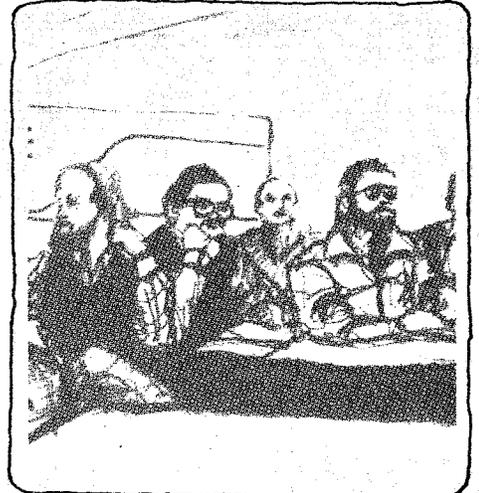
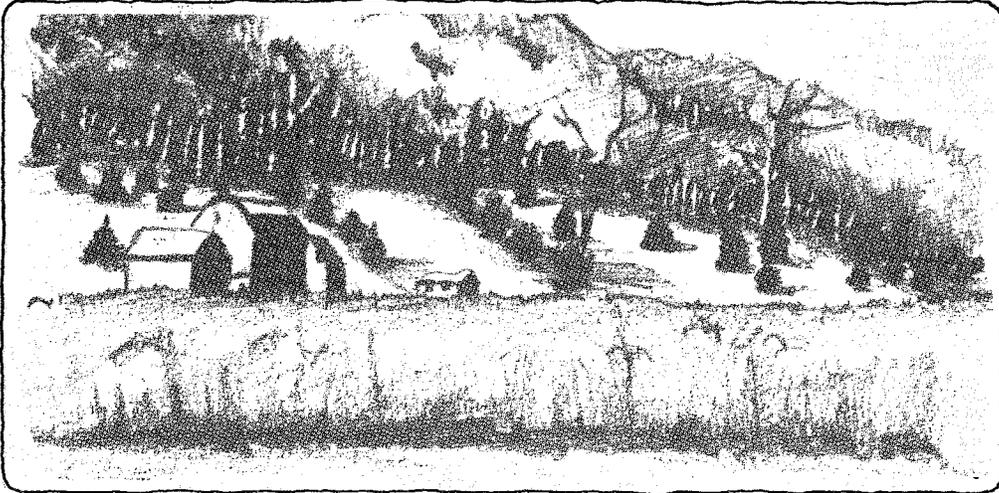
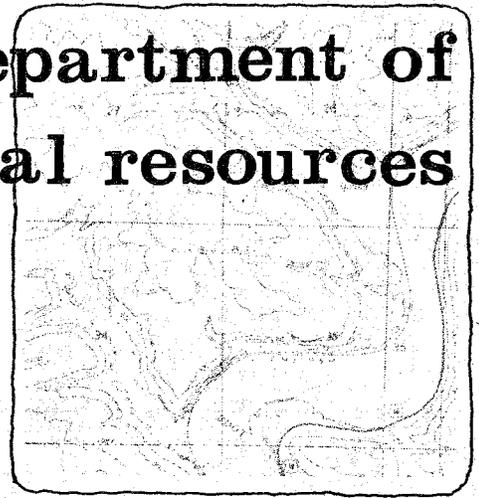
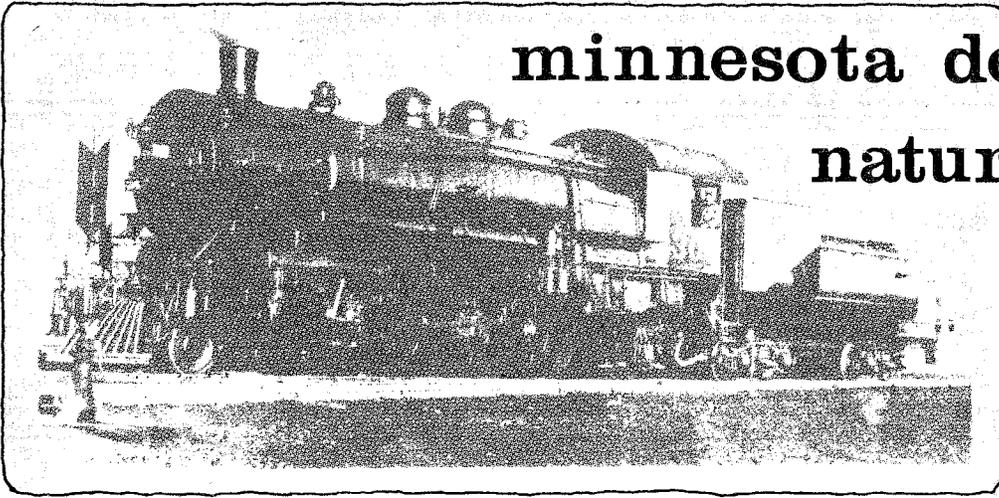
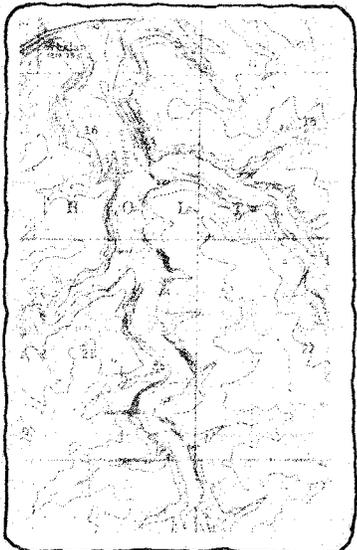


minnesota department of
natural resources



Root River State Trail

master plan



ROOT RIVER STATE TRAIL

Master Plan

Minnesota Department of Natural Resources
Trails & Waterways Unit
Trails Planning Section
November 1983

Locomotion should be slow, the slower the better; and should be often interrupted by leisurely halts to sit on vantage points and stop at question marks.

Carl Ortwin Sauer
The Education of a Geographer

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the best or most desirable road river trail
will be the one which is this ambience;
southeastern minnesota in microcosm...



introduction
introduction

I. INTRODUCTION

Foreword

This master plan was prepared by the Minnesota Department of Natural Resources' (MN/DNR) Trails & Waterways Unit in conformance with Minnesota Statutes 86A.09, Subdivision 1, which requires, with certain exceptions, that a master plan be prepared for each authorized unit in the Minnesota Outdoor Recreation System. The primary author was:

Bill Lynott, Trails Planner
Trails Planning Section
Trails & Waterways Unit.

However, no document of this nature is ever the work of just one person, nor is the sometimes complex and tedious planning which goes into it.

Donald M. Carlson, Jim Newland, John Chell and, in particular, Dan Collins, continuously encouraged and challenged the planning process to be as good as it could be.

Tom McGuigan was mainly responsible for the interpretive appendix and was additionally an invaluable source of perspective, local information and common sense. Dr. Roy Meyer provided me with invaluable historical background material.

Technical information and cooperation supplied by Bill Morrissey, Ron Winkel, Tom Romaine, Randy Mell, Bob Nelson, Tom Danger, Nancy Mahle, Pat Bursaw, Tim Peterson, John Hellquist, Craig Mitchell, Dave Mechenich, Kathy Bolin, George Kirk,

Howard Sheppard, Blair Joselyn, Nick Gulden and Lee Pfanmuller were much appreciated.

Kathy O'Connell was an effective sounding board and source of ideas for the project. In addition, she and Bruce Skrien did the graphic displays and maps; the results speak for themselves.

Joyce Suckow, Lori Rodriguez, Robin Persons, Joanne Sullivan and Terry Soltenberg all helped with the typing, which must at times have seemed endless.

The Root River Trail Citizens Advisory Group served admirably to reflect local concerns and attitudes in the course of the planning process. In particular Paul Nelson, Mabel Spear, Charles Ruen, Don Hoegh, Ron Faust and Vern Bunke made suggestions, raised concerns and in other ways were most helpful.

Numerous discussions of this project with Harry Roberts, Laures Young, Jim Dustrude, Paul Nordell, and Angela Anderson served to tighten important concepts and focus attention where it was needed during the planning process. I am indebted to them for their cheerful willingness to put their own problems aside for a few minutes to discuss mine.

In addition to the foregoing, there are numerous governmental officials and private citizens who took the time to attend meetings, write letters, and in other ways become involved when they were needed. They are too numerous to list by name, but their contributions were significant and highly valued nonetheless.

Finally, my wife Sandra and daughter Megan were patient and understanding during the numerous trips away from home required by this planning process. Their support and encouragement were unfailing and I dedicate this work to them.

There is always some risk associated with naming names because someone may inadvertently be left out. Suffice it to note that the intent is to give credit to those who have earned it and that their involvement has made this plan and the planning process which led to it better than they otherwise would have been.

Administrative Setting and Role

Since the passage of the Outdoor Recreation Act (ORA) of 1975 (M.S. 86A), Minnesota has had an Outdoor Recreation System, composed of 11 different types of outdoor recreation facilities. State Parks, State Wildlife Management Areas and State Forests are examples of component units in the system, each of which has a distinct role to play in carrying out ORA's mandate to make available to Minnesotans the abundant opportunities for outdoor recreation provided by the unique natural, cultural and historic resources of the state.

State Trails collectively are another component of the Minnesota Outdoor Recreation System. In terms of roles played by various ORA units in satisfying the recreational needs of Minnesotans, state trails have the ability, unique among the ORA units, to portray the natural and historic ambience of those parts of Minnesota through which they pass against the backdrop of the present cultural condition of the landscape, and to do this in a recreational travel setting. It is the trails' linearity which makes this possible; the trail user proceeds from point to point and the trail he/she follows, if properly aligned, planned and developed, exposes him/her to a constantly changing diorama which juxtaposes a feel for the rhythm of the land, the area's history, the natural setting, and the present-day cultural circumstances in an understandable and satisfying way.

It is to provide Minnesotans with the opportunity to experience the various landscapes of Minnesota in this way that the Minnesota Department of Natural Resources (MN/DNR) administers a State Trail System, presently consisting of 14 legislatively authorized state trails which are located in various regions around the state. The DNR

administers this system in order to provide recreational travel opportunities which highlight those outstanding scenic, recreational and interpretive attributes which are unique to the various landscapes of the state.

The southeastern corner of Minnesota, wherein the Root River Trail lies, is hardly thought of as a recreational area of statewide significance. And yet the potential is there. For this is an area of outstanding scenic beauty, a variety of existing recreational facilities, and deep historical roots. The soaring limestone bluffs, the colorful hardwood forests, the short, swift rivers, the grain and dairy farms and the venerable and historic communities all contribute to a constantly changing panorama of sights, sounds and smells, the totality of which is southeastern Minnesota. It is the experience of this ambience which the Root River Trail is intended to impart, and the best or most desirable Root River Trail will be the one which is this ambience, southeastern Minnesota in microcosm.

In this context, the Root River State Trail is seen as a component of a recreational trail collection which seeks to interpret and display the state of Minnesota in all its variety of form, color and mood. From the remote, forested north country to the unglaciated limestone bluffs of the southeast, this trail assortment makes manifest the different faces of Minnesota and does so in a way convenient for the people of Minnesota to experience and explore. The Root River Trail will contribute significantly to Minnesota's recreational spectrum; it will do so by allowing the trail user to become, for a time, an integral part of a most absorbing locality of a multifaceted gem, Minnesota.

Goal and Objectives

The aim of fulfilling the above vision for the Root River Trail is embodied in the DNR's goal for this trail, which is as follows:

Goal

To provide a recreational trail in the Root River Valley that -- a) takes maximum advantage of the area's outstanding resources; b) complements regional trail systems and other recreational facilities and systems; c) is responsive to user needs and public concerns; and, d) contributes to the achievement of statewide recreational goals.

The fulfillment of this goal will be advanced by achievement of the following objectives:

- a. to preserve, enhance and wisely use the natural, historical and cultural qualities of the Root River Valley;
- b. to design a trail which provides an outstanding recreational experience while minimizing adverse effects upon the area's resources;
- c. to link units of the Outdoor Recreation System, including existing trail systems, state forest units, state parks, and state historic sites;
- d. to provide access to other public and private recreational facilities;
- e. to enhance the contribution of recreation and tourism to the local and state economy;
- f. to work with units of government, user groups and the general public so that trail design, development, maintenance and operation reflect the needs and concerns of the public;

- g. to coordinate ongoing development and maintenance with other public agencies, adjacent landowners and interested user groups;
- h. to maximize opportunities for trail users to enjoy the natural, cultural and historic resources of the area;
- i. to take into consideration management goals of public and private lands adjacent to the trail;
- j. to serve the maximum number of users possible consistent with maintenance of resource quality and with the public interest;
- k. to consider use of the trail by special populations;
- l. to develop and operate the trail so that it provides a safe, enjoyable recreation experience;
- m. to provide a high quality recreational opportunity for the citizens of Minnesota; and,
- n. to complete a component of the statewide recreational trail system.

Conclusion

The Root River Trail has the potential to become the centerpiece of Minnesota's State Trail System. This will occur to the extent that the DNR remains sensitive to the needs and desires of its clientele: trails users, adjoining landowners, community residents and business people, and Minnesota residents as a whole. No less important is the need to conserve and wisely use the resources with whose protection the DNR is charged. This master plan for the Root River Trail, and the planning process which led to it, were authored with these considerations in mind.

ideally state trails show off and typify... the diversity in landscape, history and recreational opportunity... which is minnesota.



summary
summary

II. SUMMARY

Overview

Although the Root River Trail was authorized in 1971, it was not until 1979 that the abandonment by the Chicago, Milwaukee, St. Paul & Pacific Railroad of its trackage in the valley of the Root River provided an opportunity to carry out this legislative mandate. When abandonment was approved, the DNR moved immediately to acquire this railroad grade. Controversy over this proposal resulted in DNR's conducting a feasibility study (DNR Office of Planning 1980) and public hearing on the proposed acquisition and the final decision by the DNR Commissioner was to acquire a total of 49 miles of the 100 mile abandonment. Fifteen of the 49 miles comprise a separate land parcel, now designated a State Scientific and Natural Area, and located near Austin. This plan considers only the remaining 35 miles, between Fountain and Money Creek Woods.

The planning process leading to this plan (Figure 1) was conducted in public, with numerous opportunities for public input and review. The result is a plan which at times departs somewhat from typical DNR past practices on state trails, although it conforms fully to law and policy. The public's expressed wishes and needs were accommodated wherever possible, which was the case most of the time.

This plan fulfills the requirements of M.S. 86A.09, Subdivision 1, which requires a master plan for each unit of the Minnesota Outdoor Recreation System, with certain exceptions. Its primary purpose is to set forth a procedure by which the Root River Trail can be developed, operated and maintained in such a way as to provide a top

PLANNING PROCESS

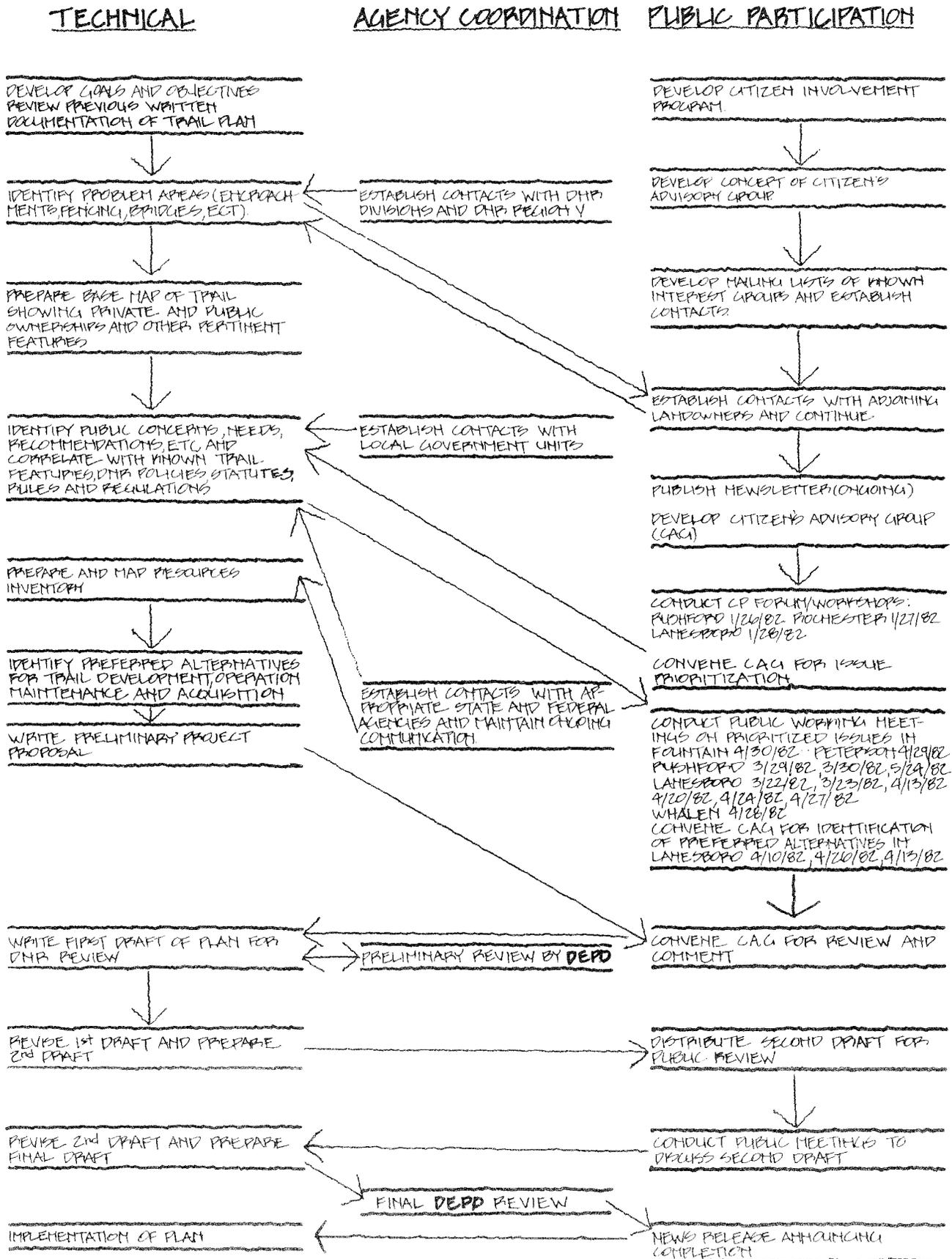


Figure 1

quality recreational and educational experience for the people of Minnesota, while keeping any negative effects on the local area to a minimum.

The trail has been divided into five segments for ease of treatment in describing planning and development concerns (figure 2). While all part of the same trail, the segments vary in length and in uses assigned to them.

In general, bicycling and hiking are the primary proposed summer uses. Horseback riding is proposed for two segments, both about five miles long and leading to sizeable DNR-owned management units of the Richard A. Dorer Memorial Hardwood Forest. Cross-country skiing is the proposed use on the main treadway in winter; snowmobiling is accommodated from Peterson and the Houston County Grants-In-Aid (GIA) Trail System on the east to as far west as Lanesboro via a combination of existing GIA trails and a separate treadway in the right-of-way. Provision is made for extension of snowmobiling from Lanesboro to Preston, Fountain and the Mower County GIA system by means of proposed prioritization of future GIA local initiatives. Due to high levels of concern expressed by the public in planning meetings, it is recommended that firearms be required to be cased and unloaded on the trail for a specified evaluation period.

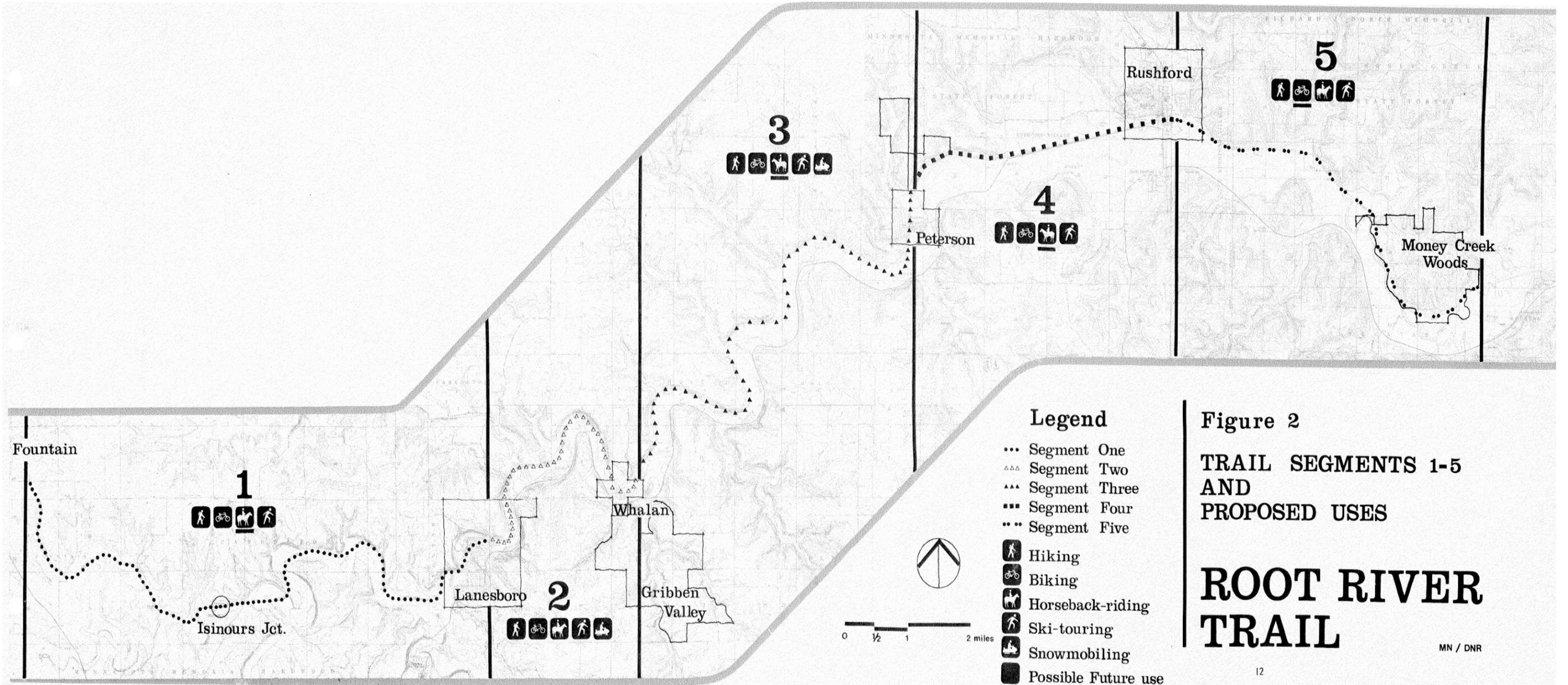
A trail information center is proposed for each community through which the trail passes. In some cases this is nothing more than a kiosk on which is displayed information for the convenience and safety of trail users; in others, such as Lanesboro and Whalan, it is recommended that existing historic buildings be refurbished as shelters and information points. Rest and sanitary facilities as well as drinking water are provided for in all towns and at several points along the trail.

Recreational developments are proposed for several Dorer Forest management units which adjoin the trail. Such developments are proposed to include unit loop trails (linked to the Root River Trail by spur connectors), camping areas and rest facilities; these are meant not only for the convenience of Root River Trail users, but also to fulfill multiple use goals of the forest units themselves.

As required by law [Laws of Minnesota 1980, Section 164, Subdivision 3 (e)] the plan recommends assignment of a full-time trail manager to the Root River Trail.

As will be made clear in subsequent sections, some proposed actions in this plan are experimental in nature and will need to be evaluated for a set period of time. This aside, changes in conditions, attitudes, use patterns and available resources are bound to occur with the passage of time. Administration of this plan should be flexible enough to respond appropriately to such changes. In the case of identified experimental proposals, evaluation periods of five years are provided for, at the end of which changes in operation and management can be made if necessary without major plan revisions. Finally, the entire plan will be reevaluated after ten years of implementation in light of experience on the trail over that period. To provide for proper evaluation, a strong monitoring effort is recommended.

In sum, the overall strategy is to be responsive to the needs of the public in ways which are appropriate, fair and cost-effective. These should be the watchwords as the Root River Trail project proceeds from acquisition and planning into the development and operation phases.



Legend

- ... Segment One
- △△△ Segment Two
- ▲▲▲ Segment Three
- ◆◆◆ Segment Four
- Segment Five
- Hiking
- Biking
- Horseback-riding
- Ski-touring
- Snowmobiling
- Possible Future use

Figure 2
TRAIL SEGMENTS 1-5
AND
PROPOSED USES

ROOT RIVER
TRAIL

MN / DNR

Major Actions and Recommendations

The following list is a compendium of actions to be taken in developing and operating the Root River Trail in accordance with this master plan. In seeking to fulfill the goal and objectives for this trail (see INTRODUCTION), the DNR proposes to do the following:

1. Develop a hard-surfaced treadway suitable for bicycling on the railroad grade between County Road 8 and Rushford.
2. Develop a grass-surfaced treadway between Rushford and the end of state ownership in Money Creek Woods.
3. Recommend development of unit trail systems for hikers, horseback riders and cross-country skiers on the Money Creek Woods and Gribben Valley subunits of the Richard A. Dorer Memorial Hardwood Forest. Recommend expansion of the interpretive trail loop for the same user groups on Isinours Demonstration Woodland. Recommend development of primitive walk-in camping facilities on all named subunits.
4. Recommend development of one or more scenic overlooks and primitive campsites on the DNR Dorer Forest subunit immediately north of Peterson.
5. Develop a parallel treadway for horseback riders from Lanesboro to Whalan.
6. Construct a bridge across the old Mn/DOT bridge abutments on the south edge of Whalan at that point in the future when the following conditions apply: 1) the proposed recreational development in Gribben Valley Woods is substantially completed; 2) the unit has become a significant destination for Root River Trail users; and 3) the cost of construction is consistent with anticipated levels of use. Develop a spur connecting the main trail at this point with the proposed unit trail network in Gribben Valley Woods.

7. Develop a parking lot adjacent to the trail for horse trailers in east Rushford. Work with the City of Rushford to provide interim parking for horse trailers in the flood ponding area.
8. Offer financial assistance to the City of Lanesboro in developing a combination Root River Trail Center and Interpretive Center in the Old VFW Hall before considering construction of a new structure.
9. Realign the trail and narrow the right-of-way for short distances at several points in order to enhance user experiences, accommodate the needs of adjoining landowners, and comply with existing rules and policies regarding uses.
10. Provide for the installation of fencing, cattle passes and gates where needed in accordance with law.
11. Provide a full-time trail manager whose duties will include trail development, maintenance of trail facilities, interpretation, law enforcement, responding to complaints and other implementation of this plan.
12. Work with the City of Rushford to identify an alignment and facilities for the trail through town which meet the needs of trail users and are consistent with community needs and plans.
13. Give consideration to future development of a parallel treadway for horseback riders between Rushford and Money Creek Woods if such proves in the future to be necessary.
14. Give consideration to extension of the paved surface for bicycling from Rushford to Money Creek Woods if future demand so indicates.
15. Establish a comprehensive program for interpretation of the unique historical, geological, industrial, commercial and agricultural features of the Root River Valley and southeastern Minnesota.
16. Develop a hard-surface parking lot in the right-of-way adjacent to County Road 8.

17. Develop toilet and/or rest facilities at the west end parking lot, Isinours Woods, Lanesboro, Whalan, Peterson, Rushford, Money Creek Woods and, if demand develops, at least one location between Peterson and Whalan.
18. Rehabilitate hand water pumps at Isinours Junction, on the Gribben Valley subunit, and the Peterson subunit for the convenience of trail users and to reduce the potential for harassment of adjoining landowners.
19. Recommend that the City of Lanesboro develop a walking tour of its Downtown Historic District to further interpretation goals of the Root River Trail.
20. Recommend the acquisition by DNR-Forestry of the Harold McCoy property in order to further forestry management goals and enhance trail user experiences.
21. Identify: Cross-country skiing as the winter use on the main treadway between the west end and Money Creek Woods; a parallel treadway for snowmobiling between Peterson and Lanesboro on private land where required by the 150' rule and within the right-of-way elsewhere, with the option of extending this use to Fountain if future demand warrants; bicycling as a summer use between the west end and Money Creek Woods; hiking as a summer use on the entire length of the trail, and horseback riding as a summer use between Lanesboro and Whalan and between Rushford and Money Creek Woods, with the option of expanding this use on the trail if future demand warrants.
22. Recommend the prioritization of requests for GIA snowmobile connections from the Root River Trail to Preston, Fountain, and the Mower County GIA system at Dexter, and to other regional trail systems as appropriate.
23. Identify routes on public roads suitable for bicycling which connect the Root River Trail with southeastern Minnesota recreation areas, historic sites and other points of interest.
24. Identify a Root River Trail System which encompasses the main treadway, necessary parallel treadways, unit trail networks and spurs to these networks,

the whole of which addresses the particular needs and recreational desires of the maximum number of user groups.

25. Recommend a resource and recreation management program for the trail.
26. Recommend a comprehensive program for monitoring and evaluation to assess changing user needs, management functions and problem areas, culminating, firstly, in any necessary changes in operating strategies after the five-year experimental evaluation periods and, finally, in a systemwide updating and evaluation of the plan after ten years of implementation.
27. Encourage and facilitate a program which incorporates volunteer labor and other donations of time, services and materials to further construction, operations, maintenance and interpretation of the trail.
28. Develop an orchestrated marketing program for the trail.

some things, those which furnish the statewide perspective under which trails are provided, do not
... change from trail to trail or from year to year
... the laws, rules, guidelines, policies...



legislation
legislation

III. LEGISLATION

Trail Authorization

The Root River Trail was authorized by the Legislature in 1971. Minnesota Statutes 85.015 (State Trails) subd. 1 provides that "the commissioner of natural resources shall establish, develop, maintain, and operate the trails designated in this section. Each trail shall have the purposes assigned to it in this section. The commissioner of administration, for the commissioner of natural resources, may acquire lands by gift or purchase, in fee or easement, for the trail and facilities related to the trail."

Subdivision 7 (Root River Trail, Fillmore and Houston Counties) provides that "(a) the trail shall originate at Chatfield in Fillmore County, and thence extend easterly in the Root River Valley to the intersection of the river with Minnesota Trunk Highway Number 26 in Houston County, and there terminate," and (b) "the trail shall be developed primarily for riding and hiking." This law was passed in 1971.

Trail Acquisition

It was not until 1978, however, that a means of aligning the trail presented itself. The Milwaukee Railroad applied to the Interstate Commission for permission to abandon its 100 mile line from the Mississippi River to Ramsey Junction, about five miles north of Austin. This line traversed the Root River Valley for a distance of about 50 miles. Permission to abandon was granted in June of the following year. Under the terms of Section 809 (c) of the Railroad Revitalization and Regulatory Reform Act of 1976 (PL94-210), a 120-day public use negotiation period then began, during which the line could not be sold while interested organizations studied the feasibility of acquisition for some public purpose.

The DNR subsequently initiated such a feasibility study (see PUBLIC INVOLVEMENT). The result of the study was a recommendation that the DNR acquire the present Root River Trail as well as a five-mile section of the line near Hokah (later dropped from consideration). The Legislature had previously (Laws of Minn. 1979, sec. 7, subd. 2) acted to require a public hearing pursuant to M.S. 15.082 on the proposed acquisition. This act also required the DNR Commissioner to determine, based on the hearing record, whether to proceed with the acquisition and to "issue a written order stating that decision."

The Commissioner's decision to proceed was contained in his Findings & Order of the Commissioner, dated April 1980. It included acquisition of the present Root River Trail as well as another portion of the same railroad grade near Ramsey Junction, now a Scientific and Natural Area (this latter segment is not a part of the Root River Trail and is not dealt with in this plan). DNR subsequently acquired the trail under authorities provided by M.S. 84.029 subd. 2 (which authorizes the DNR to acquire railroad grades for trails) and by Laws of Minn. 1980, Chapter 614, sec. 164 (which notes that the trail satisfies statutory criteria for state trails, specifically requires DNR to acquire it, gives DNR first purchase rights, and grants condemnation authority pursuant to M.S. Chapter 117).

Trail Classification

The Outdoor Recreation Act of 1975 (M.S. 86A) sets forth a classification scheme for various types of outdoor recreation land units, assigns each type of unit a major role in the system, and presents classification criteria which must be satisfied before a unit can be included in the system. The DNR finds (as did the Legislature) that the Root River Trail satisfies these criteria, and thus can be designated a state trail because (as required in ORA) it

"l. 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."

This criterion was addressed in Appendices I & F of the feasibility study (DNR Office of Planning 1980). Appendix I presents data resulting from a check of the files in the office of the State Archaeologist for known archaeological sites; 73 sites were found within a mile of the centerline of the trail between La Crescent and Ramsey Junction, and this is regarded as an incomplete compilation.

DNR personnel also performed a field inventory of significant plant and animal species, terrestrial and aquatic community types, special wildlife habitats, and special geologic features (Appendix F). The study team found three of Minnesota's 20 rare bird species, four of 13 rare reptile species, and two rare invertebraes. It also noted that the trail held excellent potential for exhibiting the bedrock and glacial history of the area.

To the above it must be added that two abandoned townsites and several historic buildings, among them several early grist mills, lie along the trail, in addition to the downtown district of Lanesboro, which was placed in the National Historic Register in the fall of 1982 (figure 3).

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

Another component of the feasibility study was a scenic inventory of the entire 150-mile abandonment (Appendix G). Quarter mile segments were scored on a standard form based upon seven criteria: complexity of visual enclosure, distance of views, orientation to water, land form, ruggedness, and important sites of southeastern Minnesota. The railroad grade east of Fountain exhibited very high scenic values on this rating scheme.

"(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."

Because this trail was originally developed as a railroad grade, the shapes and curves are gentle and easily negotiated. This has value for trail users, particularly bicyclists and cross-country skiers. The siting of a family-safe recreational trail, remote from automotive traffic, is easily accomplished. Also, the railroad grade is more than 100 years old and has become part of the natural landscape. The sometimes locally severe impacts of new trail construction are minimized by use of such a prepared roadbed, especially as regards bridges.

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

This railroad was first provided for by the Minnesota Enabling Act of February 26, 1857, and was one of the first railroad lines to be built in the state (Appendix F). It is a highly historic line for this reason alone. In addition, the State Archaeologist noted in Appendix I that the "... proposed trail is also apparently intersected at various points by former stagecoach line routes and other prehistoric and historic trails. Archival research and field reconnaissance emphasizing the communication link aspect

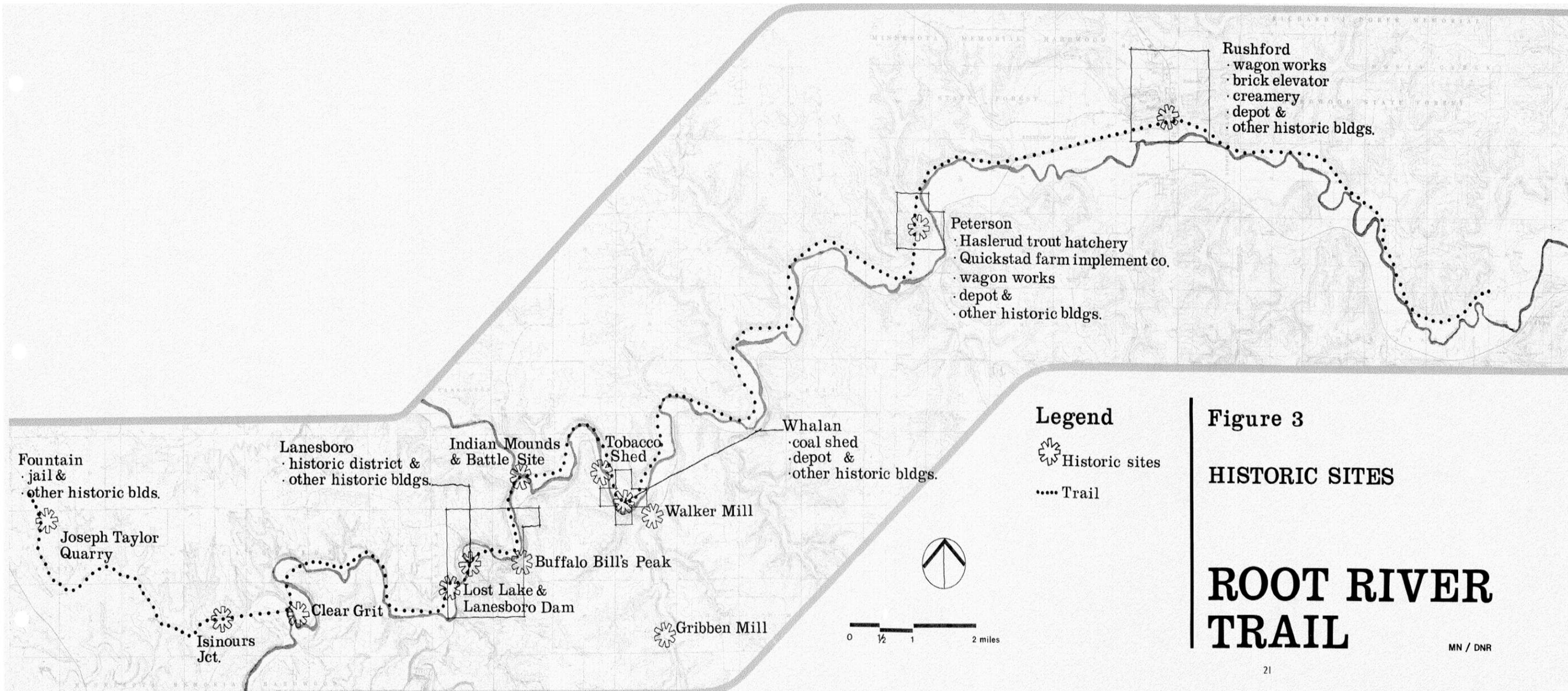


Figure 3
HISTORIC SITES

ROOT RIVER TRAIL

MN / DNR

of the proposed trail might provide useful information for interpretation which would enhance the trail user's experience."

"(v) travel between units of the state outdoor recreation system or the national trails system."

The Root River Trail adjoins or passes near to several management units of the Richard A. Dorer Memorial Hardwood Forest, some of which are proposed in this plan (see THE PLAN) for recreational development in concert with development of the trail to provide rest areas, campsites, and loop trails to complement the trail itself. The plan also describes on-road bicycle connections with other ORA units, among them Forestville and Beaver Creek Valley State Parks. Finally, the trail serves as a partial connection between the extensive Grants-In-Aid snowmobile trail systems in Houston and Mower Counties.

Under ORA, a state trail designation candidate need satisfy only one of the above sub-criteria of criterion 1. DNR believes that the Root River Trail qualifies under all of them.

There are four more criteria in ORA which must be adhered to in designating state trails. Pursuant to them, a state trail designee:

"2. Utilizes, to the greatest extent possible consistent with the purposes of this subdivision, public lands, right-of-ways, and the like."

DNR believes that the purpose of this criterion is to avoid, to the extent consistent with the legislative mandate for state trails, the taking of productive private lands for

state trail purposes. Acquisition of this railroad grade for such purposes is seen as well within the spirit of this criterion.

"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 this trail have been touched on previously. The question, in essence, is whether the DNR can interpret these qualities to the trail-using public in ways which maximize the public's appreciation and understanding of the southeastern Minnesota ambience. Techniques, media, sites and, most important, vision, will be employed creatively to imbue trail users with a sense of place and a sense of history as they travel the trail. The high interpretive potential of the area demands nothing less.

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

This criterion was addressed by Appendix D of the feasibility study, entitled Recreation Trail Needs in Southeastern Minnesota. The legislative intent behind this criterion is that the state be wary of building facilities whose level of use by the public would not justify their existence.

This study concluded that unmet demand for trail recreation opportunities sufficient to justify development of the Root River Trail does in fact exist (see DEMAND).

A fifth state trail criterion was added for the Root River Trail by Laws of Minn. 1979, Chapter 301, sec. 7, subd. 1. This is as follows:

"5. Maximizes the number of potential users and minimizes adverse effects on adjoining agricultural land and property owners."

Maximization of the number of potential users is considerably dependent upon site selection; a highly scenic trail which provides amenities desired by users, which gives people outstanding opportunities to enjoy natural and cultural resources in a recreational travel setting, will go far toward such maximization. No less important is management and operation after trail development. Management of the right-of-way to make use of the trail safe and convenient, a strong commitment to interpretation, and responsiveness to user comments, will also help. All of these things DNR is pledged to strive for.

The minimization of adverse impacts to local people is also very important. This concern received considerable attention in this project, during both the acquisition and planning phases (see PUBLIC INVOLVEMENT). The Report of the Hearing Examiner (Kaibel 1980) made subsequent to the acquisition hearing contains numerous recommendations for the minimization of adverse effects of trail development. In his responding Findings & Order (Alexander 1980), the DNR Commissioner largely accepted these recommendations.

In addition, the Legislature subsequently acted (Laws of Minn. 1980, Chapter 614, sec. 164, subd. 3) to mandate certain mitigation procedures. Most notably, this subdivision requires (a) land exchanges which will minimize impacts on adjoining land users where such exchanges are consistent with trail use; (b) that DNR assign a full-time trail manager to the trail prior to opening; and (c) that DNR assume 100% of the responsibility for keeping the right-of-way fenced (DNR policy elsewhere is to share fencing costs equally with those desiring fencing where it can be shown to be

necessary. Under law (M.S. 344) the state is not required to fence except in the Dorer Forest and on the Root River Trail).

At bottom, DNR believes it has acted well within both letter and spirit of applicable legislation in the course of the Root River Trail project. This will continue as the trail is developed and put into operation.

Trail Regulations

In 1975, DNR promulgated rules which govern the operation of state trails in Minnesota (Minn. Reg. N.R. 20). The purpose of these rules is "... 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" [N.R. 20 (a)].

As provided in N.R. 20, these rules can be enforced only after the trail has been designated for use by the Commissioner of Natural Resources. This usually takes place at some point after master plan completion. However, although N.R. 20 itself cannot be enforced until designation, the laws of the state can be enforced at any time on trails by appropriate peace officers, as they can anywhere else. Also, enforcement of N.R. 20 after designation is not limited to DNR Conservation Officers; since N.R. 20 was filed with the Secretary of State after a public hearing pursuant to M.S. Chapter 15, it now has the force and effect of law, and thus may be enforced by any peace officer.

Trail Policy

This plan and Root River Trail planning process have maintained consistency with DNR's State Trail Policy (DNR Policy #10, effective 2/25/82). This policy provides

guidance in establishing and maintaining state trails and is consistent with the provisions of ORA.

Other Trail Guidelines

Statewide DNR Trail Plan. This document, now in draft form, sets forth the broad goals, objectives, and roles to be fulfilled by the state trail system and its components. The Root River Trail Master Plan is consistent with the provisions of the Statewide DNR Trail Plan, to the extent they are known and approved at this writing.

Minnesota Trails Policy Plan. This document, completed and approved in May 1981, was a joint effort of the Department of Economic Development and the State Planning Agency (now combined with the State Energy Agency into the Department of Energy, Planning, and Development), Mn/DOT, DNR, and the Metropolitan Council. Its purpose is to assure that the variety of recreational trail programs administered by governmental agencies in Minnesota is coordinated so as to avoid wasteful duplication. The Root River Trail planning process has been conducted in such a way as to assure this. In particular, project planners have worked with Mn/DOT Bikeway Program personnel as well as personnel of the DNR Division of Forestry to provide complementary facilities which will be mutually supporting and which will enhance the trail use experience in the southeastern corner of Minnesota.

Conclusion

In operating a state trail program in Minnesota, DNR's aim is to provide a high quality recreational trail form which is cost-effective, not duplicative, and desired by the public.

If this service is to be performed properly, it must be assured that some things, those which furnish the statewide perspective under which trails are provided, do not unduly change from trail to trail or from year to year; the laws, rules, guidelines, policies, and so on which apply to the trail program are intended to assure consistency and quality in state trail program administration.

we held many meetings and initiated many individual contacts... always seeking the best answer, the most favorable compromise, the widest possible area of common ground.



public involvement
public involvement

IV. PUBLIC INVOLVEMENT

Introduction

The last several years have seen a significant increase in involvement by the public in the planning of recreational projects by DNR. The Root River Trail is no exception; indeed, the public involvement in this project and measures taken by DNR to facilitate it add up to a considerable expenditure of effort and man-hours, perhaps greater than for any other comparable DNR project.

DNR considers this time and effort well spent. While there are certain inherent weaknesses in just about any citizen involvement program, the Root River Trail planning process has been well-served by the people who involved themselves in it, be they opponents or supporters.

Citizen involvement in a public agency planning process very often turns out much different in operation and effect than what people expect. For one thing, it is becoming an axiom that the majority of people who appear and participate in meetings are generally those who oppose the proposed action, at least at first. Of more compelling concern in the case of projects with statewide implications, such as a state trail, it is mainly local people who are involved; it would be unusual to say the least to see a person from northern Wisconsin in attendance at a planning meeting to discuss the Root River Trail. For this and other reasons it cannot be said that meeting results are anything more than an indication of local attitudes; by themselves, these meetings cannot be claimed to give a balanced picture of the general public's attitude about a project.

Another inherent problem is that public meetings sometimes result in a consensus of opinion among those present on how to deal with a particular problem. It may then come as a surprise to meeting participants to find later that the seemingly feasible action, upon which all present had agreed, was not incorporated into the final plan because of some other consideration.

At bottom, the people who attend the meetings more or less tend to expect that the meetings are where the decisions are made, rather than where local attitudes and ideas are sought for resolution of problems. They sometimes fail to realize that DNR has many constituencies to whom it must be responsive, and the local people make up just one of these. There were, for example, several instances in the course of the Root River Trail planning meetings when it was "proven" that the local people did not want the trail, with the expectation that the project would then be immediately scrapped. There was little recognition at first that local concerns, while important, are not the only criteria to be evaluated.

It is incumbent upon planners who involve the public in their work to educate the people with whom they interact about how public involvement fits into the planning scheme. The public is an excellent source of ideas and information, and this potential should be exploited to the maximum. Close contacts with local people, governmental officials, and interested groups can identify pitfalls as well as courses of action which hold the best potential for successful planning results. The Root River Trail planning process has attempted to tap this potential as much as possible; DNR's success in this venture will be measured by the final project outcome.

Feasibility Study

The U.S. Interstate Commerce Commission granted the Milwaukee Road permission to abandon their 100-mile line between La Crescent and Ramsey Junction in June of 1979. The DNR had been considering this line as a means of complying with the 1971 law authorizing a Root River Trail, and immediately moved to intensively study the feasibility of such action.

The feasibility study, known as the Milwaukee Road Corridor Study (DNR Office of Planning 1980) and consisting of nine technical appendices, a social and physical inventory, and a compendium of alternative analyses and recommendations, was completed in January of 1980. The study examined a number of issues of public concern, among them the impact of trail establishment on tillable land, local law enforcement problems, public demand for trail recreation, and others. Public surveys and resource inventory data gathering were included in this effort. The entire 100-mile abandonment was analyzed, and the result, published in a summary proposal document in January, was DNR's proposal to acquire 42 miles of the grade for trail purposes, and to allow the remainder to be acquired privately. Subsequently this proposal was modified by the deletion of one parcel and the addition of another. Ultimately, 49 miles were acquired.

Citizens Groups

The initiation of the Root River Trail Project spawned a number of interest groups whose aim was to advance a certain point of view vis-a-vis the trail, whether for or against.

Representatives from several Trail Alliances (from Lanesboro, Houston and Austin) testified in favor of the trail in the acquisition hearings. (See below.)

A group known as Citizens Right to Purchase Property, Inc. was formed at the beginning of the acquisition phase. Made up largely of adjoining landowners, this group was opposed to the trail project, and intended that the property be ultimately acquired by the adjoining landowners.

The Lanesboro Community Club existed prior to the proposal to construct a state trail on the abandoned railroad right-of-way. It supported (and still supports) the trail.

The Lanesboro Trail Club, formed in early 1982, was formed to advance the interests of trail users in the Lanesboro area. It supports the trail.

The Root River Trail Citizens Advisory Group (CAG) was appointed by the DNR Commissioner in early 1982 in fulfillment of a commitment made to the public during the acquisition phase. Its most important function was to reflect the attitudes and opinions of people living in the area of the trail. In furtherance of this function, CAG was asked to review planning meeting results and preliminary proposals, and to make recommendations regarding preferred courses of action.

Public Meetings

Informational Meetings. It was decided early in the feasibility study process that an ongoing effort should be made to keep the public informed of progress on the trail project. Accordingly, DNR personnel hosted four open house-type public informational meetings between January 7 - 10, 1980. These meetings were conducted between the

hours of 11:00 a.m. and 8:00 p.m. in Rochester, Houston, Lanesboro, and Austin, and reached 271 people. The proposal to buy 42 miles of the railroad grade for trail purposes had been recently made public and these meetings gave the public the opportunity to acquire information and ask questions concerning the proposal.

Public Hearing. The feasibility study discussed above resulted in a determination of feasibility and a recommendation that DNR acquire a portion of the railroad grade for the Root River Trail. Under the terms of Chapter 301, sec. 7, subd. 2 of Laws of Minnesota, 1979, a public hearing was required on any proposal for Root River Trail land acquisition. The required public hearing was thus duly held in March of 1980. DNR secured a complete transcript of the hearing record and, in addition, has on file the written comments submitted prior to the closing of the record.

This public hearing resulted in a Report of the Hearing Examiner (Kaibel 1980) to the Commissioner of Natural Resources which reviewed the testimony and, based on this testimony, made 25 Findings of Fact, drew 15 Conclusions, and made nine Recommendations regarding the DNR's proposal which was contained in the Summary volume of the feasibility study. Essentially, the Hearing Examiner recommended acquisition of the present Root River Trail, and also consideration of trail acquisition and development near Austin. In an answering Findings & Order of the Commissioner (Alexander 1980), the Commissioner of Natural Resources took issue with a number of items in the Hearing Examiner's Report, but generally accepted the above recommendation.

Early Public Contacts. The Master Planning Process for the Root River Trail was initiated in July of 1981. Continuation of public opportunities for involvement and of the policy of keeping the public informed of progress were given a high priority.

Considerable time was spent early in the planning process in making individual contacts in the area of the trail, notably with adjacent landowners, community business people, local government officials, and town residents. From these extensive contacts a reasonably clear picture emerged of the range of attitudes held by the public regarding the project and of the main issues surrounding it. These latter, which would be developed more fully in the months to follow, began to focus on funding for recreation in tight money times, concerns over uses (which often translated to objections to motorized uses), and a grab bag of site-specific concerns, such as field accesses and road crossings.

Forum/Workshops. The first formal public planning meetings were held on January 26 - 28, 1982, in Rochester, Rushford, and Lanesboro. The purpose of these Forum/Workshops was to afford the public the opportunity to formally raise the issues they felt to be most important and deserving of attention in the course of the planning process. Six major issues of concern emerged from these meetings; these were presented to CAG, which subsequently ranked them in order of relative importance to give DNR some indication of what the most pressing concerns were. The resulting priority issue list and analysis proved to be an excellent means of quickly focusing early attention on the most important Root River Trail issues.

Working Meetings. The stage was thus set for the heart of the planning process, a series of working meetings in which the public met with DNR planners to derive resolutions for each of the major issues. In these meetings, conducted during the period from mid-March through the end of May, 1982, alternative schemes for resolving the issues raised in the Forum/Workshops were suggested and discussed. In some cases, preferred alternatives emerged from the working meetings themselves; in others, no clear consensus was arrived at. In all cases, alternatives for the resolution

of each of the six major issues were compiled and referred to CAG, which then recommended a preferred course of action. DNR reserved the final decision, but followed the CAG recommendation unless a compelling reason to do otherwise existed. In some cases doing this meant proposing a course of action which deviated from traditional DNR practices on railroad grade trails (such as designating the main treadway for cross-country skiing).

Public Information

An early commitment on DNR's part was to keep the public informed as to progress, issues being discussed, and decisions being made. We held many meetings and initiated many individual contacts during the planning and acquisition phases, always seeking the best answer, the most favorable compromise, the widest possible area of common ground. The "open house" meetings (above) held in January of 1980 were among the early efforts in this regard.

Periodic press releases to the news media have been employed to publicly announce major developments in the project. Also, a mailing list was compiled and continually added to, containing the names and addresses of interested individuals and groups. Notices were mailed to all on this list which announced the scheduling of public meetings in the course of the planning process. A planning process newsletter was also mailed out on an irregular, as-needed basis. This publication kept readers abreast of the highlights and sidelights of the planning process, announced meetings, and discussed and analyzed major issues that came up. A self-addressed and stamped mailer was attached to each newsletter, and people were encouraged to use it to communicate their thoughts to DNR. A significant number of people availed themselves of the opportunity.

Conclusion

In all, a very large number of formal meetings, individual contacts, phone conversations, and written communications have served to keep the public in touch with DNR as the planning on this project has proceeded. This was, for DNR, a wise expenditure of time and effort. It is a fair statement that the master plan for the trail would likely have been quite different, possibly to the detriment of all concerned, had the public not been involved as it was.

V. DEMAND

Recreational Facility Needs in Minnesota

The Minnesota Outdoor Recreation Act of 1975 provides, among other things, that the proposed locations of state trails must ". . . take into account predicted public demand and future use" [M.S. 86A, subd. 4(2)]. It is an ongoing concern of the DNR Trails and Waterways Unit to be aware of the trail-related needs and desires of the public so that needed facilities and services can be provided and unnecessary expenditures can be avoided.

To this end, surveys, public meetings and other ways of assessing the public will have been used by DNR to determine what those needs are. The most all-encompassing of these, the State Comprehensive Outdoor Recreation Plan (SCORP) (DNR Office of Planning 1979) utilized several types of surveys to produce information on a variety of Minnesotans' recreational facility needs. Prominent among these was a relatively high degree of expressed need for trail recreation opportunities. Another pertinent report is Recreational Trail Needs in Southeastern Minnesota, based on SCORP data and produced by the DNR Office of Planning at the time of the Root River Trail acquisition hearings. Much of the following is based upon these two documents.

The SCORP analysis resulted in predictions of recreational opportunity needs both statewide and on a regional basis by collecting and analyzing data from Minnesota's eleven Economic Development Regions. Perusal of the recreational activity flows analysis presented in SCORP shows that the bulk of the in-state market for the Root River Trail resides in Region 11 (the Metro Region) as well as Region 10, within which the trail entirely lies (Figure 4, Table 1).

TABLE 1. Region to Region Activity Flows for Selected Activities

	% OF REGION 10 OCCASIONS WHICH ORIGINATED IN REG. 10	REGION FROM WHICH BULK OF REMAINING OCCASIONS ORIGINATED	% OF REGION 10 OCCASIONS WHICH ORIGINATED IN METRO REG.	% OF REGION 10 ORIGINATIONS WHICH OCCURRED IN REG. 10
All Snowmobiling	94.6	Metro	4.2	96.5
All X-Country Skiing	77.6	Metro	19.4	90.5
Trail Snowmobiling	96.7	Metro	2.4	97.3
Trail X-Country Skiing	69.3	Metro	28.4	92.0
All Bicycling	100.0	—	0	97.0
Fishing	94.0	Metro	5.0	60.0
Hiking	94.0	Metro	5.0	69.0
Camping	73.0	Metro	24.0	55.0

SOURCE: DNR SCORP 1980

One conclusion to be drawn from the SCORP analysis is that bicycling is the single most popular recreational pursuit in the state. Minnesotans bicycled for pleasure more than 49 million times in 1978, and total bicycling occurrences (recreation plus commuting) numbered over 56 million. This activity is projected by SCORP to increase to over 52 million and 59 million occurrences, respectively, by 1995 (Table 2).

It should be noted that, while tens of thousands of these occurrences took place on Minnesota's state trail system, the majority occurred on public streets and highways and the Mn/DOT Bikeway System. However, when SCORP survey respondents were asked to indicate their preferences for additional trail recreational opportunities, bicycling again was first, requested by nearly 19% of respondents statewide (Table 3).

The picture is similar in Regions 10 and 11. In Region 10, people bicycled nearly three times as often (6,100,000 occasions) as they swam (the next most popular activity) (Table 4); in Region 11, bicycling was twice as popular as the second most popular activity, ice skating (26,900,000 occasions) (Table 5). Twenty-two percent of Region 10 SCORP survey respondents requested more bicycling opportunities; in Region 11, 21.9%. No other activity was requested by more than 16% of respondents in these Regions (Table 3).

The most popular winter activity is either snowmobiling or cross-country skiing, depending upon the area under study. Snowmobiling occasions were more numerous than skiing statewide (11.5 million v. 4.5 million) (Table 6), in Region 10 (1.1 million v. 200,000) (Table 4), and in Region 11 (3 million v. 2.8 million) (Table 5), although in the latter region the participation is close to being equal in the two activities. However, more SCORP survey respondents requested additional cross-country skiing opportunities statewide and in Region 11, while only slightly more (8.7% v. 8.1%)

TABLE 2. Projections of Summer Recreation Occurrences 1978-95

	1978	1980	1985	80-85	1990	85-90	1995	90-95	78-95
				% Δ		% Δ		% Δ	% Δ
Recreation									
Bicycling:									
Region 10	5,106,773	5,000,407	5,008,173	0.2	5,289,960	5.6	5,457,196	3.2	6.9
Region 11	23,259,872	22,887,167	22,729,170	-0.7	24,103,610	6.0	25,023,710	3.8	7.6
Statewide	49,165,031	47,912,511	47,416,024	-1.0	50,395,317	6.3	52,475,510	4.2	6.7
Transportation									
Bicycling:									
Region 10	817,054	814,117	784,610	-3.6	792,522	1.0	802,656	1.3	-1.8
Region 11	3,418,351	3,369,612	3,119,827	-7.4	3,108,614	-0.4	3,231,981	4.0	-5.5
Statewide	7,051,876	6,946,778	6,507,165	-6.3	6,545,745	0.6	6,823,476	4.2	-3.2
Total									
Bicycling:									
Region 10	5,923,827	5,815,364	5,791,782	-0.4	6,079,253	5.0	6,255,630	2.9	5.6
Region 11	26,678,223	26,256,513	25,843,884	-1.6	27,203,102	5.3	28,246,984	3.8	5.9
Statewide	56,216,908	54,863,380	53,920,459	-1.7	56,928,588	5.6	59,285,085	4.1	5.5
Hiking									
Bicycling:									
Region 10	203,286	205,251	220,146	7.3	245,518	11.5	253,459	3.2	24.7
Region 11	1,698,008	1,733,738	1,811,297	4.5	1,894,799	4.6	1,965,962	3.8	15.8
Statewide	4,388,966	4,400,643	4,589,132	4.3	4,788,562	4.3	4,951,584	3.4	14.1
Horseback									
Riding (Trail)									
Region 10	67,356	63,657	57,624	-9.5	62,134	7.8	65,903	6.1	-2.2
Region 11	226,835	224,377	214,342	-4.5	213,950	-0.2	214,521	0.3	-5.4
Statewide	1,526,761	712,135	692,247	-2.8	715,280	3.3	730,087	2.1	.4

SOURCE: DNR SCORP 1980

TABLE 3
 Percent of Population Requesting More Recreational Opportunities
 by Activity and Region

	<u>Region 10 (SE MN)</u>	<u>Region 11 (Metro)</u>	<u>Statewide</u>
Bicycling	22.0	21.9	18.9
X-Country Skiing	8.1	11.9	10.5
Snowmobiling	8.7	6.3	8.7
Hiking	12.0	8.2	7.1
Horseback Riding	3.5	1.5	2.1

SOURCE: Recreational Trail Needs in S.E. Minnesota, 1979.

TABLE 4
Economic Development Region 10 (Southeastern Minnesota) Ranking of
Recreation Activities by Number of Participation Occasions - 1978

Activity ^A	Rank	Number of Participation Occasions - 1978
<u>Bicycling</u> ^B	1	6,100,000
Swimming	2	2,300,000
Baseball/Softball	3	1,300,000
<u>Snowmobiling</u>	4	1,100,000
Fishing	4	1,100,000
Driving for Pleasure	6	1,000,000
Sledding	7	800,000
Picnicking	8	700,000
Golf	8	700,000
Tennis	8	700,000
Ice Skating	11	600,000
Camping	12	500,000
<u>Horseback Riding</u>	13	400,000
<u>Hiking</u>	14	300,000
Downhill Skiing	15	200,000
Ice Fishing	15	200,000
<u>Trail Biking</u>	15	200,000
Birdwatching/Nature Study	15	200,000
<u>Cross-Country Skiing</u>	15	200,000
Canoeing	20	100,000
Archery	20	100,000
Shooting	20	100,000
Visiting Historic Sites	20	100,000

^A Trail activities are underlined.

^B 5 million recreation occasions and 1 million households in the region.

SOURCE: Economic Development Region 10, *Recreation Opportunities*, 1978.

TABLE 5
Economic Development Region II (Twin Cities Metro Area) Ranking of
Recreation Activities by Number of Participation Occasions - 1978

Activity ^A	Rank	Number of Participation Occasions - 1978
<u>Bicycling</u> ^B	1	26,900,000
Swimming	2	13,200,000
Ice Skating	3	7,800,000
Baseball/Softball	4	7,100,000
Fishing	5	6,500,000
Powerboating/Waterskiing	6	6,400,000
Sledding	7	4,500,000
Picnicking	8	3,800,000
Driving for Pleasure	9	3,500,000
Tennis	10	3,400,000
<u>Snowmobiling</u>	11	3,000,000
Cross-Country Skiing	12	2,800,000
Downhill Skiing	13	2,600,000
Golf	13	2,600,000
<u>Hiking</u>	13	2,600,000
Camping	16	2,200,000
Ice Fishing	17	1,800,000
Canoeing	18	1,600,000
Birdwatching/Nature Study	19	1,500,000
Visiting Historic Sites	20	800,000
<u>Horseback Riding</u>	20	800,000
Sailing	21	700,000

^A Trail activities are underlined.

^B 23 million recreation bicycling and 4 million transportation bicycling occasions.

SOURCE: Recreational Trail Needs in S.E. Minnesota, 1979.

TABLE 6
Statewide Ranking of Recreation Activities by Number of Participation
Occasions - 1978

Activity ^A	Rank	Number of Participation Occasions - 1978
<u>Bicycling</u> ^B	1	56,550,000
Swimming	2	25,000,000
Fishing	3	14,500,000
Baseball/Softball	4	13,500,000
Ice Skating	5	12,500,000
Powerboating/Waterskiing	6	11,500,000
<u>Snowmobiling</u>	7	11,500,000
Sledding	8	9,550,000
Driving for Pleasure	9	9,000,000
Picnicking	10	8,000,000
Tennis	11	6,000,000
Golf	12	5,000,000
Ice Fishing	12	5,000,000
<u>Hiking</u>	12	5,000,000
<u>Cross-Country Skiing</u>	15	4,500,000
Camping	15	4,500,000
Downhill Skiing	17	4,000,000
Birdwatching/Nature Study	18	2,500,000
Canoeing	18	2,500,000
<u>Horseback Riding</u>	18	2,500,000
Visiting Historic Sites	22	1,500,000
<u>Trail Biking</u>	22	1,000,000

^A Trail activities are underlined.

^B 49 million recreation bicycling and 7 million transportation bicycling occasions.

SOURCE: Recreational Trail Needs in S.E. Minnesota. 1979.

requested more snowmobiling opportunities than requested cross-country skiing opportunities in Region 10 (Table 3). This may reflect the fact that many miles of GIA snowmobile trails exist in Region 10, while relatively few miles are available for skiing. It should also be noted that SCORP projects larger percentage increases for skiing on trails as a recreational pursuit than for snowmobiling on trails in Regions 10 and 11 as well as statewide. In fact, snowmobiling is projected to decrease slightly overall between 1978-1995 (Table 7).

The report on southeastern Minnesota trail needs makes an interesting point: that in each case, one third of the listed activities are trail-oriented. Further, 36% of the listed requests statewide were for trail opportunities; in Region 10, 42%, and in Region 11, 54%. The conclusions to be drawn are clear; expanded trail opportunities are desired by a significant portion of the population, and some combination of bicycling, cross-country skiing, hiking, and snowmobiling trail development would best satisfy those desires. The data show trail activities to be quite popular, and they support continued trail development at appropriate times and locations.

Trail Marketability

It was earlier noted that DNR wishes to provide facilities and services which are desired by the public and minimize expenditures for projects which are not needed. It is expected that the public would take a dim view of expenditures of tax dollars for projects of marginal quality and drawing power. It is thus desirable that the DNR be as certain as possible, in planning recreational facilities, that the facilities will be a worthwhile investment, i.e., that they are facilities which are highly desirable and will be well used by the public.

TABLE 7. Projections of Winter Trail Recreation Activity Occasions 1978-1995

	1978	1980	% Δ 78-80	1985	% Δ 80-85	1990	% Δ 85-90	1995	% Δ 90-95	% Δ 78-95
Region 10										
X-C Skiing	119,523	123,340	3.2	123,913	0.5	122,459	-1.2	121,910	-0.4	2.0
Snowmobiling	398,337	402,262	1.0	391,598	-2.7	379,517	-3.1	391,021	3.0	-1.8
Region 11										
X-C Skiing	1,147,481	1,178,689	2.7	1,247,510	5.8	1,314,195	5.3	1,376,302	4.7	19.9
Snowmobiling	368,076	377,638	2.6	391,564	3.7	402,663	2.8	421,752	4.7	14.6
Statewide										
X-C Skiing	1,872,737	1,920,741	2.6	2,026,687	5.5	2,103,911	3.8	2,153,222	2.3	15.0
Snowmobiling	2,597,403	2,598,249	0	2,663,487	2.5	2,826,187	6.1	2,949,348	4.4	13.5

SOURCE: Projections of Minnesota Winter Recreation Occasions 1978-1995. SCORP report 2319.

As noted elsewhere, an assessment of the resources and recreational potentials exhibited by the Root River Trail leads to the conclusion that it can be truly an outstanding recreational experience. It lies in a part of Minnesota which, while hardly tapped as a recreational area, nonetheless possesses extraordinary scenic beauty, geological, topographic, and vegetational uniqueness, and an early settlement history hardly understood by many Minnesotans. The Root River Trail bids fair to become the centerpiece of the Minnesota State Trail System.

But even a centerpiece is of little value without admirers; a recreational trail is of little value if it is not used. The earlier discussion shows that trail recreation remains and will continue to be popular among Minnesotans, and that new trail development is indicated in Region 10. Yet, the Root River Trail is more than 100 miles from the Metro Region, where the largest concentration of Minnesotans live. Surveys indicate that, other things being equal, the public prefers its trails close to home; "close to home" for the most Minnesotans means a trail close to the Twin Cities. How close? The average distances people are willing to travel for trail activities are shown in Table 8.

But will the trail serve only these "local" users? To answer this question one must reflect upon several things; the "average distance willing to travel" is just that, an average. The respondents whose answers on the surveys were averaged to produce these figures would, in all likelihood, have answered differently had they been asked not how far they would be willing to travel to bicycle, or hike, or ski, on a trail, but how far they would be willing to travel to experience a truly outstanding recreational facility; it is known, for example, that people travel consistently and in large numbers across the country to visit Yellowstone National Park. There are no hard numbers to support this line of reasoning, but some facts are known. These facts relate to the known "drawing power" of some recreational areas and facilities.

TABLE 8. Demand Statistics for Region 10 Selected Trail Use Activities

	AVERAGE DISTANCE WILLING TO TRAVEL IN MILES (X)	ESTIMATED MINN. POPULATION X MILES FROM ROOT RIVER TR.	PERCENT OF REGION 10 POP. DESIRING MORE OPPORTUNITIES	EXPRESSED LEVEL OF NEED (1 = LOW, 5 = HIGH)	SIZE OF PUBLIC SERVED BY ROOT RIVER TRAIL
Bicycling	14	133,000	22	2.7	29,260
X-Country Skiing	32	245,000	8.1	2.9	19,845
Snowmobiling	43	284,000	8.7	2.9	24,708
Hiking	31	245,000	12.0	3.1	29,400
Horsebacking	22	187,000	3.5	4.0	6,545

SOURCE: Recreation Trail Needs in S.E. Minnesota. DNR SCORP 1980.

The information in table 8 also serves as part of the rationale for DNR's estimate at the time of the public hearing that the Root River Trail will provide about 23,000 activity occasions in the fifth year of operation. This compares favorably with known use figures for Wisconsin's Sparta-Elroy Trail, and Minnesota's Heartland Trail, which get, respectively, about 45,000 and 40,000 activity occasions yearly, the Sparta-Elroy after some 15 years of operation. To judge by the calculated size of the public served by the trail (i.e., the number of recreationists living within the "average distance willing to travel"), this projection seems reasonable. It should also be noted that the trail needs report indicates that, as is Wisconsin's Sparta-Elroy State Trail, the Root River Trail is located within reasonable market proximity to the northeastern quarter of Iowa (pop. 600,000 - 1 million) and the densely-populated urban areas of Greater Chicago and Milwaukee (combined pop. 7.5 - 8 million) (figure 4). SCORP does not, of course, include these out-of-state regions in its analysis, but it is likely that the Root River Trail will attract use from these quarters, especially from northeastern Iowa.

SCORP indirectly touches upon the question of recreational facility drawing power in its discussion of inter-regional recreational activity flow, which is the phenomenon exhibited by those who seek recreational opportunities outside their home region. SCORP surveys have produced the information, for example, that development regions 2, 5, and 7E attract the majority of their anglers, boaters, and campers from other regions. On the other hand, Minnesotans stay within their home regions (i.e., stay close to home) for other activities. About 95% of Minnesota bicycling occasions, for example, originate and occur in the same region.

If the discussion is limited to percentages, then, it seems fairly clear that Minnesotans prefer to recreate close to home, but only if the recreational experience they seek is

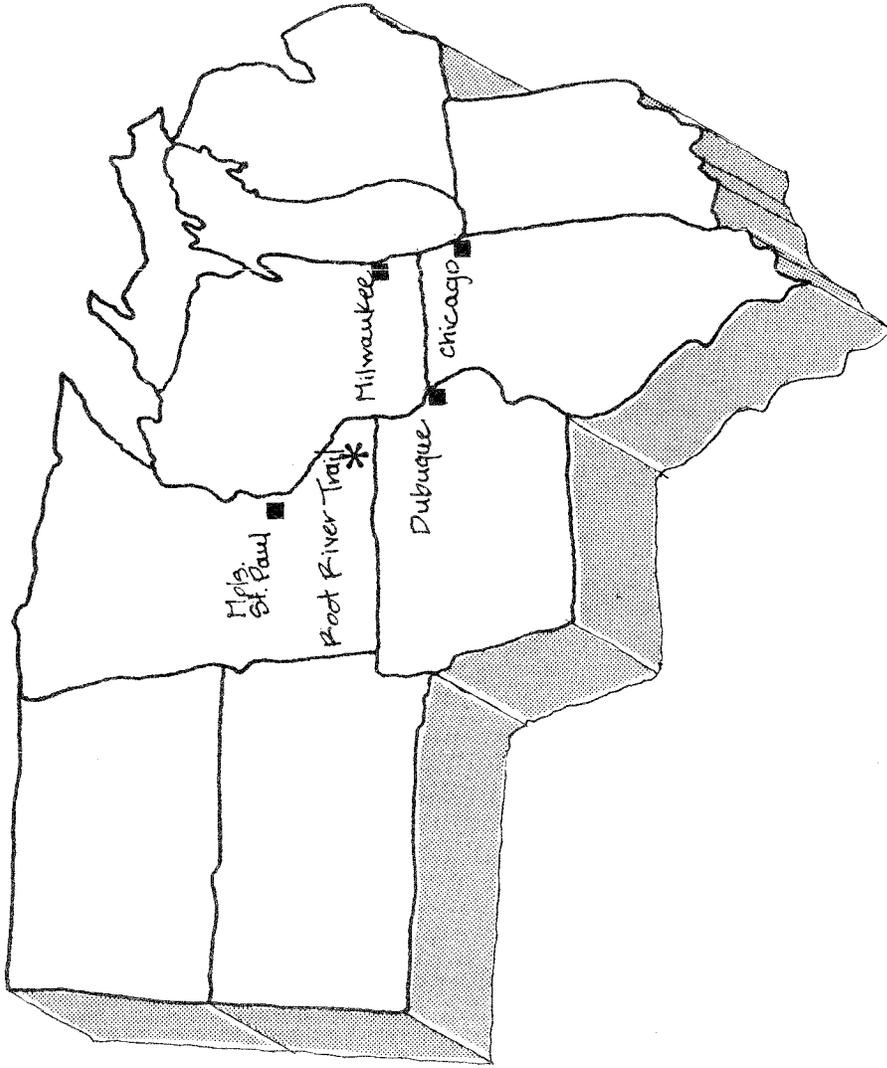


Figure 4
Major Regional Markets For The Root River Trail

available there. Within reason, Minnesotans will probably continue to travel, even long distances, in order to enjoy recreational facilities which exhibit strong drawing power regardless of the price of gasoline, though possibly not as often as in previous years.

One major contributor to the drawing power of a recreational facility is its uniqueness. Other things being equal, a recreational facility which is unique in the state will be one whose use will compare favorably with others. Again, within reason, this holds true regardless of the point of origination.

This consideration is important for several reasons, not the least of which is the substantial body of information which indicates that, other things being equal, Minnesotans prefer recreational experiences which are close to home. This preference doubtless exists, but recognition of the fact that some of the most desirable recreational amenities in Minnesota are not located close to home for the majority of state residents is also very important. Half of Minnesota's residents live in the Twin Cities, but the bulk of Twin Citians' fishing and boating occasions actually occur in regions 2, 3, 5 and 7E (figure 5). Fully one-third of boating occurrences in Region 2 (at least 3 hours from the Metro Region by car) are Metro Region originations (Table 9). Only 42% of Metro Region boating originations actually occur in the Metro Region; the rest occur outstate, primarily (22%) in Region 5. Fully 15% of all Metro

TABLE 9
Percent of All Regional Boating and Fishing Occurrences
Which Originate in the Metro Region; by Region of Destination

	<u>Region 2</u>	<u>Region 3</u>	<u>Region 5</u>	<u>Region 7E</u>	<u>Region 11</u>
Boating	33	28	71	44	42
Fishing	28	34	56	48	29

SOURCE: DNR SCORP 1980.

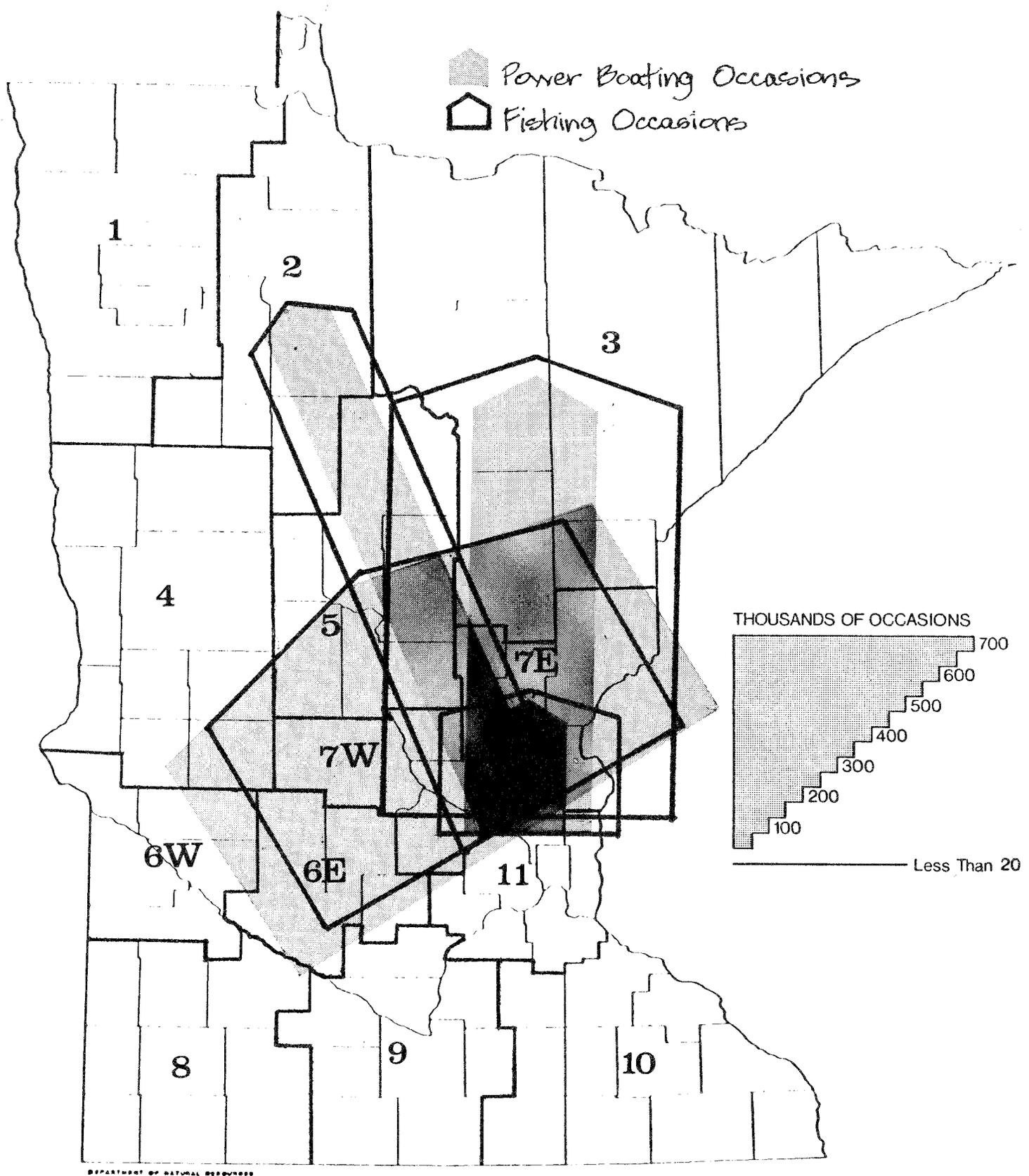


Figure 5
 Selected Destinations Of Metro Residents'
 Interegional Fishing & Boating Activity Occasions

Region boating originations take place in Regions 2, 3, and 4 (Table 10). This undoubtedly is because of the desirable amenities to be found in those regions, such as numerous good fishing lakes, resorts, campgrounds, scenery, and very importantly, relative isolation and quiet, which cannot be found in the Metro Region. No doubt these factors together with the fact that so much of the land in these regions is publicly-owned were the main reasons for the early and continuing development and use of these regions for recreation in Minnesota. But the bottom line is that Minnesotans will travel long distances to recreate if the payoff is sufficiently high, and/or if the recreational experience they seek is not available close to home.

TABLE 10
Percent of All Metro Region Boating and Fishing Originations
by Region of Destination

	<u>Region 2</u>	<u>Region 3</u>	<u>Region 5</u>	<u>Region 7E</u>	<u>Region 11</u>
Boating	4	6	5	22	4
Fishing	5	13	6	19	8

SOURCE: DNR SCORP 1980.

Of the total 7,900,679 boating occasions which originated in the Metro Region, 15% or 1,185,102 occurred in Regions 2, 3, and 5, at least 100 and possibly over 300 miles away from the metropolitan area. Yet, the average distance that Minnesotans are willing to travel for fishing and boating is given in SCORP as 82 and 61 miles, respectively, for Metro Region residents. As is inferred above, significant numbers will travel significantly farther for experiences of high desirability.

Conclusion

DNR believes, based upon the best available information, that unmet demand for trail recreation opportunities exists in southeastern Minnesota, and that the Root River Trail will help to meet this need. Further, it is believed that a Root River Trail which takes full advantage of the area's strong recreational potential will exhibit considerable drawing power outside the local area. Indeed, a properly developed and operated Root River Trail could well become the centerpiece of Minnesota's state trail system. This potential exists and DNR should spare no effort in striving for that end.

objective: to allow the user to experience the transition from prairie to river valley, from wooded isolation to local festival, from farm to small town, and back again...



the plan
the plan

VI. THE PLAN

Introduction. This section is the heart of the Root River State Trail Master Plan. In it will be discussed the procedures to be followed in constructing, operating, maintaining, interpreting, and marketing the trail. It will also cover use scenarios which are envisioned as existing after the completion of development. The implementation of this plan, the funding and personnel needed to assure the timely and economical construction and operation of the trail are considered in the next section.

Use Scenarios. The Root River Trail will be a discrete, consumable trail experience for some, though not all, users. Hikers and cross-country skiers in particular will find the trail itself and the trail loops on adjacent forestry units to be more than adequate for a weekend or more of recreational travel. Campsites, water points, and parking lots are proposed to be arranged in such a way that to the extent possible they complement communities along the trail in providing the amenities necessary for safe and convenient recreational travel. A trail user who starts the trail at the Fountain end on a Friday afternoon can walk (or ski) to Isinours Woods and camp overnight, proceeding to Lanesboro the next day. The traveler may then elect to go on to Whalan and the adjacent Gribben Valley Woods, camp overnight, and return the next day. If two cars are used, this same traveler could leave Gribben Valley Woods early on Sunday and proceed to Peterson, ending the trip there.

Day use hikers and skiers will find both Lanesboro and Rushford convenient bases for short trips of a day or less. From Lanesboro, a round trip hiking or skiing excursion either west to Isinours Woods and its trail loop or east to Whalan (where a warming shack will be located) and the trail loop system in Gribben Valley Woods would take

about a day. From Rushford the skier or hiker will be able to go west to Peterson or east to Money Creek Woods. Both the latter and the Peterson forestry unit will provide picnicking and camping facilities as well as scenic overlooks.

The long distance traveler looking for solitude will be able to find it on the Root River Trail. Though the Root River Valley has been farmed and occupied for many years, extensive stretches of the trail are quite remote from vehicular traffic and occupied houses, particularly on segment 3. The trail loops on adjacent forestry units will enhance this feature.

Horseback riders will find segments 2 and 5 to be convenient accesses to bluffland riding experiences on the Money Creek and Gribben Valley forest units. Here again, the trip out and back should be about a day in length. Riders may elect to seek permission to use private land in order to avoid retracing their steps and/or to lengthen their trips. In any case, proposed horse trailer parking lots in Lanesboro and Rushford will serve as excellent starting points and secure places for vehicles.

Snowmobilers and to some extent bicyclists, because they are inherently more wide ranging, are more likely than the other user groups to plan trips of which the Root River Trail will be merely a component, rather than making an entire trip of the Root alone, although this certainly can be done.

The trail connects on the east with the Houston County Grants-In-Aid Snowmobile Trail System at Peterson (figure 6). Snowmobilers who park in the Lanesboro Sales Commission parking lot will be able to proceed easterly over the trail to Peterson and from there enter the GIA system either north or east of town. They can proceed from this point to Rushford, Caledonia or La Crescent, and only a short gap separates this

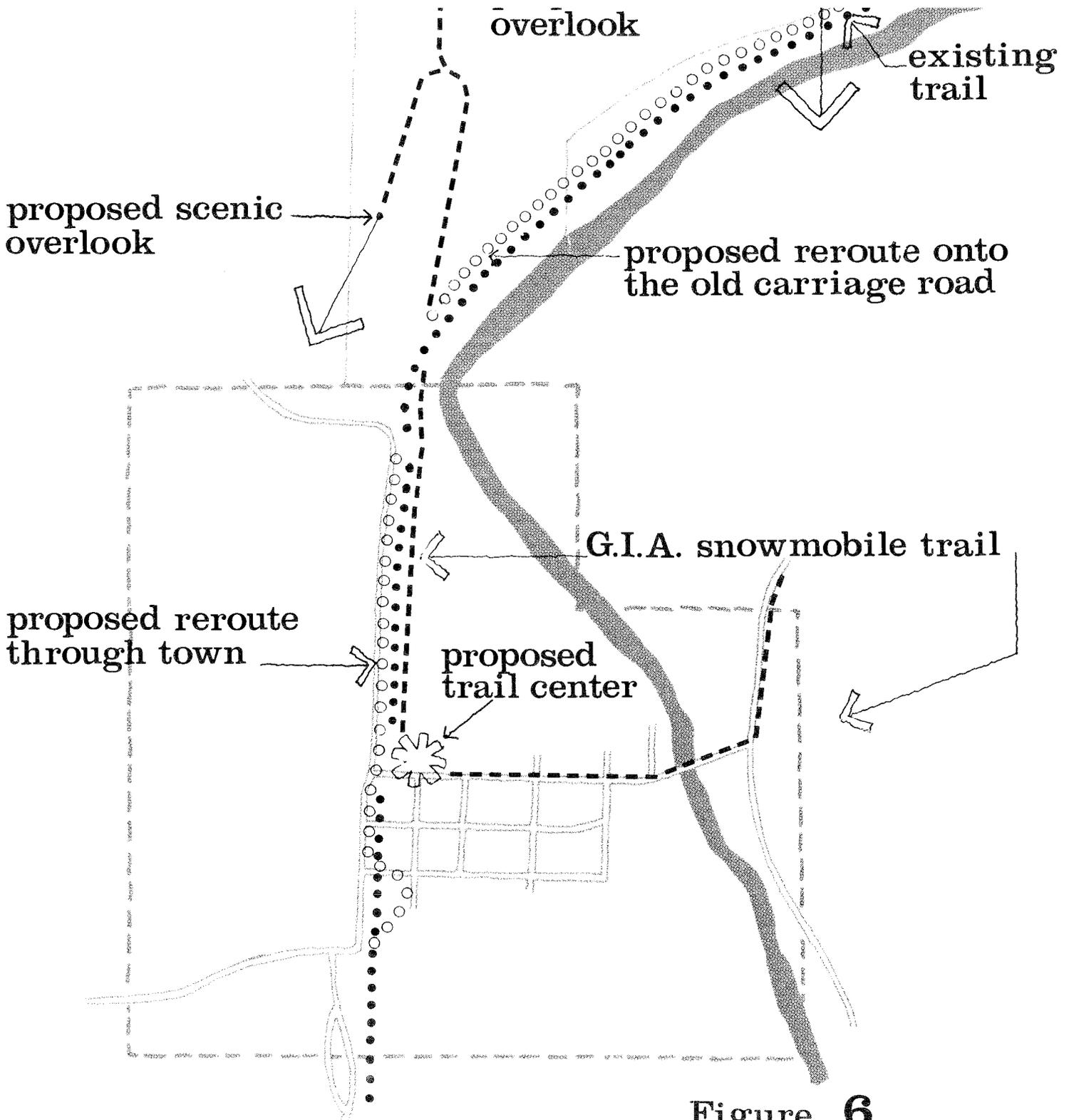
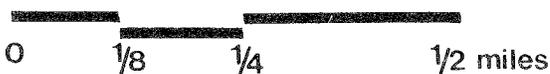


Figure 6

**PETERSON
FACILITIES**

**ROOT RIVER
STATE TRAIL**



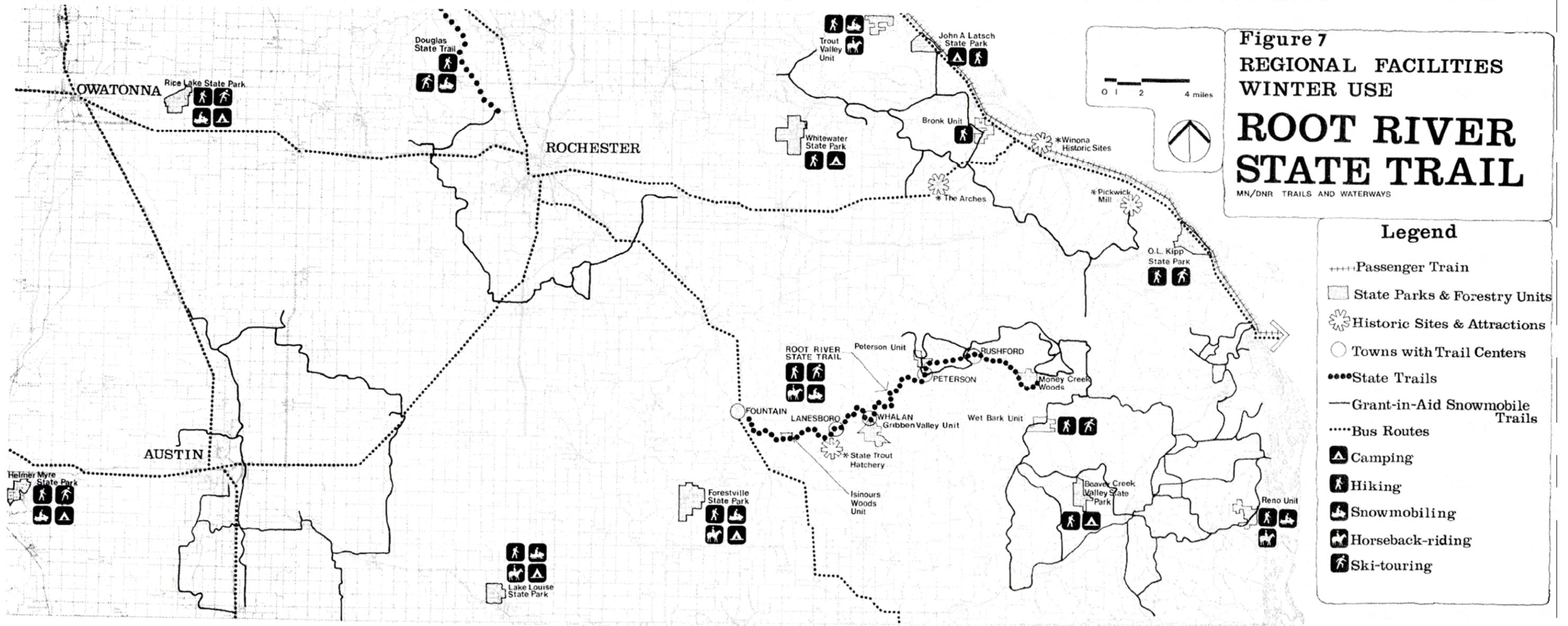
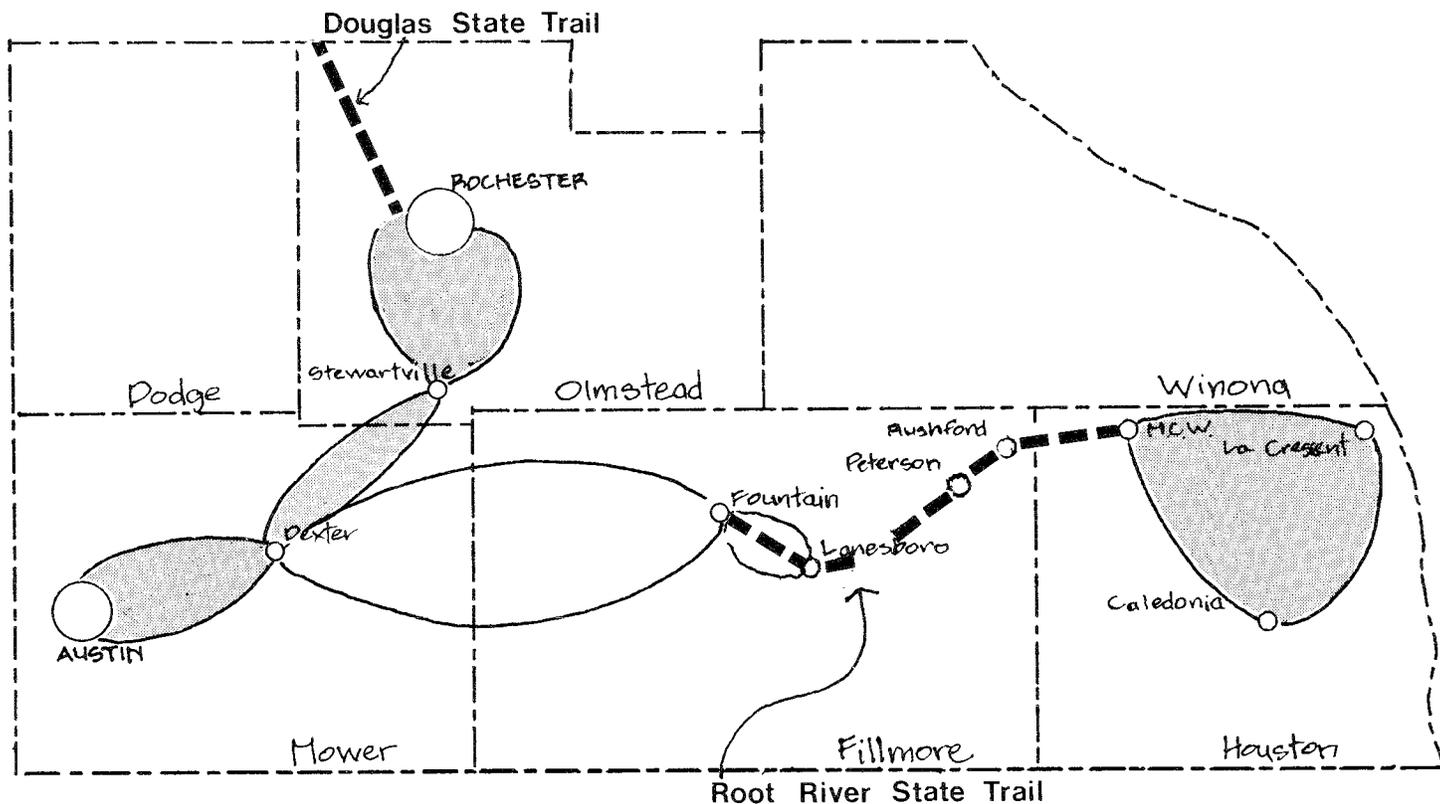


Figure 7
REGIONAL FACILITIES
WINTER USE
ROOT RIVER
STATE TRAIL
 MN/DNR TRAILS AND WATERWAYS

- Legend**
- ++++ Passenger Train
 - ▭ State Parks & Forestry Units
 - ✻ Historic Sites & Attractions
 - Towns with Trail Centers
 - State Trails
 - Grant-in-Aid Snowmobile Trails
 - Bus Routes
 - ▲ Camping
 - 👤 Hiking
 - 🏂 Snowmobiling
 - 🐎 Horseback-riding
 - 🎿 Ski-touring



LEGEND



State Trail



Existing Grant-in-Aid Trail



Desirable Grant-in-Aid Trail Connection - would receive funding priority if citizens initiated the project.

Figure 8
Conceptual Grant In Aid
Snowmobile Systems and Connections

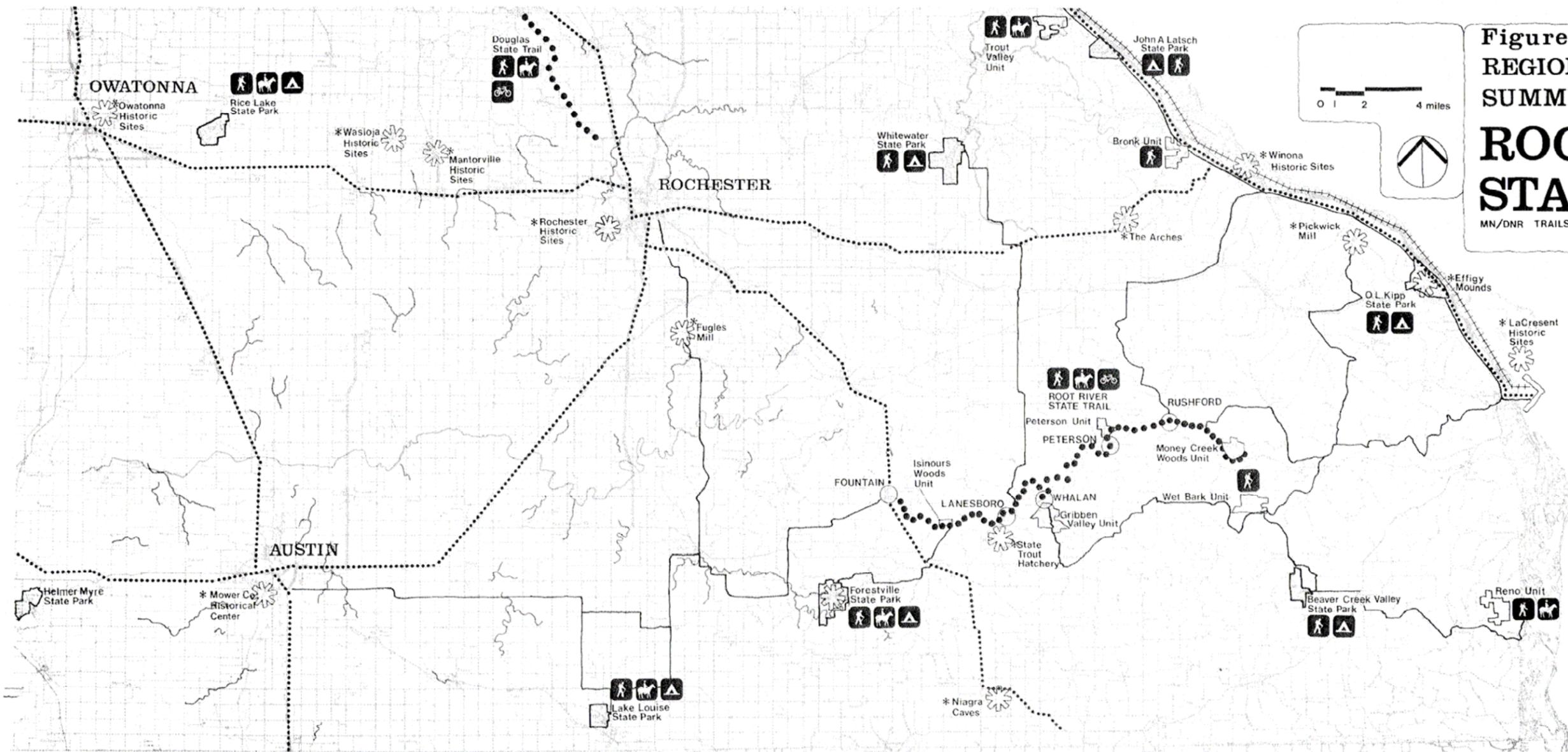


Figure 9
REGIONAL FACILITIES
SUMMER USE

ROOT RIVER STATE TRAIL

MN/DNR TRAILS AND WATERWAYS

Legend

- Passenger Train
- State Parks & Forestry Units
- ✽ Historic Sites & Attractions
- Towns with Trail Centers
- State Trails
- Suggested Bike Routes
For additional routes see Mn Bikeways Map 44&43
- Bus Routes
- ▲ Camping Primitive camping allowed in Forestry Units. Facilities may not be available.
- 🚶 Hiking
- 🚲 Biking
- 🐎 Horseback-riding
- Canoe Routes
- Trout Streams

An enhancement to the bikeway/trail combination is the fact that public transportation is available nearby. A hiker or skier can take a bus to Fountain from any of several points (figures 7, 9). Bicyclists can do the same although bicycles must be boxed in transit.

Amtrak passenger trains between the Twin Cities and Chicago stop at Winona and La Crosse, Wisconsin, within biking range of the trail. A recreational traveler from the Twin Cities could bus to Fountain (or, say, Austin), bike to Forestville State Park for the night, travel the trail and proceed to La Crescent or Winona and take the train home. (Bikes must be boxed on the train also.) Many other such experiences are possible. It should also be noted that day use bicycle and snowmobile trips originating locally are likely to figure significantly in the trail's use picture.

The Root River Trail is uniquely situated to provide multi-mode recreational travel. Recreationists can, at least conceptually, canoe the river from Lanesboro to Rushford, and then bicycle back to the starting point. Alternatively, horseback riding and hiking can be worked into this scenario. To some extent such use patterns would depend upon the presence of rental facilities in appropriate locations.

Use of the trail by the public prior to completion of development is to be expected and should be encouraged within reasonable bounds. As is discussed in the IMPLEMENTATION section, trail segments 1 and 2 (Fountain to Whalan) will be developed first (by decking and railing of bridges and blading and shaping of the embankment; paving will come later), and hiking and skiing should be permitted as soon as possible. In a similar way, these and other uses should be provided for elsewhere on the trail as usable segments become available. Appropriate levels of publicity should accompany the

opening of these various trail segments for public use. This latter item is dealt with in more detail in Table 13 and the accompanying narrative.

As the trail becomes more developed and begins to draw users from outside the local area, an Area Services Guide should be developed for public distribution. This publication should note public transportation rates, routes and schedules, towns where restaurants and overnight lodging accommodations are found, and phone numbers and addresses to use in seeking information. Special information such as where to get the boxes necessary to ship a bicycle on a bus or train should be included.

DNR should, in its promotional efforts for the Root River Trail, work closely when possible with other appropriate marketing organizations, such as Hiawathaland, Inc. and the state Department of Energy, Planning, and Development. Coordinated efforts at publicizing southeastern Minnesota in general and the Root River Trail in particular would hold greater promise than those of several agencies acting independently.

The promotional campaign should consider the desirability of suggesting certain tested routes of pre-determined length, and/or seeking the assistance and cooperation of outdoor travel groups in leading tours which include the Root River Trail. There will be a point after several years of operation after which promotional efforts, word of mouth advertising, and repeat users will form the critical mass necessary to assure continued annual growth in use levels. The achievement of that critical mass in a timely manner will depend upon an active, affirmative, and coordinated campaign to make the public aware that the Root River Trail exists and to make the use of it convenient and enjoyable.

Segment 1: County Road 8 to Lanesboro

Sales Commission Parking Lot - 11 miles

Objective.

To allow the trail user to experience the transition from the open upland at Fountain to the narrow, steep-walled Root River Valley at Lanesboro; and to take advantage of historical and geological interpretation potential on the segment.

Development Summary

- Surface with asphalt
- Develop/expand unit recreational facilities on Isinours Demonstration Woodland
- Develop a scenic overlook
- Develop two realignments
- Establish a trail center in the historic former VFW Hall in Lanesboro
- Provide parking lots at the western and eastern ends of this trail segment

Primary Uses.

Summer: Bicycling, hiking, and possibly horseback riding (on a separate treadway) in the future if demand warrants.

Winter: Cross-country skiing. Possibly snowmobiling in the future.

Snowmobiling is not proposed for this segment initially for the following reasons:

1. It is believed that the bulk of the initial snowmobiling use on the Root River Trail will originate at the eastern end. In the planning meetings, the public evinced a desire to be able to snowmobile from Rushford and the Houston Country Grants-In-Aid

System to Lanesboro and points west. A particular desire was to use the Root as a partial connection between the Houston County and Mower County GIA systems. However, use of the entire Root River Trail all the way to the outskirts of Fountain for snowmobiling would still leave a gap between the western end and the Mower County System (figure 8).

On the other hand, little was heard in the planning meetings about scenarios of use which included Preston, Fountain, or the Mower County System as starting points, or travel from west to east on the Root River Trail. Such interest may, of course, develop once the trail is in operation.

2. The provision of cross-country skiing on this segment enjoys strong support at the local and regional levels. In fact, many comments were heard in the planning meetings to the effect that the entire trail is a highly desirable facility for skiing. This is, to be sure, somewhat at odds with past DNR practices on State Trails; typically, railroad grade trails have been developed with snowmobiling as the designated winter use. One reason for this is the long, straight nature of most railroad grades, which lends itself more to use by snowmobilers than by skiers. The latter have been shown by survey results to prefer more diverse, rolling terrain.

However, skiers cite the fact that this railroad grade is not typical, since it does not present the typical long, straight nature of railroad grades in general. Also, there are few developed and groomed trail opportunities for skiers in the immediate area.

Finally, skiers point to the sheltered nature of the trail, the fact that it is heavily wooded in many areas, and that it offers many opportunities for isolation and quiet.

It thus seems appropriate to set aside a segment for skiing alone with an eye to making a later determination as to whether designation of this segment solely for skiing is appropriate and justified in the long term. This scheme of operation should be evaluated for five years, and a determination then made to continue or not. This determination should be based in part on the likelihood of a GIA connection being established between the Root River Trail and the Mower County GIA trail system. During this time snowmobiling should terminate at Lanesboro, unless a GIA initiative emerges to extend it to the west. The DNR can give priority to local user requests for GIA money to build connections between Lanesboro and Preston, Preston and Fountain, and between any of these towns and the Mower County System. Several combinations are possible, but the lack of strong demand in the planning meetings means that DNR should wait for such demand to develop before providing for snowmobiling use west of Lanesboro.

Priority accordingly should be given by DNR to proposals from local users for any combination of the following under the DNR GIA snowmobile program which will contribute to linking the Root River Trail with Fountain, Preston, and the Mower County Grants-In-Aid System:

1. A trail between Lanesboro and Preston.
2. A trail between Preston and Fountain.
3. A trail between the Mower County GIA system at Elkton or Dexter (or any nearer point as appropriate) and Fountain, Preston, or Lanesboro.
4. A trail between Lanesboro and Fountain. An alternative to this proposal would be for DNR to provide snowmobiling on the Root between Lanesboro and Fountain at a later date should demand make this appropriate.
5. Connectors between and among the foregoing and GIA systems in the Rochester area and in Winona County (see figures 6 and 8).

Specific Design Considerations

Access and Service Facilities. The trail will be directly accessible at each end of this segment. A major trail access point is proposed within the ROW adjacent to CSAH 8 (figure 11). This access point should provide parking, toilets, and picnic facilities. It should be so laid out as to expose the site to easy observation from the county highway in order to make people more aware of the trail's existence and to discourage vandalism and misuse, such as beer parties.

This plan recommends placement of an informational kiosk in Fountain near the toilets to be built by the city adjacent to the ball diamond (figure 12). This kiosk will direct users to the trailhead one half mile to the east. Doing things this way will allow DNR to designate Fountain as the trail's western terminus.

In Lanesboro, the Lanesboro Sales Commission intends to construct a parking lot for patrons of its own livestock sales operations between the abandoned railroad grade and the river bank to the north. The Commission has agreed to make this parking lot available to trail users in exchange for DNR permission to use the land now occupied by the grade for Sales Commission purposes. It thus is recommended that a land exchange be entered into between DNR and the Sales Commission which provides for a trail right-of-way of suitable width which diverges from the trail at or near the west boundary of the Sales Commission's land, proceeds northerly and easterly into the new parking lot, and rejoins the railroad grade at or near the west end of the nearby railroad bridge (figure 13). The construction of, and trail user access to, the parking lot between the grade and the river to the north must be an integral part of any final agreement, and should be so executed as to assure continuity of use regardless of changes in ownership.

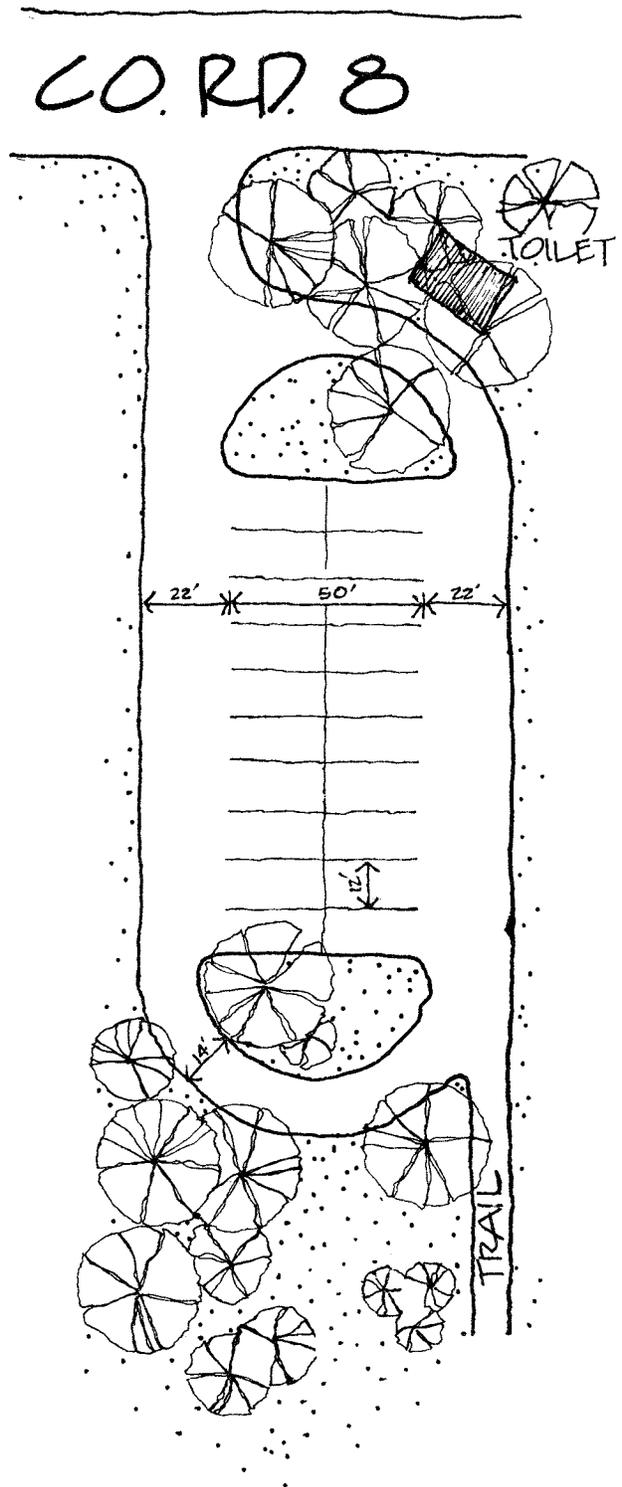


Figure 11
Proposed Parking Lot At West End Of Trail

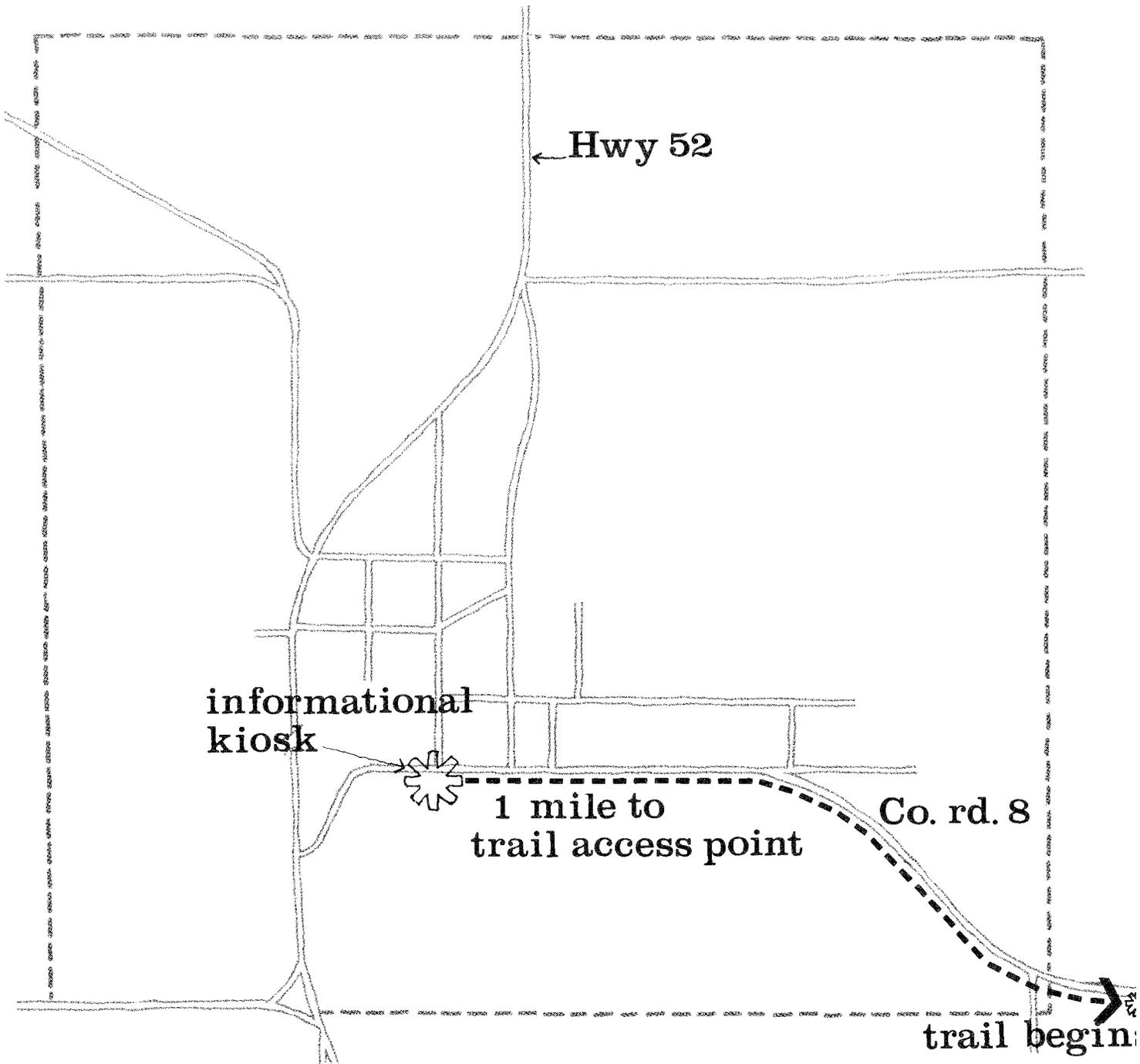
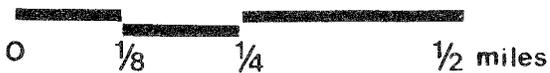


Figure 12

FOUNTAIN FACILITIES

ROOT RIVER STATE TRAIL



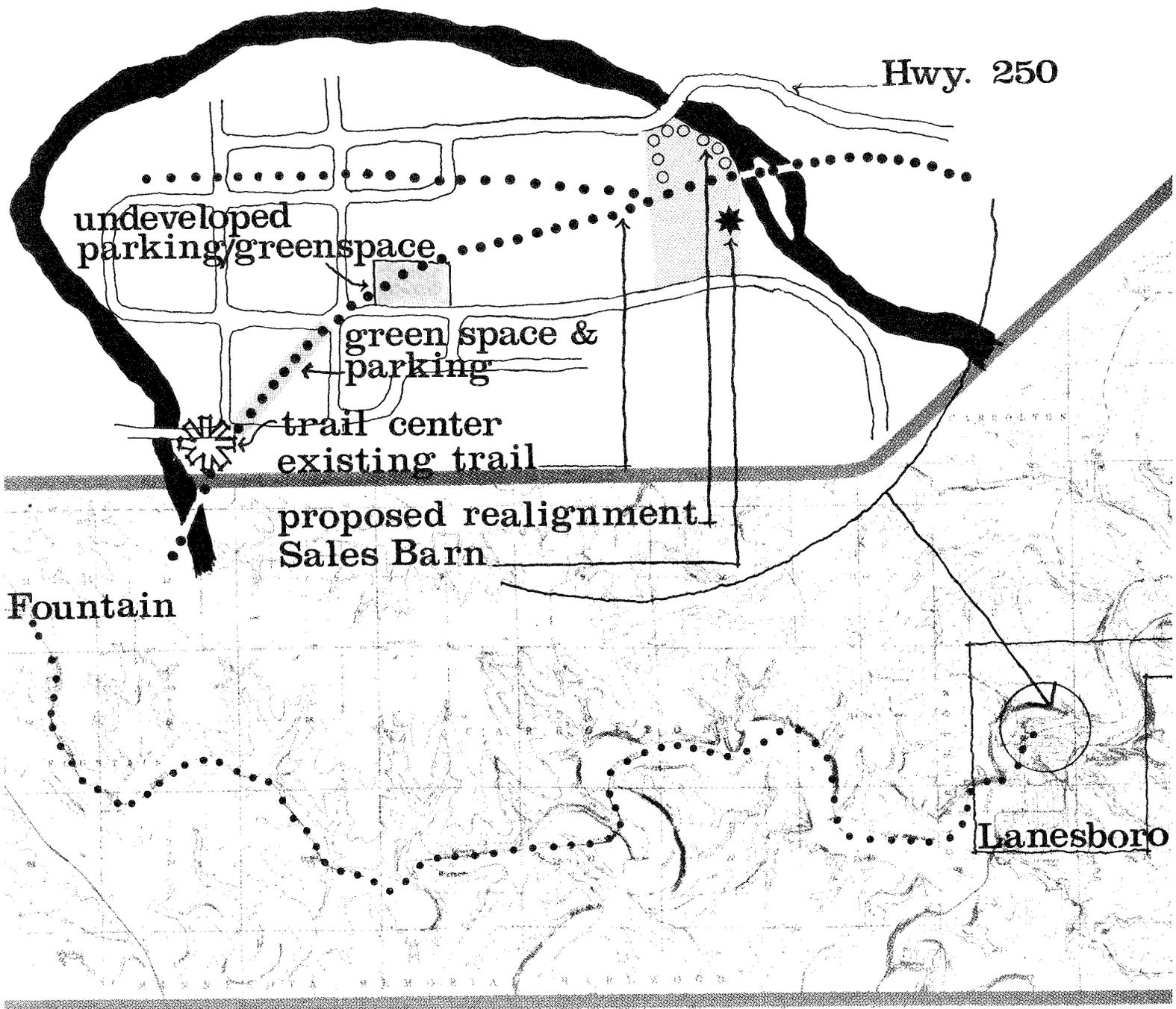


Figure 13
SEGMENT 1
REALIGNMENT
PROPOSAL
ROOT RIVER
STATE TRAIL

No toilets or other facilities than a parking lot are proposed for this location. However, signs should, among other things, direct those desiring such facilities to the trail center, described below. If for any reason public rest rooms are not provided in the trail center, they should be provided in the green space to be developed immediately east of the old VFW Hall in Lanesboro.

Also in Lanesboro, the DNR proposes to cooperate with the local Historic Preservation District in refurbishing an historic building for use as a Root River Trail Center and Interpretive Museum (figures 13, 14, 15). Containing three floors and located immediately adjacent to the trail, this building, the former VFW Hall, is ideally situated to serve as an information center, rest facility, and interpretive facility for the trail, the city, and the surrounding area (figure 14). The DNR will negotiate the terms of shared occupancy of the building with the Historic Preservation District.

Immediately to the east of the Lanesboro Trail Center lies a block-long portion of the trail ROW which formerly held the depot and downtown railroad sidings. This area is 110 feet wide and is proposed to be developed as a green space with head on parking for about 15 cars (figure 15). Convenient access to the Trail Center from this area is provided by the trail itself.

This green space should be landscaped and developed with plantings and benches so as to beautify the downtown area and serve as a focal area for downtown community functions. The City of Lanesboro should be consulted in planning for this development. Farther east along the ROW lies another block of land which could in the future be developed similarly or for overflow parking if the need arises (figure 15).

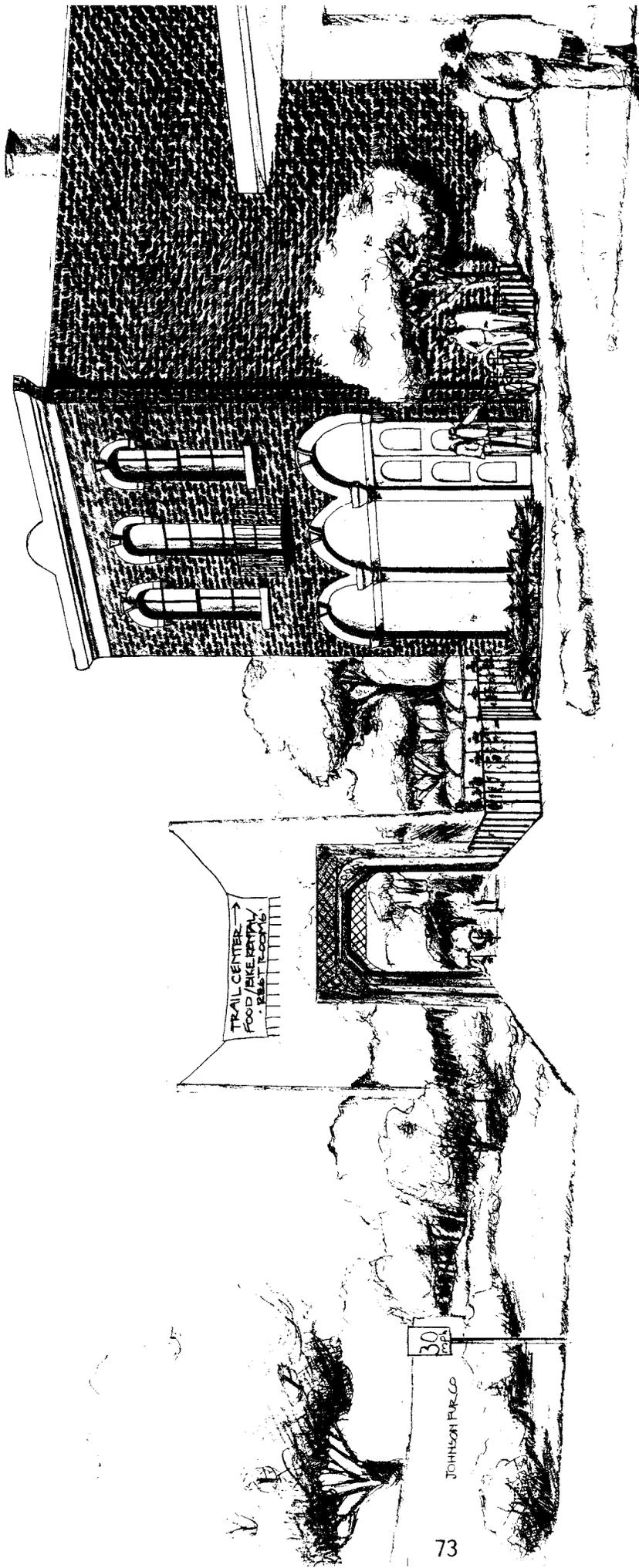
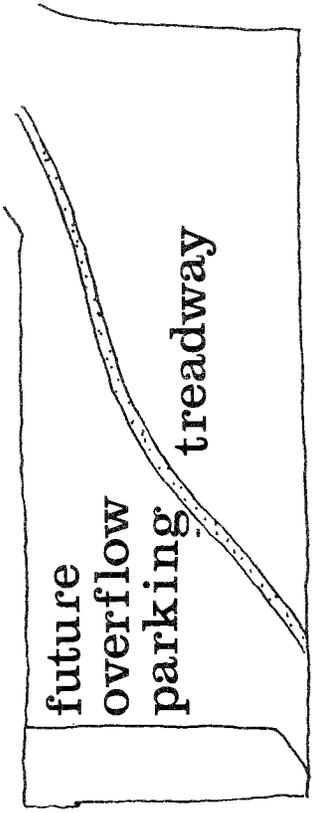
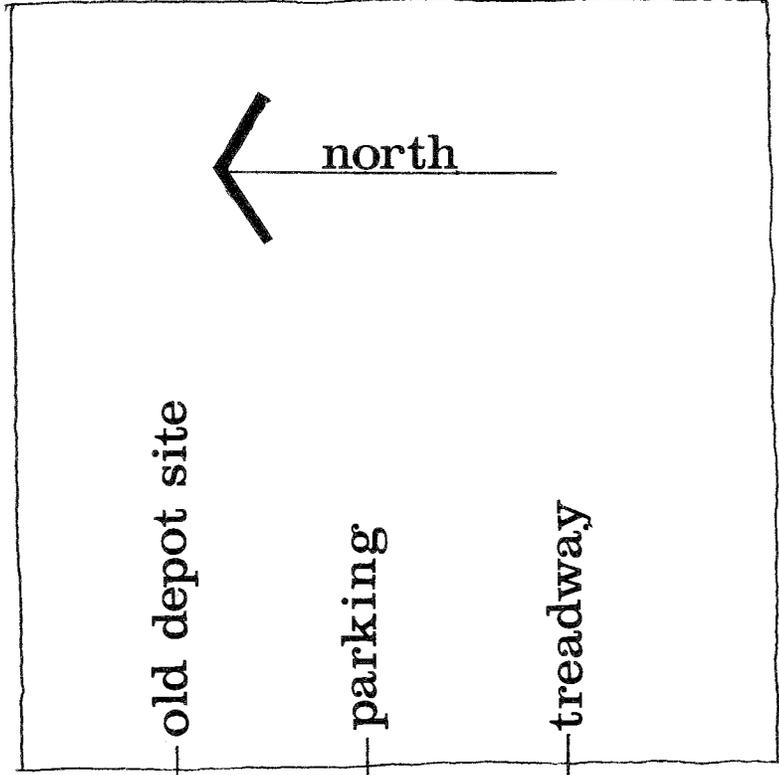


Figure 14
Proposed Lanesboro Trail Center In The
Former V.F.W. Building (view is to southwest)



2nd St.



3rd St.

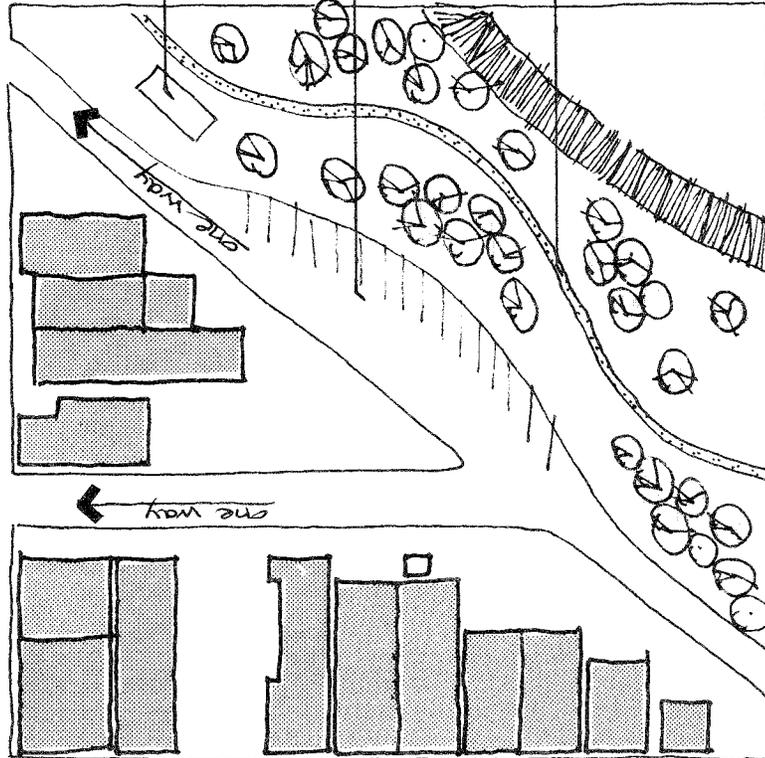


Figure 15
Lanesboro Green Space with Parking Lot

Harold McCoy, the owner of a farm in section 16, T.103N.R.10W., requests that the two bridges by which the trail enters and leaves his property be decked wide enough so that he can use them as access to his fields for farm machinery. Decking to the ends of the ties would be required. DNR should give consideration to this request and accommodate it if possible in the course of development.

Finally, the DNR Division of Forestry intends to construct an improved road access and 20-car parking lot adjacent to the trail on Isinours Demonstration Woodland for use by members of the public who wish to use the Woodland for various purposes. This parking lot will be available for use by trail users as well. The Trails & Waterways Unit should participate in funding this improvement to the extent that it serves mutually beneficial needs.

Treadway. Consideration should be given to surfacing with asphalt. This segment contains the steepest grade on the entire railroad line between Fountain and Money Creek Woods, and there is danger of crushed limestone being washed away on this grade. In general, while asphalt is more costly initially, long-term maintenance is lower, although this may not be the case in the area of the trail, since crushed limestone is readily available.

It is anticipated that there may be a future need for a second treadway on this segment of the trail, if the decision is made to provide for horseback riding or snowmobiling (and keep cross-country skiing) between Lanesboro and Fountain. For this reason any ROW narrowing should leave a minimum of 30 feet for trail purposes, and fee ownership of the entire ROW should remain in DNR hands.

If two treadways are ultimately established they should be separated by a buffer of vegetation, large rocks, or other material to ensure effective separation. Based on experience elsewhere, it appears that the best possible recreational experience for all users will result from an affirmative policy of confining each user group to its designated treadway.

A vegetative barrier which will be effective both in screening and preventing trespass should, if requested by the adjoining landowner, be established in the ROW between the treadway and any occupied dwellings which lie within 150' of the ROW centerline. This is in response to several comments by adjoining landowners regarding anticipated invasion of their privacy by trail users. Such vegetative barriers have proved quite effective in the past (figure 16). On this segment they have been specifically requested on the Bruce Wingert Farm and also the Lanesboro Bulk Plant where the trail passes close to the fuel loading dock. DNR has already provided some fencing along the trail.

Other Facilities and Services. It is recommended that DNR Trails & Waterways work closely with the Division of Forestry to beneficially integrate Isinours Demonstration Woodland with the Root River Trail. Long-range plans for this management unit of the Dorer Memorial Forest envision its use as a site which demonstrates the proper application of forestry management techniques which assure sustained yields of timber, wildlife and recreation for the public. To this end, a trail loop has been constructed which exposes visitors to several management sites. Expansion of this demonstration function is seen as highly desirable.

This plan makes the following recommendations:

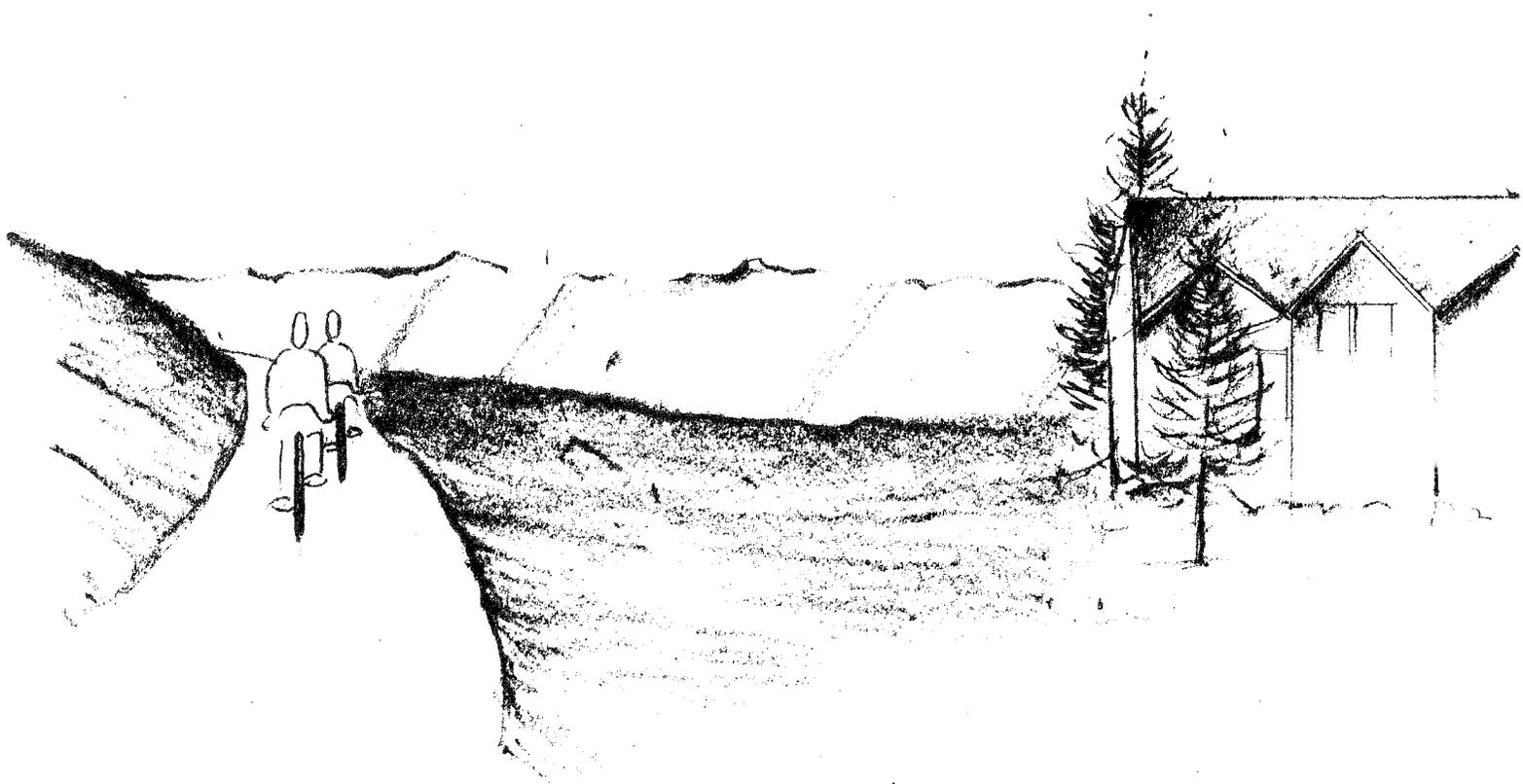


Figure 16
Use Of Vegetation For Privacy Enhancement

1. The trail loop should be expanded as appropriate for its primary demonstration function, and should be so aligned as to be conveniently used by cross-country skiers and hikers. Trails & Waterways development funds can be used for this purpose.
2. Demonstration sites should be signed and clearly interpreted. An explanatory brochure should be available where the trail loop originates near the Root River Trail.
3. A camping area with space for five tent pads should be established on the Woodland. Provision for expansion in later years should be made.
4. The hand water pump next to the trail at Isinours should be rehabilitated.
5. Consultation with District and Area Forestry personnel, as well as with Forest Planning personnel, should be instituted in connection with all work involving DNR-owned Dorer Forest lands.

Right-of-Way Modifications. At the time of the acquisition of the Root River Trail in 1980, several adjacent landowners raised the possibility of realignment of the trail where it splits fields or passes too close to houses. The DNR promised to consider such realignments in these cases or in other situations where doing so would address a landowner concern, as long as it would be consistent with trail use.

Four such realignments have been proposed on this segment. One is on the LaVerne Sorenson farm directly west of Lanesboro (figure 17).

The Sorenson proposal involves leaving the railroad grade where it abuts the river in the SW $\frac{1}{4}$ NW $\frac{1}{4}$ section 24, T103N.R.10W., and from there following the river bank east

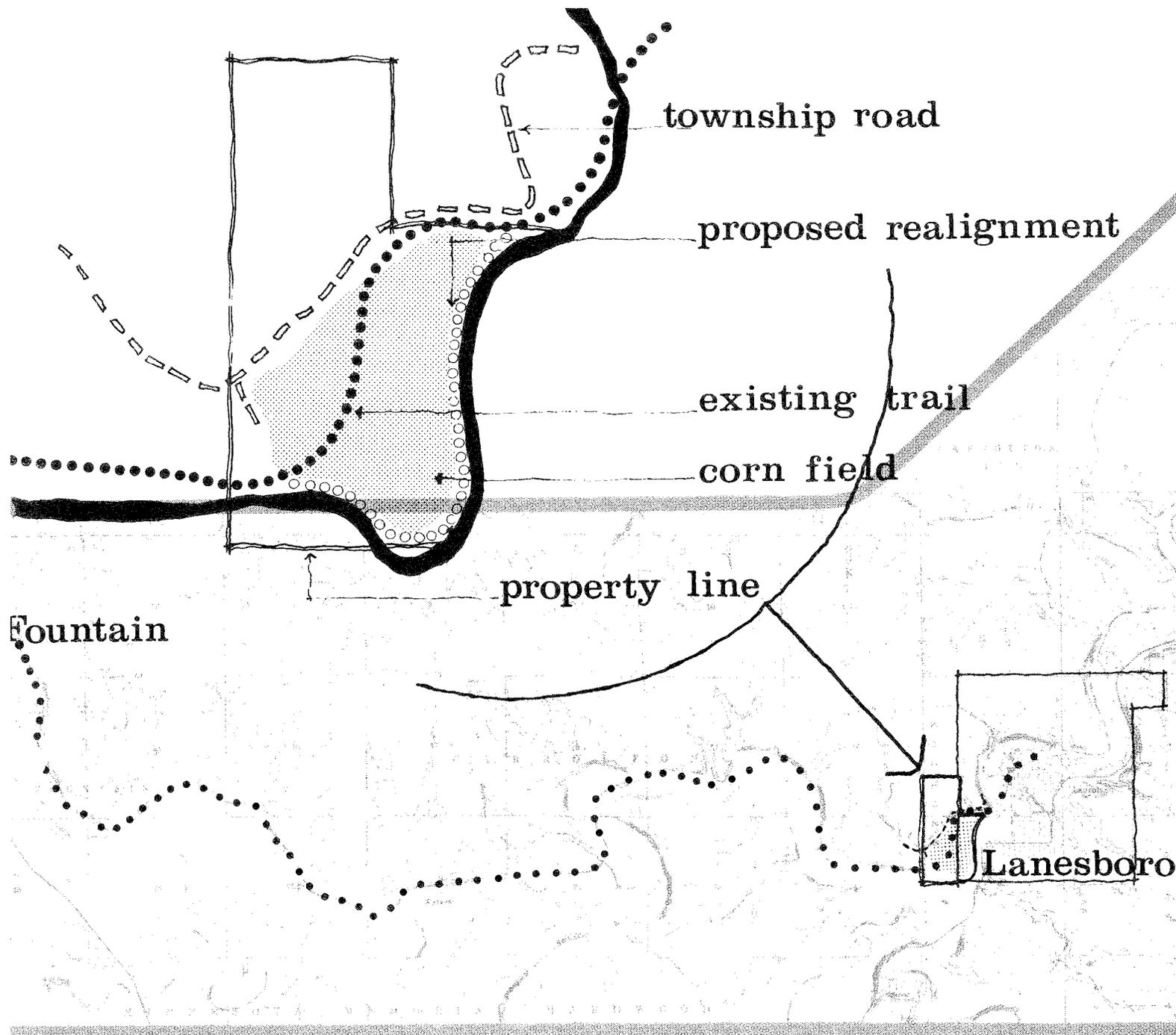
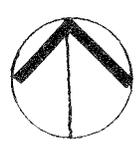


Figure 17
SEGMENT 1
REALIGNMENT
PROPOSAL

ROOT RIVER
STATE TRAIL



and northerly to rejoin the railroad grade in the NW¼ NW¼ section 24. This "river bank reroute" would avoid splitting fields on Sorenson's land and that of another adjacent landowner immediately to the north.

Such a reroute would have several advantages to trails users as well. It routes them directly adjacent to the river for about three quarters of a mile. The river bank is wooded along this entire distance. This reroute offers shade, fishing access, wading, and scenic amenities.

Arrayed against this is the fact that the Root is a very active river which floods several times each year at various times during the summer. Thus, the trail could be effectively blocked for varying periods during the heavy use season. The treadway could also be washed out or undercut by the river, necessitating costly rehabilitation. If such rehabilitation were to be necessary fairly often, it could produce a financial drain on the state and be inconvenient, even dangerous, to trail users. The need for such rehabilitation would be reduced if the trail were to be sited on the railroad grade.

In general it can be stated that river bank reroutes are highly desirable, but there is a point beyond which their cost in dollars for maintenance and in inconvenience to trail users would make them unwise investments of public money. This is an especially compelling notion at present, when money is very tight.

The recommendation of this plan is that river bank reroutes not be implemented unless and until DNR professional staff judgment is that the benefits they provide are worth whatever extra costs are associated with them. This professional judgment should be based upon hydrologic and engineering information regarding the likelihood of serious annual flood damage, the costs to repair it, and a comparison of such factors on

riverbank reroutes with those likely to occur if the trail is sited on the railroad grade. Evaluations of any future proposed riverbank reroutes should also be based upon these considerations. If at all possible, an engineered proposal for any reroute should be available for analysis by DNR Waters Division and Engineering Bureau personnel.

Information available to DNR indicates that this reroute proposal would be ill-advised at the present time. Field data gathered at the time of the National Flood Insurance Study done in Lanesboro several years ago (Federal Insurance Administration, 1981) show that the probability of this reroute being inundated in any ten-year period is quite high, that the inundation could be as deep as 11 feet (for the 100-year flood), and that damage to the trail surface could be quite severe and costly to repair, as well as being inconvenient and perhaps dangerous to trail users.

Although they were proposed too late to be included here, several other reroutes have been suggested for the same area. These will be analyzed by regional and central office personnel and a timely decision made.

The McCoy realignment is a somewhat different situation. Here the landowner requests that the trail, after crossing the bridge in the SW¹/₄ SE¹/₄ section 16, T.103N.R.10W. (proceeding east), diverge southeasterly and from that point follow the land ownership boundaries to the south, east, north, and west, rejoining the trail just to the west of the bridge in the SE¹/₄ SE¹/₄ section 16. (See figure 18.)

Once again this proposal has advantages and disadvantages. The major advantage is that this reroute climbs to the top of a low bluff from which spectacular views to the southwest are available. Included in these is a clear view of a major historic site, the Allis barn, and the former Clear Grit townsite. Built in the last century by a member

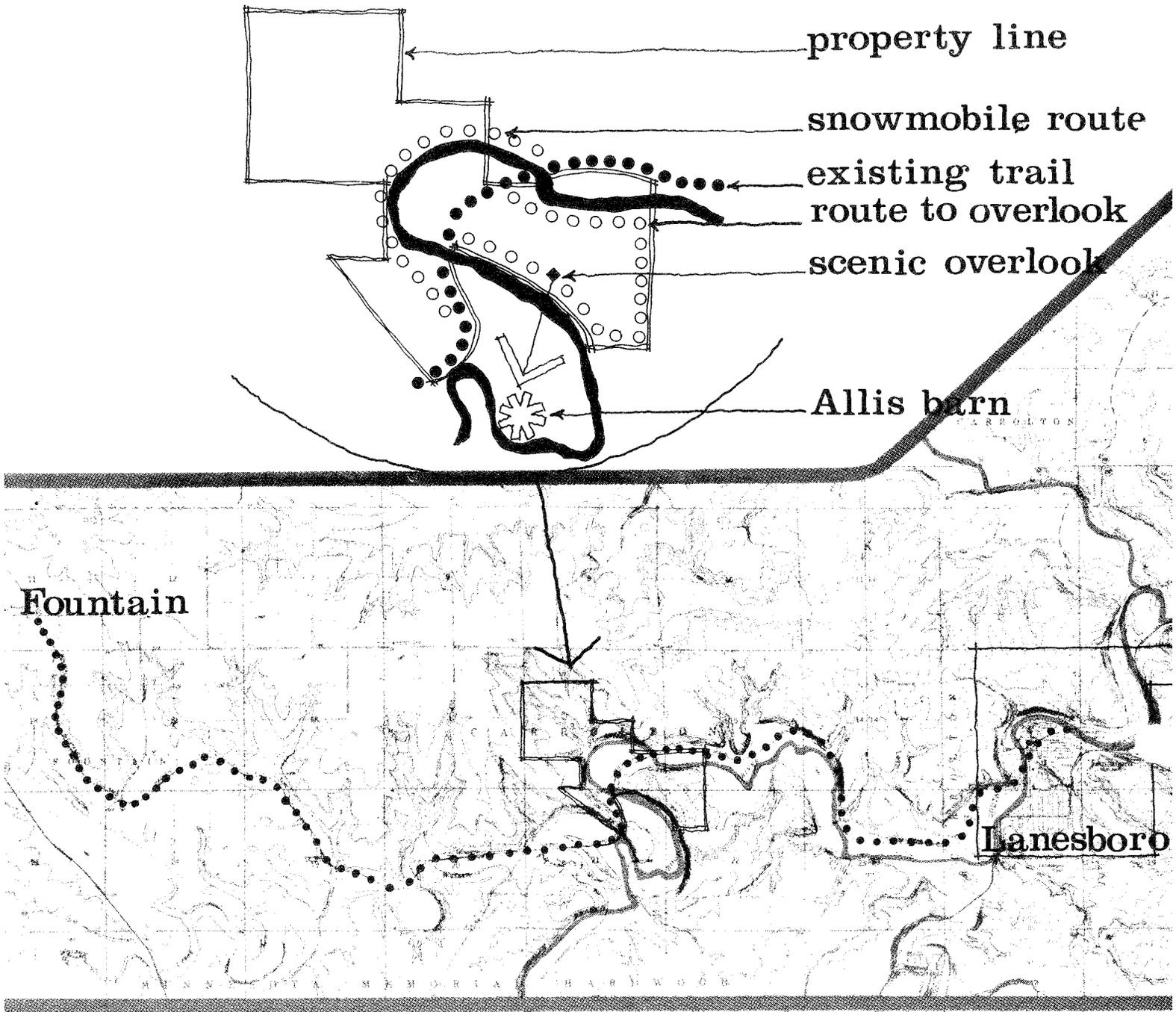
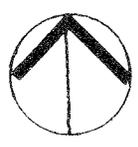


Figure 18
SEGMENT 1
REALIGNMENT
PROPOSAL
ROOT RIVER
STATE TRAIL



of the Allis Family (of Allis-Chalmers Corp.), the barn is clearly visible from several rock outcrops on the bluff top. It is not visible, however, from anywhere on the railroad grade, so this reroute contains the only point from which this site can be interpreted. Additionally, the interpretational viewpoint is one-half mile away and across the river from the barn, reducing considerably the prospect of harassment of the present owner by trail users wishing a closer look.

Other advantages of this reroute are that the bluff top is heavily wooded and quite scenic in its own right, and the remainder of the reroute crosses pasture and crop land with a rolling physiognomy, introducing topographic diversity into the trail user's experience. Also, it adds more than a mile of length to the trail.

The main disadvantage is that there are slopes of 13% and 8% in the climb to the top of the bluff. These are short (less than 50 yards each) but could be dangerous and inconvenient for bicyclists and cross-country skiers.

It may be possible to reduce the steep grades on the reroute if sufficient land can be acquired so that wide S-shaped curves could be employed. This would, of course, take more land than would a straight line up the hill and might be difficult to survey.

Several other items need to be considered here. While snowmobiling on this segment is not proposed for the initial operation, it may be provided for at a later date if demand and circumstances warrant. If it is provided in the future, the DNR will be guided by wishes of the public expressed in the planning meetings that the winter uses, snowmobiling and cross-country skiing, should be as widely separated as possible so as to enhance the experiences of both groups. An excellent possibility for such wide separation exists on the McCoy property, along the north bank of the river by means of

a rocky shelf at the foot of the bluff for part of the distance, and via a disused township road for the remainder (figure 18). While, for various reasons, this snowmobile realignment may never be implemented, it nonetheless does offer the possibility of the separation of uses desired by the public, should snowmobiling be provided on this segment later.

Another item is that this property is not the residence farm for the McCoy family, which resides in Iowa. It is presently in trust for the McCoy children. No one has lived on the property for many years.

Finally, the District Forester in Preston indicates that this farm is heavily wooded and highly desirable from a forest management standpoint. Given this potential and the potential for beneficial trail development, acquisition of the entire farm by the DNR Division of Forestry is a justifiable move. Since existing statutes require disposal of tillable areas of more than 10 acres, little or no farm production need be lost.

There are several alternatives for dealing with the McCoy reroute proposal. It is the recommendation of this plan that acquisition of the entire property for forestry and trail purposes be sought by the DNR Forestry Division with the support of the Trails & Waterways Unit. If this recommendation is followed, there should be agreement in principle between the Division of Forestry and the Trail & Waterways Unit that there are certain locations favorable for trail development on the parcel which may be so designated by mutual agreement. This plan's recommendation for such trail locations would be to provide for bicycling on the railroad grade through the property, thus avoiding the steep grades on the proposed reroute; the provision of hiking and cross-country skiing and possibly horseback riding in the future on the reroute proposed by the landowner; and snowmobiling on the north bank of the river if the Fountain to Lanesboro segment of the trail is ever designated for this use.

Needless to say, this course of action should only be pursued if it meets with the goals of the Division of Forestry and if the owner is willing to sell the property to the DNR.

If the above cannot be accomplished within a reasonable period of time, the remaining alternatives, in order of desirability, are as follows:

- * Seek to purchase sufficient ROW for a spur trail from the railroad grade to the scenic overlook. This could be an easement or a fee acquisition. This course of action would retain the railroad grade in DNR ownership so that skiers and bicyclists could avoid the steep slopes on the spur trail, which would be developed only for hiking. This alternative would include development of the scenic overlook.

- * Undertake to transfer the stretch of railroad grade between the bridges on the McCoy property to the landowner in exchange for a right-of-way of sufficient width along the west, south, east, and north boundaries south of the grade so that S-curves and landings can be employed on the steep slopes to reduce the hazards to bicyclists and skiers to acceptable levels. The scenic overlook is included here also.

- * Reject the reroute proposal and route the trail on the railroad grade through the property.

It is highly desirable to develop a scenic overlook on the bluff overlooking the Allis barn, and to develop facilities there which interpret the barn and the vanished Clear Grit townsite. This will be relatively easy if one of the first two alternatives can be employed. If the last alternative must be used, an easement should be sought from the landowner to provide for development of this interpretive overlook and a spur hiking trail leading to it.

A third reroute was proposed by DNR to Duane Benson, owner of a farm about one mile west of Lanesboro. This reroute would diverge from the grade where it crosses the township road in the NE $\frac{1}{4}$ NW $\frac{1}{4}$ section 23, T.103N.R.10W. and proceed uphill to the west to the wooded hillside above the trail. From there the proposed realignment proceeds southeasterly following the edge of the woods to rejoin the trail in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ section 23. (See figure 19.) The realignment should be situated inside the edge of the woods, if possible.

This realignment has the advantage of being higher in elevation than the railroad grade which reduces the flooding risk. It also resolves a field-splitting problem and is a more interesting and scenic route for the trail user. The only real disadvantage is that the prepared roadbed of the railroad grade will not be used for the trail. It is recommended that this reroute be pursued.

Finally, as has been noted elsewhere, the Lanesboro Sales Commission has requested that DNR reroute the trail to the north around its livestock sales yard in Lanesboro so that land it owns between the railroad grade and the river can be utilized for customer parking. The Sales Commission proposes to remove the railroad embankment in this area since it is 16 feet high and effectively cuts off the main sale barn from the proposed parking area. The Sales Commission has offered to make this parking lot available to trail users, but says building the lot will be infeasible if the railroad embankment is not allowed to be disturbed.

In addition to the above realignments, a narrowing of the ROW and use of the ROW for field access have been proposed on the Charles Ruen Farm in the SE $\frac{1}{4}$ section 15, the W $\frac{1}{2}$ SW $\frac{1}{4}$ section 14 and the NE $\frac{1}{4}$ NW $\frac{1}{4}$ section 23, T.103N.R.10W. These are proposed in order to allow the landowner to increase the size of his cornfield south of the grade,

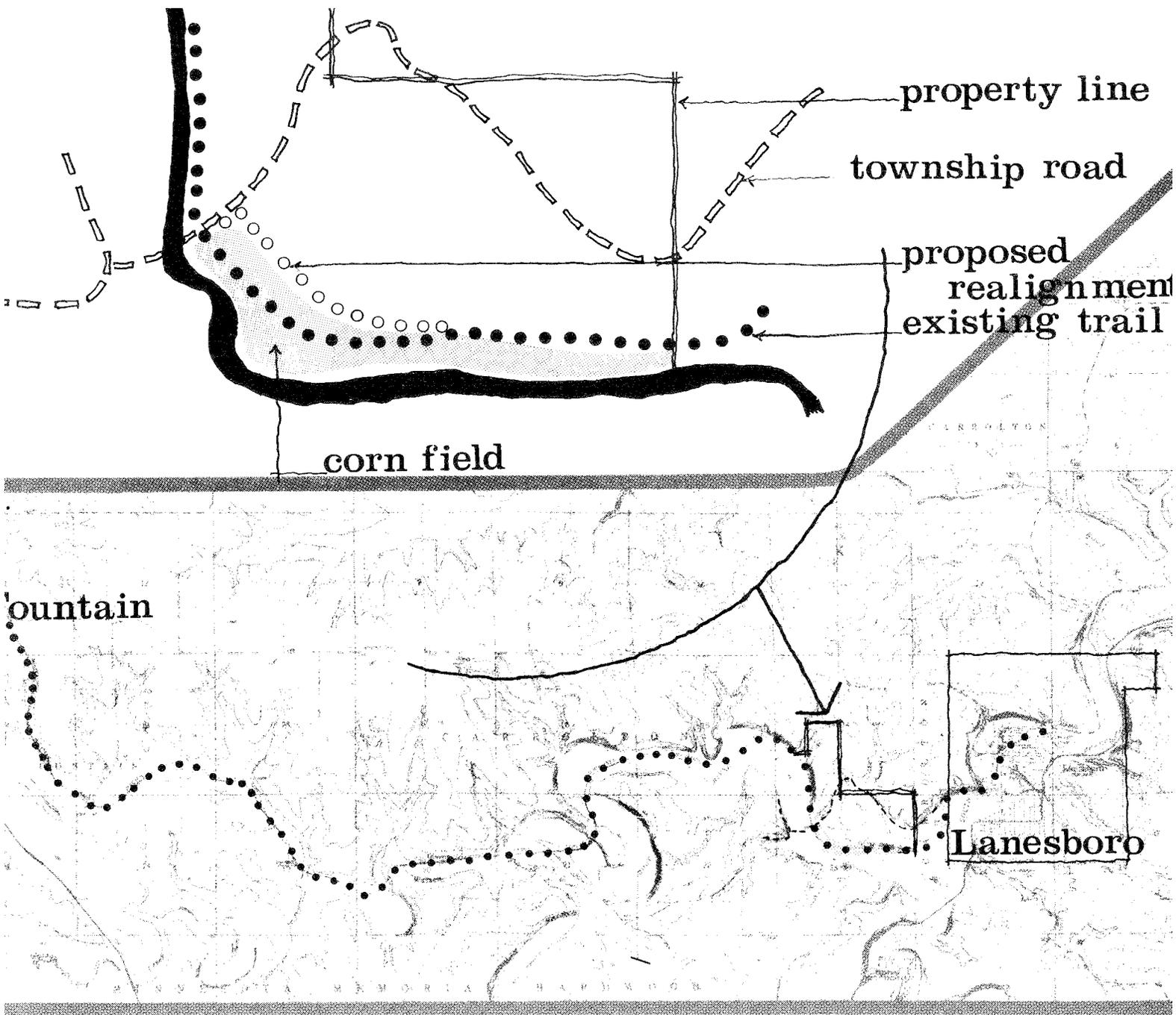
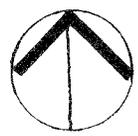


Figure 19
SEGMENT 1
REALIGNMENT
PROPOSAL
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STATE TRAIL

0 1/2 1 2 miles



and to avoid the need to ford the river in the course of moving farm machinery to a field north of the trail in section 15. The landowner proposes a 25' narrowing along the southern edge of the ROW in section 15, and no other modifications. These requests for narrowing and use of the grade for access should be approved subject to terms, conditions and criteria contained elsewhere in this plan.

A spur track off the main line on the north side of Lanesboro formerly served several businesses, including the old stock loading pens in the downtown area. Since the planning process identified no uses for this spur, and since several adjoining landowners have expressed interest in parts of it, DNR should act to dispose of this land as provided by law.

Interpretation. Interpretation of historical, geological, biological and cultural features is an important component of the Root River Trail experience. This plan envisions a comprehensive interpretive program which educates trail users in a clear and entertaining way about the unique attributes of southeastern Minnesota in general and the Root River Valley in particular. The following is a partial list of interpretive recommendations, and is not meant to be all-inclusive.

* The transition from the prairie highlands to the valley bottom exhibited by the Fountain to Lanesboro segment should be interpreted in a way which illustrates the natural forces which have shaped and are still shaping the landscape.

* Industrial and commercial development should be touched upon, including the milling industry at Clear Grit and Lanesboro, the latter's former canning industry and power dam, as well as the development of the railroad itself. The interesting story behind the railroad junction at Isinours should also be told.

* The historic buildings and downtown area of Lanesboro, now a National Historic District, should be highlighted. The Lanesboro Community Club has proposed to create an historical walking tour of the District. This should be so designed as to complement the amenities provided in town by the Root River Trail. The walking tour should begin at the Trail Center and a self-guiding descriptive brochure should be available there. DNR should work with the Lanesboro Historical Preservation District in producing this brochure.

It is felt that the best way to handle the interpretive tasks outlined above would be to treat them in depth via carefully selected photos and other artifacts put together in well-thought-out displays in the Lanesboro Trail Center and Interpretive Museum. DNR and the Lanesboro Community Club should cooperate closely to blend creative talents, artifact collections, and technological capabilities in order to most effectively tell the area's story. This should be supplemented by descriptive signage at appropriate points along the trail which briefly describes events, phenomena, and structures which are developed more fully in the Trail Center.

There is a tremendous potential for interpretation on the Root River Trail. To exploit this potential is to add immeasurably to the experience of the Root River Trail user.

Segment 2: Lanesboro Sales Commission Parking Lot to Whalan - 4 miles

Objective.

To allow trail users to experience the narrow, wooded Root River Valley surrounded by steep limestone bluffs as well as the diversity of vegetational communities common to this landform; and to interpret the unique cultural, historical, geological and biological features of the valley.

Development Summary

- Develop a hard surface suitable for bicycling on the main treadway
- Develop a parallel treadway for horseback riding and snowmobiling in the ROW
- Develop one realignment
- Establish a snowmobile bypass on private land north of Whalan
- Rehabilitate the old railroad coal shed in Whalan as a warming shack for skiers and rain shelter for summer users
- Build a trail bridge on the former highway bridge abutments on the south edge of Whalan to serve as the access to Gribben Valley Woods, if certain conditions are met
- Develop recreation facilities on the Gribben Valley Unit

Primary Uses.

Summer: Bicycling, hiking, horseback riding (on separate treadway).

Winter: Snowmobiling to and over proposed diversion north of Whalan; cross-country skiing on entire segment.

Specific Design Considerations

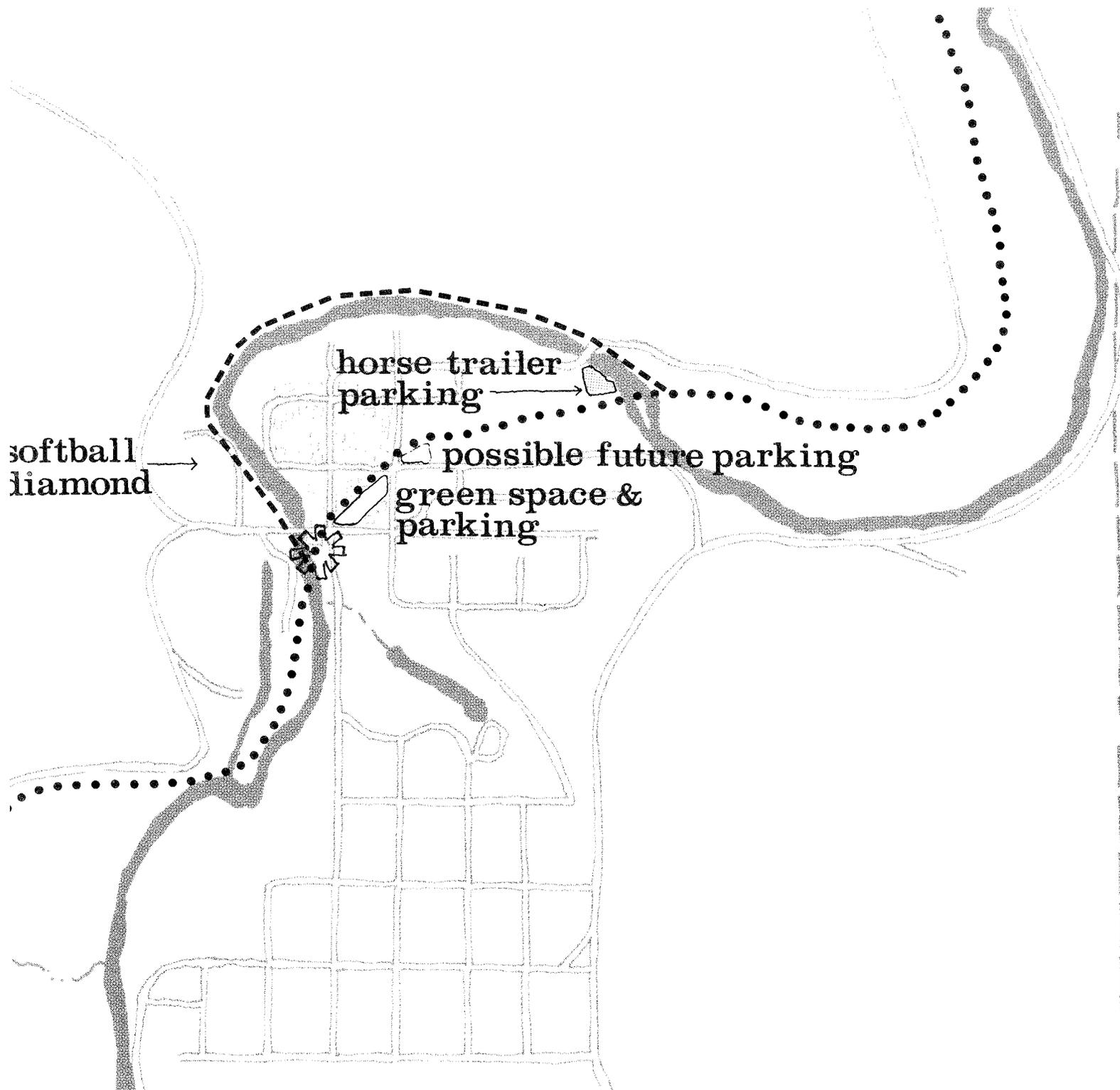
Access and Service Facilities. This segment will be conveniently accessible in Lanesboro for bicycling, hiking and cross-country skiing from the green space parking lot (figure 20). The main access to the segment for snowmobiles will be the Lanesboro Sales Commission parking lot described in the previous section (other users can, of course, use this lot also). From this parking lot users will proceed to the western end of the railroad bridge on the east side of Lanesboro where the trail segment actually begins.

No parking lot is proposed in Whalan, but considerable on-street parking exists closely adjacent to the trail.

For horseback riding, the Lanesboro Sales Commission parking lot will be the only designated access. DNR should discourage the parking of horse trailers in Whalan in order to avoid odor problems in town.

Snowmobiles present a special challenge for the planning process because under the terms of the Joint DNR-CRPP Purchase Agreement they must be prohibited from using any part of the Root River Trail which lies within 150 feet of an occupied dwelling if the occupant so requests. This could block snowmobile traffic on the trail in the downtown area of Lanesboro, and in Whalan. Further, the City of Whalan has specifically requested that snowmobiles not be routed on the trail through town, but bypass the city on private land north of the corporate limits.

The Lanesboro Sales Commission parking lot will be more than 150 feet from the nearest occupied dwelling. It can, therefore, be used by snowmobilers who intend to

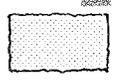


softball
diamond →

horse trailer
parking →

possible future parking

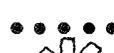
green space &
parking



Parking



Proposed Snowmobile Route



Root River Trail



Trail Center

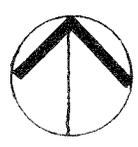
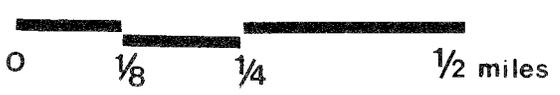


Figure 20

**LANESBORO
FACILITIES**

**ROOT RIVER
STATE TRAIL**

travel eastward on the trail. It can also be used as a destination by snowmobilers entering Lanesboro from the east; however, some doubt was expressed in the planning meetings that snowmobilers would be willing to leave their machines unattended in this parking lot while visiting the city, since it is rather remote from the downtown area. Furthermore, if demand should surface later for snowmobile connections from Lanesboro to points west, a way will have to be found to get snowmobiles from the Sales Commission parking lot to the west side of town, preferably without using the railroad grade, because the latter lies within 150 feet of numerous occupied dwellings on its way through town. Conceivably, the railroad grade could be used if all occupants of houses within 150 feet were willing to execute agreements which would allow snowmobile use on the grade and which would be binding on all future owners of the properties involved.

This plan recommends the following to resolve this difficulty:

1. The Sales Commission parking lot should be designated as the western snowmobiling terminus of the Root River Trail for the time being.
2. If (a) demand materializes for connections to the west, and/or (b) demand materializes among snowmobilers for a place in Lanesboro to leave their machines which is more secure, the following actions should be taken by DNR (see figure 21):
 - (i) Consider requesting from each owner of an occupied dwelling within 150 feet of the railroad grade in Lanesboro permission to operate snowmobiles on the trail past their properties. This permission would have to be in writing and so executed as to be binding on all future owners of the property.

or:

- (ii) Deal with the City to provide alternate routes of travel within the city between the Lanesboro Sales Commission parking lot and the railroad bridge on the west side of town.

3. If these attempts fail, the following should be considered, but only as a last resort (figures 20, 21):

- (i) Construct a snowmobile bypass which would diverge from the main trail at the east end of the railroad bridge on the east side of Lanesboro and follow the north bank of the river around town to the softball diamond on the west side of town. Obtain permission from the City to use the latter area for snowmobile parking. This area is immediately adjacent to the downtown area.
- (ii) Negotiate with the City of Lanesboro for a snowmobile route from the softball diamond to the railroad embankment at the west end of the railroad bridge adjacent to the trail center on the west side of town. There are existing service roads the shoulders of which could be used for this purpose.
- (iii) Develop a shoulder on the railroad grade for parallel snowmobile parking beside the trail treadway west of the bridge.
- (iv) Place barriers, such as posts driven into the trail, in such a way as to discourage snowmobilers from entering town from either direction on the

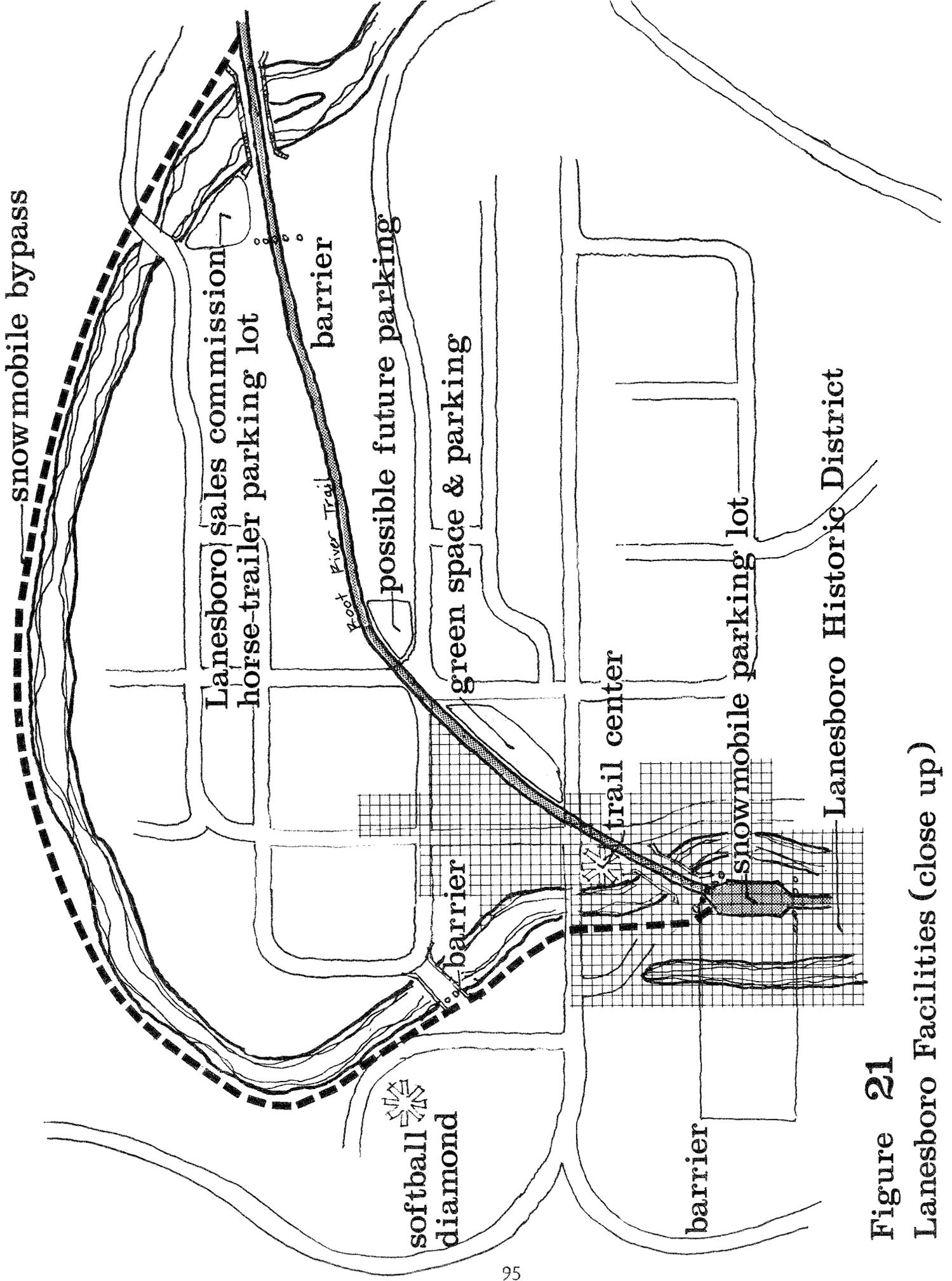


Figure 21
 Lanesboro Facilities (close up)

railroad grade, or from proceeding west out of town on the railroad grade until a treadway can be provided for them (figure 21).

The cost involved in such a solution makes it imperative that it only be used if all else fails.

The north bank of the river, upon which the snowmobile bypass would be constructed, is almost entirely owned by one individual, who has indicated willingness to grant a right-of-way for the bypass if he can be exempted from liability. (It is believed that existing statutes grant this exemption.) DNR should forthwith negotiate a 10-year renewable option on such use of this land in order to preserve this alternative.

The successful accomplishment of items 3 (i) - (iv) above would result in the provision of a snowmobile bypass around Lanesboro which would begin and end on the main trail at points where the 150-foot rule would not be a problem. It would also result in the provision of two snowmobile parking areas on the west side of Lanesboro, one (the ball diamond) convenient to downtown and the other (the widened shoulder on the trail) convenient to the trail center.

The snowmobile bypass would be considerably more costly to build than the trail on the railroad grade. This being the case, it seems wise to give the Sales Commission parking lot and other means of getting snowmobiles to the west side of town a chance to work first. However, if the need for this bypass materializes, it behooves DNR to be prepared to implement it since few, if any, other alternatives exist for getting Root River Trail snowmobile traffic through or around Lanesboro without violating the 150-foot rule.

Minimal development is proposed at this time within the city limits of Whalan. The Green Thumb Organization, a public service body sponsored by the Farmers' Union, is presently maintaining the ROW there, primarily by keeping it mowed. DNR should encourage this to continue and, failing that, undertake to keep it mowed by DNR or contract personnel.

One of the only two former railroad buildings remaining on the trail ROW is located in Whalan. It is a small shed formerly used for tool storage and before that as a coal storage building and communications point. This building is recognized as an historic site on the Minnesota Historic Properties Inventory. It is desirable to preserve it as a link with the trail's railroading past.

It is proposed that this building be rehabilitated and the front of it used as an information trail kiosk. It is further proposed that the interior be cleaned up, the partition removed, benches and a small wood stove be installed and the building be used in winter as a warming shack. It could also be used in summer as a rain shelter. Since there are no retail businesses in Whalan which can serve trail users, this would be the only reliable shelter in town. It is also recommended that toilets be installed on the ROW in the vicinity at some time in the future if demand warrants. Alternatively, toilets could be installed in the coal shed although this is less desirable; the latter is better utilized as a warming shack, since it is rather small. Wood for the stove should be supplied by DNR and the stove installation should conform to local codes. The trail manager should visit the building periodically to monitor use.

It will be important in the restoration of this building to retain its historic integrity. This should not be difficult or costly since it is small and of very utilitarian wood frame construction. It requires replacement of the roof and of some of the siding, and

paint. It should be painted in the former railroad colors, if possible. If inspection of the building by qualified DNR personnel demonstrates the infeasibility of use of this building as a warming shack, it should be removed and a new building similar in construction should be erected and used for the purpose.

Treadway. The surface material on this segment may be either crushed limestone or asphalt.

Two treadways will be necessary on this segment, the main one for bicycling, skiing, and hiking and the parallel one for horseback riding and snowmobiling (figure 22). The latter should be placed in the ROW but remote as possible from the main treadway. If necessary, the two treadways could be placed side by side on top of the embankment, but this should be done only if no other way will work. If this is necessary, serious consideration should be given to erecting a barrier between them to keep snowmobiles and skiers separated. Large rocks or vegetation would probably suffice for this purpose, but DNR should be prepared to go further to assure separation of users if necessary.

The secondary treadway should be developed to the minimum standards (as provided in the DNR Trail Manual) necessary for safe snowmobile travel. Horseback riders in the planning meetings indicated that a rudimentary treadway would be the most desirable, and this need should be accommodated to the extent that safety for snowmobilers is not jeopardized. The parallel treadway should not be routed across bridges unless absolutely necessary, as will be the case with bridges over the Root River. Bridges and culverts which cross dry washes or small, intermittent streams should not be used by snowmobilers or horseback riders if it can be avoided; instead, the stream banks should be sloped as necessary, large rocks removed, and the dry wash bottom lined

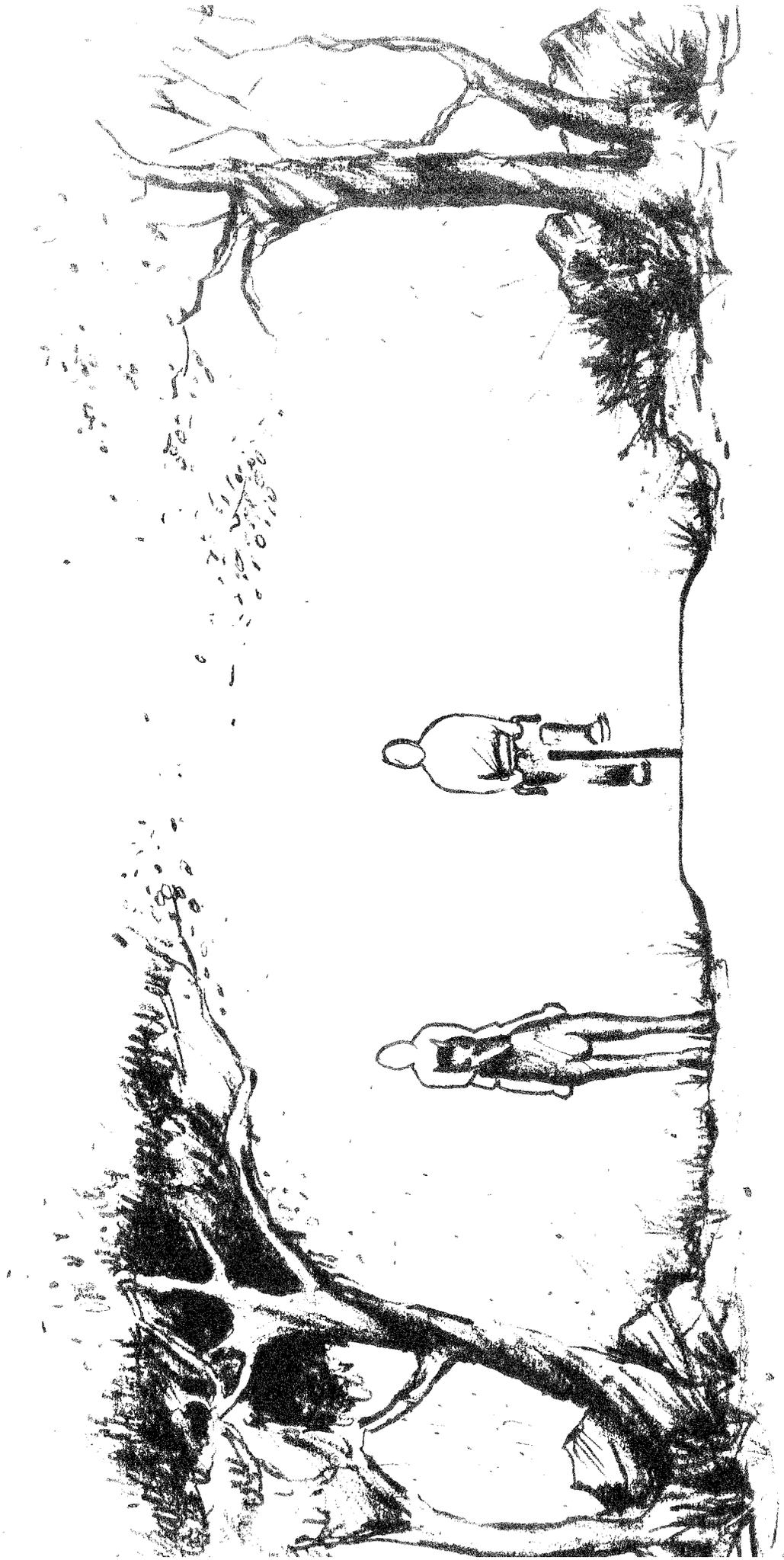


Figure 22
Treadway Typical

with rock if necessary and these be used as crossings by these user groups. This will reduce snowmobile-skier conflicts on bridges (as well as grooming conflicts) and will also tend to accommodate horseback riders whose animals are sometimes reluctant to cross bridges, especially high ones. Any work of this nature should be reviewed by the DNR Waters Division to assure compliance with applicable law.

The potential for snowmobile-skier conflicts will be reduced to the extent that effective separation between their respective treadways can be provided. DNR's experience on other trails has been that where adjacent parallel treadways for each use have been provided, the experience of one group has sometimes been degraded by trespass of the other group onto its treadway. Since a high level of interest in this trail has been expressed by members of both user groups, it will be well to heed the lessons of history and furnish the requested separation to the maximum extent wherever possible.

Several ideas surfaced during the planning meetings for resolving this issue. The most desirable of these, supported fully by members of both groups in the planning meetings, was to have snowmobilers use the parallel treadway where necessary (and in those locations affirmatively separate the two treadways via tree and shrub plantings, large rocks, or railings), and prepare a minimal treadway for snowmobiling away from the ROW on private land (mainly agricultural fields) wherever possible. This proposal envisions doing little more than running the trail groomer off the parallel treadway and across cropland wherever possible, doing only the minimum necessary brush clearing, rock removal, and earth moving to make grooming convenient and snowmobiling safe. There are, of course, some areas ("bottlenecks" or "choke points") where the trail ROW is constricted by bluff walls on one side and the river on the other (figure 23), and at these locations snowmobiles would use the horse treadway, with the barriers between treadways mentioned earlier.

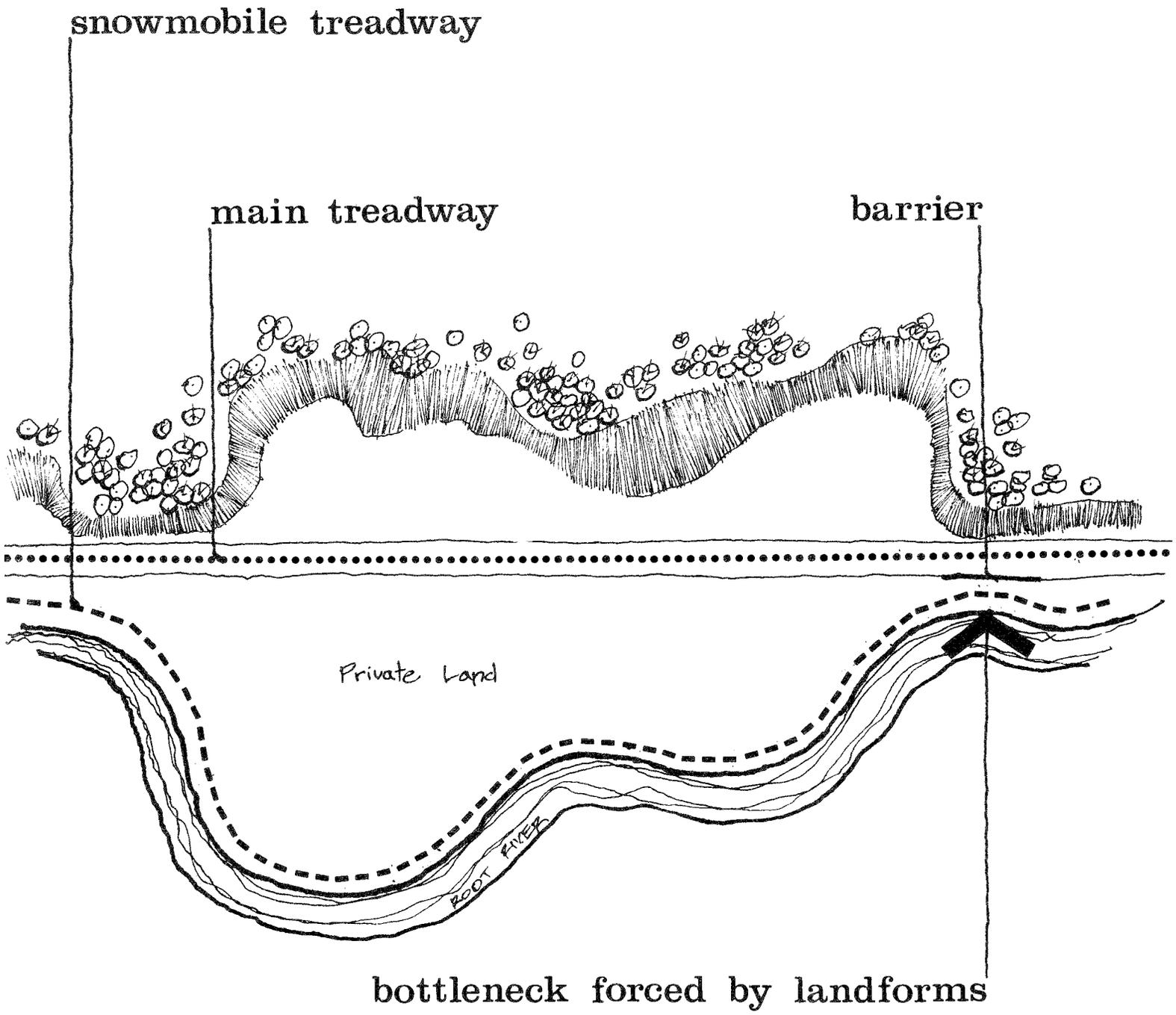


Figure 23
 Typical: Maximum Separation Of Treadways
 Through Use Of Adjacent Private Land

Obviously such a scheme depends upon the goodwill of the adjoining landowners whose land would be needed for it. Given the level of controversy which has existed regarding this trail, it might be supposed that a separate treadway for snowmobiles on private land might not stand much chance of landowner approval. However, the benefits to be derived make the attempt worthwhile, and the proposal has several things in its favor:

1. The cost would be expected to be quite low, especially in view of the payoff, namely, minimization of conflicts between two traditionally conflicting user groups and actual enhancement of their experiences. This would maximize winter trail use and make the trail that much more cost effective.
2. Implementation of the proposal would demonstrate the good faith of the DNR in creatively seeking solutions to the age-old problem of user-group conflicts.
3. The proposal could benefit landowners. Routing snowmobiles across fields would make it possible to remove the snowmobile traffic to greater distances from occupied farmhouses than would be the case if snowmobiles were confined to the ROW. In fact, in some cases this will be required because of the 150-foot rule subject, of course, to the consent of the landowner involved. Several farm houses lie within 150 feet of the ROW, although not on the Lanesboro-to-Whalan segment. In any case, adverse effects on landowners would be expected to be few, since use would be winter only, and most snowmobilers would tend to stay on the groomed treadway.

There are, of course, other considerations which must be included in any consideration of this proposal. The most important one is that if all else fails, the horse treadway will be available for snowmobiling between Lanesboro and Whalan. Another is that for

state trail purposes the DNR requires that any trail alignment used be available for a minimum of five years to justify development costs. It may be that few landowners will agree to a five-year easement for this purpose. Still another consideration is that this proposal is advanced by DNR mainly at the behest of the cross-country skiers who attended the planning meetings, although it was also supported by the snowmobilers. Finally, DNR's previous attempt at this type of action (seeking to establish a state trail right-of-way across private land) has met with, at best, mixed success, despite the efforts of local snowmobile club members to gain the approval of the private landowners.

Under the circumstances, the following seems to be the wisest course:

1. DNR should establish snowmobiling on the Lanesboro-Whalan segment on the horseback riding parallel treadway initially.
2. DNR should remain open to the possibility of establishing a separate snowmobiling treadway across private land for maximum separation of winter uses on segment 2, but only if appropriate user groups demonstrate willingness to be involved in the effort to contact landowners and win their approval.

It was earlier noted that the residents of Whalan have requested that snowmobiles not be routed through town but bypass the city on private land to the north. It appears the U-shaped nature of the main trail ROW in this area with Whalan at the bottom (south end) of the "U" lends itself to a cutoff north of town (figure 24). The two landowners whose land would have to be crossed have been contacted and have indicated their willingness to consider a right-of-way across their properties. DNR should seek to obtain such a passage as soon as possible.

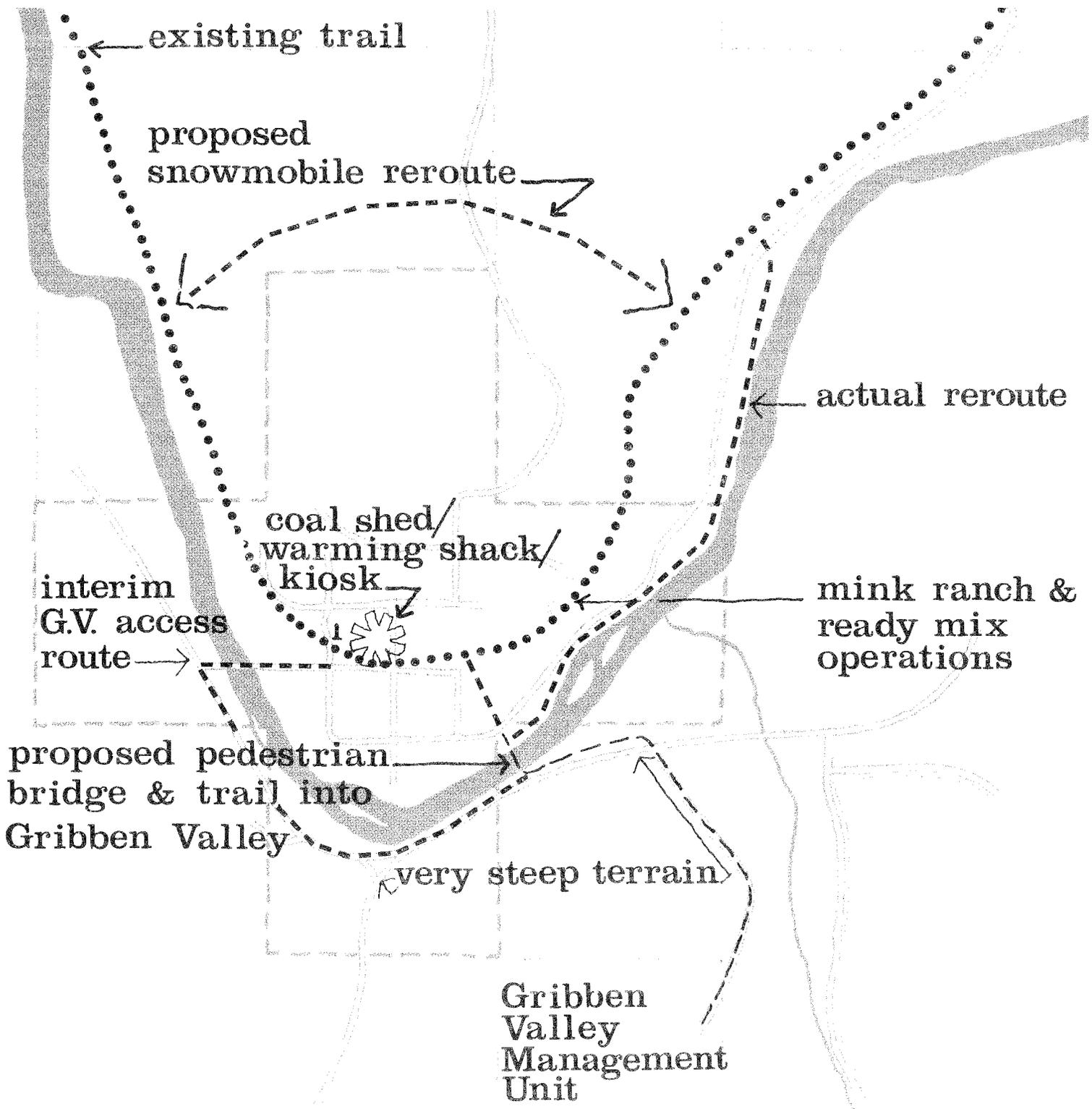
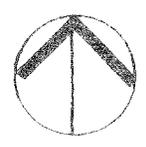


Figure 24

WHALAN FACILITIES

ROOT RIVER STATE TRAIL



As is noted elsewhere in this plan, the horseback riders in the planning meetings were somewhat more interested in the Root River Trail as a component of a riding experience which also includes travel in the wooded blufflands in and around the Root River Valley than they were in the Root River Trail itself. This particular segment is viewed as being part of a one-day trip which originates at the Lanesboro Sales Commission parking lot and includes riding in the Gribben Valley Forestry Management Unit of the Richard J. Dorer Memorial Hardwood State Forest. This management unit lies immediately south of Whalan and across the river and State Highway 16. At present the only means of crossing the river is the highway bridge into Whalan on the west side of town.

Initially it is recommended that horseback riders be routed into town from the west on the minimally-developed parallel treadway which should terminate at the first convenient city street on the west side of town. From there they should be directed on city streets to the road bridge and then southeasterly in the Highway 16 ROW to a township road which enters the Gribben Valley management unit (figure 24). Ultimately, if DNR builds a new bridge at the south edge of town (see following section), it is recommended that permission be sought to route horseback riders over the snowmobile bypass north of town to a point on the main trail northeast of Whalan (see figure 25). From there riders would proceed southwesterly on the main trail to the new bridge, crossing the Root River there and making their way on a prepared alignment from that point to the Gribben Valley management unit. This is developed more fully in the following section.

Other Facilities and Services. As with Isinours Demonstration Woodland, the Trails & Waterways Unit should work closely with the DNR Division of Forestry to establish trail recreation as part of the management mix on the Gribben Valley unit in ways

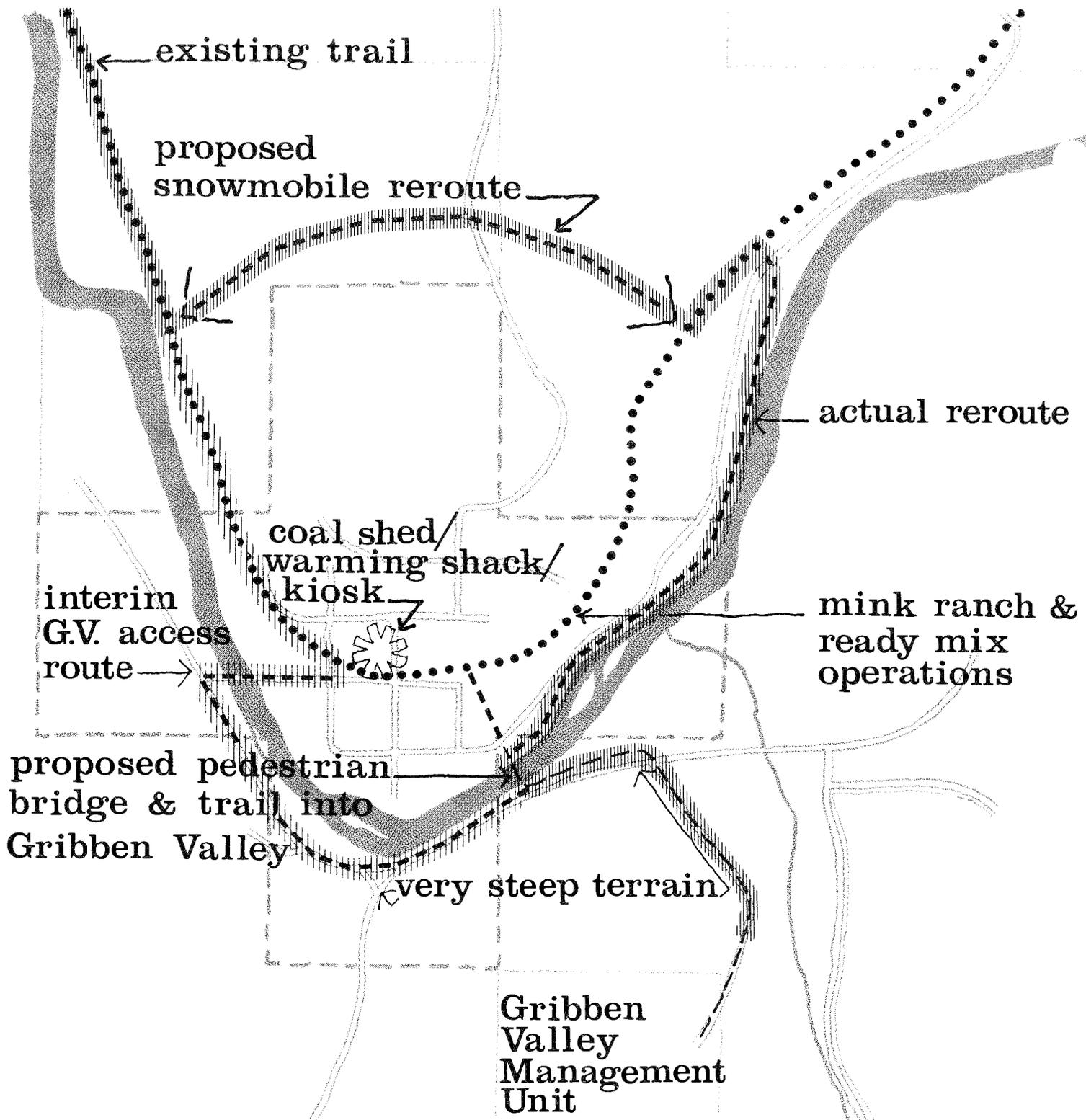
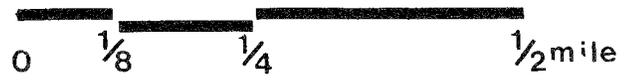


Figure 25

 Initial Alignment
 Ultimate Alignment

 Horseback Alignment



ROOT RIVER STATE TRAIL

which complement, and integrate the unit with, the Root River Trail. This unit has excellent potential for demonstration of forest management techniques, historic interpretation, horseback riding, cross-country skiing, trout fishing, camping and hiking. To the extent that these can be meshed with the forest management goals of the unit they will add immeasurably to the user experience on the Root River Trail in addition to being able to stand alone as a unit recreational facility.

This unit is ideally situated to serve as a destination for horseback riders, hikers, fishermen and cross-country skiers who start their trips in Lanesboro. It also offers the potential for overnight camping for those who prefer to camp in relatively isolated conditions as they travel the Root River Trail.

The unit presently has no developed facilities for recreationists. There are, however, numerous disused bluff roads and field accesses which would have utility as horseback and hiking trails as well as fishing accesses. It also has several hand pumps which could be rehabilitated for use by recreationists. Thus, in its present state, the unit could accommodate a variety of Root River Trail users, as well as a clientele of its own.

The existing tote roads are unsatisfactory for use by cross-country skiers, however. They tend to be inconvenient for skiers because they traverse streams, roads which are plowed in winter, and steep hillsides. Further, they often present steep grades with twisting courses, often with sharp turns at the bottom. The District Forester has noted that unit management will at some point require that some new travel ways be cut through the woods for purposes of fire protection and timber stand access; it is possible that these could be so laid out and connected with existing tote roads as to provide as a secondary function an integrated system of loop and network trails which

would serve horseback riders, hikers, fishermen and campers and also be a network of trails of varying difficulty which could be used by cross-country skiers. It would be important, of course, that the final result be a network made up of trails which would individually be either easy, more difficult, or most difficult in their entirety. A system of ski trails which would require a skier to traverse even one "most difficult" stretch before returning to the point of origin would almost certainly discourage use of the network.

The DNR Division of Forestry has observed that it will likely be a number of years before extensive recreational development can take place on the unit, even if such development could be planned and approved fairly soon. Thus, it is recommended that discussions with the DNR Forest Planning Section and with other appropriate Division Personnel (including the District and Area Forester) be initiated as soon as possible regarding the level of recreational development appropriate for the Gribben Valley unit. Substantial agreement in principle has been achieved between Trails & Waterways and Forestry personnel regarding proposed recreational development in the unit, and this consensus should be closely adhered to and coordination continued as development proceeds. The following recommendations are intended as a guide to the most favorable recreational integration of this unit with the Root River Trail:

1. Planned new construction of travel lanes on the unit for fire protection and timber stand access should as far as possible consider the desirability of integration of the new lanes with existing tote roads to produce a trail network which would be safe and provide trails of varying difficulty for cross-country skiers. Such a network would, practically by definition, be suitable for hikers, horseback riders, campers and fishermen. To the extent that such new forestry travel lanes cannot serve this function, lanes specifically cleared for trail purposes should be considered.

2. The establishment of a small number (10 or fewer) of isolated campsites should be considered. Camping is presently permissible anywhere on the unit but increased camping use could put the unit at risk from wildfires, overuse of sensitive areas, and live tree removal. Developed campsites, even if primitive, would serve to direct campers to those areas best equipped to handle them. They would also be more convenient for trail users. More sites should be developed in the future if demand arises.

3. One or more of the existing hand pumps on the Gribben Valley unit should be rehabilitated for use by recreationists. The trail network to be established on the unit should be so aligned as to make these pumps readily available, and appropriate signage on the unit trail network and the Root River Trail should announce their location.

4. Guide material such as a brochure and map should be available at the warming shack in Whalan which would describe the unit trail network and give locations of pumps, campsites, scenic overlooks, historic sites and fishing streams. This guide material should also be available at the Sales Commission parking lot and at the Lanesboro trail center.

In order to properly integrate the Gribben Valley management unit with the Root River Trail the Trails & Waterways Unit will need to provide for access from the trail to the unit across the Root River and Highway 16.

For the time being, the existing road bridge on the west side of Whalan will have to suffice. This scheme has several drawbacks, however. It will require trail users to use city streets and the Highway 16 ROW to get to the unit. This may present little difficulty to hikers, but the city may object to such a route being used by horses if the

latter use it in significant numbers. Also, once skiing trails are established on the unit, skiers will be required to take their skis off and walk in the Highway 16 right-of-way upwards of a half mile to get to the unit trail network. There is no sidewalk on the road bridge and this scheme is rendered more unsafe because the Highway 16 road shoulder will have snow plowed onto it, possibly requiring skiers to walk near the vehicular travel lanes.

Since the establishment of a designated trail network on the Gribben Valley unit is several years away, the existing road bridge should be used in the interim. Signs should direct trail users to use the north side of the Highway 16 ROW as far from vehicular traffic as possible. For the most part the shoulder in this area is narrow, and consideration should be given to provision of a temporary treadway on this shoulder, separated from the vehicular lanes by cable and posts or another suitable barrier. Coordination with the Mn/DOT District Office in Rochester will be necessary.

It is anticipated that Gribben Valley Woods could develop into a major destination for Root River Trail users, especially after recreational development proposed for it has been completed. When these occur, and if demand materializes for a safer and more convenient route, the following course of action is recommended:

1. The DNR should seek permission from the Minnesota Department of Transportation to build a new trail bridge on the abutments of the former highway bridge at the southeast edge of Whalan. The Mn/DOT District 6 Office in Rochester has been contacted regarding this matter and has expressed willingness to consider such a request. When evaluating the feasibility of a new bridge items to consider include demand for it, costs, and the utility of the interim alignment. A full hydraulic analysis should be done by the DNR Waters Division as part of the feasibility study, and the Waters Division should be consulted frequently in the course of the work.

2. The DNR should further work with Mn/DOT to provide a treadway from the south end of this new bridge to proceed easterly in the Highway 16 ROW immediately to the north of the guard rail (figure 24). This treadway would proceed to a point directly across the highway from an abandoned farmstead on DNR-owned land in the unit (figure 24). The lane into this abandoned farmstead is a township road which is disused and not plowed in winter. It is by far the most favorable access for trail users on the north side of the unit. Steep slopes where the unit fronts on Highway 16 would make trail access elsewhere difficult, and while the two township roads which enter the unit from Highway 16 (figure 24) are useable by horseback riders, they may not be safe for hikers due to vehicular traffic, and would be unuseable by skiers since they are plowed in winter.

The new trail bridge proposed on the southeast edge of Whalan should be built only at such time as a trail network is available on the Gribben Valley unit. If it is built, it is recommended that the DNR seek permission to route horseback riders over the snowmobile bypass north of Whalan (as mentioned in the previous section). This would accomplish two things: (1) horseback riders traveling from Lanesboro to the Gribben Valley unit will approach Whalan from the east and cross the new bridge to the unit without the necessity of riding through town, and (2) use of the snowmobile bypass will introduce topographic and directional diversity into the ride from Lanesboro to Whalan (see figure 25). If permission to use the bypass in summer is not forthcoming, horseback riders should be routed to the new bridge via a separate treadway within the ROW through town.

Gribben Creek, which flows northerly into the Root River and passes through the Gribben Valley unit, is a DNR designated trout stream. For this reason, trail construction on the valley floor should be carried out so as to minimize or, better, to forestall adverse effects of trail construction and use on the stream.

Consultations and a field inspection with the District Forester identified a possible routing to be followed in constructing a loop trail on the Gribben Valley unit. The available options for such routing are considerably constrained by topography and available access for skiers, as noted above. The routing settled on recognizes the desirability of avoiding impacts to the trout stream and attempts to deal with this potential problem within the context of providing appropriate and desirable levels of recreational development on the unit.

The unit trail loop as proposed involves only one crossing of the creek itself. The most desirable means of accomplishing this crossing would be by means of a bridge. It may be possible to construct and site this bridge in such a way as to discourage approaching the water from its vicinity. Regional and area DNR Fisheries personnel should be consulted prior to the onset of development for their views regarding the alleviation of impacts from recreational development on the unit.

Use of the unit and its recreational facilities is expected to be low for the first several years following the completion of development. This will provide a useful "shakedown period" during which any problems that might result from facility use should be of small magnitude and relatively easy to deal with. Any indications that such recreational use is having unfavorable effects on the unit should be resolved promptly by means of consultation among Regional Trails, Forestry, and Fishery personnel as appropriate. Consensus among these people, coordinating with central office personnel as appropriate, that a problem exists, should be followed by affirmative action to alleviate it by whatever reasonable and appropriate means are necessary. Conceivably, such alleviation could consist (but is not limited to) of erection of barriers in appropriate places, signage, restriction of use(s) which cause(s) the problem, or short realignments past trouble spots.

It may be necessary at some future point to replace the railway bridge on Lanesboro's east side with a clear span if maintenance (such as debris removal) becomes too much of a problem.

Right-of-Way Modifications. Three main trail realignments and one narrowing have been proposed by adjoining landowners.

The proposed narrowing is located on the Arlyn Johnson farm northeast of Lanesboro. This landowner has cultivated to the edge of the treadway for a number of years with the permission of the railroad. This provided weed control and allowed slightly increased crop production (figure 26).

The minimum width necessary for the two treadways on this segment is 30 feet. The remainder of the ROW width may be leased to the landowner at the discretion of the Regional Administrator for agricultural purposes under a renewable five-year agreement. The permit should allow only crop production or access on the ROW, and the land should not be sold to the landowner.

A realignment is proposed on the same farm. The landowner recommends that he be allowed to farm the ROW where it crosses his land. In exchange he proposes to transfer to DNR a ROW along a wooded hillside north of the railroad grade, rejoining the latter at his east property line (figure 26). It is recommended that DNR grant this realignment.

Another proposed realignment is located on the Duane Hungerholt farm on the east edge of Lanesboro (figure 27). The landowner proposes that the trail be rerouted to the riverbank in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ section 8, T.103N.R.9W., and from there follow the

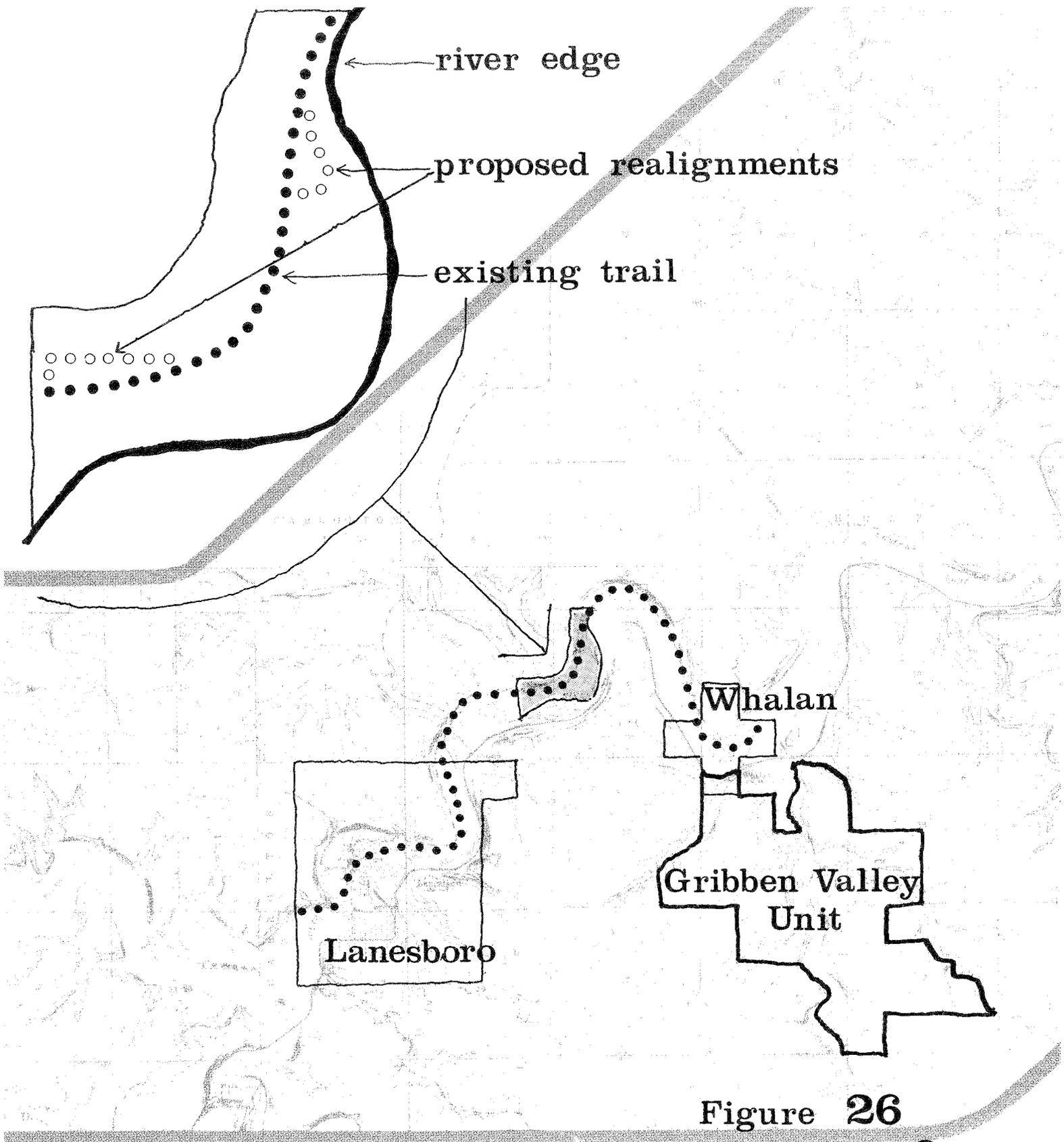
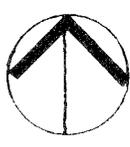
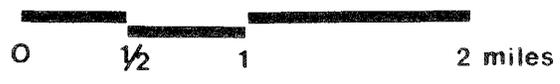


Figure 26
SEGMENT 2

REALIGNMENT
PROPOSAL
ROOT RIVER
STATE TRAIL



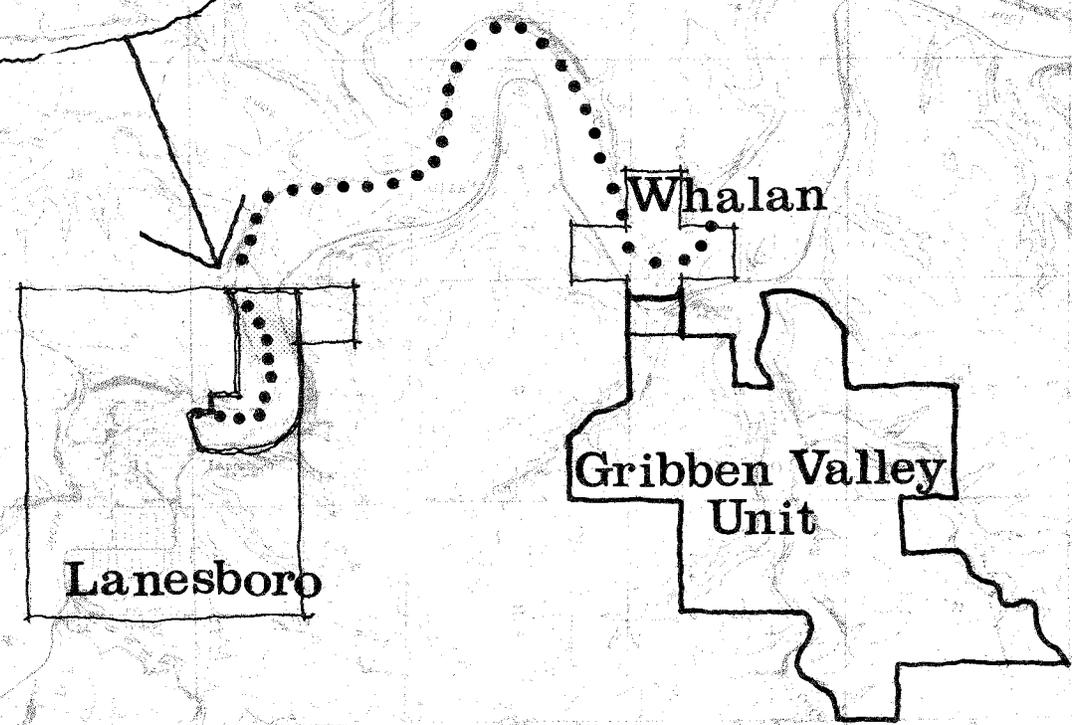
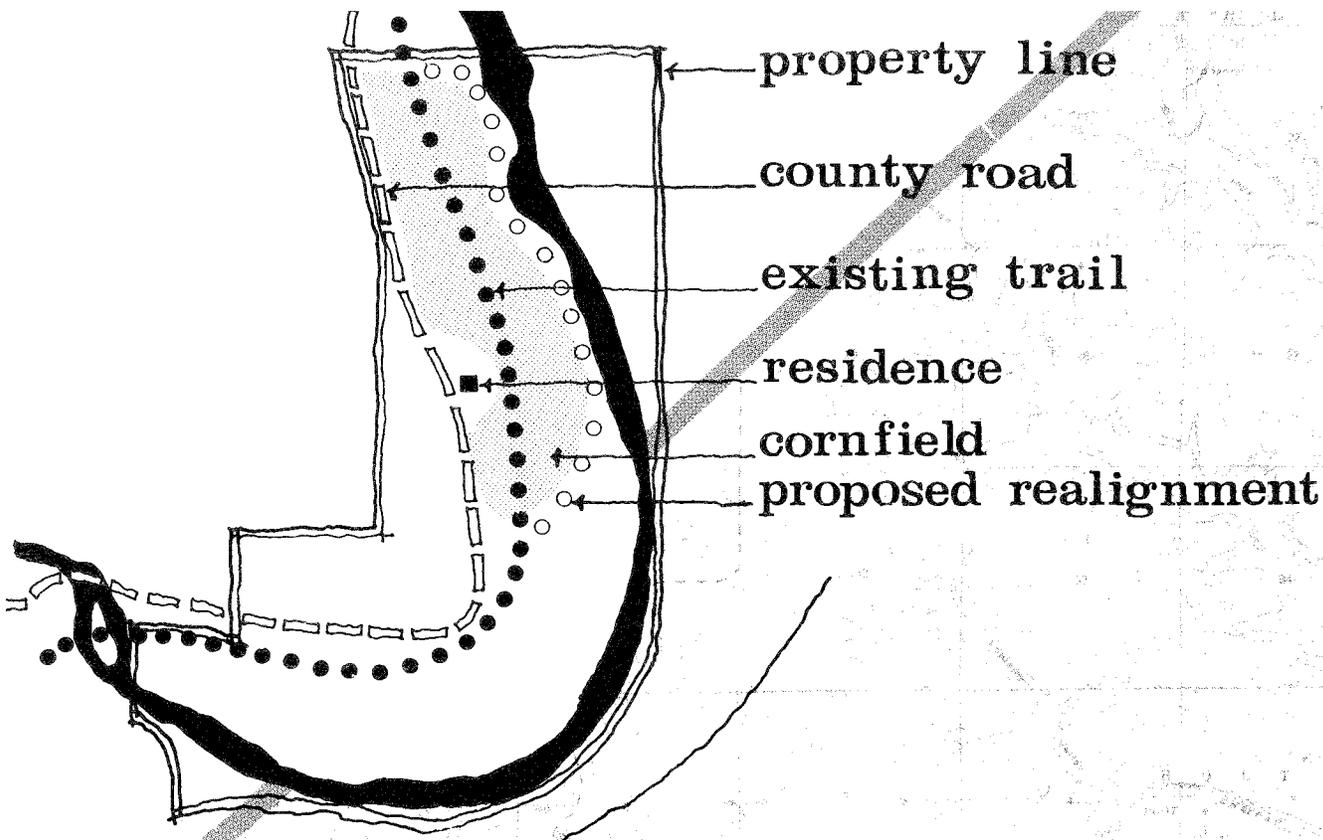
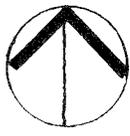
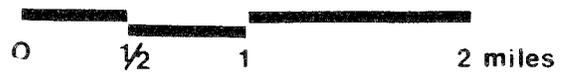


FIGURE 27
SEGMENT 2
REALIGNMENT
PROPOSAL
ROOT RIVER
STATE TRAIL



riverbank northerly to rejoin the railroad grade in the NE¼ NW¼ section 8. The advantages and disadvantages of this "riverbank reroute" are similar to those described for the Sorenson reroute in Segment I, with the added disadvantage that the bank upon which the trail would be sited is actively eroding in one location. This makes such a reroute inadvisable; it is recommended that this reroute not be implemented.

The third realignment is proposed to avoid the Gene Johnson Mink Ranch on the east edge of Whalan (figure 28). This landowner owns the SE¼ SW¼ section 9, T.103N. R.9W. He proposes that the trail diverge from the railroad grade where the latter crosses his west property line, proceed southerly along this property line to the southwest corner of his land (the site of the proposed new trail bridge), and from there proceed through the woods along the riverbank northeasterly to rejoin the railroad grade in the NW¼ SE¼ section 9. To do this requires the approval of two additional landowners whose property adjoins Johnson's on the north. Preliminary indications for this are favorable.

This proposal has been made for several reasons. The railroad grade crosses a busy intersection on the Johnson property where heavy trucks cross the trail more or less constantly carrying gravel and cement products from a business operated by the same family. This would be an unsafe condition for trail users. Another reason for the realignment proposal is that the railroad grade passes in close proximity to the mink cages east of the sand and gravel business. The owner asserts that curious trail users could excite the animals, causing them to kill the young. Additionally, the odor from the mink cages would be objectionable; the reroute avoids these problems.

Accordingly, it is recommended that the landowner's proposal be pursued. His assistance should be sought in gaining the approval of the landowners to the north whose land would be crossed by the proposed realignment.

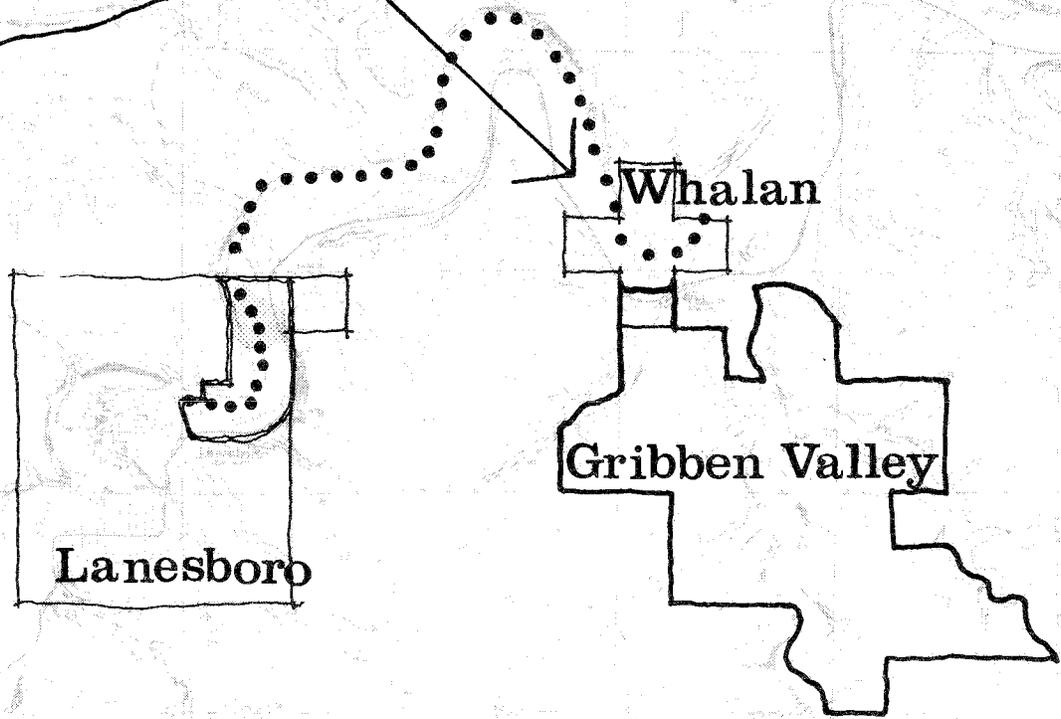
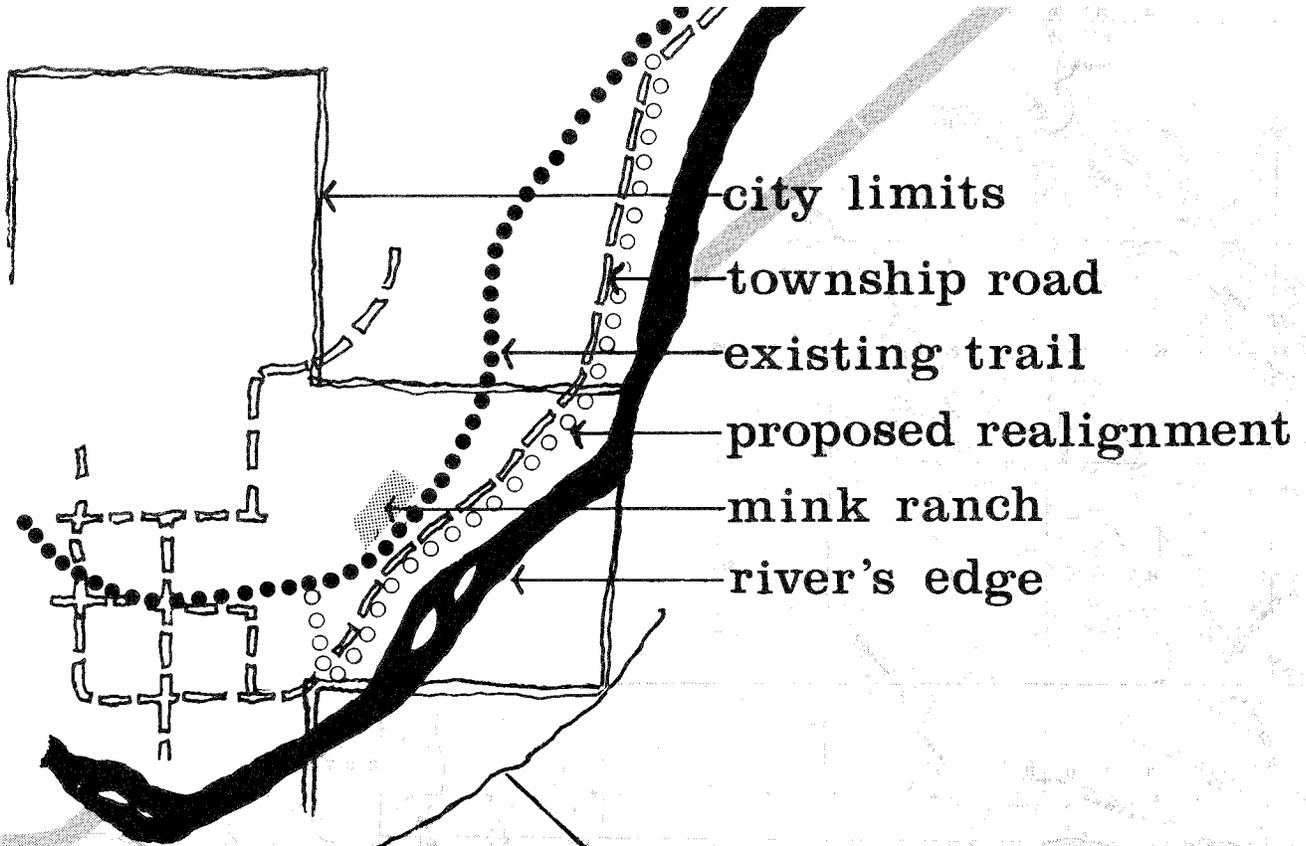
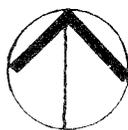


FIGURE 28
SEGMENT 2
REALIGNMENT
PROPOSAL

ROOT RIVER
STATE TRAIL



Interpretation. Several abandoned mill sites exist on the east edge of Lanesboro and on or near the Gribben Valley unit which could be used for interpretation (figure 3). In addition, the area has a history of tobacco farming in the early days. Cigars were made in Lanesboro from the locally-grown tobacco. The City of Whalan was once a bustling railroad town and commercial center for the area. Additionally, the former Whalan Depot is now a private residence, and is located closely adjacent to the ROW in town. The city also has an historic town hall, wood frame schoolhouse (now a private residence) and the coal shed.

Outstanding scenery is available from rock outcrops on the Gribben Valley unit. Any trails established on the unit should take advantage of these. Such trails can also be aligned to lead the trail user to sites where various forestry management practices are being performed to meet management goals of the DNR. Interpretation of geological phenomena is possible on this segment as well.

Segment 3: Whalan to Peterson - 11 miles

Objective.

To provide a remote, long-distance southeastern Minnesota trail experience for a variety of user groups, taking advantage of the unique scenic and remoteness qualities of the Root River Valley.

Development Summary

- Develop a hard surface suitable for bicycling on the main treadway
- Develop a parallel treadway for snowmobiling in the ROW. Route snowmobiles away from the ROW on private land via seasonal easements where the 150-foot rule is applicable.
- Consider acquisition of a parcel of riverbank land for joint Trails and Boat and Canoe Program purposes if future conditions warrant
- Rebuild a partially washed-out bridge
- Work with the City of Peterson to develop the ROW in the city limits

Primary Uses.

Summer: Bicycling, hiking. Horseback riding in the future if sufficient demand develops.

Winter: Snowmobiling, cross-country skiing.

Horseback riding is not proposed for this segment initially, since available information indicates that the majority of horseback riders are not looking for long-distance one-way trail opportunities. It is, however, entirely possible that interest could develop in the future in horseback riding experiences which include all or a portion of this

segment. There would be numerous opportunities to divert from the trail along this segment onto wooded bluffslands, with the permission of the owner, of course. If sufficient demand develops, DNR should be prepared to consider and act on it.

Specific Design Considerations

Access and Service Facilities. The on-street parking and warming shack proposal in Whalan have already been described. On-street parking is also available in Peterson closely adjacent to the trail. Parking lots specifically for trail users are not proposed for either town, although sufficient space is available in the ROW in both towns should this be necessary in the future.

A bridge over a Root River tributary has been washed out in the SE¼ SE¼ section 26, T.104N.R.9W. This bridge will need to be repaired or replaced before this segment can be opened to the public (see table 16, IMPLEMENTATION section).

Treadway. The main treadway on the railroad grade may be surfaced either with crushed limestone or asphalt.

Both snowmobiling and cross-country skiing are to be accommodated on this segment. As with the previous segment, this raises the issue of potential use conflicts and the public requests in the planning meetings that wide separation of the respective treadways be employed as a solution where possible. This potentially is a problem because it requires the use of private land for a state trail alignment. The ramifications of such action were presented in the discussion of Segment 2.

Several factors are worthy of consideration in attempting to resolve this question.

The provision in the DNR-CRPP purchase agreement requiring prohibition of snowmobiling on the trail within 150 feet of any occupied dwellings has been previously noted. There are at least three such dwellings on this segment of the trail. There are several others which are not within 150 feet but which are nonetheless relatively close. The purpose of this prohibition is to minimize disturbances to those whose homes are located close to the trail. It is clear that since snowmobiling is to be provided on this trail segment, the treadway for this use will have to be rerouted around these dwellings.

In every case, the occupied dwellings to be avoided are located adjacent to the railroad grade in areas where the grade itself lies at some distance from the river (one-quarter mile or more in most places) and is separated from the river by a relatively large acreage of cropland (figure 29). Thus, a snowmobile treadway routed on cropland along the riverbank in these locations would at once resolve the problem of the 150-foot rule and also provide the treadway separation which would contribute to the minimization of winter use conflicts on the trail. Further, doing this on cropland would considerably reduce development costs compared with providing a parallel treadway in the main trail ROW. It may be that the only significant cost would be that of periodic grooming, since a seasonal snowmobile alignment in such a location would not require a paved surface; indeed, it would require little, if any, actual development.

This segment is 11 miles long. Making maximum use of cropland to avoid houses closer than 150 feet would provide snowmobile-skier separation on four miles. (It will be recalled that a snowmobile bypass is proposed north of Whalan. Implementation of this proposal would result in snowmobilers and skiers parting company approximately .6 mile northwest of Whalan, resulting in turn in skiers having the main treadway to

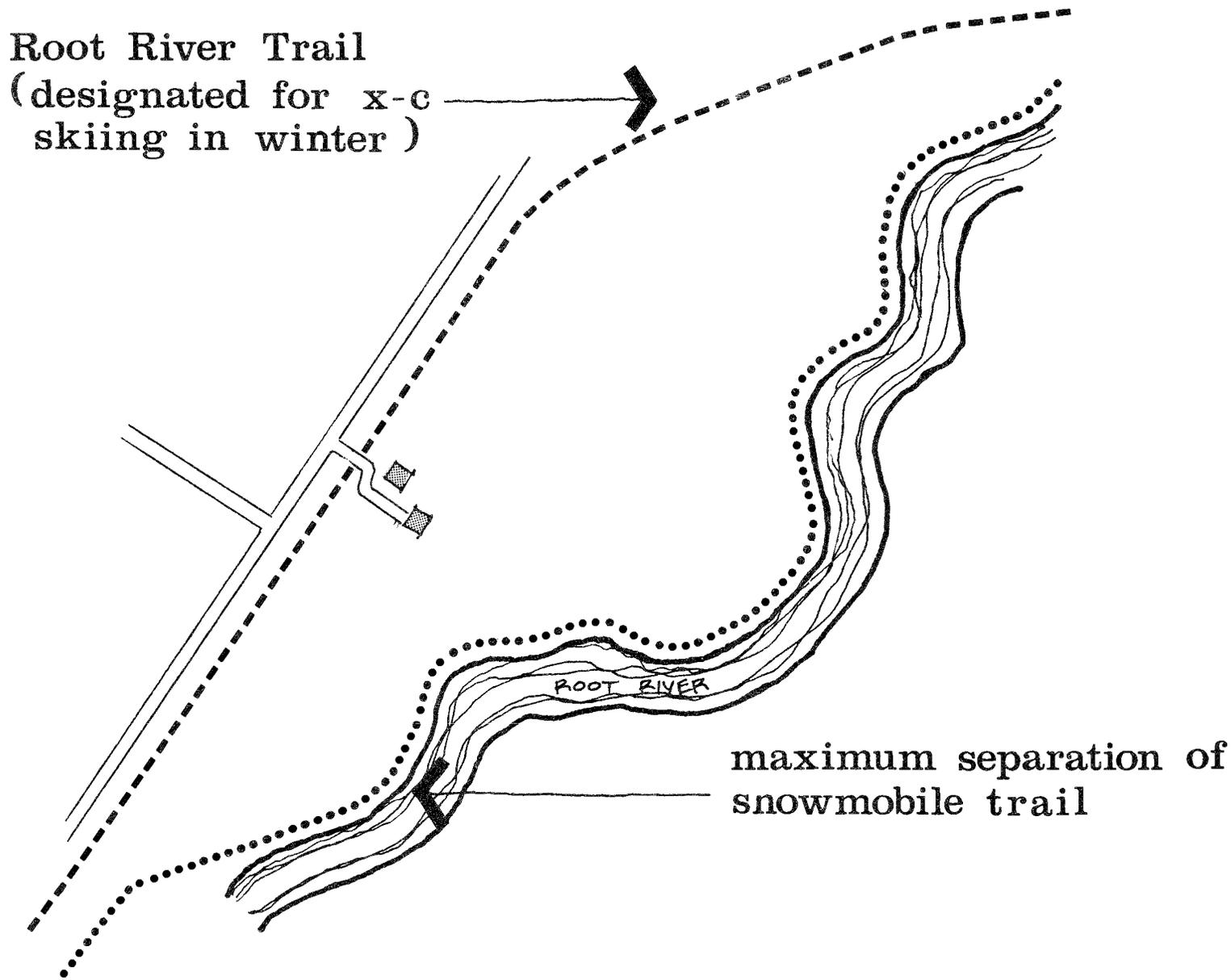


Figure 29
 Maximum Use Of Adjacent Land To Separate Uses

themselves from that point to the point where the bypass rejoins the trail east of Whalan.) Topography dictates that the two treadways must be together within the ROW for about two miles, because of the "bottleneck" factor mentioned earlier. This leaves about five miles of the segment on which use separation is theoretically possible but not required by the 150-foot rule. However, this figure warrants closer scrutiny. The two miles immediately south and west of Peterson do in fact offer good separation potential (i.e., the railroad grade is one-quarter mile or more from the riverbank). However, the remaining three miles do not, offering separation of one-eighth mile or less.

It was made clear in planning meeting discussions of this issue that total separation between these two treadways would not be possible; that topography and other factors would require the treadways to be close to each other in the ROW for significant distances. The best that could be hoped for was partial separation and this would depend on a number of factors, landowner cooperation not the least of these.

Under the circumstances the following seems the most appropriate course of action:

1. Since there are no legal reasons for rerouting the skiing treadway, it should be established on the railroad grade.
2. Snowmobiling should be provided for on a separate treadway within the ROW except where the 150-foot rule is applicable.
3. Where the 150-foot rule is applicable, DNR should seek to make maximum use of cropland in the vicinity to route snowmobiles off the main treadway and around the houses, preferably achieving maximum treadway separation by aligning the snowmobile

treadway along the riverbank. This should be accomplished by seeking seasonal easements from the appropriate landowners.

4. If any particular user group(s) should desire more mileage of treadway separation than would be provided under item 3. above, it should be left to said group(s) to take the initiative in accomplishing this task. DNR should make every effort to assist and cooperate with bona fide efforts in this regard. Any such efforts should be substantially completed before the time of construction of the parallel treadway.

5. Once the treadways have been constructed and are in operation, DNR should closely monitor the use patterns which ensue for a period of five years. If changes are indicated after this period, they should be made.

Other Facilities and Services. A parcel of land owned by the DNR Division of Forestry is located in sections 25 and 36, T.104N.R.9W. and section 31, T.104N.R.8W. Other smaller tracts are located nearby. There is potential for a unit trail network on these tracts. The Root River and State Highway 16 lie between the parcels and the Root River Trail. However, access is available via a disused township road and a bridge over the river which has been closed by the township due to deterioration (figure 30). Contacts with a township official revealed that the township has no further use for the bridge and that it probably could be opened to foot traffic with some minor repairs. The potential thus exists for the provision of camping areas and unit trail experiences adjacent to the Root River Trail should they be needed in the future. This should be kept in mind if road development on the Forestry parcel is contemplated in later years.

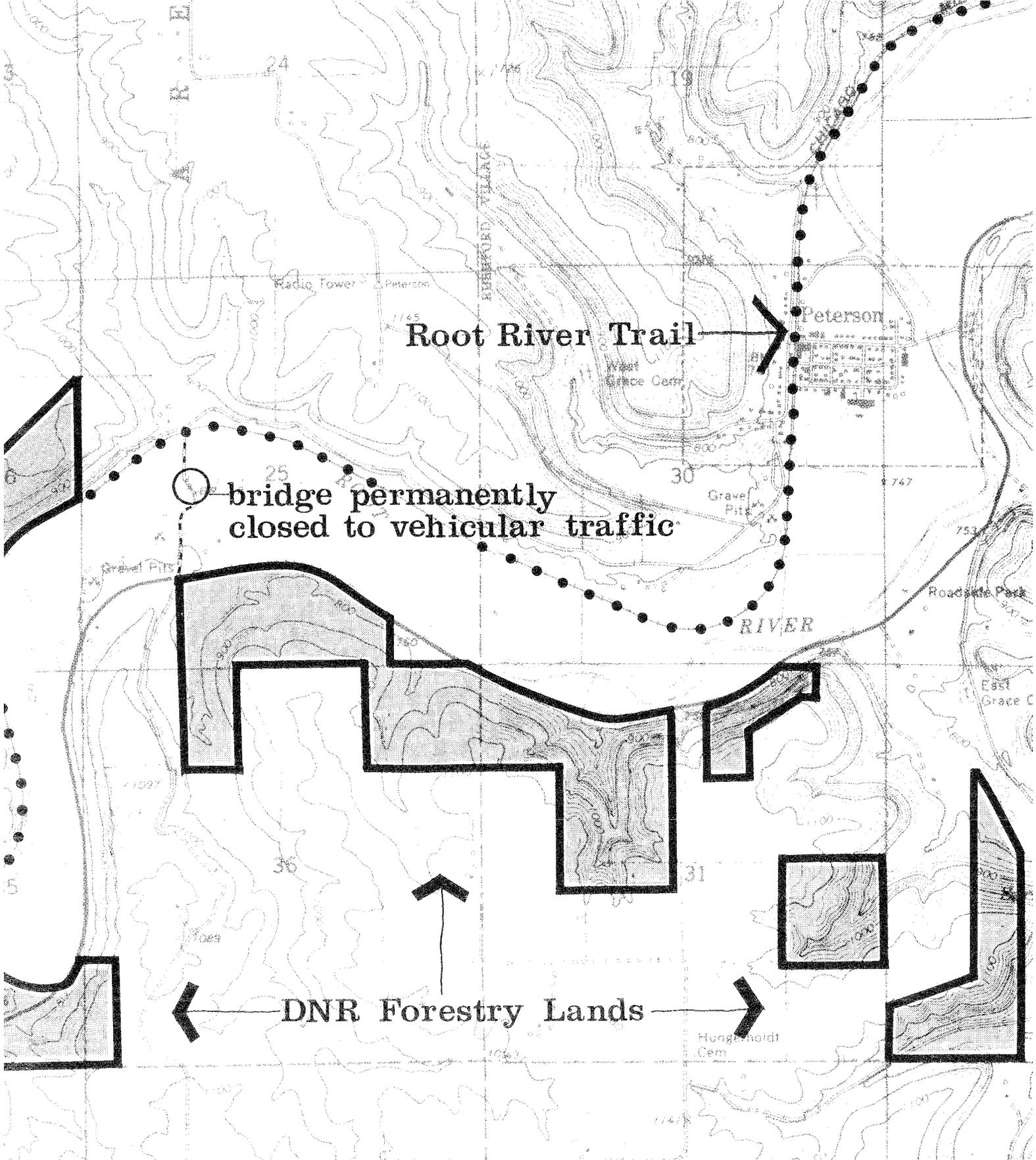


Figure 30
Disused Township Bridge Access To Forestry Lands

Several benches should be placed along the segment in quiet locations, preferably with a view of the river or other point of interest.

The owner of a 12-acre field in the NE $\frac{1}{4}$ SE $\frac{1}{4}$ of section 3, T.103N.R.9W. has offered the field for sale to DNR. This parcel could be developed first as a trail wayside with a three-sided shelter, picnic tables, and possibly fire pits. Further, if demand surfaces later, the area could be developed as a campsite. This area is ideal for trail and canoe purposes since it is accessible only by trail or river, is quite isolated, and offers good potential for interpretation of old field succession. This parcel should be acquired and developed as outlined only if camping and rest area development on the Gribben Valley unit cannot be done in a timely manner, or if demand for the above amenities exceeds what can be supplied by the Gribben Valley unit.

Minimal ROW development is proposed within the City of Peterson. The city has proposed a realignment (figure 38; see following section) which would make about 2/3 of the ROW in the downtown area available for housing development and business expansion. If this is done the city should be made aware that this would result in the trail ultimately being located closely adjacent to the projected new building sites, and the owners of the new buildings may want privacy fences or visual barriers placed between their new buildings and the trail. Since this problem would not exist if DNR kept the trail on the railroad grade, and since DNR would be moving the trail off the grade at the behest of the city, DNR will not be bound to provide any requested barriers or privacy fences.

This would leave an estimated 500-600 lineal feet of ROW near the downtown area in DNR hands. This should be landscaped and planted with appropriate trees and shrubs to present a pleasing appearance. It is recommended that several benches and at least

one picnic table be placed in this area. Since this represents an enhancement for the cities involved, it is recommended that DNR negotiate agreements with the cities under which they maintain the ROW within their corporate limits according to DNR specifications.

Sanitary and shelter facilities will be necessary in Peterson as well. Two alternatives exist for providing these.

Alternative 1

Toilet facilities can be constructed in the landscaped portion of the ROW. If this is done, an attached pavilion with benches and/or picnic tables should be added to the restroom structure. The toilets should not be tied into the city sewer system if this can be avoided since they would not be heated and this would make them unavailable to trail users in winter.

Alternative 2

DNR could cooperate with the owner of the former Peterson Wagon Works building to provide essential rest facilities in that building. The building is in the process of being renovated for use as office space for a local business, but the owner has expressed interest in allowing part of it to be used for trail purposes if DNR will pay part of the cost. The building has been nominated to the National Historic Register and is conveniently located in the downtown area about one-half block east of the trail. An additional advantage is that the building will be heated in the winter. Since rest facilities must be provided in Peterson in any case, the proposal seems worthy of exploration. This is the alternative of choice.

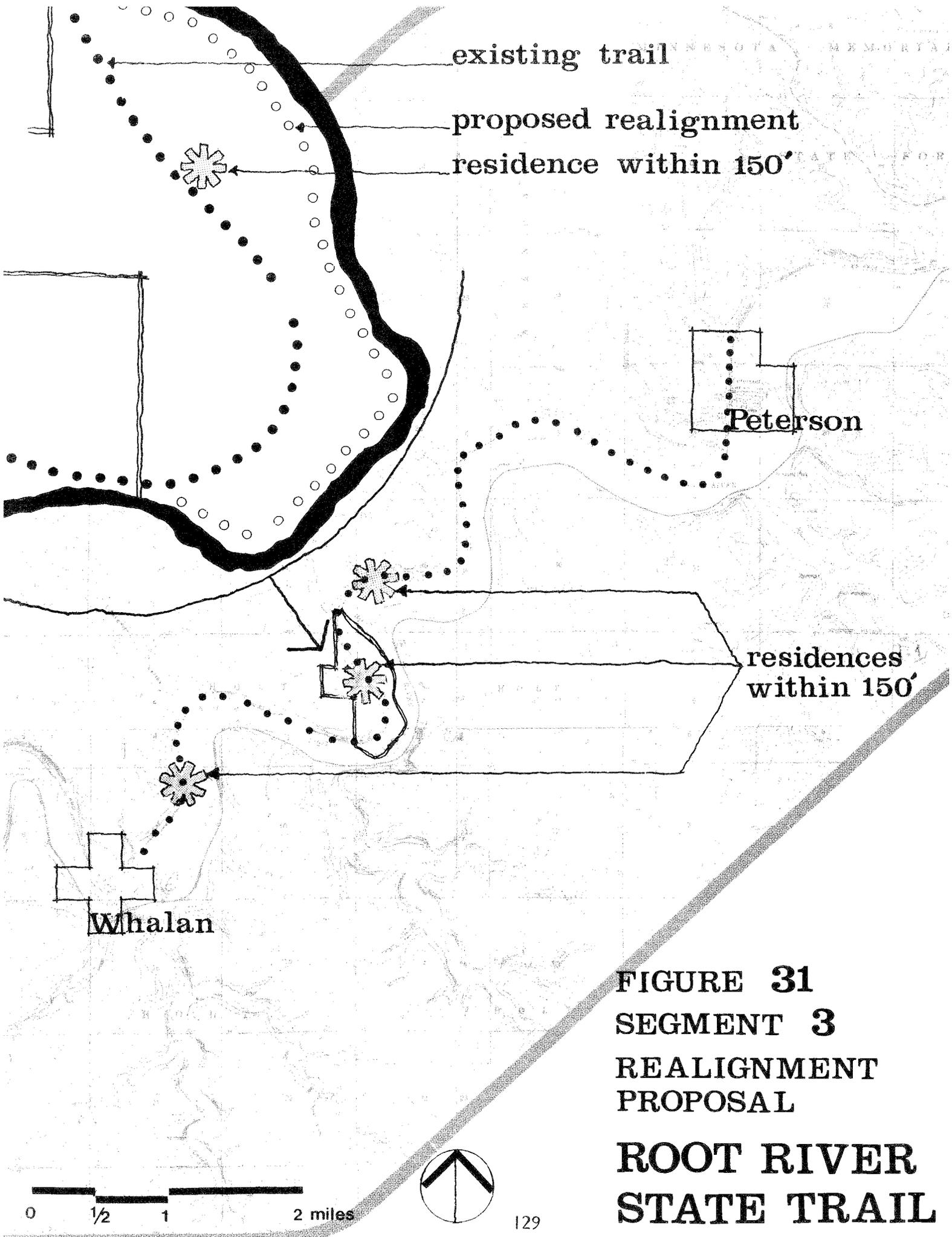
No other facilities are proposed for this segment of the trail at this time. If future demand materializes, the possibility should be considered of installing a hand pump somewhere near the segment midpoint for the convenience of trail users and to reduce the potential for harassment of adjoining landowners.

Right-of-Way Modifications. One partial realignment is proposed on this segment in the SE¼ section 2, T.103N.R.9W. The farmhouse on the Iverson Beef Farm is located 68 feet from the trail centerline and is one of those locations where snowmobiles will have to be rerouted (figure 31). The trail does not split fields on this farm.

The landowner has no objections to trail users using the main treadway, although DNR should be prepared to consider vegetative screening in the vicinity of the house in the future if so requested. He has agreed orally to a seasonal snowmobile reroute through his cropland, however. DNR should take advantage of this in order to provide separation between skiers and snowmobilers.

At the other two locations where houses exist less than 150 feet from the trail, the landowners should be approached for seasonal easements to route snowmobiles around them. Maximum use should be made of private land, if possible, to separate the two treadways in these locations.

Interpretation. This is an excellent segment for the interpretation of natural history. Educational signage which points out and illustrates the various vegetational communities and the fauna which inhabits them are quite feasible. The effects of slope and exposure on the biota can be clearly explained on this segment. The geology of the area can also be discussed.



existing trail

proposed realignment

residence within 150'

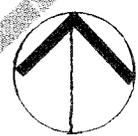
Peterson

residences within 150'

Whalan

FIGURE 31
SEGMENT 3
REALIGNMENT
PROPOSAL
ROOT RIVER
STATE TRAIL

0 1/2 1 2 miles



This segment of the trail is functionally quite remote in nature. Development should therefore not be unduly obtrusive, but should blend with and contribute to the sense of isolation evoked by the surroundings.

Segment 4: Peterson to Rush Creek Bridge (Rushford) - 5 miles

Objectives.

To provide an interpretational experience which illustrates, among other things, the changing nature of the Root River Valley from narrow, steep-walled gorge to broad, open valley, and to provide access to proposed amenities on the Dorer Forest Unit adjacent to the trail north of Peterson.

Development Summary

- Develop a hard surface suitable for bicycling on the main treadway
- Develop at least two realignments
- Develop recreation facilities on the DNR Forestry land north of Peterson
- Work with the City of Rushford to develop a suitable alignment within the city limits
- Consider the establishment of a trail center in the former Milwaukee Road depot in Rushford

Primary Uses.

Summer: Bicycling, hiking; horseback riding in the future if demand materializes.

Winter: Cross-country skiing.

Snowmobiling is not proposed for this segment because a DNR Grants-In-Aid trail presently exists which intersects the Root River Trail in Peterson and offers two separate routes to Rushford and the Houston County GIA system from that point.

Specific Design Considerations

Access and Service Facilities. The on-street parking and alternatives for provision of rest facilities in Peterson have been described. In Rushford a parking lot is proposed for the vicinity of the railroad depot. As will be detailed in later sections, this depot is proposed to be rehabilitated for use as the Rushford Trail Center and for other beneficial purposes. The parking lot and other grounds in the depot vicinity should be landscaped and planted with grass, trees, and shrubs to present a pleasing appearance. Several benches and at least two picnic tables should be placed in this area. A kiosk should be erected which displays information regarding the trail, as well as services and retail outlets which exist in Rushford. Detailed information displays can be placed inside the depot if it is developed as a trail center (figure 32).

Treadway. Only one treadway is proposed for the majority of this trail segment. It may be surfaced with crushed limestone or asphalt.

It is possible that demand will materialize in the future for horseback riding opportunities originating in Peterson and proceeding north to and beyond the Dorer Forest management unit north of town. A second treadway from the center of town to the management unit boundary would be necessary in this eventuality.

A one-half mile section of the railroad grade, located within Rushford and extending from the point where it crosses the north-south center line of section 15, T.104N, R.8W. to the west end of the Rush Creek railroad bridge, is not owned by the DNR, having been withheld by the railroad for sale to adjacent leaseholders at the time that the DNR-CRPP Purchase Agreement was executed. An intensive search for alternative routes through Rushford identified the following options (figure 33):

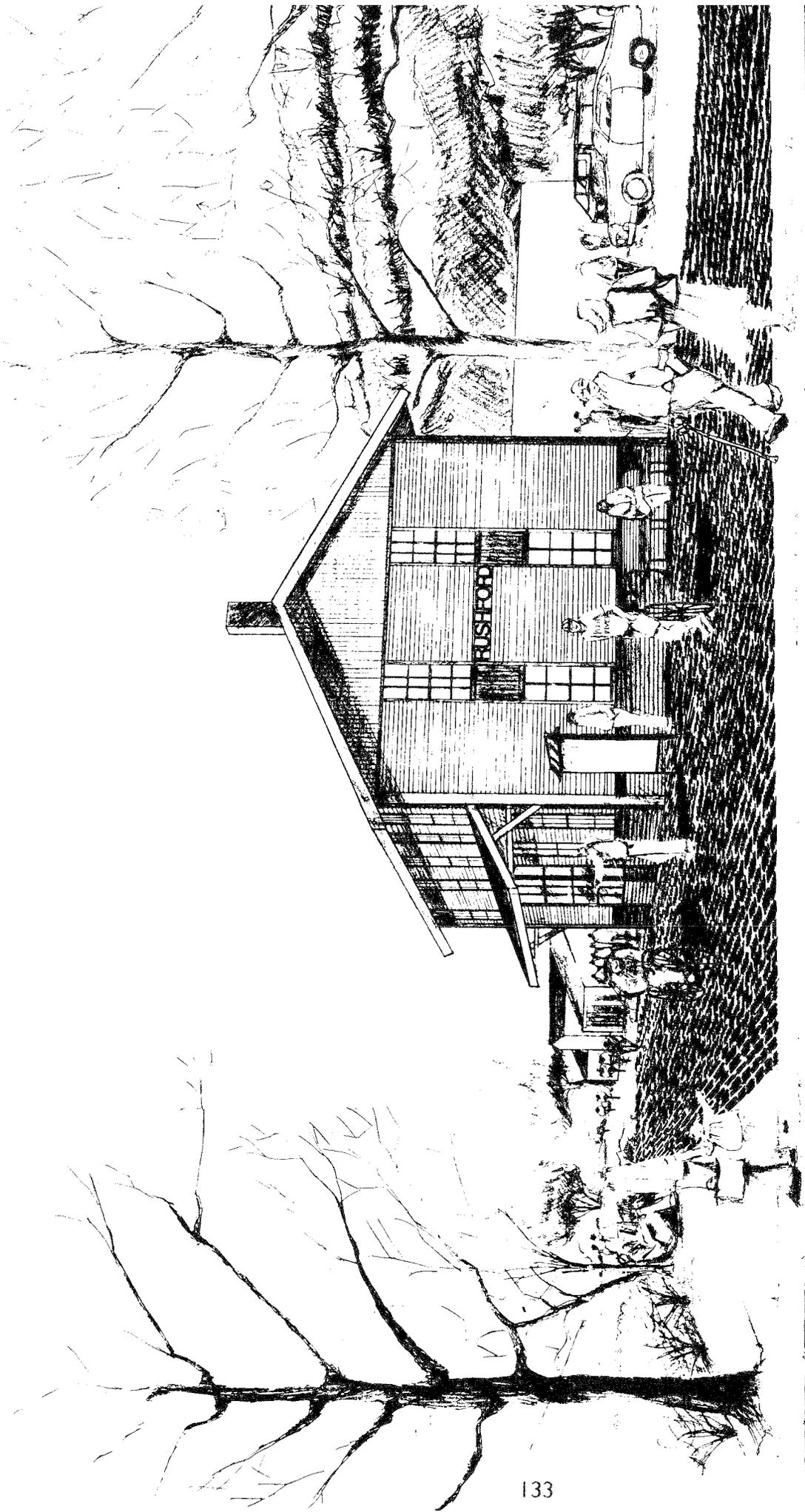


Figure 32
Proposed Rushford Trail Center In The
Former Railroad Building (view is to the west)

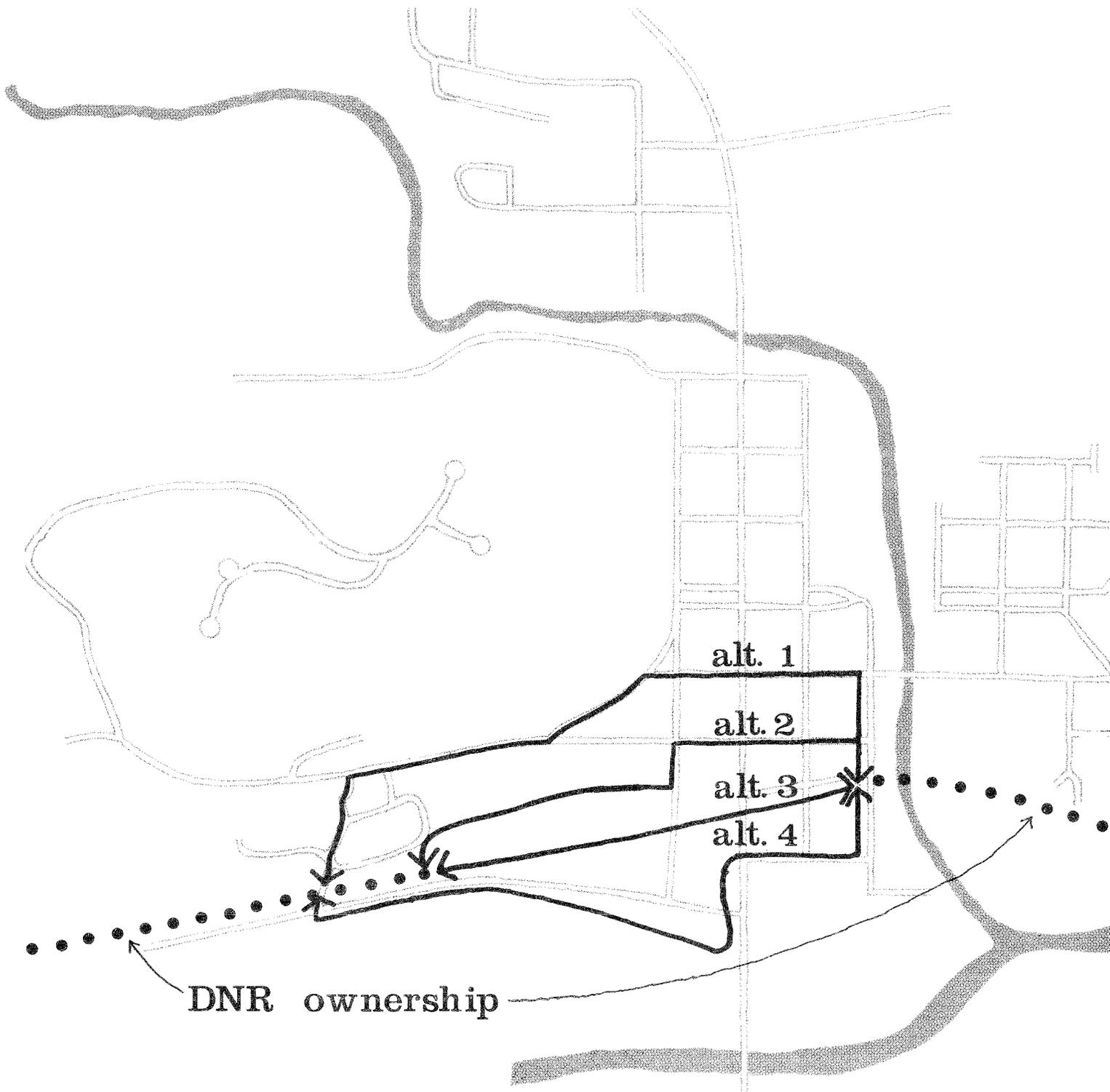


Figure 33

RUSHFORD ROUTE
ALTERNATIVES

ROOT RIVER
STATE TRAIL



Option 1. Use the city street which proceeds north from the railroad grade through the mobile home court on the west side of town. Follow this street to State Highway 30. Follow the latter into the downtown area and use appropriate city streets to get to the Rush Creek Bridge.

This option was rejected for the following reasons:

- a) There are no sidewalks through the mobile home court.
- b) This route is entirely on city streets which is satisfactory for bicyclists and somewhat less so for hikers (where no sidewalks exist), but not satisfactory for skiers and horseback riders (in the event the latter use is established on this segment in the future).
- c) It routes trail users through the middle of the downtown area, and such a situation is not consonant with the provisions of a downtown revitalization plan now being produced for the city by a private planning firm. (This plan provides for demolition of dilapidated buildings, preservation of historic ones, and relocation of businesses in order to provide focus and order to the downtown area of Rushford. An important feature of this downtown plan for present purposes is that it provides for small parking lots instead of street parking in front of downtown businesses. The sidewalks will be quite narrow and laid out in relation to the small parking lots in such a way that routing trail traffic through the downtown area will be at least inconvenient and could be a safety problem as well.)
- d) It does not pass near the depot.

Option 2. Divert the trail from the endpoint of DNR ownership on the west side of town onto a new city street, now being planned, which lies about 150 feet north of the railroad grade and parallels it. This would get the trail as far east as Elm Street, from which point it would follow other appropriate city streets to the Rush Creek Bridge.

This new street is planned to be quite narrow, and will have no sidewalks. This optional route is thus less than desirable. However, it is retained as an option since it probably will have less vehicular traffic on it than Option 1, and passes close to the depot.

Option 3. Seek easements or other trail passage from those who bought portions of the railroad grade, and route the trail on the railroad grade through town.

Option 4. Place the trail on top of the flood control dike which skirts the city to the south. This option was rejected because of possible damage to Rushford's flood control system, and Corps of Engineers' policies which discourage such use of the dike itself. Further, such a route would not well serve beneficial integration of trail and town since it is located distant from the downtown area and trail user travel between there and the dike would be unduly inconvenient.

The difficulties inherent in such an option are apparent when it is recognized that this half-mile of grade is now subdivided into no fewer than 13 private ownerships. These individuals (in some cases, corporations) acquired their parcels for a variety of reasons, among which are business expansion, yard expansion, and speculation. Several, fearing disturbance from motorized traffic on the trail, bought those portions adjoining their homes in order to negate this potential.

However, preliminary contacts regarding this option have been favorable. Snowmobiling is not proposed for this segment, nor is horseback riding initially. Thus, from the depot to the Rush Creek Bridge hiking and bicycling in summer and cross-country skiing in winter are the only proposed uses. Owners, when apprised of this fact, have tended to temper their concern somewhat.

Another factor is that on this half-mile segment the trail need be no more than 8-10 feet wide. This is not a desirable trail width, especially when the potential for future provision of horseback riding west of Rushford is recognized. However, for such a relatively short distance it is acceptable if necessary. Also, the trail can take a somewhat serpentine course along this stretch as necessary to follow property lines if the owners plan to erect buildings or other improvements on their parcels.

This option has several advantages over the others. It would lead users directly to the proposed trail center in the depot, which would be clearly visible from the trail at both ends of town. It passes in close proximity to the downtown area but would not pass through it, and thus would not conflict with the downtown revitalization plan. Most important for trail users, it offers direct trail travel through town. Skiers would not be required to remove and carry their skis for long distances as with most of the other options. And travel on it would be much safer than city streets for young trail users, especially in winter, since there would be few conflicts with vehicular traffic. Finally, this route would lead trail users through an historic part of Rushford, containing the old railroad warehouse district, the depot, an early brick grain elevator which is still active, and the old creamery.

The City of Rushford, as part of its downtown revitalization plan, has recently modified its street building plans in the vicinity of the trail and the trailer court on the west side of town. A new option being considered is to build the new city street along the route of trail alignment alternative 3 (figure 33) rather than along the route of alternative 2. In other words the city would, if this option is selected, build the new city street on the railroad grade to the trailer court. This would, of course, require DNR permission to build on its ownership in the vicinity of the trailer court. In return the city would provide a trailway along this new street. Firm decisions have not been

made at this writing but this option is worthy of favorable consideration by DNR. Regional Trails & Waterways personnel should work closely with the city to most favorably achieve mutual goals.

At any rate, it is strongly recommended that a route on the railroad grade through town be pursued. Where passage through private ownerships cannot be obtained the trail should be aligned in an appropriate manner on nearby city streets.

Other Facilities and Services. The Trails & Waterways Unit should work with the DNR Division of Forestry to provide certain amenities on the Dorer Forest Unit north of Peterson which would favorably integrate the unit with the Root River Trail. Amenities recommended are a trail loop, an interpretive scenic overlook, a parallel realignment onto a disused forest road, rehabilitation of the existing hand pump on an abandoned farmstead on the unit, and a small camping area in the vicinity of this pump.

The proposed interpretive scenic overlook would utilize a "balcony rock" outcropping near the east edge of the unit (figures 34 and 35). Outstanding views of Peterson, the valley, and the river are presented. Interpretive potentials are exhibited by a variety of vegetational communities visible from this viewpoint, as well as old oxbows, and geologic patterns in the valley. The rock outcropping gives excellent views in three directions, and is well worth the somewhat strenuous climb to it. A spur trail leading to this overlook should be developed from the carriage road up the intermittent drainage at the east boundary of the unit, but this would be a steep climb; a spur trail from the area of the hand pump and abandoned farmstead may be a better idea.

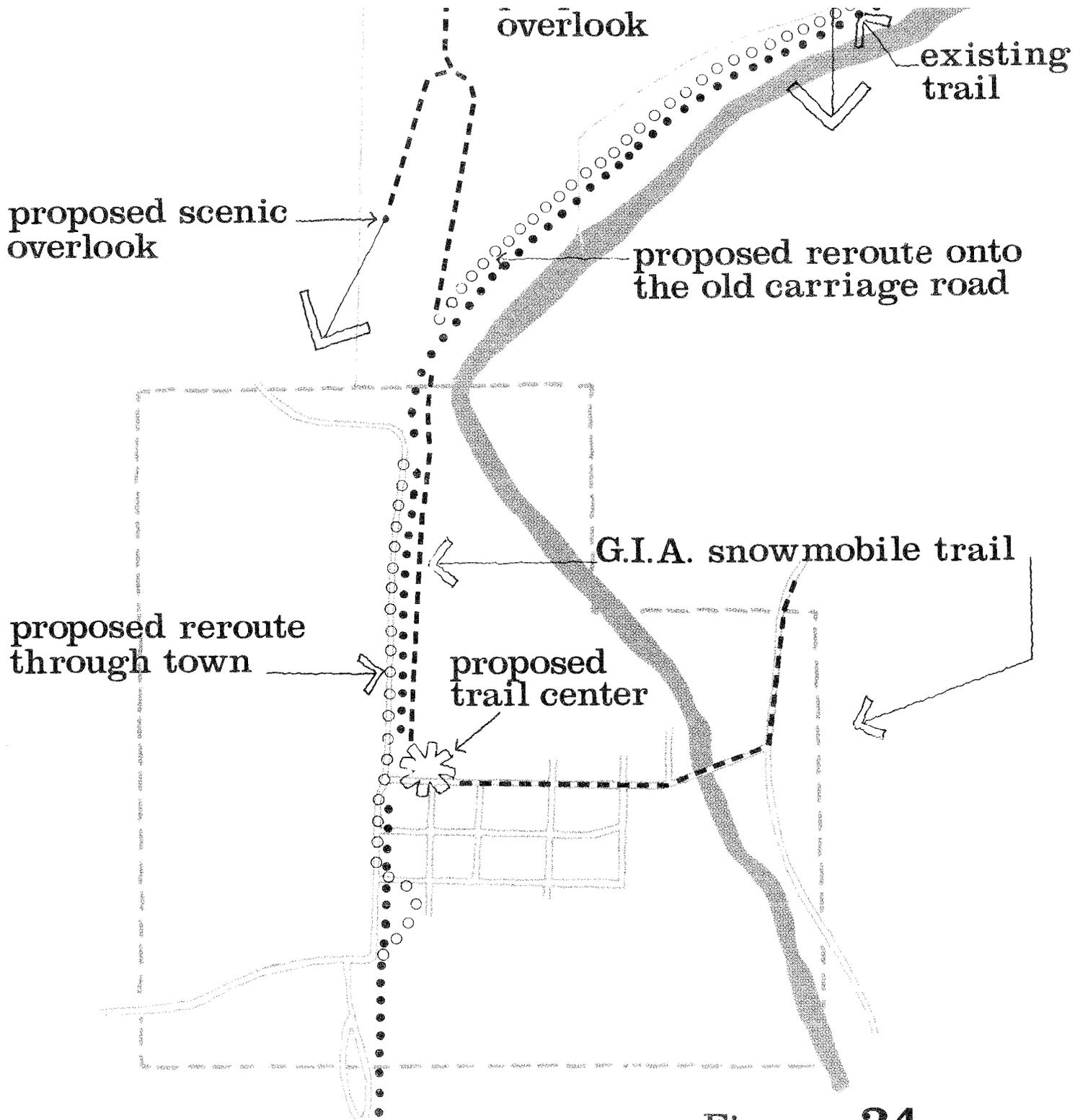


Figure 34

PETERSON
FACILITIES

ROOT RIVER
STATE TRAIL



MINNESOTA

proposed realignment
on old carriage road

Rushford

STATE FOREST

RUSHFORD VILLAGE

Peterson

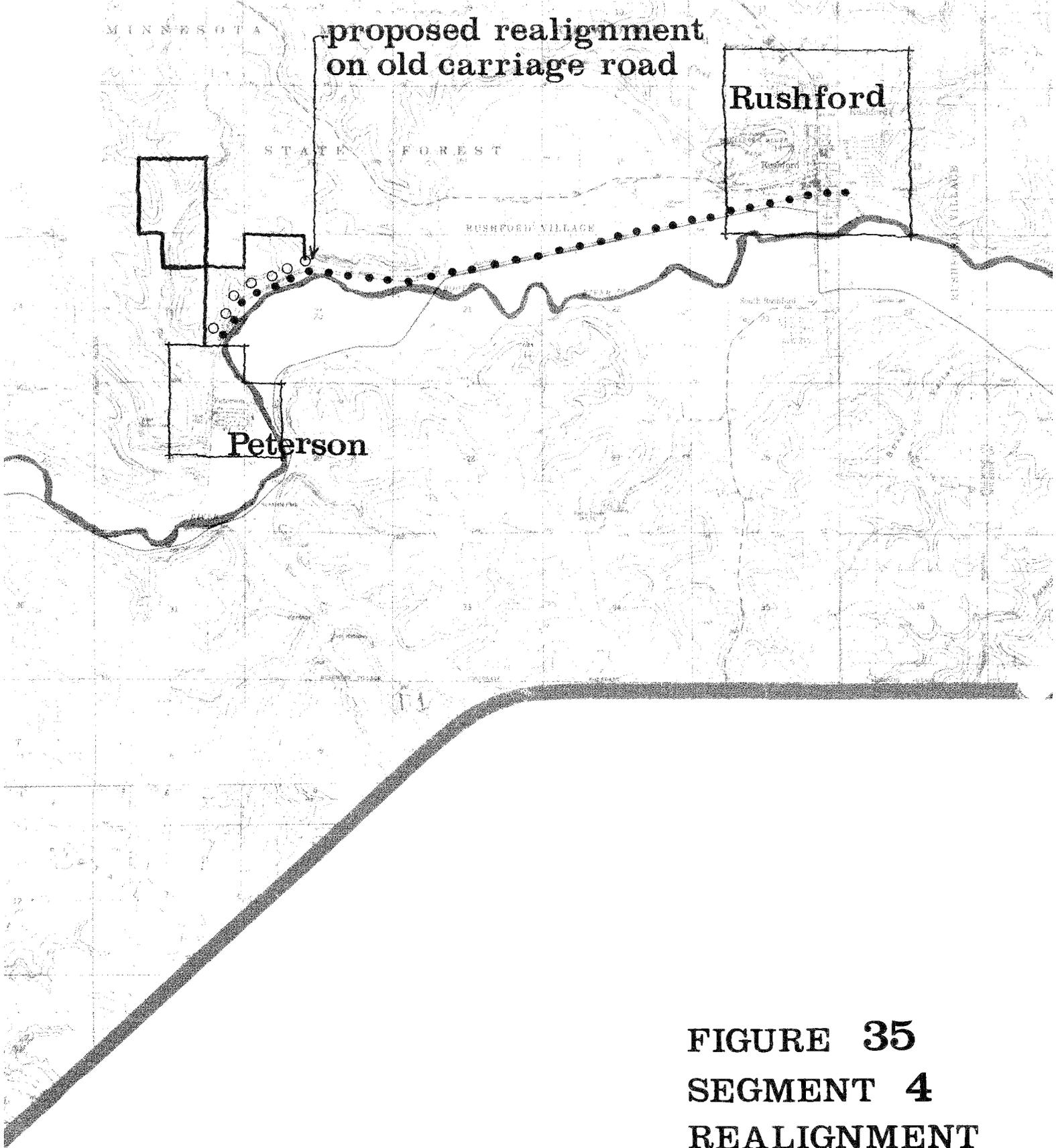
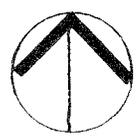


FIGURE 35
SEGMENT 4
REALIGNMENT
PROPOSAL
ROOT RIVER
STATE TRAIL



Another scenic overlook is available immediately north of Peterson on the same management unit (figures 34 and 36). A GIA snowmobile trail spur leads to it. It should not be developed in any way but should be signed to make it easy to find.

It is proposed that a small number (5 or fewer) of campsites be developed on the unit in the vicinity of the hand pump on the abandoned farmstead. It is further proposed that the DNR Division of Forestry close the road leading to this site to motorized vehicles other than snowmobiles and official DNR vehicles. Recent information from the Forestry Division indicates that the area immediately surrounding the hand pump may be privately-owned. If this is true, DNR should attempt to secure a lease from the owner for the above recreational purposes.

A portion of the 19th century carriage road between Peterson and Rushford parallels the trail on the Forest Unit north and east of Peterson (figures 35 and 36). It is recommended that the Trails & Waterways Unit seek to trade the trail to the Forestry Division in this vicinity for use of this old highway, in order to introduce topographic and elevational diversity into the trail ambience in the area. A spur trail to the scenic overlook and camping area can conveniently be developed from this alignment, following a drywash up to the top of the bluff, unless an on-site inspection finds this infeasible. In the latter case, access to the scenic overlook should be provided via a spur trail from the area of the abandoned farmstead.

As noted in an earlier section, it is proposed that the existing railroad depot in Rushford be restored and a portion of it developed as a trail center. Rushford will unquestionably be the hub of trail activity at the eastern end of the trail, and the desirability of providing an information center and rest area of suitable stature in this, the largest city on the trail, is clear.



Figure 36
Potential Site Of Scenic
Overlook Along Root River Trail

The depot is an historic building, dating almost to the time of building of the rail line. It offers considerable potential as an interpretive center for the trail and surrounding area as well as being a natural site for the rest facilities and parking which will be required in town.

The depot and the land it sits on are privately-owned; however, early indications are that conditions could be favorable for conversion to trail use. It currently is used as a storage building.

The depot is presently in seriously run-down condition, understandable in a wood frame building which is about 100 years old. However, personnel of the State Historic Preservation Office estimate the total cost of rehabilitation (to make the structure useable) and restoration (to restore historic integrity) at less than \$100,000. This would be money well spent if an appropriate mix of beneficial uses for the building could be identified and implemented.

The trail center would require some space for indoor rest facilities, information displays, and possibly some interpretive space. However, the depot has two floors and is quite large, and some use would have to be found for the remaining space.

Several ideas have been put forth in the course of the planning process to accomplish this end. Conceivably, a private rental business (bicycles, skis, snowmobiles, etc.) could be installed. This has been successfully done on other trails. The depot could be a residence for the trail manager or quarters for trail work crews, with the former baggage room given over to storage of trail maintenance equipment (the second floor was formerly the home of the station agent). Space not needed for the trail center could be converted and leased as general office space. Or it could become the home

of the Rushford Museum and Interpretive Center. The possibilities are limited only by imagination.

Similarly, there is a range of possibilities for actual ownership of the building and funding of restoration. The nature of DNR's annual maintenance fund situation is such that DNR acquisition of the building is less than perfectly desirable, although this can be done. Ownership by an entity with an appropriate and beneficial use for the structure who then leases a portion to DNR for trail purposes is preferable and highly desirable. More important is the notion that this historic building should not be lost to the community, nor to the Root River Valley.

The planning process has also identified several ways of resolving the question of who will own and rehabilitate the building. Early indications are that funding for acquisition and restoration would be available to a properly-situated entity.

The City of Rushford, in conjunction with its plan for downtown revitalization, intends to apply for a block grant for community development from the Federal Department of Housing and Urban Development. A depot restoration project would qualify for funding from the proceeds of this grant. As grant recipient, the City would acquire the depot and see to its restoration, then lease it to prospective occupants, such as DNR.

A private corporation or individual could also accomplish the task using private capital, subsequently leasing the space as in the first option. There would be tax advantages to this approach.

Finally, DNR could acquire and restore the building, occupy part of it and lease or donate the rest of the space.

The DNR feels that the preferable scenario is one in which the building is owned and restored by a local entity and used for purpose(s) which boost and benefit the community. The DNR would then lease sufficient space for trail center purposes. The local community should be encouraged to accomplish this, and DNR should work closely with the local community to facilitate the proper accomplishment of trail and community goals with regard to the depot. It should also be mentioned that DNR can, to a limited extent, participate in the funding of the project, contingent upon appropriation of funds by the Legislature.

It is thus recommended that DNR open discussions with the present owners of the depot as well as community leaders in order to ascertain the feasibility of this course of action. These discussions should begin in a preliminary way as soon as possible and should be finalized as soon as possible after a trail route is established on or near the railroad grade. DNR should be willing to consider any reasonable proposal for acquisition, rehabilitation, and use of the depot. However, it should proceed only after a strong show of support from the city and a clear signal that the city desires to cooperate with the state to successfully complete the project.

If a satisfactory arrangement for local ownership of the depot cannot be negotiated within a reasonable time, DNR should evaluate the feasibility of state acquisition and restoration and come to a timely conclusion. Finally, if use of the depot is ultimately determined to be infeasible, DNR should as a minimum seek to acquire space in the vicinity to be developed as a wayside with a kiosk and benches.

Right-Of-Way Modifications. The reroute onto the 19th Century carriage road has already been described. An additional realignment has been proposed by the City of Mountain View which would use school property and county road ROW instead of the railroad grade through town (figure 34). This would make the railroad grade proper available for business expansion and home building sites. The school board has agreed in principle but the county has not been contacted. This reroute should be pursued in the interests of beneficial integration. The city should be asked to take a lead role in the negotiations leading to the exchange.

A drain tile line from a flowing spring on the Robert Brand farm (NE $\frac{1}{4}$ NW $\frac{1}{4}$ section 21, T.104N.R.8W.) passes under the main treadway (proceeding south) and then proceeds west closely paralleling the treadway for a short distance before terminating in a backwater of the Root River. This clay tile line lies in an open ditch where it parallels the treadway and is thus susceptible to breakage.

It is recommended that one of two alternative courses of action be followed by DNR with respect to this tile line:

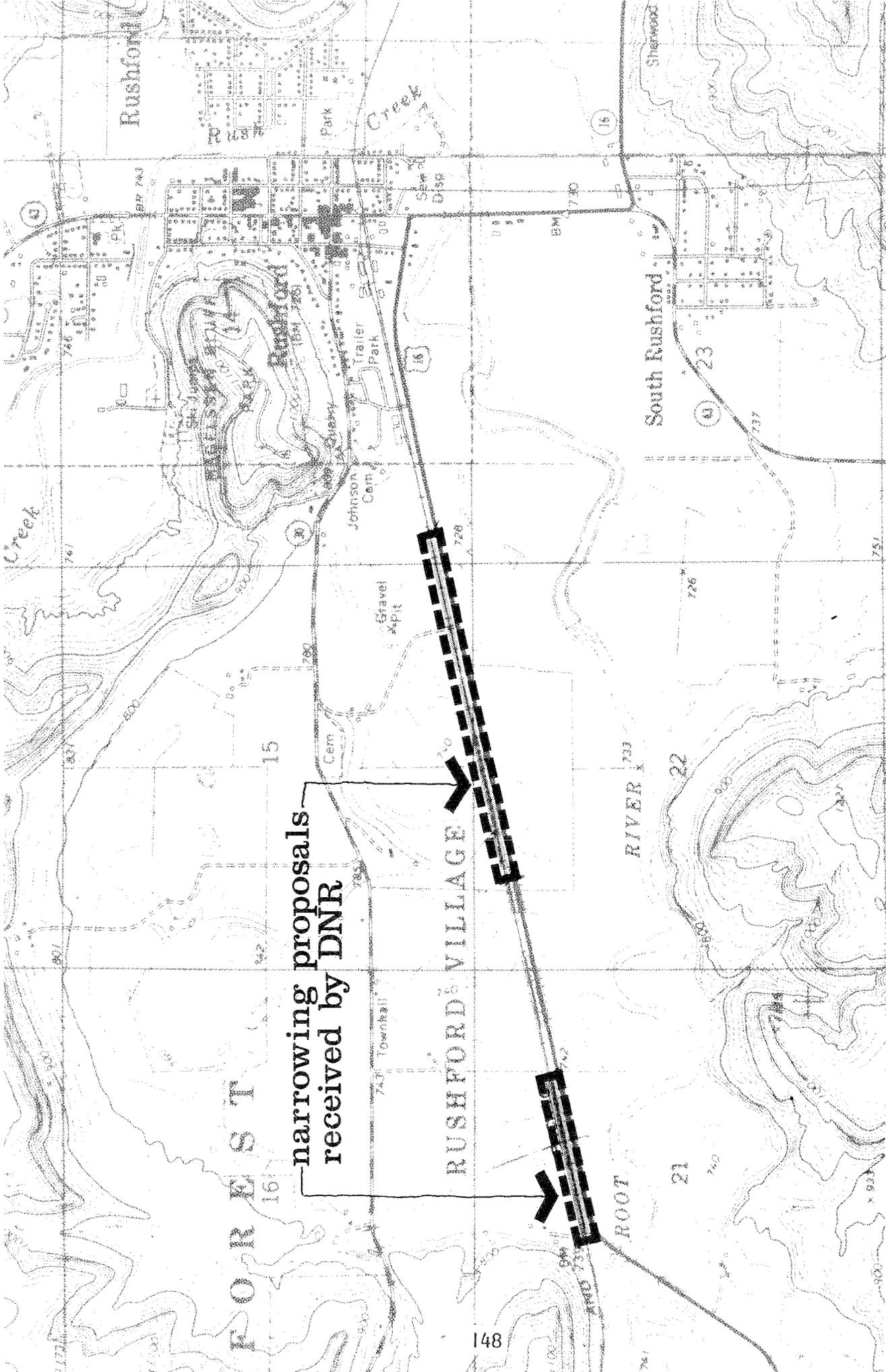
1. Fencing could be erected at each edge of the treadway for a distance of 200 yards to the west of Brand's driveway. This fencing could be faired into the existing ROW fence at the west end, and at the east end attached to the ROW fence via a second fence parallel to the driveway. Such a fence would have the practical effect of confining trail users to the main treadway, thus preventing breakage of the tiles in the open ditch.
2. DNR could undertake to replace the tile line within the ROW with a new, more durable line which could be buried. This new line should be equipped with a clean-out

aperture on the Brand property immediately north of the north ROW fence. This would obviate the need for narrowing of the ROW and is the method of choice.

This same landowner has requested that DNR take appropriate measures to protect the banks of a drainage ditch on his property from erosion which might be caused by trail traffic. This ditch runs north and south and crosses the trail about one-quarter mile east of Brand's driveway. Fencing or another appropriate barrier should be installed at the east and west approaches to the bridge over the ditch, which will serve to direct trail traffic onto the bridge and away from the ditch and its banks. The aim should be to keep trail users from crossing the ditch at any point other than on the bridge.

Finally, on the same farm, a flood control dike was constructed some time ago from the north end of the nearby highway bridge in a northwesterly direction, terminating at the railroad embankment. The active railroad prevented this dike from being completed, but since abandonment the dike has been extended across the grade to the adjoining hillside. The landowner requests that DNR leave this completed dike in place and construct the trail up and over it with suitable earth inclines, since he alleges that the dike protects his house and yard from floods. The actual change in elevation is relatively small. DNR should accommodate this request, but should require the landowner to apply for a permit which would specify that DNR has no objection to the placement of this dike across the trail but assumes no responsibility for the dike's function or for any liability associated with it.

East of the Brand farm is agricultural land owned by Donald Woxland (NE $\frac{1}{4}$ NW $\frac{1}{4}$ section 22, T.104N.R.8W.). This landowner proposes that the ROW be narrowed along its north edge for agricultural purposes (figure 37). This request should be accommodated to the extent that it can be reconciled with recommendations made in the



narrowing proposals
received by DNR

Figure 37
Narrowing Proposals West Of Rushford

vegetative management section regarding the possibility of native prairie restoration in this area.

Still farther east is the farm of Styrk Isberg. This landowner proposes narrowing of the north side of the ROW for crop production on that portion of the ROW which lies west of his driveway. He also proposes a 10-foot narrowing of the ROW east of the driveway, the strip thus delineated to be used for an access road. These proposals are in the SE¼ SE¼ section 15, T.104N.R.8W. This request should also be accommodated, subject to the same conditions as noted for the previous landowner.

Any narrowing done on this segment should be made with the possibility of future need for a second treadway kept in mind. In no case should narrowing result in less than 30 feet of width remaining available for trail purposes. Land given over to private use as a result of narrowing should not be sold, but leased via renewable five-year agreements. Other terms, conditions, and criteria given in the Appendix apply as well.

A privacy barrier has been requested where the trail passes near the Rollie Dubs residence in Rushford. Since the trail is elevated via a fill section in this location, special features will be required here to insure privacy.

Interpretation. A prominent feature of the Peterson to Rushford segment is the transition of the Root River Valley from a narrow, steep-walled physiognomy to the wide-open, almost spacious ambience characteristic of the lower reaches near the Mississippi River. A major contribution to this transition is made by the underlying geology; the upper valley has been carved by nature from limestone which is more resistant to weathering than is the sandstone which comprises the bedrock in the

Rushford-Houston area. Interpretation of the different responses of various bedrock materials to the same erosional forces is highly desirable.

The proposed scenic overlook north of Peterson (see previous section) is remarkably well situated to interpret this phenomenon. From this vantage point the narrow valley upstream can be contrasted with the incipient widening due to different bedrock geology which is clearly visible downstream.

This site also overlooks several changes of stream course, as manifested by several old stream channels. The river clearly has been moving to the west and north, and probably would be continuing this movement except for the flood control dikes at Peterson.

There are several historic buildings in Peterson which once housed businesses whose services have become obsolete in the time since the city was founded. Peterson once had a local creamery (as did the other communities on the trail) whose functionality faded as efficient transportation ushered in the age of centralization. The former railroad depot has been moved from trackside to its present location and now serves as a museum. The former wagon factory has already been mentioned.

Finally, certain forestry management practices are currently being applied on the forest management unit north of Peterson. This could be interpreted *in situ* by means of the proposed trail loop and appropriate explanatory signage.

Segment5: Rush Creek Bridge (Rushford) to Money Creek Woods - 6.4 miles

Objectives.

To continue to termination the trail experience involving the transition of landform from upland prairie to river bottom; to provide opportunities for interpretation of vegetation and landforms of Money Creek Woods and the Root River Valley; to provide trail access to the proposed amenities in Money Creek Woods; and to take advantage of the City of Rushford's ability to provide a base of operations for day-length trail experiences in two directions (east and west) along the Root River Trail, making use of the Peterson and Money Creek Woods Forestry Units as destinations.

Development Summary.

- Develop a sod surface on the main treadway
- Site a parking lot for horse trailers on the east side of Rushford
- Develop recreation facilities in the Money Creek Woods Unit

Primary Uses

Summer: Hiking, horseback riding, bicycling.

Winter: Cross-country skiing.

Bicycling is not expected to be a primary use on this segment of the Root River Trail. Money Creek Woods has not emerged as a desirable bicycling destination, and ending this use at the Rushford Trail Center would bring bicyclists into close proximity to state highways 16, 30, and 43, by which means bicyclists could continue their trips in any direction. Similarly, bicyclists could approach Rushford from any direction and proceed west on the trail, ending at Fountain near U.S. 52. However, there is no

particular reason to forbid bicyclists to use this segment, and this plan does not propose to do so.

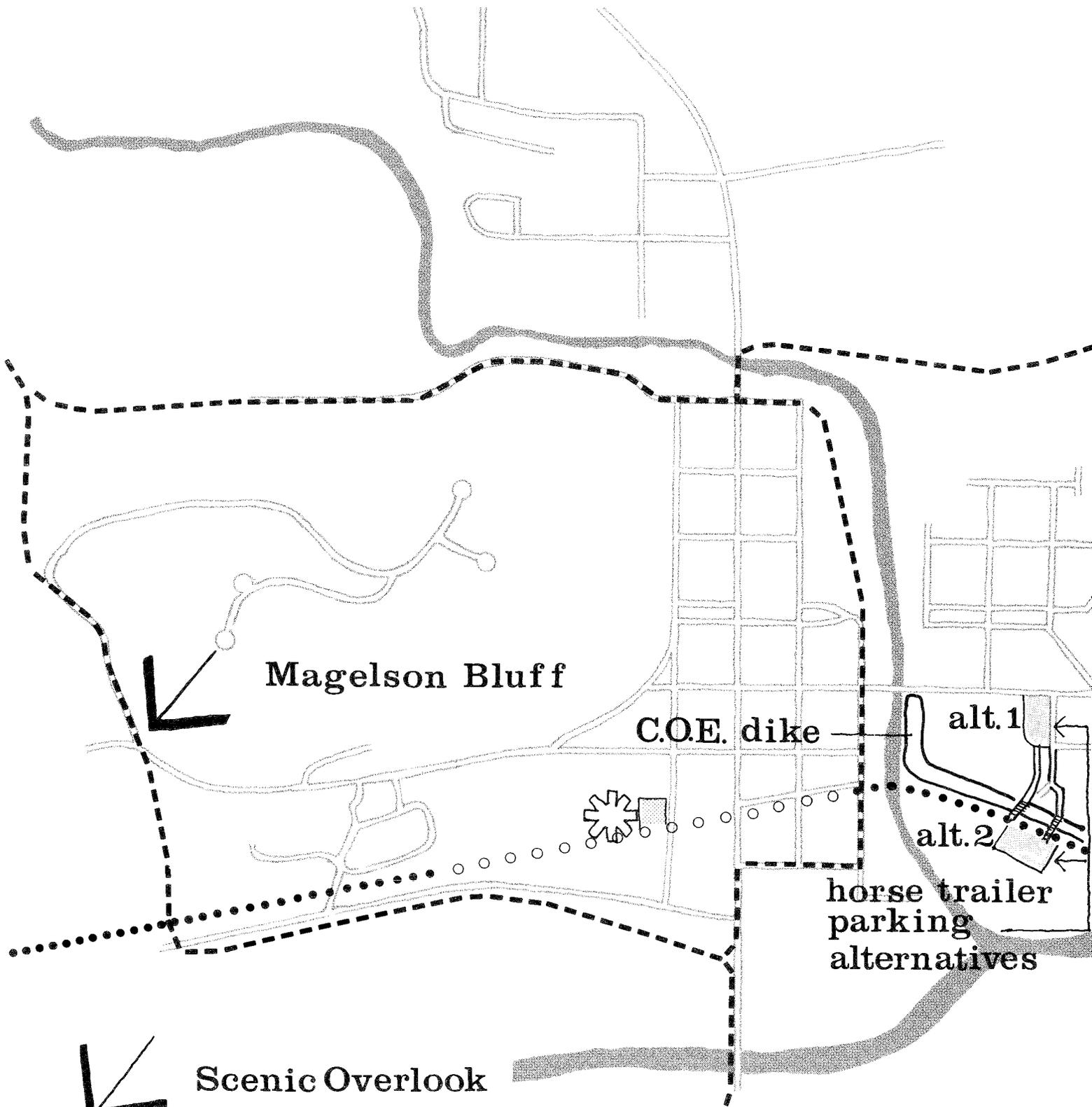
Snowmobiling also is not proposed here since several means exist via GIA trails to get from Rushford to Money Creek Woods and the Houston County GIA system.

Specific Design Considerations

Access and Service Facilities. The proposed Root River Trail Center would serve as a parking and rest area for hikers and cross-country skiers wishing to use this segment of the trail. If for any reason the use of the depot for this purpose is found not to be feasible, permission should be sought from the depot owners to use the depot parking lot for trail user parking. A kiosk and benches should be provided.

Access to this segment for horseback riders should be provided by construction of a parking lot designed to accommodate horse trailers in the vicinity of the trail east of the Rush Creek Bridge (figure 38). No other facilities will be necessary here. Horseback riders who stop at the trail center can make use of the rest facilities there and should be directed to use the east side parking lot as their staging area. The trail center parking lot should be specifically designed not to accommodate horse trailers in order to avoid a consistent pattern of horseback traffic in the downtown area of Rushford. If the depot is not used as a trail center, toilets should be provided at the horse trailer parking lot.

Two areas are presently under consideration as sites for the horse trailer parking lot. One is the "ponding area," a large open expanse in the east side of Rushford, part of which is occupied by a softball diamond. This area, which serves as an overflow area



-  Scenic Overlook
-  Parking
-  Grants-In-Aid Trails
-  Root River Trail
-  Trail Center
-  Privately owned

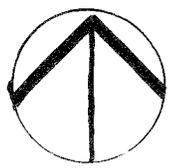
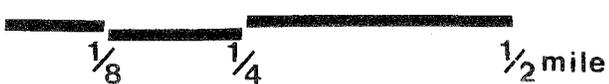


Figure 38

RUSHFORD FACILITIES

ROOT RIVER STATE TRAIL

for flood water, is owned by the City of Rushford, and is adjacent to the trail but separated from it by a flood control dike built by the U.S. Army Corps of Engineers. An approved crossing built to Corps specifications would be necessary to get trail users over the dike and onto the trail (figure 38).

The other potential parking lot location lies on eight acres of privately-owned, undeveloped land which lies between the trail and the Root River. If this land is used, the parking lot should be sited on that portion of it which is immediately adjacent to the trail. This will, of course, be dependent upon the present owner's willingness to sell or otherwise permit use of the land for parking. The lay of this land is such that minimal grading will be required and it should be surfaced with gravel. Use of this location would also require an approved vehicular crossing of the U.S. Army Corps of Engineers (COE) dike, built to COE specifications. In work of this sort DNR should consult with COE personnel in St. Paul in order to minimize prejudice to the dike's primary function.

DNR should work with the city to provide this horse trailer parking in the ponding area (alternative 1, figure 38) for a period of five years. If after this period it appears that this arrangement is unsatisfactory, DNR should consider acquiring sufficient acreage for a horse trailer parking lot on the south side of the trail in the same vicinity (alternative 2, figure 38).

A small parking area should be developed near the township road in Money Creek Woods. This could be developed in the present firewood cutting area, or immediately across the road from this area. DNR Forestry personnel should be consulted before this work is begun. A location has been decided upon.

Treadway. This segment of the trail will not be developed primarily for bicycling; therefore, it need not be hard-surfaced. A mix of durable vegetation species should be planted on the treadway. If the decision is made in the future to specifically provide for bicycling on this segment, the main treadway should be paved and a separate treadway in the ROW provided for horseback riding. Until this occurs, the main treadway should be designated for all approved uses. For this reason, any ROW modifications implemented on this segment should leave no less than a 30' width for trail purposes.

Other Facilities and Services. It is recommended that the Trail & Waterways Unit work closely with the DNR Division of Forestry to provide certain amenities on the Money Creek Woods Unit which will contribute to unit management goals and beneficially integrate recreation on this unit with that on the Root River Trail. Proposed amenities are a parking area (already mentioned), a unit trail network, toilets and rest facilities. A small camping area already exists on the riverbank adjacent to the trail, provided by DNR's Boat and Canoe Route program.

A unit trail network designated for cross-country skiers, hikers, and horseback riders would serve a function similar to that proposed for the Gribben Valley Unit. Such a network could stand on its own as a unit trail system, would establish Money Creek Woods as a destination for trail users (when combined with rest and camping facilities), and would offer to Root River Trail users more challenging trail experiences than are to be had on the main trail. The trails should be constructed so that they are usable by all of the above groups.

The existing Boat and Canoe Route campsite should be upgraded if necessary and signed for use by Root River Trail users. Toilets are already provided on this site. If

demand arises for more space or if joint use by trail users and canoeists proves to be a problem for any reason, a separate camping area for trail users should be provided elsewhere in Money Creek Woods adjacent to the trail.

A scenic overlook should be established on the high ground immediately north of the main trail, located in such a way as to present interpretive views of the Root River Valley both up and downstream. This would expose to panoramic view the phenomenon of the widened-out valley which begins in the Peterson area.

The proposed trail network on the unit should be so aligned as to connect the main trail, camping area, parking lot, and scenic overlook with trails which are safe to use, have elevational and directional diversity, and present varying levels of challenge to users.

Substantial agreement in principle has been reached between DNR Forestry and Trails & Waterways personnel regarding recreational development on this unit. Terms of this agreement should be followed closely.

One or more benches should be placed on the main trail between Rushford and Money Creek Woods for the convenience of trail users.

Right-Of-Way Modifications. Narrowing of the ROW for agricultural purposes has been proposed by adjacent landowners on the Robert Kingsley, Harley Larson, and Donald Hoegh farms (figure 39). Such narrowing would function to get additional land into production. DNR should accommodate these requests where appropriate but should do so in such a way that two treadways can be accommodated within the ROW in the future, if needed. In no case should ROW narrowing result in less than 30 feet

Rushford

trail r.o.w.
narrowings

**Money Creek
Woods**



Figure 39
SEGMENT 5
 R.O.W. MOD.
 PROPOSAL

**ROOT RIVER
 STATE TRAIL**

remaining available for this purpose. Land granted to adjoining landowners for this purpose should not be sold, but leased via renewable five-year agreements.

A trail realignment was proposed where the trail crosses the Bernard Jacobson farm. The landowner proposes that the trail be rerouted off the railroad grade to the township road in summer so that he can till the grade. After examining this proposal the DNR concludes that this realignment is not feasible for the following reasons:

1. Rerouting from the grade to the road would send trail users from a route having no vehicular traffic conflicts to a route which has them and is thus relatively unsafe.
2. Once on the township road there are few convenient ways of getting back on the grade within a reasonable distance. The nearest such access point is more than a mile away.
3. The sole benefit to the landowner is increased farm production; to achieve this the trail user is asked to divert from a quiet, conflict-free trail to a well-traveled gravel road for more than a mile before regaining the trail. The tradeoff of trail user safety and convenience is deemed inadvisable in this instance.

Interpretation. As noted elsewhere, a unique feature of the corridor trail is its ability, properly sited, to present the trail user with a feel for the rhythm of the land as it is transformed in the course of a point-to-point trip. In the present case the transformation is from relatively dry upland prairie to relatively moist, narrow river bottom, to the point where the valley widens and becomes more mature.

The interpretive overlook proposed for Money Creek Woods should bring to fruition the Root River Trail's interpretive treatment of this phenomenon by recapitulating this progression and illustrating the combination of natural forces and materials which result in it. This should be done briefly but completely via appropriate displays at the overlook.

The proposed trail network can be utilized as on other units to illustrate forestry management practices, as well as wildlife and wildlife habitat characteristics and management.

2. OVERALL DESIGN AND MANAGEMENT CONSIDERATIONS

This section outlines an overall design and management philosophy, with specific examples as appropriate, which should be adhered to in the development, operation and maintenance of the trail. This will assure a safe and satisfying experience for trail users as well as fair and equitable treatment of all affected by the trail.

Accessibility. In order to achieve its full potential, a trail must be conveniently accessible to the trail-using public. At the same time the use of private driveways and public roads as parking lots and access points must be minimized unless such use is appropriate. The key is to provide trail accesses which are safe, reasonably secure, convenient, easy to find and sufficiently numerous as to reduce the tendency to access the trail elsewhere in ways which might inconvenience others.

Trail accesses including parking lots are proposed for the west end near Fountain, Isinours Woods, Lanesboro, Rushford and Money Creek Woods. In Whalan and Peterson, sufficient on-street parking space is available for the expected small number of people who initially will prefer to access the trail in these towns. If parking becomes a problem in these towns, space exists in the right-of-way to provide more parking in the future.

It is considered unlikely that major access problems will develop elsewhere on the trail, given its generally remote nature and the ready availability of provided access points. If such problems do crop up, such measures as signing and barricades should help to alleviate them.

For those wishing to use public transportation to get to the trail, public transportation routes and sources of further information should be included on DNR trail maps and promotional material. This use of public transportation should be encouraged and facilitated to the extent possible. DNR could additionally indicate on the trail maps the locations of towns having overnight and restaurant accommodations so as to facilitate trip planning. Alternatively it could publish a guide to local services to be disseminated with trail maps. DNR may wish to consult with Hiawathaland, Inc. of Lake City, Minnesota, for assistance in preparing a guide to local services.

A number of adjoining landowners have indicated interest in using short portions of the trail as field accesses. These requests should be evaluated by DNR on a case-by-case basis and a 5-year permit issued if approved. The permit should specify the type and seasonality of use and be issued by the Regional Administrator under such constraints as he/she may deem appropriate under the circumstances. It should be made clear that DNR will not modify the right-of-way, nor will the applicant be allowed to do so, unless such modification is in the trail-using public's best interests. The burden of proof should be on the applicant.

The Root River Trail is presently crossed by numerous field crossings, cattle passes and drains. It will be DNR policy that those presently existing will be allowed to remain and be used, but that after June 30, 1983, they must be legitimized by written agreement between DNR and the landowner. Such agreements should be set to run for five-year terms and subject to cancellation for cause by either party upon 30-days' written notice. In the latter event the prorated unused amount of any payment made by the landowner to the DNR should be refunded, less any damages or other costs. The agreement should specify that such use of the trail ROW for private purposes shall not be enjoyed in such a way as to create a safety hazard or undue inconvenience to trail

users. The landowner should be responsible for maintenance of the crossing, and also for damage to the ROW or treadway caused by his use of the crossing. Proposals to legitimize crossings should be evaluated on a case-by-case basis by the Regional Administrator. Similar action should be taken on proposals for new field crossings, cattle passes, and drains.

In addition, utility crossings will be granted in compliance with Minnesota Regulations NR 5100.

It is a violation of state regulations [Minnesota Regulations NR 20 (j) (1)] to use a state trail as access to private land without permission of the landowner. This should be printed in a conspicuous place on all Root River Trail promotional material.

Invasion of Privacy. Considerable discussion on this topic took place in the planning meetings. Invasion of privacy can occur when a trail user approaches a house in order to get a drink of water, use the phone or borrow tools. The Social & Physical Inventory of the feasibility study (see PUBLIC INVOLVEMENT) noted that 80 percent of respondents along the Sparta-Elroy Trail in Wisconsin have been asked for help or services by trail users and that 11 percent of those respondents were annoyed by such requests.

Invasion of privacy also occurs when a trail passes in close proximity to a house or yard. People can feel inhibited, even threatened, in such circumstances, even if trail users keep their distance and do not make direct contact. Finally, noise (such as snowmobile noise) can disturb those property owners located closely adjacent to the trail, especially at night. This topic also was given considerable attention during the planning process.

Two separate potential problems exist here, the first being the trail user who seeks out and approaches a house for some reason. This can be alleviated by providing drinking water and toilet facilities at appropriate places along the trail and by publicizing the locations of camping and recreation areas, repair shops, restaurants and motels. DNR could also post signs at various places on the trail urging trail users not to bother adjacent landowners.

The second type of invasion of privacy problem is represented by the trail user who unwittingly or inadvertently annoys adjoining property owners because the trail lies in close proximity to a yard or dwelling. Several such situations exist on the Root River Trail. These can and should be dealt with via vegetative screens, board or chain link fences or other appropriate physical and visual barriers. These have the added virtue of, in some cases, alleviating the direct approach problem also by discouraging users from leaving the trail.

If any homeowners take the initiative and erect their own barriers, DNR should, if requested, consider reimbursement, being guided by a reasonable assessment of what DNR would have done about the problem itself. It should be DNR policy, and publicized as such by all appropriate means, that anyone contemplating such action should contact DNR before beginning. However, after-the-fact requests should be evaluated on their merits.

As mentioned above, trail-related noise can be a disturbance, particularly at night. The purchase agreement executed between DNR and CRPP at the time of acquisition stipulates that no snowmobiles will be allowed on the Root River Trail within 150 feet of an occupied dwelling. DNR will observe this restriction in aligning those portions on which snowmobiling is allowed. As further mitigation it should be noted that

snowmobiles are much quieter nowadays than they were early in their development. Since many non-trail-related sources of noise exist these days, snowmobiles should not be unduly singled out as a trail noise problem. Further, noise is generally a more severe problem at night than during the day. If repeated noise disturbances, from whatever trail source, becomes a problem, DNR may consider setting a curfew on the offending trail use. In the planning meetings the public recommended against curfews unless a serious problem were to arise.

Conflicting and Competing Uses. Some legitimate uses of trails are rightly regarded as mutually exclusive on DNR trails. The most widely recognized conflict exists between snowmobilers and cross-country skiers. In the past skiers have complained about the speed and noise of the machines, which renders the skiing experience less than satisfactory or even unsafe. But the problem goes beyond experience degradation; ski and snowmobile trails are groomed quite differently from one another, and while a skier can use a groomed snowmobile trail without damaging it, the reverse is not true, nor is the experience totally satisfactory.

As noted in the PLAN section, separate treadways have been recommended for that portion of the right-of-way where both uses will be allowed (between Lanesboro and Peterson). Further, where the 150-foot rule is applicable, DNR should make every effort to make maximum use of private land to separate the two uses. It must be understood that topography will require both uses to be within the right-of-way for some of the distance.

Skiers noted in the planning meetings that on other trails (notably the Douglas) where parallel treadways were provided, snowmobiles "trespassed" off the main treadway onto the skiers' treadway. To deal with this problem, DNR should consider erecting

suitable barriers (such as large rocks, vegetation, steep road cuts, cable and posts, etc.) in appropriate locations to keep the uses separated and encourage each user group to stay on its own treadway. Such barriers must be clearly visible and not present an undue hazard. Every effort should be made to alleviate bona fide problems of this nature in order not to discourage use of the trail and to allow each use to develop on the trail in a conflict-free environment to the extent possible.

The DNR state trail policy document identifies horseback riding as a use which conflicts with hiking and bicycling and notes that these should not be accommodated on the same treadway unless the master plan determines that it is acceptable to do so. This plan provides for all three to be allowed between Lanesboro and Whalan and between Rushford and Money Creek Woods. The first-named segment will be paved and it is felt that horseback riding on a paved surface should be avoided to avoid damage to the surface, erosion problems, and injury to the horses. Accordingly, a parallel treadway for horses is proposed between Lanesboro and Whalan and on any other paved stretch of trail where horseback riding may in the future be allowed consistent with this plan. This can and should be the same treadway as is used by snowmobiles in winter where possible.

Between Money Creek Woods and Rushford the surface will be sod. The planning process identified no reasons why these three uses should not share the main treadway and this, accordingly, is the recommendation. After a five-year evaluation period, a decision should be made whether to continue this use pattern or to construct a separate treadway for horseback riding.

Under the terms of Minnesota Regulations NR 20, and as provided for in policy, hunting and trapping have been permitted on state trails. Considerable debate on the

merits of this use of state trails has taken place within DNR and present Statewide DNR Trail Plan (draft) provisions are that the question of whether or not to allow these uses is to be dealt with in the course of the master planning process on each trail.

Participants in the Root River Trail planning meetings were, after lengthy discussion, essentially unanimous in the position that firearm use on the trail conflicts with other legitimate uses, and that therefore the use of firearms should not be permitted on the trail itself. Participants noted that the land surrounding the trail is mostly private and houses are very close to it in some locations. More specifically, many noted that they would be interested in hiking or biking on the trail during the fall color season, when many hunting seasons are open, but would be reluctant to do so if firearm use were to be permitted. The same people recognized, however, that the trail was a good means of access to many DNR Forestry Units where hunting will continue to be legal and that hunters will undoubtedly also cross the trail in getting from one field to another. Law enforcement officers in the planning meetings saw no problem with such use of the trail by hunters, but noted that enforcement of a firearm ban would be essentially impossible unless firearms were required to be unloaded and cased when actually on the trail. Thus, the recommendation is that use of firearms be prohibited, but carrying them on the trail should be allowed if they are cased and unloaded.

This scheme should be followed for a five-year evaluation period. During this period DNR should survey trail users and other interested parties in order to determine whether the firearm prohibition should continue. The overall guiding principle to be followed is to allow those uses for which the trail is primarily established the best possible climate in which to develop. At the same time it must be recognized that hunting is another potential use of the trail which should be allowed if it does not

seriously conflict with other uses. If after five years it is determined that allowing hunting on the trail will not seriously impair existing use patterns, it should be permitted in accordance with law.

Trapping within the right-of-way should not be allowed, since trail users may be accompanied by pets or children which may be injured as a result. However, those who wish to use the trail for access to trapping areas outside the right-of-way should be allowed to do so.

Other legitimate recreational uses of the trail may develop as time passes. Such other uses may include, but not be limited to, snowshoeing, dogsledding and running. Administration of trail operations should be marked by common sense in dealing with these; for example, snowshoeing should not be allowed on groomed skiing treadways. Motorized uses other than snowmobiling will be prohibited unless the master plan is revised to provide a rationale. This would also require a revision of NR 20.

Special events within the right-of-way, such as marathon runs, dogsled races, etc., or farmers markets, easter egg hunts, etc., must be handled on a permit basis. When solicited for such a permit, the DNR Commissioner should base the decision to permit on such considerations as the necessity for trail closure to the general public, possible degradation of the trail and other resources, and general inconvenience to the trail-using public. There should be no fee for special events except to recover DNR's reasonable costs.

Non-recreational (e.g., commercial, industrial or agricultural) uses of the right-of-way can and often do compete or conflict with the primary recreational use. Recommendations made elsewhere in this plan provide for narrowing of the right-of-way for

crop production, use of the trail for field access and others. In general, DNR should make an effort to accommodate such uses of the right-of-way when so doing will not unduly degrade the trail user's experience. Any such use should be via lease, easement, cooperative agreement or other duly recorded and executed written instrument. Any such agreement should be for a term not to exceed five years. Unsanctioned encroachments in the right-of-way should be dealt with promptly and appropriately (see below).

Logging is an important industry in southeastern Minnesota, and it is conceivable that DNR will receive requests for use of the trail right-of-way for this purpose. The handling of these requests will be based upon the following policy:

1. No cut products will be piled, landed or stored on the established trail.
2. No slash or logging debris will be left on the right-of-way after the cutting of the trees.
3. Logging equipment, buildings or facilities will not be parked, stationed or erected on the trail right-of-way.
4. Trucks and logging equipment are not allowed to use the treadway for access to the timber operation unless such action is approved by the regional trails and waterways coordinator and the area forester and then only when the use of the trail does not jeopardize the safety of the trail users or harm the trail surface.
5. If DNR determines that it is impossible or impractical to conduct a timber sale under the above conditions, the area forester and the regional trails and waterways coordinator will determine the feasibility of establishing a temporary realignment of the trail for the duration of the sale.
6. Any ruts, holes or other damage to the trails caused by the loggers will be repaired by the logging company, as directed by the trails and waterways coordinator before the sale is closed.
7. The establishment of temporary alignments for the purpose of conducting a timber sale on the normal trail right-of-way will not excuse the logger from items 1, 2 or 6.
8. Safety signs--for example: Danger, Trucks Hauling, Timber Cutting--will be posted at least 200 feet beyond both ends of any segment of the trail where timber is being cut and at least 200 feet on either side of where logging equipment and trucks are using the right-of-way.

DNR may wish to consider the assessment of a performance bond prior to the beginning of operations in order to assure compliance.

Commercial or industrial activities which would necessitate more or less constant vehicular use of the trail will be prohibited.

Agricultural encroachments presently exist in the right-of-way. In most cases these are holdovers from the railroad era and in several cases landowners had written agreements with the railroad which provided for these encroachments. These agreements typically ran for five years and few, if any, were still in force at the time of DNR's acquisition of the railroad grade. DNR will, of course, honor any such agreements which still exist under the terms they specify.

In those cases where encroachments are unsanctioned by a written document as of July 1, 1983, adjoining landowners will be informed that they must have a written agreement with DNR in order to occupy DNR property for any reason. After January 1, 1984, any unsanctioned right-of-way encroachments will be removed by DNR and damages and costs assessed the perpetrator. It will be the job of the regional trails and waterways coordinator to affirmatively inventory the encroachments, notify landowners of the new policy, and handle the leasing process.

In those cases where landowners seek to legitimize existing encroachments or to initiate a lease for new occupancy of the trail right-of-way, DNR should give consideration to the requests based upon the encroachment's expected effect upon the trail and its users. The proposed encroachment should enhance or at least not unduly degrade the experience of the trail user. In no case will the right-of-way available for trail purposes be narrowed to less than 30 feet. DNR will, in addition, not usually

relinquish fee title to land within the right-of-way, but lease it instead, unless a land exchange is involved.

Support Facilities. As alluded to earlier, trail facilities such as restrooms, campsites and rest areas serve two functions: they contribute to the convenience, safety and well-being of the trail user and they reduce the tendency on the part of the trail users to impose upon adjoining landowners for services. Support facilities proposed for the initial development phase of the Root River Trail are conceived with these twin aims in mind. Privately tendered services such as overnight accommodations and restaurants presently exist in several of the communities on the trail and may be expanded in future years as the trail develops heavier use.

DNR should, through its monitoring and evaluation effort on the Root River Trail, remain sensitive to unsatisfied service needs of the trail-using public. Needed new facilities should be installed as necessary to contribute to user satisfaction and reduce the occasions of landowner harassment by trail users. Campsites and rest areas should be sited so as to be accessible only from the trail, remote from vehicular access if possible. Failing this, such facilities should be located in areas where public observation will reduce the potential for vandalism and improper use.

The Root River is a designated DNR Canoe & Boating Route. A Canoe & Boating Route campsite exists on the trail side (north bank) of the river near the extreme eastern end of the trail (figure 10). This site is immediately adjacent to the trail and can be made easily accessible by establishment of a short spur trail. If future monitoring shows overuse of this campsite, expansion of the site or the development of separate trail campsites in the vicinity should be considered.

Detailed trail design and construction specifications for such things as treadway cleanup, grading, drainage, signing and support facilities are addressed in the DNR Trails Manual. The construction, maintenance and operation of the Root River Trail will be in conformance with this manual.

Vegetation Management. Vegetation on the Root River Trail is both a blessing and a curse. On the one hand it provides the trail user with spectacular scenic panoramas of colorful fall hardwoods and grassy hillsides, and bucolic vistas of manicured pasture and cropland. On the other hand, a high incident rainfall and warm summer climate can result in abundant, luxuriant woody and herbaceous growth which, while scenic and pleasing in many instances, can cut off views and contribute to weed problems in others if not properly managed. Management of vegetation on the Root River Trail should take careful note of growth characteristics, weed problems, and outstanding scenic potentials, and seek to combine this knowledge with specific management techniques in order to provide and maintain scenic views, shade, wildlife food and cover, proper management, and low maintenance costs on the trail itself.

The climatic and soil conditions present in this region will rather quickly result in an overgrown condition in the ROW if not taken into account. The long views which presently exist due to recent railroad activity will become obscured by vegetation growth if the latter is not properly managed. This "green corridor" effect is to be avoided except where deliberate screening is needed, as where houses are located close to the trail. In general, the trail should allow users the visual experience of surrounding land use.

The type of management recommended varies with the desirability of the species involved. In some cases, the growth of existing vegetation (certain deciduous tree

species, native grasses and shrubs) should be encouraged and mechanically manipulated where necessary in order to frame views and present a pleasing appearance. Large existing trees should be retained for shade or "view framing," but should be pruned up to 10 feet on the main treadway and 12 feet on horseback treadways, where necessary, for convenient trail user passage. Shade trees should be planted here and there where they do not already exist on the more open stretches of the trail for the convenience of slower travelers such as hikers.

Where the trail traverses cultivated areas, occasional shade trees are desirable for microclimate control and view framing; however, the open ambience common to cultivated areas should be maintained and tree selection for such areas should consider and keep to a minimum the shading of cultivated fields. Careful thought as to which side of the trail and where in the ROW the tree should be planted will help keep field shading and moisture draw to a minimum.

In other cases vegetation such as herbaceous weeds, and other nuisance species should be controlled by mowing, grubbing, or spraying. In still other cases, otherwise desirable vegetation such as berry bushes and vines can foul fences and in other ways become a nuisance, and should be controlled accordingly.

The DNR is required by law to control noxious weeds within the trail right-of-way. This control is done in two phases. First, weeds are cut or sprayed with herbicide, if necessary. Second, for long-term weed control, native vegetation is encouraged and supplemented by mechanical seeding and planting. This practice will in time shade out undesirable weeds and improve wildlife habitat. Under state law, the DNR recognizes nine noxious weed species that occur statewide and several others that may be considered noxious in individual counties. Adjacent landowners should notify their

local inspector or the regional DNR office if noxious weeds in the trail right-of-way cause a problem. These officials will determine and undertake the appropriate treatment. However, proper vegetation management will in time make mechanical and chemical weed control altogether unnecessary.

The preferred manner of control of nuisance or noxious vegetation is biological; in other words, the establishment of a stable native vegetational community will essentially eliminate undesirable species in many areas. Where this end can be achieved by mere encouragement of the existing vegetational community, it is the preferred route to follow. However, this is not always possible. The edges of the trail right-of-way will always, by definition, be maintained in a sub-climax condition. Stability in such places may need to be induced via the establishment of non-weedy, shrubby and herbaceous species, preferably species requiring little maintenance. These should be species native to the area if at all possible. Where undesirable vegetation must be removed, it should be replaced by native species whose qualities include as many as possible of the following (in no particular order): self-establishment of suitable height for view framing, fall color, flowers, wildlife food and cover, competitiveness against reinvasion of undesirable plants, non-invasiveness in cultivated areas, and a suckering growth habit where spreading is desirable.

Areas to be planted to grass should be seeded with a mix similar to Mn/DOT Formula #1, or other suitable mixture which either consists entirely of native species or whose growth will evolve over time to result in a nearly pure native stand.

The two-mile stretch of trail immediately west of Rushford should be evaluated as a site for the restoration of native prairie. A list of consultants and contractors who can assist in this effort is provided in the interpretive appendix.

The maintenance and enhancement of wildlife habitat is highly desirable on this trail. In all efforts involving management of vegetation care should be taken that species selected and techniques employed will enhance the wildlife resource wherever possible consistent with maintenance of views and control of nuisances. Trail personnel should consult with District and Regional personnel of the Division of Wildlife for advice.

Mowing of the right-of-way immediately adjacent to the trail will undoubtedly be necessary for convenience of trail users, weed control, and user safety. The treadways and right-of-way facilities should be so laid out and landscaped as to make this task efficient and convenient.

Use of chemical sprays on the trail should be avoided to the extent possible. The possible deleterious effects on desirable flora and fauna and the potential for entry of chemicals into the Root River mandate the use of other techniques for vegetative management unless they will not suffice for the task at hand.

In summary, the overall management scheme should be one of encouragement of the growth of existing desirable vegetation and mechanical management of it to frame views, provide shade and a pleasing appearance, promote the wildlife resource, and control undesirable species. Where these objectives can be better attained via the artificial establishment of native vegetation, this should be done. The introduction of exotic species and the use of pesticides should be avoided except where their use is clearly indicated and reasonable alternatives do not exist.

Table II. Tree list. Trees planted in the trail right-of-way should be selected from this list. DNR nursery stock should be used whenever possible.

- Acer saccharinum* (silver maple) L.
- Acer saccharum* (sugar maple) Marsh.
- Betula lutea* Michx. f. (yellow birch)
- Betula papyrifera* (paper birch) Marsh.
- Betula nigra* (river birch) L.
- Carpinus caroliniana* (American hornbeam or blue beech) Walt.
- Carya ovata* (shagbark hickory) (Mill.) K. Koch.
- Celtis occidentalis* (hackberry) L.
- Crataegus crus-galli* (corkspur hawthorn) L.
- Fraxinus americana* (white ash) L.
- Fraxinus pennsylvanica* (green ash) Marsh.
- Gleditsia triacanthos* (honey locust) L.
- Gymnocladus dioica* (Kentucky coffee tree) (L.) K. Koch.
- Juglans cinerea* (butternut) L.
- Juglans nigra* (black walnut) L.
- Pinus strobus* (eastern white pine) L.
- Populus deltoides* (cottonwood) Marsh.
- Populus grandidentata* (large-toothed aspen) Michx.
- Populus tremuloides* (quaking aspen) Michx.
- Prunus serotina* (black cherry) Ehrh.
- Quercus alba* (white oak) L.
- Quercus macrocarpa* (burr oak) Michx.
- Quercus borealis* Michx. f. (red oak)
- Quercus velutina* (black oak) Lam.
- Salix amygdaloides* (peach-leaved willow) Anderss.
- Tilia americana* (basswood) L.

Soils. Soil resources should be managed to minimize erosion, compaction, and contamination during and after trail construction. Since most of the trail is to be sited on an abandoned railroad grade, the potential for such impacts is less than it might otherwise be. However, several reroutes are proposed, and a parallel treadway in the ROW is proposed for portions of segments 2 and 3. There is the potential in these locations for damage to soil resources and the trail use experience unless care is taken to avoid it.

The McCoy reroute, for example, involves short grades of 8% and 13%, which, if the reroute is implemented, will call for site specific drainage and soil protection measures regardless of the uses to be provided for on it. Similarly, the Benson and Arlyn Johnson reroutes, while not involving overly steep grades, do involve lateral construction on hillsides. The Fillmore County Soil Survey as well as soil science and engineering expertise should be consulted as necessary in order that soil capabilities and limitations can be taken into account in the course of construction.

Bedrock and Extractive Resources. Considerable outcropping of limestone and sandstone exists in southeastern Minnesota in general and the vicinity of the Root River Trail in particular. In the past quarrying of limestone for building stone was a major industry. Considerable crushed limestone for road building is still mined in the area. There presently are several active sand and gravel pits along the trail as well.

It is conceivable that permission will be sought by private interests to use a portion of the Root River Trail for access to such a site. The handling of such requests is to be based on the premise that the trail is not to become a haul road for a long-term commercial operation. The safety and convenience of trail users as well as the integrity of the trail surface are the major considerations.

When an extractive operation is conducted near an established state trail, DNR trail, forest trail, park trail or grant-in-aid trail, or when any part of the trail right-of-way is used for extractive purposes or to provide access to the extractive operation, the following regulations will prevail:

1. No vegetative debris, waste earthen materials or commercial products may be stored on the right-of-way.
2. No equipment, buildings or facilities will be parked, stationed or erected on the trail right-of-way.
3. Extractive equipment and trucks will not be allowed on the treadway to travel to the operation unless such action is approved by the regional trails and waterways coordinator and then only when the use of the trail does not jeopardize the safety of the trail users or the condition of the trail surface.
4. Safety signs--for example: Danger, Trucks Hauling, Mining Operations--will be posted at least 200 feet beyond both ends of any segment of a trail where there is an extractive operation and at least 200 feet on either side of where the extractive equipment and trucks are using the trail surface.
5. If it is impossible to carry on an extractive operation under the conditions outlined above, the officer in charge of the operation and the regional trails and waterways coordinator may elect to establish a temporary alignment for the duration of the work.
6. If the extractive operation renders the trail unusable, the firm or governmental unit responsible for the operation will help develop a new permanent alignment.
7. Any ruts, holes or other damage to the trail caused by the extractive operation will be repaired by the operator as directed by the Department of Natural Resources officer in charge of operation.
8. The establishment of a temporary alignment for an extractive operation on the trail right-of-way will not excuse the operator from items 1, 2 or 7.

DNR may wish to consider the imposition of a performance bond prior to beginning extractive operations in order to assure compliance with the above regulations.

Surface Water. The railroad grade on which the Root River Trail will be constructed is situated, for the most part, on the floor of the Root River Valley. It is crossed by numerous small intermittent drainages, flowing springs, and drainage ditches. At the

time the railroad grade was constructed, its builders dealt with these by means of bridges and culverts as necessary. The majority of these structures still exist and are still performing their designed functions. Trail management should be directed at keeping these clear and in good condition.

There are some problem areas, however. While the railroad grade was originally designed and built so as to minimize water problems, deferred maintenance in its last active years and removal of ties and rails upon abandonment has led to several serious erosion problems resulting in large holes being created in the embankment. Further, some culverts have become choked with rocks and debris, causing water to pond or flow over unprotected areas. Debris has accumulated on the center piers on several river bridges, and one bridge has been partially washed out as a result. In several places ditches along the grade have been obliterated by erosion or filled with silt. It is an article of faith that affirmative water management will be necessary as long as the trail operates, although, once the deficiencies are corrected, this should amount to no more than proper preventive maintenance, which will be a standard part of trail operations. It will be important before development begins to assess the existing surface water management system of ditches, bridges and culverts. This should be done by a professional person who would document the location of all structures on the trail, note deficiencies, and make recommendations for corrections.

The above, as well as corrective measures (such as culvert clean-out or replacement) and any new work to be done (such as ditching or bridge building) should be coordinated with DNR's Division of Waters so as to ensure compliance with state and/or federal flood and shoreland management regulations.

Wildlife. A wide variety of game and non-game wildlife species exists in the vicinity of the Root River Trail. To the extent possible, the existence of the trail should enhance or at least not adversely affect wildlife in the area.

Use of native species for revegetation of disturbed areas will contribute to this goal. Further, the choice of species, native or non-native, to be used for revegetation work should be influenced by the species' ability to provide cover and food for wildlife consistent with their suitability for the primary task, whether it be privacy screening, stabilization of disturbed areas, etc.

To date, consultations with DNR Division of Wildlife personnel have uncovered no critical wildlife habitats which may be impacted unduly by trail construction activities. If, at some future date, such areas as perennial deer yards, turkey propagation areas or others are found to be at risk from trail-related activities, consultation with DNR wildlife professionals should be employed to identify a resolution. Special attention in this regard should be paid to spur and loop trail systems proposed in this plan for DNR forest management units. This would require involvement of the DNR Division of Forestry as well.

Man-made Resources. As part of the Root River Trail feasibility study, an archaeological records check was made of a strip of land two miles wide following the railroad grade (Appendix I). A number of known sites were identified in this records check. The report noted that detailed field studies had not been done and indications were that more sites, as yet unidentified, probably existed in the area; the document called for field reconnaissance in order to locate them. M.S. 138.40 Subdivision 3 requires that state agency construction plans be reviewed by the State Archaeologist's Office prior to development in cases which involve the known or suspected existence of

archaeological sites which may be impacted by the proposed construction. For present purposes this concern is limited to trail development off the railroad grade, since the grade itself is a disturbed site unlikely to contain significant artifacts (Streiff 1982; pers. comm.). The Statewide Archaeological Survey performed a statewide assessment of historic sites in 1979-80 designed to predict the location of unidentified sites. The assessment included a portion of southeastern Minnesota, and the Root River Trail was included *in toto* (Minnesota Historical Society 1981).

Fencing. Fencing serves the twin purposes of deterring trespass and vandalism on adjacent private land from the trail and to discourage inappropriate or illegal access to the trail itself. As noted in the LEGISLATION section, the DNR is required to construct and maintain necessary fences along the Root River Trail ROW. Where fencing specifications are not set by local ordinance, the minimum standards found in M.S. 344 are applicable, except that instead of sharing costs equally with the landowner, DNR will assume 100% of the cost of construction and maintenance. Some fencing has already been done although at present severe funding constraints will limit this activity for some time into the future. In order to most wisely and efficiently allocate what funds are available, DNR has named a 3-person fencing committee to assist in prioritizing the fencing requests as they come in. This committee is made up of adjacent landowners.

3. RECREATION MANAGEMENT

Enforcement.

The acceptance of the trail by local communities and adjoining landowners will depend considerably on favorable relations between adjoining landowners and trail users. To achieve this objective the state has established management policies and specific rules and regulations to govern the use of recreational trails (Minnesota Regulation NR 20).

The DNR implements these rules and regulations by the following approaches:

1. Public education.
2. The establishment of volunteer safety patrols.
3. The enforcement of NR 20 by DNR regional conservation officers.
4. Other supplementary enforcement.

Public Education. Special emphasis should be given to informing the public about rules and regulations on state trails. This is presently done by posting signs on trails to indicate designated use and by posting NR 20 at all designated trail accesses and waysides. This will be done where appropriate on the Root River Trail as well. In addition, a trail user's code should be developed which incorporates layman's language and a positive tone which would encourage voluntary compliance. Such a trail user code could then be posted at trail support facilities and also be printed on all trail maps and brochures.

Such a code could include but would not be limited to the following items:

1. Travel only within the trail right-of-way.

2. Use the trail only for its designated uses (list uses).
3. Consider adjacent landowners' rights to privacy; don't be unduly noisy, especially at night.
4. Carry out all garbage.
5. Light campfires only in designated areas.
6. Leave flowers and other plants for others to enjoy.
7. Protect and do not disturb wildlife.

Emphasis should be placed initially on voluntary compliance through public education and by reducing the tendency to violate through trail design and management. Peace officers and others who observe violations can so inform individuals and encourage them to proper behavior. Finally, citations can be issued by peace officers for blatant or repeated infractions.

The Trail Manager and Trail Coordinator should be alert for opportunities to make presentations about the trail and DNR's policies regarding it to civic groups as well as elementary and secondary classes.

An additional tool for enforcement of trails rules and regulations would be the "Landowner's Handbook" identified in the statewide DNR Trail Plan. This handbook will, when it is developed, be given to each adjoining landowner and will include phone numbers of the Trail Manager and Regional Trails & Waterways Coordinator to further aid the adjoining landowner so that violations can be dealt with in a more expeditious manner.

Volunteer Safety Patrols. The Regional Trails & Waterways Coordinator and the Trail Manager may wish to consider the establishment of volunteer safety patrols made up of lay citizens. These people could serve as sources of information and emergency

first aid for trail users, and could serve the purpose of enhancing the visibility of an official presence on the trail. Such patrols should, if utilized, be established according to the following guidelines:

1. They should be clearly identifiable as patrollers via a DNR-issue patrol pack (containing emergency necessities, perhaps), a badge, or standard article of clothing.
2. They should be required to complete the routine Red Cross courses on CPR and First Aid.
3. They should volunteer for specified minimum (say, 30) hours per year, and patrol as per a schedule set by the trail manager.
4. Their duties should involve user safety, emergency first aid, emergency repairs and maintenance to the trail itself, and information services. They should be trained to identify infractions and report them to proper authorities.
5. They should be at least 16 years of age.
6. They should be under the direct supervision and control of the Trail Manager.
7. If a trail user fee is ever established on the Root, patrols should be issued a pass free of charge for the season in which they work, upon completion of the specified minimum hours of patrolling.

Those individuals charged with the enforcement and safety duties on the trail should be impressed with the notion that their primary function is to be of service to trail users and to encourage voluntary compliance with applicable laws, rules, and policies.

DNR Regional Conservation Officers. DNR regional conservation officers, in cooperation with local law enforcement agencies, will be responsible for the enforcement of NR 20. The sheriff's office in each county along the trail will be asked to aid in the control of trail use. Funds to assist county sheriff departments may be available through the DNR.

Other Supplementary Enforcement. Minnesota Statutes, 1978, Section 84.029, as part of the Outdoor Recreation Act, provides that each DNR employee, "while engaged in

his employment in connection with such recreational areas, has and possesses the authority and power of a peace officer when so designated by the commissioner." In addition, Minnesota Statutes, 1978, Section 84.083, Subdivision 1, gives the commissioner of natural resources the authority to delegate his duties to any specific DNR employee.

Staff members in the Trail & Waterways Unit presently do not have the authority or training to enforce rules and regulations on state trails. In accordance with the aforementioned statutes, it is recommended that regional trails and waterways coordinators and state trail managers receive the training and authority of peace officers so they may enforce rules and regulations on state trails. Presently certain DNR forestry personnel have the training and authority to enforce the law at recreational facilities within state forests.

The DNR's Policy Directive 22 (interim Operational Order 21) gives DNR employees, while engaged in their employment, the authority to write infractions of the rules and regulations on Conservation Officer Form 145. Such a report constitutes a record of evidence admissible in court. Employees doing this must witness the violation and are advised to understand the constitutional rights of individuals.

Monitoring.

The monitoring of trail use on the trail is of utmost importance. Only through periodic monitoring will the DNR learn how the trail is used, who uses it, where overcrowding occurs, where potential conflicts exist and what the future uses of the trail may be. Only through the accumulation of use data will it be possible to make valid decisions on the management of the trail.

The DNR Bureau of Comprehensive Planning and Programming, Research and Policy Section, developed a monitoring program for state trails in 1980. This program is presently being administered on the Heartland, Sakatah, Douglas, and Luce Line state trails. The monitoring is done in the form of a survey and attempts to determine users' ages, type of use, direction the user is headed, residence of user, hours of use, one-way use or round-trip use, first-time user or repeat user and the time of entry. Other information that could be derived from those surveys via additional questions is:

1. User demographic information.
2. Number of users by weekday and weekend day by season.
3. Average group size.
4. Average length of trip.
5. User ability.
6. User satisfaction.
7. Conflicts between trail users.
8. Demand for uses (e.g., snowmobiling) that are not accommodated over the entire alignment.
9. Need for additional support facilities.

The monitoring program, although developed in the DNR's St. Paul office, will be implemented by personnel in the field. The trail manager (see Maintenance and Operation) could coordinate efforts along the Root River Trail.

Information and Promotion.

A comment commonly heard when the public is consulted regarding DNR's state trail program is that significant portions of the public are unaware of many trail opportunities that already exist. It will thus be important, as segments of the Root River Trail are completed and opened for use, that DNR make every reasonable effort

to make the public aware of the fact of the trail's existence. Official designation, feature articles and other coverage by the news media, and dissemination of printed materials to and presentations before user groups, schools, civic groups, and other organizations would assist in the promotion of the trail. Though the trail will promote itself as use levels increase, a continuing promotional program will be necessary.

Since the trail will not be developed fully for a number of years, initial promotional efforts should focus on the use scenarios developed earlier in this section and in the IMPLEMENTATION section. A strong early effort to acquaint potential users with the spectrum of weekend and longer recreational routes (of which the Root River Trail will some day be a part) available in the area will pay dividends when the trail is completed. This topic is considered in detail in the IMPLEMENTATION section.

4. INTERPRETATION

As noted in an earlier section, a faithful presentation of the essence of the local area is a critical component of the success of the Root River Trail. In this sense it is arguable that the trail itself and its ancillary facilities comprise a major interpretive facility for the southeastern corner of Minnesota. This will be true if the trail ultimately serves as a vehicle through which the trail user is allowed to fully experience and sense this fascinating part of the state.

This experience of the local ambience takes place on a number of levels. One such level is the subliminal/emotional response to such stimuli as closeness to a flowing stream, the sensations resulting from standing on a high scenic overlook, or eye-pleasing views of juxtaposed limestone bluffs, cornfields and hardwood forest. (This response level has been dealt with in detail in section 5 of this chapter, PORTRAYAL OF NATURAL AND CULTURAL RESOURCES.) Another such level of experience is the purely physical--the pleasurable reliance on one's own strength and stamina to travel from point to point at one's own pace. Here the "kinesthetic sense of the region" of Dustrude (1980) comes into play; the physical exertion of climbing on a spur trail from the bottom of the Root River Valley to a scenic overlook or a campground on a forestry unit brings forcefully home the point that this region is one of great topographic diversity. The trail user will carry the memory of it long after the trip is over because he/she actually experienced it.

Thirdly, the level of sensation and experience to which this section is devoted can be broadly described as the intellectual. For there is more to the region than merely its kinesthetic essence or its ability to present spectacular overlook views and otherwise

satisfy the subliminal human. The area is a rich cultural and historical tapestry of objects, events, and people which made it what it is today. A fully developed sense of the present-day southeastern Minnesota is impossible without a full understanding of what has gone before.

Interpretation has been defined as "an educational activity which aims to reveal meanings and relationships through the use of original objects by firsthand experience and by illustrative media rather than simply to communicate factual information" (Tilden 1967). Although its author is not entirely satisfied with it, it is a good definition. It recognizes implicitly that the entire sensory experience of the trail user is, in a sense, interpretation. Interpretation is not, in its best form, merely a few signs or displays pointing out historical landmarks or events. It is an attempt to convey the totality of influences which make a region and its people what they are. Interpretation is a high priority item on the Root River Trail. Without a thorough-going treatment, the aim of the trail to accurately give its users a sense of the region may miss the mark.

It is for this reason that the subject of historical and cultural interpretation will be dealt with separately in detail in an interpretive plan, to be appended to this master plan. That document will discuss the various geological, biological, and cultural forces which have shaped the present-day southeastern Minnesota. It will further show how these will be portrayed via various media on and along the trail to excite interest, to educate, and to imbue trail users with a sense of the region--the "sense of place" described by Lynch (1976) as so important to user pleasure and understanding.

5. PORTRAYAL OF NATURAL AND CULTURAL RESOURCES

A major function of the Root River Trail is to portray and interpret the southeastern Minnesota environment for trail users. Doing this properly will require more than simply establishing a trail alignment somewhere in the area; this alignment must be carefully chosen. Moreover, even a trail alignment with high potential will fail to perform this function effectively unless the natural and cultural resources of the trail are carefully synthesized to faithfully present the essence of the local area.

This can and should be done in ways which make the trail experience an interesting, educational, and satisfying one for the user. Scenic vistas, interpretive facilities, and a sense of isolation in some areas and incorporation into the human community in others, should be creatively employed in order to instill in the trail user a strong sense of place and integration into the landscape. If this is done effectively the trail user is allowed to experience southeastern Minnesota as it truly is; he/she comes away from the experience not with vague recollections but with a strong sense of the region and of having been for a time an integral component of it.

Southeastern Minnesota is a mosaic of diverse landscapes. In terms of recreational experience, management of cultural and natural resource values on the Root River Trail has the following major objective: to allow the user to experience the transition from prairie to river valley, from wooded isolation to local festival, from farm to small town, and back again, absorbing the sights, sounds, and smells which particularize the region as he/she follows the trail through it.

There is an already existing mix of open areas (long views of fields and farmsteads, hillsides and bluffs, and of the Root River and its tributaries) as well as closed areas (rock cuts, steep hillsides bordering the railroad grade, and dense wooded areas) along the Root River Trail. No one type of view really dominates. Instead, the trail presents an interesting mix of perspectives from which can be viewed scenery which is spectacular in its own right as well as presents a dramatic overall picture of the valley and its components. Management should be directed at refining and maintaining this view mix so that the perspective of southeastern Minnesota thus gained is maintained and enhanced. To the extent that the resulting experience gives an accurate portrayal of the southeastern Minnesota environment, the trail fulfills its objective of immersing the trail user in the ambience of the region. Dustrude (1980), in a paper dealing with the subject of sensory images on trails, notes that views presented should not be limited to those which are merely scenic in their own right, but should include those views which are ". . . uniquely characteristic of a given landscape region." The same is inherently true of other sensory images presented, such as sounds and smells.

A considerable number of sensory image types are available from the Root River Trail and its immediate surroundings (table 12). Moreover, the illustration of the transition from upland prairie to steep-walled, narrow gorge to broad, flat river valley (proceeding east from Fountain) or the reverse (proceeding west from Money Creek Woods) against the backdrop of the present-day cultural setting is the essence of the Root River Trail experience. The challenge before DNR is to creatively exploit the above to present to trail users a recreational experience which is visually stimulating and educational as well as satisfying in a recreational sense.

TABLE 12
Sensory Images to be Portrayed on the Root River Trail

CULTURAL	SMELLS	SOUNDS	TOPOGRAPHY	VEGETATION		WATER
				herbaceous	woody	
Small towns -- a. historic buildings b. church spires c. houses d. old ware-houses and depots	Farmyard Riverbank coolness Sweetclover (and other flowers) Soil (in damp places)	Farm equipment Livestock Town noises River flow Wind Trucks hauling (sand and gravel, crushed limestone) Wildlife -- a. ruffed grouse drumming b. turkeys gobbling c. songbirds singing d. insects buzzing e. pheasants crowing	Flat prairie near Fountain Rolling topography on descent from Fountain Long views of countryside -- a. on descent (oak savannah - crop - land) b. from scenic overlooks (big woods, prairie, river) Rock cut(s) Sheer limestone cliffs and outcrops	Cropland Pasture Undisturbed grass-land -- a. upland prairie b. riverbank	River bottom forest Upland "Big Woods" Hillside communities -- a. red cedar b. deciduous shrubby c. (goat prairie) Savannah on rolling descent	The river River backwater (slough) Dry washes Ditches Springs Lanesboro dam
Country roads Farmsteads -- factive and abandoned a. interesting farm homes b. old barns and other out-buildings c. livestock d. fences	Pine and cedar Woodsmoke		Broad valley floor (Rushford area) (panorama) Broad slopes (goat prairies) Isolated hills in Rushford area (resistant bed-rock)			
Railroad bridges and equipment The trail itself Abandoned towns			Dry wash drainages ("breaks of the Root River")			

Presentation Overview

The sensory image types listed in Table 12 are all available around, and should be presented on, the Root River Trail. While some individually are in some sense "unique" to southeastern Minnesota, others are not; this is less important than the fact that taken as one large group, or in certain subgroupings, they personify the southeastern portion of Minnesota, and give it its uniqueness in relation to other regions of the state. Proper presentation of them will give the viewer the highly desirable "strong sense of place."

But it is necessary to go beyond mere presentation. Without giving a distorted picture of the region, it is desirable to present and frame each image in an interesting and informative way (without overdoing it, so as to avoid sensory fatigue), and to present the images in proportion to their actual occurrence so as not to misrepresent the local ambience. For example, although close orientation to water is generally recognized as a desirable attribute of recreational facilities, siting the entire 35-mile trail on the riverbank would do two unfavorable things: it would tend to overwhelm the sensory appreciation of water orientation (i.e., tend to make the trail boring), and it would give a distorted picture of the actual southeastern Minnesota environment by overrepresenting the riverbank environment in relation to other important landscape components.

It is thus in the DNR's best interest to identify a balanced juxtaposition of sensory images which accurately portray the region and do so in an enlightening and stimulating way. Because it was well-chosen, the trail as it presently exists already considerably fulfills these objectives; it remains for DNR to build on, refine, and interpret those images which presently exist, enhancing some and playing down others so as to present a balanced picture and avoid sensory fatigue.

Thus, the proper presentation of natural and cultural resources on the Root River Trail reduces naturally to three major tasks:

1. Select the sensory images to be presented (from table 12).
2. Identify means of presenting them (scenic overlooks, view framing on the trail, realignments to pass through or near image areas, etc. . .).
3. Implement the chosen procedures.

Some examples follow.

Specifics of Sensory Image Presentation

Perhaps more than any other trail feature, orientation to water is widely regarded as a highly desirable trail feature. On the Root River Trail, the temptation to overuse this feature is countered by the trail alignment itself, which is out of sight of the river most of the time. A rough estimate is that a person on the trail would be in sight of the river for about five of the trail's 35 miles.

But as alluded to earlier, mere exposure to the sight of the river will not exploit the full potential which the Root River Trail has for visually stimulating water orientation. Opportunities for presentation of this sensory image can be enhanced and refined to present the user with a truly rewarding experience.

Dustrude (1980) recommends that key images on trails be "sandwiched" within an experiential sequence of anticipation-climax-relief. This exposes the trail user to key images in a smooth, instinctively transitional way which, when juxtaposed with similar treatment of other sensory image types, imparts to the user a sense of the region in a sensorily satisfying manner while avoiding fatigue and boredom.

Proceeding east on the trail from Fountain, the first major exposure to water orientation takes place at a bend of the Root River near the abandoned town of Clear Grit. But this is not a close contact; the trail is high above the river on a steep, rippapped embankment which is heavily wooded. In summer, the heavy leaf cover makes the river a fleeting, elusive, almost tantalizing image, and the terrain makes the river impractical to approach. But the trail user will tend to want to approach the water, and will most likely be somewhat frustrated at not being able to do so, a necessary ingredient of the anticipation phase. The user will probably look forward to the prospect of being able to see the river clearly and approach it. DNR should consider selective tree clearing on this site and possibly some native shrub plantings which will frame a view of the river which will somewhat more forcefully than is now the case drive home the point of its presence without losing the ephemeral, distant quality of the image.

The anticipation phase builds at the next encounter with the river which is in passing over a large steel truss bridge about one half mile to the north. Here the river is plainly visible from the bridge which is high above the water, and the banks are steep. DNR could consider building a primitive approach to the riverbank which would provide some relief of anticipation if necessary, but this is probably not advised; the building of anticipation toward the climax is important to the Root River Trail experience.

The next significant exposure to the river is about a mile farther east, at which point the trail passes within a range of 10-50 feet from the river, separated from it by mature tree and shrub growth. The exposure is about three quarters of a mile long so that experiencing the river in conjunction with travel is possible, unlike the situation at the bridge crossing, but terrain and vegetation make actual approach to the river

impractical once again. The river is thus becoming more and more tantalizing and the user begins to anticipate that at some point on the trail ahead there will be an opportunity to travel immediately adjacent to the river. Perhaps on this site DNR should not in any way encourage approach to the river itself, so as to heighten the sense of anticipation in the user.

The climax (fulfillment of anticipation) comes just west of Lanesboro, where the trail is situated quite close to the river above the Lanesboro Dam, allowing travel in intimate proximity to it until shortly before entry into Lanesboro. Here direct approach is possible; fishing, wading and direct observation are convenient and relatively safe. It is also highly pleasing esthetically; the riverbank is heavily wooded and a pleasantly bucolic atmosphere pervades the scene.

The relief phase begins at the point where the trail passes through a highly scenic rock cut on the west city limit of Lanesboro which frames the picturesque city in its setting on a gentle hillside opposite a steep limestone bluff. Also at this point a sense of gradual departure from the river is induced by the wall of tree and shrub growth between the trail and river as well as by the gradual cessation of water flow caused by entry of the river into the reservoir behind Lanesboro dam. Selective vegetative clearing at this point might be appropriate to reinforce the image of the river's continuing presence without inducing anti-climax.

A sense of denouement pervades the water orientation experience as the trail enters the city limits with the river visibly and audibly falling over the dam and its course skirting the town, but distant from the trail user.

By this time the trail user has been made aware that the river is present, and this awareness has been induced in a pleasurable and satisfying way. From Lanesboro east, the occasional visual contacts with the river should be managed in such a way as to reinforce this heightened awareness without overdoing it; occasional approaches to the water are possible and desirable, and these, mixed with selective vegetation clearing which provides visual but not physical contact at appropriate sites, will maintain this awareness at an appropriate, non-fatiguing level.

Topography is another physical feature which can be used on a trail to good advantage in presenting sensory images to trail users. The Root River Trail itself is somewhat limited in this regard as it is a railroad grade which is relatively flat except for the stretch between Fountain and Isinours Junction. This latter trail segment effectively portrays a part of the southeastern Minnesota ambience (the descending transition from prairie to limestone-walled river valley), but the flatness of the trail as a whole prevents it from by itself conveying the total kinesthetic nature of the region to the user. The steep, rugged nature of those parts of the region characterized by the Root River Valley is imparted to the trail user only in a one-dimensional manner; the trail user's experience is generally limited to being one of walking (or riding or skiing) at the foot of the tall bluffs. If only the Root River Trail itself is used the trail user cannot get a fully developed topographic sense of the region, which includes the steep, wooded slopes, the high rock outcrops with their long vistas, the narrow, densely vegetated tributary creeks in the uplands -- he/she would get only the perspective from next to the river at the bottom of the cliff.

However, means exist to impart a kinesthetic sense of the region by providing spur trails and other facilities in the woods and uplands of the DNR Forestry units which flank the trail, as proposed in this plan. Facilities provided on these units should be

sited in such a way as to take advantage of and ascend the terrain. Campsites should be so placed that scenic vistas become an integral part of the camping experience. Trail loops should reflect the topography and not unduly seek out the flat, easy experience. Further, the trail loops should be so aligned as to portray as much of the diversity (in topography, vegetation, etc. . . .) as possible, and should orient the user to the top of the uplands with scenic overlooks. This, coupled with vegetation clearing for long views from the main trail will present an accurate picture of the regional landscape and the niche of the Root River Valley within it.

The topographic diversity in the area of the trail gives rise to a corresponding diversity in the area's vegetational communities. The extreme west end of the trail edges the Oak Barrens biotic zone, characterized in pre-settlement times by groves of oak (and occasional single trees) surrounded by grassland (figure 40). East of Lanesboro the trail environment is most closely associated with River Bottom Forest, but comes into contact with remnants of the Big Woods, True Prairie, and Brush Prairie zones. These characterize southeastern Minnesota in general and should be portrayed on the Root River Trail as such.

This can be done via several strategems. On the west end, the relatively steep trail gradient offers the opportunity for long views of the surrounding countryside, especially to the south and southwest. These views are available directly from the trail and will serve to begin in the traveler the process of orientation to the landscape surrounding the trail. This is a process which is critical to imparting a sense of the region through which the trail passes. And imparting a sense of the region to the trail user is critical to the success of the trail. As Lynch (1976) notes:

"... the identification of places ... is ... a source of emotional security, pleasure, and understanding. Orientation in space (and time) is the framework of understanding. We have powerful abilities for recognizing places and for integrating them into mental images, but the sensory form

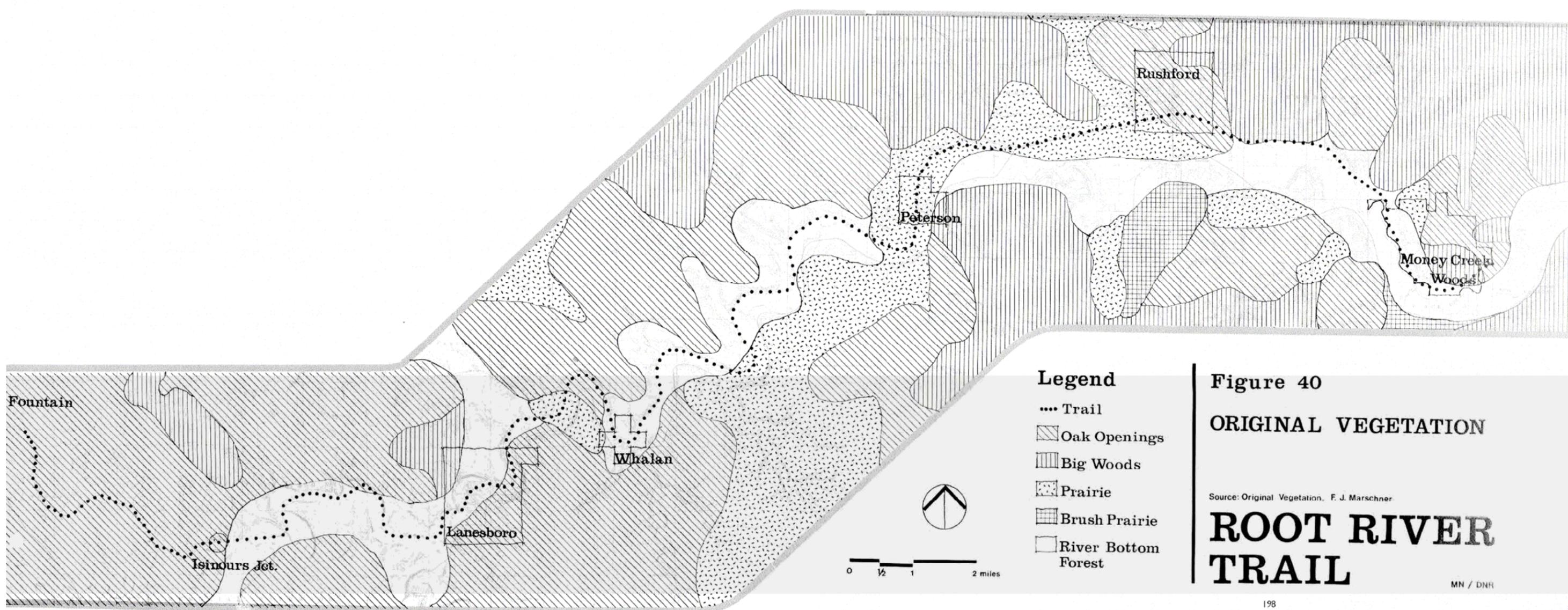


Figure 40
ORIGINAL VEGETATION

Source: Original Vegetation, F. J. Marschner

ROOT RIVER TRAIL

MN / DNR

of those places can make that effort at understanding more or less difficult. So we take delight in physically distinctive, recognizable locales and attach our feelings and meanings to them. They make us feel at home, grounded. Place character is often recalled with affection; its lack is a frequent subject of popular complaint. People are pleased to "know" a great city, or to understand its history. Indeed, a strong sense of place supports our sense of personal identity" (emphasis added).

Vegetation management should be directed at selective clearing and planting which will frame views of the countryside, with special emphasis on the first two trail miles east of Fountain. On this stretch the descent is relatively rapid and excellent views of the landscape exist to the southwest. These views, in conjunction with the relatively rapid descent in this area, should be used to point up the fact of transition from the open upland to the north and west to the valley floor to the east.

The above serves to gradually initiate a sense of the region in the course of travel on the trail. The proposed loop system at Isinours Demonstration Woodland gives the opportunity to interrupt the travel for a time and actually enter a wooded community and see it up close instead of viewing it from afar. Then, later, the proposed scenic overlook near Clear Grit (McCoy's farm), presenting as it does views of interspersed cropland, riverbottom forest, and oak groves and grassland, provides the opportunity for recapitulation and integration of what has been observed in the first several trail miles. Interpretive treatments on this overlook should deal not only with the vanished Clear Grit townsite but also with the juxtaposition and integration of the above community types which are visible from it to fully acquaint the traveler with the vegetative composition of the area. (Here, perhaps, is a reasonably good example of the ability of trails to illuminate the close connections between an area's resources and its past history against the backdrop of existing cultural conditions. An historical continuum consisting of the cornfields (formerly wheatfields), the mills at Clear Grit, and the latter's disappearance in favor of the present-day farm has good interpretive potential.)

The trail actually enters the riverbottom forest proper just east of Lanesboro. Previous to this point the woody riverbank vegetation is more in the nature of Oak Barrens, since the riverbank ecosystem is not yet fully developed and a dry, upland ecology still predominates. Note should be made of this fact, and the differences explained, east of Lanesboro where the Riverbottom Forest zone is better established.

The overall physiognomy of the land at this point, as seen from the air, is still essentially Oak Barrens in nature, similar to the view from the trail near Fountain. But from trail level east of Lanesboro the visual effect is very different. Here the trail is on the valley floor next to the river surrounded by steep limestone cliffs, rather than on a high (though descending) vantage point. This will be the norm for the next 20-25 trail miles, as the river cuts through a series of limestone beds. The valley is narrow, almost gorge-like in places, and this is mainly due to the relative resistance of limestone to erosion. The primary natural vegetation closely adjacent to the trail is riverbottom forest.

But again, views from the trail can and should be provided by judicious selective clearing and other forms of vegetation management. Areas of Big Woods, Cropland, Prairie, and Brush Prairie can be seen from the trail, especially if the immediately adjacent vegetation is managed to make them visible. Interpretive media placed at appropriate points along the trail should be used to illustrate the various vegetative communities encountered. This again imparts an understanding of the nature of the region and provides the important "sense of place."

Thus the vegetative picture from Fountain to the east along the trail is one of diversity in forest communities interspersed with croplands and small patches of grassland. Views from the trail contribute to the notion that the region is a

kaleidoscope of vegetative textures, colors and densities, interesting, and pleasing to the eye.

An overall view of the complexity and integration of these communities is possible from the proposed scenic overlook on the DNR Forestry land north of Peterson. Most of these above-named communities are visible from this overlook, and a comprehensive picture of the vegetative complexity of the area is thus easily accessible. The opportunity exists here to "put together" an understanding of the region's vegetative makeup, based upon the glimpses of its components which were presented earlier on the trail. In addition, the scenic overlook itself contributes significantly to the experience since it sits high atop a sheer limestone bluff in a completely undeveloped setting. The view from this overlook is dramatic in its own right; the opportunity to observe and understand the vegetative setting of the Root River Valley within that context is thus enhanced and strengthened.

In general, it is the aim of this plan to go beyond the mere portrayal of interesting sights and sounds. Further, as Lynch (1976) states:

"The public purpose must go beyond [merely] removing the barriers to the senses and suppressing disagreeable sensations . . . (t)o bring the world within sensory reach, to increase the depth and fineness of our sensations, and to confer that immediate pleasure and well-being that comes from vivid perception are more positive aims - not only to clear the air but to fill it with intricate things to watch, marvelous sounds to hear . . . Most people . . . have learned to turn off their conscious attention . . . Public management could put the senses back to work again, so that people might take delight in the luminous, odorous, sonorous world all about them."

To achieve this end while imparting a true "sense of place" and "sense of the region"--this is a major function of the Root River Trail.

...close cooperation between D.N.P. regional personnel and the trails planning and operations sections... is essential if the great potential of this trail is to be reached.



implementation
implementation

6. MAINTENANCE AND OPERATION

Good maintenance will be critical to the success of the Root River Trail. A clean and otherwise well-maintained trail will attract users and sell itself, and will also discourage littering and vandalism.

Maintenance includes, but is not limited to, trail surface repair, fencing, upkeep of support facilities, resurfacing of parking areas, inspection and repair of wells, windfall removal, litter pickup, and winter grooming.

Operation of the trail includes management of natural and cultural resources along the trail, monitoring, responding to user and adjacent landowner concerns, information dissemination, and law enforcement. Taken together, maintenance and operation involve activities which directly affect the safety, well-being, and quality of experience of trail users. It will therefore be important to assure that adequate funding for manpower and equipment be provided so that necessary maintenance and operations activities can be carried out in a timely manner.

A critical feature of the maintenance and operations picture is the assignment of a full-time trail manager, whose job it will be to directly oversee these tasks. It is required by statute (Laws of Minnesota 1980: Chapter 614, Sec. 164, subd. 3e) that a full-time trail manager be assigned to the Root River Trail prior to its opening. A Root River Trail Manager position in the DNR has not yet been approved by the Legislature, and this will be necessary to do before the trail can be opened for use. To date a specialist one Trail Specialist has been assigned to the trail to deal with interim landowner concerns, fencing requests, and emergency maintenance on the trail itself.

IMPLEMENTATION

The implementation of this plan has been programmed as a series of priorities. The priorities were set based upon DNR's perceptions of the public's wishes regarding the phasing of development; those segments in which the keenest public interest has been displayed will be developed first. This has necessarily been tempered by current constraints on DNR manpower, equipment, and funding levels. It is expected that development of the Root River Trail will take somewhat longer in this era of belt-tightening than would otherwise be the case.

Partly for this reason, development projects were not programmed for any particular year or biennium, but were prioritized instead. This way, projects can be taken on in a coherent order as money becomes available. The goal of the priority ranking has been to set it up in such a way that completion of any project or group of projects results in the provision of a consumable trail experience. For this reason, it is important, for maximum convenience to the public, that projects be completed as much as possible in the order specified.

The actual construction of the trail, and later its operation and maintenance, will be the job of the Root River Trail Manager and Region V Trails & Waterways Coordinator. They will consult as necessary with Central Office Trails Operations and Planning personnel. It goes without saying that close cooperation between DNR regional personnel and the Trails Planning and Operations Sections in St. Paul is essential if the great potential of this trail is to be reached.

Introduction. The planning meetings and other contacts made in the course of the planning process have provided a fairly clear picture of the use patterns to be expected while development is going on, on the one hand, and after development is completed, on the other. This section provides a phased program for construction which coincides with expressed preferences of the public for prioritization of development on the various trail segments. The phased program also speaks to the need to keep expenditures as low as possible in the early going in order not to unduly exacerbate the current budget crunch. The aim is to minimize early expenditures while simultaneously getting as many user groups as possible onto the trail as soon as possible, i.e., the most "bang" for the initial buck. Major expenditures, such as the bicycle treadway, are prioritized lower. As the segments are developed they will be opened for use and publicized according to a phasing schedule developed by the Trails & Waterways Unit (table 13). This will allow public use of the trail at the earliest possible time with appropriate publicity while reserving major marketing efforts until the trail as a whole is completely developed.

Maintenance and Operations. The cost per mile of maintaining the Root River Trail is expected to be somewhat higher than is the case on other state trails, primarily because of the higher potential for erosion and the necessity of periodically dealing with debris piling up on bridge piers. Table 14 gives estimated costs.

Table 14. Estimated Costs of Maintenance¹ on the Root River Trail

Paved trail (31 mi) @ \$1000/year	\$31,000
Grass surface (6.4 mi) @ \$400/year	<u>2,560</u>
	\$33,560

¹ Includes all routine maintenance such as facility upkeep, treadway repair, grooming, litter pickup, etc.

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		DESCRIPTION OF PHASES			
PHASE	APPROPRIATE CLIENTELE	MINIMUM REQUIREMENTS OF CLIENTELE	3. ORIENTATION*	4. INTERPRETATION*	
A ACQUISITION	(each phase retains clientele from all previous phases) Adjoining landowners; incidental local citizens	1. CONSTRUCTION A1. Land acquisition; minimal prudent treadway maintenance; emergency fencing; removal of hazards.	2. RESOURCE MANAGEMENT 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 landowner's newsletter to maximize awareness, appreciation & stewardship of trail.
B PARTIALLY OPEN (Less Than 2 Day)	Local citizens; incidental tourists	B1. Treadway constructed of approx. 1/2 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.
C OPEN (2 Day)	Adventurous 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.
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.
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.
					APPROPRIATE WAY TO REACH CLIENTELE MARKETING: (once their minimum requirements have been met) <ul style="list-style-type: none"> News release describing what's being done, plans & schedule. "More info call . . ." Show on state map "under development" Start landowners' newsletter
					<ul style="list-style-type: none"> 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"
					<ul style="list-style-type: none"> Mn/DOT signs up Incidental coverage in metro newspapers
					<ul style="list-style-type: none"> GRAND OPENING Remove "under development" from order form, trail map & state map Feature articles in all market areas (& advertising) market to tour operators, etc.
					<ul style="list-style-type: none"> continue ongoing marketing program

MASTER PLAN COMPLETED

*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).

An important feature of long-term maintenance may be related to the migration of the Root River toward the trail. DNR should move immediately to assess the magnitude of this problem, if any, and estimate the extent and future costs of any needed corrective measures.

Operations involves such items as interpretation, orientation, and publicity. Interpretation media cost estimates have been presented in Table 16, DEVELOPMENT PRIORITIES, in the following section.

Table 15 gives other estimated operational costs.

Table 15. Estimated Costs of Operations on the Root River Trail

Development of promotional slide shows	\$ 3,000 each
Printing of brochures, maps, survey forms, handouts, etc.	\$10,000 every 5 years

Personnel. As noted earlier, a full-time trail manager must be assigned to the trail before opening it to the public. If this person is hired as a Natural Resource Specialist I, the annual cost to maintain the position is \$22,000. The annual cost for a Natural Resource Specialist II is \$24,000.

Phases of State Trail Development. Table 13 illustrates the conceptual construction phases through which state trails proceed in the course of their development. A major purpose of this conceptual framework is to provide a schematic for steadily intensifying the marketing efforts for a trail as each phase of construction is completed. It is also important that the public understand that trails often take years to go from the initial conception of a trail to final completion; the expectation often is that a year or two after acquisition will see the completion and grand opening of the trail. This

phasing framework, by providing for the construction of consumable segments and levels of marketing efforts appropriate to the level of development, allows convenient and enjoyable interim use, and keeps the public's expectations to a level which can be met.

This implementation plan for the Root River Trail has been developed with the above in mind, with due regard for the fact that expenditures for development projects must be kept to a reasonable level initially. Table 16^(back cover) summarizes the timing of development phase completion for each use. Completion of each development phase triggers the marketing procedures shown in Table 13.

Development Priorities. A small number of hazardous situations presently exist on the railroad grade. These mainly involve eroded areas which, due to the present undeveloped and weed-grown nature of the grade, could be dangerous to the unwary trail user. There is, in addition, a washed-out bridge on segment 3.

The eroded areas will be permanently repaired in the course of routine blading and shaping operations. In the interim these should be barricaded by means of snow fencing or something similar and properly signed to warn people away. Alternatively, temporary repairs could be made, although snow fencing and signing would be sufficient for present purposes. The washed-out bridge is not programmed to be repaired for some time (it is a fourth priority task), and should be fenced off and signed in the interim. Once these things are done and necessary acquisitions are accomplished, development phase I can be said to be completed.

The phasing schedule (table 13) recognizes the fact that the trail's clientele is largely made up of local people during the initial development phases. In the planning

meetings, the highest level of local and regional demand was for access to segments 1 and 2, with somewhat lesser demand for early access to segment 5. Accordingly, segments 1 and 2 are programmed to be developed first, beginning with bridge decking and railing on segment 2, followed by the same task on segments 1 and 5. When bridges on segment 2 have been decked and railed it will be necessary to erect temporary signage since use on the segment will probably pick up somewhat. The trail will then be in development phase 2 for hiking and skiing. Decking and railing of bridges on segment 5 (and erection of temporary signage) will put the trail into phase 2 for horseback riding as well.

Landowner privacy enhancements and the Lanesboro Trail Center are priority one items. The former are primarily vegetative screens and will need some years to grow and mature in order to be functional when significant use exists on the trail. The Trail Center must be started early so that deterioration of the building can be halted and so that it can be ready for use by the public when use of segments 1 and 2 becomes significant.

The third development priority mainly involves blading and shaping of segments 1 and 2, as well as fencing and fence repair where necessary.

Blading and shaping of segments 4 and 5 are priority 4, as is the new bridge on segment 3 and trail development in Peterson, Whalan, and in Money Creek Woods. Establishment of a grass treadway and horse trailer parking lot on segment 5 will essentially complete development on the latter.

Construction of the bicycle treadway is priority 5 on segment 1, and priority 6 on segments 2, 3 and 4. The main reason for this is to keep initial costs down. This leaves interpretive signing as the last major task prior to completion of development.

No exact timetable has been placed on this implementation plan, only priorities. This is because an exact timetable is difficult to adhere to in the best of times, and current economic conditions make such an attempt of dubious value at best. The priorities are important however; it will be important to do things more or less in the order specified in order to provide for desired interim use of the trail and to allow final use patterns to develop in an orderly fashion.

Interim Use Patterns. Use of the trail during the course of development will undoubtedly take place, although it will not be on a large scale and will involve few, if any, people from outside the local area. DNR's wisest course is to plan for this interim use so as to provide those services initially desired by the public and so as to encourage the orderly progression and development of those use patterns which will exist after the trail is completely developed. Another consideration is that in the absence of action by DNR, illegal or unplanned use could become established early and be difficult to control later. Development priorities outlined in the previous section and exhibited in Table 16 were established with those considerations in mind.

Decking and railing of the bridges on segment 2 will allow hiking and skiing on this segment, since the grade itself is now passable. Appropriate signage should be erected to make note of this and to discourage illegal uses. This segment could also be opened to horseback riding; if this is done, riders will have to use the main treadway in the interim until the secondary treadway is completed. Appropriate signing will be especially necessary in this case. This segment should not be opened to snowmobiling until the secondary treadway is constructed, unless an effective means of resolving skier-snowmobiler conflicts can be devised.

The proposed recreational development in Gribben Valley Woods has a relatively low development priority; however, this forestry unit has recreational utility in its present state. There are many abandoned roads and field accesses which can be used by trail users in getting around on the unit, and camping is permitted although no developed sites are yet available. The Gribben Valley Woods Unit thus can serve as a destination for day-use and overnight trail users who jump off from Lanesboro. Access to the unit from Whalan, requiring the traveler to use the highway bridge on the east side of town and travel in the Highway 16 ROW for one-half mile, is something less than convenient, but if Gribben Valley develops significant use as a destination for Root River Trail users, it is proposed that consideration be given to a new bridge to be constructed on the south side of town which would directly and conveniently connect the trail with the proposed trail network on the Unit. Primary factors to consider include the level of expected use, user satisfaction with the interim access alignment, and the expected costs associated with development and maintenance.

Interim use will also occur on segments 1 and 5 when their bridges are decked and railed. It will again be important to properly sign and control use on these segments as they are thus made more accessible.

Blading and shaping of segments 1 and 2 (priority 3) will increase use levels on them. As use levels increase, marketing strategy should highlight the Gribben Valley Unit and Isinours Woods as destinations and stopping points, and should identify services and points of interest associated with the area. In this way a planned and controllable pattern of usage will evolve which will naturally mature into the permanent scenarios envisioned for this trail.

Other segments should be handled similarly as they are developed. A gradual intensification of marketing efforts should accompany development. Appropriate levels of enforcement should be a part of the picture from the beginning. In this way proper use patterns will develop naturally and improper and illegal use problems will be minimized.

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