroacher will be warned that he or she has 30 days (90 days if the encroachment is a crop) to remove the encroachment. As soon as the grace period ends, the DNR should plant native vegetation, removing the encroachment if necessary. If vegetation is inappropriate or fails due to crop spraying adjacent to it, then segments of fence should be built.

(10) Building encroachments should be assessed individually. If the right-of-way can be narrowed to eliminate the building without damaging the trail, and the building is serving a useful purpose, the right-of-way should be reduced and the land sold through normal land disposal procedures. If not, the building should be removed. Any reduction of right-of-way width must be approved by the commissioner or designated representative.

(11) A user's handbook should be developed and distributed at all accesses along the trail (see Appendix B).

4. Concerns About Trail Layout, Maintenance and Management

a. Alternatives

Trail users are the reason trails are built. Meeting their recreational needs involves designing and managing a trail that is enjoyable and convenient to use. This requires careful planning.

One potential problem area is conflict between different user groups on a trail. Skiers report that snowmobiles destroy the sense of peace and solitude they seek on a trail. Snowmobilers complain that four-wheel drive enthusiasts render the treadway unfit for snowmobile use. Horseback riders experience difficulties with trail bikers and are themselves criticized by bicyclists and hikers.

In some cases these users have legitimate grievances. However, provision of a separate trail network for every use could easily bankrupt the program. In addition, the legislation authorizing trails often includes the admonition that trails should be multi-use facilities.

Figure 71: Dual Treadways to Minimize User Conflict.

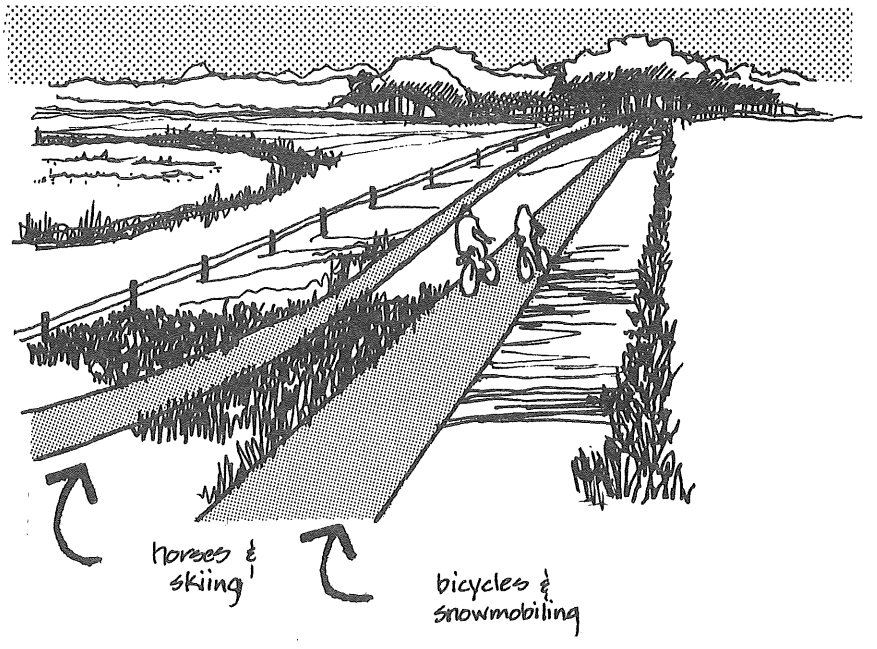


Figure 71 illustrates a dual treadway, one way in which use conflicts can be minimized. User conflict is not a major problem on existing trails with two treadways. Other use conflict solutions include public education, trail use "seasons" and more and better signs along trails. There is often confusion over where trails begin and end, and which uses and activities are allowed.

The public favored allowing only compatible uses during any one season on each treadway and constructing a fence and baffle gateway at trail entrance points. ORVs in particular, and snowmobiles to a lesser extent, were singled out for separate trails. The public also felt that better signing and stronger enforcement would help solve the problem. A number of people suggested the DNR hire a manager to patrol the trail (Figure 72).

A small segment of the public suggested that a single, wider treadway be constructed where there is a conflict. Conflicting uses would be assigned one side or the other. Additional discussion on the topic of multiple use can be found on page 202.

Fencing the trail right-of-way has been a source of conflict between the DNR and adjacent landowners on some trails. According to law (MN Stat. 344.03), adjoining landowners shall build and maintain the partition fence between their lands in equal shares when one of the owners desires it to be fenced. Except within the Dorer Memorial Hardwood Forest and along the Root River State Trail, DNR is exempt from the law. However, the Trails and Waterways Unit has adopted a policy to comply with the law on a case-by-case basis (with a written agreement) if it is determined that such a fence would be in the best interest of both DNR and the adjacent landowner. It is important the DNR clearly identifies this policy on such matters so that later misunderstandings do not arise. For the Root

Figure 72: User Conflict - Alternatives.

User conflicts arise when more than one use is allowed on a one-treadway trail. Common conflicts include: snowmobiling vs. skiing; hiking vs. horseback riding; bicycling vs. horseback riding; hiking vs. bicycling; snowmobiling and skiing vs. horseback riding; bicycling and hiking vs. ORVing; and, firearms use vs. all other uses. The primary affected party is the user, although the managing agency is also affected.

EFFECTIVENESS

MOST → LEAST

COST

HIGH

Provide an alternate asphalt treadway. This solution assumes original treadway is not hard-surfaced.

**Provide alternate asphalt or gravel trail nearby*. The surface depends on the original trail surface.

***Hire trail manager*. The manager will patrol the trail and speak at churches, schools and civic organizations explaining the merits of multiple use.

Close trail to only one use or compatible uses each season and construct fence with baffle gate at all access points. Signs would indicate seasons of use (i.e., horseback riding 4/1-11/15 and snomobiling 11/16-3/31).

**Provide an alternate grass-surfaced trail nearby*. This solution assumes original trail is hard-surfaced.

Provide alternate gravel or grass treadway. This solution assumes original treadway is hard-surfaced.

Close trail to one or compatible uses per season. The seasons will be announced in local papers and in the User's Handbook.

Include a section in the User's Handbook explaining the season and, if necessary, that the trail must be shared.

LOW

*Solution requires legislation authorizing another trail or treadway.

**Solution requires authorization of additional complement position.

Presently Being Implemented: ▒▒▒

River State Trail, special legislation (Laws of MN 1980, Chap. 614 Subd. 3c) was passed authorizing DNR to pay total fencing costs along the trail right-of-way if an adjacent landowner requests a fence.

Users have indicated that better law enforcement is needed on trails. Acts of vandalism, user conflict and illegal trail uses are upsetting to the law-abiding trail user. Problems such as these can drive away legitimate trail users.

Enforcement on trails can be complicated by lack of public information, remoteness, trail length and uncertainty over jurisdiction. Adequate signs, for example, are necesssary to help prevent unauthorized use of the trail treadway. If a state snowmobile trail is not adequately signed, there is little preventing an ORV user from using it (Figure 73).

Figure 73: Unauthorized Use of Treadway.

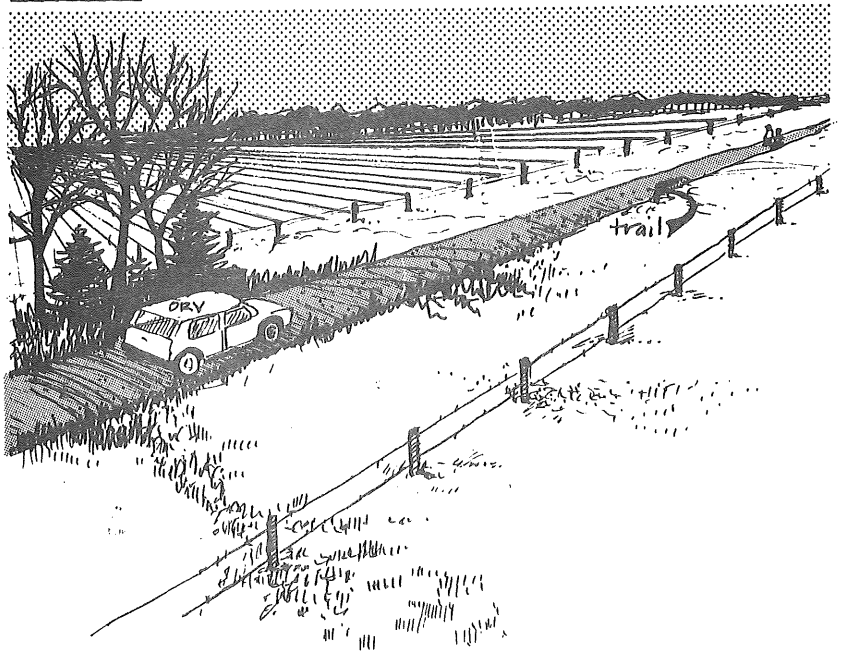


Figure 74: Unauthorized Use of Treadway - Alternatives.

This concern includes: (1) use of the treadway by vehicles presently not allowed on any state trail (i.e., cars, ORVs, except snowmobiles and with few exceptions, farm equipment); and (2) legal use that is specifically prohibited on any particular treadway (i.e., snowmobiles on a ski treadway). The trail user and the management agency are affected.

EFFECTIVENESS

MOST → LEAST

COST: HIGH ↓ LOW

Hire a trail manager, create a volunteer citizens' patrol. The trail manager is empowered to order an illegal user off the trail, give the person a ticket, or bring charges against the person, depending on the specific situation. The manager will also speak before school, church and civic groups to inform them of the allowable uses for the trail and to request other uses to stay off. The volunteer patrol will ask unauthorized users to leave the treadway. They can also take names and/or license numbers and report them to the trail manager/sheriff.

***Develop an alternate trail somewhere in the vicinity.* An alternate trail will provide a trail opportunity for those user types that can't use the original trail because of the use conflict.

Develop a separate asphalt treadway within the same right-of-way. This solution assumes the original treadway is not hard-surfaced.

Surface treadway with a use-limiting (asphalt) surface. This solution will be effective primarily for keeping horseback riders off a treadway.

Construct a fence and baffle gate at all access points and junctions (if necessary). The cost of this solution will vary depending on the number of accesses where problems occur. Generally, though, it will be a medium cost solution

Develop a separate gravel treadway within the same right-of-way. This solution assumes that the original treadway is hard-surfaced.

Surface treadway with a use-limiting (gravel) surface. This solution will be most effective in keeping bicycles off the treadway. If the gravel is coarse, it may keep some horseback riders off, too.

***Determing right-of-way width needs and dispose of the excess.* At certain locations, particularly through communities, the total right-of-way may not need to be as wide.

Provide a separated grass treadway. This solution assumes the original treadway is hard-surfaced.

Form a volunteer citizens' patrol.

Have a DNR representative speak at schools, civic organizations and churches explaining allowable uses for each treadway.

Surface treadway with a use-limiting (grass) surface. This solution will effectively restrict bicycles.

Publicize seasonally in local newspapers the allowable uses on each treadway.

Request local sheriff and area DNR conservation officer to patrol trail. The officers have the option of telling the unauthorized users to leave, tagging them or arresting them. If the latter two penalties are necessary, the case should be publicized as a deterrent.

Write a section in the User's Handbook discussing unauthorized use. This handbook will be available at all major trail access points.

*Solution requires authorization of additional complement position.

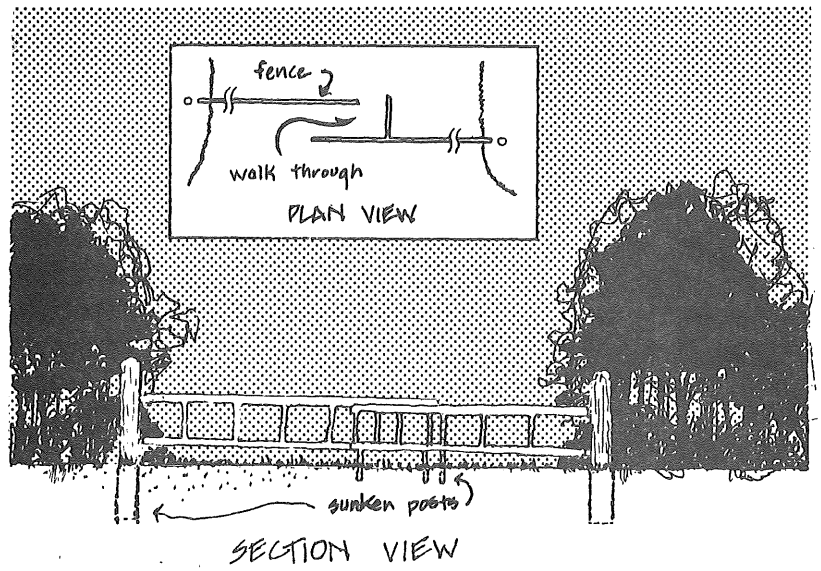
**Solution requires legislation to change trail alignment.

***Solution requires legislation to dispose of excess land.

Presently Being Implemented: ▒▒

To deal with enforcement problems, the DNR can have the trail regularly patrolled by law enforcement officers, a trail manager or volunteer citizen patrols. Other solutions include constructing another trail for the offending use, surfacing the trail with a use-limiting material, or erecting a gateway (Figures 74 and 75). Solutions to this problem will most likely be site-specific.

Figure 75: Trail Entrance Baffle Gate to Prevent Unauthorized Use.



b. Recommendations

(1) If there is a crossover problem on trails with dual treadways, a vegetation barrier should be planted between the treadways, particularly in chronic problem areas.

(2) If vegetation fails to solve a crossover problem, segments of fence should be built with baffle gates at entrances.

(3) The DNR should maintain signs along each treadway at all accesses, road crossings and bridges to eliminate user mistakes.

(4) Regular media releases should announce seasonal trail uses.

(5) The regional coordinator should encourage development of a local citizen patrol to help keep users on the right treadways by making a presence on the trail, informing wayward users and reporting violators to the authorities.

(6) The trail manager or regional coordinator should emphasize the importance of staying on the right treadway during talks to user and other groups.

(7) The regional coordinator should encourage the local conservation officer and local sheriffs to increase their patrol efforts if unauthorized use complaints are received.

(8) Accesses pinpointed as sources of unauthorized use problems should be modified with a baffle gate system, if compatible with the trail's designated use(s).

(9) Depending on future trail demand, funding and problems, hiring of a trail manager or construction of a second treadway might be necessary.

(10) A user's handbook should be developed and made available to users on the trail (see Appendix B).

(11) A landowner's handbook should be developed and distributed to all adjacent landowners along the trail (see Appendix C).

Figure 76: Land-Use Conflict in Vegetation Management: Alternatives.

Weed control and right-of-way vegetation management are involved. Weed control is fairly well spelled out by state law. Without vegetation management, trees and shrubs would slowly fill in the entire right-of-way. The result is a tunnel of vegetation that is not aesthetically pleasing. This concern affects the managing agency and landowner.

EFFECTIVENESS

MOST → LEAST

COST: HIGH → LOW

*Hire a trail manager. The manager would prepare and implement a trail vegetation plan. He would also work with adjacent landowners to avoid unnecessary weed spraying.

DNR staff (planning and regional) write a vegetation plan. Contract the necessary work to implement the plan.

Re-landscape areas. Areas covered with noxious plants would be re-landscaped with native (if feasible) self-maintaining plant materials.

Establish a noxious weed control program of spraying and mowing. The combination of timely mowing and spraying can be a very effective, moderately expensive solution to the noxious weed concern.

Use volunteer crews to carry out maintenance actions. Senior citizens and service clubs, etc., are potential crews that could assist either the regional trails coordinator or the trail manager.

Place sign at access points explaining the vegetation management procedures and why they are necessary.

*Write sections in both the Landowner's and User's Handbooks discussing the DNR's vegetation management policies. The discussion should point out that some plants considered noxious have good points, too. The handbooks would be given to all adjacent landowners and provided at accesses.

Meet with adjacent landowners and tour trail segments to explain DNR policies, to show management results and discuss just what is or isn't a noxious plant.

*Solution requires authorization of additional complement position.

Presently Being Implemented: ▒▒

Figure 77: Disturbing Desired Vegetation: Alternatives.

This involves protecting sensitive and/or rare plant species within the right-of-way. The managing agency is the primary affected party.

EFFECTIVENESS

MOST → LEAST

COST: HIGH → LOW

*Reroute the trail away from highly sensitive and/or protected plant species. The cost of this solution is highly variable, depending on the length of the realigned segment and the distance moved.

**Hire a trail manager and create a volunteer citizen patrol. The manager would patrol the trail and tag violators. If damage is great, violators should be prosecuted and the case should be publicized. Also, the manager should speak to churches, schools and civic groups about the potential plant damage by users leaving the treadway.

**Hire a trail manager.

Realign the treadway within the right-of-way to avoid sensitive/protected areas. This solution may fall in the medium- or high-cost range, depending on how long the realigned segment is.

Construct a fence around sensitive vegetation

Create a volunteer citizens patrol to watch the trail.

Request the local sheriff and/or DNR conservation officer to patrol the trail.

*Write section in the User's Handbook explaining the need to stay on the treadway to protect rare and sensitive plants. If the plants can withstand some nearby traffic, an interpretive brochure could be made available listing and describing some of the plants along the trail. If not, the locations of the plants should not be mentioned.

*Solution requires legislation to change alignment of trail.

**Same as top half of page.

Presently Being Implemented: ▒▒

5. Concerns About Disturbance of Natural and Economic Resources

a. Alternatives

Trail users can disturb rare or desirable vegetation, wildlife and farm animals (Figures 76, 77, 79 and 80). They may litter the trail or adjacent private land (Figure 81). Their campfires may become wildfires, endangering adjacent private property as well as trail facilities (Figure 82). Possible solutions to these problems include citizen patrols, trail realignment and fencing.

Disturbance of farm animals is not a widespread problem. However, when it does occur it is a source of great irritation to the owner, and may turn him or her into a strong trail opponent. Wildlife disturbance other than open harassment (e.g., chasing deer with snowmobiles) is more difficult to measure. The public favored vegetation screening and treadway realignment to solve this problem.

Figure 78: Trail Users May Disturb Livestock.

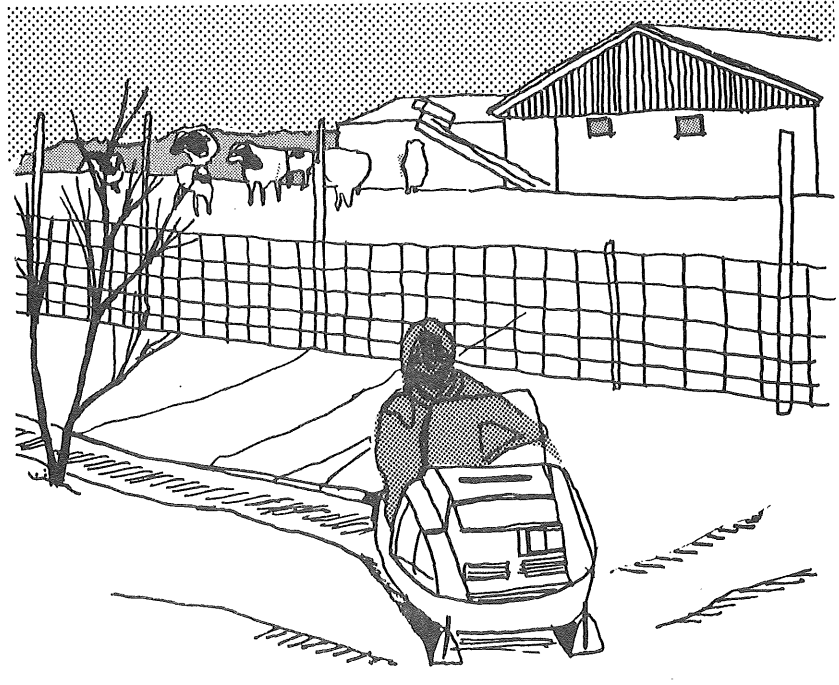


Figure 79: Disturbing Wildlife/Farm Animals: Alternatives.

The concern is to protect wildlife nest and den sites and prevent users from yelling or throwing things at farm animals. The adjacent landowner and managing agency are both affected.

EFFECTIVENESS

MOST → LEAST

COST: HIGH ↓ LOW

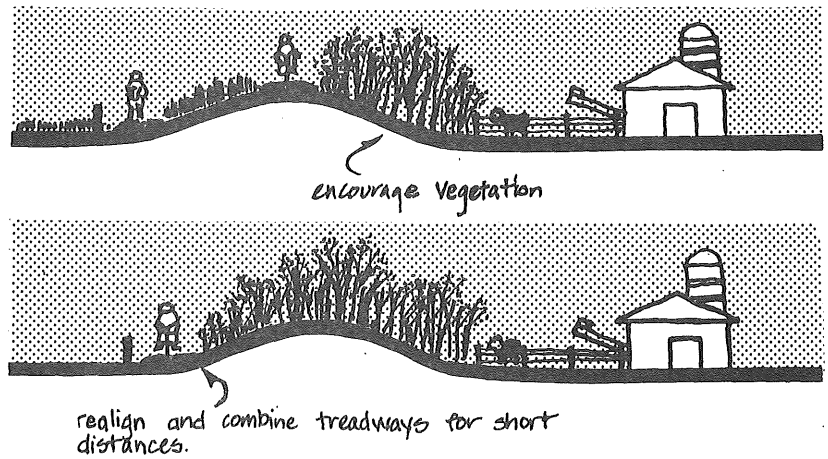
* *Reroute trail away from sensitive areas.* This involves buying or trading right-of-way. The areas could be nest or den sites or farm yards.	**Hire trail manager and create a volunteer citizen patrol.* Manager will patrol trail for violators and monitor wildlife along the trail. Violators should be ticketed and prosecuted. If possible the case should be well publicized to act as a deterrent. The manager can also speak to schools, churches and civic groups and explain why users should not disturb wildlife or farm animals. The citizen group will patrol the trail and report violations to the trail manager or local authorities.	**Hire a trail manager.*
Realign the trail within the right-of-way to avoid sensitive areas. The cost of this solution will vary depending on the number and length of realignments.	*Plant vegetative screen around/along a sensitive area or farmyard.*	*Manage vegetation to enhance wildlife habitat.*
	Sensitive areas should not be signed or announced to draw attention.	*Close trail to all uses on a temporary basis.* This alternative would be effective from the wildlife standpoint but would shut the trail down completely and thus is not as good an alternative as others on this page.
	Close the trail to certain uses on a temporary basis to protect sensitive wildlife. The trail could be closed during the nesting season, for example, to protect sensitive species.	*Write a section of the User's Handbook that discusses disturbing wildlife and farm animals.* The section should note that such behavior is considered bad trail etiquette by most users.
		Create a volunteer citizens' patrol.
		Request the local sheriff and DNR conservation officer patrol the trail and ticket violators.

*Solution requires legislation to change trail alignment

**Solution requires authorization of additional complement position.

Presently Being Implemented:

Figure 80: Preventing Livestock Disturbance.



Disturbance of rare vegetation will be a concern primarily when the proposed trail is not on an abandoned railroad grade. On railroad rights-of-way, problems might occur if a second treadway were developed.

Some landowners are concerned that a trail will help spread noxious weeds into their cropland. The control of noxious weeds is dictated by state law (MN Stat. 18.181-18.271). The level of enforcement, however, varies with the amount of cropland in the area.

The amount of litter on a trail seems to vary seasonally with how clean the trail appears to the user. A trail that is kept clean and looks clean in the spring tends to stay clean all summer even with a reduction in litter maintenance.

The public favored providing more trash receptacles over hiring more staff to patrol and pick up litter. The public also supported a DNR-sponsored clean-up program, education programs, a reporting and reward system, and hiring a trail manager if it becomes necessary to coordinate and supplement litter maintenance efforts.

Camp fires can enhance a user's trail experience. But it can also be hazardous if not handled with care. N.R. 20 specifies that all fires on state trails must be in designated fire rings or fireplaces.

Figure 81: Litter - Alternatives.

Litter is a concern on the trail and on adjacent land. This concern directly or indirectly affects the DNR, landowners, and trail users.

EFFECTIVENESS

MOST → LEAST

COST: HIGH ↓ LOW

*The combination of the following actions: Provide above-ground and recessed trash cans at all access areas and key points along the trail, hire a trail manager, and create a volunteer citizens' patrol. The manager and citizens will patrol the trail and clean up litter. The manager can ticket litterers and speak to groups (schools, civic groups,) when using the trail and to consider a trail clean-up project. If a project is established, it should be well publicized.	*Hire a trail manager, create a citizens' patrol and have a volunteer clean-up project.	*Hire a trail manager.
Provide above-ground and recessed trash cans at all accesses and at key points along the trail and have a volunteer citizens' patrol on the trail.		
	Provide visible trash cans at all accesses, create a volunteer citizens patrol and place a sign at all accesses urging everyone to pack out their litter.	Place a sign at all accesses urging everyone to pack out all of their litter.
	Start a local clean-up program involving 4-H clubs, scouts and school classes.	Write a section in the User's Handbook discussing litter. The discussion should highlight the pack in/pack out philosophy. Make handbook available at all access points.
		DNR staff should speak to groups (e.g schools,) emphasizing the expense of litter and the pack in/pack out philosophy.

*Solution requires authorization of additional complement position.

Presently Being Implemented:

Figure 82: Camp Fires and Controlled Burns - Alternatives.

Fire is a concern only when misused. This section will discuss solutions to both wildfires and user fires. Fires can affect the DNR, landowners and trail users.

EFFECTIVENESS

MOST → LEAST

COST

HIGH

*Hire a trail manager and create a volunteer citizens' patrol. The manager could patrol the trail to ensure that fires are burning only in designated areas. The manager could also coordinate any burning done by adjacent landowners so that the trail would be protected. The citizens' group would watch the trail and report any fires outside of designated areas.

*Hire a trail manager.

Prohibit all fires on the trail.

Close portions of the trail during high hazard fire seasons.

Require all adjacent landowners to obtain a permit for burning near the trail.

Post fire hazard sign at all accesses when conditions dictate.

Encourage users and adjacent landowners to report illegal fires.

Publicize fire hazard in local media.

Post fire regulations at all trail accesses. The fire regulation states that "all fires must be in designated areas."

Request local sheriff and conservation officer to patrol trail during fire seasons. Users with fires outside a fire ring would be asked to leave.

Provide fire rings at all accesses, waysides and rest areas with a 10-foot diameter cleared area around every ring and then ban fires except within these rings. (Note ban in User's Handbook).

LOW

*Solution requires authorization of additional complement position.

Presently Being Implemented:

b. Recommendations

(1) Trails and Waterways should continue to ask the DNR area fisheries manager, area wildlife manager and the non-game wildlife specialist to study the proposed trail alignment and make recommendations they deem necessary to protect any sensitive fish and wildlife habitat the trail may adversely impact.

(2) The DNR should plant a vegetation screen between the treadway and the farmyards where there is a disturbance problem. If the farmer has a pasture or farm buildings across the right-of-way, he may oppose a vegetative screen. In those cases, other solutions must be pursued.

(3) If (2) is not sufficient or if the right-of-way is found to contain a sensitive wildlife habitat area, the treadway should be moved to skirt the area as much as possible within the right-of-way.

(4) If the sensitive area includes an entire section of right-of-way, the DNR should attempt to move the entire right-of-way through a land exchange. An exchange could be beneficial to both parties: the DNR could avoid a sensitive area; and the landowner could avoid other problems, such as land use conflicts and invasion of privacy.

(5) User and landowner handbooks should be developed and distributed (Appendices B and C).

(6) Vegetation management plans should be written for each proposed trail as part of the master plan. If the master plan is already written and does not address vegetation management, a supplemental plan should be written. The vegetation management plan should identify noxious weed areas and any rare plants along the right-of-way. The plan should outline a weed control program. Chemical spraying should be kept to the minimum necessary, using mostly spot-spraying. The plan should also address restoring native vegetation

where feasible. The plan should include a program to maintain a variety of views and keep an overgrown "green tunnel effect" under control.

(7) No chemical spraying should be done near rare plants or important water resources and related aquatic life. The regional coordinator should ask landowners to voluntarily stop spraying next to the right-of-way where these conditions exist.

(8) The DNR should recruit clubs and organizations to help with vegetation management programs such as tree planting. Retired farmers may provide expert assistance when seeding is needed.

(9) The treadway should be realigned within the right-of-way to provide a buffer around rare plants.

(10) If a second treadway is being developed, it should merge with or abut the first to pass around a rare plant area.

(11) Sensitive plant areas should not be signed unless adequate protection can be given.

(12) The DNR should continue to provide an adequate supply of easily accessible (by users) trash cans at all accesses and waysides. It should consider providing recessed cans at selected spots along the trail (e.g., rest benches and scenic overlooks) if they are feasible.

(13) The regional coordinator should start a clean-up program involving local 4-H clubs, scouts, school groups and others, utilizing the volunteer program.

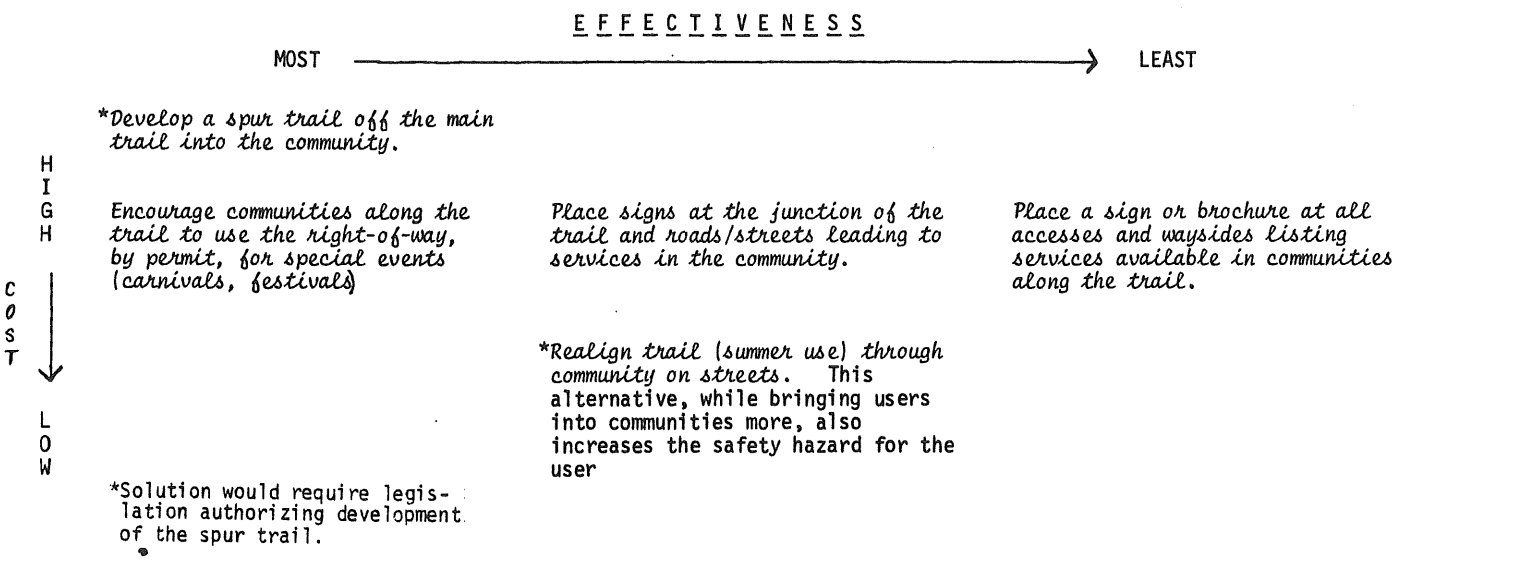
(14) A sign should be erected at the trailhead to inform users of trash can locations and to urge them to use the cans or carry their refuse out with them.

(15) The regional coordinator should talk to local clubs and user groups and try to form a citizen's patrol group to help with litter policing.

(16) Signs at trailheads should inform users of the regulations relating to fires.

Figure 83: Integrating Trails into Communities: Alternatives.

Trails on abandoned railroad grades can help fill the economic void created by loss of the railroad by directing users to purchase goods and services from the community. The level of acceptance of a trail can be affected considerably by the relationship it has with these communities. This concern can affect the DNR but affects the landowner and user to a greater degree.

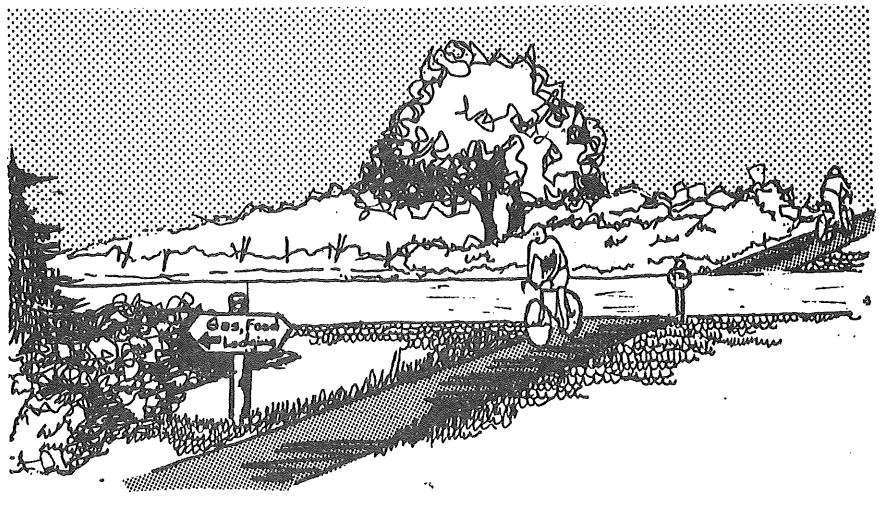


C. Integrating Trails into Communities

The DNR's desire to maximize positive and minimize negative trail impacts extends to the communities through which the trails pass. As stated earlier, the DNR wants to supply trails that benefit adjacent communities as well as provide an appropriate level of recreation and commuting opportunities for present and future generations.

The economic vitality of the community, as well as the comfort, safety and enjoyment of the trail user can be enhanced through careful planning (Figures 83, 84). A well-planned trail, sited with the involvement of the communities it passes, can provide the trail user with overnight accommodations (see pages 216-218), repair facilities, transportation and participation in community events. It can provide a community focus and added tourist dollars--many communities report a surge in retail sales of goods and services after the construction of nearby trails.

Figure 84: How to Integrate the Trail into the Community.



Integrating a trail into the community is comparatively easy along abandoned railroad grades, since they run directly through communities. Other trails present greater problems. The public has favored signing services off the trail or building spur trails to the

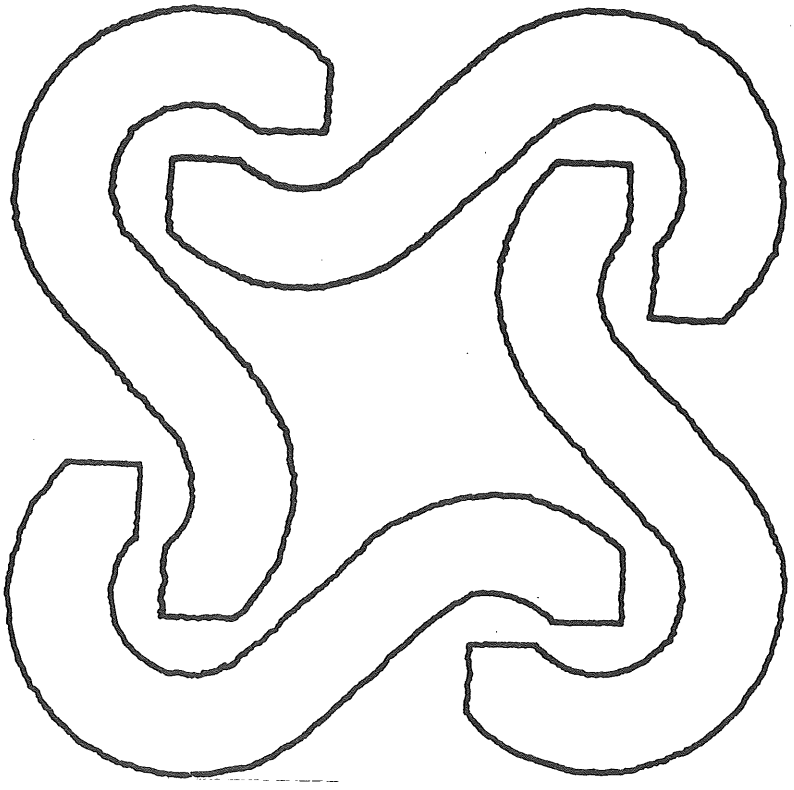
services. Providing brochures of services at trail waysides and accesses was often mentioned in combination with the above.

The DNR makes the following recommendations:

1. Road-trail intersections should be signed for users to available services and, where appropriate, an independent route through town should be signed.
2. Brochures or posters should be at all trail access points and waysides. They should list services available in communities along or near the trail.
3. If in the future the DNR's funding improves and signing seems inadequate, spur trails to the most needed and popular services should be built. If built, they should tie together services and connections to public transportation.
4. A user handbook should be developed and distributed at all trail access points.

9

Special Topics



Introduction

The trails program today is the result of experimentation, public pressure and cooperation, and hard work on the part of organized user groups and government agencies. Although the original surge of planning and construction may be leveling off, there is still much to be done. Some user groups remain to be provided for, and some legislative and policy decisions for overall program direction, system operation and funding must still be made. The Minnesota DNR Trail Plan process brought some of these issues to the forefront. This chapter will address these concerns and provide future direction through recommendation.

A. Explore Minnesota Trails: A Collection of Trails and An Affiliation of Agencies (referenced on pages 111, 125, 140 and 144).

Within Minnesota several public agencies provide trail opportunities. That isn't to say that there is excessive duplication of effort. Each agency enjoys a slightly different perspective as to its role, responsibilities, and clientele. Nevertheless, when government agencies work together, it is sometimes possible to create more benefit for the public than would be allowed if each agency continued to work independently. Out of such thinking came the "Explore Minnesota Trails."

"Explore Minnesota Trails" would be a collection of qualifying public trails with affiliate agencies suitable for use on a two-day basis that uniquely show off the state's varied resources. In many cases they would be state trails, but they could also be grants-in-aid trails, unit trails, federal trails or local trails. They might even be bikeway opportunities provided through the Minnesota Department of Transportation. "Explore Minnesota Trails" would be the "flag" under which they would be made known to the public. And, as proposed in Chapter 5, would be organized using the Landscape Region system developed largely within the DNR. The intent would be to recognize a high-quality trail opportunity for each user group within each region.

By pursuing this system of scenic overnight trail opportunities three benefits are realized:

1. Duplication of effort is avoided. For example, if there is already a qualifying federal trail in a given location, no state trail would be developed for those trail uses already served.
2. Administrative flexibility is maximized. For example, if a suitable unit trail exists in a given location, it could be incorporated into the "scenic overnight" trail system:
   a. without going through the potentially cumbersome steps of legislative authorization and/or departmental designation of it as a state trail;

b. without being bound by the state trail rules and regulations sometimes deemed to be in conflict with the unit's primary purpose; and
c. with the trail maintenance function being retained by the operating divisions.

3. Opportunities for minimizing costs of development and maintenance can be realized. For example, a qualifying scenic overnight trail might be developed by volunteers, possibly through a grant-in-aid program.

However, effective provision of high-quality trails entails not only building and maintaining the trails, but ensuring that the public knows about them. Therefore promotion of the system and the individual components is an essential element of the affiliation.

A related need in the effective provision of trails is for a mechanism by which to systematically obtain and cohesively analyze user feedback and act upon on the individual trails in this system.

Accordingly, the following basic characteristics of the affiliation are recommended:

1. Affiliation would be voluntary, but required for inclusion of any trail in the Explore Minnesota Trail System.
2. Affiliation would be by means of cooperative agreements between DNR Trails and Waterways and the operating agency, covering a sufficient period of time. The following authorities and responsibilities would be subscribed to:
   a. DNR Trails and Waterways would
      i develop minimum design criteria for trails;
      ii effectively make the trail known to the public as part of the Explore Minnesota Trail System;
      iii coordinate system use-monitoring and user-opinion surveying and data analyzing;
      iv provide necessary development funds for those trails sponsored by the DNR.

b. The cooperating agency would:
   i assure compliance with minimum design criteria;
   ii maintain the trail;
   iii cooperate in monitoring and surveying efforts; and
   iv assist in the promotion of the Explore Minnesota Trail System.

3. Each party's affiliation would remain in effect during the one year that has been designated.

Figure 86 outlines the steps necessary in establishing the "Explore Minnesota" trail system and also indicates its role in identifying the need for additional state trails.

Because of the experimental nature of this proposal, benefits of the proposed system should be thoroughly evaluated after being in operation for five years.

Figure 85: Promotional Logo (1983-), MN/Dept. of Energy and Economic Development - Minnesota Tourism Division.

Figure 86: Establishing the "Explore Minnesota Trail System"

	STEPS
Establish Framework	1. Establish operating framework for Explore Minnesota Trail System and define quality standards for participation.
Identify Trails	2. Identify the very "best" existing overnight trail opportunities to serve as skeletal Explore Minnesota Trail System and revise annually.
Follow Priorities	3. Utilizing plan priorities, study trail opportunities within a given region.
	If suitable existing opportunities are found, invite participation into the Explore Minnesota Trail System.
	If suitable opportunities are not located in priority one regions, identify and advocate potential state trails that qualify under MN Stat. 86A, and additional criteria listed in "2" above. First - consider public land Second - study the feasibility of using abandoned railroad rights-of-way or other quasi-public rights-of-way Third - work with landowners and others to identify acceptable and suitable alignments
	If suitable opportunities are not located in priority two regions, consider on a case-by-case basis the merits of various trail proposals for state trail status and inclusion within the Explore Minnesota Trail System and advocate where appropriate. Otherwise simply identify the region's best existing trail opportunity and include within the Explore Minnesota Trail System.
	If suitable opportunities are not located in priority three regions, simply identify the region's best trail opportunities and include within the Explore Minnesota Trail System.
Plan and Develop	4. Master plan and develop once state trails are authorized.
Monitor and Promote	5. Incorporate trails into ongoing monitoring and promotional efforts.
Evaluate	6. After skeletal system has been in operation for two years the DNR should conduct a formal strategy evaluation.

and Identifying Necessary Additional State Trails

RELEVANT DETAILS	MISCELLANEOUS	YEAR
- open to all agencies - voluntary - on a year-by-year basis (see pps 197-199)		1984
criteria: - suitable for two-day use - shows off regions - is significantly different from trails in other regions - considers lodging needs (see Figure 26)	- intention is to get the system going quickly - field check trails shown in Figure 37	1984 & 1985
- Twin City Metropolitan Area, Northern Pine and Lakes, Tamarack Bog, are to be studied first (See Figure 45)		initiate studies in 1985
criteria: - same as "2" above	- intention is to fill in skeletal system established in "2" above	
- "a state trail shall be established to provide a recreational travel route which connects units of the outdoor recreation system or the passage through other areas which have significant scenic, historic, scientific or recreational qualities or re-establishes or permits travel along an historically prominent travel route or which provides commuter transportation" (MN Stat. 86A)		
criteria: - same as "2" above		
criteria: - same as "2" above		
		as appropriate
- see pps. 222-223		continuous
- see page 124		1988?

B. Multiple Use of Trails (referenced on pages 36, 110 and 178).

Not all trail user groups have the same needs. Therefore, use compatibility is a key consideration in the development of multiple use trails.

DNR policy states that:

> A priority use will be selected for each trail treadway for each season. Other uses, which due to clear incompatibility or intensity of use, are in conflict with the priority use, shall be prohibited. (Minnesota Trails Policy Plan, see Appendix O).

In addition, DNR policy specifies that:

> Motorized and non-motorized uses shall be separated by season or adequate distance in order to maintain quality recreational experiences.
>
> The maximum number of compatible year-round uses of trails and trail facilities will be promoted.
>
> Appropriate recreational use(s) of a right-of-way will be determined, based on an analysis of user needs, resource suitability, and a regional trail inventory.
>
> Combinations of the following uses will not be accommodated or planned for on the same treadway unless the management plan has determined that they are acceptable: ski-touring and snowshoeing; horseback riding and hiking; bicycling and horseback riding (DNR State Trail Policy, February 1981, p. 8).

In development of a single treadway for multiple uses, user safety, speed and maneuverability requirements, as well as personal expectations, must be considered in light of predicted use levels and possible degradation of the treadway and trail corridor. In development of dual treadways within the same corridor personal expectations or user satisfaction must be considered in light of predicted use.

For example, skiing would likely be satisfactory for users if a separate parallel snowmobile treadway were only occasionally used. However, it would probably not be satisfactory with heavy snowmobile traffic. Similarly, light horseback use of a hiking trail would not pose an unacceptable safety risk or make less enjoyable a hiker's experience. It may be perfectly acceptable to

a motorized user to share a trail with a hiker or a skier, but not acceptable to the hiker or skier to share the trail with the motorized user.

Trail Design

Design and construction standards on multiple-use trails must meet appropriate user facility requirements.

Where possible, multiple use of trails by different user types is desirable because of the cost-efficiency of sharing facilities. Multiple use is not appropriate where user safety or satisfaction would be significantly threatened or where the uses would result in significant resource degradation.

Appropriate trail designs vary for different user groups. For example, a good ski trail will include considerable topographic diversity, whereas a good bike trail is likely to be essentially flat even as it winds through hilly terrain. In addition, the extent of meandering is based on the expected rate of travel. Finally, the width of a trail is based on the speed and maneuverability of the conveyance.

Additional Factors

The existence of suitable alternatives to multiple use trails is an important factor. If suitable bicycling opportunities or a good grant-in-aid snowmobile trail already exist in a landscape region, there may be no need to consider these uses on a new trail.

Further, where a trail intersects a large block of public land, it may be possible to develop separate treadways a half mile apart but which come together at access points.

Finally, it may be possible to break up a long snowmobile trail for summer uses. In the summer, hikers, horseback riders and bikers might enjoy their own stretches of what is a snowmobile trail in the winter.

Accordingly, the following is recommended:

Although there is a great potential to accommodate multiple uses on trails, caution must be exercised. Final recommendations must incorporate detailed design considerations for different users, and must consider the use picture on trails which already exist in the area.

C. Allocating Mileage by Trail Type (referenced on page 45).

Trails are a recreation resource to be managed. As discussed elsewhere, they can be designed to minimize maintenance and enforcement concerns, or improved to carry additional use and enhance user satisfaction. To some extent trail mileage can also be reallocated to different user groups based upon demand.

Over the years the DNR has seen the popularity of different trail uses change appreciably. As an example, cross-country skiing currently is enjoying a period of rapid expansion. If it is to treat each user group fairly, the DNR must be capable of periodically readjusting its priorities or redefining what are acceptable uses. Recommendations in Appendix E explicitly allow the DNR to designate two such groups: dog sledders and users of horse-drawn carriages.

Earlier drafts of this plan multiplied the estimated number of activity occasions on state and unit trails for different uses by the rate of speed at which these activities typically occur. The products were intended to represent the estimated mileage consumed over a year by each of the user groups. Seasonal percentages were then compared with percentage distributions of existing trail mileages and surpluses and deficiencies were identified.

The results from this analysis were unsatisfactory for a number of reasons. The results assume that the DNR should prioritize its efforts according to existing use. Not only does this approach assume reliable estimates of use on all DNR trails, the approach does not consider latent demand of people not satisfied by the current management direction of the DNR. Uses currently not provided for would not be able to develop a history upon which a case could be built for additional opportunities. It could be that some people are staying away from trails because they are frustrated by location, design or management. In short, that analysis tended to relegate the DNR to a caretaker role which serves only established trail uses and users.

Some have also wondered whether uses that consume mileage at a faster rate of speed are entitled to a corresponding additional mileage allocation and even if use estimates were available, and a method for prioritizing was available which was sensitive to latent demand, it would still beg the question regarding the role of the DNR in satisfying trail demand. What percentage of the demand for each use should the DNR attempt to satisfy?

Factors include the suitability of the DNR's land base to accommodate different uses, the intentions of various governmental agencies to provide trail opportunities, the evolution of trail user groups over time and several others.

Because it is important to relate appropriately to the changing needs of the different user groups, it is recommended that this question not be left unanswered. Possibly future SCORP opinion surveys can be focused so as to shed light on the matter. The results of future use monitoring on trails is also relevant here.

Accordingly, the following is recommended: that the DNR monitor its trail use so as to identify unacceptable use levels and consequently opportunities for reallocation of trail mileage to different user groups. The DNR should also retain a flexible position so that it can respond to the needs of emerging user groups which can appropriately be served on DNR administered lands.

D. Design Preferences (referenced on pages 148 and 216).

Unfortunately, the DNR does not have a complete trail user profile for all its users; only snowmobilers and ski tourers have been surveyed in any depth. SCORP estimates that approximately 90 percent of Minnesota's ski-tourers and snowmobilers who indicated a desire for more trails, said they should be developed for either short outings or full-day outings. Another area deserving consideration is the trail-user's interest in convenient overnight lodging in conjunction with trails. This has been addressed when considering the use of youth hostels along state trails, especially for bicyclists (see page 216).

Ski-tourers preferred short outings to full-day opportunities 47 percent to 40 percent. Snowmobilers expressed just the opposite opinion, preferring full-day opportunities over short opportunities by a 53 percent to 35 percent margin.

Trail users have expressed their feelings about scenic quality and preferred trail development as well. "Specific features of an ideal cross-country ski trail by respondents were 86 percent agreeing that trails should parallel a stream or river, over 86 percent wanting skiing trails in wilderness areas. Items with similar favorable response were: through forests; through forest recreation areas; through wooded areas; along lakeshore; having open areas where they could leave the trail; in hilly terrain; signed areas; groomed trails, trails connecting major recreation areas and trails having learning experiences and displays. Ninety-five percent of the respondents felt trails should be developed in areas where wildlife could be viewed." (SCORP)

Scenic preferences of snowmobilers on an "ideal" trail as reported in SCORP included (in order): wildlife viewing opportunities; wilderness like settings; hilly terrain; along rivers or streams; forested trail segments; open fields/meadow trail segments; and lakeshore. Alignment preferences included: being able to return to the starting point; connections with recreation areas; and

passing through state forest recreation centers. Finally, management preferences for snowmobilers included: frequent signing; groomed trails; and paths for different users.

Although it has not been documented to the same degree for others, it is reasonable to expect that this preference for visual quality, appropriate orientation, and good management extends to all Minnesota user groups.

A study by Ballman, Knopp, and Merriam (1981)[1] pointed out another research deficiency. After surveying Minnesota's skiers, they conclude that planning thus far has concentrated on satisfying the "averaged skier" rather than the "average skier." They suggest that by catering to questionnaire response averages planners compromise the needs of sub-groups which comprise the total cross-country skiing group. They segmented skiers into 8 distinct markets:

the moderate skier
the family nature skier
the social exerciser
the family social skier
the older family skier
the gung-ho wilderness skier
the naturalist skier, and
the indifferent, occasional skier

As an example of the differences, they pointed out that the family social skier looks for social contact and opportunities to promote family solidarity. Exercise is an important ingredient and so is moderate challenge. Total mileage skied is not all that important. Compare that with the gung-ho wilderness type who is highly motivated except for social contact and family solidarity. Twenty-five miles of trail having sharp curves and requiring trail breaking are desirable, as are remote wooded areas.

---

[1] Ballman, G. E., T. B. Knopp and L. C. Merriam, 1981. Managing the Environment for Diverse Recreation: Cross-Country Skiing in Minnesota. Agricultural Experiment Station, University of Minnesota, St. Paul. Station Bulletin 544 Forestry Series 39, 21 pp.

Looking at the differences in motivation among sub-groups as a planning factor makes sense. It also suggests that there is much to learn about all user groups. By recognizing the particular needs of user types first and then sub-types within, the DNR will assure more responsive trails.

On the other side of the coin, the nature and size of the area traversed by a trail is a determining factor in satisfying the needs of each user group. The Recreation Opportunity Spectrum (ROS) concept advanced over the years by the U.S. Forest Service is now being studied within the DNR. The basic premise is that settings from the "paved to the primeval" are needed to fulfill a wide range of user needs.

As part of the Land Resource and Management Plan Project, a task force has tentatively divided the state into seven classes:

1. primitive;
2. semi-primitive, remote from roads;
3. semi-primitive, roaded;
4. natural, remote from roads;
5. natural, roaded;
6. rural; and
7. intensive land use.

In the absence of complete data and a finalized ROS system, it is more important than ever for planners of trails to determine who is the expected clientele for a particular trail and what potential the land has to satisfy user desires.

Accordingly, the following is recommended:

1. Future SCORP surveys assess the specific needs of hikers, bicyclists and perhaps horseback riders. (Skiers and snowmobilers have been covered in research to date.)
2. Trails and Waterways should tentatively target trail user sub-groups (market segments) and assess their needs.
3. The Office of Planning should finalize an ROS system for the DNR.
4. Based upon the size and nature of the resources, trail planners should identify ways to serve the target audiences (i.e., market segments) on state trails.

E. Bicycle Trails vs. On-Road Bikeways (referenced on pages 11 and 61).

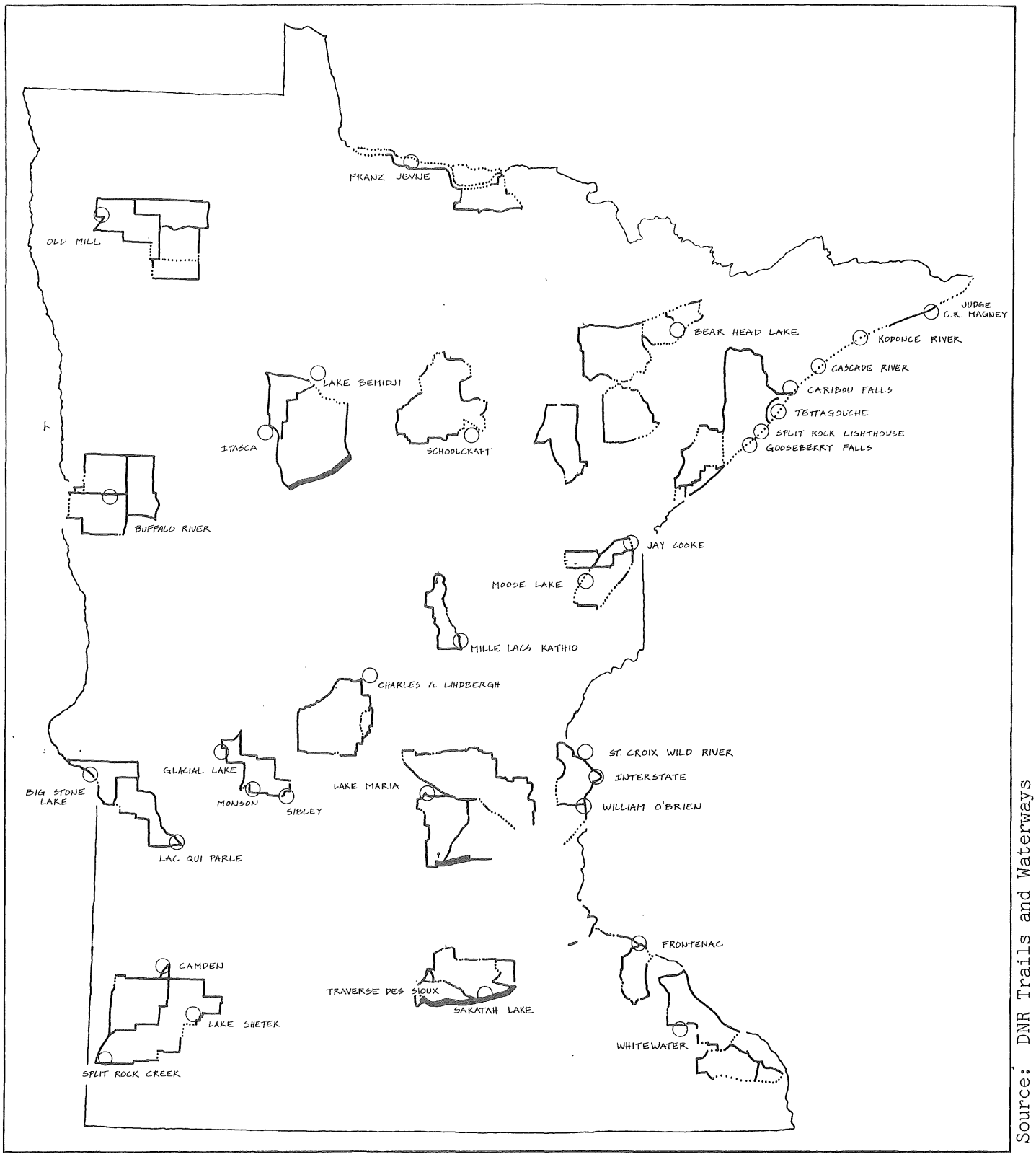
Background

Bicycle facilities provision deserves some special consideration. Bicycle trails are the most requested trail type; moreover, bicyclists are the single largest group of "trail" users, and more bicycling occasions take place than all other trail occasions combined. However, bicycle trails are by far the most costly to develop. When people request more bicycle trails, some mean off-road trails, but some mean paved shoulders on highways; the SCORP data do not distinguish between the two. There is an ongoing debate within the bicycling community over how much money should be going into special bike trails and how much should be going into removing obstacles on roads and highways. One faction maintains that because bikes are legally entitled to share roads (with or without shoulders) with cars, bikers should learn to feel comfortable riding on roads--it's so much cheaper. Shoulder paving is comparable in cost to developing off-road trails in many cases.

The DNR knows there are both trail bicyclists and road bicyclists in substantial numbers. It would be an irresponsible use of scarce money to initiate a major bike trail development program without first determining the needs and relative number of trail and road enthusiasts.

Accordingly, the following is recommended: The DNR and Mn/DOT should jointly establish, map and publicize a few on-road bicycle routes. Use monitoring and user surveys should be conducted, and the results compared to off-road trail use figures and survey results.

Using Mn/DOT's inventory of roads suitable for bikes, the potential bike tour routes map (Figure 87) was prepared to illustrate the concept and some tentative candidate routes.



Source: DNR Trails and Waterways

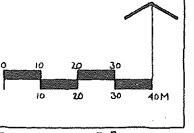
BIKE TOUR ROUTE POSSIBILITIES

Note: this map shows examples of routes which could be developed. They are not specific recommendations

Route on DNR Trail
Route on good/fair roads
Portion of route on poor/gravel roads
State Park

Note: Routes are situated on poor/gravel routes only when no other alternatives exist.

Figure 87.



F. Grant-in-Aid vs. Permanent Trails (referenced on pages 34 and 130). What proportion of trails in the state should be state-owned is a question with important implications for the future of trail use in Minnesota. The trails program to date has provided a mix composed of state trails, which are owned, constructed and operated by the DNR; DNR unit trails, which are recreational trails located in units of the state outdoor recreation system, such as state forests and state parks; and grants-in-aid trails, which are designed, constructed and maintained by local user groups with DNR funding.

DNR state and unit trails are sited on land owned by the state, and are publicized, operated and maintained by the state. Purchase of land, if necessary, and construction are relatively expensive and time-consuming.

However, long-term operation and maintenance costs are low. Finally, state and unit trails are more or less permanent, since the public owns the land and the DNR operates the trails. People can expect the trail to be there year after year, which makes it a good drawing card for tourists.

The grant-in-aid program tends to work in just the opposite way. No land acquisition is required because the trails are usually located on private land through low or no-cost permits from the landowners. A well-organized group can build a trail in a short time with DNR funding; the group does not have to wait until the DNR can muster the resources necessary to buy and build a state trail. The local group has considerable influence over where the trail will go and what uses will be allowed.

On the other hand, grants-in-aid trails are single purpose and temporary with the agreements usually on a yearly basis, and can be terminated in any year. This fact, and the fact that these trails are not usually well publicized, creates uncertainty over where trails are located and whether they still exist. This has obvious implications for tourist visits.

Another problem with grants-in-aid trails is that, typically, it takes a well-organized user group to get one built. If trail needs were to exist in areas of the state without organized groups, the DNR, under a grant-in-aid system, would have no power to fulfill those needs. Minnesota's snowmobilers have demonstrated for many years that they are organized enough to build grants-in-aid trails; few other user groups are organized as well. While there are many skiers, horseback riders, hikers and bicyclists in the state, there are few grants-in-aid trails for those uses. Under a grant-in-aid system, then, many trail needs could go unmet because of users' inability to organize, which may be due to factors beyond their control.

Accordingly, the following is recommended:

1. The DNR should develop state trails where there are high-quality resources and high demands.
2. Grants-in-aid trails should continue to provide the bulk of the DNR snowmobile trail mileage (80-85%).
3. The grant-in-aid program should be expanded to cover all DNR-designated trail uses. It may be necessary to tailor the program in order to meet the special needs of the various user groups.
4. Local governments should be encouraged to provide for local trail needs through the grant-in-aid program or on their own.
5. Individual state trails should provide for as many compatible uses as possible, particularly in regions where there are few trail opportunities available.
6. Grant-in-aid programs should be used selectively to develop trails on publicly-owned land.

G. Use of Trails by People with Physical Disabilities (referenced on pages 45 and 149).

State and federal legislation has been passed to guarantee that facilities and programs are accessible to and usable by special populations. Such legislation includes the Minnesota Architectural Barriers Act, the Federal Architectural Barriers Act, and Section 504 of the National Rehabilitation Act. The National Forum on Meeting the Recreation and Park Needs of Handicapped People also states: "All disabled citizens, each according to their individual ability, shall be guaranteed access to recreation programs, activities, and/or facilities which are held forth to be 'public'."

This subject has been dealt with thoroughly by a DNR publication, Access for All, A Workbook for Outdoor Accessibility. Much of what follows is based on that study.

Within environmental and economic limitations, it is the DNR's goal to provide recreational opportunities for all of Minnesota's citizens. However, topographic relief in some DNR units would necessitate extensive systems of switchbacks and hard surfacing to accommodate the disabled--thereby destroying the natural atmosphere for which the unit was established. Therefore, the DNR should concentrate on providing barrier-free facilities in areas which have the most potential for use by persons with disabilities (Appendix E).

Obviously, all disabled populations do not have the same limitations. Figure 88 is a trail classification system which includes a full range of opportunities but is still sensitive to the range of disabling conditions that might afflict an individual. Trail length is up to 10 miles, slope from 2 percent (1:50) to steps or natural terrain and surface from asphalt to whatever the natural surface is. Trail classification varies from 1 (easiest) to 5 (most difficult).

Accordingly, the following is recommended:

1. The DNR should make accessible picnic areas, campground areas and other major facilities of a specific trail, sanitation buildings and interpretive centers. Efforts should concentrate on former railroad rights-of-way, as these appear to be the most cost-effective.
2. The DNR should make accessible as many unique features as possible, again concentrating on former railroad grades.
3. Landscape regions with the highest concentrations of disabled persons should be provided with a full range of opportunities based on Figure 88.

Figure 88: Specifications and Amenities for Trails for the Disabled.

	* 1	2	3	4	5
Length of Trail	0 - ¼ Mile	¼ - 1 Mile	1 - 3 Mile	3 - 10 Mile	Over 10 Miles
Rest Stop Spacing & Types Use natural materials whenever possible for benches, shelters, etc.	100' - 150' ** benches, shelter interpretation	200' - 300' benches, shelter interpretation	500' - 600' natural benches, occasionally interpretation	Every one mile cleared area - adjacent trail or interpretation	None - unless extremely unique interpretation
Width of Trail	1-way - 4' 2-way - 8'-10'	1-way - 3'-4' 2-way - 8'	1-way - 3' 2-way - 6'-8'	1-way - 2'-3' 2-way - 4'-6'	Undefined
Width and Type of Trail edge	1½' grass edge. Slight slope toward trail	Clear understory brush to 1' from trail; gradual slope either direction	Clear understory brush to 1' from trail; no abrupt dropoffs adjacent	Clear understory brush to ½' from trail	Undefined
Slope of Trail	1:50	1:20 with 5' level space at 100' intervals	1:12 with level space 5' long at 30' intervals	1.8 occasional level space when possible	steps or natural terrain
Cross Slope	*** None	1:50 for max. of 30' and varied from one side to other-entire trail	1:25 for max. of 50' - vary from side to side	1:20	Undefined
Surface of Trail	- concrete - asphalt - wooden planking going perpendicular to walking	- asphalt - very fine crushed rock, solidly packed surface	- firm pea gravel size surface, well compacted	- bound woodchips - class 5 gravel mixture, coarse	- sandy - rough unbound woodchips - rocks
Trail Edge (Rails, curbs, etc.) Use natural materials whenever possible	Curbs used where necessary for safety; rails 3' high for safety or for resting along lineal slope where necessary	Gradual ramping; rails used for resting along lineal slope and to provide safety on cross slope or hazard area	Compacted earth level with trail edge; definite texture change. Rails for holding slope at steepest grade and for safety	Texture change with immediate drop to natural terrain from trail edge. Rails used to guard hazard	Nothing

* 1 - 5 where "1" is the easiest trail and "5" is the most difficult
** Benches may mean commercial type or a big log or boulders suitable for sitting on
*** Drainage by crown or valley - cross slope strongly relates to lineal slope

H. Hostels (referenced on pages 193 and 207).

As part of its statewide trail planning effort, the DNR is exploring hostels as a means to supply additional overnight accommodations for Minnesota's trail users. Hostels are low-cost, supervised dormitory-style lodgings where people of different nationalities, social backgrounds and opinions can come to know and, perhaps, understand each other while preparing their own meals and sharing other housekeeping chores.

The first hostels opened in Germany in 1910. Since then, this increasingly popular form of lodging has been introduced into many countries, including the United States in 1934. Over 5,000 hostels exist worldwide, with 270 in this country.

Although there are many campgrounds, resorts, hotels and motels near Minnesota's trails, as of 1982 there were only five hostels in the state. The DNR believes that more hostels could benefit Minnesota's trail users. The availability of low-cost accommodations along trails would open trail travel to people who otherwise could not afford it. Strategic location of hostels would benefit both users and the state trail program by improving trail accessibility and use.

According to American Youth Hostels, Inc. (a non-profit corporation whose purpose is to provide travel and recreation opportunities through hostels), the demand for hostels in the United States is growing. During the period October 1979 through October 1980 the first survey of hostel users was conducted by AYH. Of 50,000 survey cards sent out, 2,661 cards were returned. AYH considered this return representative of people who used hostels in 1980. Eighty-eight percent of the respondents indicated they would stay in hostels again.

AYH is planning a national system of youth hostels based on the travel movements of recreationists and tourists, and is asking the cooperation of state departments of planning, natural resources, transportation and tourism in its collection of data.

The 1981 Minnesota Legislature recognized the increasing demand for hostels by directing the DNR and the state Outdoor Recreation Advisory Council (ORAC) to cooperate in a study of hostels in Minnesota (Laws of MN 1981, Chap. 304, Sec. 7). The resulting study, Feasibility of Developing Youth Hostels in State Outdoor Recreation Facilities (Jan. 15, 1982), was developed cooperatively between Trails and Waterways and the Division of Parks and Recreation.

Since 1977, eleven AYH hostels have operated in Minnesota, but none of these have been on public lands. Only eight hostels operated in early 1982.

Hostels should be located in areas which encompass natural, historical, cultural, educational, recreational, or scientific resources. Moreover, their location should encourage both short- and long-distance trail experiences.

The role that the state should assume in aiding AYH, or another vendor, to develop a network of hostels in Minnesota should be to:

1. develop location criteria and select a target area;
2. promote the target area as a tourist attraction;
3. identify a potential for developing a system of hostels;
4. identify structures within the target area (focusing on historic structures) that can be used as hostels;
5. seek vendors to develop low-cost overnight lodging for the traveler;
6. develop model contracts for leasing state-owned buildings; and
7. help selected vendors to pursue funding sources.

The geographic area identified as most appropriate for the development of a pilot hostel is the eastern portion of the state. This geographic area includes three locations which the public finds most attractive, namely: the North Shore, the Mississippi River blufflands, and the St. Croix River valley. All of these locations are well-established tourist destinations. This area also contains most of the state's population and a large percentage of the state's bicyclists and trail users. State parks with the highest attendance levels and prominent historical travel routes are located in this area. Public transportation can easily provide access for potential users in this area. State trails located in this geographic area are the Minnesota-Wisconsin Boundary State Trail and the North Shore State Trail. These trails are connected to local trail systems. Based on its attributes, this geographic area is best suited for a program which would demonstrate the need for hostels in the state.

Accordingly, the following is recommended:
DNR lands should be used to provide two pilot hostel sites: one near the Twin Cities, perhaps along the St. Croix River or Minnesota River, to accommodate the metro, short-distance traveler, and another at a site suitable for the destination traveler located some distance from the metropolitan area.

Hostel development in Minnesota should concentrate on establishing a network for travelers based on three priorities: (1) complementing the outdoor recreation system; (2) highlighting scenic locations; and (3) promoting leisurely, long-distance trail experiences.

I. Involvement in Federal Trail Initiatives (referenced on page 11).

North Country Trail

The North Country National Scenic Trail was authorized on March 5, 1980 with the passage of Public Law 96-199. The 3,200-mile trail from New York to North Dakota will pass through Minnesota in a generally east to west direction for a distance of 389 miles.

The trail will enter Minnesota from the east near Danbury, Wisconsin, and then turn north to Jay Cooke State Park. Then the trail turns west moving north and south along an east/west line to a point near Breckenridge, where it passes into North Dakota. The trail attempts to use public land whenever possible. The legislation authorizing the trail restricts the expenditure of funds by federal agencies for acquisition of lands for the trail to segments which lie within the boundaries of existing federal areas.

Between federal areas the trail will attempt to use existing state and local facilities. As for Trails and Waterways administered trails, the North Country Trail could use parts of the Minnesota/ Wisconsin Boundary and Heartland State Trails. It will also pass through St. Croix, Nemadji, Savanna Portage, Hill River, Paul Bunyan and White Earth State Forests; Jay Cooke, Savanna Portage, Itasca and Maplewood State Parks. At this time no funds have been specifically appropriated for development outside of federal areas and therefore only 44 miles within the Chippewa National Forest have been developed in Minnesota.

Accordingly, the following DNR cooperation with the National Park Service is recommended:

1. Allow utilization of DNR trails within the North Country Trail corridor provided such utilization does not unilaterally change the allowable use of the DNR trail.
2. Upgrade trails utilized in #1 to meet federal trail standards, provided funds are available.

3. Provide connecting links of new trail provided that the links are identified within this plan's implementation process as an area needing a trail and provided there are funds available.

The cooperation must be limited to providing for the needs of Minnesotans and, for that reason, generally Minnesota trail users' use preferences must be first priority.

Superior National Forest

Northeastern Minnesota has long been recognized for its snowmobiling. As early as 1970, the DNR reported that it (i.e., RDC 3) ranked only behind the metro region (i.e., RDC 11) in terms of use and well ahead of most other regions. Similar results were reported in the 1980 SCORP.

Considering the large amounts of public land in that region, it is probably not surprising that the Legislature saw fit to authorize much of Minnesota's state trail mileage in that area. In 1971 the Taconite State Trail from Grand Rapids to Ely was authorized. In 1975 two additional trails were authorized, the Arrowhead Trail between Grand Marais and International Falls (utilizing the Taconite Trail alignment between Tower and Ely), and the North Shore Trail from Duluth to Grand Marais.

At one time considerable snowmobiling opportunities were provided by the Boundary Waters Canoe Area; snowmobiles were often used to access winter fishing areas. These were first limited by the Secretary of Agriculture's Regulations in 1976 which excluded snowmobile use on U.S. Forest lands within wilderness areas (but not on adjoining frozen water) and then by Federal legislation in 1978 (P.L. 95-495). That law limited snowmobiling throughout the area to 2 trails totaling 7 miles in 1984.

However, P.L. 95-495 also directed the Secretary of Agriculture to "intensify the program of dispersed outdoor recreation devel-

opment on the Superior National Forest outside the BWCA as designated by this act. The Secretary shall consider in such new program development the need for the following: addition of snowmobile trails, particularly those now planned or under construction . . ." (emphasis added).

Accordingly, the following is recommended:
That the United States Forest Service provide a high-quality snowmobile trail between Ely and the North Shore State Trail. To the extent that this trail would likely suffice for the authorized Ely to Grand Marais portion of the Arrowhead State Trail, it is also recommended that DNR cooperate with the Forest Service in this effort.

J. Monitoring (referenced on pages 109 and 232).

An on-going use monitoring program is a vital component in the planning, management, and evaluation of Minnesota's trail system. A monitoring program should provide specific information on trail use levels, cost-effectiveness, carrying capacity, and user needs. In addition, the program should establish a communications-feedback link between the DNR and its trail-using public.

Recent monitoring efforts have included surveys of snowmobile owners (May 1984) and licensed cross-country skiers (June 1984), completed by the Trail Planning Section and on-going surveys of summer use on selected state trails, completed with the assistance of the DNR Office of Planning. These efforts must be continued and expanded to cover all seasons and user groups to meet the information needs of trail management in the future.

Accordingly, the following is recommended:

1. Baseline date should be gathered for all user groups, including: user group profiles, use patterns, preferences, expenditures and satisfaction with the trail opportunities provided by the DNR. These data should be updated every three to five years, or as warranted by changes in legislation or recreation trends.

2. Communications with user groups and continuous monitoring of trail conditions and use levels should be maintained through small scale surveys during high use seasons.

3. Each state trail should be monitored during all seasons to establish baseline use figures. State trail use data should be updated through surveys administered on a rotating basis. The summer use surveys instituted by the DNR Office of Planning should be continued and expanded.

4. Individual unit trails should be monitored on a rotating basis to evaluate use levels, cost-effectiveness and their role in the statewide system.

5. GIA trails should be monitored on a "spot-check" basis to determine use levels and cost-effectiveness.

K. Advertising Trails (referenced on pages 108 and 232).

The DNR has made some effort to promote trails, but many still don't know about the state trail system. Promotional activities must be organized to be efficient and effective.

Presently the Department's trail promotion efforts consist largely of trail map preparation and distribution, and construction of periodic press releases of interest to the trail-using public.

The DNR also annually invests effort into displays and programming at the state fair which promotes trails. This is in addition to a limited number of sporting shows throughout the year doing the same thing. Finally, the DNR cooperates with the Department of Energy and Economic Development's Division of Tourism (DEED) in the preparation of their annual brochures that identify statewide trail opportunities.

As a necessary first step, it is recommended that the Trails and Waterways Unit develop a promotional action plan with the help of professionals from the DNR Bureau of Information and Education, the Divisions of Parks and Recreation, and Forestry, DEED and other member agencies of the "Explore Minnesota Trail System" (see page 197).

Unit trails should also be incorporated into the promotional action plans for state forest recreation areas and state parks. Additionally, the DNR should encourage greater promotional effort on the part of local sponsors of grants-in-aid trails. The DNR should continue to maintain the Registry of Recreational Trail Mileages to serve as a central source of information (see Appendix K).

The proposed Explore Minnesota System should be a cornerstone in the promotion of state trails. When operational, it will be an extremely convenient way for the public to get acquainted with a variety of Minnesota's resources in a most enjoyable way. This

trail system will highlight some of the best recreational trail opportunities in the state.

Each and every trail will be monitored to ensure consistently high standards in development and maintenance. In this way it is hoped that the present wide variety of choices will be boiled down to a manageable list of trails of consistent quality. The objectives of this effort are to promote greater use and help ensure quality experiences for both new users and seasoned veterans.

In addition to initiating the Explore Minnesota Trail Collection, promotion of each and every trail should be coordinated with its development to ensure that a high quality product image is created and maintained. Because the DNR is a public agency, perhaps it will be impossible to do this as the "private sector" does. Typically corporations keep a new product under wraps until it has been completed, market tested, and modified before releasing it in a flurry of media hoopla. This is impossible because:

1. The DNR is under pressure to open trails as fast as possible. It cannot keep them closed until they are completely developed and refined. As soon as land is acquired the public has a right to use it, save overriding hazards to health and safety.

2. The DNR does not normally have "on-demand" access to sufficient funds to complete a trail within, say, a biennium, which might otherwise be a reasonable time for most trail users to wait to use a trail.

Successful management of these constraints requires that user expectations be consistent with current conditions, and that users likely to be served by current conditions be made aware of those conditions. Or, in reverse order, the following steps can be identified:

1. identify market segments (a set of discrete, incremental clienteles);

2. identify and satisfy the needs of each of those clienteles; and

3. communicate current conditions to those clienteles throughout and beyond the development process.

The development process can be viewed as a finite number of phases, each of which has discrete characteristics germane to each of the above three steps (1-3). The keystone to the success of this system is in the timing of information dissemination--that it not be done until specified requirements have been satisfied.

STATE TRAIL DEVELOPMENT PHASES

Guidelines for the coordinated development, operation, and marketing of trails to ensure a consistently high quality product image . . . while encouraging appropriate interim use.

DNR Trails & Waterways
10/14/83

Figure 89: State Trail Development Phases.

under development

PHASE	APPROPRIATE CLIENTELE (each phase retains clientele from all previous phases)	MINIMUM REQUIREMENTS OF CLIENTELE: 1. CONSTRUCTION	2. RESOURCE MANAGEMENT	3. ORIENTATION *	4. INTERPRETATION *	APPROPRIATE WAY TO REACH CLIENTELE MARKETING: (once their minimum requirements have been met)
A ACQUISITION	Adjoining landowners; incidental local citizens	**A1.** Land acquisition; minimal prudent treadway maintenance; emergency fencing; removal of hazards.	**A2.** Emergency resource management (e.g. to solve or prevent erosion, plant disease, and hazards to public safety.	**A3.** Boundary marking and signing necessary for public safety.	**A4.** Series of articles in local newspapers & in landowners newsletter to maximize awareness, appreciation & stewardship of trail.	• News release describing what's being done, plans & schedule. "More info call . . ." • Show on state map "under development" • Start landowners' newsletter
MASTER PLAN COMPLETED						
B PARTIALLY OPEN (Less Than 2 Day)	Local citizens; incidental tourists	**B1.** Treadway constructed of approx. ½ day length; provide landowner privacy enhancements & interim parking.	**B2.** Landowner privacy enhancements as necessary.	**B3.** Interim trailhead signs and reassurance markers (e.g. ribbon or paint blazes); trail map with "under development" Call 800- . . . for info.	**B4.** Interpretive overview on map.	• Departmental designation • Articles with map in local papers; make clear it is still under development • Send similar flyers to chambers of commerce; resorts • Add to map order form w/note: "under development"
C OPEN (2 Day)	Adventuresome statewide trail users	**C1.** 2 day treadway constructed; provide interim parking & campsites.	**C2.** Spatial experience enhancements via vegetative management.	**C3.** Interim trailhead signs; permanent reassurance markers as necessary; permanent intersection signs; map still says "under development".	**C4.** Draft of raw interpretive data made available.	• Mn/DOT signs up • Incidental coverage in metro newspapers
D COMPLETED (2 Day Trail)	Statewide general population & tourists	**D1.** Permanent parking, waysides & rest areas, trailheads, and campsites w/water developed.	**D2.** Botanical & historical enhancements.	**D3.** Permanent trailhead orientation kiosks; permanent distance and services signing; "Service Guide." Remove "under development" from trail map.	**D4.** Interpretive trail guide; interpretive overview on trailhead kiosks.	• GRAND OPENING • Remove "under development" from order form, trail map & state map • Feature articles in all market areas (& advertising) • market to tour operators, etc.
E FULL AUTHORIZED LENGTH COMPLETED	Long-distance trail users (depending on length & trail use)	**E1.** All of the above developed along entire authorized length of trail.	**E2.** All of the above along entire authorized length of trail.	**E3.** All of the above developed along entire authorized length of trail.	**E4.** All of above plus interpretive enhancements (e.g. on-site interpretation plaques, introductory cassette tapes) on entire trail.	• continue ongoing marketing program

*Primitive or wilderness trails will require less refined orientation and interpretive development.

Notes: (1) The progression of a trail thru the 5 phases is charted by use, in summary form in the master plans budgets. (2) Maintenance and enforcement functions, while necessary to have in place throughout the 5 phases, are not included in the above chart. (3) Some work may have to begin in prior phases in order for it to be effectively completed by the end of the phase for which it is "required" (e.g. vegetative management).

L. Interpretation (referenced on page 157).

Interpretation of state trails is important to the Department of Natural Resources (DNR) Trail Program for several reasons. These reasons were first outlined in Guidelines for Developing Interpretive Plans for DNR State Trails (MN/DNR, 1981).

- Interpretation can enhance the experience of the user.

  Provided with information on and experiences with the natural and cultural resources of the trail, users will have a greater awareness of their surroundings which will foster an increased appreciation of the trail and its adjacent land uses. This appreciation will increase their enjoyment of the trail. Interpretation not only makes the trail experience more enjoyable, it makes it easier and safer. The knowledge gained through interpretation can help the user make appropriate choices in terms of planning and executing the trip.

- Interpretation can assist in preserving the natural and cultural resources along the trail.

  An effective interpretive program will result in improved communication and cooperation between the trail user and the Trails and Waterways Unit. Interpretation will foster an understanding of the importance and value of the resources along the trail and of the behavior necessary to their perpetuation.

- Interpretation can promote a positive image of the DNR by providing the user with an understanding of the agency's goals and programs.

  Interpretation provides a prime opportunity to convey information to trail users about the agency's goals as well as specific recreational, wildlife, forestry and water resource management programs. Increased knowledge of agency goals and programs will help establish and maintain the credibility of the DNR. This understanding can help generate public support which is necessary to keep DNR programs operating effectively.

- Interpretation can provide users with an understanding of ecological concepts and natural resource issues that are relevant on a state or national level.

  The sensitivity and increased awareness of natural and cultural resources and resource management issues gained through the trail experience, can assist in the understanding of other similar natural resource issues in the state and

nation. This understanding can generate support for natural resource management programs and the conservation of natural resources. This will help ensure future generations will be able to enjoy our natural and cultural resources.

In order to develop high quality, effective interpretation on state trails, this 1981 study recommended that interpretive plans be developed for each state trail.

In 1984 the DNR published a second document, a Statewide Interpretive Plan for State Trails which can be found in the Appendix. It provides guidelines for the development of interpretive plans to ensure statewide consistency in the content and quality of interpretation. These guidelines provide a framework for the interpretive planning process and establish standards for the implementation of interpretive facilities.

Accordingly, the following is recommended:

1. That interpretive planning continue as an integral part of the master planning process.
2. That completed plans be reviewed and amended in light of statewide goals.
3. That interpretive development on state trails be given a high priority for completion.
4. That interpretive efforts be periodically monitored and modified to improve program efficiency and effectiveness.

M. A Trail Volunteer Program (referenced on page).

A well-planned volunteer program could be an asset to Minnesota's outdoor recreation system. It is a way to involve the local community and foster a greater appreciation of the natural environment. Reasons for volunteering range from a need for career work experience to a desire to commit some free time to a worthwhile cause. A well-planned trail volunteer program could offer meaningful experiences to many while strengthening the state trail system.

How can the state trail system profit from volunteers? The most obvious answer is an increased labor force at minimal cost. Volunteers supplement paid staff and permit services that otherwise are impossible to provide. Volunteer research, writing and artistic skills, for example, could give a significant boost to the trail interpretive program. User clubs could "Adopt A Trail" where maintenance is their responsibility. Volunteer patrols could assist in the enforcement of trail rules and regulations.

Accordingly, the following is recommended:

1. Trails and Waterways should use the offices of DNR's volunteer coordinator to secure individuals to enhance its trails.
2. Written policies and guidelines should be developed to govern the volunteer program.
3. Need and cost-effectiveness studies should be conducted as part of the volunteer-program planning process.
4. Volunteers for trails should be recruited locally.
5. An on-going file of persons expressing an interest in volunteerism for the agency should be kept.
6. A written job contract should spell out agency and volunteer responsibilities.
7. All staff who will work with volunteers should attend educational seminars on volunteerism and management principles. Every effort is to be made in the initial stages of program development to gain staff commitment and understanding.

8. Volunteers should attend training and orientation sessions to learn about their responsibilities, about the trail program and about other DNR programs. A volunteer manual should be given to all volunteers.
9. Records should be kept of each volunteer's work and the work should be periodically reviewed. This information will help individuals volunteering as part of career development, and will aid in program coordination, evaluation and expansion.
10. Volunteers should be treated with respect and consideration. Recognition for volunteer work, in the form of certificates, banquets or pins, for example, should be used. Volunteers who know they are wanted and needed are more likely to be committed to the job.
11. Volunteers who are already giving time to the DNR free of charge should not be expected to spend money on the job. The DNR should reimburse volunteers for out-of-pocket expenses, buy uniforms, supply meals, pay parking fees, camping entrance fees and on-the-job travel expenses.
12. A gift catalog or brochure should be developed to describe and price trail needs. An individual, group or business could earmark its donation for a specific trail project.

N. User Fees (referenced on page 131).

The early 1980s have seen significant changes in the way that DNR's trail program has been funded. Because of scarce public dollars, the public has increasingly indicated that the direct beneficiaries of public services should pay for them. Users of public trails should pay for trail construction, upkeep and operation. New user fee systems should be studied, and those which have already demonstrated their viability should become dedicated accounts.

The first move in this direction came when Laws of MN 1982, Chap. 580, was signed by the Governor. This law increased snowmobile registration fees and dedicated them exclusively to snowmobile purposes after July 1, 1983. This bill also called for a plan and recommendations on methods of collecting fees from other users of state and grants-in-aid trails. Prior to passage of this law, incoming snowmobile revenues, both from registrations and gasoline taxes, were deposited in the general fund and were not earmarked solely for snowmobiling.

The funding study which resulted from Laws of MN 1982, Chap. 580, was entitled User-Fee Feasibility on DNR-Assisted Recreation Trails. This study, conducted by the Trails and Waterways Unit, examined a number of funding alternatives. The study identified the DNR License Bureau as the most appropriate agency to administer a direct trail user fee. In an attempt to pull all non-motorized trail use together under one user-fee system, a combined license for all users other than hikers was recommended. Because of the high administrative costs of such a system, the proposed user fee was not expected to pay its own way for a number of years, let alone pay for annual trail maintenance.

During the fall and winter of 1982-83, extensive discussions took place among Minnesota cross-country skiers in particular. Recognizing that their trail-grooming funds would be cut off as of

July 1, 1983, they supported new legislation. Through these efforts, the findings of the legislatively requested user-fee study were adopted for a user fee solely for cross-country skiers. Through much legislative discussion, Laws of MN 1983, Chap. 325, evolved. This skier user fee is the first of its kind anywhere. It culminates the efforts and carries with it the concerns of a good number of Minnesotans who are attempting to assure the continuation of an important winter recreation opportunity in this state.

The cross-country skiers' user fee, to be sold through DNR offices, county auditors, and designated subagents, relies on certain factors which to date have never been fully measured in this state. They include the ability of ski clubs to rally skiers around a new self-preserving effort. This user fee depends also upon the ability of skiers to support a new funding method without requiring heavy enforcement. The user fee's success will be dependent upon efficient administration of an untried system. During the initial years of the program, because of the above-cited factors, as well as perhaps others, the revenues from the user fee will be deposited in the general fund, to be appropriated by the Legislature for ski trails.

As for other changes in trail funding, much will depend upon the success of the new snowmobile dedication bill and skier user fee. A period of experimentation with these two legislations is necessary.

Accordingly, the following is recommended:

- DNR should maintain whatever records are necessary to have up-to-date estimates of the actual costs of providing trails to the various users. This will help develop better funding priorities.
- DNR should develop reliable monitoring efforts to, in part, measure the potential of existing or future user-fee systems (see page 222).

- The findings of the legislatively authorized user-fee study should be periodically reviewed to determine if certain user groups should be added or deleted from a user-fee system.
- Any user-fee system should be evaluated regularly. It should clearly benefit the user group. If, after a period of conscientious experimentation, the system does not clearly benefit the user group, experimentation should end with a return to complete general fund support if the demand exists.
- When development for new user groups is considered, an assessment should be made as to the user-fee potential within the new group. Incremental goals should be set for funding self-sufficiency. The appropriateness of complete self-sufficiency should be addressed.

O. Hunting on State Trails (referenced on pages 149 and 150).

The stated purpose of the Outdoor Recreation Act (ORA) (MN Stat. 86A) is to provide a system of outdoor recreational lands which will accommodate the needs of Minnesota's residents for recreation. Eleven different types of recreational land parcels are classified as units of the Outdoor Recreation System. Each unit has a specific purpose and management direction under DNR policy and these have implications for the uses which receive primary consideration on each type of unit. In general, other uses are allowed which do not conflict with these primary uses.

State trails are one type of Outdoor Recreation System unit. The law spells out the purposes for which trails are constructed and criteria they must meet, but is rather general on the subject of uses to be allowed. Under law, most state trails are constructed primarily for "riding and hiking" (MN Stat. 85.015) and are to be recreational travel routes (MN Stat. 86A, Subd. 4a.).

To what extent then should state trails provide for hunting opportunities?

Generally, much state-owned land is open to public hunting, except where such use is inappropriate. State parks generally are closed, except in instances where hunting is necessary to control wildlife population, whereas state forests generally are open to hunting as, of course, are Wildlife Management Areas. State trails generally are open although some have been closed by the DNR as provided for in N.R. 20 (Appendix E).

The Minnesota Trails Policy Plan (Appendix O) frames very well the discussion that follows, when it says:

> "In general, hunting is permitted on state and unit trails. On those trails where hunting is in conflict with other recreational uses or poses a safety hazard for adjoining

landowners, hunting will not be permitted and other trail uses will be promoted."

DNR state policy states the following:

> "Recreational uses of state trails may include, but are not limited to, hiking, snowmobiling, ski touring, jogging, backpacking, bicycling, hunting, trapping, snowshoeing, photography, horseback riding, bird watching and nature study. The state trail policy pertaining to the prohibition or consideration of these and other uses is set forth in Section IV, Recreation Management, of this policy document." (emphasis added)

Section IV of the policy provides that the maximum number of compatible uses will be provided for on state trails, that management and design of trails will be geared to avoid use conflicts and that all compatible uses will be accommodated where feasible and practical.

According to Minnesota regulation N.R. 20, hunting is presently allowed within state trail rights-of-way, although not on, over or across the treadway.

Survey responses, as well as comments made by the public at planning meetings, indicate that there is some feeling among trail users and adjacent landowners that hunting is an incompatible use. Safety and trespass potential appear to be the primary concerns.

Incompatibility is a difficult concept to determine. The classic case of trail incompatibility in the past has been between ski-tourers and snowmobilers. DNR's traditional approach has been to separate the two uses, either via separate trails or separate treadways on the same trail. The planning process on all state trails must sooner or later come to grips with the question of which uses to allow. If both of these uses are desired, some means of resolving the issue must be arrived at. One or the other use may be prohibited. Alternatively, the two uses may be separated in some way.

Clearly, the actual incompatibility of one use with another is the issue here. Neither snowmobilers nor skiers are prohibited from using trails because they may litter, or trespass, or vandalize, as some have. They can be kept off if their activity conflicts with other uses which are primary in management of the trail.

The same must be true for hunters. The question is one of whether the recreational pursuit known as hunting is incompatible with other uses on the trail or adjacent land uses. Indications are that some members of the public feel that it is, although this is by no means a universally-held opinion. Hunting considered in this light is merely another potential trail use, permissible under law and provided for by regulation and policy, which may be prohibited if it is incompatible.

DNR has surveyed landowners adjacent to two state trails and people attending planning meetings for the Minnesota-Wisconsin Boundary Trail regarding hunting on state trails. These surveys have produced mixed results, seemingly dependent upon the nature of the trail and its surroundings, and its location. In response to the question, "If you were planning the trail, would you allow hunting?", 25 percent of all Douglas Trail adjoining landowners who were contacted responded positively. This trail is located in a part of the state which is quite agricultural. On the Heartland Trail, 59 percent responded in the affirmative.

In meetings held in conjunction with development of the Minnesota-Wisconsin Boundary State Trail Master Plan, five of 221 respondents were favorable toward hunting on a portion of purchased railroad grade within the Twin Cities Metropolitan Area. In meetings held in Duluth, Sandstone and Finlayson to discuss management of former railroad grades proposed for inclusion in the trail system between Hinckley and West Duluth, 14 of 167 respondents were favorable to hunting. The management plan calls for a prohibition on hunting on the railroad grade portions of the Boundary Trail.

To date there have been few formal complaints regarding actual hunter-related incidents on state trails. Thus, it may be true, as it is of other potential problems dealt with elsewhere, that the problems are considerably greater in the anticipation than in the realization and should be treated as such. However, survey results and other information at least indicate that some users stay off trails during hunting season or when hunters are using the trails and this may be one reason for the lack of complaints.

It might appear that if sufficient "riders and hikers" were staying away from trails open to hunting during the fall months, that hunting is incompatible, and it follows logically that hunting should be prohibited on state trails. However, it could also be argued that such compatibility has not been proven. Hunting is one of several uses permissible under law and provided for by regulation and policy and that the policy also mandates accommodation of all compatible uses.

Instead of physical separation of users, time-zoning might resolve the incompatibility. This would allow hunter use of state trails and have the potential not only for additional support for the trails program on the part of an identifiable user group, but also for additional use of trails at a time of year when other uses tend to begin to taper off.

Another factor to consider is that there are proportionally more public areas to hunt in the northeastern part of the state, consequently railroad grades, especially in agricultural areas, take on added significance as they relate to hunting. However, the same can be said for trail-related activities: the bulk of these opportunities also exist in areas of dense public-land ownership.

In a further attempt to gauge the public will regarding this issue, this section of the statewide trail plan was submitted to approximately 1,000 people representing several trail-related viewpoints (both pro and con). They were asked to indicate preference for

one of several alternatives. Although the results are not statistically significant, they are nevertheless noteworthy. For further discussion of this survey, see page 250. See Appendix N for the survey instrument and statewide tabulations.

ALTERNATIVES PRESENTED:	% indicating preference
1. DNR could continue the status quo and conduct a survey and monitoring campaign to see if the status quo is acceptable. After a set period of time, the survey results could be evaluated and appropriate action taken.	25
2. DNR could close state trails to hunting and conduct surveys as above, for a period of five years. Then the trails could be reopened to hunting and surveys taken again. This would allow data to be gathered on attitudes, use levels and other parameters with the trails both open and closed to hunting. Final evaluation of data would suggest appropriate action.	3
3. DNR could immediately close trails to hunting and then allow them to be opened on a case-by-case basis, based upon trail use levels.	8
4. Regional differences in needs and desires could be allowed for by allowing hunting, or closing trails, on a regional basis, depending upon perceived public attitudes and availability of other nearby hunting and trail opportunities.	23
5. Hunting could be prohibited only on bike trails. Since DNR spends about $30,000 per mile to develop and acquire former railroad rights-of-way for biking, it could be argued that any activity, in this case hunting, jeopardizes this use and should be avoided, since to do otherwise might mean that the public is not getting the maximum return on its investment.	4
6. Time-zoning or temporal separation of users could be made a matter of policy. DNR could set certain dates, which may or may not coincide with hunting season opening and closing dates, between which hunting could be allowed. Firearms use would be prohibited at other times.	20
Miscellaneous Write-ins	
7. No hunting at all should be allowed.	14
8. Trapping should not be permitted.	3
TOTAL	100

Analysis of this review suggests:

1. The public is not unanimous in its recommendation (25% of the respondents say the status quo is fine, while 14% would completely ban hunting from state trails);
2. The public recognizes the regionality of the issue and would prefer a site specific approach rather than a blanket endorsement or prohibition;
3. A survey and monitoring program to document the problem (or lack thereof) is warranted;
4. Compatibility can be enhanced by time-zoning.

Accordingly, the following is recommended:

1. Efforts to further evaluate compatibility of hunting on state trails should be continued.
2. The state trail master planning process will determine appropriateness of hunting on a case-by-case basis. Factors to consider include in order of importance:
   - likelihood of conflict with trail users;
   - potential impact on adjoining landowners; and
   - availability of suitable hunting alternatives.

P. Off-Road Vehicles* (referenced on pages 45 and 150).

The use of off-road vehicles (ORVs) has become a highly charged issue in the United States. ORVs may arouse either strongly positive or strongly negative emotions in people. One response to the ORV is the pleasurable feeling of mastery over nature, the excitement of travel into previously impassable terrain by means of a wonderfully invincible machine. At the other extreme is the impression that the ORV will indeed conquer the wilds and do it well enough to provoke a terrible ecological revenge for man's callous attitude toward the environment. Both attitudes exist, and they color our attitudes and stir strong sentiments concerning the ORV issue.

When deciding on the proper response to the ORV issue one must acknowledge how naturally our society has evolved toward the full-scale dispersal of ORVs across the land. For centuries in this country the wilderness was something to be tamed--if not an implacable enemy, at least a grudging opponent. Man has always wished to lighten his personal load by using various conveyances to carry his burdens from place to place.

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*Off-road vehicle: An off-road vehicle is any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, snow, ice, marsh, swampland or other natural terrain. It includes, but is not limited to, four-wheel-drive or low-pressure-tire vehicles, motorcycles and related two- and three-wheel vehicles, amphibious machines, ground-effect or air-cushion vehicles, and any other means of transportation deriving motive power from any source other than muscle or wind; except that such term shall exclude any registered motorboat, any military, fire or law enforcement vehicle, farm-type tractors and other self-propelled agricultural equipment used exclusively for agricultural purposes, any self-propelled equipment for harvesting and transportation of forest products, or for earth moving or construction while being used for these purposes on the work site, and self-propelled lawn mowers, snowblowers, garden or lawn tractors or golf carts while being used exclusively for their designed purpose. For purposes of this discussion, snowmobiles will not be considered as ORVs. (See Baldwin and Stoddard 1973, p 54).

The four-wheel-drive vehicle was developed first as a mechanized beast of burden, a tool to help man do his work faster and more efficiently.

Man's view of the hinterlands away from the paved roads and cities gradually changed, however. The wild country assumed its present importance as a major recreational entity. Thousands began to use it in this way. And it should come as no surprise to find people adopting ORVs as the means by which to get into the back country to recreate. It is a fact that family togetherness and observing natural beauty are regarded as important facets of off-road vehicle activities. The ORV has also been viewed as a symbol of American mechanical ingenuity and personal freedom. Still another aspect of the ORV, important to many, is simply the overpowering aura of power and endurance it provides.

However, ORVs are not an unmixed blessing. A typical motorcycle, when driven very carefully, directly affects a full acre in 20 miles of travel. A typical 4x4 vehicle accomplishes the same effect in less than six miles. A person walking would have to cover at least 40 miles for the same result, while the impression left by a horse would be somewhere between that left by a man and a motorcycle (Wilshire 1977, p. 6).

Further, ORVs cause environmental impacts beyond the immediate physical damage inflicted by the machines themselves. Their use can introduce significant numbers of people into remote areas, raising the potential for fires and other vegetative disturbance, soil damage, and adverse effects upon wildlife. A recent DNR study (January 1984) found that all ORVs cause some social and environmental impact which varies depending on location, amount, type, and season of use. Such use can be managed via site design and development, signing, enforcement, and user education.

One of the most difficult problems with providing good ORV opportunity has been that the most satisfying aspect for the ORVer (i.e., crossing rugged terrain) also creates the most severe erosion potential. Even the easy rolling terrain of sand dune areas can be ravaged by wind erosion if anything is allowed to destabilize the vegetation.

The following is a summary of what the various states have done in response to the ORV issue as of 1982:

ORV registration: 17 states (including Minnesota)
ORV operator's license: 2 states (Maryland and Ohio)
ORV recreation funding: 13 states (including Minnesota)
ORV use permitted on some state land: 31 states (including Minnesota)

(Source: MIC-1982 and DNR files)

In Minnesota, available indicators point to continued growth in ORV interest. The DNR study referenced above estimates that at present there are 30,000 three-wheeled ORVs in Minnesota. In addition, there are about 90,000 off-road motorcycles and 50,000 four-wheel-drive vehicles being used for off-road riding in the state. Only low to moderate growth is expected in the latter figure, but three-wheelers are expected to grow considerably before 1990. The potential thus exists for considerable negative impact to the state unless properly managed.

If 90,000 Minnesota motorcycles are used at some time off-road, then the following ORV motorcycle densities would exist in Minnesota:

2.2 ORV motorcycles/100 residents (Pop. = 4,133,000 as of 7/1/82)
7.5 ORV motorcycles/1000 public acres
16.7 ORV motorcycles/1000 state-owned acres

ORV recreationists typically look to "vacant" or "idle" land for opportunities to ride. Often this land is publicly-owned forests or road rights-of-way. The public land ownership picture is given in the following table:

	Acres	% of State's Land Area
Federal	3,700,000	7.4
State	5,400,000	10.8
County	2,900,000	5.8
TOTAL	12,000,000	24.0%

Of course, considerable use takes place on private land as well. But, regardless of where the use takes place, almost all of it is on land which has not been specifically developed or maintained for vehicular use. The result can be and often is severe erosion problems and other negative impacts. Proper management of ORVs necessarily includes limiting their use to areas which can withstand the impacts they cause.

One attempt to measure public interest on the ORV question was to survey public opinion in November, 1981.* The survey sample was drawn from an October 1980 listing of 14,000 parties potentially interested in Minnesota trails recreation. The list of 14,000 included over 70 categories drawn from virtually all Minnesota telephone yellow pages, as well as Mn/DOT listings of elected and civic leadership throughout the state. Within this group, about 1,000 indicated interest, in some way, in trail recreation. In November, 1981, this group of 1,000 was sent a questionnaire addressing the ORV issue in regard to trails managed by the State. Of this number, over 125 responses were received by the end of January, 1982. The responses illustrate the range of opinion (pro and con) on this controversial policy issue. The policy alternatives responded to on the ORV issue are the following:

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* This two-part questionnaire also addressed the issue of hunting on state trails as discussed on page 234. (DNR, Nov. 1981). See Appendix N for survey instrument with statewide tabulations.

ALTERNATIVES PRESENTED:	% indicating preference
1. DNR could essentially ignore ORV use as a legitimate trail activity and not consider it in trail planning. This would require a change in present policy.	21
2. The status quo (permissible if not in conflict) could be continued.	17
3. Considerable opportunities exist statewide for ORV use (old logging roads, abandoned railroad grades, etc.) on public land although they are not managed or maintained for this use. DNR could institute a program of promotion of these existing opportunities, without initiating an ORV trail construction or maintenance program.	25
4. DNR could establish ORV use as a part of the Grants-In-Aid Program. This would require a funding source, preferably dedicated funds from users or something similar.	6
5. DNR could develop an area or trail on an experimental basis and monitor use, taking appropriate action later as warranted.	8
6. DNR could immediately make ORVs a full-fledged component of the Trail Program and begin planning and construction of trails for their use.	5
7. DNR could allow ORVs on existing state trails.	5
Miscellaneous Write-ins	
8. Allow them only on special trails, and only if self-supporting.	12
9. Three-wheel drive vehicles are fine.	1
TOTAL	100

Analysis of this review suggests:

1. Most of the people sampled believe additional development of facilities is not needed;
2. Existing opportunities should be promoted;
3. If ORV facilities are to exist, they should be separate from other user groups; and
4. A significant minority of the people sampled feel that ORV opportunities should be expanded.

As a follow-up to the points expressed above, a landowner survey was conducted in the spring of 1983 along grants-in-aid snowmobile trails (Genereux and Genereux, 1983). A case study of 400 respondents addressed the use of three-wheel all-terrain vehicles (3W ATVs) on snowmobile trails during winter months. The trails in question were then as now restricted to snowmobile use only.

The survey was conducted both as a follow-up to the January 1982 DNR survey and also to what had become an increasing interest and/or concern expressed to DNR by the public about the compatibility of three-wheeled ORVs and snowmobiles. This was illustrated by the fact that the Motorcycle Industry Council estimated that, in December 1982, approximately 17,000 three wheelers had been sold in Minnesota (DNR, 1983, p. 1). The rate of growth in their use was expanding rapidly.

The survey findings demonstrated the complexity of finding good solutions for three-wheeler use. For example, although 55 percent of the survey population either "agreed" or "strongly agreed" that "the time has come to develop trails for three wheelers in Minnesota," 25 percent said they would cancel their trail agreements if three-wheeling were allowed on trails which crossed their land.

In 1984 the Legislature acted (Laws of MN, 1984, Chap. 647) to provide some direction for ORV recreation. Dealing specifically with three wheelers, the Act provides as follows:

1. The DNR Commissioner may allow three wheelers to use existing state trails under his jurisdiction under specified conditions after a public hearing. Three-wheelers were previously (and still are) banned on snowmobile trails by law.

2. A comprehensive environmental and safety training program is to be established to include a youth training program.

3. A three-wheeler registration fee is established, and a study of the amount of gasoline tax attributable to three wheelers is to be performed. The law also establishes a dedicated fund for the three-wheeler program.

This must be viewed as the beginning of an affirmative management effort by the state on behalf of ORV recreation. Although two- and four-wheeled ORVs are not dealt with in this law, the trend for the future is obvious. It will be up to the DNR as a land managing agency to take the lead in planning to provide ORV opportunities in places where the physical and societal impacts will be least.

Analysis of this review suggests the following:

1. A MULTIPLE USE AND SUSTAINED YIELD LAND MANAGEMENT APPROACH WILL BE NECESSARY. The views of competing recreationists, as well as others, should be considered. The views of professional people both in and out of government should be sought for developing specific land-use decisions.

2. DNR MUST BE ABLE TO ADEQUATELY ENFORCE ANY FUTURE ORV DESIGNATION. If money cannot be made available to enforce policy, then policy must be made to fit budgetary constraints. Experience has shown that it will generally take greater effort to enforce the "open-unless-designated-closed" approach than to enforce the "closed-unless-designated-open" approach. However, to close large areas to ORVs requires a presence in the field. This is particularly true if previous use has already been established.

3. ORV RECREATION IN MINNESOTA IS NOT GOING TO SIMPLY GO AWAY. An aggressive and balanced ORV policy is needed in Minnesota, and affirmative steps must be taken to arrive at such a policy.

Accordingly, the following is recommended:

1. DNR should consider on a case by case basis three-wheeler use of existing DNR trails.

2. DNR should make formal contacts with other land managing agencies in Minnesota with the aim of coordinating planning for dealing with ORV needs in the future.

3. Those areas presently used by ORVs should be regularly monitored. Soil loss measurements and monitoring of biological changes should be part of an on-going program. Appropriate reclamation work resulting from ORV use should be anticipated. Use of ORV areas, depending upon their nature and size, could be divided into parcels for sequential use and reclamation. Hardening of erodible surfaces should be considered.

4. ORV use should be avoided during the spring thaw (approximately March 15 through May 15).

5. DNR should use the Forestry Unit planning process to decide which of the units administered by the DNR Forestry Division could be used for ORV activities. A sub-group of DNR's ORV task group should be convened to produce ORV development and management guidelines for Departmental lands.

6. Land managers should deal with ORV use as provided in law and policy, and according to recommendations made in DNR's ORV study.

7. When DNR receives "where to go" queries, it should respond in the following manner:
   a. Ascertain the area of interest, and
   b. Refer the inquirer to the appropriate Area Forester, since ORV use on Forestry lands is allowed unless posted otherwise.

8. DNR should perform an inventory of abandoned mining areas around the state as potential ORV use areas.

9. DNR should support the legal prohibition of ORV use in state road ditches. Further, given the safety hazards and risks to DNR's wildlife management program inherent in such use, steps should be taken to apply this prohibition to county, township, and municipal road ditches as well.

10. Due to the fact that three wheelers are not self-limited by season as snowmobiles are, three wheelers should not be defined in law or regulated as snowmobiles.

11. ORV use on public land must be managed, as opposed to ultimately simply ignoring it or dealing with it only on a site specific basis. This implies the need for policies to cover foreseeable contingencies, procedures and techniques to alleviate impacts.

Sources mentioned in this section are completely referenced in a bibliography included in Appendix F. Additional information may be available upon request from the Trails and Waterways Unit.

Q. A Directional Routing System for Snowmobile Trails

A quality snowmobile trail network is impossible without a carefully designed signing system. This system should accomplish three purposes: safety, convenience and direction. Although a plethora of signs should be avoided, sufficient signs should be provided for these purposes. Safety and convenience have already been addressed in the state's trail-signing program, but a numbered directional routing system has not yet been implemented statewide.

The need for a directional routing system on Minnesota's snowmobile trails became more apparent during the winter of '83-'84. Citizens raised the issue as part of its review of this plan when it was still in its "draft" stage. They pointed out the need to utilize various trails as components of long-distance trips.

This problem can be approached in numerous ways. The following are offered as examples:

1. Itasca County, Minnesota:
   a. Milepost signs, including direction of travel on the top, trail route number in the center and milepost number on the bottom are being installed.
   b. The reverse side of the signs shows reverse directional and milepost numbers.
   c. Every five miles, a larger trail-name sign is posted.

2. Oregon:
   a. Signs with one, two or three diamonds, both with and without reflective surfaces, describe a variety of trail width and grooming standards. These signs are on the left side of the trail as you leave the trailhead.
   b. One-foot diameter circle signs give the route number of the trail.
   c. Trail junction signs are square.
   d. Signs marked with an "X" indicate "danger ahead."

3. Vermont:
   a. Corridor (or through) snowmobile trail signs are in green and white (the state colors).
   b. Corridor route numbers (corresponding to the state or federal highways which the trails roughly parallel) are superimposed on logos in the shape of the state.
   c. Corridor route signs are placed at the beginning of the trail and at all trail intersections.

d. Secondary (or feeder) trail signs are orange and black and do not have route or directional information.

Each of the systems has its advantages and disadvantages. However, it is clear that a flow-through trail-numbering system would go a long way toward improving the quality of the snowmobilers' trail experience. It would increase the visitor's confidence about cross-country snowmobile travel and would facilitate the visitor's use of local business establishments along extended routes. The resulting positive economic impacts of this improvement in trail signing are self-evident.

Accordingly, the following is recommenced:

The Department of Natural Resources (DNR) should develop a trail-numbering system which follows numbering used on U.S. and Minnesota Trunk Highways within the vicinity and orientation of the trail. The system should include the following features:

1. Only those "through" trails which form part of a major cross-state trail system should be numbered.
2. Trails which are presently segments, but are part of a planned regional or statewide linkage, should also be numbered.
3. Future "Explore Minnesota" trails should have additional signing to that effect superimposed on them.
4. Each route sign should include an indication of its overall direction (N, S, E, W) and the name of the county in which it is located.
5. The numbering system should include as many categories of publicly provided trails as possible.

R. Adequately Funding Ongoing Trail Rehabilitation and Maintenance

The statement "the Department of Natural Resources (DNR) always has lots of money for acquisition, but little for maintenance," has become a byword. True or not, it is perceived to be true by many. As a matter of fact, the DNR expends significant sums of money each year on maintenance activities. However, it is also true that considerable fencing, surfacing work, bridge repair, and other needed maintenance projects are deferred year after year because funds are not available.

It is probable that there has traditionally been a tendency to defer maintenance while emphasizing acquisition and development. However, it is becoming apparent that this situation cannot continue indefinitely. Facilities developed early in the DNR's existence are aging, and we are entering an era in which there will be a predictable and relatively high level of maintenance on DNR facilities required year after year, indefinitely.

To continue deferring maintenance until an emergency occurs or a critical situation exists will no longer be viable. In the past the relative newness of many facilities prevented major problems from occurring on a statewide basis. However, the DNR now has responsibility for a sufficiently large infrastructure that critical situations could become epidemic in the next decade unless an ongoing and, most importantly, well-structured program of maintenance is instituted.

Deferred maintenance takes a heavy toll in user satisfaction, DNR prestige, and in facilities themselves, which can prematurely age to the point of non-utility if not maintained properly. It often also costs significantly more to rehabilitate or replace a deteriorated facility than to maintain it properly. And some facilities will become unsafe to use if allowed to deteriorate too far. The essential point is that the DNR's clientele, the taxpaying public, are not well served by the state's inability to plan and implement proper maintenance.

On the other hand, a long-range and on-going program of rehabilitation and maintenance would protect the public's investment and encourage public use of facilities. User satisfaction occurring as a result would contribute significantly to local and state economic growth by means of increased tourist expenditures and DNR disbursements for materials and manpower. The potential for cost-effectiveness of such a program speaks for itself.

The notion that maintenance on a large scale can wait or is somehow less important than other budgetary items must be turned around. At the very least deferred maintenance unnecessarily diminishes the original investment of the public's money; at worst it encourages the public not to use DNR facilities and fosters the public attitude that the DNR is not qualified, nor can it be trusted, to properly manage its own facilities.

The maintenance situation regarding DNR facilities will grow more and more acute as time passes, because at present insufficient funds are available to perform needed work. The DNR will need to take affirmative steps soon to correct this situation.

Accordingly, the following is recommended.

1. That the cost of maintenance be reduced as much as possible by means of careful cost accounting, use monitoring, equipment sharing, and contracting. These things can be accomplished internally by administrative action.

2. That permanent funding for manpower, equipment, and services be sought through the legislative process. This can be done via a dedicated maintenance account or some other means of earmarking a dependable level of funding on an annual basis.

S. Right to Occupy

As a general rule, state trails are meant to be multi-use, highly-developed and, most particularly, permanent components of the DNR recreational trail network. The permanence of state trails is critical because these trails are units of the Outdoor Recreation System. As such, a considerable expenditure of time and money are invested in them for planning, acquisition, development, and operation. They form the backbone of the DNR trail system and are rightly regarded by the public as permanent fixtures which serve as anchors for the somewhat more ephemeral grants-in-aid and private trails which connect with them. Since their existence continues year after year, and because they are constructed and maintained to state standards, they serve as important drawing cards to tourists. They can be compared in this sense to state parks.

The permanence of state trails has typically been assured by means of outright acquisition in fee of the right-of-way by the state, which then undertakes to develop and operate the trail for the public. The Root River, the Sakatah Singing Hills, and the Douglas are examples of state trails which are wholly-owned and operated by the state.

However, the DNR does not own all of its state trails in their entirety. The Taconite and North Shore snowmobile trails, for example, cross sizeable areas of lands owned by other entities, mostly counties. On many of these lands, DNR has been unable to acquire a proprietary interest, and in a sense the trail exists at the pleasure of the vested owner. In such cases the DNR has had to rely on county resolutions and the like to accomplish trail objectives. Often the trail treadway is situated on previously-existing forest roads, which are themselves used for a variety of purposes, such as timber sales, hunting and fishing access, and off-road vehicle riding. This situation has, at times, created conflicts between and among legitimate users whose goals and

methods of use can be seriously at odds with one another. Recently several logging operations have used, for their timber cutting operations, forest roads on which state trails were aligned. Because these operations have occurred in winter, the loggers have plowed the roads, rendering them unfit for snowmobiling.

Standard policy to date in such situations has involved a provision that a temporary trail realignment would be provided for the duration of the logging operation. However, the procedures and constraints involved in state timber sales often do not lend themselves to the early consultations necessary for orderly designation of such temporary bypasses. When the state sells a tract of timber, the logger has up to two years to exercise his right to remove the timber, and extensions of time are possible under certain circumstances. The logger's actions in this regard are considerably governed by market conditions, availability of labor, and weather. The logger's immediate need to use the trail does not allow for development of an adequate reroute.

Theoretically, the trail could be interrupted at any time where no written right to occupy the trail is possessed by the DNR and the high cost of development elsewhere, especially without a right to occupy, could make realignments unfeasible, or at least delay them considerably. The trail user can be seriously inconvenienced, and personal safety may be prejudiced. Additionally, the tourism value of the trail suffers, as does DNR prestige. It is a serious dilemma for the DNR in its capacity as recreation provider.

The sheer numbers of interested parties involved and the variety of means by which the DNR acquired clearance to cross a non-owned land parcel would seem to mandate an in-depth inventory. Further, conflicts over the right to use land can exist not only between the DNR and some other entity but also between Divisions within the DNR because each operates with slightly

different resource management objectives and operating philosophies. It would be to no one's advantage to create policies or make decisions which would jeopardize either sound resource management objectives or the provision of needed recreational facilities.

Accordingly, the following is recommended:

1. The DNR needs to evaluate its potential control of land on a case-by-case basis when considering future trail alignments. The agency must, in such cases, weigh the recreational benefits of having a trail against the prospect of having those benefits interrupted at some point. Public satisfaction, DNR's image as a reliable recreation provider, and the agency's ability to control development costs all hang in the balance.

2. Every effort should be made to formally legitimize the DNR's presence in those areas where the DNR does not now have a written right to occupy the land. Such agreements should be for as long a period of time as possible and should include procedures to be followed if the right-of-way must be used temporarily for some non-trail purpose.

3. Discussions should be continued between the Trails and Waterways Unit and those who administer lands crossed by state trails with the aim of refining the process by which needed temporary realignments are sited, so that when such realignments are found to be necessary they can be installed sufficiently far in advance as to not inconvenience or endanger trail users.

4. The DNR should consider creation of a file system containing information regarding land transactions pertaining to state trails. This file system could contain sufficient detail to allow DNR personnel to determine ownership conditions, type of agreement, terms of conveyance, constraints, coordination needs and procedures, and limitations on all land parcels crossed by state trails.

A. Implementation

Although other public agencies are involved in providing recreation trails, the Trails and Waterways Unit is responsible for the greater portion of the trails in the state. In general, Trails and Waterways will develop feasibility studies, master plans, administer grants-in-aid trail funds, develop and manage the State Trail system. It will also assist other Divisions within the Department in planning and developing trails within management units, coordinate and promote trail legislation and funding, promote DNR sponsored trails and take the lead in forming and promoting the Explore Minnesota Trail Collection.

Actions arising from this plan to be implemented fall into three primary categories: general planning and operations; service to neighbors and users; and data base development. Based on these categories plan initiatives have been sequenced for implementation in five phases on the foldup insert attached to the back cover of this plan.

Figure 90: Implementation Process and Organizational Relationships Involved in the Provision of Trails

IMPLEMENTATION STEPS		TYPE OF TRAILS			
		Unit Trails	GIA Trails	State Trails	Other Explore Minnesota Trails
1.	Initiative	Divisions	Local Clubs/ Local Unit of Government (L.U.G.)	Trails and Waterways (T&W)	Federal, L.U.G., or DNR Divisions
2.	Planning	Divisions with DNR Trail Plan Guidelines	Local Clubs/ L.U.G.	T&W	Federal, L.U.G., or Divisions (guidelines provided by T&W)
3.	Funding	T&W Divisions as appropriate	T&W*	T&W	Federal, L.U.G. or T&W
4.	Acquisition	Divisions	NA	T&W	Federal, L.U.G. or Divisions
5.	Development	Divisions	Local Clubs/ L.U.G. following T&W Development Guidelines	T&W	Federal, L.U.G., or Divisions (guidelines provided by T&W)
6.	Maintenance and Operation	Divisions	Local Clubs/ L.U.G. following T&W standards	T&W except where other DNR personnel are assigned	Federal, L.U.G. or Divisions (guidelines provided by T&W)
7.	Monitoring	Divisions and T&W	T&W	T&W	Federal, L.U.G. or Divisions, Office of Planning, (guidelines provided by T&W)
8.	Promotion	Divisions with T&W Cooperation/ Guidance DEED-Tourism I&E	DEED-Tourism I&E Local Clubs/ L.U.G. & T&W	DEED-Tourism I&E T&W	T&W with cooperation from Federal, L.U.G., Divisions, & DEED-Tourism
9.	Other				Affiliation coordinated by T&W

* T&W provides matching funds at a prescribed rate for local effort (money or "in-kind" labor)

B. Evaluation

Periodic review and evaluation of trail plans will enable managers, legislators, users and other interested parties to determine how effectively and efficiently trails are being managed. Trail conditions, user populations, technology, landowners and land uses change with time--often in unforeseen ways. In addition, it may be necessary to address problems which arise during implementation of trail plans. Trail evaluations will address such questions as whether user needs are being met and whether a second treadway should be extended. Based on the results of the evaluations, changes in the plan's goal, guidelines and actions may be made.

1. Public Input

Public input is an important part of trail evaluation. The evaluations of trail users and adjacent landowners, the two groups most affected by trails, can provide a fresh perspective on trail management.

To enable users and landowners to voice their frustrations, problems and suggestions, periodic meetings should be held along trails. Surveys can also be used to solicit comments for evaluation purposes. By encouraging citizens to voice their concerns, the DNR is acknowledging the importance of continuing citizen input in the management of the trail.

2. Provisions for Modifications

Managers, users, landowners and other interested parties will eventually propose changes in this trail plan. Proposed changes must be sent to the DNR Trails and Waterways Unit in St. Paul. Proposals will be reviewed by the trail operations and planning sections. When agreement is reached on a proposal, the trail planning section will draft the necessary plan changes for the special assistant to the commissioner assigned to the Trails and Waterways Unit.

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The entire plan should be thoroughly reviewed and updated by the Trails and Waterways Unit planning section every 10 years, starting in 1991. Public comments, DNR staff recommendations and trail studies should all be considered in these reviews. If major changes in the plan are proposed, the same procedures used to develop the plan should be followed.

Minor amendments will simply be distributed to the DNR Division's Regions and other necessary agencies and individuals. Major amendments, such as those that might occur as a result of the formal strategy evaluation (page 124) will be prepared for PERT review within DNR and appropriate citizen review.