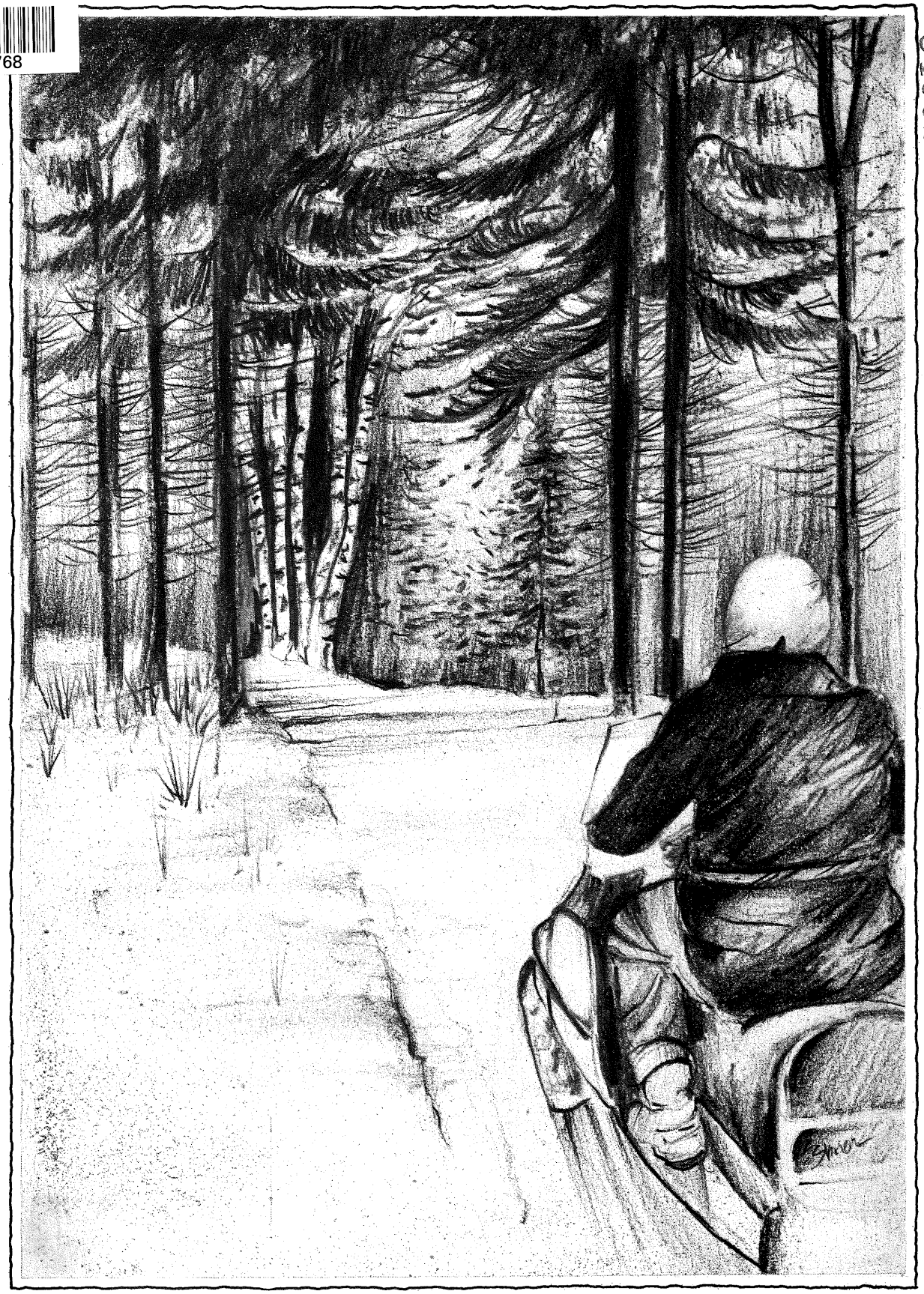
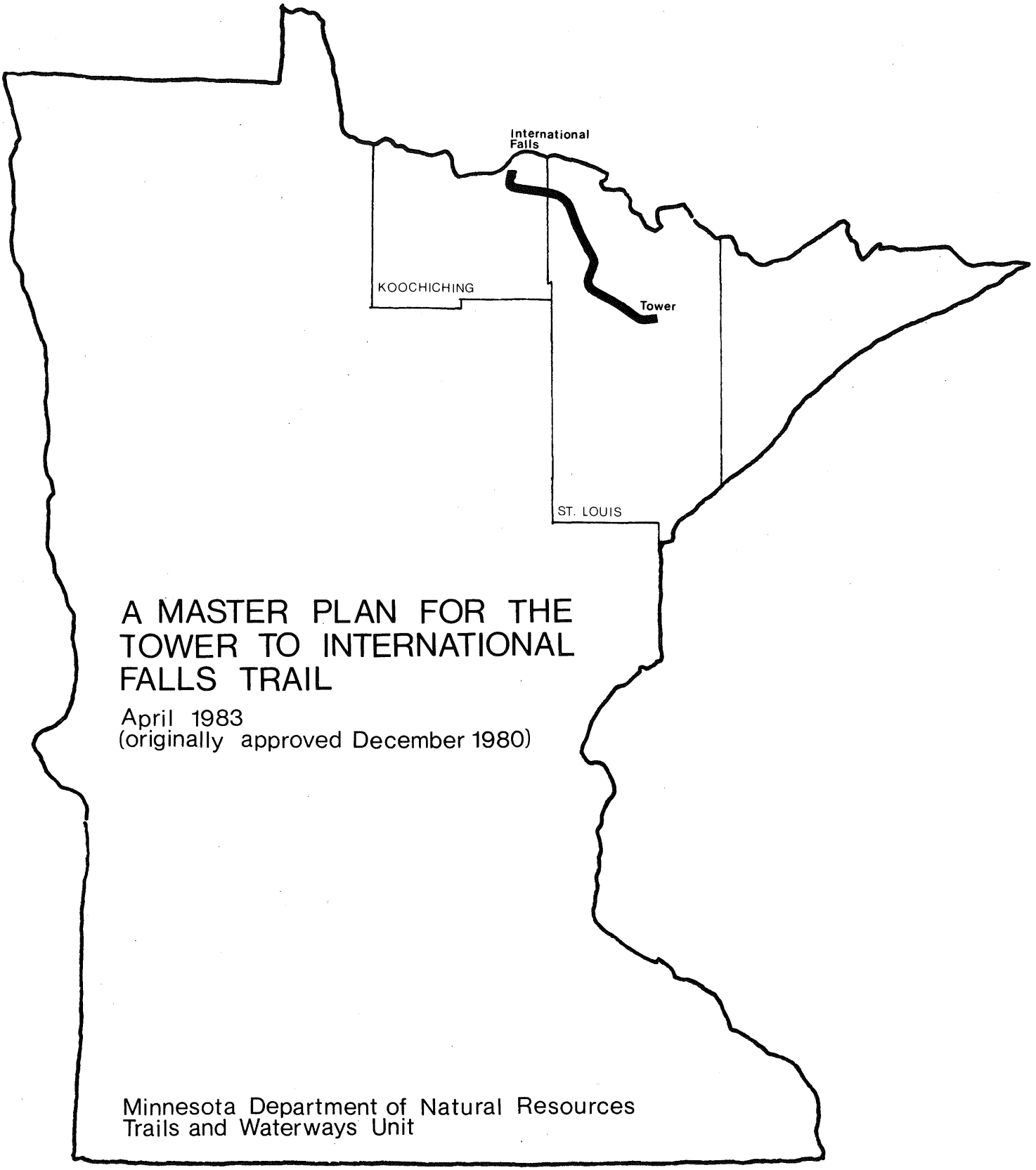
minnesota department of natural resources



master plan for the
tower to international falls trail



A MASTER PLAN FOR THE TOWER TO INTERNATIONAL FALLS TRAIL

April 1983
(originally approved December 1980)

Minnesota Department of Natural Resources
Trails and Waterways Unit

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FOREWORD

The Department of Natural Resources wishes to express its gratitude to those citizens and public servants who have contributed to the development of this management plan for the International Falls to Tower Trail. It is hoped that these people will continue to support this project to insure that the trail is developed into a first rate recreation facility for all Minnesotans to enjoy.

PURPOSE AND SCOPE OF THE PLAN

This master plan is written to provide a procedural outline for administration, management, development and maintenance of the International Falls to Tower segment of the Arrowhead Region Trails System. The purpose of the master plan is to implement the specific and general mandates of the legislature, cooperative agreements with the U.S. Forest Service, DNR - Division of Forestry, County Land Commissioners and other public and private agencies affecting management of the area, along with policies and objectives for state recreational trails.

This master plan is also written to inform the general public, state and local authorities, and trail user groups about the management of the trail. The master plan includes a description of the regional setting of the International Falls to Tower Trail, the trail itself and its immediate environment. Furthermore, it addresses user demand, lists goals and objectives, and lays out the plan of action for development, maintenance, resource management, and interpretation. The master plan also includes an environmental assessment of the proposed action and how it will effect the environment. (See Appendix 5)

The master plan is intended to be flexible to allow for unforeseen changes in the social and natural environment. Should these conditions change in the future, another planning effort should be made to update and amend this plan taking into account these changes. Periodic research and re-evaluation of the master plan concepts should be undertaken to insure that the trail will continue to fulfill public and natural resource needs.

LEGISLATIVE HISTORY

The formal beginnings of Minnesota's Trail System came about in 1967, when the legislature required snowmobiles to be registered. Funds from these fees were appropriated to the Department of Natural Resources to promote, develop, manage and maintain recreational facilities for snowmobile users.

Until the first State Recreational Trail was authorized in 1969, state trails were developed only in state parks and state forests. In 1969, the legislature authorized the DNR to establish, develop, maintain and operate recreational areas including the Minnesota Valley Trail (MSA 1969, 85.015, Subd. 1). Since that time, twelve additional trails have been authorized (see Table 1, page 3).

During the 1973 session, the legislature provided the means for a state-wise recreational trail system through passage of trail legislation, appropriation of trail development and maintenance funds, and authorization of a temporary DNR trail staff.

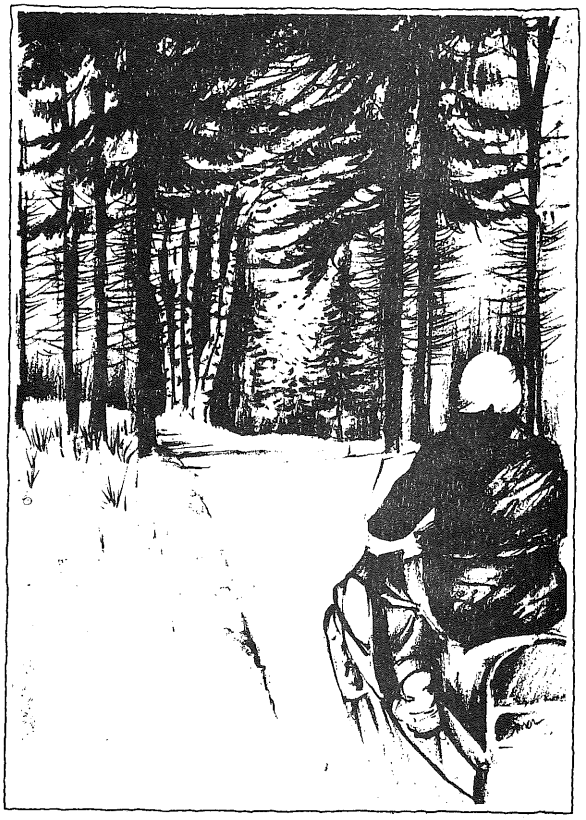
In 1975, the Minnesota Legislature passed the Outdoor Recreation Act (ORA). This act established an outdoor recreation system, classified units and specified the purpose and administrative authority for each unit. State Trails are included as one of the 11 units identified by the ORA.

The act specifies that "No construction of new facilities or other development of an authorized unit (State Trail), other than repairs and maintenance, shall commence until the managing agency has prepared and submitted to the State Planning Agency and the State Planning Agency has reviewed pursuant to this section" (See Appendix 1 for ORA trail related sections).

TABLE 1

STATE TRAILS

Trail	Authorization	Authorized Mileage
Taconite	1974	165
North Shore	1975	192
Grand Marais to International Falls	1975	220
Casey Jones	1971	37
Countryview	1971	22
Douglas	1971	12
Glacial Lakes	1971	100
Heartland	1974	48
Luce Line	1973	104
Minnesota Valley	1969	72
Minnesota-Wisconsin Boundary	1973	210
Root River	1971	50
Sakatah Singing Hills	1971	42
TOTAL		1,274



summary

SUMMARY

REGIONAL PERSPECTIVE
The International Falls to Tower Trail is an 85 mile trail which will be located in northwestern St. Louis County and eastern Koochiching County. The trail travels through a variety of terrain and vegetation and along many small lakes, rivers and streams.

Northeastern Minnesota, often referred to as the Arrowhead region, contains a variety of natural resources. Iron mines, extensive forests and the many lakes have long attracted tourists from Minnesota and the U.S.

The area has extensive amounts of land in public ownership, national forests, a national park, a national monument, state forests, state parks, wildlife management areas, state trails and tax-forfeited property.

Bounded on the north by the Province of Ontario, Canada and the east by Lake Superior, the Arrowhead region ranks first in the state in water and forest acreage. Because of the rocky soil, mining and forestry are the area's main source of income.

Opportunities for providing recreational facilities abound in this region. Recognizing this fact the legislature has authorized three state trails in this region: 1) the Taconite Trail, from Ely to Grand Rapids, 2) the North Shore Trail from Duluth to the Canadian Border, and 3) the Grand Marais to International Falls Trail.

Completion of these trails will allow visitors to view and enjoy northeastern Minnesota.

LEGISLATIVE AUTHORITY
The International Falls to Grand Marais Trail is part of the Arrowhead Region Trails system authorized by the Legislature in 1975 (MS 1975, 85.015).

(NOTE: Due to its length, the trail has been divided into two segments for planning purposes; International Falls to Tower and Ely to Grand Marais.)

Subd. 13. Arrowhead Region Trails, in Cook, Lake, St. Louis, Koochiching and Itasca counties.

(3) The Grand Marais to International Falls Trail shall originate in Grand Marais in Cook County and extend northwesterly, outside of the Boundary Waters Canoe Area, to Ely in St. Louis County, thence southwesterly along the route of the Taconite Trail to Tower in St. Louis County, thence northwesterly through the Pelican Lake area in St. Louis County to International Falls in Koochiching County, and there terminate.

(b) The trail shall be developed primarily for riding and hiking.

(c) In addition to the authority granted in subdivision 1, lands and interests in land for the Arrowhead Region Trails may be acquired by eminent domain. Before acquiring any land or interest in land by eminent domain, the commissioner of administration shall obtain the

approval of the governor. The governor shall consult with the legislative advisory committee before granting his approval. Recommendations of the legislative advisory committee shall be advisory only. Failure or refusal of the Committee to make a recommendation shall be deemed a negative recommendation.

Sec. 2. This act is effective the day after final enactment.

LEGISLATIVE CLASSIFICATION

To be included as a unit of the Outdoor Recreation system, a State Trail must meet the criteria established for state trails in the Outdoor Recreation Act (M.S. 1975, Chapter 353, Section 86A.05). (see appendix 1). The extent to which the Tower to International Falls Trail fulfills the criteria for classification as defined by the Outdoor Recreation Act (ORA) is summarized below.

ORA Criteria

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

   i "travels along a route which connects areas or points of natural, scientific, cultural and historic interest;"

The Tower to International Falls Trail is located in two very diverse landscape regions: the Border Lakes Region known for its lakes, ridges and bedrock areas, caused by glacial erosion, and the Agassiz Lowlands, an area of little relief and extensive lowlands caused by glacial deposition. Users of the Tower to International Falls Trail will be able to experience this natural diversity firsthand. While traveling from Tower to International Falls, trail users will be able to view the lowlands near Tower, the rock ridge topography near Orr and the Ash River and once again the flat lowland topography near International Falls. This natural diversity, when experienced and interpreted, will help users to better understand the natural forces which shaped this area of the state.

Culturally and historically, the trail area is important because it is: located near one of the major fur trading areas of the last century, connects to the areas where iron ore was first discovered and mined, and because it travels through an area of significant logging. Scientifically, the trail is significant because it may connect to Voyageurs National Park which is one of the best preserved areas of the state.

   ii "travels through an area which possesses outstanding scenic beauty."

The diversity in vegetation and relief and the wildness of many areas through which the trail passes will provide the trail user an opportunity to view areas of scenic beauty unique to this part of the state. The seemingly endless sedgemats and broken stands of black spruce, tamarack, and white cedar of the Agassiz lowlands present a contrast to the pine

covered ridges, rock outcroppings and lakes which make the Border Lakes Region one of the most scenic areas in the state.

iv "travels along a route which is historically significant as a route of migration, commerce or communication."

The Tower to International Falls Trail crosses the Pike River, parallels the Vermilion River and may connect to Voyageurs National Park. These rivers and the lakes of Voyageurs National Park were once traveled by early explorers and fur traders.

v "travel between units of the outdoor recreation system or national trail system."

The Tower to International Falls Trail will connect to two state parks, Tower Soudan and Bearhead Lake; two state trails, the Taconite and Northshore; Kabetogama State Forest trails; and in the future, Voyageurs National Park.

2) "Utilizes to the greatest extent possible public lands."

The land ownership patterns shown on Plates 1 through 9 show that over 90 percent of the Tower to International Falls Trail has been routed on available public lands.

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."

The scenic, historical, natural and cultural qualities of the trail area mentioned earlier and in the Description of the Environment section of this plan will be interpreted so that trail users will be better able to appreciate and enjoy the trail and the area. Management and development practices utilized in implementing this plan will insure that the areas and resources are conserved for future enjoyment.

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

As outlined in the user demand and projected use sections of this plan, the Tower to International Falls Trail is being developed primarily for snowmobile use because of current public demand. The plan, however, does allow for upgrading for other uses in the future, should demand for hiking, horseback riding and ski touring along the entire trail increase in the future. SCORP surveys and trail user studies will be used to determine future increases in demand for these activities.

GOAL AND MAJOR OBJECTIVES

The goal of the DNR for the International Falls to Tower Trail is:
To provide Minnesotans with a recreational travel route which will allow them to enjoy, appreciate, and better understand the natural, cultural and historic resources of the border lakes region.

To help implement this goal, the following major objectives have been identified:

1. To complete a segment of the statewide recreational trail system.

2. To provide a vital link to the Arrowhead Region's Trail System as authorized by the legislature.

3. To provide a recreational trail that is flexible and responsive to user demand.

4. To provide access to other trails and recreation areas within the region.

5. To encourage local units of government and private interests to provide connecting trails to points of interest and service facilities.

6. To contribute to the local recreation-based economy.

7. To establish and maintain trail waysides where existing facilities cannot meet user needs.

8. To provide a recreation facility that promotes user enjoyment and safety through proper signing and management techniques.

9. To coordinate on-going development and maintenance operations with various governmental agencies, private concerns and interested user groups.

10. To interpret natural and historic features in the area for user enjoyment.

11. To involve interested members of user groups in the on-the-ground layout of the trail to insure that the trail is responsive to their needs.

NATURAL RESOURCE MANAGEMENT

The management of lands adjacent to the trail will be supervised by the U.S. Forest Service on federal lands, the DNR Division of Forestry on state owned lands, and by the county land commissioner on county lands. National, state and county forest lands are managed to provide resource use and enjoyment for the greatest number of people. This multiple use policy considers watershed, wildlife, wood resource and outdoor recreation uses when making a land management decision.

RECREATION MANAGEMENT

The DNR recommends:

- that a continuous snowmobile trail right-of-way be established from Tower to International Falls that will link existing state forest and grants-in-aid snowmobile trails.

- that development follow the specifications and alignment outlined in this plan.

- that the trail be linked to service areas and towns to insure user safety and enjoyment.

- that only designated sections of the trail be suitable for hiking and horseback riding.

- that construction of an additional treadway for ski touring not be considered unless user preference for skiing changes from loop trail systems to linear trail systems.

- that a spur trail be developed to Voyageurs National Park should an on-land snowmobile route become a reality in the future.

- that additional loop trail systems rather than a linear trail for ski tourers, horseback riders, and hikers be developed in state forests in the area when a need is expressed by these users.

description of the environment

DESCRIPTION OF THE ENVIRONMENT

NATURAL RESOURCES

Location

The International Falls to Tower Trail is located in Northern Minnesota along the western edge of the Border Lakes Region. From its start west of Tower to International Falls (approximately 85 miles), the trail passes through a remote forested landscape typical of the Border Lakes Region.

Trunk highways 53, 65, 73 and 169 are the major north-south highways serving the area. Trunk highways 1 and 11 provide east-west access and intersect most north-south highways in northern Minnesota (see Figure 1).

Population centers nearest to the trail include Tower, Cook, Orr and International Falls. South of the trail area is Minnesota's Iron Range with all its historical and recreational aspects.

The nearest major metropolitan area to the trail is Duluth-Superior, 86 miles southeast of Tower, 163 miles southeast of International Falls. Estimated driving time from Duluth to Tower is about two hours, to International Falls about four hours. The Duluth-Superior area had a 1970 census population of 265,350 people and may be a major visitor market for the trail.

The Saint Paul-Minneapolis metropolitan area is 300 miles south of International Falls, 220 miles south of Tower. The metropolitan area had a 1970 census population of 1,813,647. Most visitors from the Twin Cities and Duluth are expected to reach the trail via U.S. Highway 53.

The region has a variety of recreational facilities that will complement the trail. In addition to the previously mentioned Taconite, Ely to Grand Marais and North Shore trails, there are many miles of trails located in state parks, state forests, national forests and Voyageurs National Park.

The Superior National Forest located to the east and south of the trail encompasses nearly 3,000,000 acres. Within this national forest is located the 1,000,000 acre Boundary Waters Canoe Area. This famous wilderness area is a major attraction which draws recreationists from all over the United States.

Voyageurs National Park, 219,000 acres, located north and east of the trail is in the planning stage and could have a significant impact on the International Falls to Tower Trail because of the large number of visitors it could attract.

The Kabetogama State Forest through which a majority of the trail passes, encompasses 697,000 acres in Koochiching and St. Louis counties of which 155,772 acres are state owned. For its vast size, this state forest has relatively few recreational developments.

Numerous state parks, state forests and historic sites are also found throughout the region. Figure 2 outlines public land ownership in the area of the trail.

FIGURE 1

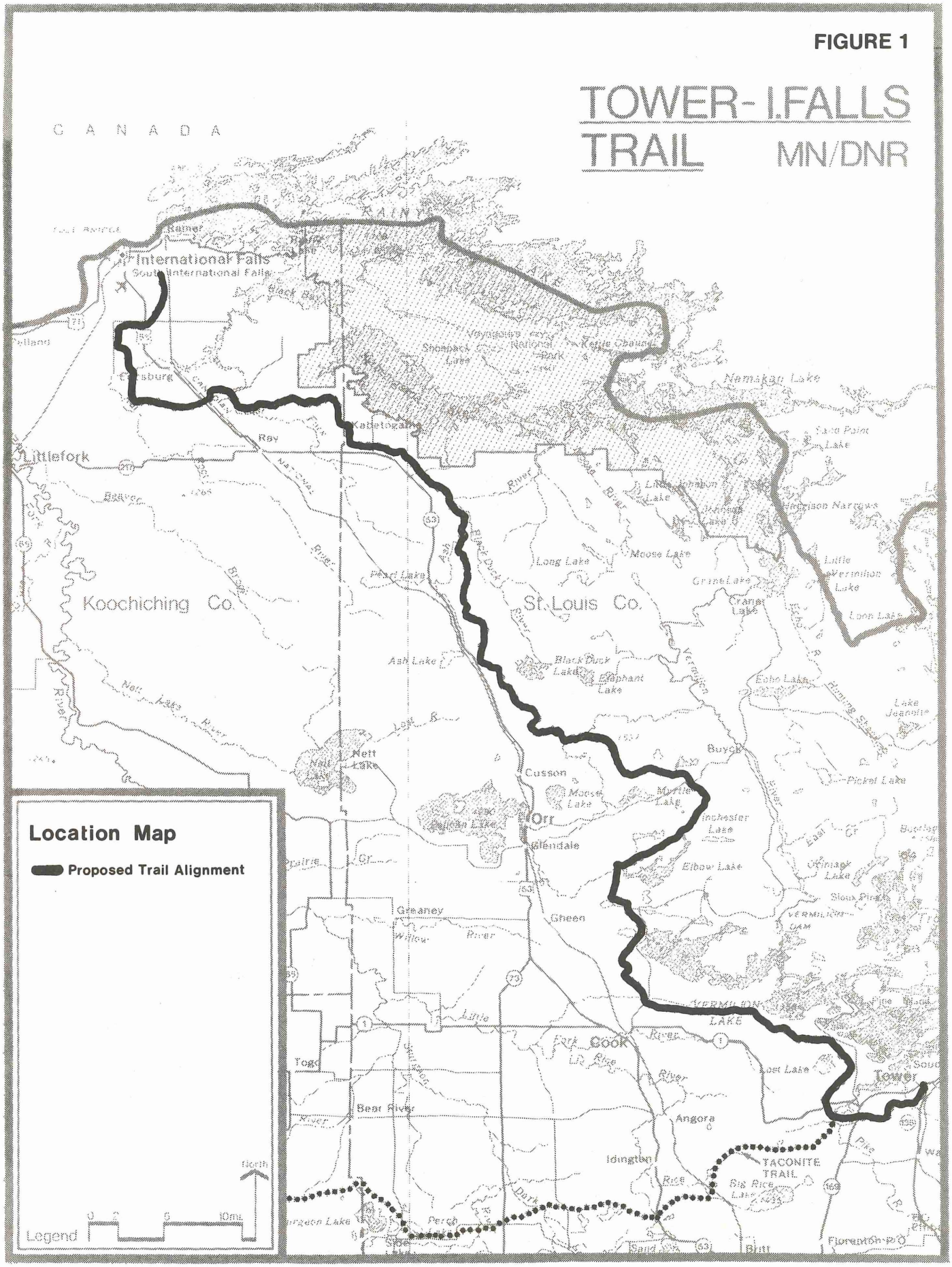
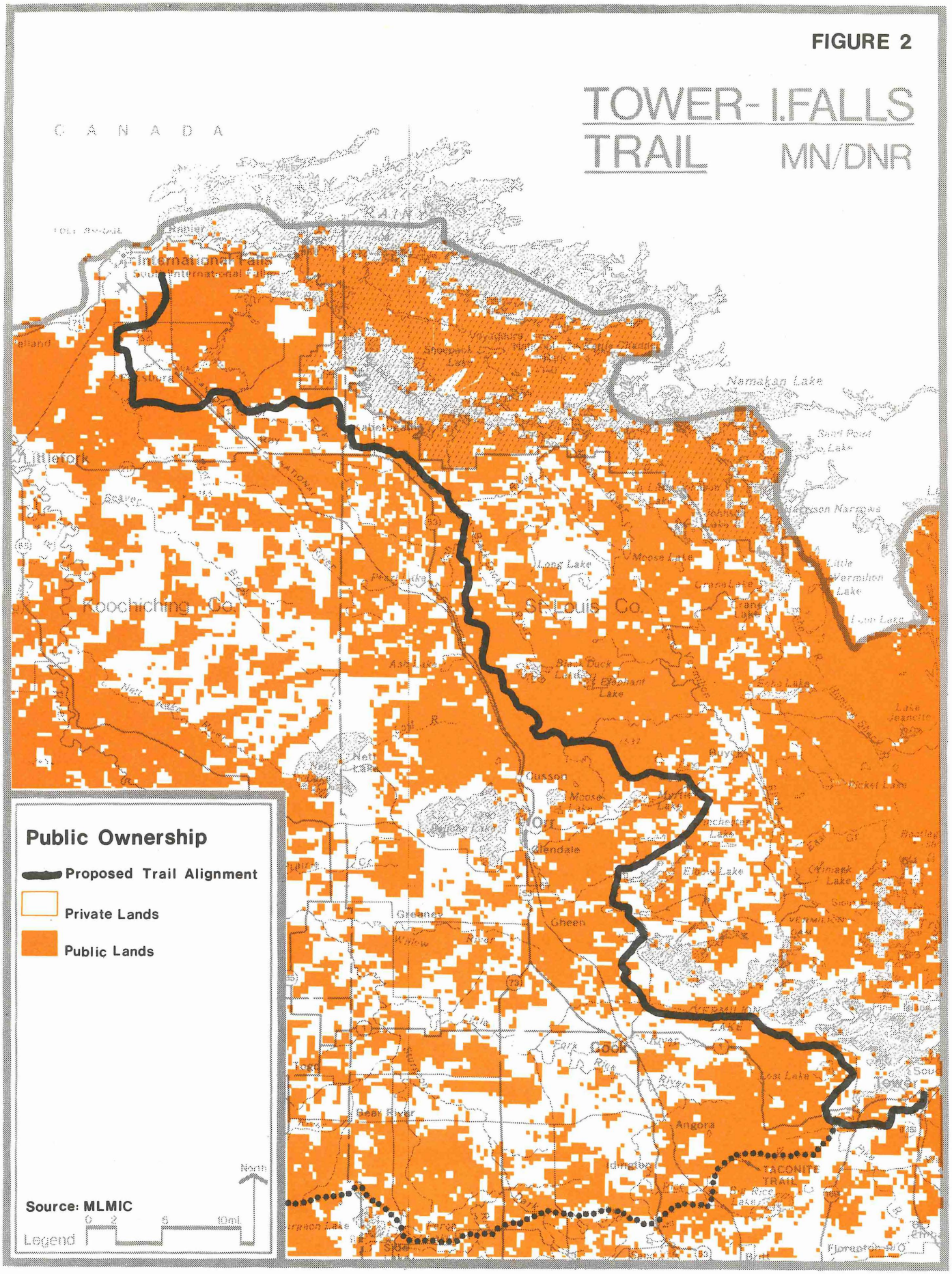

TOWER-I.FALLS TRAIL
MN/DNR
CANADA
International Falls
Littlefork
Koochiching Co.
St.Louis Co.
Nett Lake
Orr
Cook
Tower
Angora
TACONITE TRAIL
Location Map
Proposed Trail Alignment
Legend
North

FIGURE 2

TOWER-I.FALLS TRAIL

MN/DNR



Geology and Topography

Many features of the area surrounding the trail are diverse examples of the area's geologic history. The trail is located in the Superior Province of the Canadian Shield, a vast area of ancient Precambrian rocks that form the nucleus of the North American Continent.

The topography of the region surrounding the trail is a combination of flat marsh or lowlands and rugged rolling mounds and hills caused by glaciation that occurred over ten thousand years ago.

Rock types found in the area of the trail today consist basically of granite and granite related rocks, biotite schist and greenstone. The principal area of granite rock is found along the middle one-third of the trail, generally south of Lake Kabetogama and near Orr (see Figure 3). The granite rock that outcrops within the area generally is rounded and smooth and displays evidences of glacial activity.

The extensive marsh or wetlands found south and east of International Falls is a glacial lake bottom. This lake bottom formed by Glacial Lake Agassiz at one time occupied most of Koochiching County and portions of St. Louis County. Today most of this old lake bottom is a poorly-drained flat wetland. Figures 4 and 5 show drainage problems caused by this lake bottom.

Bedrock outcroppings are also found within the former glacial lake basin and are most prominent near Rainy, Kabetogama and Namakan lakes. The rugged hilly topography experienced along Highway 53 and portions of the trail was caused by glaciers scouring the land surface, removing soils and leaving the most resistant rock rounded and smoothed.

Lakes in the area were formed by glacial action which gouged out the basins that are now occupied by water.

Mineral Potential

The area surrounding the International Falls to Tower Trail has mineral potential for a variety of metallic minerals. This would include such minerals as: gold, silver, copper, zinc, lead, nickel, and iron. The highest potential for these minerals is found in contact areas between geologic formations.

An area of high mineral potential is found to the west of the southern portion of the trail.

Another area of high mineral potential is found near the start of the trail at Tower.

An area of fair mineral potential exists in the northern area of the trail from Rainy River on the west to the Voyageur Park boundary on the east.

Areas through which the Tower to International Falls Trail passes could in the future be subject to leases for mining. In the past, areas around the southern portion of the trail and to the south and east of the area, have been included in state copper-nickel lease sales. It is likely that

FIGURE 3

TOWER-I.FALLS TRAIL

MN/DNR

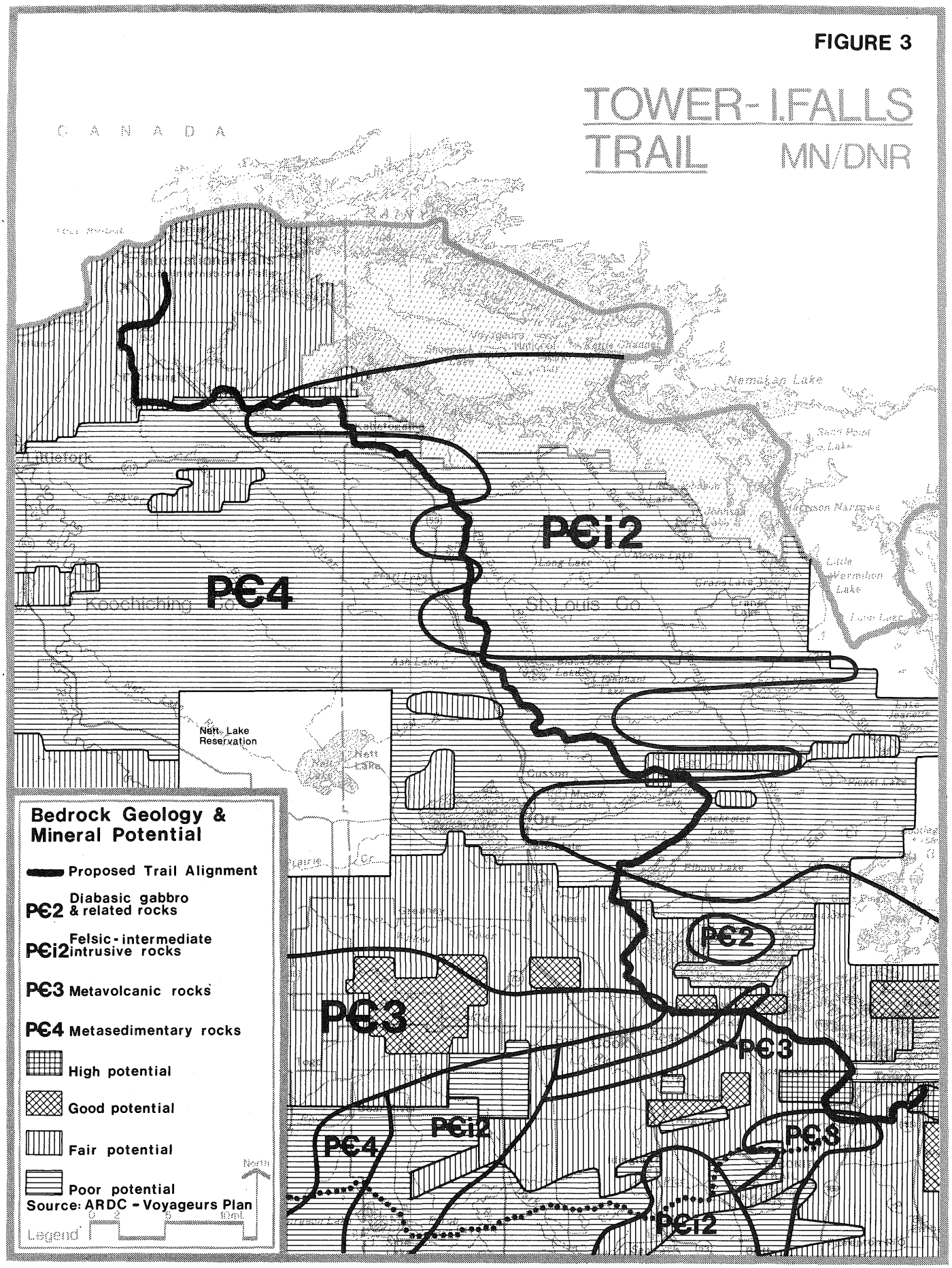
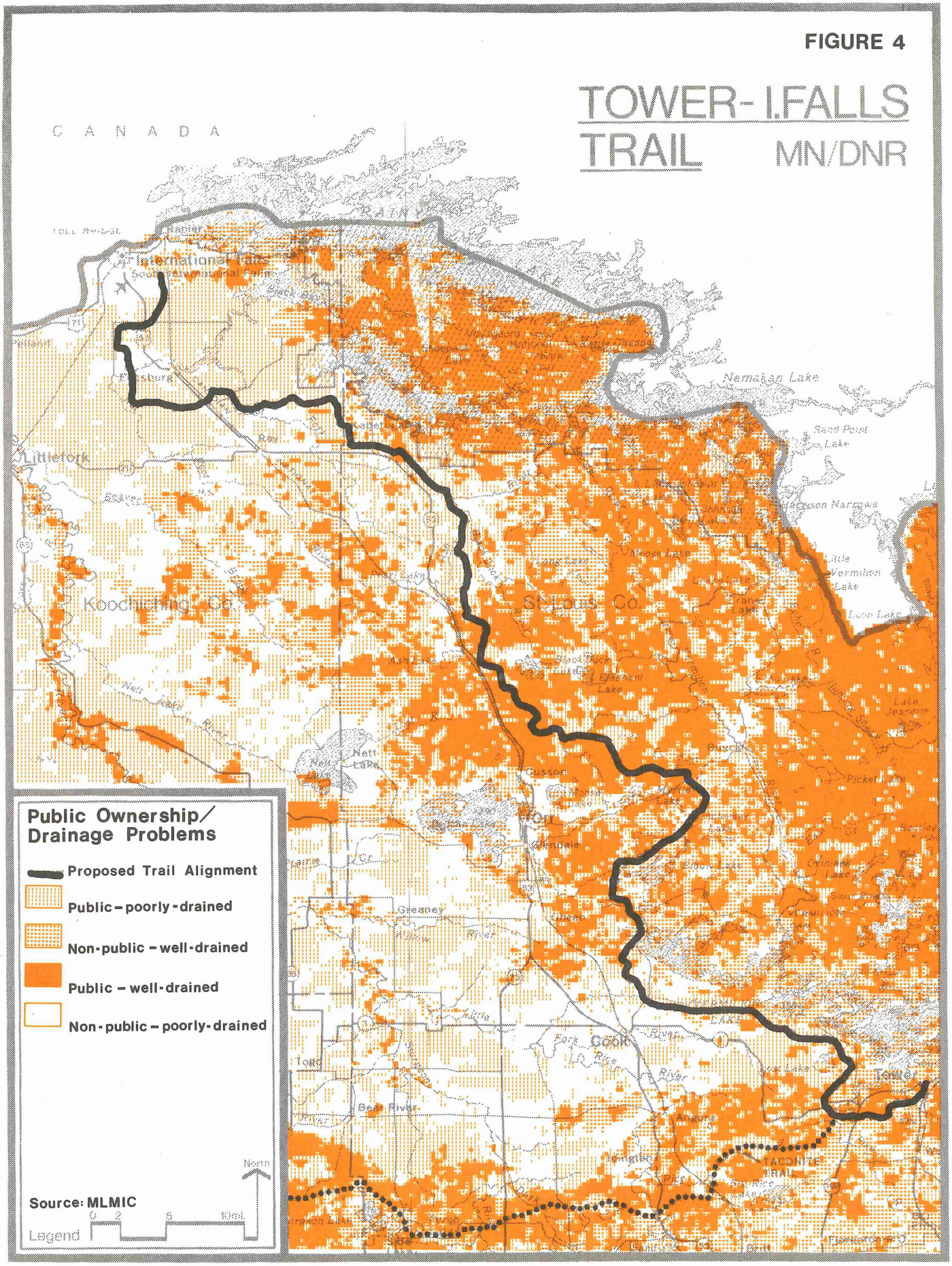


FIGURE 4

TOWER-I.FALLS TRAIL

MN/DNR



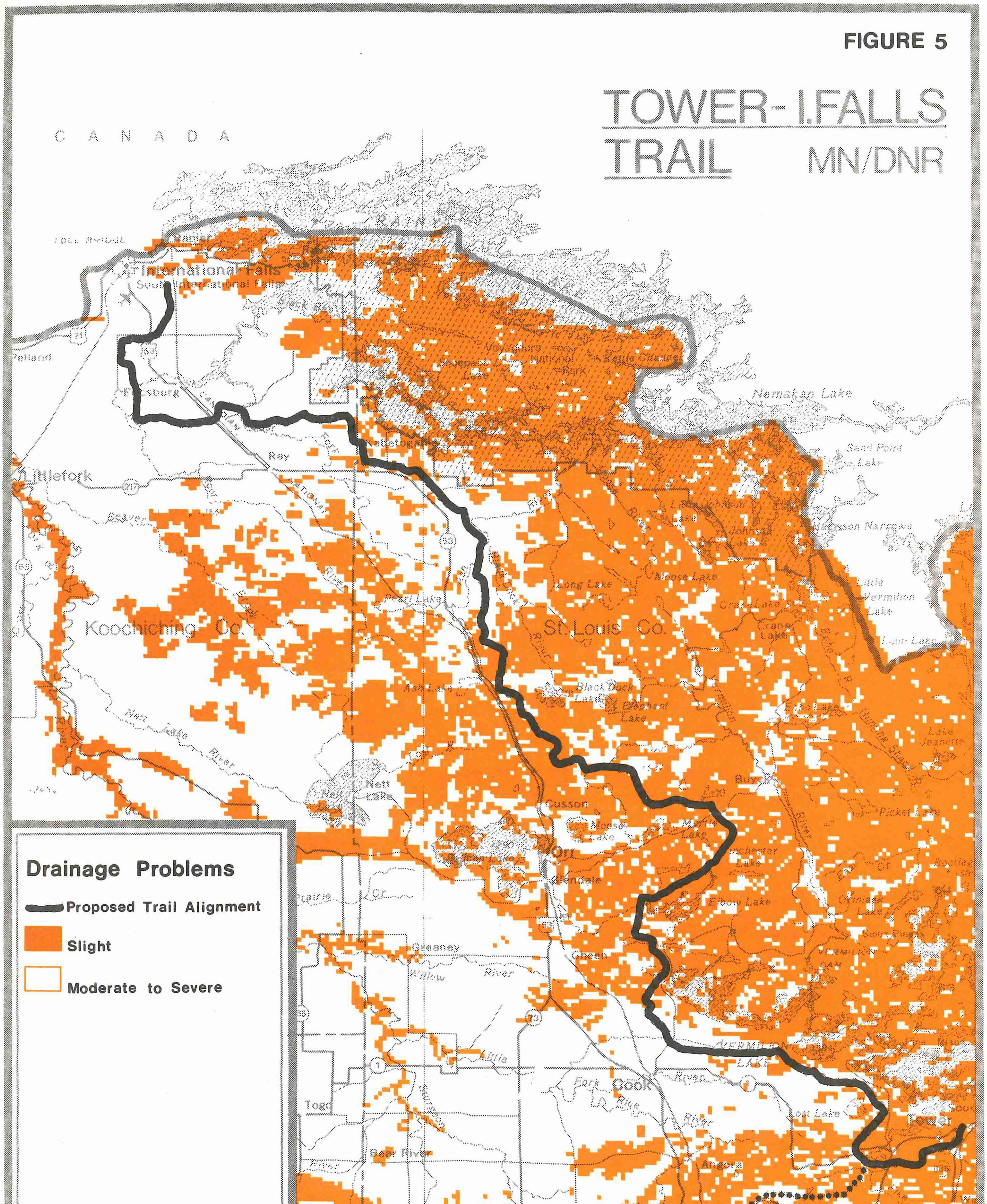


FIGURE 5
TOWER-I.FALLS TRAIL
MN/DNR
CANADA
International Falls
Littlefork
Koochiching Co.
St. Louis Co.
Nemakan Lake
Ray
Cusson
Orr
Cook
Angora
TACONITE TRAIL
Drainage Problems
Proposed Trail Alignment
Slight
Moderate to Severe
Source: MLMIC
North
Legend

in future lease sales, parcels within this area and adjacent areas will be requested for lease. The areas with the greatest potential to be leased would include those areas of high and good mineral potential shown in Figure 3.

Another source of mining activity along portions of the trail may be the excavation of peat. The Lost Lake peat bog near Tower, the Nakoda peat bog south of International Falls, and the International Falls peat bog east of International Falls, are all prominent peat bogs traversed by the trail. Special consideration should be given to the trail if these resources will be mined.

Soils

Five major soil types have been identified in the area surrounding the trail according to H. F. Arneman, a soil scientist for the University of Minnesota (see Figure 6).

Nebish-Rockwood and Chetek-Menahga are medium to coarse textured forest soils formed from glacial outwash. These soils are found primarily along the southern portion of the trail near Pfeiffer Lake and Tower. Indus-Taylor-peat, Ahmeek Rock Outcrops and Cloquet-Taylor Rock Outcrops are coarse to fine textured forest soils, organic soils and rock outcrops which are interspersed along the northern portion of the trail.

Nebish-Rockwood soils are found in hilly to undulating areas. These light colored well drained soils have developed from loam (Nebish) and sandy loam (Rockwood) calcareous buff colored glacial till. Lakes and poorly drained mineral and organic soils occupy the level and depressional areas.

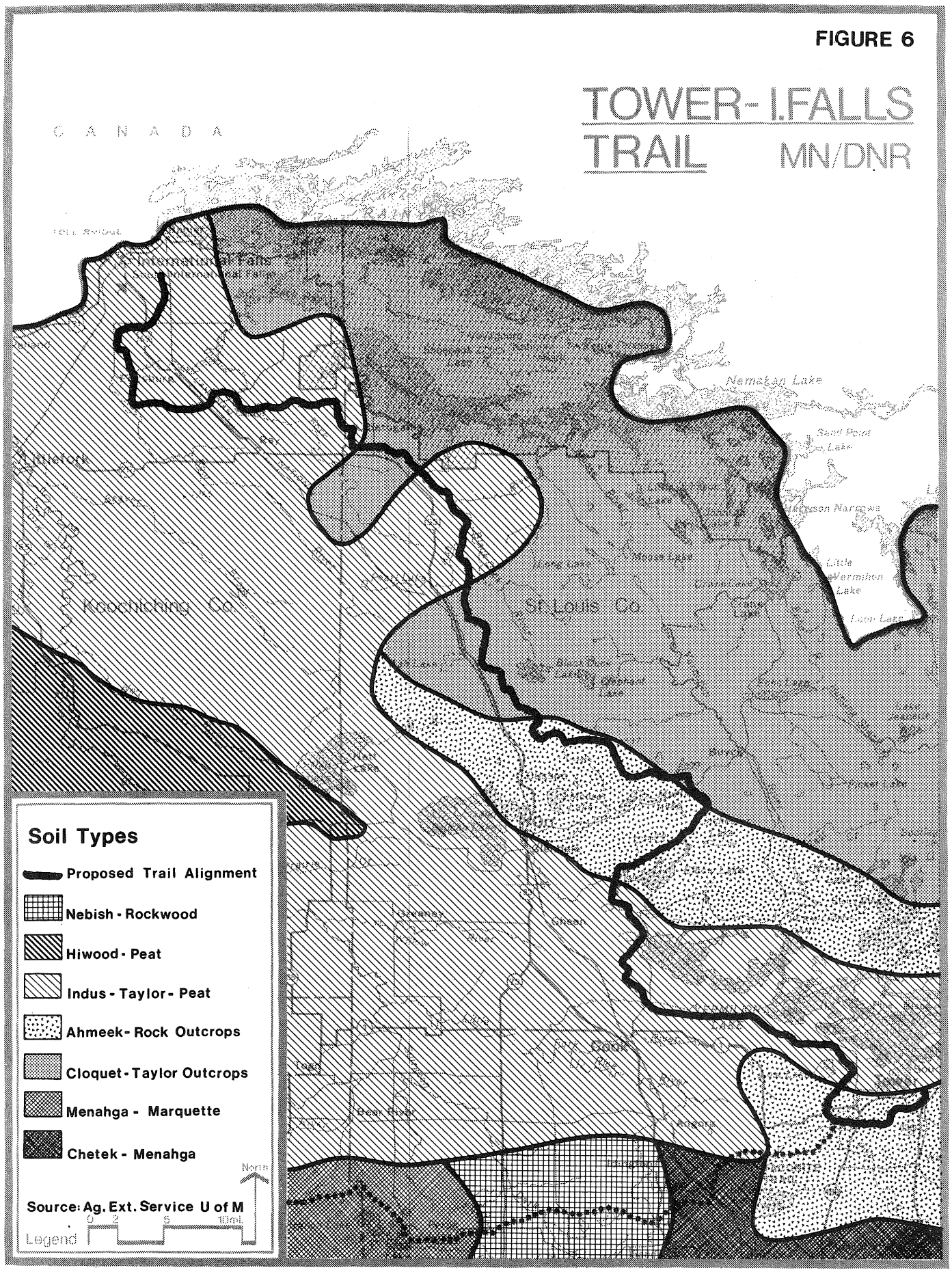
Chetek-Menahga soils are found for the most part in a nearly level area. These soils are light colored and droughty. Chetek is developed in sandy loam or loam material overlying noncalcareous outwash gravel within 18 inches of the surface. Menahga is formed from medium to coarse outwash sand.

Indus-Taylor Peat soils are found in a hilly to undulating area. These mineral soils are light colored and have formed from calcareous lacustrine clay. Indus is somewhat poorly drained and Taylor is moderately well drained. The mineral soils are intermingled with areas of organic (peat) soils.

Ahmeek-rock outcrops are found in a rolling to hilly area. The Ahmeek soils are dark colored soils formed from a reddish brown noncalcareous sandy, stony, glacial till. Rock outcrops of basic igneous rocks are common.

Cloquet-Taylor-rock outcrops is a gently rolling to hilly area, with many lakes. Rock outcrops are prominent on the landscape, but only make up about one-fourth of the land surface. Cloquet is a light colored soil formed from gravelly glacial drift. Taylor is a light colored soil developed from calcareous lacustrine clay.

FIGURE 6


TOWER-I.FALLS
TRAIL
MN/DNR
CANADA
International Falls
Koochiching Co.
St. Louis Co.
Nemakan Lake
Sand Point Lake
Little Vermilion Lake
Soil Types
Proposed Trail Alignment
Nebish - Rockwood
Hiwood - Peat
Indus - Taylor - Peat
Ahmeek - Rock Outcrops
Cloquet - Taylor Outcrops
Menahga - Marquette
Chetek - Menahga
Source: Ag. Ext. Service U of M
Legend
0 2 5 10mi
North

Climate

The trail area, as well as the entire state, lies within a humid, continental-type climate zone. This zone has great extremes in temperature with the greatest share of precipitation falling during the growing season.

Temperatures range from an average daily of 65.5°F during the month of July to an average daily of 3.1°F during January. However, extremes such as -46°F in the winter and 98°F in the summer have been recorded. The frost-free growing season ranges from 100 to 110 days. The last killing frost generally occurs between May 27 and June 1 with the first killing frost occurring around the 11th of September.

Precipitation in the trail area follows a seasonal pattern. Light precipitation falls in the winter season of December, January, and February with a fairly even distribution pattern. Precipitation amounts increase steadily during the spring months of March, April and May. The summer period of June, July and August coincides with the growing season, and accounts for 40 to 50 percent of the annual precipitation. Annual average precipitation is 26.6 inches, with a normal range from 3.37 inches for the wettest month to .71 inches in the driest month.

Even with the light precipitation levels in the winter months, the normal snowfall is between 50 to 60 inches per year. However, the maximum recorded snowfall is 158.20 inches and the minimum is 6.70 inches.

Water Resources

The trail travels through two watersheds. These are the Littlefork watershed covering 1,849 square miles, and the Rainy Lake watershed covering 4,489 square miles.

The Littlefork River rises in a rather flat region in St. Louis County south of Vermilion Lake. This is also the area where the trail will start. However, only the southern ten to fifteen miles of the trail will be located in this watershed.

From its start in St. Louis County, the Littlefork River follows a meandering course to the northwest through the eastern part of Koochiching County to its junction with the Rainy River 12 miles below International Falls. Throughout its length, the main stem of the Littlefork has numerous falls and rapids. Sturgeon Lake, 2,115 acres, Big Rice Lake, 1,800 acres, and Nett Lake, 7,300 acres, are the only major lakes in the drainage basin. In addition, many small lakes occupy the closed depressions in the morainic terrain near the headwaters area.

The Rainy Lake watershed is characterized by irregularly shaped lakes and numerous short broken streams occupying depressions in the forested rocky terrain. The majority of the trail is located in this area. Drainage within the watershed is northward to the border chain of lakes and thence westward into Rainy Lake.

The principal drainage line is a chain of connected border lakes with the following major tributaries: Kawishiwi, Vermilion and Rat Root rivers which have drainage areas of 1,376, 1,030 and 270 square miles respectively. The rocky nature of the terrain and absence of appreciable soil cover combined with the rugged topography tend to accelerate runoff. Many of the large lakes lie in deep valleys cut in the bedrock and have

outlets partly dammed by accumulations of glacial drift. As a result, the lakes act as retarding basins which tend to equalize streamflow. In addition to the excellent regulation afforded by lakes, additional storage and regulation has been created on some of the rivers and lakes by the construction of dams. Large lakes located near the trail include Kabetogama, Namakan, Sand Point and Rainy lakes. Numerous smaller lakes are also found along the route.

Ground water is abundant in some parts of both watersheds. Sand glacial aquifers of sufficient depth of groundwater in bedrock fractures, fissures and joints are occasionally used for municipal and domestic water supplies but more frequently these supplies are obtained from surface waters.

Water quality is relatively good throughout the trail area. Areas where lower water quality may occasionally occur are the Vermilion River, Ash River and near the towns of Tower, Cook, Orr, Kabetogama, Ray, Ericsburg and International Falls. Water quality may also suffer near resorts or private residences because of inadequate utility systems. These reductions in water quality are primarily due to poor treatment of sewage and other waste materials.

Industrial and commercial uses of water are primarily related to hydro-electric generation and the pulp and paper industry. Dams at Kettle Falls and Squirrel Falls control the Namakan reservoir that stores water for the hydroelectric plant at International Falls. Water from the Rainy Lake reservoir is utilized by Boise Cascade Corporation to operate a steam and hydroelectric station.

Vegetation

The presettlement vegetation types in the area of the International Falls to Tower Trail identified by Marschner consisted primarily of the following plant communities: Conifer Bogs and Swamps, Jack Pine Barrens and Openings, Aspen-Birch-Conifer and White and Norway Pine (see Figure 7).

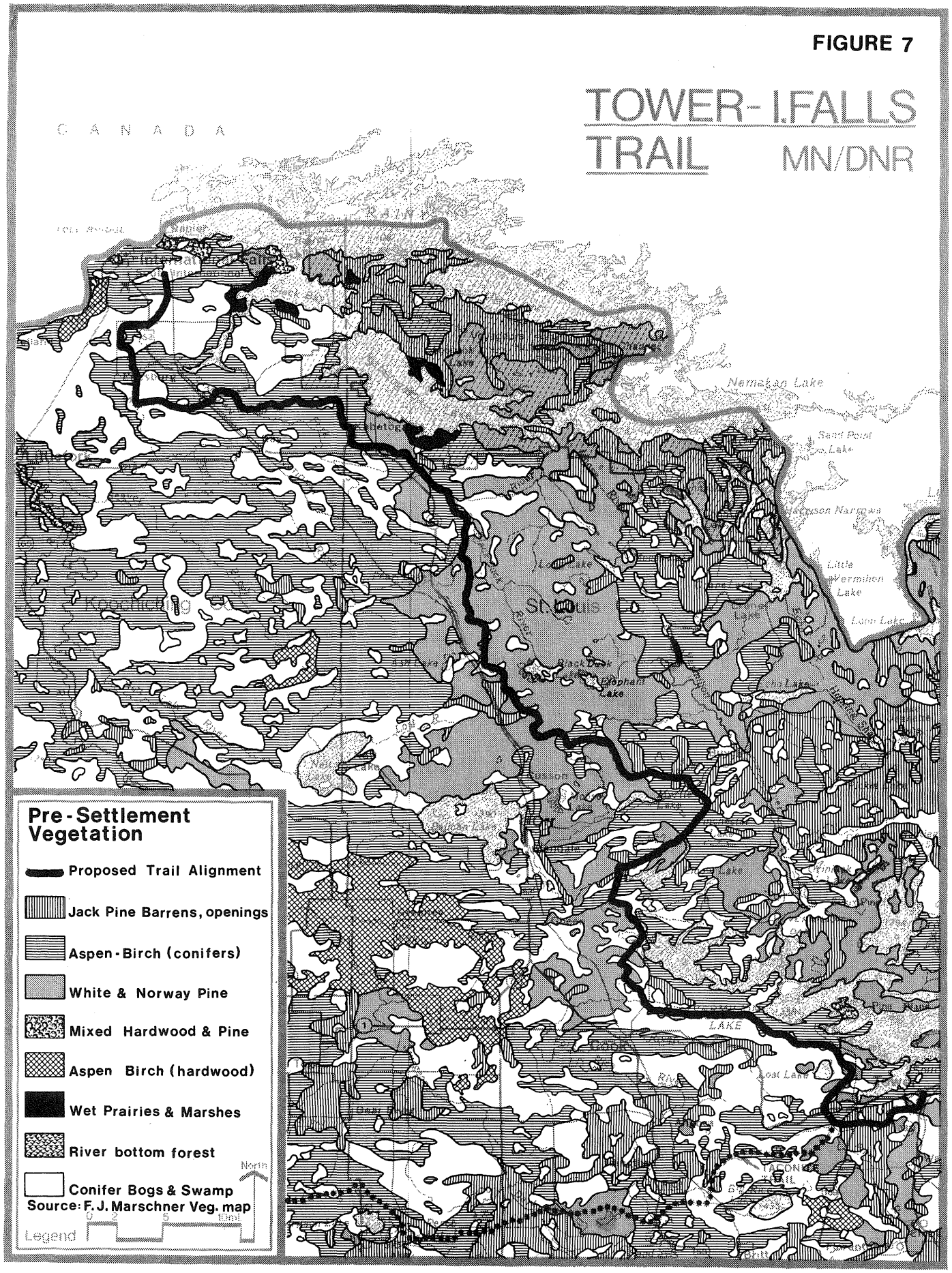
Conifer bog and swamp community which was found along the flat poorly drained areas of the trail consisted primarily of black spruce, tamarack, bog birch, heaths and sphagnum mosses. Less acid soils also supported northern white cedar, balsam fir, paper birch and speckled alder. Some areas were nearly treeless and supported only sedges, grasses and bog birch.

Jack Pine Barrens and Openings community was found primarily on the thin rock outcrop soils in the area and was fire maintained. In places extensive stands of jack pine were interspersed with nearly treeless heaths or open, lichen-covered, rock outcrops. Common shrubs and ground cover species included hazel, blueberries, sweetfern, bearberry, bracken and reindeer moss. In some areas, jack pine stands were integrated with black spruce, balsam fir, white spruce and northern white cedar.

Mixed Hardwood and Pine community is a transitional forest and was found along some of the rock ridges near Orr. In these areas, white pine stands were intermingled with oak, maple, basswood, elm, black ash, aspen, yellow birch, and paper birch.

FIGURE 7

TOWER-I.FALLS TRAIL MN/DNR



Today's vegetation along the proposed trail has been altered by land clearing, logging, fires, tree planting, urbanization and fire exclusion. Pioneer species have invaded many of the disturbed sites resulting in a wide distribution of the Aspen-Birch and Spruce-Fir covertypes. (see Figure 8). Fire suppression has permitted many conifer bogs and swamps to succeed toward more mature stands of black spruce, tamarack and northern white cedar. Alder and dogwood are the most common shrub species found on wet soils.

Aspen-Birch is the major forest cover to be found along the trail. This forest type generally is associated with clay-sandy-gravel soil types and the majority of this cover type is found in St. Louis County. These stands of aspen-birch also have a scattering of conifers and mixed hardwoods.

Spruce-Fir is the second largest forest type to be found along the trail. This forest type is associated with wetter-poorer soils of the area. The majority of this cover type is found along the southern and northern portions of the trail.

Other major forest types found along the trail include non-productive forest lands and a combination of white, red and jack pine. These non-productive areas are associated with the very wet organic soils. The pines are associated with the shallow rocky soils found in northwestern St. Louis County.

Wildlife

The area surrounding the International Falls to Tower Trail with its diversity of vegetation, provides suitable habitat for many wildlife species. The trail user may on occasion be able to observe a number of mammals and birds.

Common big game species found in the trail area today are white-tailed deer, black bear, and occasionally moose. Woodland Caribou were at one time present but were extirpated with the advent of the logging industry and its influence on forest ecology.

Upland game species include ruffed grouse and snowshoe hare. Fur bearers include beaver, otter, mink, Canada lynx, weasel, muskrat, fisher, pine marten, fox, timber wolf, wolverine and bobcat.

Owls, hawks, warblers, chicadees, nuthatches, sparrows, wood peckers and grosbeaks are some of the more common birds. Waterfowl most common to the area are mallards, black ducks, mergansers, ring-necked ducks, goldeneyes and teal. The area also provides good nesting habitat for the common loon - Minnesota's state bird.

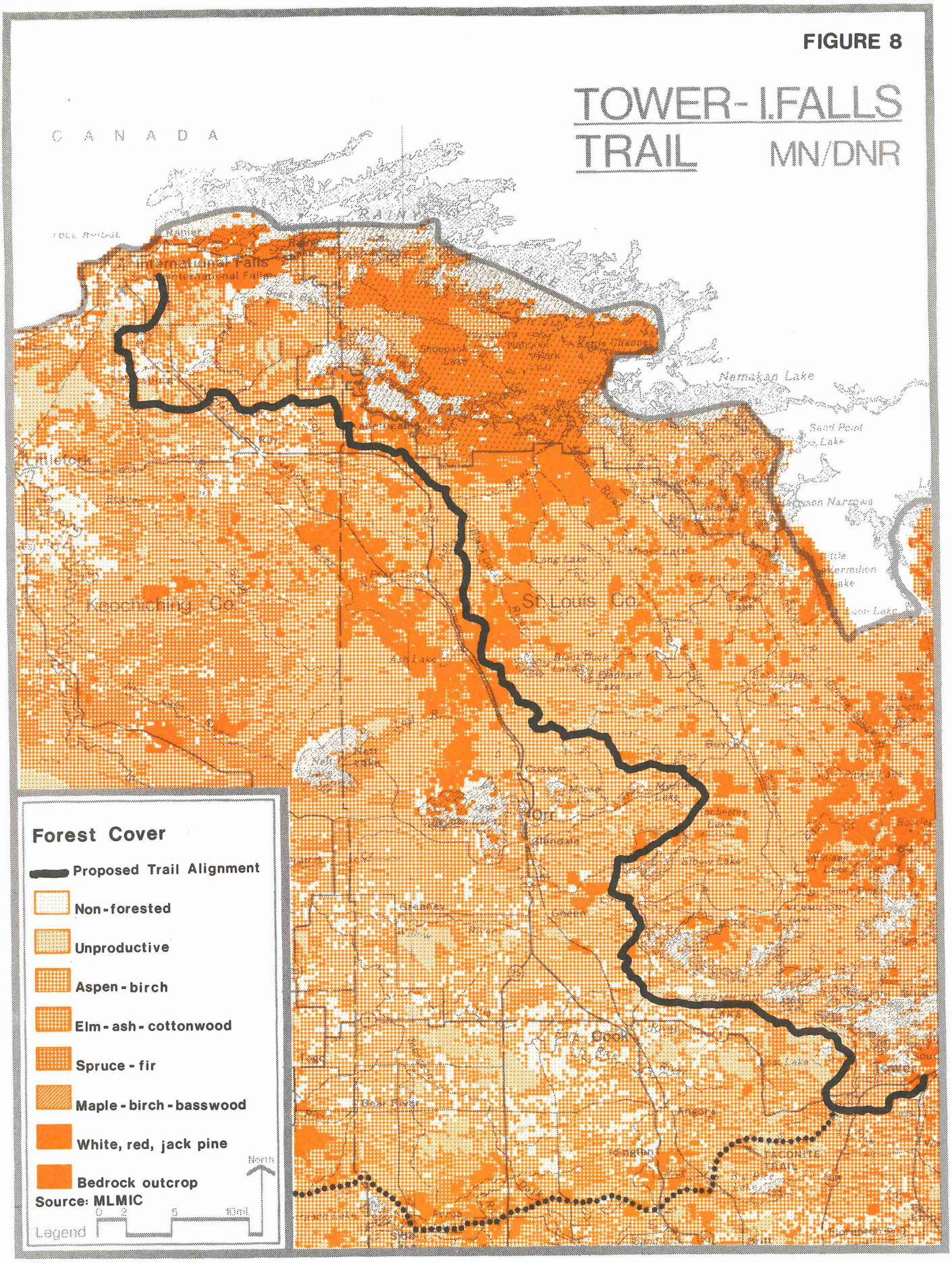
Fisheries

Fish species of commercial or sport fishing value found in area lakes include: smallmouth bass, muskellunge, black crappie, yellow perch, northern pike, sauger, walleye, lake trout, brook trout and brown trout. Burbot, northern redhorse, white sucker and tulibee have commercial value but are less desirable sport species.

FIGURE 8

TOWER-I.FALLS TRAIL

MN/DNR



The following list of species which occur in the area of the trail are listed in The Uncommon Ones, a Minnesota Department of Natural Resources publication and merit varying degrees of special consideration and management. Presently none of these species are considered endangered or rare. Those considered threatened in Minnesota but not necessarily throughout their entire range include the pine marten and timber wolf. Species of changing or uncertain status include the Canada lynx, fisher, bald eagle, osprey and lake sturgeon.

The wildlife managers, district foresters and trails development personnel will work closely together when implementing this plan to assure that these and other species are not detrimentally affected by the trail.

CULTURAL RESOURCES

History

Dakota Indians had lived in the Quetico-Superior country for two centuries before the arrival of Europeans, a time coincidental to the already started forced move of the Dakota out of the region by the Chippewa Indians.

The early explorers of the region were nearly all French, sent out in search of new sources of fur by the merchants of Montreal and Quebec. Radisson and Gorseilliers explored the mouth of the Pigeon River in the spring of 1660. The Coureurs de Bois (Knights of the Forest), as the roving explorer-traders were called, ranged far and wide along a 3,000 mile fur trading route which eventually extended from Montreal to Lake Athabaska. Fur trading was the motivation in the exploration and, finally, settling of much of North America.

The establishment of forts at strategic locations along the trading route provided supply depots and winter headquarters as well as trading centers for the Indians. One of the earliest forts in northwestern Ontario was Fort Kaministiquia, built in 1679 by Daniel Graysolon Sieur Du Lhut, near the present City of Thunder Bay. Nine years later, in 1688, Jacques de Noyon blazed the first section of the canoe highway to the West when he ascended the Kaministiquia River to Dog Lake and followed the route through Lac des Mille Lacs to Rainy Lake and Lake of the Woods. During the next 30 years, trading operations were primarily along the James and Hudson bays.

In 1731, la Verendrye and his sons set out from Grand Portage to explore the country between Lake Superior and Rainy Lake. Later that year, Fort St. Pierre was established, near the present town of Fort Frances. For the next 70 years, the route followed by la Verendrye through the Quetico-Superior country was the main link in the fur trading highway to the West.

Originally there were three routes into the International Falls area. The southern route started at Fond du Lac, (present day Duluth), then up the St. Louis River and Pike River to Vermilion Lake, then down the Vermilion River to Crane Lake. The middle route started at Lake Superior over Grand Portage to Pigeon River, then westward through the border chain of lakes to Lac La Croix and Rainy Lake. The northern route was by way of the Kaministiquia River, near Fort William in Canada, to Lac de Mille Lacs, by portage to Pickerel Lake, across Sturgeon Lake, down the Miligne River, then into Lac La Croix.

After the founding of the Hudson Bay Company in 1670, a series of forts were established along Hudson Bay. In a counter move, Montreal merchants established a chain of forts from Lake Superior across the prairies: Fort Williams, Fort Frances, and fur posts at Winnipeg, Prince Albert, Calgary and others. In 1779, the Montreal merchants formed the North West Company which made the border lakes canoe route famous, building posts at Grand Portage and Fort Charlotte, and on Moose, Knife, Basswood and Little Vermilion lakes. In 1808, a third company, the American Fur Trading Company headed by John Jacob Astor entered the scene and resulting competition was eventually ruinous. In 1821, the

North West Company merged with the Hudson Bay Company and paid the American Fur Company an annual sum for exclusive trading rights in the border country. Meanwhile, after the American Revolutionary War, the trading route shifted northward. After 1804, when the North West Company discontinued using the Grand Portage-Pigeon River route, and the importance of the boundary area in fur trading ended.

During the late 1800's as lumber supplies in the east diminished, lumbermen turned to Northern St. Louis and Koochiching counties. Railroads were responsible for the lumber industry developing on a large scale in these counties. They provided the necessary transportation to ship products to towns which were developing on the prairies and elsewhere.

White and Norway pine were the main types of trees cut by the lumber companies. In the peak years of the lumbering industry, around 1904, a total harvest of 85 million board feet was not uncommon.

Most of the western portion of the boundary waters was logged around the turn of the century for several large mills. Powerful groups operated large mills at Fort Frances, International Falls and Rainy River over a period of 40 years. Perhaps the most successful of the lumber-mill operators was J. A. Mathieu, who as owner of J. A. Mathieu Limited (1922-66) produced and processed a billion board feet.

Until the middle 1890's the timber industry was only concerned with pine logs and cedar products. Then the paper industry was attracted to this area by the fine spruce stands. The first operations were for eastern paper mills. In 1889, Minnesota's first paper mill, Northwest Paper Company, was established in Cloquet.

In 1865 Henry H. Eames, the state geologist, was in northern St. Louis County making a survey of the area's mineral resources. His report stated that there were high grade iron ore deposits in paying quantities in the area. Eames also mentioned that he found some gold bearing quartz. His mention of gold started a gold rush to the shores of Lake Vermilion and the Trout Lake area. Although some gold was found, it was difficult and costly to mill. Transportation was a problem and interest in gold soon waned in the area. The opening of the Mesabi Iron Range at the same time was of greater importance and interest to the mining industry.

Fishing became a commercial industry in the 1890's throughout the Rainy River, Rainy Lake and Crane Lake area. Sturgeon, pike, pickerel and whitefish were the main types of fish netted commercially. The area was also known for its caviar production, which was hauled to eastern market areas via railroads.

In the 1890's transportation by steamboat and railroad made the area more accessible. Fur trading, logging and commercial fishing attracted many people to the area. The land contained some rich soils which encouraged farming. Farmers were soon growing, on a small scale, wheat, barley, oaks, potatoes and legume crops in the rich soils of the Rainy River Valley. Steamboats serviced the farmers along the river. West of Lake Vermilion there are rich soils, bottom lands of Glacial Lake Agassiz. Here farmers concentrated on dairying, seed crops and legume crops. Agriculture, however, has never developed on a large scale in this area.

Significant historic features in the trail area are listed below and are exhibited in Figure 9.

A. Nett Lake Indian Culture - Wild rice harvesting and processing. Drum Island Petroglyphs, early burial gounds.

B. Cusson Settlement - One time headquarters of Virginia Rainy Lake Logging Company. Railroad shops and service center for more than 5,000 woodsmen, 1909-1930.

C. Gheen Farm - Site of Indian farm school, Indian Agency, first saw mill in region.

D. Bourassa Fur Post - Believed to be site of earliest trading posts in region (French, 1736). Owned by Minnesota Historical Society.

E. American Fur Company Post - Documented in 1866 map as "Roussain Post." (William Aitkin and Vincent Roy also served here). Site of gold stamping mill during 1860's gold rush; 1878 mission Indian burial grounds.

F. Soudan Mine - State's oldest and deepest mine operated from 1887 to 1962 by U.S. Steel and now incorporated within Tower Soudan State Park. (Only National Historic landmark within planning area).

Natural and Historic Features

There are many natural and historic features within the study area. The list below and Figure 10 show the most significant features.

Unique natural features shown in Figure 10 are:

1. Ash River Falls
2. Wild rice beds of Nett Lake
3. Haslem Point, "Sugar Bush", Pelican Lake
4. Indian Point, Pelican Lake
5. "Hidden Forest" of South Big Lake and adjoining Pelican River
6. Wild rice fields of Vermilion River
7. High Falls of the Vermilion River
8. Vermilion River Gorge
9. Moss covered granite outcrop at Crane Lake Lookout Tower
10. Table Rock Falls of Vermilion (Privately owned access and posted)

FIGURE 9

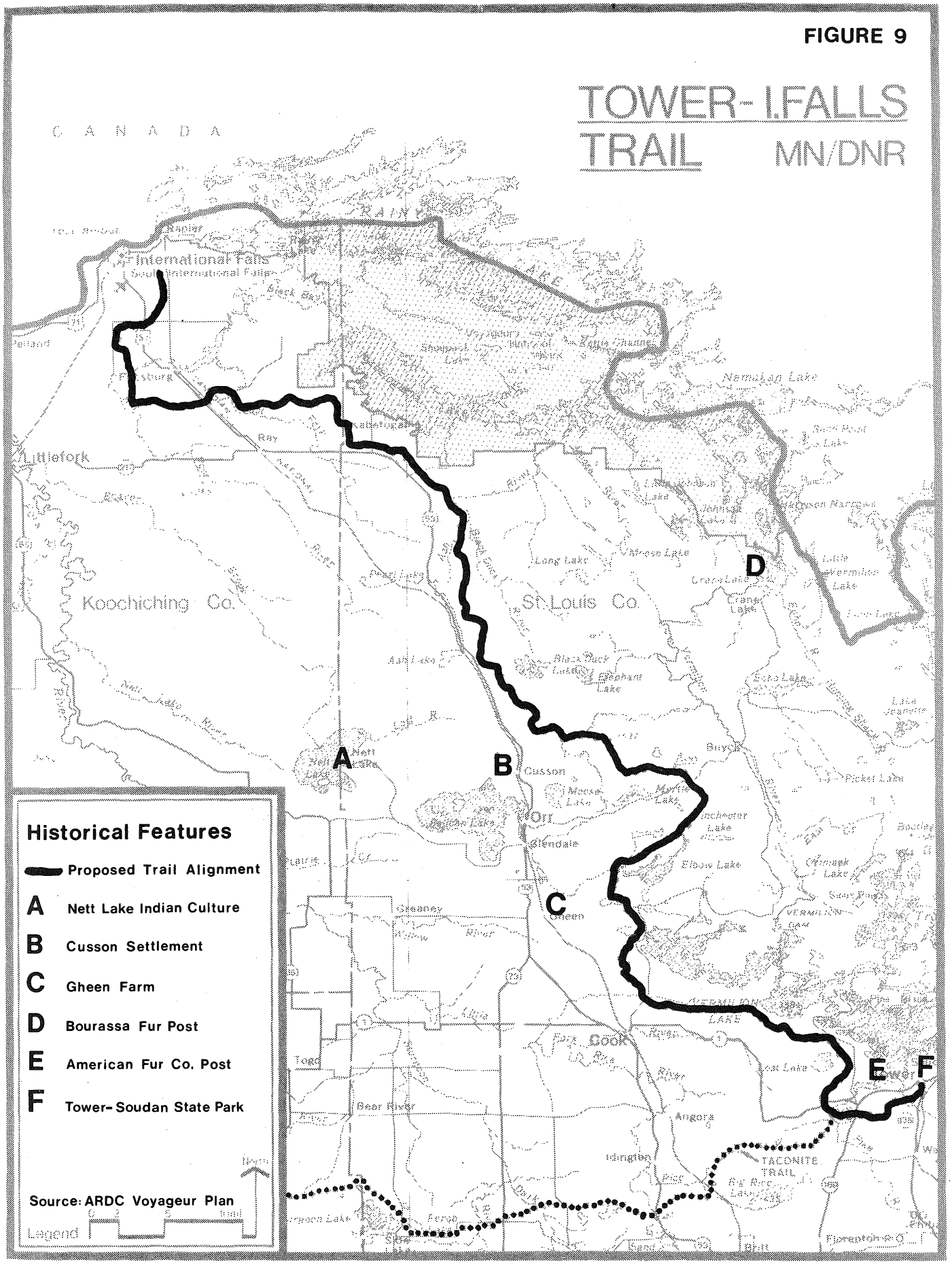

TOWER-I.FALLS TRAIL
MN/DNR
CANADA
International Falls
Littlefork
Koochiching Co.
St. Louis Co.
Cusson
Gheen
Cook
Angora
TACONITE TRAIL
A
B
C
D
E
F
Historical Features
Proposed Trail Alignment
A Nett Lake Indian Culture
B Cusson Settlement
C Gheen Farm
D Bourassa Fur Post
E American Fur Co. Post
F Tower-Soudan State Park
Source: ARDC Voyageur Plan
Legend

FIGURE 10

TOWER-I.FALLS TRAIL

MN/DNR

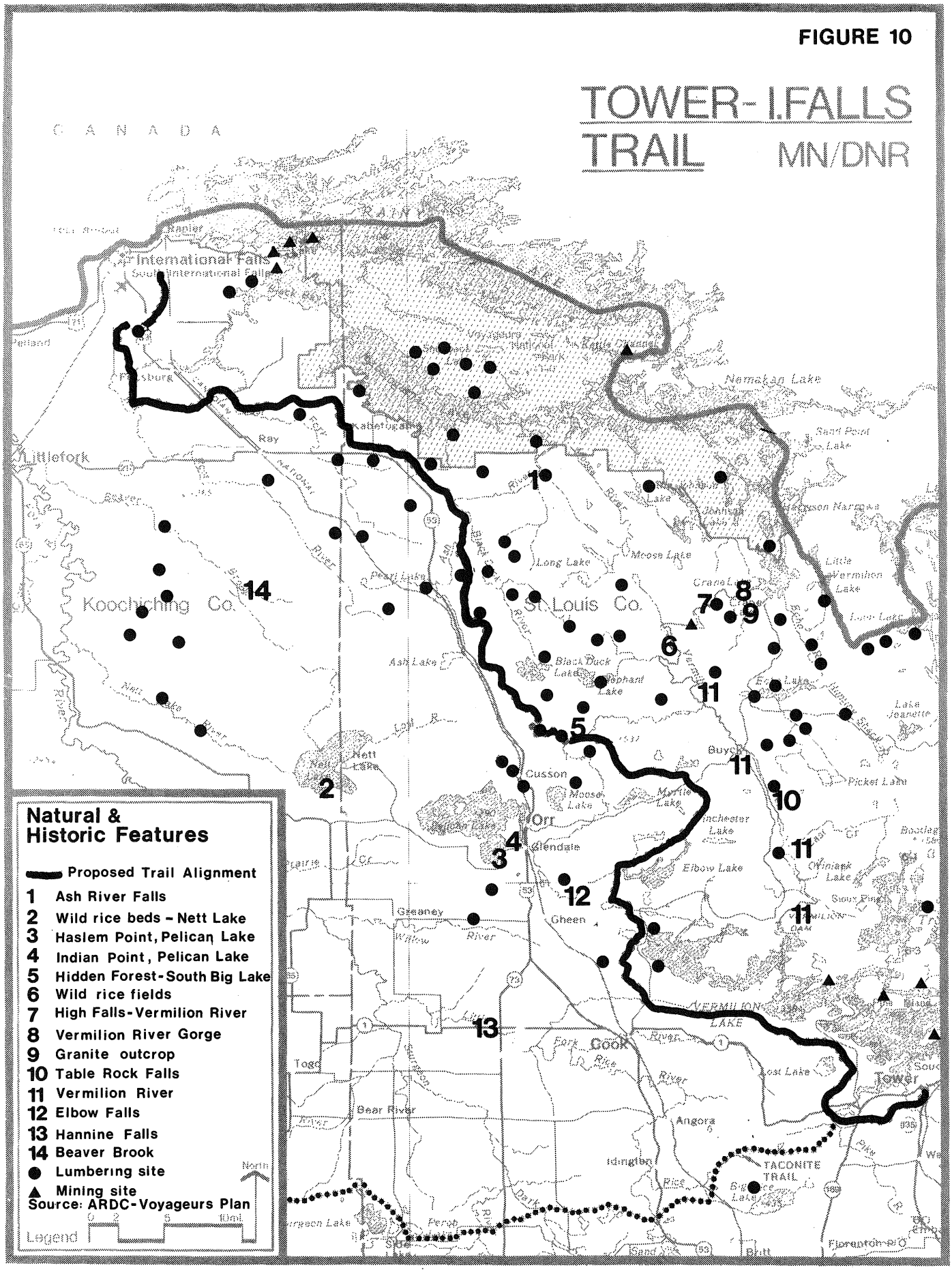


TABLE 2

Historic and Natural Features of the Trail Area

	Koochiching	St. Louis	Total
Prehistoric Sites	4	10	14
Cluster of Archaeological Features	2	0	2
Indian Cultural Sites	3	23	26
Fur Trade Post	2	10	12
Lumbering Sites	26	111	135
Mining Sites	4	23	27
Historic or Architecturally Significant Building	2	13	15
Ghost Town Sites	1	1	2
Other Historic Sites	0	1	1
Waterfalls (10' + Vert. Drop)	0	2	2
Rapids, Whitewater Areas	2	2	4

Source: Natural Historic Areas of Minnesota, Minnesota Department of Natural Resources, 1971, and Exploring St. Louis County's Historical Sites by Charles E. Aguar, 1971, and Historical Resources Inventory Koochiching County, Minnesota by Aguar, Jyring, Whiteman and Moser, 1967.

11. Entire length of Vermilion River. Unique cross-section of Laurentian Shield Country and historic Indian waterway and voyageurs route.

12. Elbow "Falls" of Elbow River

13. Hannine Falls of Little Fork River

14. Beaver Brook - Scenic Falls and Gorge

In addition to the outstanding features listed above, a tabulation of recognized natural and historic features in the area has been compiled and is summarized in Table 2. The information for this compilation has been obtained from "Natural and Historic Areas in Minnesota" by the Department of Natural Resources, plus the "Historical Resources Inventory" for Koochiching County and the "Historical Sites" of St. Louis County by Charles Aguar.

The regional naturalist and Minnesota Historical Society will be consulted to determine which of these sites should be identified and which should not. In some cases, trail users could unknowingly harm these sites. Those sites which are suitable to be identified and interpreted will be managed according to recommendations of the Historical Society and regional naturalist.

Population

Population projections for St. Louis and Koochiching counties and Economic Development - Region 3 are listed in the table below (Source: Department of Energy, Planning and Development). Projected changes for the counties and region vary until 1985. Thereafter, the population of the region is expected to decline. The statistics for St. Louis County reflect the strong influence of Duluth, and urban area, distant from the trail. Forty-five percent of the people in St. Louis County live in the city of Duluth, making the population figure for the county unrepresentative of the trail area.

TABLE 3

Population Projections

Year	St. Louis County	Koochiching County	Region 3
1970	220,700	17,100	329,600
1975	218,700	17,600	331,100
1980	217,100	17,800	330,300
1985	216,400	18,200	332,600
1990	215,000	18,400	332,400
1995	212,900	18,300	330,200
2000	210,000	17,800	325,400

The trail is located in a sparsely populated area with approximately half of the residents living in cities of 2,500 people or less. The poulation of the region is decreasing, while the state population as a whole is increasing. Much of the decrease can be attributed to out-migration.

Economic Structure

The forest industry provides the economic base for those communities that exist along or near the trail route. Boise Cascade Corporation is the major employer for the area. Agriculture, fisheries, construction and recreation are relatively unimportant in the area's economy when compared to the timber industry. In addition, wholesale and retail trades make up a smaller portion of jobs in the region than in the rest of the state. These characteristics indicate an economy highly dependent upon a single basic resource industry.

Economic expansion in the recreation industry of the area is expected as Voyageurs National Park is developed and attracts visitors. When development occurs, employment is expected to increase in the recreation, construction and wholesale-retail trade sectors.

Tourist travel expenditures during 1974 in St. Louis County totaled $61,742,091 ranking it 20th in the state based on tourist travel expenditures as a percent of gross sales. These expenditures accounted for 5% of gross sales. Tourist travel expenditures for Koochiching County totaled $14,680,155, or 22% of gross sales. Koochiching County ranked fourth in the state in tourist travel expenditures as a percent of gross sales.

Land Use and Development Trends

TABLE 4

Koochiching and St. Louis County General Land Use (acres)

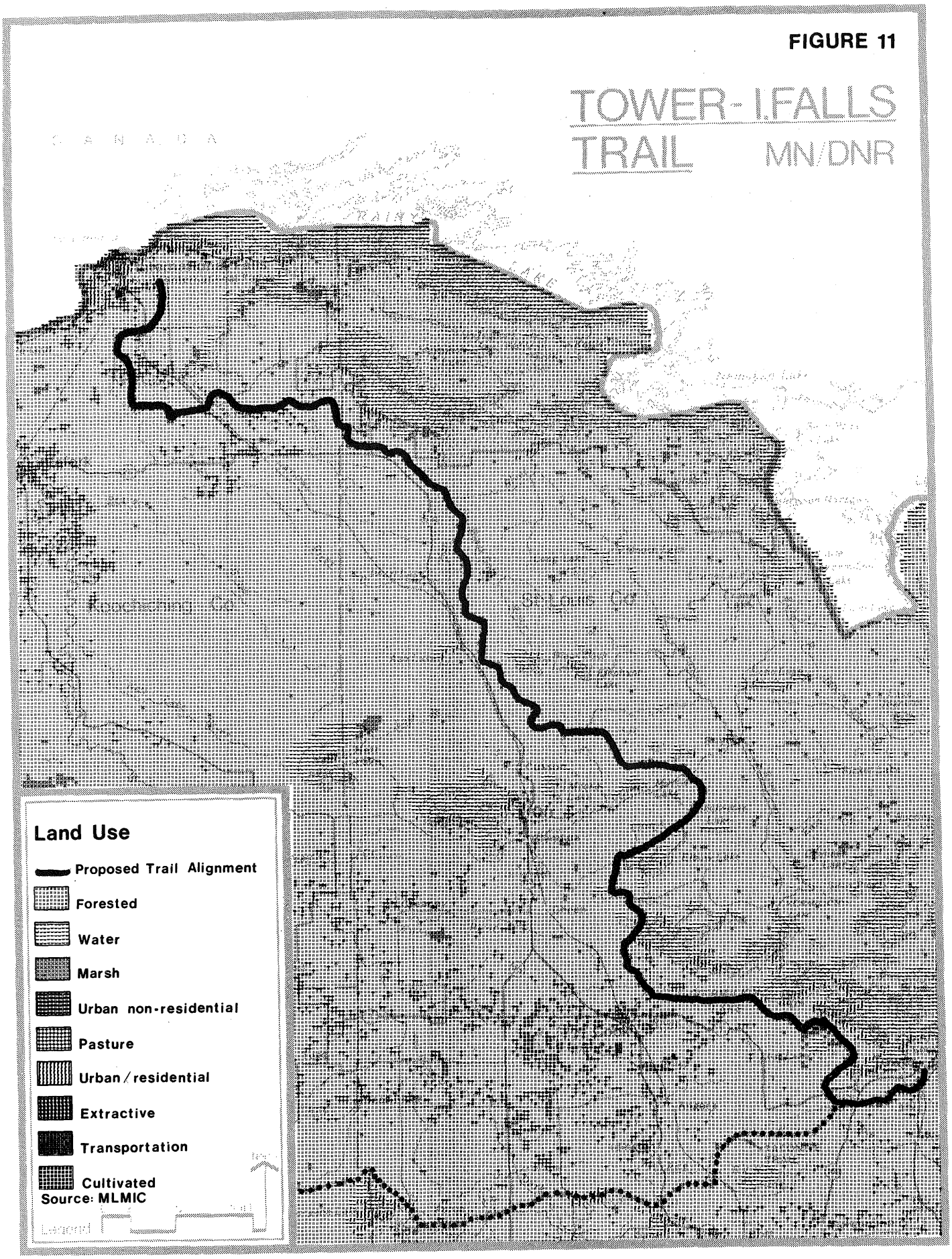
	Koochiching	St. Louis	Total
Forested	1,736,600	3,568,000	5,304,600
Cultivated	17,960	79,840	97,800
Pasture and Open	86,000	182,440	268,440
Water	31,360	352,600	383,960
Marsh	147,640	48,640	196,280
Urban	8,720	101,800	110,520
Extractive	160	44,960	45,120
Transportation	560	4,160	4,720
TOTAL	2,029,000	4,382,440	6,411,440

Source: MLMIC

Eighty-three percent of the land in the two counties is forested and constitutes the largest type of land use followed by water and marsh (see figure 11).

Most of the farming activity in the area is near Orr and Littlefork. The densest concentration of farms is within 12 miles of Littlefork with over 120 farms in the area. Another cluster of 69 farms is located south and west of Orr. The remainder of the farms are scattered throughout the area long major roadways.

FIGURE 11


TOWER-I.FALLS
TRAIL
MN/DNR
CANADA
Land Use
Proposed Trail Alignment
Forested
Water
Marsh
Urban non-residential
Pasture
Urban / residential
Extractive
Transportation
Cultivated
Source: MLMIC

The most extensive form of development in the area is seasonal and year-round dwellings. These can be divided as a ribbon of development lying along major roadways throughout the area, concentrations in close proximity to cities and the larger lakes.

Commercial development is also located along major highways, large bodies of water and municipalities. Resorts and lodges are the most prominent commercial development, followed by retail businesses.

Forest and forest related products form the only major industry in the area. There are 12 or more sawmills in the area and extensive logging takes place throughout the trail area. Boise Cascade Corporation's paper and wood chip mills are the major industry in the area.

Relationship to Other Recreation Areas

Region 3 (see Figure 12) offers a number of state-owned recreation facilities including: 16 state parks, 22 state forests, four state trails, 12 historic sites, 5 canoe and boating routes, 559 miles of ski touring trails, and 1,800 miles of snowmobile trails.

In the study area, a number of publicly- and privately-owned recreation facilities offer a wide variety of activities to the visitor of the trail. Following is an inventory of existing outdoor recreation facilities derived from the Department of Natural Resources' - Statewide Comprehensive Outdoor Recreation Plan (SCORP) inventory. The inventory has been summarized and broken down into four recreational categories.

The planning area has a combined total of 18 wayside rests and picnic grounds (see Figure 13). Eleven wayside rests are found along major highways in the area. Picnic grounds total seven and are located in the vicinities of the South Shore of Kabetogama Lake and also near Crane Lake and the rivers of Echo, Sioux and Vermilion. The sites are in federal, state and private ownership.

A second category of recreational facility includes campgrounds, public access areas and swimming beaches. The trail study area has a total of 83 such facilities consisting of 34 campgrounds, 38 public access areas and eleven combination campground/public access sites (see Figure 13). These facilities are scattered along the major waterways of the area. The water courses include lakes Vermilion, Pelican, Crane, Kabetogama and Rainy, also the rivers of Vermilion, Ash and Big Fork. There are, of course, several sites located on other water courses.

A third category identified by SCORP for their recreational importance and multi-use attributes are forest lands and wildlife management areas. The area has eleven individual forests and one wildlife management area. These areas encompass roughly two thirds of the land area near the trail (see Figure 14). The St. Louis County portion of the trail is almost totally within forest designated lands from the Southern township line of 61 north to the Canadian border. The Superior National Forest and Kabetogama State Forest are the two largest forest areas. The Koochiching County segment is not as extensively covered with designated forest lands. Koochiching County has forest lands located along the western, southwest and southern boundaries of the county. The Koochiching State Forest is the largest forest land holding in the county.

FIGURE 12

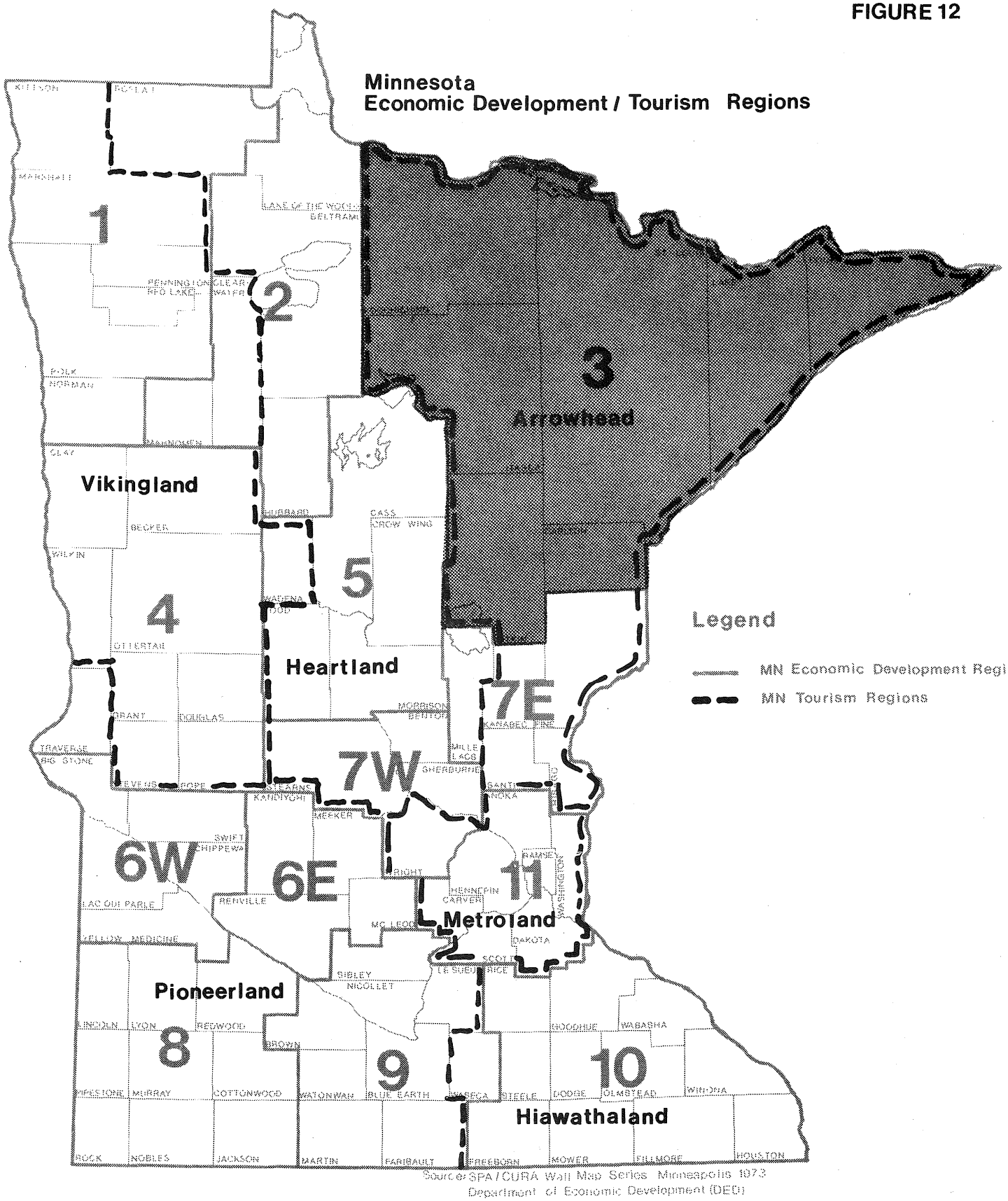

Minnesota
Economic Development / Tourism Regions
1
2
3
Arrowhead
Vikingland
4
5
Heartland
7E
7W
6W
6E
11
Metroland
Pioneerland
8
9
10
Hiawathaland
Legend
MN Economic Development Regio
MN Tourism Regions
Source: SPA / CURA Wall Map Series Minneapolis 1973
Department of Economic Development (DED)

FIGURE 13

TOWER-I.FALLS TRAIL MN/DNR

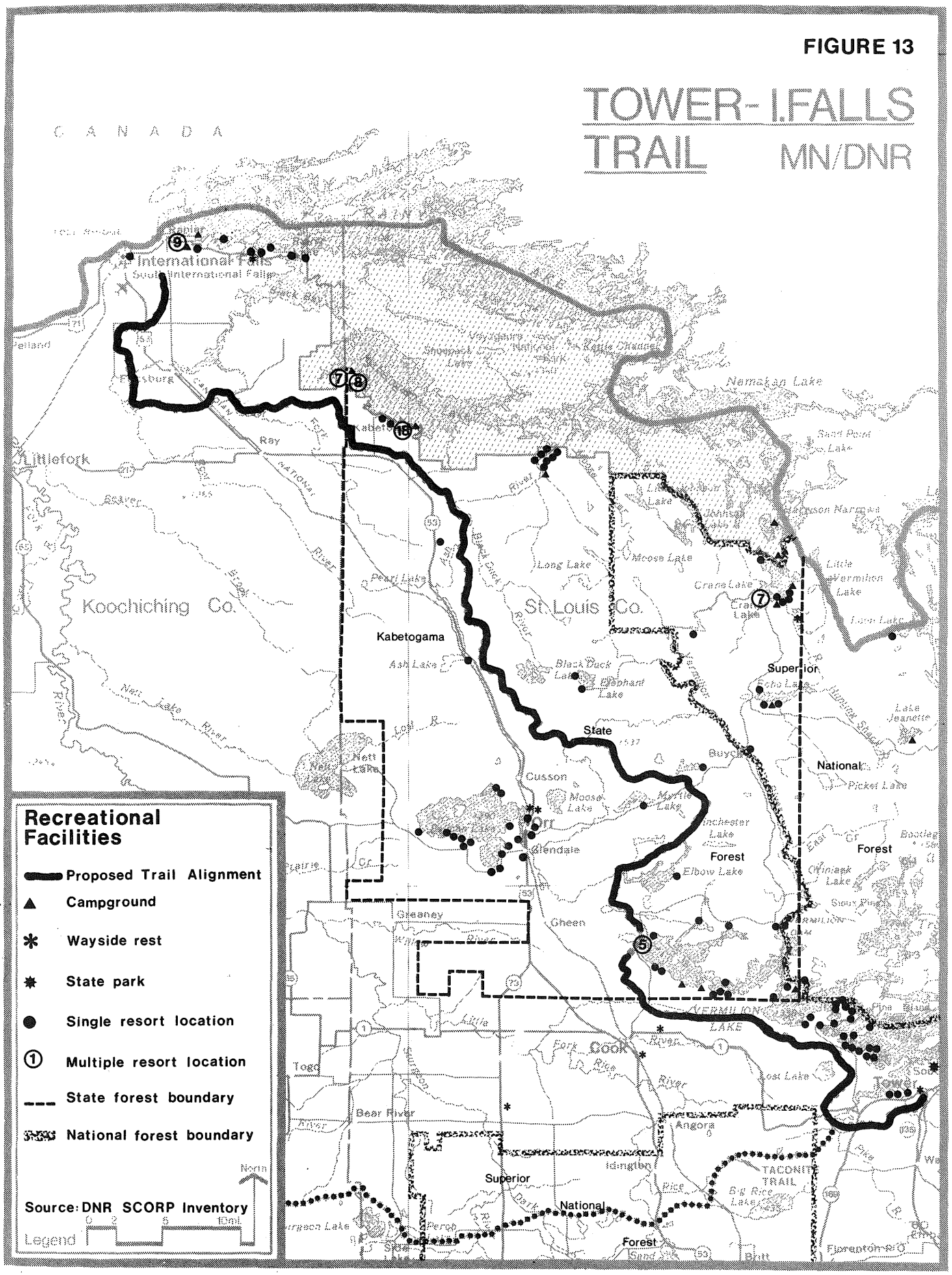
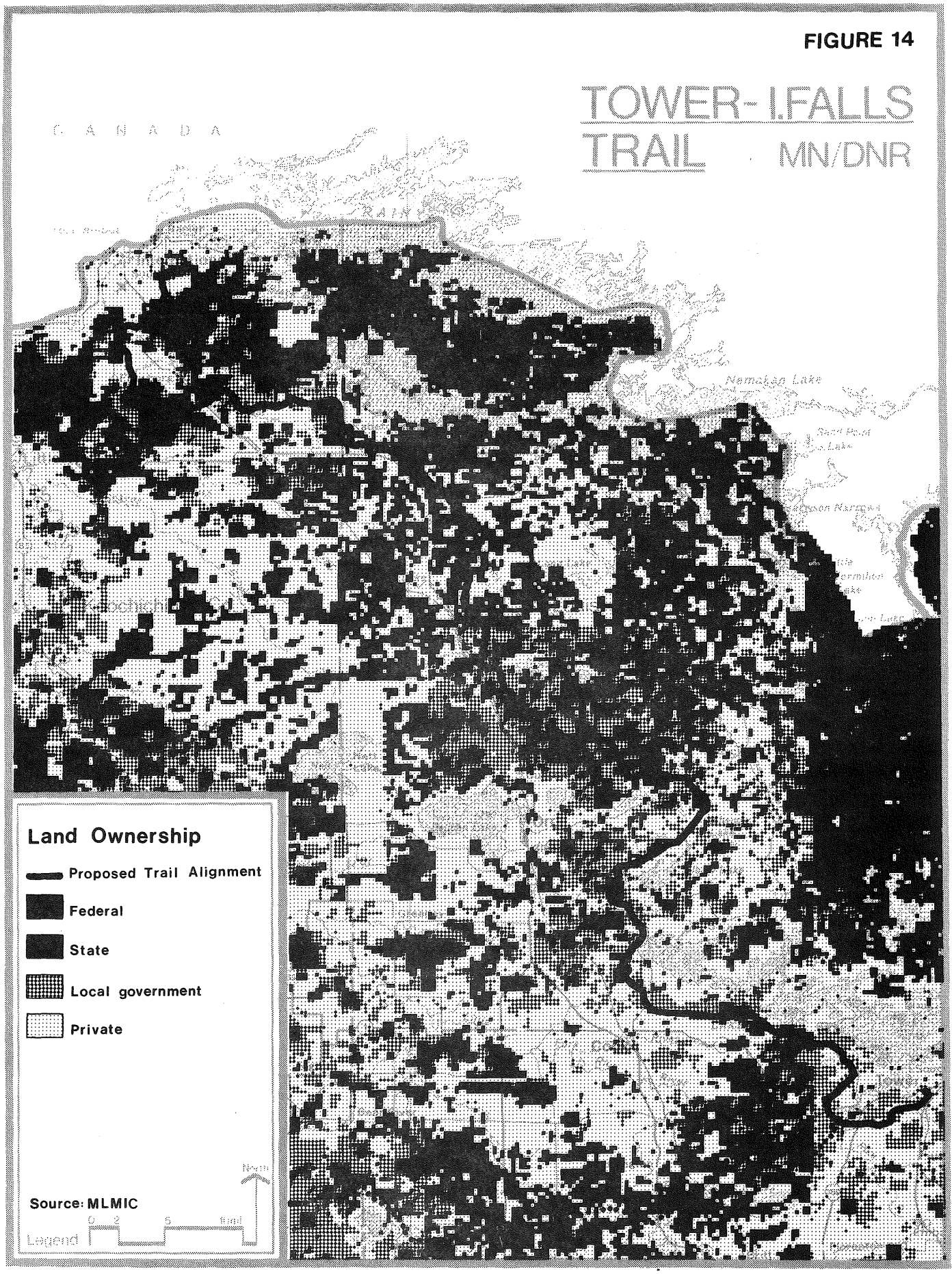


FIGURE 14


TOWER-I.FALLS TRAIL
MN/DNR
CANADA
Namakan Lake
Land Ownership
Proposed Trail Alignment
Federal
State
Local government
Private
Source: MLMIC
North
Legend
0 2 6 Miles

The ownership and administration of forest lands and management areas is contained under five government levels and one private company. The six different ownership classifications are federal, state, county, municipal, district and private sector (see Figure 14). These forest lands are multi-use in nature but are primarily managed for timber and pulp production and only secondary for public outdoor recreation.

The fourth and largest recreational facility category in the trail area is resorts, lodges and golf courses. This category contains 78 resorts, eight lodges, 16 resort/lodges and two golf courses (see Figure 13). The resorts and lodges are concentrated along several major waterways including the major lakes of Rainy, Vermilion, Kabetogama, Namakan, and Pelican. Other resorts are scattered on smaller lakes and rivers. Services such as marinas, public accesses, playgrounds and swimming beaches are offered by these establishments.

Along with the above mentioned inventory, a general description of major federal and state facilities has been included as follows which will have a significant impact on the trail.

Voyageurs National Park is a 219,000 acre park managed by the National Park Service within the U.S. Department of the Interior.

Of the 219,000 acres Voyageurs encompasses, 80,300 are water. The main body of the park is located on the Kabetogama Peninsula which is heavily forested. The park offers visitors a chance to view superlative lake country scenery, wildlife, rock formations and other significant features.

As of this date, Voyageurs is relatively undeveloped. When developed, it will offer the visitor opportunities for backpacking, hiking, camping, boating and other outdoor related activities. An extensive system of loop trails is being planned for skiers and hikers. At present snowmobiling is permitted on Rainy and Kabetogama lakes but these routes may change after a wilderness study for the park is completed. Boating, fishing and canoeing will probably be the major activities attracting visitors to the park.

Voyageurs National Park is of significance to the trail because of the projected number of visitors expected at the park. Approximately 600,000 people are expected to visit the park annually by 1990. Although most of these will visit only the park, some may use the trail. Also, this large amount of visitors will cause significant economic development throughout the area.

The Minnesota Department of Transportation (Mn/DOT) is developing a bike route along trunk highway 11 which will allow visitors to reach the park by bicycle. Although funding is doubtful, Mn/DOT is giving consideration to upgrading U.S. 53 to a four-lane divided highway with shoulders between International Falls and Virginia. If this project is implemented, use levels would likely be consistent with bicycling safety standards. Mn/DOT has already developed an on-shoulders bikeway between Virginia and Cook.

Superior National Forest borders Voyageurs National Park on the east and encompasses more than 3,000,000 acres of land and over 2,000 lakes. The forest is managed for multiple-use by the U.S. Department of Agriculture and the U.S. Forest Service. The forest is managed for outdoor recreation, range, timber, watershed and fish and wildlife purposes. The Forest has a number of campgrounds and other recreation facilities available to the public in addition to the 1.2 million acre Boundary Waters Canoe Area Wilderness.

The Boundary Waters Canoe Area Wilderness (BWCAW) is the second largest unit of the National Wilderness Preservation System and its only canoe wilderness. The BWCAW lies within the Superior National Forest and is managed in a manner which is meant to "leave it unimpaired for future use and enjoyment."

The area is a major attraction for people who like to canoe and hike in a wilderness setting.

Both the Superior National Forest and BWCAW are also major attractions for visitors to northeastern Minnesota. These facilities may have a significant impact on use of the trail because the BWCAW and Voyageurs National Park will draw most of the hikers and backpackers who visit this region.

Kabetogama State Forest encompasses 697,000 acres in northern St. Louis and Koochiching counties. The majority of the trail will be located in this forest.

Management of Kabetogama State Forest is also based on the multiple-use concept and the management program includes timber, wildlife, soils, watersheds and recreation. Four campgrounds have been developed in the forest along with snowmobile and ski touring trails. The four campgrounds are: Ash River, Hinsdale Island, Wakemup and Woodenfrog and contain a combined total of 100 campsites, nine picnic sites, two swimming beaches, and four boat accesses. Fifty-four miles of snowmobile trail and eighteen miles of ski touring trail currently exist.

Kabetogama State Forest is significant to the trail because management of the trail area will be handled for the most part by DNR District Forester.

User Demand

The following table (Table 5) shows estimates of the number of users who participate in various trail activities in Koochicning and St. Louis counties, Region 3 and the rest of the state. These figures are based on a survey of trail users which is part of the State Comprehensive Outdoor Recreation Plan (SCORP) of 1980.

TABLE 5

Number of Participants by County, Region and State

Activity	St. Louis	Koochiching	Region 3	State
Hiking	6,513	534	9,909	273,397
Horseback Riding	4,342	356	6,606	88,211
Bicycling	32,565	2,670	49,545	707,664
Snowmobiling	78,156	6,408	115,900	921,800
Cross Country Skiing	32,565	2,670	48,400	500,500

Table 6 shows the number of miles of existing trails, by type, in Koochiching and St. Louis counties, Region 3 and the rest of the state. These figures are based on SCORP inventory and DNR-Parks and Recreation data.

TABLE 6 - EXISTING TRAIL MILEAGES

Trails	St. Louis	Koochiching	Region 3	State
Hiking	239	12	791	2,841
Snowmobile	334	230	2,310	7,546
Horseback	36	---	171	1,135
Bicycle	16	3	24	565
Cross Country	225	---	426	1,277

In 1974, a comprehensive sub-regional plan for the Voyageur Planning Area was prepared by the Arrowhead Regional Development Commission. (Figure 1, shows the approximate area covered by this study.) In this technical report, projections were made indicating the number of miles of hiking and snowmobile trails necessary to meet future demand in the Voyageur Planning Area.

Data available at that time indicated that the study area contained some 20 miles of existing hiking trail, with half the mileage located in the Kabetogama State Forest. Private trails, as well as trails developed by individual hikers, were not included. Five additional miles of designated hiking trails were projected to be required by 1975, with an additional 6 miles needed by 1980, and 20 miles required by 1990. In all, 51 miles of hiking trails would be needed by 1990 based on these projections. 1978 data for the Voyageur Planning Area indicates that the area contains 95 miles of hiking trail, more than was projected to be needed to meet user needs. Voyageurs National Park will add additional miles to this total when developed.

Snowmobiling was the second activity for which projected needs were calculated. At the time the sub-regional plan was written, the planning area contained 178 miles of snowmobile trail. Future trail facility needs projected at the time of this study for the planning area indicated that the area would require 185 miles by 1975, 223 miles by 1980, and 298 miles by 1990. During the fifteen year period, a total of 113 additional trail miles were projected to be required. (No projections were made for other trail uses.)

1978 data for the Voyageur Planning Area shows that the area today contains about 187 miles of snowmobile trail. This mileage was sufficient to meet projected demand for 1975 but will be deficient by 36 miles by 1980 and by 111 miles by 1990.

Table 7 shows snowmobile registration figures by county for the past eight years. The counties shown were chosen because they are expected to be the counties where the majority of users will come from.

TABLE 7

Snowmobile Registration Figures

	1973	1974	1975	1976	1977	1978
Koochiching	3,288	3,258	3,125	2,960	2,798	2,659
St. Louis	23,412	25,859	25,584	25,019	24,035	22,157
Itasca	5,719	5,554	5,791	5,936	5,937	5,900
Lake	2,645	2,638	2,800	2,777	2,692	2,481
Cook	869	831	885	892	879	851

Table 7 shows that the number of snowmobile registrations for the five counties has remained relatively stable since 1973. Whether this trend will continue cannot be predicted at this time. However, a 1978 survey conducted by the Minnesota DNR - Office of Planning found that nearly 70% of Minnesota's snowmobilers expressed a resounding desire for more trails. Based on this survey, Minnesota snowmobilers still desire more trails.

Cross country skiers were also surveyed in 1978 and it was found that over 80% of the skiers felt that additional trails and facilities were needed.

Along with finding out whether skiers and snowmobilers desired more trails, the survey also asked a series of questions regarding actual trail design. The responses to these questions appear in Table 8.

TABLE 8

Trail Design Choices

	Cross Country Skiers Percent	Snowmobilers Percent
Resource Characteristics		
Offer a chance to view wildlife	95.6	89.6
Located in wilderness-like area	86.3	79.9
Pass along a river	86.1	72.7
Pass mostly through woods	84.2	75.3
Pass along a lake shore	73.8	64.0
Pass through hilly terrain	67.7	76.9

TABLE 8 Cont.

	Cross Country Skiers Percent	Snowmobilers Percent
Design and Management		
Return to starting point	90.2	78.9
Pass through open areas where the trail can be left	69.2	69.5
Develop rest shelters	60.9	57.2
Be marked by frequent signs	60.3	83.3
Have warming huts and toilets	58.5	59.7
Provide safety patrol	57.1	73.4
Connect recreation areas	56.3	72.0
Contain groomed trail	55.2	65.3
Have tent campsites along trail	27.9	19.3
Have cabins for overnight stays	27.7	30.8
No signs, but self-guiding map	27.0	15.2
Require trail breaking	19.8	19.0
Conflicts		
Provide separate paths for different uses	43.4	62.8
Allow all types of uses	8.8	22.2

Tables 9 and 10 show the desired trail types and lengths and the percentage of respondents who would not return to a trail if it was being used by other recreationists.

TABLE 9

Desired Trail Type and Length

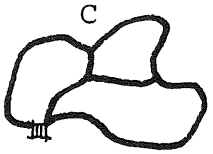
Trail Type	A	B	C
			
		Cross-Country Skiers Percent	Snowmobilers Percent
Type A		5.0	3.1
Type B		18.4	16.4
Type C		76.6	80.4
Trail Length			
Mean		10.5 miles	32.4 miles
Median		9.5 miles	25.3 miles
Distance from Home			
Median		20.1 miles	20.3 miles

TABLE 10

Percentage of respondents who would not return to a trail if it was being used by other recreationists

Recreationists Using the Trail	Respondents: Cross-Country Skiers Percent	Respondents: Snowmobilers Percent
Cross-Country Skier	1.9	32.9
Snowshoer	12.0	29.9
Dog Sledders	43.2	3.3
Four-wheel Drives	93.2	39.3
Snowmobilers	84.2	16.8

From the tables it can be seen that there are few differences between the two groups in regard to trail needs and preferences (Table 8).

Network trails were desired by over three quarters of the respondents from each group (Table 9). The ideal trail for cross country skiers was thought to be ten miles in length. Snowmobilers wanted trails of around thirty miles in length (Table 9).

Snowmobilers for the most part expressed a tolerance for other types of trail users; cross country skiers saw themselves as compatible only with other skiers and snowshoers (Table 10).

Concluding, the Department of Natural Resources recommends that the Tower to International Falls Trail be designated for snowmobile use. Only portions of the trail will be open to hikers and horse riders. Ski touring and snowshoeing will be permitted but not promoted.

The reasons for this designation are as follows:

1. At public information meetings held in February and March, 1980, the majority of interest concerning the trail came from snowmobilers. In fact, no interest was expressed by cross-country skiers, and only three of 55 people were interested in a horse trail. No interest was expressed by hikers.

2. A snowmobile trail can be developed at far less cost than a year-round trail. This is because of the large areas of low ground found in the study area which cannot be avoided. If all portions of the trail were developed for summer use, large sums of money for acquisition and development would have to be expanded to make a high land route. Demand for a summer use trail in this area would not justify this expense at this time. It should also be noted that Voyageurs National Park and the Boundary Waters Canoe Area Wilderness will provide additional and possibly more desirable hiking and cross country skiing areas.

3. The majority of research indicates that ski touring and snowmobiling are not compatible and that even separate adjacent treadways will not mitigate this conflict.

4. Based on the Voyageurs Planning Area Study, there appears to be a deficiency of snowmobile trails versus hiking trails in the area. The 1978 SCORP survey also points out that even though snowmobile registrations have not increased in recent years, there is still a strong desire for more snowmobile trails.

5. Even though research indicates that the majority of users prefer network trails, public input at information meetings indicates that there is a strong desire in the study area for a connection from Tower to International Falls. Also, the Tower to International Falls Trail will connect with three separate state forest systems and a grant-in-aid system. By providing this connection, the snowmobiler will have the choice of enjoying a network system, point-to-point trail or mixture of the two types.

6. If hiking demand increases for this trail in coming years, the plan allows for upgrading to year-round use for the trail's entire length.

Projected Use

Potential use of the trail by snowmobilers should be considered although this is extremely difficult to estimate. Use by hikers and horseback riders is expected to be minimal although scattered areas of the trail will be used by local residents. The majority of the hikers will probably be hunters and fishermen using the trail for access. Use by cross country skiers is also expected to be minimal because of this group's preference for network trail and their strong preference to be able to ski without encountering snowmobiles.

The following paragraphs explain the methodology used to try and predict the number of potential snowmobile users for the International Falls to Tower Trail.

The data from the State Comprehensive Outdoor Recreation Plan (SCORP, 1980) snowmobile survey shows that the average snowmobiler in Development Region 3 will travel 12.5 miles to use a trail for a short outing. He will travel 23.5 miles to use a trail made for full-day outings. No other region's snowmobilers will travel far enough to reach the International Falls to Tower Trail area, given the availability of the average trail.

The size of the potential user group for a trail between International Falls and Tower was calculated as follows: two bands, one corresponding to the 12.5 mile distance from the trail; the other to the 23.5 mile distance, were drawn. The towns on the map were recorded by band. The remaining Region 3 towns were also noted. Each town's population was obtained from the 1978 Rand-McNally Commercial Marketing Guide.

The total population within each band was calculated along with the total population of the region. The population within the bands, divided by the total population of the region, resulted in the percentage of the population within the bands. This was necessary because the mapped towns in the region accounted for only 60% of the Region 3 population.

To get a true population in each band, each percentage was multiplied against the 1975, Region 3, population figures (Population Estimates for Minnesota Counties 1977) to yield an estimate within each band.

The population figure in each band was multiplied by the percentage of the regional population that snowmobiles (SCORP Surveys). This product in turn was multiplied by the percentage of snowmobilers wanting a new trail. Finally, the number of snowmobilers wanting a short day use trail was applied to the 12.5 mile band, and the percent wanting a full day trail to the 23.5 mile band.

The results show:

1. 3,904 snowmobilers in Region 3, in the area of the International Falls to Tower Trail, want a trail made specifically for short outings;

2. 13,587 snowmobilers in Region 3, in the International Falls to Tower Trail, want a trail made specifically for a full day outing (the calculations used to arrive at the figures mentioned above can be seen in Table 11); and

3. Region 3, in the area of the International Falls to Tower Trail, provides a ready clientele of 17,500 snowmobilers who would probably make regular use of a trail like the International Falls to Tower Trail.

In addition, since the trail is being developed to make use of the scenic attractiveness of the area and will connect to existing network trail systems in the area, the trail may draw users from a greater distance. Nevertheless, the 17,500 user figure in the immediate area will form the majority of the trail users.

No attempt has been made to calculate use by summer user groups due to insufficient data. Cross-country ski use could be calculated using the same methodology and the SCORP surveys. This was not done because the incompatibility of the two groups would probably cause use by this group to be minimal.

TABLE 11

Total Population - Mapped Towns Region 3	208,881
Total Population - Mapped Towns Within 12.5 mile band (short day)	19,968
% of True Population within 12.5 miles	10%
10% of 322,726 (Actual Region 3 population) = True Population within 12.5 miles	32,273
True Population within 12.5 miles	32,273
x% of population that snowmobiles (36%)	11,618
x% of snowmobilers wanting new trail (80%)	9,294
x% of snowmobilers wanting short day trail (42%)	3,904
Total Population - Mapped Towns	208,881
Total Population - within 23.5 miles (full day)	50,891
% of True Population within 23.5 miles	24%
24% of 322,726 (Region 3 Population) = (True Population within 23.5 mile band)	78,628
True Population within 23.5 miles	78,628
x% of population that snowmobiles (36%)	28,306
x% of snowmobilers wanting new trail (80%)	22,645
x% of snowmobilers wanting full day trail (60%)	13,587

the plan

THE PLAN

The following pages describe the acquisition, development and maintenance procedures for the Tower to International Falls Trail. The trail will be developed primarily for snowmobiling, with hiking and horseback riding being secondary uses to be accommodated only on specific segments. The major topics covered in the plan are: Trail Route Description, Land Acquisition, Corridor Development Specifications, Trail Maintenance and Implementation.

The solid and dotted line on the trail route maps indicates the main trail route which will be developed primarily for snowmobiles. In addition, the maps show areas that may be developed along the main trail route for hiking and horseback riding and also suggested spur routes to various cities.

Only where sufficient high ground exists will segments of the trail be opened to summer use. The entire route will not be developed for summer use until significant demand is demonstrated by hikers and horseback riders who wish to travel from Tower to International Falls.

TRAIL ROUTE DESCRIPTION

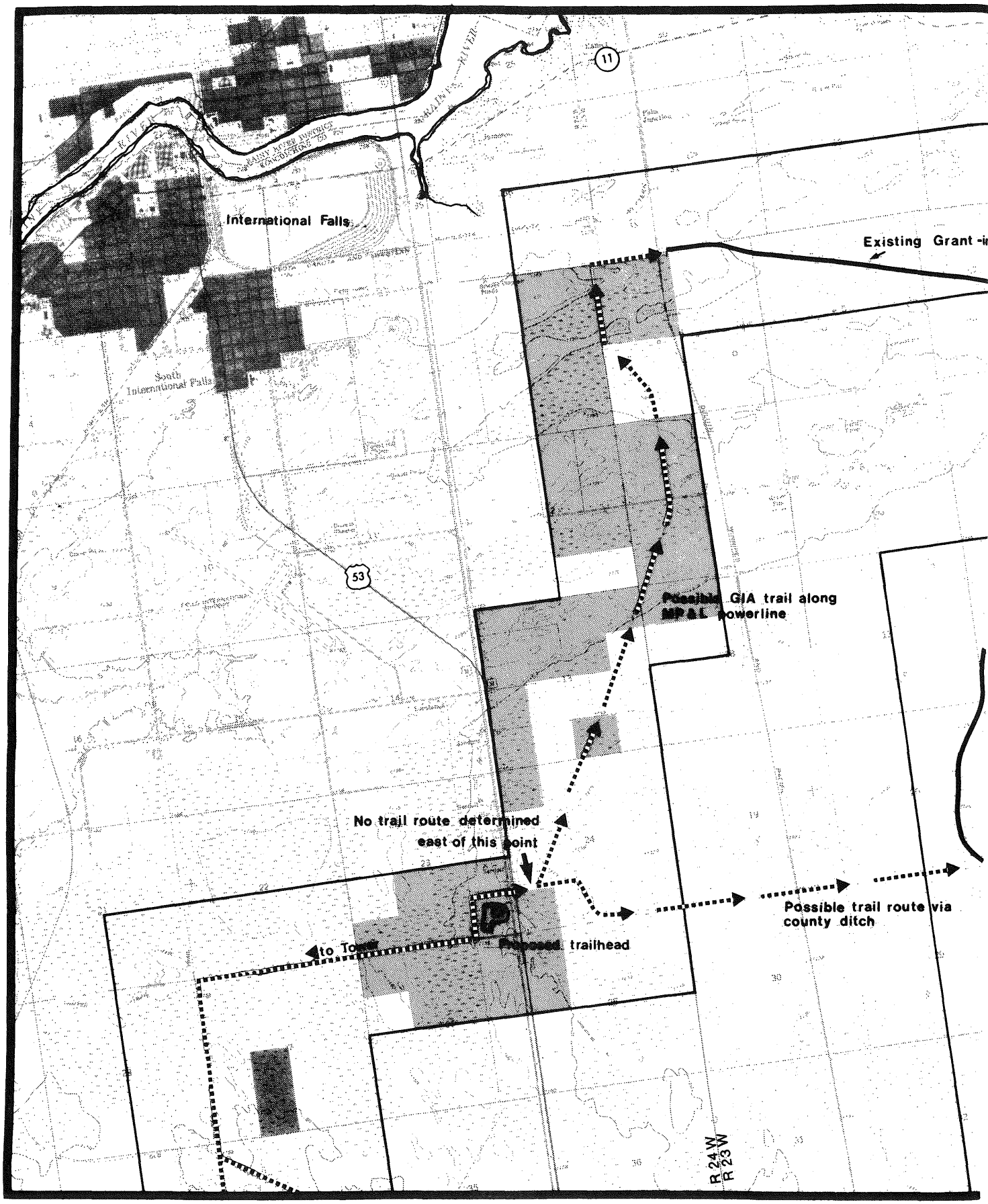
The following pages and maps describe the alignments and uses proposed for various portions of the International Falls to Tower Trail. The descriptions are by segments to allow the reader an opportunity to view the maps after reading the description. Waysides, parking areas and bridges are also shown on the maps and will be developed according to specifications described later in the plan.

International Falls Area Trail Segment

Plate 1, pages 47-48 shows the proposed trail starting point along U.S. Highway 53. From this point east, no trail route has been determined at this time. Large amounts of private land and the Duluth Winnipeg and Pacific (DWP) Railroad tracks limit the potential trail routes that could be utilized to reach the existing grants-in-aid trail.

One route which would have followed the new Minnesota Power and Light (MP&L) powerline was investigated and found to be infeasible at this time. All affected landowners along the route were contacted by letter or phone. Some were in favor and some were not, so the idea has been dropped for the present time. This route will be investigated further when development commences to see if a suitable connection can be found.

Another possibility investigated was to follow the county ditch east from the porposed trail starting point and cross the DWP railroad tracks where the ditch crosses. This would have involved an undergrade or overgrade crossing since DWP will not give any new on-grade crossing permits for trails unless it is at an existing public crossing. The undergrade (culvert) type crossing is not feasible due to a high water table and an overgrade crossing is not feasible due to the costs involved.


International Falls
South International Falls
Existing Grant-in
Possible GIA trail along MP&L powerline
No trail route determined east of this point
Possible trail route via county ditch
to Town
Proposed trailhead
R.24W
R.23W
53
11

TOWER-I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

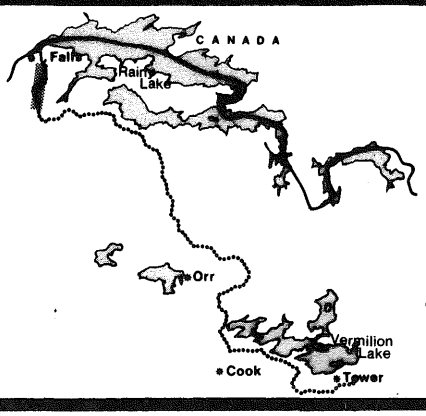


PLATE # 1 of 9

Because of the problems encountered with the crossing of this railroad, the Department may seek legislation to obtain a crossing, or condemnation of a crossing easement in this area.

If these measures fail, it is recommended that the trails development section work with the International Falls snowmobile club to determine a feasible trail alignment to connect to town and the existing grants-in-aid trail system. It may be feasible for the club to obtain permits along the new MP&L powerline since most landowners contacted said they might be willing to allow a grants-in-aid trial but did not want to grant permanent easements.

From the proposed starting point at the International Falls Jaycees trap range and snowmobile race track, the trail will follow along the north and west property lines to the county ditch grade. It will then follow the ditch grade west until it intersects another ditch grade and turns south. From this point south, the trail will follow alternative 2 shown on Plate 2.

Use of this segment of the trail (Plate 1) will be limited to snowmobile use due to the large amounts of low ground which it must traverse. Should demand for summer use be shown in coming years, this route could be upgraded to a year-round trail or a more suitable higher land route could be investigated.

The proposed trail access facility at U.S. 53 would be located on property owned by the International Falls Jaycees. The DNR would like to lease the land needed to construct a parking lot, toilets and a shelter.

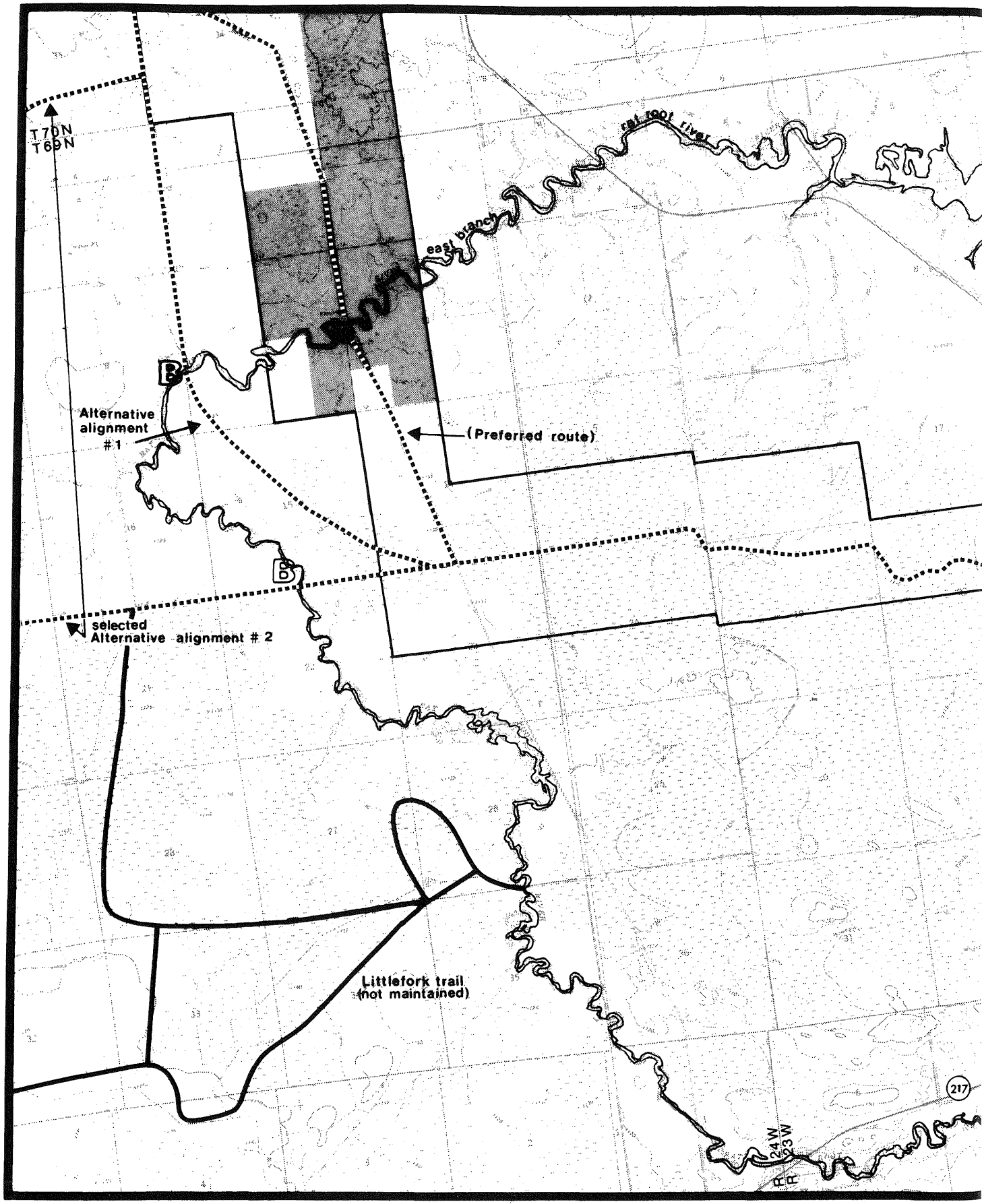
North Galvin Line to East Branch Rat Root River

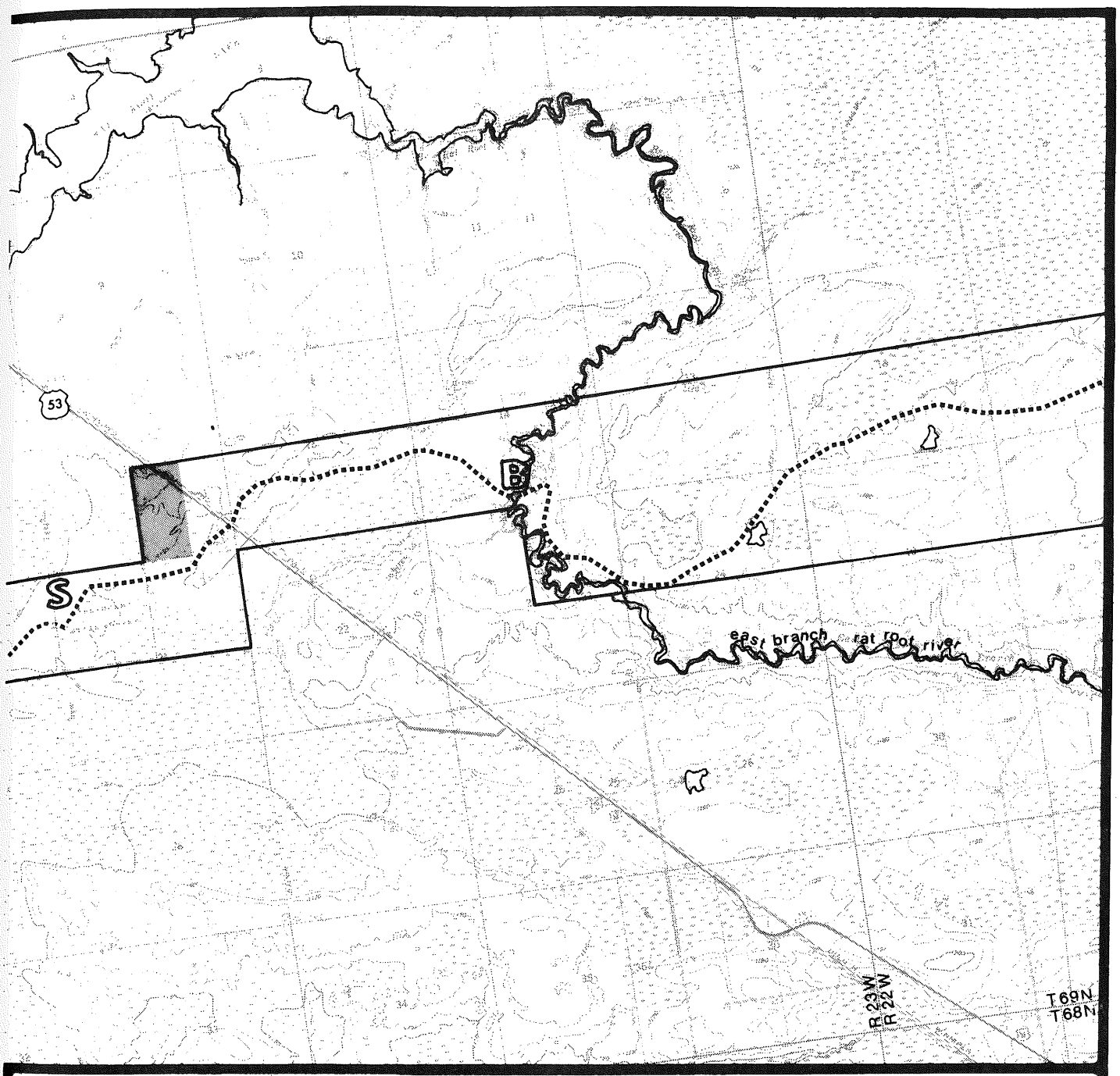
Plate 2 shows three trail alternatives for this segment. The eastern route which uses the Galvin Line was the preferred route but has been eliminated because the DNR could not obtain easements from Boise Cascade Corporation.

Alternative 1 has also been eliminated due to problems with adjacent landowners.

The third route, (Alternative 2) which is the one selected, involves a route which goes west and south of the county ditch shown on Plate 1, to avoid private lands. The trail would then turn east, cross the Rat Root River where a bridge would have to be constructed, and then connect to the ditch grade which routes the trail east.

From the ditch grade, the trail will continue east utilizing state and county lands to U.S. 53. From U.S. 53 the trail will continue east, cross the Duluth Winnipeg and Pacific Railroad tracks at an existing crossing, and continue east to the East Branch of the Rat Root River (Plate 2).


T70N
T69N
east branch
Alternative alignment #1
(Preferred route)
selected Alternative alignment # 2
Littlefork trail (not maintained)
217
R24W
R23W



TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

PLATE # 2 of 9

This segment of trail will also be limited to snowmobile use. By using alternative 2, the Tower to International Falls Trail will connect to the Little Fork (State Forest) Snowmobile Trail.

The shelter area shown on Plate 2 will consist of a fire ringe and adirondack shelter. The shelter is to be located in a small state forest plantation.

East Branch Rat Root River to Ash River Trail

From the East Branch of the Rat Root River (Plate 3), the trail will continue east, staying south of Voyageurs National Park. At the Koochiching County line the trail will turn south staying close to the county line for approximately 3½ miles, where it will again turn east. Continuing east, the trail will cross the Kabetogama Road where it will turn southeast to the Ash River Trail. The area wildlife manager must be consulted prior to finalization of this trail segment to insure that deer habitat areas are avoided as much as possible.

Use of this segment of trail will be predominantly snowmobile, but portions will be suitable for limited hiking and horse use.

An adirondack shelter with a fire ring is proposed near the county line. The access area, Kabetogama Road, will include parking for 5-10 cars, a trash receptacle and pit toilets.

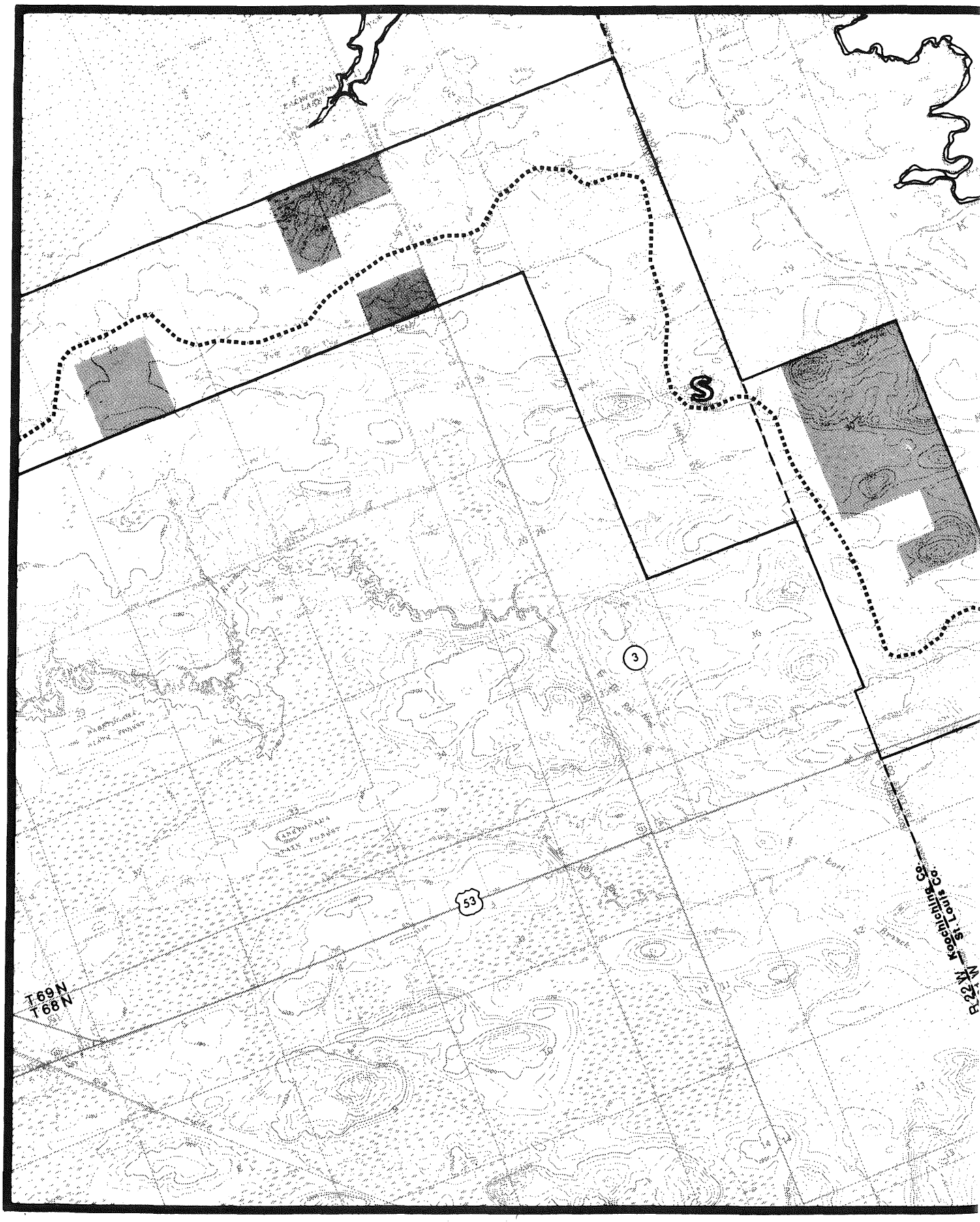
It should be mentioned here that trail routes were investigated also farther north during the planning process for this segment. These routes, however, were determined to be infeasible because of the width of the Rat Root River east of Ericsburg. Had there been a suitable crossing, a northern route would have been preferred.

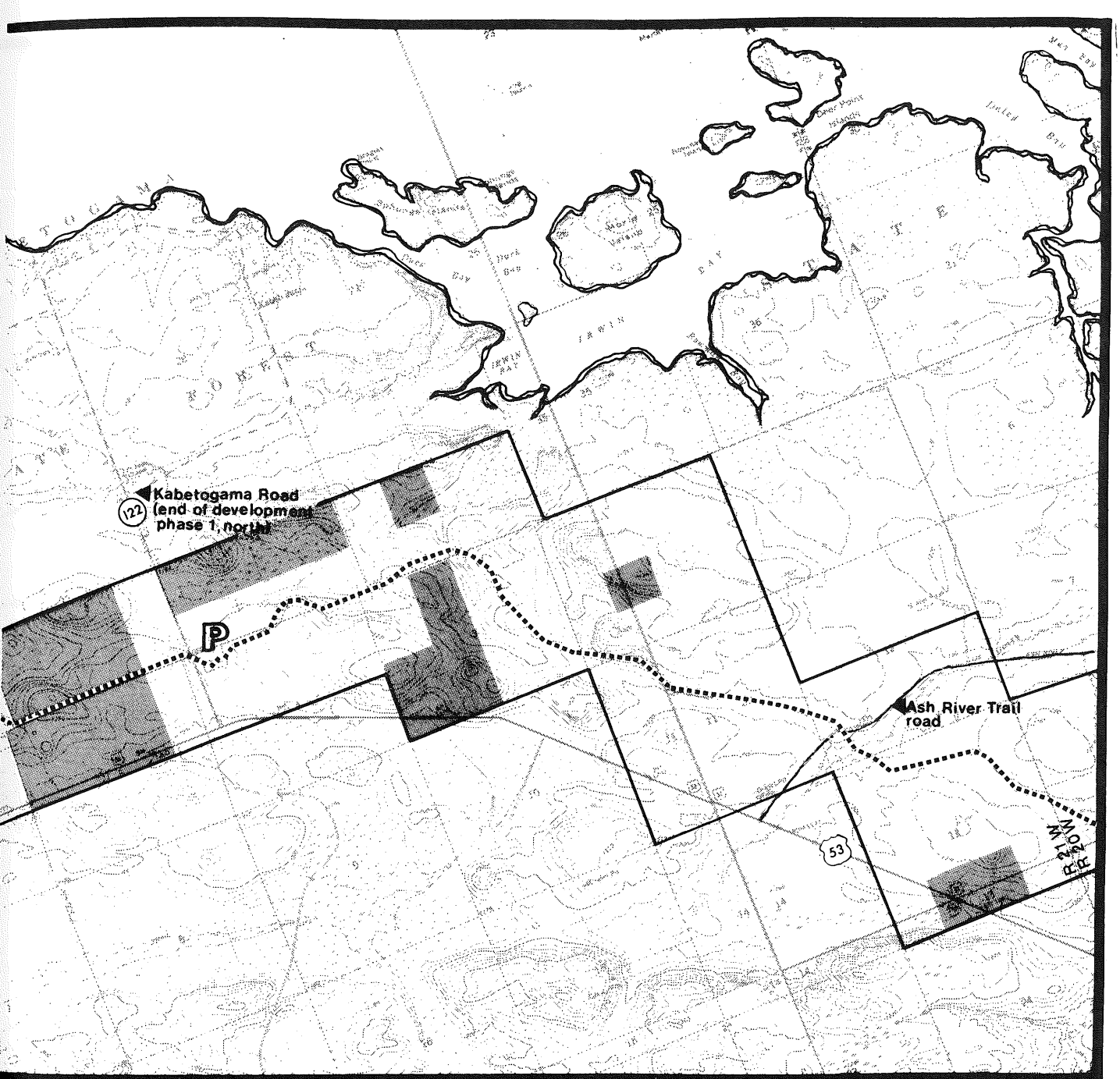
Ash River Trail to Ash Lake

From the Ash River Trail, the trail will proceed south along the Ash River (Plate 4). The trail will be routed very close to the Ash River Falls Ski Touring and Hiking Trail which is being developed at this time. Both trails have been routed close together to avoid private lands over which the DNR could not obtain easements. Special design considerations will have to be utilized to prevent conflicts between users. From the Ash River, the trail will proceed south to Ash Lake. As the on-the-ground alignment for this portion of the trail is being established, the area fisheries manager must be contacted. Special consideration will have to be given to trout streams and springs in this area. Bridges, instead of culverts, should be used and the trail should be routed away from the edges of rivers and streams.

Suggested uses for this portion of trail are snowmobiling, hiking and horseback riding.

The proposed shelter area will be designed similar to those previously mentioned and will be shared with users of the Ash River Falls Ski Trail. The proposed parking area east of Ash Lake will again be a small 5-10 car lot and be located along Highway 53. The spur trail to the Ash Lake State Forest Trail will cross TH 53 and the railroad at an existing crossing and connect via a gravel road.


S
3
53
T69N
T68N
R22W
St. Louis Co.
Koochiching Co.

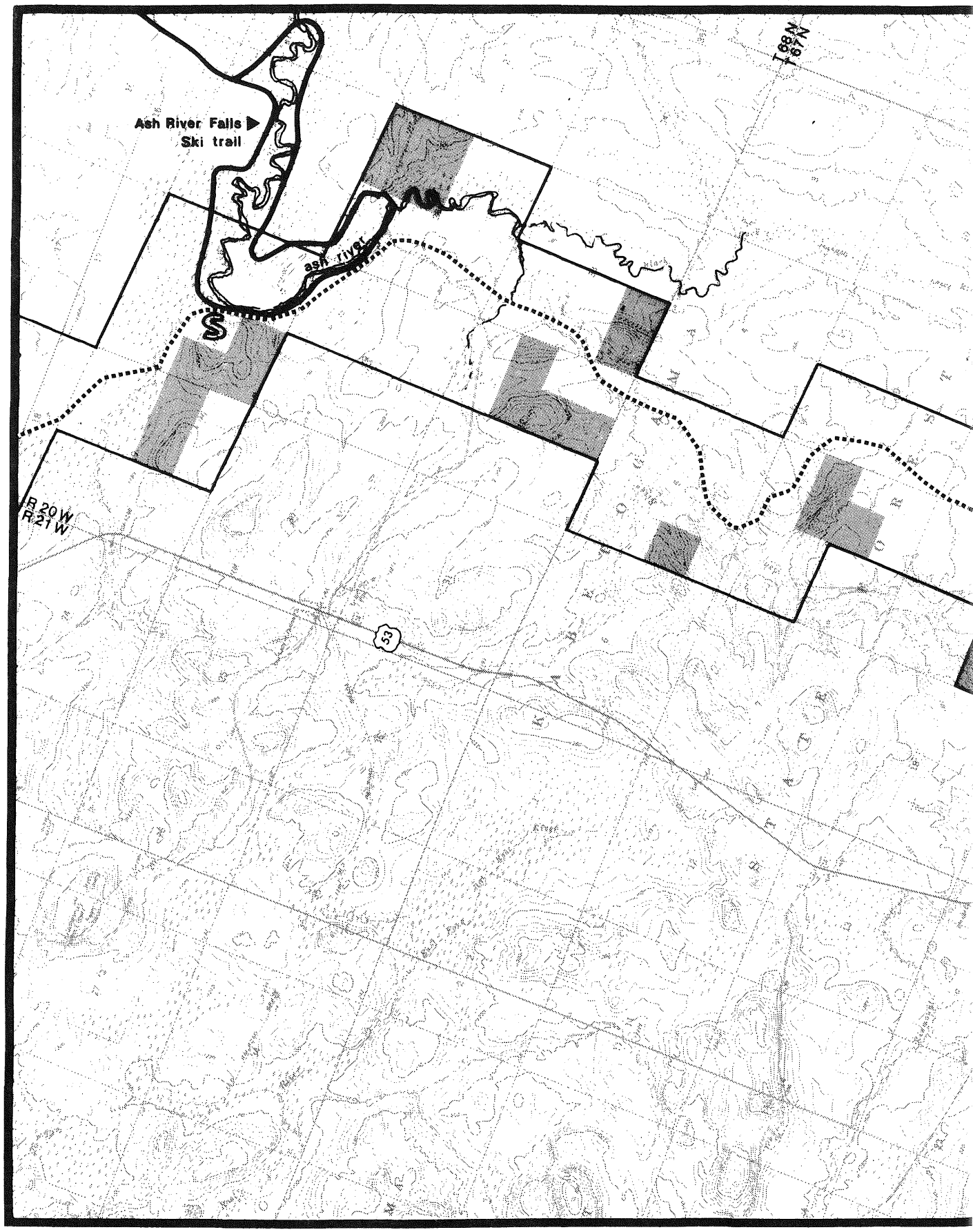


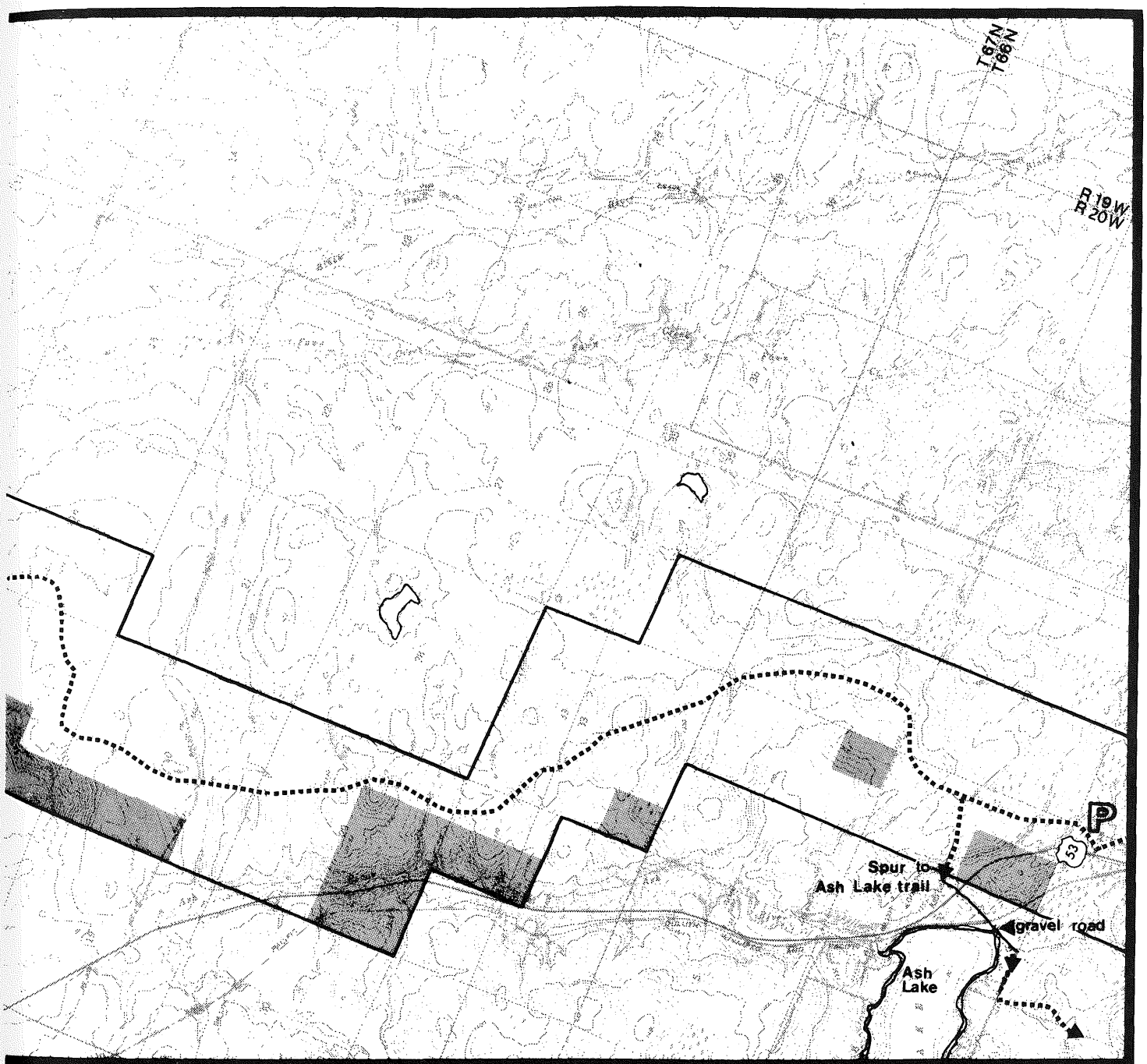
TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

PLATE # 3 of 9


Ash River Falls
Ski trail
ash river
T68N
T67N
R20W
R21W
53



TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

PLATE # 4 of 9

Ash Lake to Myrtle Lake Trail

From Ash Lake, the trail will proceed south and east toward Black Duck Lake (Plate 5).

From Black Duck Lake, the trail will proceed south and east to the Pelican River where it will connect to the existing Kabetogama state forest snowmobile trail. This existing trail is located on an abandoned logging railroad grade. It should be mentioned here that a route closer to Black Duck Lake was investigated and eliminated due to an existent deer habitat improvement project close by. The special considerations mentioned in the previous section concerning streams and rivers also apply for this section.

The shelter area will be located near a beaver pond.

Snowmobiling will be the primary use, but hiking and horseback use will also be feasible. The spur to Cusson, if developed, will be located on or next to the county road and will not have to cross the railroad.

Myrtle Lake to Elbow River

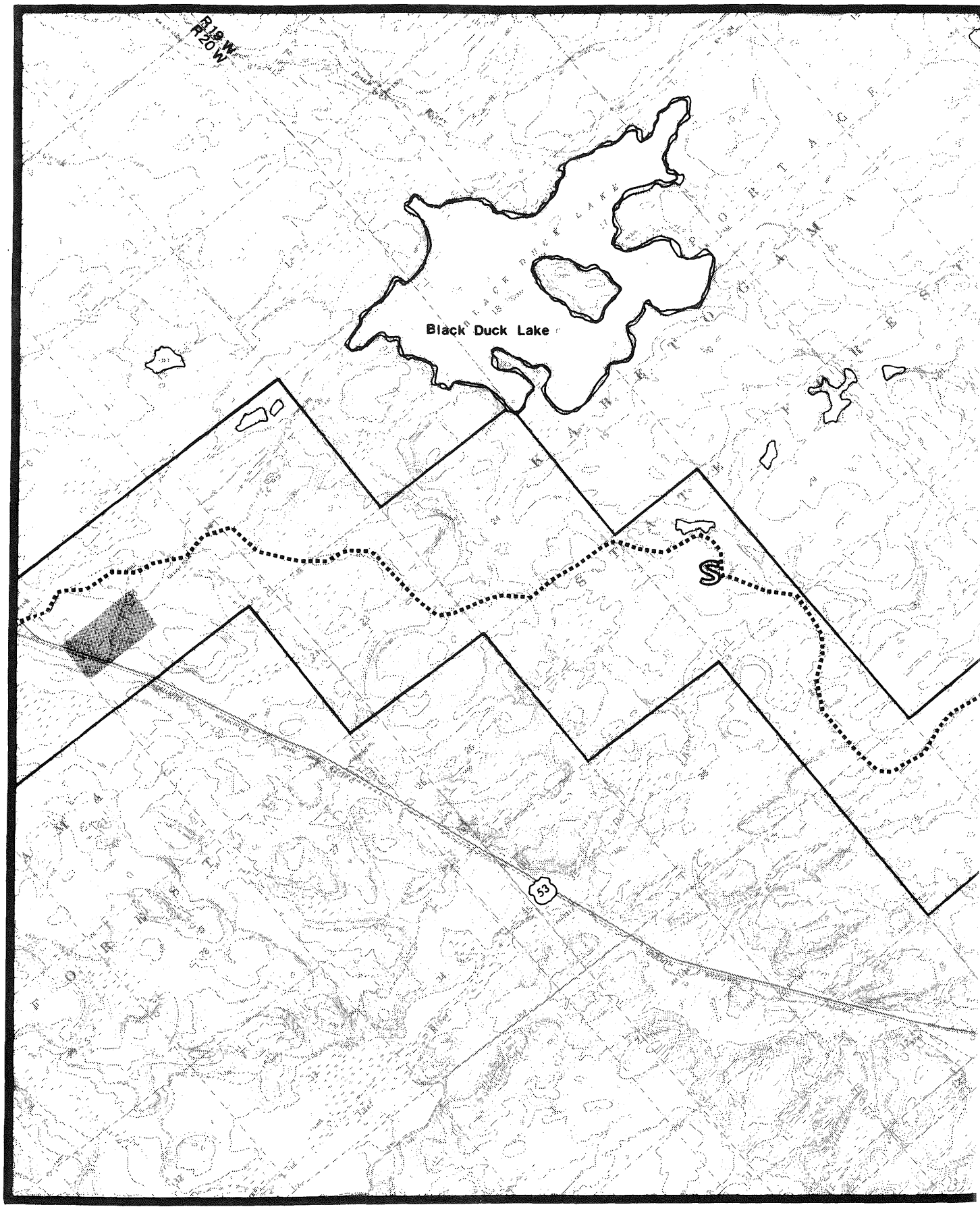
From Myrtle Lake (Plate 6), the trail will continue on the existing Kabetogama state forest snowmobile trail to the Elbow River. A route west of this existing trail was investigated earlier in the planning process which would have been located closer to Orr and Moose Lake. This route, however, was eliminated after opposition was expressed at the public meeting held in Orr (spring 1979). Residents in this area were concerned about increased trespass and other problems they felt would be created if this route was selected.

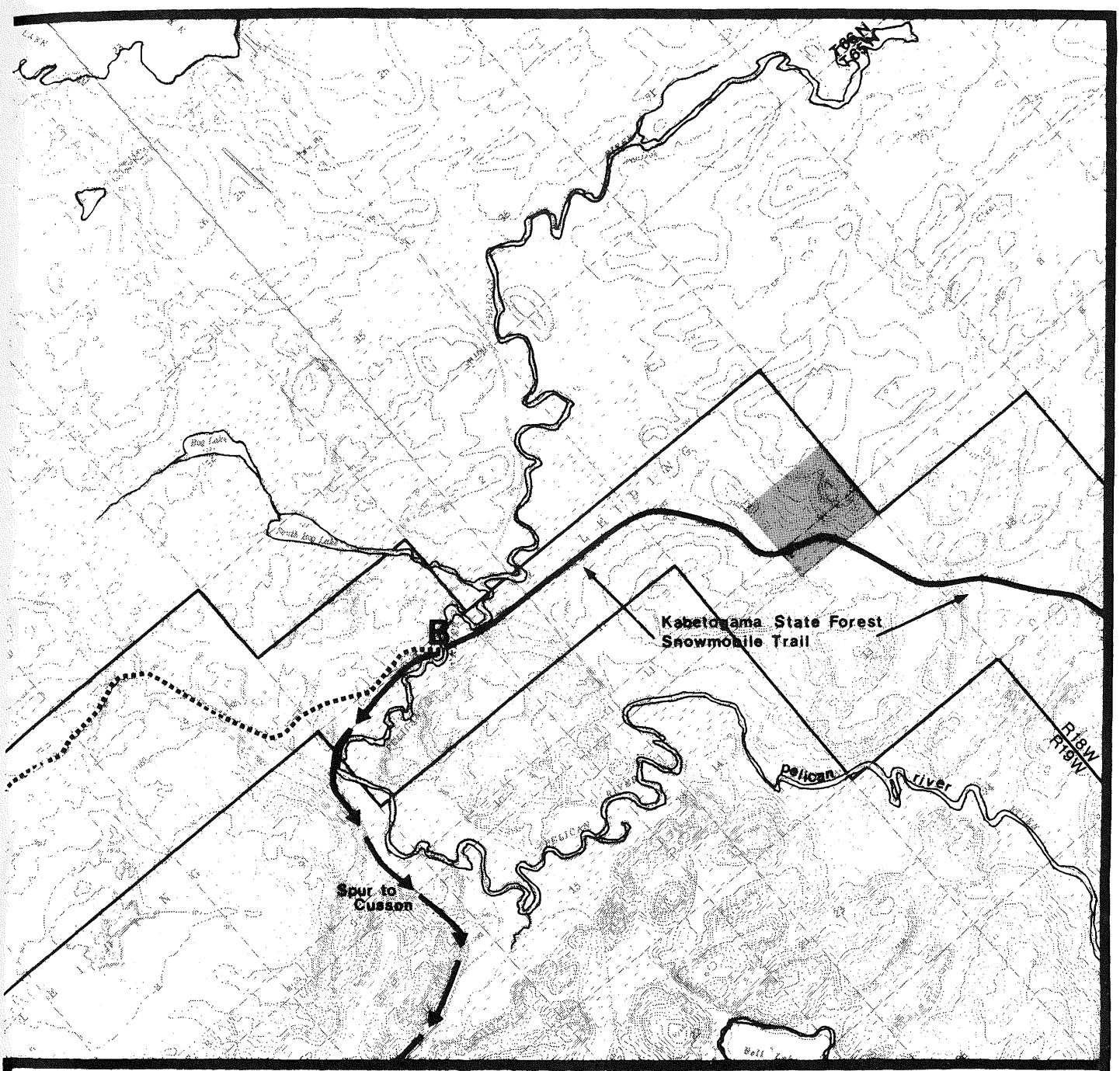
Along the route of the existing Kabetogama state forest trail is a spur to the Pelican River and a trail shelter. A route from this shelter to Orr was investigated by the district forester and determined to be infeasible.

Uses on this portion of the trail will include snowmobiles with limited opportunity for hiking and horseback riding. Special signing will have to be placed along the portions of trail which are routed on the Elbow Lake State Forest Road warning motorists and trail users of each other's presence. The parking area will be built to handle 5-10 cars with trailers. Trash receptacles will also be provided. A pit toilet will not be located here because of potential vandalism problems.

Elbow River to Cook Trail

From the existing state forest trail at the Elbow River (Plate 7) the proposed trail will proceed south crossing the river on a new bridge. It should be mentioned that from this point the state forest snowmobile trail continues west to Glendale located on U.S. 53, 1½ miles south of Orr. From Glendale, a route will be investigated by local residents to determine if a connection through Orr to the Ash Lake Trail is feasible. Local residents from the Orr meeting (spring, 1980) will be working on this and will contact DNR.


R19W
R20W
Black Duck Lake
53



TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile

North

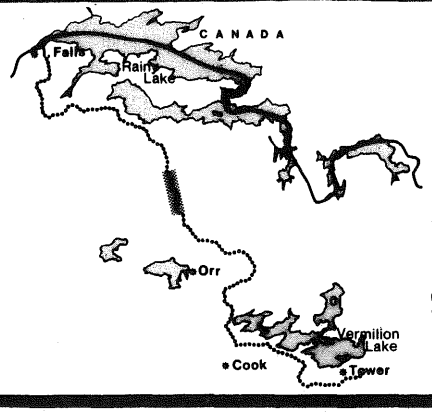
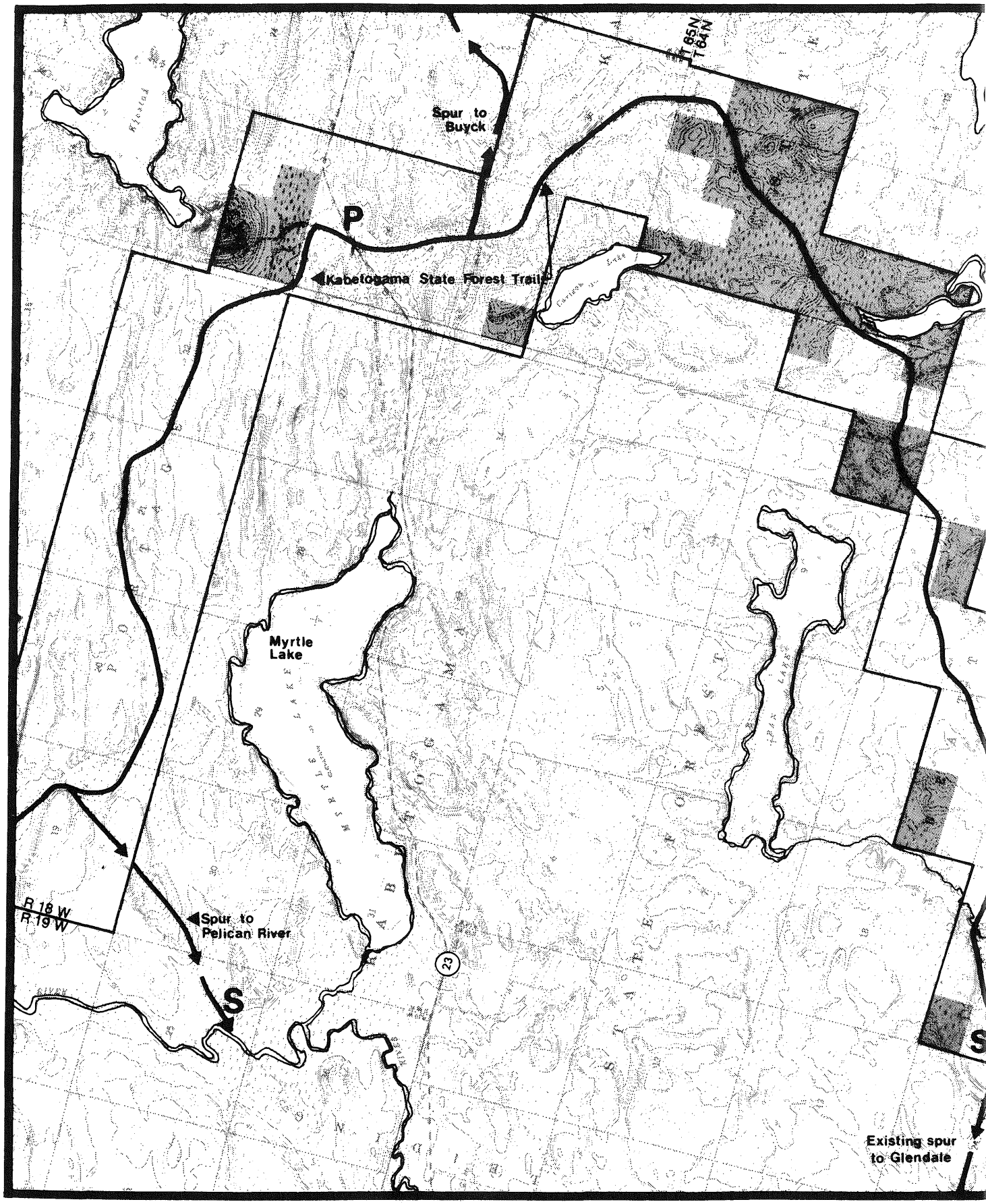
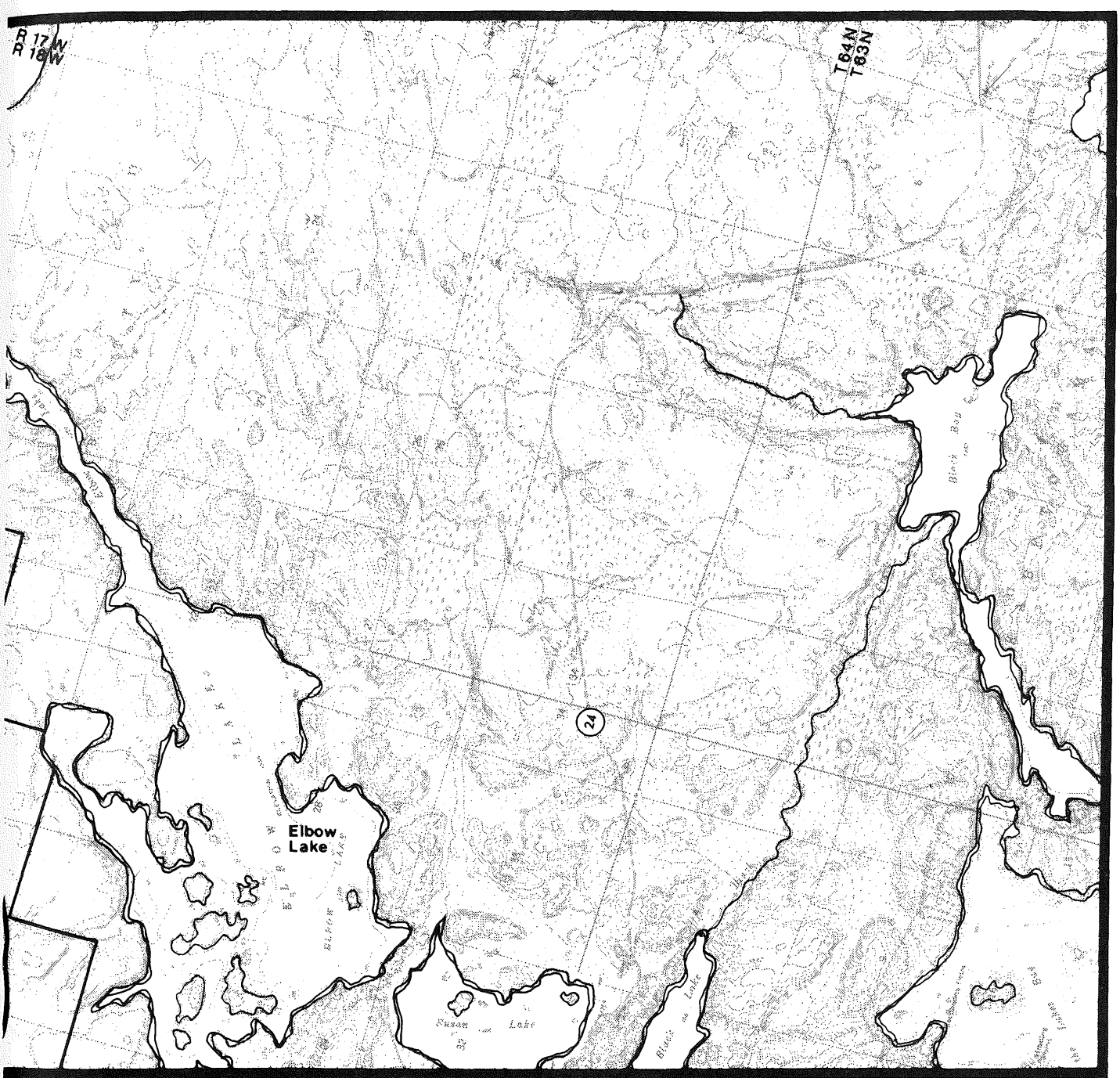


PLATE # 5 of 9


T65N
T64N
Spur to
Buyck
P
Kabetogama State Forest Trail
Myrtle
Lake
R 18 W
R 19 W
Spur to
Pelican River
S
23
Existing spur
to Glendale

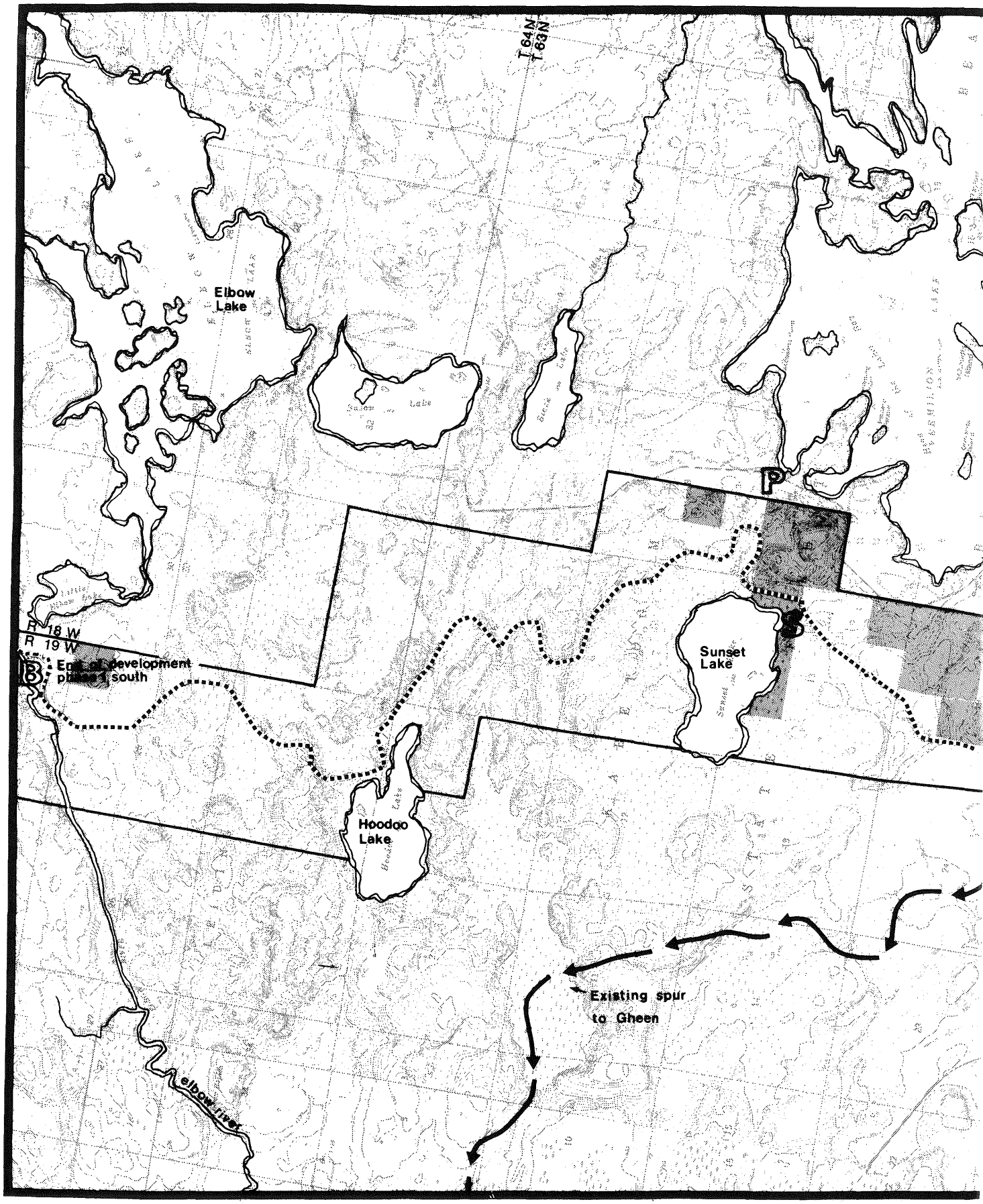


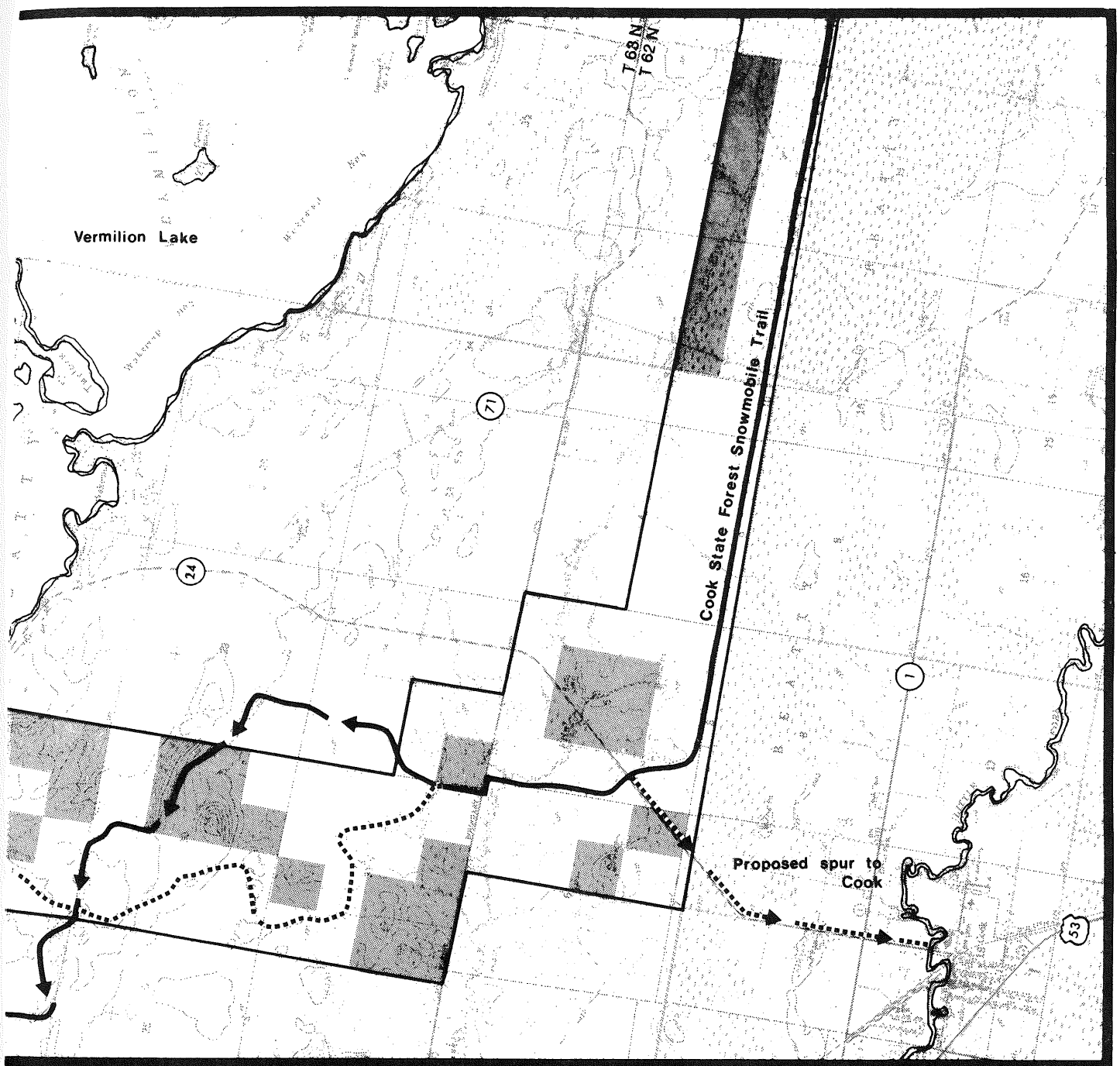
TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

PLATE # 6 of 9


T 64 N
T 63 N
Elbow Lake
R 18 W
R 19 W
End of development planned south
Sunset Lake
Hoodoo Lake
Existing spur to Gheen
elbow river



TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

PLATE # 7 of 9

After crossing the river, the trail will proceed south and east around Hoodoo Lake to Sunset Lake. From Sunset Lake, the trail will proceed south to a township road where it will connect to the Cook Trail, an existing state forest snowmobile trail which goes from Gheen to Frazer Bay.

Use of this segment will be primarily snowmobile, but the route from Sunset Lake to Hoodoo Lake should be developed to accommodate hikers and horseback riders.

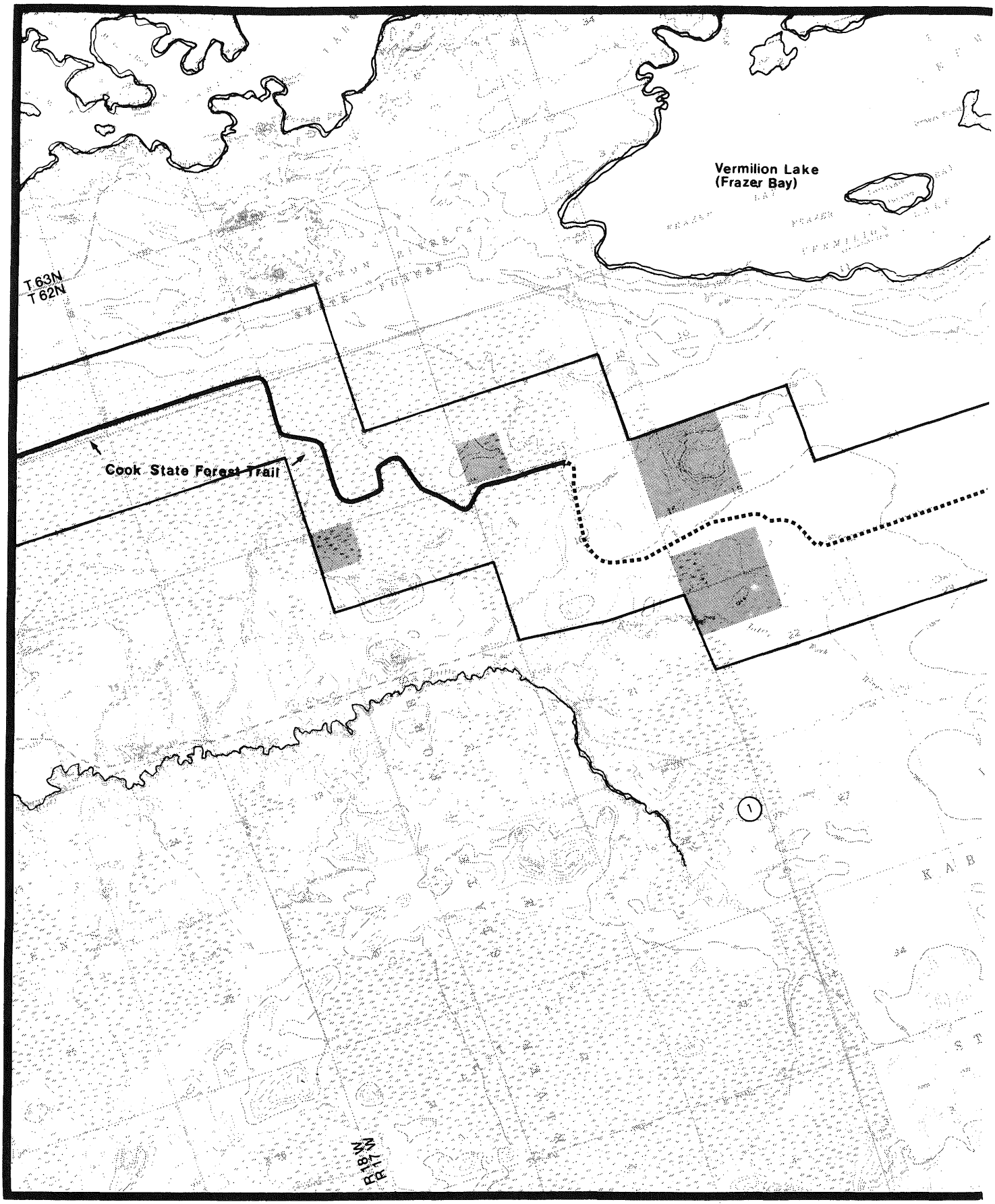
Cook Trail to Lost Lake

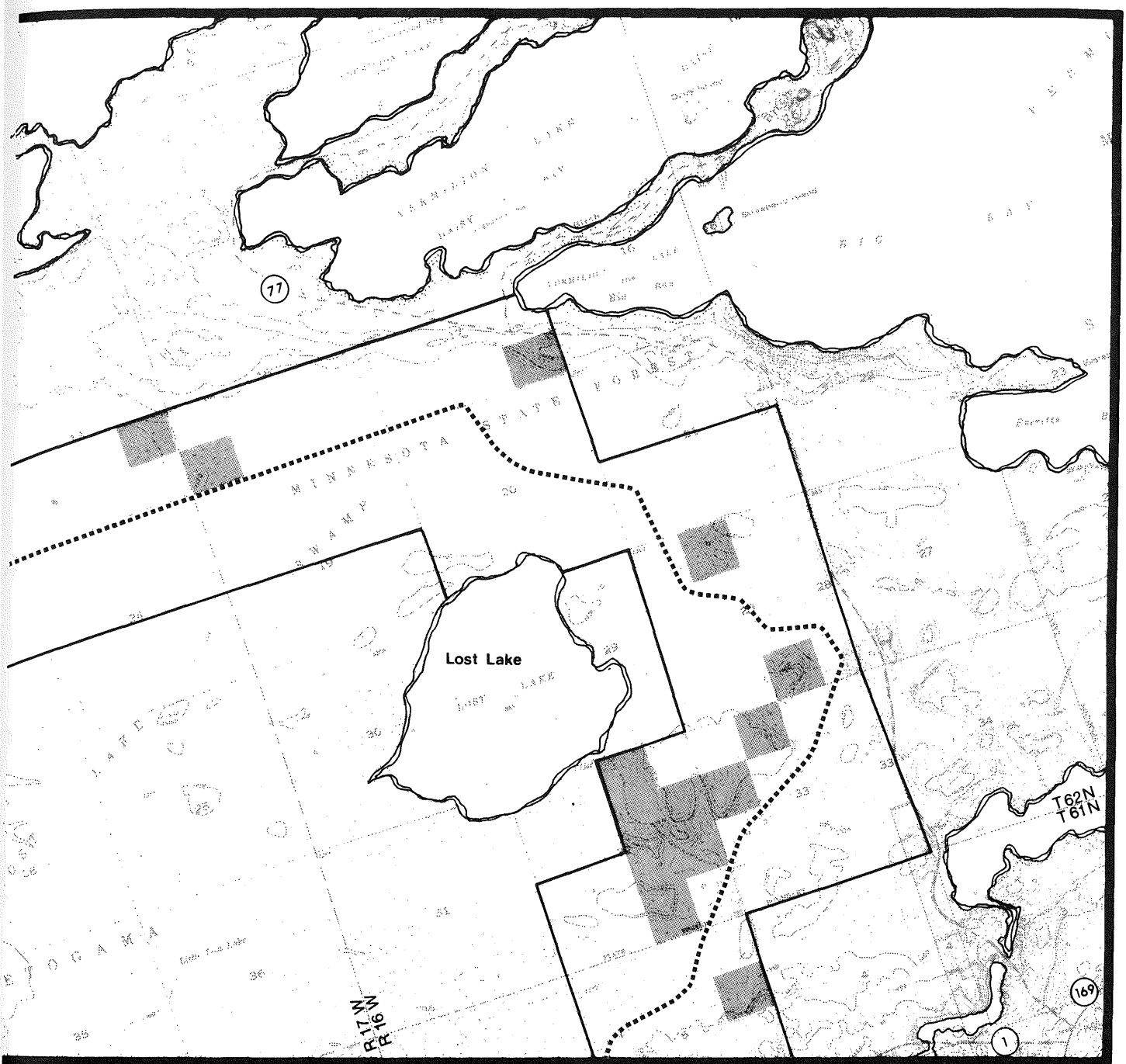
From Cook Trail, the proposed trail alignment continues to a point east of Frazer Bay (Plate 8). From this point, the trail will go south and east toward Lost Lake. The trail was routed to the east of Lost Lake to accommodate snowmobilers who live along Lake Vermilion. Public input at the Tower planning meeting and a follow-up meeting with local club members in 1979 produced the route shown.

Due to large areas of low ground, snowmobiles will be the only trail use accommodated on this section.

Lost Lake to Tower (Plate 9)

From Lost Lake, the trail wil proceed southwest, cross State Highway 1 on grade and connect to the Taconite Trail at the Pike River Flowage. The Taconite Trail Plan calls for development of a rest stop at this point. Signs will have to be placed on Highway 1 to warn motorists of the trail crossing. From this point, the International Falls to Tower Trail will follow the route of the Taconite Trail to Tower and Ely. Interested readers should refer to the Taconite Trail Master Plan for details of this route.


Vermilion Lake
(Frazer Bay)
T 63N
T 62N
Cook State Forest Trail
R 18 W
R 17 W

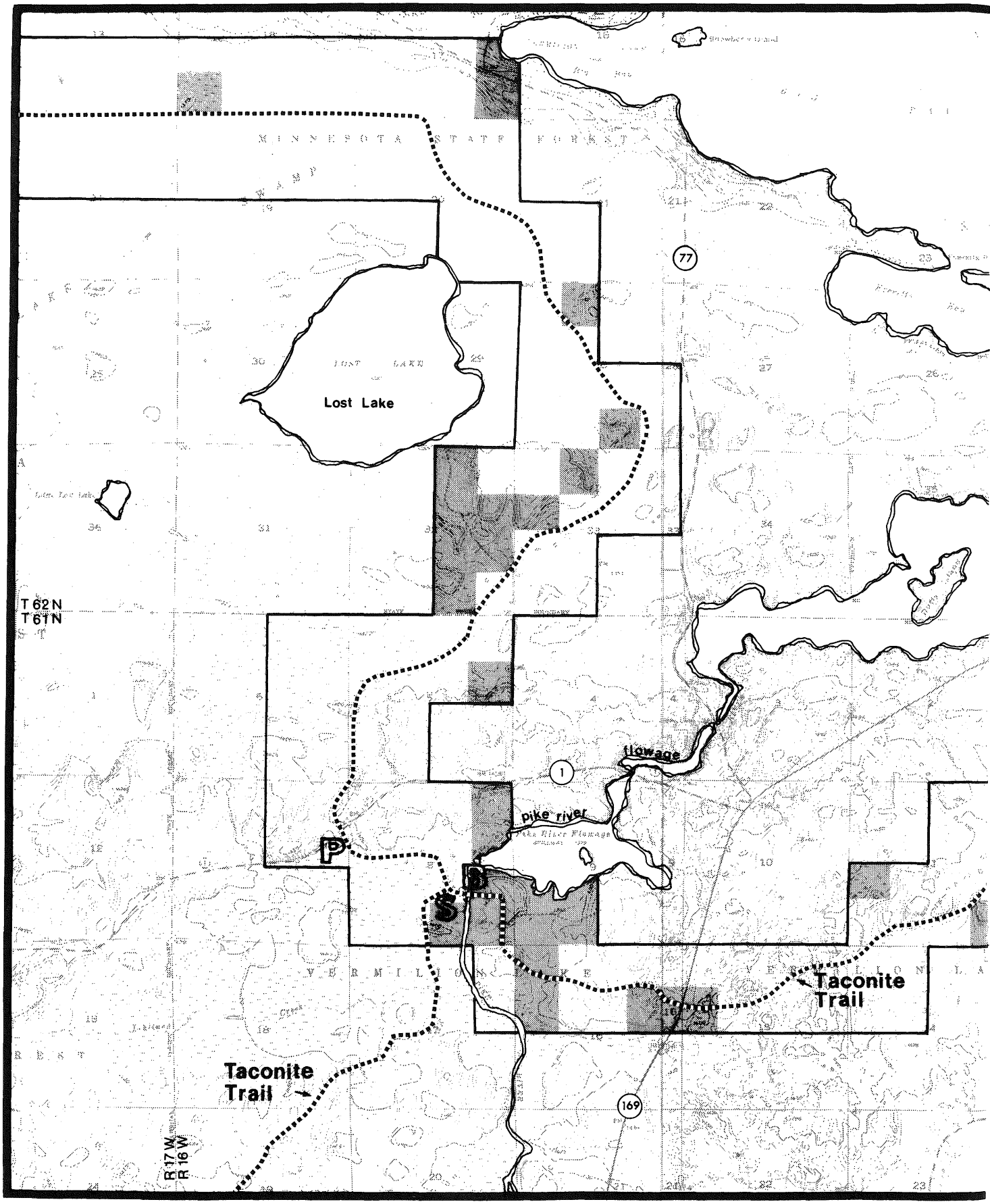


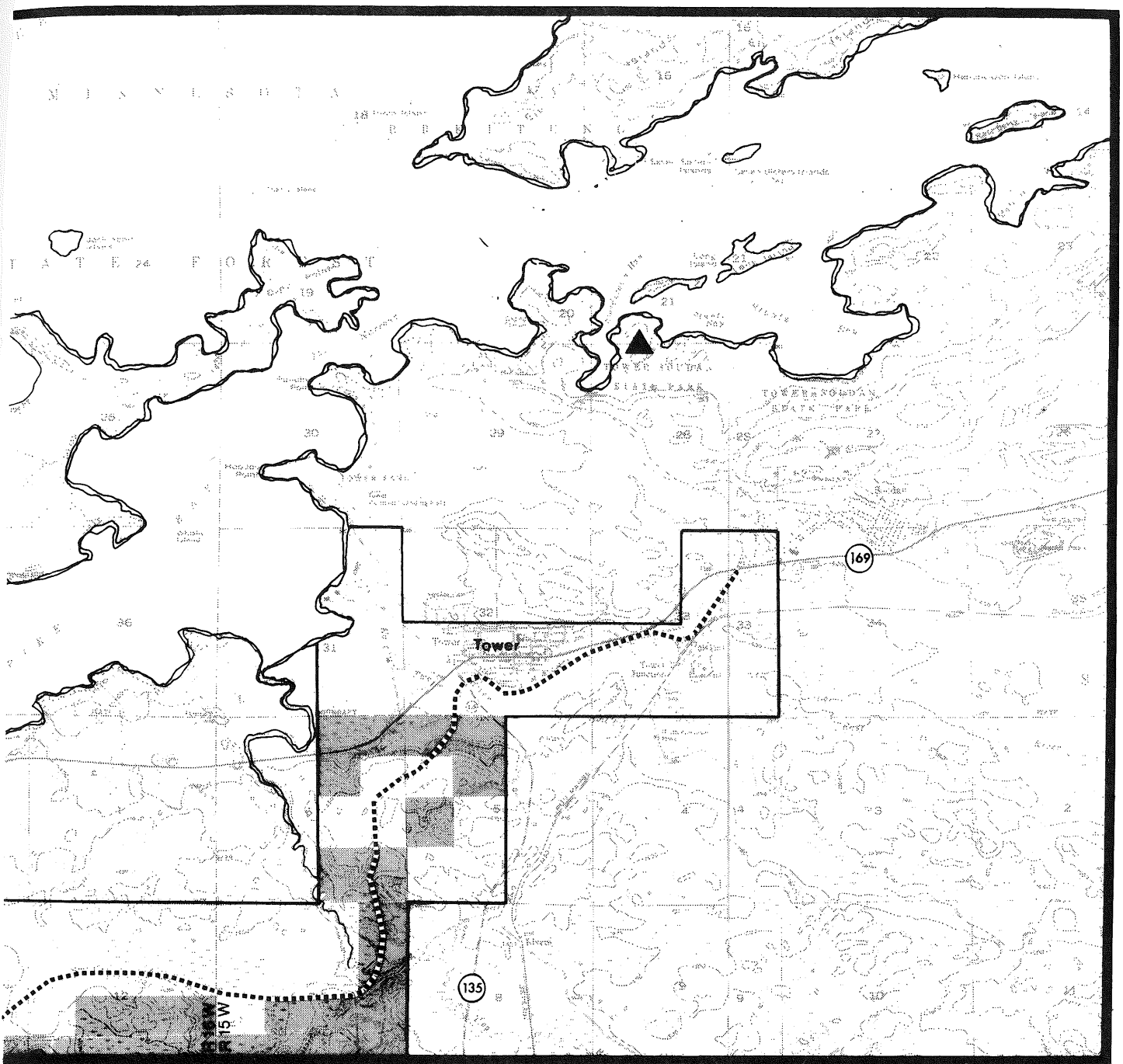
TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

PLATE # 8 of 9


MINNESOTA STATE FOREST
Lost Lake
77
T62N
T61N
flowage
1
pike river
P
S
Taconite
Trail
Taconite
Trail
169
R17W
R16W



TOWER - I.FALLS TRAIL MANAGEMENT MAPS

	Existing	Proposed	
Private land ownership	B	B	Bridge
Public land ownership	P	P	Parking lot
Proposed trail alignment	S	S	Shelter area
Existing trail alignment	▲		State park

Scale: 1 inch = 3/4 mile North

PLATE # 9 of 9

LAND ACQUISITION

Land acquisition for the Tower to International Falls Trail will be kept to a minimum by using public lands and rights-of-way as much as possible. However, in certain areas, private land will be acquired for the trail right-of-way. Types of land acquisition measures utilized will include the following:

1. Fee Title Acquisition - outright purchase - may be the most preferred means of acquiring land in that it provides permanent public ownership. This type of acquisition requires a willing seller and a clear title.

2. Land Exchange - can be used to acquire fee title land that meets requirements for outright purchase. Exchanges are made on a value-for-value basis.

3. Easement - is an acquisition of certain interests in land for specific purposes; ie., trails. An easement, used when fee title cannot be obtained, should be perpetual.

4. Leases, Use Permits and Cooperative Agreements - will be utilized only if one of the more permanent forms of acquisition is not possible.

5. The authority for eminent domain has been granted for this trail at the time of authorization. However, this authority will only be used when no other alternative exists.

Policies for Land Acquisition

a. Public lands and rights-of-way will be considered first for the right-of-way. Private lands will be considered only where no other feasible alternative exists.

b. County Tax Forfeited lands will be acquired through county board resolutions and long-term easements.

c. The use of federal land will be secured via cooperative agreements[1] or special use permits.

d. The amount of right-of-way acquired for the trail will be a minimum of 20 feet and a maximum of 100 feet. Final width will be determined during negotiations with the landowner.

e. In addition to the trail right-of-way, spur trail routes leading to service areas and towns will be acquired. In many cases, these routes could be for winter use only, similar to acquisition for grant-in-aid snowmobile trails.

f. Additional land adjacent to the trail right-of-way will be purchased for support facilities.

---

[1]See Appendix for details of Cooperative Agreement currently in place for the Arrowhead Region Trails System.

g. If condemnation is required on any parcel, no more than a 33 foot right-of-way will be acquired. This authority will be used for trail right-of-way only and not for land needed for parking lots or other support facilities.

h. Prices paid for land in fee or easement will be the fair market value as determined by an appraiser.

DEVELOPMENT SPECIFICATIONS

Trail Construction

Detailed trail design and construction specifications including items such as treadway construction, grading, drainage, signing, bridge construction, support facilities, to name a few, are addressed in the DNR's Trails Manual and shall be applied to the Tower to International Falls Trail.

Development specifications specific to this trail are outlined below:

Maintenance of a 250 feet signt distance is recommended as a minimum trail user safety standard. Where this is not possible, warning signs must be installed. In addition a separation of treadways must be ensured by use of earth berms and planting material.

All highway crossings, trail accesses from highways and/or adjacent parking areas must be submitted for review and signoff by MN/DOT prior to development. The DNR will be responsible for trail crossings and trails on trunk highway rights-of-way in compliance with MN/DOT Maintenance Bulletin 77-6 and Limited Use Permits.

Construction will start as soon as possible after the management plan is approved. The trail will be developed in annual segments based within existing and anticipated appropriations (see development schedule). Only segments of the trail will be opened as trail development progresses. Temporary trail terminii will be developed as segments are completed each construction year.

Bridges will be constructed according to DNR - Bureau of Engineering standards. All bridges constructed will be capable of handling all maintenance vehicles and equipment as well as trail users. All bridges will have side railings. Stream crossings will be at right angles and all necessary permits will be obtained from the DNR - Division of Waters and U.S. Army Corps of Engineers (if applicable), prior to construction. No restrictions of natural flow of streams will be permitted. All major bridges will be high enough so that they will not obstruct canoeists. Three types of crossings will be utilized.

1. Major bridges will be constructed on rivers such as the Elbow, Pelican and Rat Root rivers. These bridges will have long spans of 50-100 feet and will be built to withstand flooding.

2. Minor bridges will be used on rivers and streams spanning less than fifty feet. These bridges will be built of natural materials or pre-fabricated depending on the location.

3. Culverts may be used on those streams and intermittent creeks that do not need a bridge. Permits may be required.

Fording of rivers and streams will only be used as a temporary method of crossing until such time as a bridge can be constructed. Prior to construction of stream crossings or development of the trial near streams, DNR - Fisheries personnel must be contacted to insure that the fisheries resource is not detrimentally affected.

Signing will be kept to the necessary minimum to show trail location and direction at major intersections and protect the safety of the user. Signing will be done in accordance with the specifications and regulations set forth in the DNR sign manual. Additional signing will be provided to indicate map location of the user (You Are Here signs and mile markers and the location of potential hazards). Bulletin boards should be constructed at parking lots and should contain space for rules and regulations and interpretive information.

Present regulations would require that the state trail boundary be posted every 1,000 feet so that rules and regulations can be enforced. This requirement should be waived for this and other long distance trails in the northeast because of the cost involved. Where the trail passes through private land, it will be posted, but where it is located on state forest land, it may not. DNR attorneys are currently working on ways to waive this requirement.

It is the responsibility of the state, county, and municipal highway departments to work with the DNR in adequately directing trail users to the trail from major road systems with proper signing. It is the policy of MN/DOT to place trail crossing signs on the trunk highways only where minimum sight to the crossing cannot be obtained (i.e., 800 feet). The placement of signs on trunk highways directing trail users to the trail is the responsibility of the DNR after proper review and coordination with MN/DOT.

Any visible management activities, historic sites or outstanding natural features should be interpreted for the benefit of the recreationist. Signs will be utilized in these areas to inform the user of such sites. Education through this type of interpretation will help promote better public understanding of forest management, historic sites and natural features which can lead to successful integration of forest management and recreational programs. The regional naturalist should be granted funds to interpret such features.

Support Facilities

Access to the trail will be provided at the following locations:

U.S. #53 South of International Falls	(Plate #1 of 9)
Kabetogama Road	(Plate #3 of 9)
Ash Lake (U.S. #53)	(Plate #4 of 9)
County Road #23	(Plate #6 of 9)
County Road #24	(Plate #7 of 9)
State Highway #1	(Plate #9 of 9)

Waysides will be located at 10-12 mile intervals depending on terrain. Such areas will include a three sided adirondack shelter, toilet facilities, fire rings and a litter receptacle. These facilities will be located a short distance from the main trail and be accessible via spur trails. Interpretive information about the trail and area will be included on bulletin boards near the shelter. No campsites are planned at this time. Hikers will be permitted to camp in cleared areas near shelters.

NATURAL RESOURCE MANAGEMENT

Recognizing that the majority of trail is contained within managed forests, a specially tailored program respecting the values of these lands has been proposed. For lands outside of these forests, a different set of guidelines will be applied. Where agreements have been made prior to publication of this plan, such as in the case of the United States Forest Service, conditions agreed to within will be honored (see appendix 4 for details of this cooperative agreement).

Trail Within Managed Forests

Division of Forestry Circular Letter 3501 contained in the Appendix of the DNR Trails Manual outlines specific management procedures for areas where the trail will pass through state managed forests. These management procedures shall be applied and are designed to avoid conflicts between trail management and forest management.

Trail Outside Managed Forests

Outside of managed forests, DNR/Trails and Waterways, is responsible for the entire trail corridor. In other words, the guidelines outlined in the previous section will be supplemented with other responsibilities.

Vegetation management will deal with revegetation, selective cutting and selective screening. Revegetation will be used extensively in areas where the soil has been disturbed by construction of the trail. The exposed soil of the trail treadway, sloped areas, and landscaped areas should all be seeded with a wildlife seed mixture. This mixture should consist of red fescue, perennial ryegrass, red top clover, Kentucky blue grass, bromegrass, and Dutch White clover.

All waste areas for stumps and borrow pits will be reseeded and planted with trees and shrubs. In open areas, plantings of shrubs and trees can also be utilized along the trail to form shelterbelts protecting the trail users from high winds and extensive drifting. Screening on a large scale is not recommended. However, in some small areas it may be necessary. For all plantings, native species must be used. Type, size and placement of the materials must be chosen with consideration of the job to be done. It is recommended that for areas of more than one acre or more than 1/8 of a mile long, the landscape architecture staff in engineering be consulted. The local DNR and federal foresters should also be consulted. Needed trees and shrubs available from the DNR/Forestry Division should be utilized to cut down on overall development costs.

As in the previous section, any tree that poses a potential hazard to trail users will be removed. The hazards will include shallow rooted trees susceptible to being blown over. In addition, dead trees that are standing near the trail are potential hazards. All such hazardous trees should be removed within 25' of the trail centerline. Where narrow easements are obtained, a provision should be included so that this removal can be accomplished.

Vegetation may be trimmed in certain areas to provide key vistas. This is especially recommended for rest stops.

Interpretation

The interpretive program for the trail will be developed in at least four different ways:

1. Literature will be prepared and distributed to key information points to give visitors information and to assist them in planning for use of the trail.

   Trip planning literature should include information on the recommended times of the year to use the trail, estimates of travel time to reach destinations along the trail, points of interest to visit in the area, along with camping suggestions, equipment necessary and trail etiquette guidelines. Regulations on fires, hunting, fishing and trail safety should also be explained.

2. Self-guiding brochures supplied along with trail maps will also be developed.

   A comprehensive self-guiding brochure will be written explaining in detail, interesting natural or cultural features along the trail. This could be accomplished by combining a map-text with ample illustrations. These brochures should be readily available and distributed to trail user groups, schools, tourist information centers, area Chambers of Commerce, etc.

3. Photos and interpretive literature on bulletin boards at parking lots and shelters, will be used to get general information to trail users. Boards should include information on what lies ahead, off-trail conveniences, recreation and service facilities, points of interest and emergency information.

4. Interpretive signs or symbols will also be placed along the trail.

   Careful consideration should be given as to what features should be pointed out and which should not. In some cases, where the resource is fragile or occurs infrequently, interpretive signing could mean extermination of the resource.

   Because trail users travel at varying speeds, signs and placement of signs must be designated to serve as many users as possible. Rest stops or pull-offs could invite the user to stop and look.

Interpretive themes and information will feature a variety of subjects depending on the location of the parking lot or wayside. Featured will be bedrock geology, glacial geology, vegetation, Native American history, early explorers, logging and forest management practices, and other subjects.

In the area of the trail near International Falls, the geology of Glacial Lake Agassiz and the extensive peatlands should be highlighted. Included also should be vegetation types and the massive efforts to drain, colonize and convert this area to farmland early in this century.

Along the southern two thirds of the trail, bedrock geology should be emphasized where appropriate. Also interpreted should be the glacial activity that was erosional in this area rather than depositional as in the Agassiz Lowlands. The many vegetation types listed on Marschner's Original Vegetation map (page 20) should also be discussed.

Culturally important resources for interpretation include the fur trading routes, Minnesota's first gold rush, the iron ore mine near Soudan, and the various sawmills and logging railroads. Also a number of different Native American cultures have been identified in the area and should be interpreted.

Maps

The trail map will show lakes, waysides, trail locations, parking lots and service areas for easy orientation. The map will also contain interpretive information and explain regulations on fires, camping, and trail use.

Fencing

Fencing policy will follow Minnesota Statutes 1976, Section 344. This law states that fencing costs will be shared equally by adjacent property owners. Minimum standards for fences will be 48 inches high, with steel posts 12 feet apart, and wire will be barbed, smooth or woven depending on the type of surrounding land.

Enforcement

In order for citizens to have a safe and enjoyable trail experience, an effective enforcement program is necessary.

The state of Minnesota has specific rules and regulations which govern the use of state recreational trails (Minnesota State Regulations NR 20). These regulations will be posted conspicuously at accesses, waysides and other necessary locations. Any violation of these rules and regulations is a misdemeanor subject to a fine of up to $500 and/or 90 days in jail. Enforcement of these rules and regulations will be accomplished through public education, DNR conservation officers, and supplementary enforcement agreements with local law enforcement agencies.

MAINTENANCE AND OPERATIONS

Maintenance

Trail maintenance will be performed as necessary to preserve the trail location and to provide for safe unobstructed travel. Maintenance procedures are outlined in detail in the DNR Trails Manual.

Summer maintenance may involve a variety of techniques ranging from minor hand clearing and brushing to machine brush hogging and mowing. Basal spray applications of approved herbicides in accord with label instructions and state regulations may be used to control unwanted vegetation. Such treatment would be followed or preceeded by cutting and clearing.

One specific form of summer maintenance which may have to be contracted is control of beaver dams. Much of the trail travels through areas with high concentrations of this fur bearer. Since these animals frequently build dams near bridges or culverts, some form of control will have to be implemented to solve this problem. The area wildlife manager and enforcement officer should be consulted concerning types of contracts which could be utilized to prevent flooding of the trail.

Summer maintenance should be done by crews using a flotation tire vehicle rather than a truck. Use of this type of vehicle will eliminate tire tracks which may encourage unauthorized use.

Winter maintenance will include litter pick up, sign replacement, and trail grooming. Grooming will be done twice a week during peak use months, preferably on Mondays and Fridays. A back-up contract will be let prior to the grooming season to insure that the trail will be groomed even if the state equipment is in for repairs.

Personnel and Equipment

Provision of adequate monies and personnel is essential if this trail plan is to be implemented. It is not enough to develop facilities--they must also be protected and maintained if they are to be used in the future. In addition, the natural resources must be properly managed so that the user may have an enjoyable experience.

Listed below are several responsibilities best performed by personnel specifically assigned to the trail:

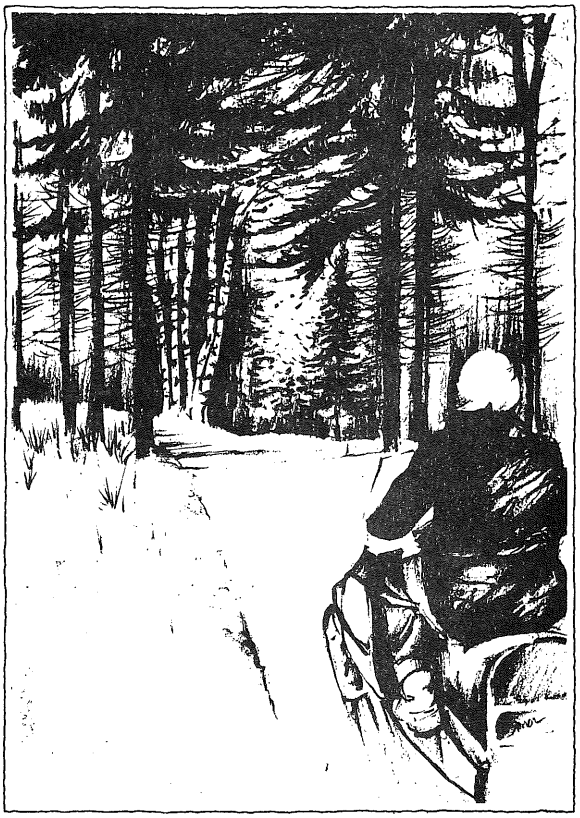
- maintaining of rest areas;
- treadway repair
- winter grooming;
- summer mowing of areas open for hiking;
- promoting use;
- answering complaints of adjoining landowners;
- monitoring use;
- perform administrative duties;
- promoting a sense of trail ownership on the part of users;
- assisting with land acquisition;
- promoting environmental appreciation;
- performing routine preventative maintenance on heavy equipment;
- managing the natural resources; and
- enforcing rules and reulations which protect the user and the resource.

Due to its length of approximately 85 miles, the trail poses special management problems. When one considers the logistical problems created by having the facility stretched out between Tower and International Falls for routine maintenance, it becomes readily apparent that staffing for this unit will require personnel specifically assigned to this trail. In addition to the problems of routine maintenance, the unlimited accesses provided by a linear facility compounds enforcement problems.

Finally, vandalism of trail facilities has been a concern brought up at public meetings held on other existing trails in the area. Hopefully, this problem can be reduced with personnel assigned specifically to supervision of this trail. The public's knowledge that someone is responsible for the trail and may be close by may also be a deterrent to vandalism. Permanent personnel assigned to the trail can be an advantage if vandalism does occur. Early detection and repair can reduce hazards created by vandalism.

The exact personnel requirements are difficult to anticipate at this point. Two seasonal laborers are seen as minimum requirements. Additional personnel requirements will be identified by the trail coordinator as trail development progresses. It appears, however, that additional seasonal help will be needed in the future.

Adequate equipment must also be provided. Table 14 on page 82 outlines the equipment necessary for the successful operation and maintenance of the trail.



implementation

IMPLEMENTATION

Coordination and Responsibilities

In order to accomplish the recommendations of this plan, it is necessary to know "who is doing what." One of the purposes of this section is to delineate these responsibilities.

The following Table 12 delineates these responsibilities.

TABLE 12

TRAILS AND WATERWAYS

Planning	Operations	Field	Administration	Office of Planning	Implementation Steps
■	□	□	□		Prepare master plan
■		□			Prepare interpretation plan
□	■	○			Prepare site specific implementation plans
○	□	■			Develop the trail according to the following implementation schedule
○	□	□	■		Develop promotional action plan with assistance of DNR-I&E and the Tourism Section of the Department of Energy, Planning and Development
○	□		■		Incorporate trail into on-going information dispersal program
	□		■		Authorize positions and hire appropriate personnel
■	□	□		□	Incorporate trail segments into monitoring and user opinion survey program
	○	■			Hold annual/seasonal meetings to ascertain user/landowner satisfaction

■ Major Role

□ Supporting Role

○ Consult as Needed

Implementation Schedule/Phased Development Map

Development of this trail will be done in phases. In phase one, the trail will be developed between the Taconite Trail just to the west of Tower and the Kabetogama State Forest Trail at the Elbow River utilizing, in part, the Cook State Forest Trail. This will allow use between Tower and the Cusson/Orr area. Also in phase one, the trail will be developed between International Falls and the Kabetogama area, terminating at Kabetogama Road (122) utilizing in part, the Little Fork State Forest Trail (see Figure 15). Based upon evidence of demand, the remainder of the trail will be developed in phase two.

Implementation of developments outlined in this plan will depend, of course, on the availability of funds and personnel. These two factors will determine the extent of development within the two phases, management and maintenance, the trail will receive in any given year.

Acquisition of a trail right-of-way on private lands consistent with above mentioned phasing program should be given top priority so that the trail can be completed as soon as possible. See Plates 1-9 for areas where a right-of-way must be purchased.

Table 13 outlines costs for trail development for the International Falls to Tower Trail. Refer to the route maps for specific areas where development will take place. Costs shown are estimates for 1979. Inflation will add to costs in upcoming years.

Since much of the trail will be developed in areas bordering on or in swampy areas, construction will have to be done during dry periods of the year or in the winter, after freeze up.

No portion of the trail should be opened for use until all signs, support facilities and bridges have been constructed.

Maintenance will involve the use of two seasonal laborers who will be responsible for this trail and the state forest trails in the area. Table 14 lists personnel and equipment which will be necessary to maintain these trails.

FIGURE 15

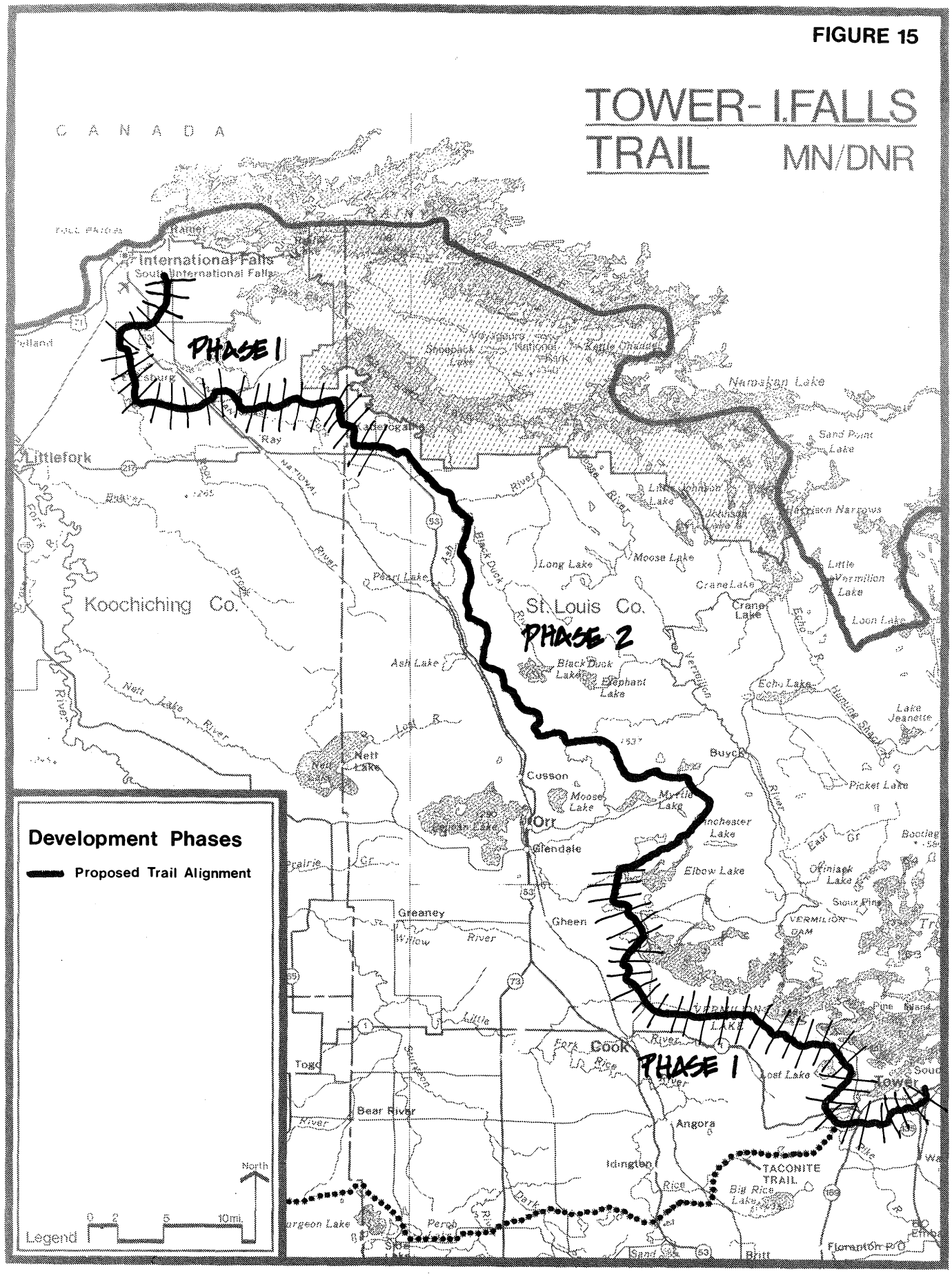

TOWER- I.FALLS TRAIL
MN/DNR
CANADA
International Falls
South International Falls
PHASE 1
Littlefork
Koochiching Co.
St. Louis Co.
PHASE 2
Namakan Lake
Sand Point Lake
Long Lake
Moose Lake
Crane Lake
Loon Lake
Ash Lake
Nett Lake
Cusson
Orr
Glendale
Elbow Lake
Greaney
Gheen
Cook
PHASE 1
Tower
Bear River
Angora
TACONITE TRAIL
Big Rice Lake
Development Phases
Proposed Trail Alignment
Legend
0 2 5 10mi
North

TABLE 13

Estimated Cost of Development		Total Estimated Cost (1979)	Phase One 40 miles new	Phase Two 25 miles new
Trail Treadway -	development - 65 miles new trail	$200,000	$ 123,000	$ 77,000
	improvement - 20 miles existing state forest trail	25,000		25,000
	develop 15 miles spur trails to towns	15,000	7,000	8,000
Waysides -	(includes 3 sided trail shelter, trash cans, fire ring, bulletin board, pit toilet)			
	$3,500/wayside x 6 new areas	21,000	10,500	10,500
	Improve two existing areas	2,000	2,000	
Parking Lots -	(includes space for 5-10 cars with trailers, pit toilets, trash cans, bulletin board) 8 lots x $4,000	32,000	20,000	12,000
Bridges -	3 major bridges 50-100 foot spans	120,000	120,000	
	22 minor bridges or culverts	60,000	20,000	40,000
Signing -		15,000	5,000	10,000
Interpretation -	(includes maps, brochures, advertising, signs, etc.)	7,500	4,000	3,500
	Grand Total	$497,500	$311,500	$186,000

TABLE 14

Maintenance

	Total Estimated Cost (1979)	Phase One	Phase Two
2 Seasonal Laborers (10 months)	$ 26,000	$ 26,000	
Equipment			
2 - 3/4 ton pickups (one witha plow)	18,000	10,000	$ 8,000
2 snowmobiles	4,000	4,000	
2 trail groomers and drags (Bombi's or similar) (will be used to maintain state forest trails also)	20,000	20,000	
2 Flatbed Trailers for Bombi's	10,000	10,000	
2 portable radios fro groomers	2,000	2,000	
1 Radio unit for truck	1,000	1,000	
Hand tools and chainsaws	2,000	2,000	
Supplies and materials	2,000	2,000	
Contract grooming (if necessary)	10,000		10,000
TOTAL COST	$ 69,000	$ 51,000	$ 18,000

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

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)
under development **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						
under development **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"
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.

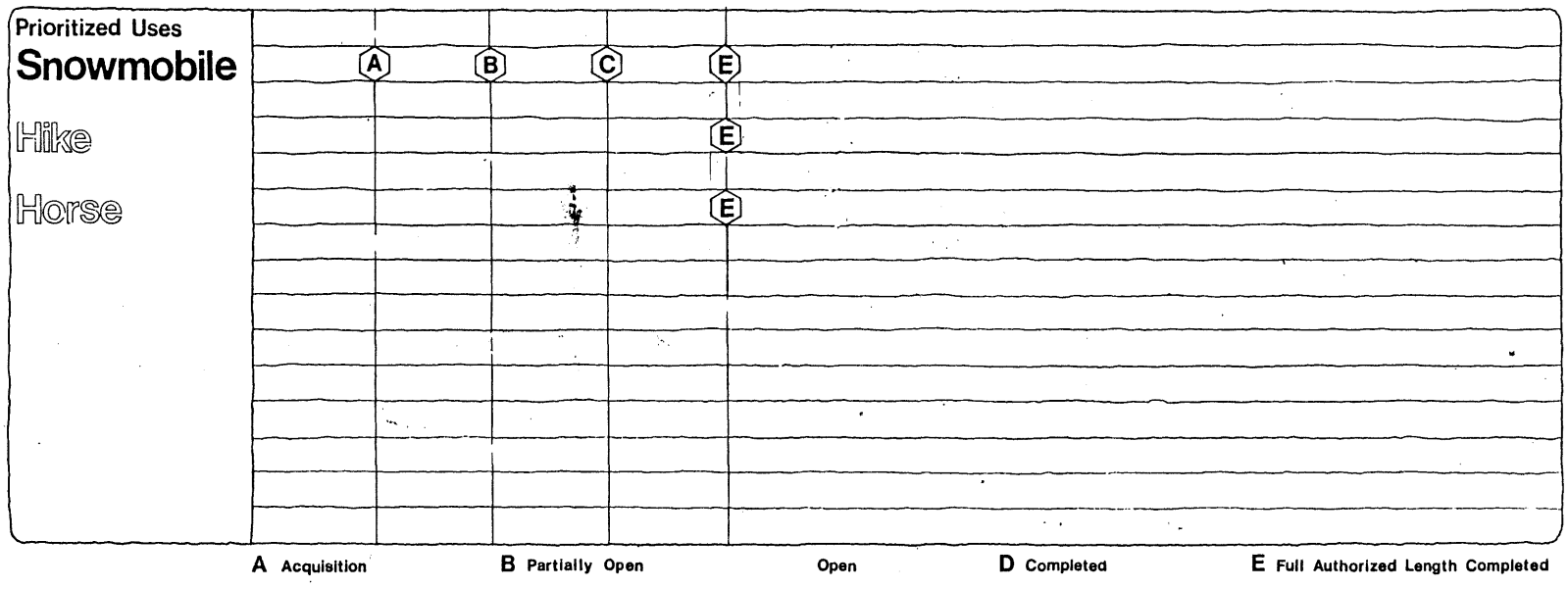
Notes: (1) The progression of a trail thru the 5 phases is charted by use, in summary form in the master plans budgets. (2) Maintenance and enforcement functions, while necessary to have in place throughout the 5 phases, are not included in the above chart. (3) *Some work may have to begin in prior phases in order for it to be effectively completed by the end of the phase for which it is "required" (e.g. vegetative management).*

Capital Improvements on the

Tower To International Falls Trail

Summary of Development Status

Phase Completion by Use

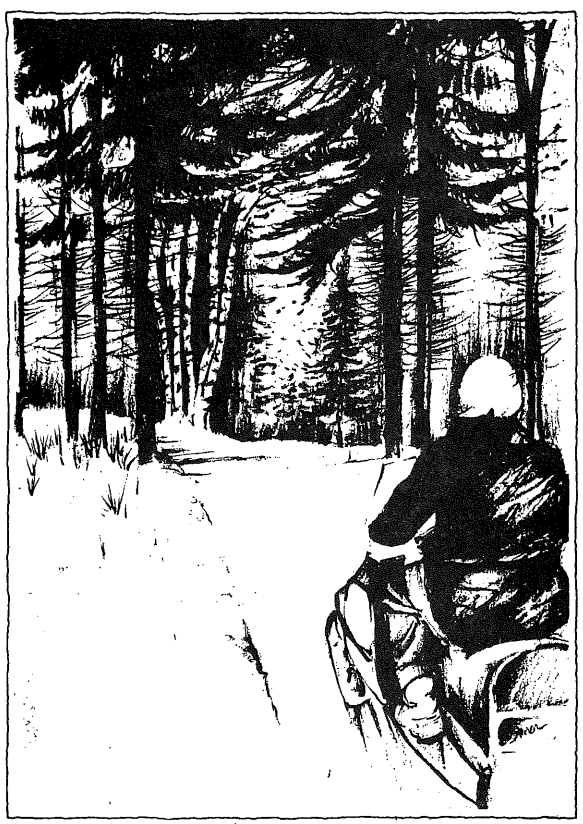


Project Priorities and Status

○ Land Acquired ◍ Partially Completed ● Completed

Segment \ Priority	1	2	3	4	5	6	7	8	9	10	Hold
International Falls to Kabetogma Road Phase One North $174,000	○ Acquire 4mi of Trail into International Falls ○ Trail Access Hwy. 53 & Kabetogma Road $10,000 ○ Develop & Sign 25 Miles New R.O.W. $77,000 ○ Install 2 Bridges $40,000 ea.	○ Build 2 Trail Waysides West of Hwy. 53 & West of Kabetogma Road $3,500 ea.									
Kabetogma Road to Elbow River Phase Two $113,750			○ Develop & Sign 25 Miles of New R.O.W. $77,000 ○ Trail Access U.S. #53 & County Rd. 23 $10,000 ○ Build 2 Trail Waysides near Ash River & Blackduck Lake $7,000 ○ Rehabilitate 11 Miles Existing Trail R.O.W. $13,750	○ Rehabilitate Spur Trails to Neighboring Communities $8,000							
Elbow River to Tower Phase One South $114,250	○ Acquire Trail R.O.W. Near Sunset Lake ○ Build 2 Trail Waysides near Sunset Lake & near the Taconite Trail $7,000 ○ Install Bridge over Elbow River $40,000	○ Trail Access County Rd. #24 & Hwy #1 $10,000 ○ Develop & Sign 15 Miles of New R.O.W. $46,140 ○ Rehabilitate 9 Miles of Existing Trails $11,250		○ Identify Trail Segments & Loops Suitable for Hiking & Horseback Riding							

Status Effective Fall	1983	1984	1985	1986	1987
Updated by Region					
Checked by Operations					
Checked by Planning					
Approved by Director					



evaluation

EVALUATION

The preceding pages have described the actions which are presently considered necessary to guide the future development and management direction of the International Falls to Tower State Trail. However, trail conditions, user populations, technology, landowners, land uses, and other management considerations change with time--often in unforeseen ways. Also, problems may need to be addressed in the implementation of the plan. It is, therefore, important to periodically review and evaluate the plan. The evaluation will enable managers, legislators, users, and other interested parties to determine how effectively and efficiently the trail is being managed. The evaluation will address such questions as whether user needs are being met, and whether the second treadway should be extended. Based on the results of the evaluations, changes in the plan's goal, guidelines, and actions may be instituted.

Public Input

Public input is an important part of evaluation. Indeed, the public is constantly evaluating the trail and its manager. The users and adjacent landowners are particularly important evaluators since these groups are the two most interested in the trail--the evaluation these groups give the trail will largely determine whether or not the trail is used.

To enable users and landowners to voice their frustrations, problems, insights and general comments, periodic meetings should be held, perhaps once per year. Comment cards and 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.

Provisions for Modifications

Managers, users, landowners and other interested parties will eventually propose changes in the trail plan. Proposed changes must be sent to the Trails and Waterways Unit in St. Paul. Proposals will be reviewed by both the trail operations and planning sections. When agreement is reached, the trail planning section will draft the changes for the Special Assistant to the Commissioner assigned to the Trails and Waterways Unit.

The entire plan should be thoroughly reviewed and updated every ten years starting in 1990 by the Trails and Waterways Unit planning section. Public comments, DNR staff recommendations, and trail studies should all be utilized in these reviews. If major changes are proposed for the trial, such as changes in the trail goal or actions which significantly affect the trail alignment or management, then the same procedures used to develop the plan should be followed: public meetings, in-house DNR review, and State Planning Agency review should all be sought.

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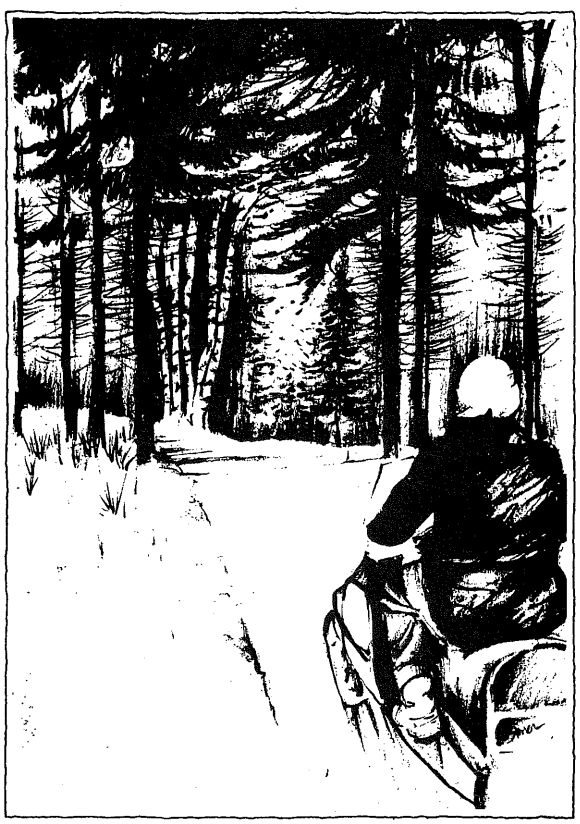

appendix

Legislation

Minnesota Statutes 86A.09 OUTDOOR RECREATION SYSTEM

86A.09 DEVELOPMENT AND ESTABLISHMENT OF UNITS. Subdivision 1. Master plan required. No construction of new facilities or other development of an authorized unit, other than repairs and maintenance, shall commence until the managing agency has prepared and submitted to the state planning agency and the state planning agency has reviewed, pursuant to this section, a master plan for administration of the unit in conformity with this section. This requirement shall not apply to an existing unit until August 1, 1977. No master plan is required for wildlife management areas that do not have resident managers, for water access sites, or for rest areas.

Subd. 2. Master plan; preparation and content. The managing agency shall supervise preparation of the master plan and shall utilize the professional staffs of any agency of the state when the expertise of the staff of such agency is necessary to adequately prepare the master plan; the master plan shall present the information in a format and detail that is appropriate to the size and complexity of the authorized unit. When the master plan has been completed the managing agency shall announce to the public in a manner reasonably designed to inform interested persons that the master plan is available for public review and in the case of any major unit shall hold at least one public hearing on the plan in the vicinity of the unit. The managing agency shall make the master plan available for review and comment by the public and other state agencies for at least 30 days following the announcement and before submitting the master plan to the state planning agency. Copies of the plan shall be provided to members of the outdoor recreations advisory council and to any other person on request.

Subd. 3. Master plan; review and approval. All master plans required by this section shall be submitted to the state planning agency for review pursuant to this subdivision. The state planning agency shall review the master plan to determine whether the plan: (a) provides for administration of the unit in a manner that is consistent with the purposes for which the unit was authorized and with the principals governing the administration of the unit, as specified in section 86A.05 and the statutes relating to each type of unit; (b) recognizes values and resources within the unit that are primarily the responsibility of another managing agency to protect or develop, and provides for their protection or development either through a cooperative agreement with other managing agency or through designation of the appropriate area as a secondary unit. In reviewing any master plan, the state planning agency shall consult with other state agencies. Within 60 days after receiving the master plan, the state planning agency shall notify the managing agency that the plan has been reviewed and forward its recommendations for any changes it might suggest. The managing agency shall review the recommendations nnd notify the state planning agency of the disposition made of them. Failure to comment on a master plan within the time specified shall be considered approval of the plan by the state planning agency. If the director of the state planning agency feels that the master plan still fails significantly to comply with this subdivision, he may request review of the master plan by the governor. In that event review shall not be deemed completed until after the master plan has been approved by the governor or 60 days have elapsed without action by the governor to approve or reject the plan, whichever occurs first.

Subd. 4. Development. Construction of necessary facilities and other development of the unit shall commence as soon as practicable after review of the master plan by the state planning agency, and the governor if requested, and shall be carried out in conformity with the master plan.

Subd. 5. Establishment. When, in the opinion of the managing agency, acquisition and development of the unit are sufficiently complete to permit operation and administration of the unit in substantial conformity with the master plan as approved, the managing agency shall declare the unit established and ready for use.

(1975 c 353 s 9)

Minnesota Statutes 86A.05 Subdivision 4 (CRITERIA)

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 menner which is consistent with the purposes of this subdivision. State trails established by the commissioner of natural resources shall be managed to provide a trail 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 recreations 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.

Rules and Regulations

NR 20 -- State Recreational Trails

(a) PURPOSE

It is the purpose of these statewide rules and regulations to provide for public use of designated state recreational trails while protecting the quality of the trail environment to promote long term trail use and enjoyment.

(b) JURISDICTION AND SCOPE

These rules and regulations are promulgated under the authority of Minnesota Statutes, Section 84.03, and Minnesota Statutes, Section 84.86, and apply to state recreational trails, which are (aa) those trails established by the Legislature in Minnesota Statutes, Section 85.015 when designated by the Commissioner of Natural Resources by order filed with the Secretary of State; and (bb) those other trails designated by the Commissioner by order filed with the Secretary of State after a public hearing conducted pursuant to Minnesota Statutes, Chapter 15, in a county through which the proposed trail passes. These rules and regulations shall not apply to any person lawfully engaged in the performance of his duties in the development, maintenance and operation of such trails, including but not limited to, the Commissioner of Natural Resources, his agents, employees, those persons operating under contract with the Department of Natural Resources and Law enforcement officers.

(c) SEVERABILITY

The provisions of these rules and regulations shall be severable, and the invalidity of any paragraph, subparagraph, or subdivision thereof shall not make void any other paragraph, subparagraph, subdividion or any other part.

(d) DEFINITIONS

For the purpose of these rules and regulations, the terms defined in this section have the meanings given them.

(1) "Bicycle" means any land based vehicle powered by human muscle.

(2) "Commissioner" means the Commissioner of Natural Resources, State of Minnesota, acting directly or through his authorized agent.

(3) "Drug" means any drug, controlled substance, or immediate precursor found in Scheduled I through V of Minnesota Statutes, Section 152.02, and marijuana, as defined in Minnesota Statutes, Section 152.01, Subd. 9.

(4) "Horseback riding" includes all modes of human travel produced at least in part by non-human muscle.

(5) "Intoxicating liquor" for the purposes of these rules means liquors which are intoxicating pursuant to Minnesota Statutes, Section 340.07, and malt liquor containing not less than one-half of one percent alcohol by volume nor more than 3.2% alcohol by weight.

(6) "Motor vehicle" means any self-propelled vehicle and any vehicle propelled or drawn by self-propelled vehicle including, but not limited to, automobiles, trucks, dune buggies, mini-bikes, motorcycles, trail bikes and all terrain vehicles (ATV's).

(7) "Person" means any individual, partnership, corporation or association.

(8) "Snowmobile" means any self-propelled vehicle designed for travel on snow or ice and steered by skis or runners.

(9) "Special event" means an organized rally, race, exhibit, demonstration or other similar activity of limited duration which is conducted according to a prearranged schedule and in which general public interest in manifested.

(10) "Trail means all of that land contained within the area designated as a state recreational trail by the Commissioner.

(11) "Treadway" means that part of the trail constructed for travel.

(e) USE OF A TRAIL

(1) Trail Uses

Subject to the limitations imposed by these regulations and other duly enacted statutes, rules and ordinances, or unless specifically prohibited by the Commissioner, trails may be used for snowmobiling and all non-motorized forms of recreation, including but not limited to hiking, bicycling, horseback riding, snowshoeing, cross-country skiing, camping and picnicking.

(2) Motor vehicles

No motor vehicle, other than a snowmobile, shall be operated within a trail, except upon a legal road or highway as those terms are defined in Minnesota Statutes, Section 160.02, Subdivision 7, and except as authorized by the Commissioner.

(3) Snowmobiles

No snowmobile shall be operated within a trail except upon treadways designated for such use and under conditions considered adequate for the protection of the trail by the Commissioner.

(4) Horses

No one shall ride, lead or drive a horse or other beast of burden upon a trail except upon treadways designated for such use.

(5) Trail hours

Any specific use of a trail may be limited to hours designated by the Commissioner and any use in violation of such limitation is unlawful.

(6) Traffic control

(aa) Trail signs shall be obeyed.

(bb) When on a trail treadway, all trail users must stay on the right half of the treadway when meeting or being passed by another trail user.

(cc) When passing another trail user traveling in the same direction a trail user must pass on the left half of the treadway and may pass only when such left half is clearly visible and is free of oncoming traffic for a sufficient distance ahead to permit such overtaking and passing to be completely made without interfering with the safety of any trail user approaching from the opposite direction or any trail user overtaken.

(dd) Any trail user who is about to enter onto or cross a trail treadway, shall yield the right of way to any trail user already on the treadway to be entered or crossed.

(ee) When at approximately the same time, two trail users are about to enter an otherwise unmarked treadway intersection from different treadways or are approaching an otherwise unmarked merger of two treadways from any two directions, the trail user on the left shall yield the right of way to the trail user on the right.

(7) Special events

No special events shall be held within a trail except with a written permit of the Commissioner previously obtained. Such permit may exempt the holder and other participants from the operation of any of the rules contained herein, and may be revoked or suspended by the Commissioner at any time.

(f) USE OF CAMPING AND REST AREAS

(1) Camping

(aa) Overnight camping is restricted to designated camping areas.

(bb) The duration of the stay of any person at said areas shall be no more than two consecutive nights except where otherwise posted.

(cc) A fee may be prescribed by order of the Commissioner for use of the camping areas and facilities, and if such a fee is prescribed, it shall be paid before the area or facility is used.

(dd) There shall be no digging or trenching within the camping or rest areas.

(ee) No persons or group of persons shall unreasonably exclude others from campgrounds or rest areas.

(2) Fires

It is unlawful to build a fire within a trail excpet in a fireplace or a fire ring provided for that purpose. However, portable gas or liquid fueled camp stoves may be used within a camping or rest area if such use does not create a hazard or danger to the trail or to others.

(g) HUNTING AND TRAPPING

(1) Hunting

No firearm or bow and arrow shall be discharged within the trail at any time, except for the purpose of lawful hunting during the period from September 15th to March 30th only. No rifle, shotgun with slug, or bow and arrow shall be discharged upon, over or across the trail treadway at any time.

(2) Trapping

The Commissioner may forbid the placement of any manner of animal trap in any area of a trail by order.

(h) PROTECTING THE TRAIL

(1) Environment

No person shall disturb, destroy, injure, damage or remove any property within trails including but not limited to vegetation, ruins, wildlife, geological formations, signs, or facilities except edible fruit and wild animals legally taken under the provisions of Section (g) subdivisions (1) and (2) of these rules, and vegetation unavoidably damaged or destroyed by the ordinary uses

of the trail as specifically permitted by these regulations. Collections for scientific and educational purposes may be made with the written consent of the Commissioner previously obtained.

(2) **Bill posting**

No persons shall post, paste, fasten, paint or affix any placard, bill, notice or sign upon any structure, tree, stone, fence or enclosure in a trail.

(3) **Obstructions**

No person shall place or cause to remain within any trail, any snowmobile, trailer, horse, bicycle or other object so as to obstruct the free use and enjoyment of said trail. Any such obstruction shall be removed at the owners expense. If not claimed and payment of expenses offered within a reasonable time, which in no case shall be more than thirty days, it shall be disposed of according to the provisions of Minnesota Statutes, Section 16.0231 concerning the disposal of lost or abandoned property.

(4) **Refuse**

No person shall burn or dispose of garbage, refuse, litter or trash within a trail except in receptacles provided for that purpose.

(i) PROTECTING OTHER USERS

(1) **Personal conduct**

Within a trail, no person, knowing or having reasonable grounds to know that is will, or will tend to, alarm, anger or disturb others, or provoke an assault, shall breach the peace by engaging in the following conduct:

(aa) Brawling, fighting or other violent conduct directed toward another; or

(bb) Offensive, obscene, or abusive language or boisterous and noisy

conduct which might be reasonably expected to arouse alarm, anger or resentment in others.

(2) Intoxication

No person while within a trail shall be in a state of intoxication brought about by the consumption of intoxicating liquor.

(3) Drugs

No person shall use, be in the possession of, or be under the influence of drugs within a trail unless such use, possession or influence is pursuant to and in compliance with a prescription from a licensed physician.

(4) Pets

No persons shall allow any pet animal to be unrestrained or unattended except dogs used for hunting during legal hunting seasons in accordance with Section (g) paragraph 1 of these rules. Such pets shall be restrained by a leash not exceeding six feet.

(5) Peddling

No person shall peddle or solicit business of any nature, within a trail, or use any of the lands or structures as a base for commercial operations.

(6) Safety

While being ridden or operated within a trail, horses, bicycles and snowmobiles must be under the control of the operator at all times.

(j) ADJACENT LAND

(1) Access

A trail shall not be used as an access to private lands without the consent of the landowner, lessee, occupant or his agent.

(2) Posting

Failure to post private lands does not imply such consent for trail users.

(k) OTHER LAWS

(1) Safety regulations

All uses of trails will be subject to:

(aa) Commissioner's Orders;

(bb) Snowmobile rules, regulations and safety laws; and

(cc) Bicycle rules, regulations and state laws.

(2) Conflict with other laws

(aa) Each component of the designated State Recreational Trail System shall be subject to the provisions of these rules and regulations, provided that in the event of conflict with some other law, rule or regulation of this state, the more restrictive provision will apply.

(bb) No regulation or ordinance adopted by a local unit of government, may be inconsistent with these rules and regulations, except that local regulations or ordinances concerning the use of firearms, bows and arrows, and traps may be more restrictive than these rules and regulations.

(l) SUSPENSION OF RULES

The Commissioner may provide exceptions to the general rules for a specific trail by order filed with the Secretary of State, if such exceptions authorize activities which are not inconsistent with the purposes for which the trail is established or better serve the public interest.

(m) PENALTY

Any person who shall violate any rules promulgated herein shall be guilty of a misdemeanor and subject to arrest.

Filed June 13, 1975

Trail Funding (1978-79 Biennium)

1. Outdoor Recreation Bonding Act (Laws of Minnesota Chapter 421)

   Appropriations: $1,800,000.00 for betterment (development, not maintenance) of state trails.

   $1,805,000.00 for acquisition of state trails.

   $1,105,000.00 for development of non-motorized trails in state parks and state forests.

2. Snowmobile Unrefunded Gas Tax (Laws of Minnesota Chapter 455, Section 28)

   Appropriations: $2,400,000.00 for acquisition, development and maintenance of recreation trails. Ninty percent of this appropriation goes to the Grants-In-Aid Trails Program. Ten percent is used for trails operating costs, state trail contracts and various other expenses.

3. Snowmobile License Fees (Laws of Minnesota Chapter

   Appropriations: $780,000 from Division of Parks and Recreation General Operations Account for maintnenace of state trails, state forest trails, and state park trails.

4. Resource 2000 (Laws of Minnesota 1977, Chapter 421)

   Appropriations: $900,000 for acquisition of state trails.

SCORP-User Demand Data

Resource Characteristics. Both groups strongly desired that trails be located where there would be a chance to observe wildlife (96 percent of the cross-country skiers and 90 percent of the snowmobilers) and pass through wilderness-like areas (86 percent and 80 percent). There were also strong desires for trails which would pass near water. Over 86 percent of the skiers and 73 percent of the snowmobilers desired trails which would parallel a river. Slightly fewer were in favor of trails that would pass along a lake shore (74 percent and 64 percent). Trails which would pass mainly through woods were highly desired (84 percent and 75 percent). Generally, more snowmobilers than cross-country skiers desired trails which would pass through hilly terrain (68 percent skiers and 76 percent snowmobilers).

Steep hills were desired by only 8 percent of the cross-country skiers. Over half of the skiers wanted moderate hills and 40 percent indicated gentle hills would be fine. Nearly 70 percent of the skiers indicated they avoided narrow twisting runs, while the remainder indicated they sought out such an environment.

Design and Management. Both groups desired open areas where they could leave the trail (70 percent each). More snowmobilers desired trails to be marked by frequent signs (60 and 83 percent) and to be monitored by some type of safety patrol (57 and 73 percent). Approximately 60 percent of the respondents in each category reacted positively to the idea of providing rest shelters or warming huts and toilets. Those cross-country skiers who wanted shelters indicated they should be spaced 4.5 miles apart. The snowmobilers wanted shelters spaced 15 miles apart. Over one half of the respondents from each category wanted trails to be groomed, while less than 20 percent indicated a

a personal desire to break trail. Over 56 percent of the skiers and 72 percent of the snowmobilers desired trails which would connect recreation areas. Campsites and/or cabins places along trails for overnight use received limited positive response.

Network trails were desired by over three quarters of the respondents from each group. Nearly 80 percent of the snowmobilers and over 90 percent of the skiers wanted trails which would begin and end at the same point. Linear trails or those which simply go from point A to point B were desired by only five percent or less of each sample.

The ideal trail for cross-country skiers was thought to be ten miles in length. Snowmobilers wanted trails of around thirty miles in length. Trails would best be located within twenty miles of home according to the majority of respondents.

Conflicts. While snowmobilers, for the most part, expressed tolerance for other types of trail users, cross-country skiers saw themselves as compatible only with other skiers and snowshoers. Only two percent of the cross-country skiers and 33 percent of snowmobilers stated they would not return to a specific trail if they encountered cross-country skiers. Over 90 percent of the cross-country skiers stated they would not return if they encountered four-wheel drive vehicles and 84 percent would not return if they encountered snowmobilers. The same theme appeared in the comments of cross-country skiers where over one-third thought that snowmobilers should not be allowed on or near ski trails. This data suggests a need for separate trail facilities for each user group or system whereby contact between the groups is limited.

When choosing appropriate types of trail use, less than ten percent of the cross-country skiers and only 20 percent of the snowmobilers indicated all types of uses should be allowed on trail. Over 60 percent of the snowmobilers indicated there should be separate paths for different user groups.

Appendix 4

COOPERATIVE AGREEMENT

Between

STATE OF MINNESOTA

DEPARTMENT OF NATURAL RESOURCES

and

SUPERIOR NATIONAL FOREST, U.S.D.A.

THIS COOPERATIVE AGREEMENT, made and entered into by and between the State of Minnesota, Department of Natural Resources, hereinafter referred to as the State and the Forest Service, U.S. Department of Agriculture, hereinafter referred to as the Forest Service, under the provisions of the Act of June 12, 1960 (16 U.S.C. 530) and under the provisions of Minnesota Statutes, Sections 84.025, Subdivision 7,84.029 and 471.59.

WITNESSETH:

WHEREAS, the State desires to develop and maintain a State multi-purpose recreational trail corridor system within the Superior National Forest to a mutually agreed standard, and,

WHEREAS, the Forest Service within the Superior National Forest desires to develop corridor trails on United States owned lands and State owned lands to a mutually agreed standard, and

WHEREAS, it is to the mutual benefit of both parties to this agreement to locate, clear and construct a State multi-purpose recreation trail corridor system along specified routes on United States owned land and State owned land for use by the public.

NOW, THEREFORE, in consideration of the above premises, the parties hereto agree as follows:

A. The State shall:

1. In the performance of work, the State agrees to comply with the provisions shown in Section 1, Equal Opportunity, of Part B - Labor Standards Provisions, which is attached and made a part of this agreement. For the purpose of this agreement "contractor" means "State"; "contracting officer" and "contracting agency" means "Forest Service".

2. By accepting this agreement the State hereby agrees to comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by or pursuant to the regulation of the United States Department of Agriculture (uCFR, Part 15) issued pursuant to that Act, and hereby assures that in the operation and performance of this agreement to take immediately any measures necessary to effectuate this requirement. If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the State by the United States Department of Agriculture, this assurance shall obligate the State or in the case of any transfer of such property, and transferee, for the period during which the Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance shall obligate the State for the period during which he retains ownership or possession of the property. In all other cases, this assurance shall obligate the State for the period during which the Federal financial assistance is extended to him by this agreement. This agreement is given in consideration of the Federal financial assistance extended in this agreement to the State by the United States Department of Agriculture. The State recognizes and

agrees that such Federal Financial assistance will be extended in reliance on the representations and agreements made in this assurance. The State further agrees that the United States, in addition to any other rights and remedies provided by this assurance, the Civil Rights Act of 1964, or the regulations issued thereunder, shall have the right to enforce this agreement by suit for specific performance of by any other available remedy under the laws of the United States or the State in which the breach of violation occurs.

3. Determine independently the amount of State funds to be spent on the trail system.

   Nothing contained in this agreement shall require the State to expend State funds on the trail system in the absence of an appropriation by the State Legislature.

4. Take necessary precautions for prevention of fires and cleanup all State work areas to the satisfaction of the Forest Service.

5. Promote the public use and recognition of the trail in the National Forest.

6. Prepare an Environmental Analysis Report (EAR) for Forest Service review for the proposed trail system. Changes recommended by the Forest Service will be incorporated into the final EAR.

B. The Forest Service shall:

1. Determine independently the amount of Federal funds to be spent on the trail system.

   Nothing in this agreement shall be construed as obligating the Forest Service to expend, or as involving the United States in any obligation

for future payment of money, in excess of appropriations authorized by law.

2. The Forest Service will review the State EAR and forward the State any recommended revisions.

C. It is mutually agreed and understood by and between the said parties that:

1. The on-the-ground trail location shall be approved by both the Forest Service and the State and shall consist of a 100 foot right-of-way corridor.

2. As the on-the-ground trail location is determined, the description and necessary maps shall be attached to this agreement. After the on-the-ground trail location is determined a map shall be prepared to show the right-of-way of the trail. Said right-of-way shall be dedicated for trail purposes for public use subject to the terms and conditions of this agreement.

3. Forest Service and State multiple-use activities shall be permitted within the 100 foot corridor. Each agency shall notify each other of planned multiple-use activities in the trail corridor.

4. Upon mutual agreement of both agencies, trail corridor shall be rerouted to avoid multiple-use conflicts.

5. Motor vehicles shall be prohibited except snowmobiles and those motor vehicles used for administrative uses by either agency.

6. Trail construction shall be guided by the following specifications.

a. Design

(1) Minimum tread surface of 10 feet and a maximum of 14 feet. Average tread surface of approximately 12 feet.

(2) An additional two feet shall be cleared outside trail surface. Additional clearing is authorized if required for the purpose of maintaining proper cut and fill slopes.

(3) Minimum turning radius is 50 feet.

(4) A height of 10 feet above trail shall be cleared.

(5) Sustained grades and slopes shall be a mixamum of 20%.

(6) International Snowmobile Industry Association reflectorized signs shall be used on snowmobile trails. All signs, except reassurance markers, shall be placed on posts.

b. Trail vertical and horzontal sight distance shall be a minimum of 50 feet. Snowbanks at road crossings shall be cut back to provide adequate visibility in both directions on both sides. Snowbanks shall be kept low at trail crossing points to permit easy exit from and entrance onto the trail. Warning signs shall be installed on trails at both trail and road corssings at sufficient distance to properly warn users.

c. Trails shall cross contours at right angles where possible. Routing trails along side slopes shall be avoided. Approaches to slopes shall be straight and at least as long as the slope.

d. Snowmobile trails <u>shall not</u> be routed over lakes, streams, or other bodies of water. If stream crossings are necessary, bridges at least six feet in width shall be provided. Bridge designs shall have mutual approval of the State and Forest Service. Railings or other appropriate markers shall be required.

e. The location and design of other facilities along trails, such as parking lots, toilets, etc., shall be mutually agreed upon before construction begins.

7. Trail maintenance and maintenance of other trail facilities shall include but not be limited to removal of hazardous materisls, trash removal, servicing of toilets, grooming and removing snow from parking lots.

8. The State and Forest Service shall mutually formulate an annual plan on or before May 1, stating specific trail maintenance and construction responsibilities of each party for the coming year. This annual plan shall be in writing and will become a part of this agreement.

9. This agreement in no way restricts the Forest Service or the State from cooperating with or receiving cooperation from other public and private agencies, organizations, and individuals or from accepting contributions and gifts for the development, administration, and operation of the trail facilities.

10. All improvements constructed in whole or in part on National Forest land shall be and will remain the property of the United States. Likewise, all improvements constructed in whole or in part on State land shall be and will remain the property of the State of Minnesota.

11. If mutually agreeable, the Forest Service will reimburse the State for trail construction on National Forest land. The amount of funds available for reimbursement, estimated length of trail to be constructed and billing procedures will be established in writing and in advance of construction.

12. Reimbursable expenditures are those costs incurred for trail construction work by one party to this agreement at the request of the other party. In calculating these expenditures, the following elements shall be included:

a. Salaries and wages, including employer's share of Federal Insurance Contributions Act, retirement, and insurance, of all persons assigned to work on the project.

b. Travel and per diem expenses of all employees engaged in the construction and direct supervision of the project.

c. Rental charges for equipment either owned or under contract and used on each proejct at equitable rates.

d. All other direct expenditures incident to the construction of each particular trail.

13. To comply with Public Law 91-190, the National Environmental Policy Act of 1969, the State and Forest Service agree to direct their program activities covered by this agreement toward managing and enhancing the environment for the widest range of beneficial uses without its degradation or risk to health or safety or other undesirable consequences. The cooperator furhter agrees to assist the Forest Service in the preparation of environmental statements as required by section 102 (2) (c) of PL 91-190 for all major Federal actions taken under this agreement which might significantly affect the quality of the human environment or be highly controversial in regard to unresolved conflicts concerning the use of resources.

14. Permission to camp, and to perform work on National Forest lands, under terms of this agreement, does not in any way convey to the State, their officials, or any person or persons working with the State in the performance of said work employee status that would extend to them the benefits of the Federal Employees Compensation Act, as amended.

15. No member of, or Delegate to, Congress or Resident Commissioner shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

16. This agreement may be revised as necessary, by mutual consent by both parties, by the issuance of a written amendment, signed and dated by both parties.

17. Either party may terminate this agreement by providing 60 days written notice. Unless terminated by writtne notice, this agreement will remain in force indefinitely.

18. The Rules and Regulations of the Minnesota Department of Natural Resources for Recreation Trails shall govern the use of the trails.

19. This agreement shall be effective upon execution by both parties hereto.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the last date written below.

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

By _____

Title _____

Date _____

DIVISION OF PARKS & RECREATION

_____

MINNESOTA DEPARTMENT OF ADMINISTRATION
JAMES J. HINIKER, JR., COMMISSIONER

By _____

Title _____

Date _____

MINNESOTA DEPARTMENT OF FINANCE

By _____

Title _____

Date _____

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE - SUPERIOR NATIONAL FOREST

By _____

Title _____

Date _____

Impact on the Environment

A. Natural Resources

The International Falls to Tower Trail will do nothing directly to improve the natural environment. However, modification of trail area will be limited and extremely localized. Adverse effects on the areas natural resources are expected to be minimal.

Total land area to be directly affected by construction of the trail and facilities will be about 180 acres of which a substantial portion has already been disturbed due to existing development.

Soils

Soil erosion will occur during construction and use but will be minimized through route selection, retaining natural ground slope and using cross drains and culverts where necessary. No siltation of streams or lakes is anticipated.

Soil compaction on the trail will be minimized through the selection of dry soil locations, the use of surfacing, or by placing bridges, board walks, or culverts where necessary to avoid compaction.

Siting of development structures and waysides on upland well drained sandy and gravel soils wherever possible will minimize their effects.

In areas where long stretches of poorly drained soils must be traversed use will be restricted to winter use only. This restriction will minimize compaction and erosion because these soils will be more stable during this season of the year.

Air and Water Quality

Impacts on air and water quality are expected to be minimal but will largely depend on the intensity of trail use.

Areas of exposed soils could cause sedimentation of waterways and intense use by horses on some portions of the trail could lead to problems of organic waste disposal. Summer use however, is expected to be minimal therefore, this effect should be slight. Also summer travel on a stabilized trail surface will minimize erosion.

Increased use of the area will cause some deterioration in air quality as a result of increased auto emissions on access roads and parking areas, and increased snowmobile emissions on the trail and at waysides. Use of heavy equipment in development will have a temporary adverse impact on air quality.

These impacts will have a negligible or only minimal long term effect on the air and water quality of the area because use of the trail is not expected to be intense.

Vegetation

Adverse impacts on vegetation will be its loss from the trail treadway, waysides, and parking lots during construction. These impacts, however, will be offset by reseeding of the trail treadway and waysides.

In addition, ground cover and other vegetation may be adversely effected by snowmobiles and other trail users. Snow compaction and soil compaction could cause a delay of ground cover growth and trail users could cause damage to vegetation by not staying on the trail.

Development of the trail should minimize this type of disturbance by concentrating use through the provision of a travel route. Provision of the trail will discourage wildcat trails which are occurring at present because people are unable to reach desired destinations.

Disturbance to vegetation will also be minimized through the use of existing logging roads, skid roads, railroad grades and trails.

Wildlife

Wildlife will be disturbed during construction, maintenance and use of the trail. Trail construction may also result in more wildlife being harvested adjacent to the trail by hunters using the trail for access. These effects however, will be minimal and only result in concentrated disturbance rather than dispersed disturbance. Particularly sensitive areas such as deer yards **have been avoided during alignment.**

Wildlife will probably benefit from seeding of the trail and the "edge effect" which the trail will create. Wide ranging species such as deer and wolves may also benefit because of the travel lane the trail will provide for these species.

Minerals

No impacts on mineral resources will occur.

Impacts on Historic and Cultural Resources

No impact on these resources is expected to occur. The Minnesota Historical Society will conduct a study of available historical and cultural resource records and U.S.G.S. topographic maps to determine **whether on site** archaeological investigation is necessary before construction.

Impacts on Socioeconomic Resources

Landowners

Increased use of the area by trail users may increase the incidence of fires, vandalism, trespassing, littering and noise levels. However, problems such as those mentioned are expected to be minimal. Also, concentrating use to a specific area such as a trail, will help to limit potential problem areas. In many instances, use of the trail should help alleviate some of these problems by providing a route for people to travel.

Government

The proposal will result in the loss of approximately 20 acres of tax accessible private land for the two counties involved. This tax loss is not significant enough to have an adverse impact on the taxing units. The new payment in lieu of tax law passed last session may in fact increase tax revenues to the counties.

Timber Industry

Commercial forestry will be slightly affected on those individual parcels through which the trail passes. Loggers will have an increased responsibility to protect the trail and timber managers will be expected to consider the same in their management activities such as planned timber sales. Parking and rest areas will take lands out of forest production. Total land taken out of production will be approximately 180 acres. Loss of this acreage is insignificant when you consider that a majority of this land would have been cleared or has already been cleared for access roads.

Mining

Mineral exploration and extraction will not be precluded by the trail.

Miners, however, will be expected to protect or reroute the trail should extraction occur.

Hunting and Trapping

Hunting and trapping are permitted on state trails during established seasons in accordance with NR 20.

Recreation

Establishment of the trail will make available to the general public a chance to view a scenic portion of the state via recreational means. Also, public and private recreational facilities will receive increased use by the public attracted to the trail. This is not necessarily unfavorable as few existing facilities are used to capacity and it is not expected that trail users will have a significant impact on existing services. Increased use will have a beneficial impact on the economy through increased tourist travel expenditures.

Transportation and Utilities

Expected increases in use of the area will have an insignificant impact on traffic volumes on highway access routes. Access to the area via township and forest roads should not be adversely affected. No impact on utilities will occur.

Land Use

Construction of the trail will not change the land use of the area. It will, however, require contract provisions to protect the trail treadway.

Mitigating Measures Included in the Proposed Action

A. Natural Resources

All trail treadways and trail facilities will be constructed utilizing established and accepted treadway and facility design standards and materials. Further, wherever possible, already disturbed lands will be used for construction of new facilities to minimize disturbance of soils and watersheds and loss of native vegetation and wildlife. The length of the trail and spaced locations of facilities will help to disperse use and aid in preventing overcrowding. Connection of various existing trail systems should also help to disperse use and prevent crowding.

Adverse effects of construction activities will be minimized to the greatest possible extent by selection of suitable development sites and by implementation of soil stabilization measures.

Revegetation and proper landscaping of the trail treadway and facility areas will minimize the effects on soils, vegetation, and wildlife.

The trail treadway will be located on old skid roads, logging roads, railroad grades or existing trails wherever possible to minimize disturbances and losses to the environment. Steep slopes, side cuts, deer yards and other particularly sensitive areas will be avoided. Summer use will be restricted to high land areas or areas where short stretches of corduroy or boardwalks can be utilized to prevent damage to sensitive soils. In addition, trail maintenance, adequate signing and provision of a trail surface will further mitigate the potential effects by limiting trail users to a particular area which will cause a concentrated rather than dispersed disturbance.

The small waysides and parking lots which will be spaced at 10 to 30 mile intervals will also reduce adverse effects by spreading trail use out over a larger area.

All pit toilets will be constructed on suitable soils or equipped with vaults to prevent contamination of the water resource. These requirements will minimize the potential for this type of pollution. Toilets will be built to conform to Pollution Control Agency and county Health Department standards.

Information and education programs implemented through interpretive signs and literature will also help to reduce environmental effects by making trail users aware of potential problems associated with their recreation activity.

Cultural Resources

All areas of development proposed in this plan will be studied by the Historical Society or a contractor prior to construction. This study will be used to identify sites which must be avoided during construction. All provisions of this plan will be implemented in a manner which will have no adverse effect on qualified cultural resource sites which have been identified.

Socio Economic Environment

A major concern to landowners will be increased fire hazard, trespassing and littering and increased noise levels from snowmobiles. These impacts will be partially mitigated by concentrating use to a specific area, constructing gates where necessary to discourage trespass, placing litter receptacles at parking lots and waysides and by routing the trail away from occupied buildings where possible.

The loss of tax revenues to local governments will be offset by the state paying the counties for leases to use tax forfeit land. Such payments will produce revenue for the county on lands which they currently collect no taxes. Counties will also be paid for timber cut during construction of the trail. The new payments in lieu of taxes legislation will also increase revenues for county governments.

Impacts on the Timber Industry will be mitigated through implementation of policies which will allow timber harvesting adjacent to the trail. Trail rules and regulations will be amended in the Commissioner's designation order to permit these activities with minor restrictions. Timber companies may benefit from increased access to areas via construction of the trail.

Anticipated recreation benefits associated with the proposed action can be expected to occur with increased visitation to towns and service areas via the trail. Although no figures are currently available to estimate this value in real terms, studies for other recreation areas in the state have shown that dollars generated through increased tourist-travel expenditures have a significant impact on the economy.

Any Adverse Effects Which Cannot be Avoided Should the Proposal be Implemented

The acquisition and development of the state trail will cause some environmental impacts which cannot be mitigated or which can only be partially mitigated. Some unavoidable loss of soil, vegetation and wildlife resources will occur. However, the gains made for these same resources, as a result of this proposal, will more than mitigate for their losses.

Any deterioration of air quality resulting from development activities and increased trail use will also be unavoidable. Any increases in littering and trespassing can only be partially avoided, as can increases in noise levels resulting from the proposal. None of these impacts will pose serious problems to the physical, biological and socio-economic community.

Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

Short-term uses of the environment as they relate to maintenance and enhancement of long-term productivity are not considered in terms of years. Tradeoffs are necessary in order to gain certain benefits.

Present and future generations will benefit from the trail through increased opportunities for outdoor recreation. This will become increasingly more important as population increases and more and more restrictions are placed on recreational activities.

None of the proposed developments or uses will significantly impair the long-term productivity of the natural or socio-economic environment.

The changes in land ownership, tax base and loss of up to 180 acres of timber producing lands are short-term alterations of the trail area which are tradeoffs for long-term gains.

Irreversible and Irretrievable Commitments of Resources

The cleared width of the trail and development of trail facilities is a commitment of resources that could be partially retrieved.

The manpower, some materials, and funds necessary to implement the project will be irretrievably committed.

Alternatives to the Proposed Action

Major alternatives considered for the proposed action were: 1) no action; 2) project of a larger scope; and 3) project of a smaller scope.

1. No Action

   If the No Action alternative is selected no trail between International Falls and Tower would be developed. The International Falls to Tower trail would remain a trail authorized by the legislature, but no development would occur.

   The no action alternative would probably cause an overall detrimental effect on the environment, because area trail users would have to continue to blaze their own wildcat trails to reach the destinations they seek. Trails would be blazed in locations unsuitable for such use and would be of lesser standard than required.

   The no action alternative could also cause government agencies to be critized for failure to provide adequate recreational facilities, especially in this area where snowmobile use has been restricted.

2. Develop a continuous high land trail between Tower and International Falls

   The entire trail between International Falls and Tower would be routed on high land and the entire trail would be open to summer use.

   This alternative would slow construction of the trail and be three to five times more costly. Reasons why include a) Most of the suitable highland areas are in private ownership and therefore the state would have to purchase much of the right-of-way. Land acquisition of this magnitude could take years even if there was a majority of willing sellers; b) Much

of the high land areas in this part of the state are shallow soil bedrock areas or contain large boulders. Cost of developing a trail in these areas would be extremely high due to the large amount of equipment and labor that would be necessary; and c) Even if all suitable high land locations could be utilized there would still have to be a tremendous amount of corduroy or boardwalk construction to develop a continuous summer trail. Costs for this type of trail construction would be extremely high.

This alternative, although the best alternative in terms of multiple use, would be extremely costly. Second very little public support for a summer use trail has been shown and projected trail needs for summer trails have already been met. Third this alternative could delay construction of the trail for years, extending the wait for snowmobile users who have supported and pushed for this trail to be constructed. Finally, government agencies could be critized for holding up construction of the snowmobile trail because of summer use considerations, when there appears to be very little interest in the trail by these groups.

3. Project of a Small Scope

This alternative has been given very little consideration since existing legislation and state trail criteria would prohibit such a project. Also, development of only a portion of the trail would not satisfy the desire of users from this region to be able to travel to International Falls and Tower via a state trail.

NOTES