ECONOMIC DEVELOPMENT STRATEGY

for rural koochiching county

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ECONOMIC DEVELOPMENT STRATEGY
FOR RURAL
KOOCHICHING COUNTY

October, 1980

Prepared by

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PREFACE

This study was prepared for the purpose of developing an economic development strategy for specific labor market areas throughout the outlying areas of Koochiching County. The overall objective is to provide job opportunities for the citizens of the rural portions of the county.

The study was authorized by the Koochiching County Private Industry Council and funded with a grant from Title VII of the Employment and Training Act through the Department of Labor and the Region III CETA Consortium. Private industry councils, primarily representing business and industry, have separate funds to design employment and training programs to increase CETA's involvement with industry.

The membership of the Private Industry Council for Koochiching County numbers ten area residents, including:

Mr. Otto Jourdan
County Commissioner
Northome

Dr. Carl Andersen, President
Rainy River Community College
International Falls

Mr. Robert Frederickson, Manager
Job Service Office (State)
International Falls

Mrs. Bruce Polkinghorne
Hardware Business
Littlefork

Mrs. Frances Bird
Public Interest
International Falls

Mr. Robert Myers
South International Falls

Mr. Elmer Walls
Labor
International Falls

Mrs. Judy Doren
North Central Alliance
Littlefork

Mr. Oscar Bergstrom
Logging Business
International Falls

Mr. Dennis Brown
AEOA
Grand Rapids

I. SUMMARY AND CONCLUSIONS

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Summary

The purpose of this report is to present a strategy for economic development efforts of Koochiching County outside of the Cities of International Falls and South International Falls. The Koochiching County Private Industrial Council (PIC) contracted with the Arrowhead Regional Development Commission (ARDC) to prepare such a strategy.

In order to determine an economic development strategy for the rural Koochiching County area, ARDC staff proceeded to implement a work program that included: a definition of development or trade areas within the rural portion of the county and the identification of development groups responsible for implementation of economic development in those areas; a commercial analysis was undertaken to determine the nature of expansion potential of existing business and the development of new business in each of the trade areas; an industrial analysis identified the types of industry that local resources could support; and an analysis of the key resources of the County was made concerning the labor force, natural resources, and suitable industrial sites.

Based on the above analysis, needs and objectives were identified that could be related to potential commercial and industrial ventures. A number of financial programs were suggested as a means to assist in implementing the projects and ventures. Based upon the type of projects and ventures warranted from the commercial and industrial analysis and from the local development representatives, suggestions, objectives and priorities were developed to guide future economic development activities.

Trade areas were identified in four separate areas of Koochiching County and included:

Littlefork area (North Central)

Big Falls (Central)

Northome-Mizpah (Southwest)

Border-Birchdale-Clementson area (Northwest)

Local develoment groups responsible for implementation of economic development activities in these areas included:

Littlefork Industrial Development Corporation

Koochiching-Itasca Development Corporation (Big Falls area)

The Northome Commercial Club

Border-Birchdale-Clementson Development Association

Conclusions

The commercial analysis revealed that there were some trade areas that were not capturing the maximum share of potential sales resulting in personal patterns of shopping away from immediate commercial centers. The conclusions for each trade area are that the merchants should conduct surveys to determine consumer preferences for specified retail items and pursue promotion and physical development programs for increased retail improvements. Based on preliminary analysis of unadjusted estimates (percent share of potential total sales and average sales per square foot of retail space by retail category), the following retail categories by trade area warranted further research for potential commercial development:

Littlefork -

Apparel and Accessories

Furniture and Home Appliances

Miscellaneous Retail

Hardware, Building Materials

Eating and Drinking places

Big Falls -

Apparel and Accessories

Miscellaneous Retail

Eating & Drinking

Northome-Mizpah -

General Merchandise

Apparel & Accessories

Furniture & Home Appliances

Miscellaneous Retail

Hardware, Building Materials

Eating and Drinking Places

Border-Birchdale-Clementson -

Very limited potential exists in this trade area. It is suggested that perhaps a combination of retail items be consolidated in one or two establishments at most and located in one or two communities.

The industrial analysis indicated the following types of industry warranting continued support and development:

Paper and Allied products manufacturing

Furniture, Lumber and Wood products manufacturing

Other Personal Services

Railroads

Education

Since the forest industry is the number one industry in the county, the two strongest economic sectors, Paper & Allied Products and Furniture-Lumber-Wood Products manufacturing, demand continued efforts of support and development. The Big Falls area emerged as a focal point for development potential in the direction of a wood processing center. Its central location in the county and its function as a transportation crossroad tend to warrant efforts at determining a feasiblility toward establishing a chipping operation and distribution point for the major mills in International Falls, Grand Rapids, and other major mills within a reasonable distance.

Other development in the forest industry must proceed with caution at this time due to uncertainty with the current data on recommended harvest by species. This should direct efforts at further research and forest management of the existing resources.

National Market trends that appear favorable to sustaining the wood products industry for Koochiching County:

- A strong demand for housing is anticipated due to a bounce back from recent low levels of demand and in general to a strong fundamental demand for housing. (Softwood lumber demand)
- Nonresidential construction should be watched since it is not as volatile as the residential construction. Key areas of end-use include industrial consumption and repairs-and-alterations. (Alterations and repairs comprised 43% of all building permits issued in the Arrowhead Region in 1979 and 39% in 1978).
- General industrial applications for hardwood lumber demand are forecast nationwide. Particularly, demand for low-grade hardwoods in pallet, crate, dunnage, and packaging production is good for the latter 1980's.
- Particleboard, Waferboard, and Oriented Strandboard demand is growing in the repairs-and -alterations activities beginning in the early 1980's. Industrial use will grow in packaging and crating.
- Paper and Paperboard demand is bright for Minnesota due to growth in the printing and writing papers demand. The heavy import activity in

coated papers (700% recently) presents an excellent opportunity to displace these imports with local production.

Minnesota's position is favorable in sharing in the national markets. The key factors for this optimism are:

- -Available forest resource,
- -A developed infrastructure,
- -A trained labor pool,
- -Production costs competitive with those in other parts of North America.

The tourism industry is another direction for economic development efforts. The economic impact of visitors during the four-month tourist season could result in as many purchases of goods and services as the permanent residents generate throughout the year. The sector of the economy that could benefit from this potential is the Other Personal Services category. This includes hotels, motels, garment services, beauty & barber services, dressmaking, shoe repair, etc.

The assessment of another natural resource, peat, provides another direction for economic development. The recommended course of action at this point is to form a citizen's task force to keep appraised of progress. An education program should be developed to learn of possible impacts on the social and economic factors affecting the citizens of the area. This could be a major economic development program alone.

Implementation

The economic strategy described here is for the use of those persons who will be carrying out the economic development programs within the trade areas of the county. Implementation will not be the sole burden of the local development groups. The strategy has identified sources of assistance among state and

and federal agencies as well as advice and technical assistance from the Arrowhead Regional Development Commission staff.

The basic decisions on economic development will be a combined effort of the local development groups and the Koochiching County Private Industry Council working with private business and local units of government. Proposals for economic development projects can now be prepared with the benefit of a coordinated set of facts and objectives.

ARDC Contacts

The local groups can look for assistance from the Arrowhead Regional Development Commission when a need for implementing portions of this strategy arises. The assistance is in the form of technical assistance, primarily in the planning phases of a development project. ARDC cannot provide grants or loans for economic development purposes. ARDC staff will be able to guide you toward the sources most likely to fund your project. Due to increasing workloads on staff, the actual application writing must be left to the local applicant. ARDC staff will be available on an advisory basis.

Contacts at ARDC for various types of assistance are provided in Appendix F for convenience in obtaining the right type of assistance. In addition to the staff, the official membership of the Arrowhead Regional Development Commission may also be of assistance.

II. INTRODUCTION

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A. Purpose of Strategy.

The purpose of this strategy is to provide the citizens of rural Koochiching County with a guide to promote economic development in their area. Too often, rural areas which are sparsely populated and geographically remote from the major metropolitan centers of the nation are left out of the mainstream of economic development activities. In most cases, full-time efforts are not organized and staffed to exert the necessary push and acquire the technical expertise to pursue a continuing program of economic development. Generally, the people who do have concerns about the growth and vitality of the local economy and express these concerns, must do so on a part-time basis. Without a defined procedure on how to go about this task, the local groups are left with a time consuming exercise that may result in a fragmented approach toward realizing their goals.

This strategy attempts to provide those people engaged in the economic development process with a set of procedures that will make the implementation of local economic development goals a more orderly and carefully thought out approach. This is consistent with the trend of public agencies, especially those that have financial assistance, that are requiring each applicant to develop a convincing case to justify release of public funds. Economic development strategies will comply with this intent because it allows the local people to take a critical look at their own community, define the strengths and identify weaknesses. Study of resources and needs will lead to the proper objectives and priorities leading to the implementation of projects that will be most effective.

The end product of this strategy will be a document that contains information everyone involved in the development process can use to make their own decisions. Local promotion efforts will have a single document that summarizes the basic information about their area that can be provided to potential prospects and funding agencies.

B. Description of the Strategy.

The strategy is designed to provide a set of facts, basic economic analysis, and a method to pursue the economic development process. The first portion deals with the definitions and data gathering elements of the process. Market or trade areas are delineated which conform to the definitions of local citizens and business people. After discussions with local development groups throughout the rural areas of the county, four trade areas were identified.

1. Littlefork.
2. Big Falls.
3. Northome-Mizpah
4. Border-Birchdale-Clementson.

Within each of these areas, a local development group was identified that would be responsible for carrying out the economic development process in their area.

1. Littlefork Industrial Development Corporation.
2. Koochiching-Itasca Community Development Corporation.
3. Northome Commercial Club.
4. Border-Birchdale-Clementson Development Association.

A commercial analysis was developed that determined the existing and potential expenditures on retail items, total population within the individual trade areas, and estimated the amount of expansion that could be supported by each trade area by type of business.

An industrial analysis was made which included an analysis of the Koochiching County economy compared to the State of Minnesota economic structure. Employment distribution, locational quotients and shift-share techniques were applied to the data to determine the markets and the type of industry that the trade area's resources could support.

The labor force and natural resources of the areas within the county were examined both quantifiably and for the quality. Industrial land was sought out and identified according to the capacity for future industrial location.

Once the data gathering and basic economic data analysis was completed, the second portion of the strategy was developed. The first task was to identify the shortages and opportunities highlighted by the analysis of the data gathered. Assessments were then made by the local development corporations as to economic needs as they related to the local trade areas of the county.

At this point it was possible to list objectives in terms of specific projects and potential commercial or industrial ventures that would meet the needs as expressed by the local development corporation members.

A search was made of all applicable financing sources including federal, state and local governmental levels and the private sector. An understanding of the type of financing available, the sources and access to financing sources, and the best method to obtain the financing followed.

The next phase of the strategy describes the process for determining a priority for all the objectives identified. This enabled a thorough sifting of the facts by both the local development groups and the County Private Industry Council.

The last phase brings everything together. The objectives are listed in order of the priorities given by the participants; responsibilities for implementing economic development projects were assigned to the appropriate local development groups; a determination as to the most appropriate financing tools was made; and the most advantageous timing for project development was worked out, based on the knowledge gained.

III. TRADE AREAS WITHIN KOOCHICHING COUNTY

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Definition of Trade Areas

Trade areas were developed for the purpose of focusing local development efforts on certain geographic areas within Koochiching County. Judging from meetings with the Private Industry Council and the local development group representatives, it was decided that four separate areas should be established. Initial consideration was given to the trade patterns of the local residents, primarily respecting the retail buying areas in which the majority of residents bought their retail merchandise. A further description is given in the Commercial Analysis section.

A. Littlefork Trade Area

The Littlefork trade area is the largest in size and in population among the four areas discussed in this report. The general area encompasses most of the central portion of the county. Roughly, it includes an area influenced by the U.S. 71 and MN TH 65. It includes the Big Falls area within its trade area.

The area is served by the Littlefork Industrial Development Corporation. See Appendix A for list of membership.

B. Big Falls Trade Area

The Big Falls area includes an area from Gemmel to ten miles north of Big Falls along U.S. 71. The general area is an approximate square with U.S. 71 as its diagonal.

The local development group is the Koochiching Itasca Community Development Corporation.

C. Northome-Mizpah Trade Area

The Northome-Mizpah area is located in the southwest corner of the county and includes portions of Itasca and Beltrami Counties. It is the next largest in population of the four areas being studied.

The Northome Commercial Club is the local development group responsible for economic development.

D. Border-Birchdale-Clementson Trade Area

This area is located in the Northwest portion of the County and has the smallest population of the four development areas. It includes part of the Lake of the Woods County...the unorganized territory of Rainy River.

The Border-Birchdale-Clementson Development Association is the local development group responsible for economic development.

Map 1 depicts the four trade areas within Koochiching County for the purposes of this study.

IV. COMMERCIAL ANALYSIS SECTION

IV. COMMERCIAL ANALYSIS SECTION

The purpose of this section is to present the results of a market survey of the Littlefork, Big Falls, Northome/Mizpah, and Border/Birchdale/Indus/Loman retail trade areas. This information will be used to determine the potential for expansion of existing business and development of new business in each of these areas.

This report will provide information, analysis, and recommendations that will be useful to civic and business leaders in each of these communities in making decisions that will affect the future of their communities. Within this objective, the following work elements have been completed:

1) Definition of a trade area for each community or group of communities,
2) Analysis of existing retail conditions in Koochiching County and,
3) Analysis of the market potential for new development in each retail trade area.

A variety of sources were used to collect the data contained in this report, including published Census data, information from the Minnesota Department of Revenue, and field research by ARDC. The cooperation received from the Koochiching County Private Industry Council and the local development groups was greatly appreciated.

A. Retail/Trade Areas

Koochiching County is a sparsely populated county of approximately 17,748 people located adjacent to the Canadian border in northern Minnesota. As shown in Map 1, it is located approximately 163 miles north of Duluth and 112 miles northeast of Bemidji. The largest city is International Falls with 5,884 people. The rest of the population is scattered between several smaller communities and rural areas.

In order to determine the amount of new development that could be supported in each of the target areas, ARDC delineated a retail trade area for each community or group of communities from which they draw most of their business. The retail trade area served by each community is shown in Map 2.

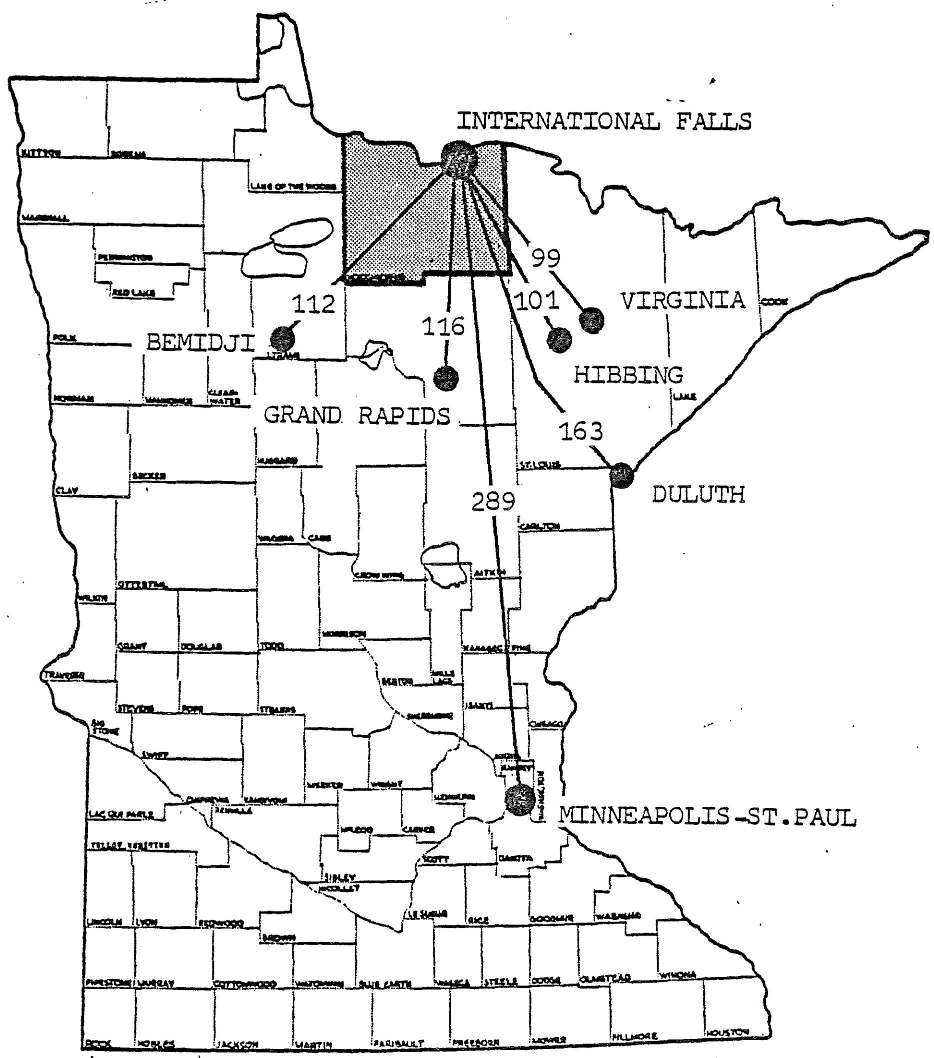
The retail/trade areas were determined by a combination of several methods:

1. Reilly's Law of Retail Gravitation (a statistical method which uses size and distance between communities to determine the retail drawing power of each),
2. Discussions with representatives of the local development groups in each area, and
3. An analysis of the location and characteristics of nearby shopping areas with relation to each community.

Individual businesses in each of these communities may have a different trade area, but on an overall basis, this is the area from

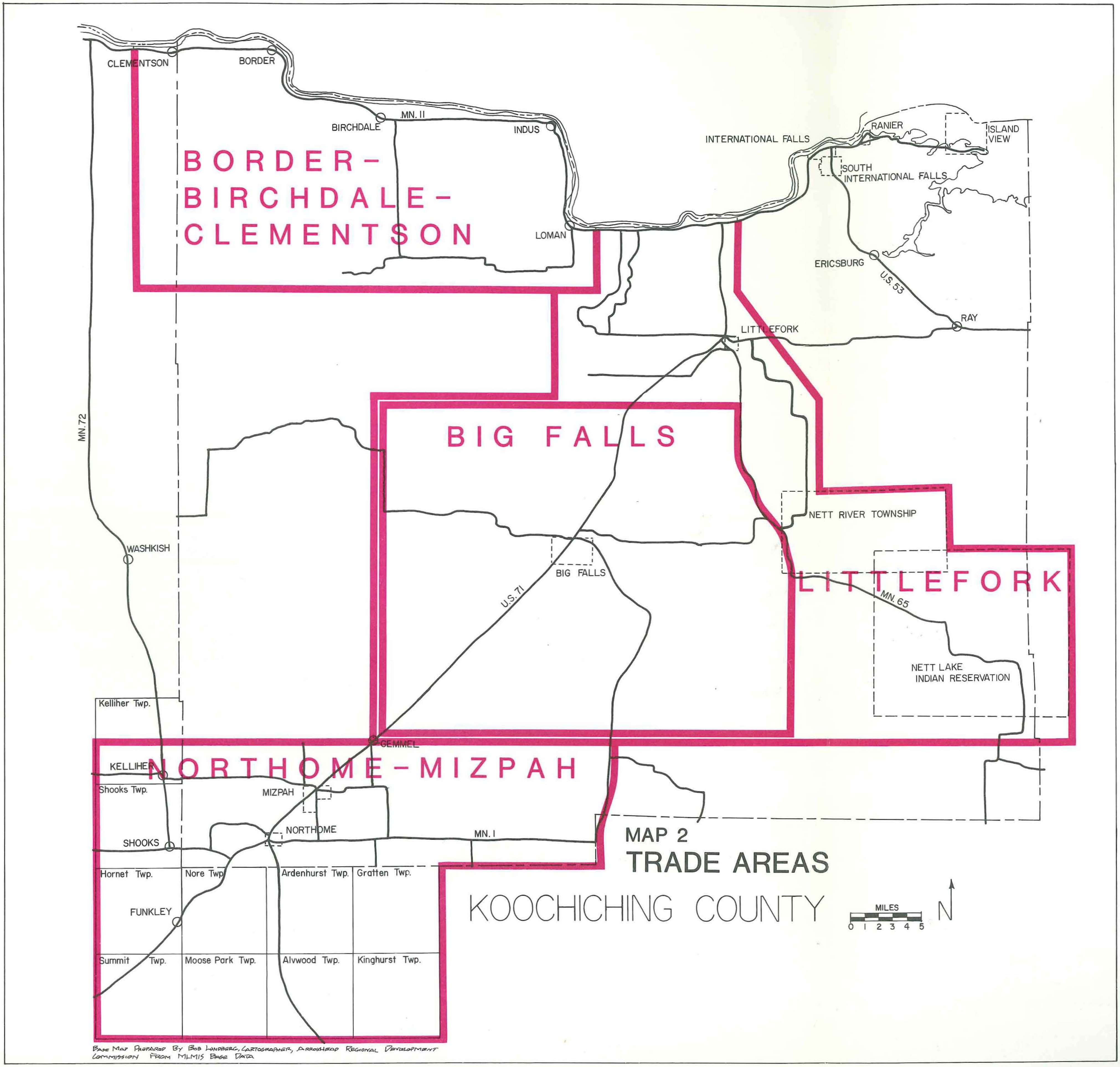
MAP 1

KOOCHICHING COUNTY AND ITS REGIONAL SETTING



Distance in miles between
International Falls and
major Minnesota cities.

Source: MN/DOT


MAP 2
TRADE AREAS
KOOCHICHING COUNTY
MILES
0 1 2 3 4 5
N
BORDER-BIRCHDALE-CLEMENTSON
BIG FALLS
LITTLEFORK
NORTHOME-MIZPAH
CLEMENTSON
BORDER
BIRCHDALE
MN. 11
INDUS
LOMAN
INTERNATIONAL FALLS
RANIER
ISLAND VIEW
SOUTH INTERNATIONAL FALLS
ERICSBURG
U.S. 53
RAY
LITTLEFORK
NETT RIVER TOWNSHIP
MN. 65
NETT LAKE INDIAN RESERVATION
BIG FALLS
U.S. 71
MN. 72
WASHKISH
GEMMEL
Kelliher Twp.
KELLIHER
Shooks Twp.
MIZPAH
NORTHOME
SHOOKS
MN. 1
Hornet Twp.
Nore Twp.
Ardenhurst Twp.
Gratten Twp.
FUNKLEY
Summit Twp.
Moose Park Twp.
Alvwood Twp.
Kinghurst Twp.
Base Map Prepared By Bob Lindberg, Cartographer, Arrowhead Regional Development Commission From MLMIS Base Data

which most of the customers to each community will come. It is based on the distance which shoppers are willing to travel to make various kinds of purchases on a regular basis. Within each trade area, the greatest amount of business will come from the areas that are the closest to each community.

In analyzing the retail/trade areas, it is useful to consider shopping patterns for two different types of items. Convenience items are those products that are needed on a day to day basis, including food and hardware. Most customers buy these items at the store closest to their homes. Comparison items are products for which customers shop around before they buy to make sure they are getting the price and/or quality they want. Comparison items are those such as clothing, furniture, and appliances. Stores of this type normally draw from a larger area than those offering only convenience items.

It has been estimated that the Big Falls, Northome/Mizpah, and Border/Birchdale/Indus/Loman areas will draw both convenience and comparison shoppers from the same geographical areas. However, the Littlefork area is of sufficient size and diversity that it has been delineated into two sub-areas--a Primary Retail/Trade Zone and a Secondary Retail Trade Zone.

The Littlefork Primary Retail/Trade Zone includes the City of Littlefork, Nett River Township and Census Enumeration Districts 4, 5, and 6. It is from this area that Littlefork draws most of its business. Residents within this retail trade zone will buy most of their convenience items from Littlefork if those items are available, because Littlefork is closer to them than any other retail center. They will shop for comparison items in Littlefork as well as in other retail centers.

The Littlefork Secondary Retail Trade Zone includes the locations within the trade area that are not in the primary zone. It includes the City of Big Falls, the Nett Lake Reservation and Census Enumeration Districts 22 and 23. Residents of this area will buy convenience items mostly from a retail center closer to home than Littlefork, but would come to Littlefork for comparison items.

The populations of each of the retail trade areas are shown in Table 1 for 1970-1985.

Table 1

Retail Trade Area Populations

Littlefork Retail Trade Area	1970[1]	1977[2]	1980[3]	1985[3]
Primary Retail Trade Area:				
Littlefork	824			
Nett River Twp.	4			
U.T. NE Kooch (ED 4)	69			
U.T. NE Kooch (ED 5)	1,121			
U.T. NE Kooch (ED 6)	313			
	2,331	2,415	2,449	2,490
Secondary Retail Trade Area				
Big Falls	534			
Nett Lake Reservation	146			
U.T. S Kooch (ED 23)	176			
U.T. NW Kooch (ED 22)	106			
	962	997	1,011	1,027
Total Trade Area	3,293	3,412	3,460	3,517
Big Falls Retail Trade Area (also included in Littlefork)				
Big Falls	534			
U.T. S Kooch (ED 23)	176			
U.T. NW Kooch (ED 22)	106			
Total	816	845	857	871
Northome/Mizpah/Retail Trade Area				
Northome	351			
Mizpah	118			
U.T. S Kooch (ED 23)	155			

	1970[1]	1977[2]	1980[3]	1985[3]
U.T. S Kooch (ED 24)	569			
Moose Park	80			
Alvwood	52			
Kinghurst	150			
Grattan	51			
Nore	59			
Ardenhurst	132			
Kelliher	289			
Kelliher Twp.	122			
Shooks	194			
Hornet	179			
Funckley	19			
Summit	180			
Total	2,700	2,797	2,837	2,884
Border/Birchdale/Indus/Loman Retail Trade Area				
U.T. NW Kooch (ED 21)	412			
U.T. NW Kooch (ED 22)	82			
U.T. Rainy River	215			
Total	709	735	746	758

1. 1970 Census
2. 1977 Census Estimate
3. ARDC Projections - A combination of two different methods was used to project population for 1980 and 1985. The first method projected past trends into the future for each trade area. The second method applied the existing ratio between population of each trade area and Koochiching County to the State Demographer's projections for Koochiching County. Results of these methods were averaged to develop population projections for each trade area.

B. Existing Retail Conditions

Retail expenditures and number of establishments in Koochiching County for 1972 and 1977 are shown in Table 2. This figure shows total expenditures as well as a breakdown by type of business in Koochiching County. To estimate how many of these expenditures were made by residents of each trade area, it was necessary to determine the per capita expenditures in Koochiching County for each item and multiply this by the population of each trade area.

To determine per capital retail expenditures by type of business, total sales and sales by type of business from Table 2 were divided by the total population in Koochiching County. The results are shown in Table 3.

The Koochiching County per capita expenditures were multiplied by the population in each of the trade areas to determine the total amount of potential retail expenditures that will be made in Koochiching County by residents of each trade area. Results are shown in Tables 4, 5, 6, and 7 for 1977, 1980 and 1985 for the Littlefork, Big Falls, Northome/Mizpah, and Border/Birchdale/Indus/Loman areas respectively. The figures for 1980 and 1985 are based on projected population and the same per capita expenditures as in 1977.

It should be noted that these figures represent the total sales by type of business that will be made in Koochiching County by residents of each of the trade areas. Not all of these expenditures will be made in these trade areas. Some will go to International Falls and other locations. These estimates of potential expenditures that could be attracted to each trade area are fairly conservative. They do not account for expenditures that are currently being made in other counties by residents of Koochiching County. The estimates of potential expenditures shown in Tables 4-7 reflect the potential sales that could be attracted to each respective trade area if all expenditures in Koochiching County by those trade area residents were made within their own trade area.

Table 2

KOOCHICHING COUNTY RETAIL SALES VOLUME [1]

TOTAL RETAIL SALES ($1,000)

	1972		1977	
	# Establishments	Sales	#Establishments	Sales
Koochiching County	217	34,603	189	58,162
International Falls	88	14,857	119	42,894
Remainder	129	19,746	70	15,268

SALES BY TYPE OF BUSINESS ($1,000)

BUILDING MATERIALS, HARDWARE, ETC.

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	14	2,064	12	5,586
International Falls	5	409	8	3,739
Remainder	9	1,655	4	1,847

GENERAL MERCHANDISE

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	8	1,544	11	3,299
International Falls	1	D[2]	4	2,517
Remainder	7	D	7	782

1. Census of Retail Trade, Geographic Area Series, Minnesota 1972 and 1977. This Census is published by the Department of Commerce every five years.

2. D-Sales were not listed to avoid disclosure.

FOOD STORES

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	25	7,334	21	10,873
International Falls	11	5,326	10	8,592
Remainder	14	2,008	11	2,281

AUTO DEALERS

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	14	5,641	14	8,952
International Falls	5	D	5	D
Remainder	9	D	9	D

GAS STATIONS

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	29	4,625	24	10,075
International Falls	12	1,339	15	8,293
Remainder	17	3,286	9	1,782

APPAREL & ACCESSORIES

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	13	2,487	11	3,625
International Falls	7	1,966	11	D
Remainder	6	521	--	D

FURNITURE, ETC.

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	8	1,587	12	2,321
International Falls	4	D	10	D
Remainder	4	D	2	D

EAT/DRINKING ESTABLISHMENTS

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	53	3,135	37	5,160
International Falls	18	1,174	21	4,102
Remainder	35	1,961	16	1,058

DRUG STORES

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	5	1,690	4	2,779
International Falls	1	D	4	2,779
Remainder	4	D	--	--

MISCELLANEOUS RETAIL

	1972		1977	
	# Establishments	Sales	# Establishments	Sales
Koochiching County	48	4,496	43	5,492
International Falls	24	2,444	31	4,349
Remainder	24	2,052	12	1,143

Table 3

KOOCHICHING COUNTY PER CAPITA RETAIL EXPENDITURES

	1972	1977
Total County Retail Expenditures	$34,603,000	$58,162,000
Total County Population	17,600	17,748

Per Capita Retail Expenditures by Type of Business

General Merchandise	$88	$186
Apparel and Accessories	141	204
Furniture, Home Appliances	90	131
Miscellaneous Retail	255	309
Hardware, Building Materials	117	315
Food Stores	417	613
Eating, Drinking	178	291
Auto Dealers	321	504
Gas Stations	263	568
Drug Stores	96	156
Total Retail Sales	$ 1,966	$ 3,277

Source: Census of Retail Trade, 1972 and 1977
(1972 and 1977 Census Estimates of Population)
ARDC Calculations

Table 4

TOTAL POTENTIAL RETAIL EXPENDITURES

By Residents of Littlefork Retail Trade Area

1977

Primary Zone	Per Capita Expenditures	Population of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		449,190
Apparel and Accessories	204		492,660
Furniture, Home Appliances	131		316,365
Miscellaneous Retail	309		746,235
Hardware, Building Materials	315		760,725
Food Stores	613	2,415	1,480,395
Drug Stores	156		376,740
Eating/Drinking	291		702,765
Auto Dealers	504		1,217,160
Gas Stations	568		1,371,720
Total Primary Zone	3,277		7,913,955
Secondary Zone			
General Merchandise	186		185,442
Apparel and Accessories	204		203,388
Furniture, Home Appliances	131		130,607
Miscellaneous Retail	309		308,073
Drug Stores	156	997	155,532
Eating/Drinking	291		290,127
Total Secondary Zone	1,277		1,273,169
Total Trade Area			
General Merchandise			634,632
Apparel and Accessories			696,048
Furniture, Home Appliances			446,972
Miscellaneous Retail			1,054,308
Hardware, Building Materials			760,725
Food Stores			1,480,395
Drug Stores			532,272
Eating/Drinking			992,892
Auto Dealers			1,217,160
Gas Stations			1,371,720
Total Trade Area			9,187,124

Source: ARDC Calculations

Table 4 (Continued)

TOTAL POTENTIAL RETAIL EXPENDITURES

By Residents of Littlefork Retail Trade Area

1980

Primary Zone	Per Capita Expenditures	Population Of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		455,514
Apparel and Accessories	204		499,596
Furniture, Home Appliances	131		320,819
Miscellaneous Retail	309		756,741
Hardware, Building Materials	315		771,435
Food Stores	613	2,449	1,501,237
Drug Stores	156		382,044
Eating/Drinking	291		712,659
Auto Dealers	504		1,234,296
Gas Stations	568		1,391,032
Total Primary Zone	3,277		8,025,373
Secondary Zone			
General Merchandise	186		188,046
Apparel and Accessories	204		206,244
Furniture, Home Appliances	131		132,441
Miscellaneous Retail	309		312,399
Drug Stores	156	1,011	157,716
Eating/Drinking	291		294,201
Total Secondary Zone	1,277		1,291,047
Total Trade Area			
General Merchandise			643,560
Apparel and Accessories			705,840
Furniture, Home Appliances			453,260
Miscellaneous Retail			1,069,140
Hardware, Building Materials			771,435
Food Stores			1,501,237
Drug Stores			539,760
Eating/Drinking			1,006,860
Auto Dealers			1,234,296
Gas Stations			1,391,032
Total Trade Area			9,316,420

Source: ARDC Calculations

Table 4 (Continued)

TOTAL POTENTIAL RETAIL EXPENDITURES

By Residents of Littlefork Retail Trade Area

1985

Primary Zone	Per Capita Expenditures	Population of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		463,140
Apparel and Accessories	204		507,960
Furniture, Home Appliances	131		326,190
Miscellaneous Retail	309		769,410
Hardware, Building Materials	315	2,490	784,350
Food Stores	613		1,526,370
Drug Stores	156		388,440
Eating/Drinking	291		724,590
Auto Dealers	504		1,254,960
Gas Stations	568		1,414,320
Total Primary Zone	3,277		8,159,730
Secondary Zone			
General Merchandise	186		191,022
Apparel and Accessories	204		209,508
Furniture, Home Appliances	131		134,537
Miscellaneous Retail	309		317,343
Drug Stores	156	1,027	160,212
Eating/Drinking	291		298,857
Total Secondary Zone	1,277		1,311,479
Total Trade Area			
General Merchandise			654,162
Apparel and Accessories			717,468
Furniture, Home Appliances			460,727
Miscellaneous Retail			1,086,753
Hardware, Building Materials			784,350
Food Stores			1,526,370
Drug Stores			548,652
Eating/Drinking			1,023,447
Auto Dealers			1,254,960
Gas Stations			1,414,320
Total Trade Area			9,471,209

Source: ARDC Calculations

Table 5

TOTAL POTENTIAL RETAIL EXPENDITURES

By Residents of Big Falls Retail Trade Area

1977

	Per Capita Expenditures	Population of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		157,170
Apparel and Accessories	204		172,380
Furniture, Home Appliances	131		110,695
Miscellaneous Retail	309		261,105
Hardware, Building Materials	315		266,175
Food Stores	613		517,985
Drug Stores	156	845	131,820
Eating/Drinking	291		245,895
Auto Dealers	504		425,880
Gas Stations	568		479,960
Total	3,277		2,769,065

1980

	Per Capita Expenditures	Population of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		159,402
Apparel and Accessories	204		174,828
Furniture, Home Appliances	131		112,267
Miscellaneous Retail	309		264,813
Hardware, Building Materials	315		269,955
Food Stores	613	857	525,341
Drug Stores	156		133,692
Eating/Drinking	291		249,387
Auto Dealers	504		431,928
Gas Stations	568		486,776
Total	3,277		2,808,389

1985

	Per Capita Expenditures	Population of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		162,006
Apparel and Accessories	204		177,684
Furniture, Home Appliances	131		114,101
Miscellaneous Retail	309		269,139
Hardware, Building Materials	315	871	274,365
Food Stores	613		533,923
Drug Stores	156		135,876
Eating/Drinking	291		253,461
Auto Dealers	504		438,984
Gas Stations	568		494,728
Total	3,277		2,854,267

Table 6

TOTAL POTENTIAL RETAIL EXPENDITURES

By Residents of Northome/Mizpah Retail Trade Area

1977

	Per Capita Expenditures	Population Of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		520,242
Apparel and Accessories	204,		570,588
Furniture, Home Appliances	131		366,407
Miscellaneous Retail	309		864,273
Hardware, Building Materials	315	2,797	881,055
Food Stores	613		1,714,561
Drug Stores	156		436,332
Eating/Drinking	291		813,927
Auto Dealers	504		1,409,688
Gas Stations	568		1,588,696
Total	3,277		9,165,769

1980

	Per Capita Expenditures	Population Of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		527,682
Apparel and Accessories	204		578,748
Furniture, Home Appliances	131		371,647
Miscellaneous Retail	309		876,633
Hardware, Building Materials	315	2,837	893,655
Food Stores	613		1,739,081
Drug Stores	156		442,572
Eating/Drinking	291		825,567
Auto Dealers	504		1,429,848
Gas Stations	568		1,611,416
Total	3,277		9,296,849

1985

	Per Capita Expenditures	Population Of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		536,424
Apparel and Accessories	204		588,336
Furniture, Home Appliances	131		377,804
Miscellaneous Retail	309	2,884	891,156
Hardware, Building Materials	315		908,460
Food Stores	613		1,767,892
Drug Stores	156		449,904
Eating/Drinking	291		839,244
Auto Dealers	504		1,453,536
Gas Stations	568		1,638,112
Total	3,277		9,450,868

Table 7

TOTAL POTENTIAL RETAIL EXPENDITURES

By Residents of Border/Birchdale/Indus/Loman Retail Trade Area

1977

	Per Capita Expenditures	Population Of Trade Area	Total Potential Retail Expenditures
General Merchandise	186		136,710
Apparel and Accessories	204		149,940
Furniture, Home Appliances	131		96,285
Miscellaneous Retail	309	735	227,115
Hardware, Building Materials	315		231,525
Food Stores	613		450,555
Drug Stores	156		114,660
Eating/Drinking	291		213,885
Auto Dealers	504		370,440
Gas Stations	568		417,480
Total	3,277		2,408,595
1980			
General Merchandise	186		138,756
Apparel and Accessories	204		152,184
Furniture, Home Appliances	131		97,726
Miscellaneous Retail	309		230,514
Hardware, Building Materials	315		234,990
Food Stores	613	746	457,298
Drug Stores	156		116,376
Eating/Drinking	291		217,086
Auto Dealers	504		375,984
Gas Stations	568		423,728
Total	3,277		2,444,642
1985			
General Merchandise	186		140,988
Apparel and Accessories	204		154,632
Furniture, Home Appliances	131		99,298
Miscellaneous Retail	309		234,222
Hardware, Building Materials	315	758	238,770
Food Stores	613		464,654
Drug Stores	156		118,248
Eating/Drinking	291		220,578
Auto Dealers	504		382,032
Gas Stations	568		430,544
Total	3,277		2,483,966

C. Market Potential for New Development

Tables 8-11 estimate the percentage of potential sales in each category and for each year that could be attracted to each trade area. These estimates are based on an analysis of the trade area, the current drawing power of each trade area, and the strength of neighboring retail centers. These sales are not all being captured in each trade area. A significant number of customers will always shop in other locations for at least some of their purchases.

The estimates of sales that could be attracted to each trade area assume that each trade area could attract a reasonable percentage of potential sales for each type of business and that at least the same selection of merchandise will be provided as what is now available. The percentages shown in Tables 8-11 could be increased if business is expanded sufficiently to raise the drawing power of each community.

Tables 12-15 show the amount of retail space that can be supported in each of the trade areas by 1985. Potential sales from Tables 8-11 were divided by the median sales per square foot for each type of business to determine how much floor space could be supported with an adequate sales volume. Median store sizes are shown for comparison purposes. In some categories, there may be a need for a particular type of merchandise, but the floor space warranted is not large enough to support the size of store needed to maintain a profitable business. In those cases, it is recommended that a related business consider expansion into those lines. In evaluating this information, each community should subtract the amount of existing floor space, if any, from the appropriate category to determine how much additional space in that category could be supported.

D. Trade Area Summaries

This section should be reviewed carefully by the business leaders in each trade area. Particular attention should be given to percent (%) share columns in Tables 8-11. These percentages are used to determine the most accurate estimates and projections of retail expenditures anticipated by the residents in each trade area.

Another set of figures that should be reviewed more closely is the column showing Median Sales Per Square Foot in Tables 12-15. The figures shown are for Gross square feet per establishment, not square feet of selling area only. Figures should be used that apply most accurately to the Median Sales for each trade area.

Assistance from ARDC staff may be helpful when further study is desired.

Table 8

LITTLEFORK SHARE OF TOTAL POTENTIAL TRADE AREA RETAIL SALES, 1977-1985

Primary Zone	% Share	1977	1980	1985
General Merchandise	50	224,596	227,757	231,570
Apparel and Accessories	30	147,798	149,879	152,388
Furniture, Home Appliances	40	126,546	128,328	130,476
Miscellaneous Retail	25	186,559	189,185	192,353
Hardware, Building Materials	60	456,435	462,861	470,610
Food Stores	75	1,110,296	1,125,928	1,144,778
Drug Stores	60	226,044	229,226	233,064
Eating/Drinking	35	245,968	249,431	253,607
Total, Primary Zone		2,724,242	2,762,595	2,808,846
Secondary Zone				
General Merchandise	30	55,633	56,414	57,307
Apparel and Accessories	10	20,339	20,624	20,951
Furniture, Home Appliances	20	26,121	26,488	26,907
Miscellaneous Retail	20	61,615	62,480	63,469
Drug Stores	30	46,660	47,315	48,064
Eating/Drinking	10	29,013	29,420	29,886
Total, Secondary Zone		239,381	242,741	246,584
Total Trade Area				
General Merchandise		280,229	284,171	288,877
Apparel and Accessories		168,137	170,503	173,339
Furniture, Home Appliances		152,667	154,816	157,383
Miscellaneous Retail		248,174	251,665	255,822
Hardware, Building Materials		456,435	462,861	470,610
Food Stores		1,110,296	1,125,928	1,144,778
Drug Stores		272,704	276,541	281,128
Eating/Drinking		274,981	278,851	283,493
Total Trade Area		2,963,623	3,005,336	3,055,430

Source: ARDC Calculations

Table 9

BIG FALLS SHARE OF TOTAL POTENTIAL TRADE AREA RETAIL SALES, 1977-1985

Item	% Share	1977	1980	1985
General Merchandise	40	62,868	63,761	64,802
Apparel and Accessories	30	51,714	52,448	53,305
Furniture, Home Appliances	35	38,743	39,293	39,935
Miscellaneous Retail	20	52,221	52,963	53,828
Hardware, Building Materials	40	106,470	107,982	109,746
Food Stores	70	362,590	367,739	373,746
Drug Stores	20	26,364	26,738	27,175
Eating/Drinking	35	86,063	87,285	88,711
Total		787,033	798,209	811,248

Table 10

NORTHOME/MIZPAH SHARE OF TOTAL POTENTIAL TRADE AREA RETAIL SALES, 1977-1985

Item	% Share	1977	1980	1985
General Merchandise	50	260,121	263,841	268,212
Apparel and Accessories	20	114,118	115,750	117,667
Furniture, Home Appliances	35	128,242	130,076	132,231
Miscellaneous Retail	20	172,855	175,327	178,231
Hardware, Building Materials	50	440,528	446,828	454,230
Food Stores	60	1,028,737	1,043,449	1,060,735
Drug Stores	50	218,166	221,286	224,952
Eating/Drinking	40	325,571	330,227	335,698
Total		2,688,338	2,726,784	2,771,956

Table 11

BORDER/BIRCHDALE/INDUS/LOMAN

SHARE OF TOTAL POTENTIAL TRADE AREA RETAIL SALES, 1977-1985

Item	% Share	1977	1980	1985
General Merchandise	30	41,013	41,627	42,296
Apparel and Accessories	10	14,994	15,218	15,463
Furniture, Home Appliances	10	9,628	9,773	9,930
Miscellaneous Retail	10	22,712	23,051	23,422
Hardware, Building Materials	30	69,458	70,497	71,631
Food Stores	30	135,167	137,189	139,396
Drug Stores	10	11,466	11,638	11,825
Eating/Drinking	25	53,471	54,272	55,145
Total		357,909	363,265	369,108

Table 12

WARRANTED RETAIL FLOOR SPACE, 1980-1985

LITTLEFORK TRADE AREA

Retail Sales Category	Potential Sales	Median Sales Per Square Foot[1]	Total Retail Floor Space Warranted (sq. ft)	Median Store Size (sq. ft)[2]
General Merchandise	280,229 - 288,877	38.00	7,374 - 7,602	10,160
Apparel & Accessories	168,137 - 173,339	50.00	3,362 - 3,467	1,680
Furniture, Home Appliances	152,667 - 157,383	40.00	3,817 - 3,935	3,200
Miscellaneous Retail	248,174 - 255,822	40.00	6,204 - 6,396	1,600
Hardware, Building Materials	456,435 - 470,610	35.00	13,041 -13, 446	6,000
Food Stores	1,110,296-1,144,778	135.00	8,224 - 8,480	18,900
Drug Stores	272,704 - 281,128	80.00	3,409 - 3,514	4,000
Eating, Drinking	274,981 - 283,493	75.00	3,666 - 3,780	2,400
Total Retail	2,963,623 - 3,055,430		49,097 -50,620	

1. Median sales per square foot are based on figures listed in the Urban Land Institute's Dollars and Cents of Shopping Centers: 1978, with adjustments based on local conditions.

2. Median store sizes are based on figures listed for neighborhood shopping centers in the Urban Land Institute's Dollars and Cents of Shopping Centers: 1978.

Source: ARDC Calculations

Table 13

WARRANTED RETAIL FLOOR SPACE, 1980-1985

BIG FALLS TRADE AREA

Retail Sales Category	Potential Sales	Median Sales Per Square Foot[1]	Total Retail Floor Space Warranted (sq. ft.)	Median Store Size (sq. ft)[2]
General Merchandise	62,868 - 64,802	38.00	1,654 - 1,705	10,160
Apparel and Accessories	51,714 - 53,305	50.00	1,034 - 1,066	1,680
Furniture, Home Appliances	38,743 - 39,935	40.00	969 - 998	3,200
Miscellaneous Retail	52,221 - 53,828	40.00	1,306 - 1,346	1,800
Hardware, Building Materials	106,470 - 109,746	35.00	3,042 - 3,136	6,000
Food Stores	362,590 - 373,746	135.00	2,686 - 2,768	18,900
Drug Stores	26,364 - 27,175	80.00	329 - 340	4,000
Eating, Drinking	86,063 - 88,711	75.00	1,148 - 1,183	2,400
Total Retail	787,033 - 811,248		12,168 - 12,542	

1. Median Sales per square foot are based on figures listed in the Urban Land Institute's Dollar and Cents of Shopping Centers: 1978, with adjustments based on local conditions.

2. Median store sizes are based on figures listed for neighborhood shopping centers in the Urban Land Institute's Dollars and Cents of Shopping Centers: 1978.

Source: ARDC Calculations

Table 14

WARRANTED RETAIL FLOOR SPACE, 1980-1985

NORTHOME/MIZPAH TRADE AREA

Retail Sales Category	Potential Sales	Median Sales Per Square Foot[1]	Total Retail Floor Space Warranted (sq. ft)	Median Store Size (sq. ft.)[2]
General Merchandise	260,121 - 268,212	38.00	6,845 - 7,058	10,160
Apparel and Accessories	114,118 - 117,667	50.00	2,282 - 2,353	1,680
Furniture, Home Appliances	128,242 - 132,231	40.00	3,206 - 3,306	3,200
Miscellaneous Retail	172,855 - 178,231	40.00	4,321 - 4,456	1,800
Hardware, Building Materials	440,528 - 454,230	35.00	12,587 - 12,978	6,000
Food Stores	1,028,737 - 1,060,735	135.00	7,620 - 7,857	18,900
Drug Stores	218,166 - 224,952	80.00	2,727 - 2,812	4,000
Eating, Drinking	325,571 - 335,698	75.00	4,341 - 4,476	2,400
Total Retail	2,688,338 - 2,771,956		43,929 - 45,296	

1. Median sales per square foot are based on figures listed in the Urban Land Institute's Dollars and Cents of Shopping Centers; 1978, with adjustments based on local conditions.

2. Median store sizes are based on figures listed for neighborhood shopping centers in the Urban Land Institute's Dollars and Cents of Shopping Centers: 1978.

Source: ARDC Calculations

Table 15

WARRANTED RETAIL FLOOR SPACE, 1980-1985

BORDER/BIRCHDALE/INDUS/LOMAN TRADE AREA

Retail Sales Category	Potential Sales	Median Sales Per Square Foot[1]	Total Retail Floor Space Warranted (sq. ft.)	Median Store Size (sq. ft.)[2]
General Merchandise	41,013 - 42,296	38.00	1,079 - 1,113	10,160
Apparel and Accessories	14,994 - 15,463	50.00	300 - 309	1,680
Furniture, Home Appliances	9,628 - 9,930	40.00	241 - 248	3,200
Miscellaneous Retail	22,712 - 23,422	40.00	568 - 586	1,800
Hardware, Building Materials	69,458 - 71,631	35.00	1,985 - 2,047	6,000
Food Stores	135,167 - 139,396	135.00	1,001 - 1,033	18,900
Drug Stores	11,466 - 11,825	80.00	143 - 148	4,000
Eating, Drinking	53,471 - 55,145	75.00	713 - 735	2,400
Total Retail	357,909 - 369,108		6,030 - 6,219	

1. Median sales per square foot are based on figures listed in the Urban Land Institute's Dollars and Cents of Shopping Centers: 1978, with adjustments based on local conditions.

2. Median store sizes are based on figures listed for neighborhood shopping centers in the Urban Land Institute's Dollars and Cents of Shopping Centers: 1978.

Source: ARDC Calculations

V. INDUSTRIAL ANALYSIS

V. INDUSTRIAL ANALYSIS

Background

The following section will provide information, analysis and recommendations that will be useful to Koochiching County economic development leaders in making decisions that affect the future of rural Koochiching County. Within this objective, the following work program has been completed:

1. An analysis of the industrial structure of Koochiching County through the use of the "Location Quotient" technique to determine the "basic" or "export" industries.
2. An analysis of the industrial structure to determine the nature of some of the changes of the competetive factor and the effect of the mix of high and low growth industries within the economy of the county.
3. An examination of the types of products associated with the basic/export industries within Koochiching County.
4. Study of existing reports identifying potential markets for manufactured products and services within the County.
5. Determine the types of industry which resources within the county can support.
6. Matching resources to markets to identify potential industrial expansions.
7. Industrial analysis by local development area.

A variety of sources were used for the data upon which analysis was done in this report, including U.S. Census, the Minnesota Department of Economic Security, the U.S. Department of Commerce's Bureau of Economic Analysis's data on personal income and employment, County Business Patterns from the U.S. Department of Commerce, studies by private consultants (Pope-Reid & Associates, and George Banzhaf Company) and calculations by ARDC staff.

Cooperation is also acknowledged from the Koochiching County civic and business leaders as well as from the local development group members, citizens, and public officials from the municipal and county governments.

A summary of the technical analysis follows showing the highlights of the techniques applied. A complete text of the industrial analysis techniques can be found in Appendix B.

Summary of Industrial Analysis

This section summarizes the findings and conclusions resulting from the industrial analysis of Koochiching County. These findings are also tied to the Resources section and are thus consistent with the information presented in this document for preliminary recommendations for economic development. Caution is necessary for those making decisions about specific project development efforts. It is not intended that the information presented in this document is appropriate for final project development purposes. It may be necessary for further feasibility study before making financial committments. This will be covered in the section on Financial Resources.

The strongest industries now existing in Koochiching County are:

-Other nondurable goods manufacturing

-Furniture, lumber & wood products manufacturing

-Other personal services

-Railraods & railway express services

-Education (elementary, secondary, collegs) government

Highlights about each of the above top industries follows:

Other Nondurable Goods

Definition: Other Nondurable Goods Manufacturing in Koochiching County includes primarily the Paper & Allied Manufacturing Industry (the Boise Cascade Corporation). The Standard Industrial Classification (SIC) manual also includes other industries in this category such as Tobacco Manufacturers, Petroleum Refining, Rubber-Miscellaneous Plastics Products, and Leather-

Leather Products Manufacturing. However, there are no firms in Koochiching County that appear in existing directories under these latter categories.

-Other Nondurable Goods Manufacturing was the largest employer, by far, in both 1960 and 1970.

-Other Nondurable Goods Manufacturing employment was the highest ranking basic industry in both 1960 and 1970. While the industry increase statewide in employment, it dropped in the County, but it still maintained its number one position in relative strength by Location Quotient analysis.

-Other Nondurable Goods ranked last out of 29 industries in Koochiching County in growth according to Shift-Share Analysis. Two analyses were made to examine the forces which occurred in this industry in Koochiching County from 1960 and 1970 compared to the Minnesota economy. Other Nondurable Goods ranked number one to the overall industry mix in the county. This identifies it as the fastest growing industry in the local economy compared to the state. However, when we examined the competitive situation, we find this industry ranked last among the 29 industries. The sheer size of the number of people employed in this industry was enough to offset the industry mix force and result in the overall ranking at the bottom.

Furniture, Lumber & Wood Products

Definition: Includes logging, sawmills and furniture manufacturing.

-Furniture, Lumber & Wood products manufacturing is the third largest employer in the County, in 1970.

-Ranked fourth in number employed in 1960.

-Employment grew by 32% from 1960 to 1970.

-Employment in this industry comprised nearly 7½% of the Labor Force in 1970.

-Furniture, Lumber & Wood Products manufacturing had the second highest ranking as a basic industry in both 1960 and 1970. Its relative position of strength gained considerably in the County in relation to the Other Nondurable Goods segment.

-Furniture, Lumber & Wood Products manufacturing ranked number five overall growth. The strongest growth force was identified as competitive advantage, where this industry ranked second among the 29 industries. The second growth force was its relationship to the industrial mix within the County. Here, furniture-lumber-wood products ranked 26th, indicating this industry to be a low growth type industry.

Other Personal Services

Definition: Includes hotels, garment services, beauty, barber, dressmaking, and shoe repair shops.

-This industry ranked as the fifth largest employer in the County in 1970 and 12th in 1960. Its share of employment rose from 2.1% in 1960 to 4.6% in 1970.

-Other Personal Services gained considerable strength in terms of Location Quotient, rising from only .818 in 1960 to third place in 1970 with a 1.742. This qualifies this industry as a "basic" industry, because it brings in outside capital to the county.

-The second fastest growing industry in Koochiching County during the 1960's was "Other Personal Services". It ranked number two in the combined Shift-Share analysis. It also ranked number two in the competitive analysis. It ranked in a tie for 10th place in the industrial mix analysis with such industries as: "Other Transportation", Utilities & Sanitary Services", and "Welfare, Religious, and Nonprofit Membership Organizations."

Railroads & Railway Express Service

Definition: Includes companies primarily engaged in line-haul railroad operations and also in the furnishing of terminal facilities for freight traffic for line-haul service, movement of railroad cars between industrial sidings, etc. The railway express service in 1970 Census references has now been deleted because this referred to REA Express, which is no longer active.

-This industry still ranks as an important or "basic" industry in Koochiching County, ranking fourth in Location Quotient in 1970 and fifth in 1960.

-In terms of employment generation, this industry ranked 14th in 1970 and 10th in 1960. Employment in this industry declined from 153 to 114 from 1960 to 1970.

-According to shift-share analysis, this industry cannot be classified as a high growth industry. Overall, it ranked only 25th out of the 29 industries analyzed. Its competitive position was positive, ranking in a tie for 6th place with the mining industry. In the industrial mix, it ranked only 27th and near the bottom of the low growth industries.

Education (elementary, secondary, colleges) Government

Definition: This includes educational services furnishing formal academic courses. The elementary & secondary schools are below university grade (ordinarily grades 1 through 12), kindergartens included. Colleges refer to those schools granting academic degrees and requiring for admission at least a high school diploma or equivalent general academic training.

-As an employment generator, education rose from fifth place in 1960 to second in 1970 comprising nearly 8% of total employment compared to about 5% in 1960.

-Education (elementary, secondary, colleges) government slipped from fourth to fifth place in Location Quotient ranking from 1960 to 1970 even though total employment number increased. The same industry increased statewide at a rate faster than in Koochiching County, accounting for the lower Location Quotient ranking. This industry may be considered a basic industry in the County.

Top Industries Ranked by Employment Size in 1970, With Comparisons to 1960, Koochiching County

FIGURE 1

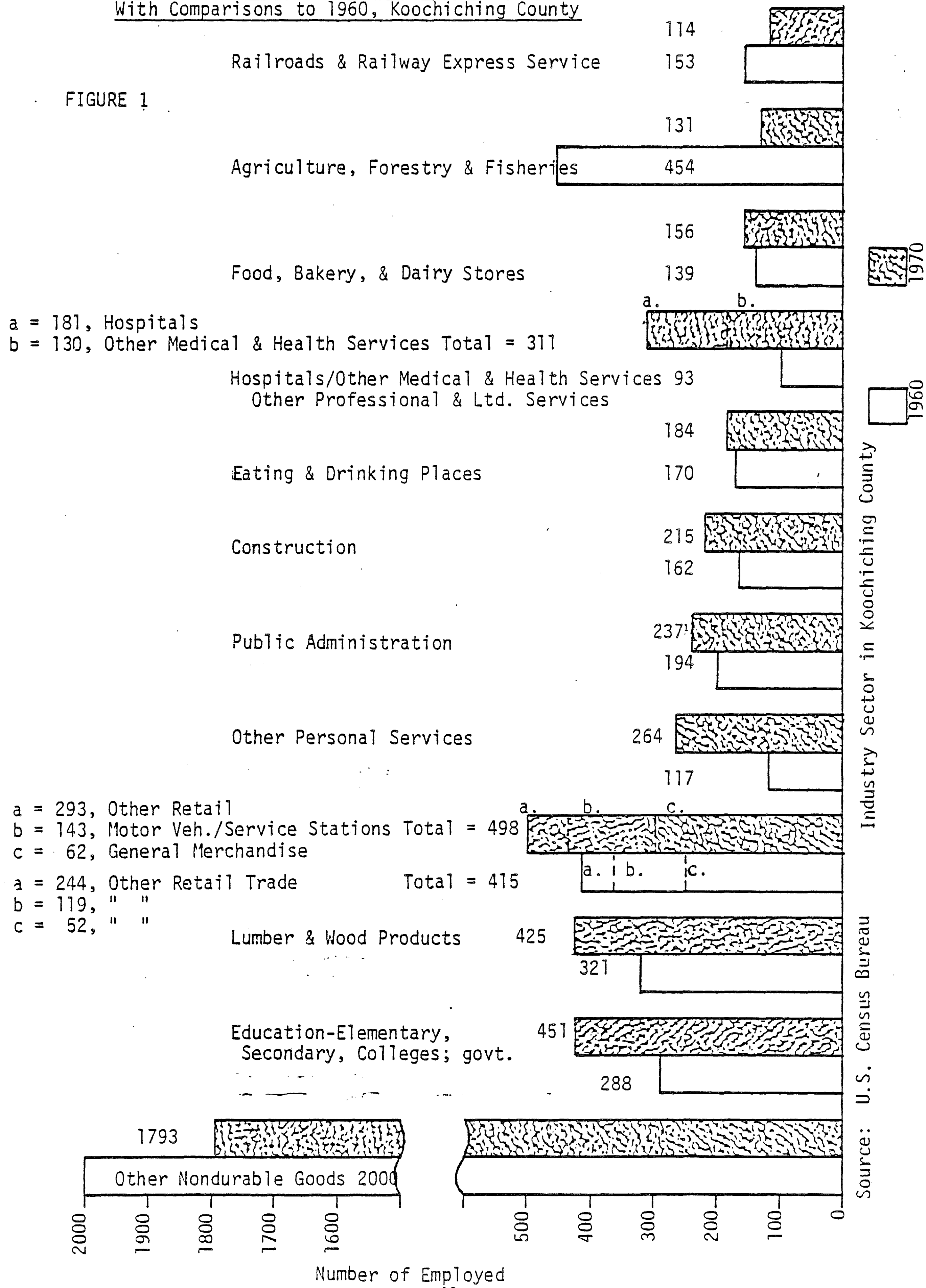
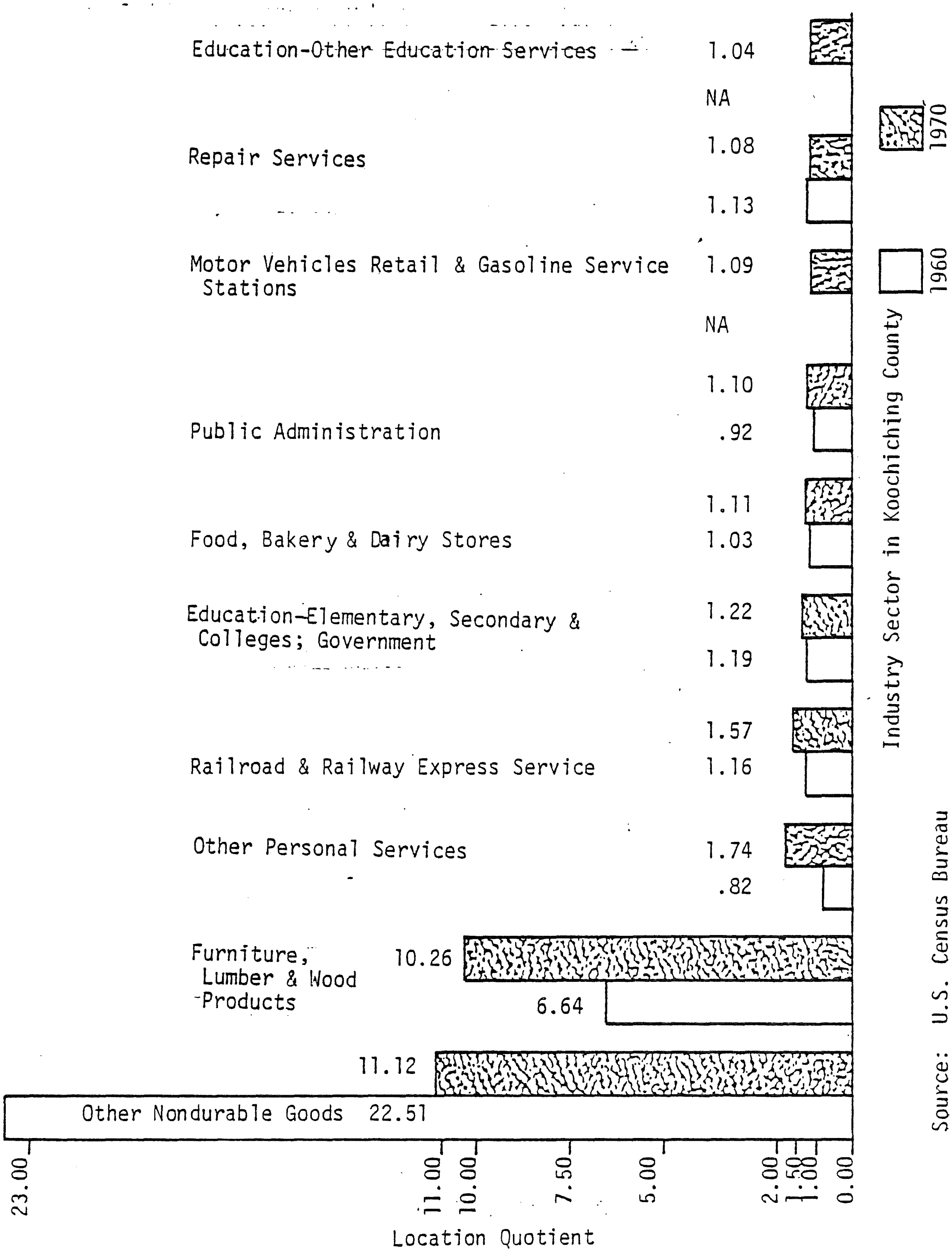


FIGURE 2

Top Industries Ranked by Location Quotient in 1970, With Comparisons to 1960, Koochiching County



-The third fastest growing industry was "Education (elementary, secondary, & colleges) government." It ranked favorably at second place among the industrial mix analysis, indicating it was doing exceptionally well according to the mix of high and low growth industries in the county. Education....government did not do so well, however, from the viewpoint of the competitive situation, winding up among the losers at 26th place among the 29 industires. This may be tempered somewhat by the fact that the statewide growth rate was faster (77%) than the growth of this industry in the County (57%).

The following industries are listed because of their low ranking. They are to be considered for possible development in the area of replacing import activities of products and services. There is not sufficient information here to warrant immediate decisions. This can be accomplished only with further discussion among local development group members and future feasibility studies for specific project ventures.

The weakest industries now existing in Koochiching County are:

- Food and kindred products
- Fabricated metal products
- Business services
- Printing, publishing & allied industries
- Wholesale trade
- Agriculture, forestry, fisheries
- Mining
- General merchandise retailing
- Trucking services & warehousing

Highlights about each of the above low ranking industries:

Food and Kindred Products

Definition: Includes meat, dairy, and grain products, beverage products; and canning and preserving.

-This industry ranked in a tie for 33rd among 35 industries in number of employed during 1970 and 22nd in 1960.

-Employment in this category dropped from 43 in 1960 to only 5 in 1970, a percentage drop of 88.4%.

-It had the lowest relative strength among the 35 local industries in 1970 and the third lowest in 1960.

-This industry is rated as a low growth industry according to shift-share analysis. Overall, it ranked 24th among 29 industries analyzed from 1960 to 1970. Employment losses were apparent in both the competitive situation and in the industry mix conditions.

Fabricated Metal Products

Definition: Includes establishments engaged in fabricating ferrous and non-ferrous metal products. It also includes firms manufacturing ordinance and accessories.

-This industry ranked last out of 35 industries in number of employed. It was not listed separately in the 1960 Census, but included in the "Other Durable Goods" category.

-There was insufficient detail for analysis of shift-share growth.

Business Services

Definition: Includes advertising, research labs, employment agencies, consulting services, and computer programming services.

-Ranked 33rd out of 35 industries in number of employed in 1970. In 1960 it ranked 27th of 29 industries analyzed. It slipped in percentage of employed from .23% in 1960 to only .09% in 1970.

-Its relative contribution to the county's economy was rated 33 out of 35 industries, indicating a very weak contribution to the economy.

-Growth potential in Business Service is a little better, ranking 18th out of the 29 positions analysis. Growth in the industry statewide was reflected locally with its ranking of number 8 among the 29 industries. This indicates some potential as a growth industry. However, the competitive position was negative as indicated by its loss in competitive growth and low ranking of 19th out of 29 industries analyzed.

Printing, Publishing & Allied Industries

Definition: Includes establishments engaged in printing by one or more of the common processes and those establishments which perform services for the printing trade. Also includes establishments engaged in publishing newspapers, books, & periodicals.

-Ranked very low in number of employed in 1970...32nd, dropping from 17th in 1960.

-Its relative strength also declined from ranking of 15 in 1960 to 32nd in 1970.

-Growth trends are not promising, being a low growth industry in the shift-share analysis, it ranked 26th overall. It also reflected low growth according to industrial mix forces (ranking 23rd) and a declining competitive situation (ranking 27th).

Wholesale Trade

Definition: Includes establishments or places of business primarily engaged in selling merchandise to retailers; to industrial, commercial, institutional farm, or professional business users; or to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies.

-Employment improved both numerically and in ranking. Ranked 19th in 1970 and 20th in 1960.

-The relative strength of Wholesale Trade ranked 26th in 1960 and 31st in 1970.

-The growth of story of Wholesale Trade in Koochiching County was good during the 1960's, ranking 10th overall. It ranked 10th competitively and 9th in industrial mix growth.

Agriculture, Forestry and Fisheries

Definition: Includes establishments primarily engaged in agricultural production, forestry, commercial fishing, and trapping, and related services. Agricultural production includes establishments primarily engaged in supplying soil preparation services, crop services, landscape and horticultural services, veterinary and other animal services, and farm labor and mangement services. Forestry covers establishments primarily engaged in the operation of timber tracts, tree farms, forest nurseries, the gathering of forest products, or in preforming forestry services. Does not include logging camps and logging contractors (manufacturing).

Fishing, hunting and trapping covers establishments primarily engaged in commercial fishing, operating fish hatcheries, and fish and game preserves; and commercial hunting and trapping.

-This industry ranked 12th in 1970 in terms of number of employed...down from 2nd in 1960.

-The relative strength of this industry was a rank of 30 in 1970 compared to 18 in 1960.

-The overall growth trend during the 1960's reflected the statewide downward trend and ranked 28th in Koochiching County. The competitive situation was in the low growth category also ranking 28th again. Industry mix influence also had a low growth picture, ranking 29th.

Mining

Definition: Includes all establishments primarily engaged in mining. Includes extraction of minerals occurring naturally: solids, such as coal and ores; liquids, such as crude petroleum; and gases, such as natural gas. Also includes quarrying, well operation, milling (crushing, screening, washing, flotation, etc.) and preparation customarily done at the mine site, or as a part of mining activity. Exploration and development of mineral property is included. Services performed on a contract or fee basis in the development or operation of mineral properties are also included. Establishments which have complete responsibility for operating mines, quarries, or oil and gas wells for others on a contract, fee, or similar basis are classified according to the product mined rather than as mineral services.

- The mining industry employs few workers in the County, ranking 31st in 1970 and 29th in 1960 as an employment generator.
- Its contribution to the economy ranked 29th in 1970 and 28th in 1960.
- The growth pattern during the 1960's, however, was enough to classify Mining as a "growth", ranking in a tie for 9th place overall. Its competitive position was good, ranking 6th, but its position among the industrial mix influence was negative, ranking no better than a tie for 21st.

General Merchandise Retailing

Definition: Includes department stores, variety stores, mail order houses, vending machines, and door to door sales. (The classification of mail order houses, vending machines, and door-to-door sales changed in 1972 and is now included in "Miscellaneous Retail Trade" under nonstore retailers. But in the 1960 and 1970 Census of Population, the source of the data used here, they are all included in General Merchandise Retailing).

-As an employment generator, this segment of the County economy ranked 22nd in 1970. There was no separate listing of this sector in the 1960 Census, being lumped together with the Other Retail Trade category.

-As a contributor to the strength of the economy, this industry ranked only 28th.

-This industry was included in the Other Retail Trade classification along with Motor Vehicles Retail & Service Stations. Thus, there is no basis for individual analysis from the period 1960 to 1970.

Trucking Services and Warehousing

Definition: Includes establishments furnishing local or long-distance trucking, or transfer services, or those engaged in the storage of farm products, furniture and other household goods, or commercial goods of any nature. Also includes the operation of terminal facilities for handling freight, with or without maintenance facilities. Storage of natural gas and field warehousing are not included.

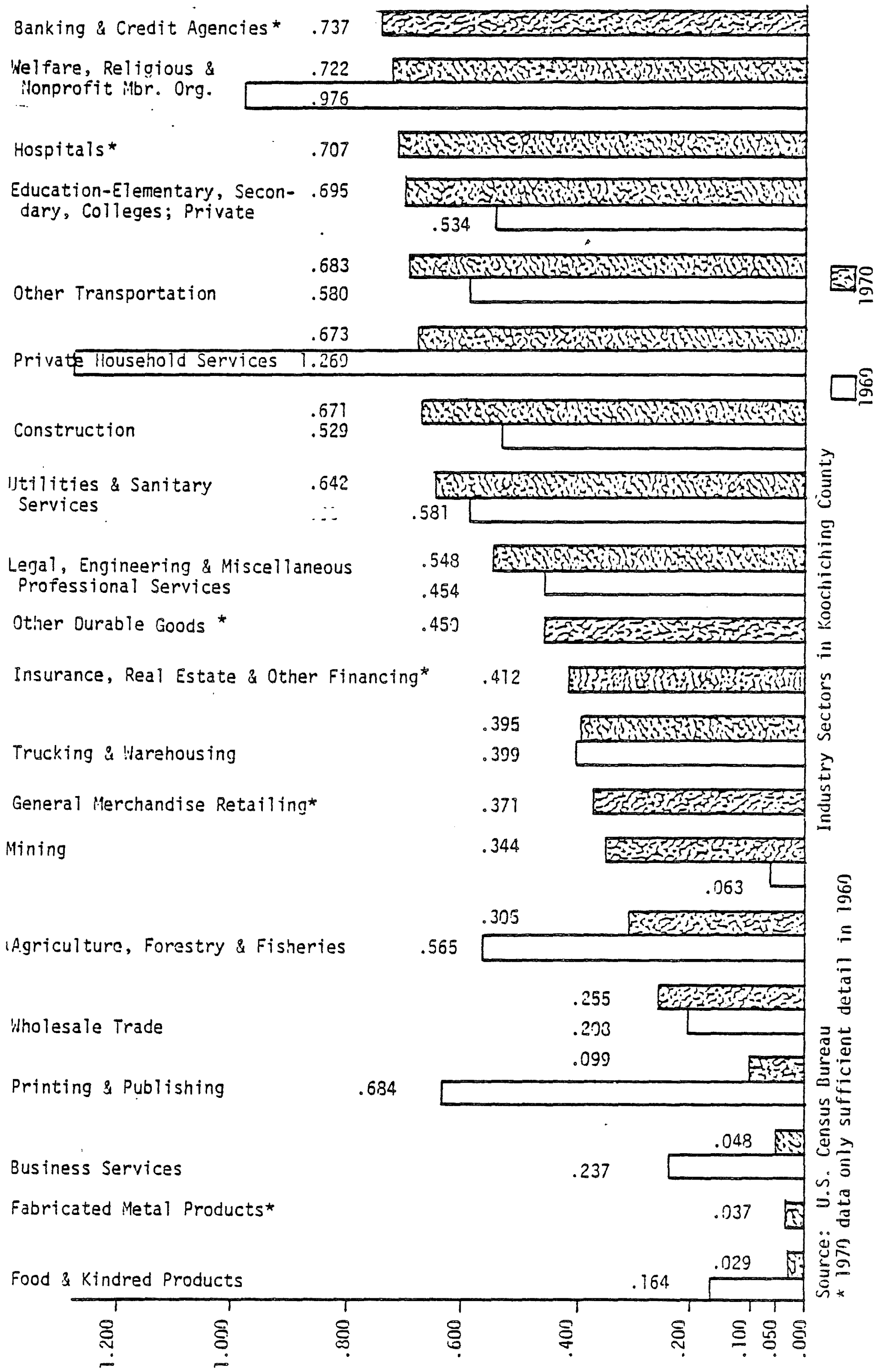
-As an employment generator, it ranked 29th in 1970 and 25th in 1960.

-Its position of strength was low, ranking 29th in 1970 and 25th in 1960.

-It was classified as a low growth industry in Koochiching County during the 1960's in the overall rating, which found Trucking Services and Warehousing ranking 15gh. It enjoyed positive growth due to the industry mix and ranked 18th. However, it declined in competitive advantage and ranked 15th. (The cutoff pints for high growth and low growth industries differs in these tow analyses. In the competitive analysis, the first 12 positions were classified as having a competitive advantage. The industrial mix category included 19 industries classified as high growth).

FIGURE 3

Bottom Ranked Industries By Location Quotient in 1970, With Comparisons to 1960, Koochiching County



The Middle Industries

The remaining industrial cateogories are in the middle group of the Koochiching County economy. They are just as important to the local economy as they are to the state economy. They cannot be classified as "basic" to the county nor are they likely to import products and services. The result of this assessment implies that the middle industries generally produce products and services that are consumed locally.

They are important to the local economy. They contribute over 40% of the employment in the County. They are, for the most part, far enough along in their development, that if they were promoted in the right direction, they could become a basic industry to the economy in Koochiching County. In order to accomplish this, a broader study of the Input-Output type could be quite useful for providing the right type of information for future economic development efforts.

The Multiplier Effect

The process used in this industrial analysis so far has identified the basic and non-basic industries in Koochiching County. By continuing our analysis, we estimate a broad economic impact of this basic-non-basic economic situation in the local economy. This is based on the assumption and logic that each basic industry in a region needs other industries to service its own needs as well as the needs of its workers. These are the non-basic industries we have discovered. Logic tells us that for every employee in the basic industries there are a certain number of employees in the non-basic or service industries that are required. This can be measured through the multiplier analysis.

The calculation of the multiplier factor uses the information in Tables 1 and

2.* By adding up the employment shown for the top industries indicated by the Location Quotient computation, subject to our judgment of a cutoff point at a Location Quotient of 1.200, we have identified the number of persons employed in basic industries. The next step is to take the total number of employed and divide it by the number of basic employees we have determined. The resulting figure is the "Multiplier." * See Appendix A

What the multiplier means for Koochcihing County can be explained by referring to the following table.

BASIC AND TOTAL EMPLOYMENT MULTIPLIERS IN KOOCHCIHING COUNTY

1960 & 1970

	1960	1970
Total Employment in County	5,553	5,676
Employment in Basic Industries:		
Other Nondurable Goods	2,000	1,793
Education-Government	----	451
Furniture, Lumber & Wood Products	321	425
Other Personal Services	----	264
Railroads & Railway Express Service	----	114
Private Household Services	165	---
TOTAL	2,486	3,047
Employment Multiplier	2.234	1.863

The multiplier in 1970 means that for every 100 persons employed in the basic industries in Koochiching County in 1970, there were 86 people employed in non-basic or service industries. If one of the basic industries expands or a new firm in the basic industry classification becomes established, every 10 employees added by that expansion or new firm will require nearly 9 additional persons employed in the non-basic or service firms to support the new or expanded industry operations in Koochiching County.

INDUSTRIAL ANALYSIS BY LOCAL DEVELOPMENT AREA

According to the same type of analysis of the employment by industry presented for the County, a breakdown is possible for each local development area. However, caution is urged in placing much emphasis on the results of analysis of areas as small as these. The theory works for larger regions, such as multi-state regions of the U.S.A. or for entire States. Occasionally, economic base studies are made on substate areas such as multi-county regions. But to draw specific conclusions about industrial projects and objectives from small area analysis is sketchy at best.

The type of analysis presented here is to describe the local development area economy in broad industrial terms. It may help to identify the concentrations of activity identified in the overall county analysis.

Littlefork

The strength of the Littlefork employment is apparently related to the Fabricated Metals manufacturing activity. This is misleading because the area includes Big Falls which was the residence of the four individuals employed in this industry. There were none from Littlefork employed in this industry. The relative strength of this industrial activity is high based on this type of analysis.

The largest job generator is in the Furniture, Lumber and Wood Products category, which ranks second in the industrial activity.

Other industrial activities ranking high in the Littlefork development area include;

Agriculture-Forestry-Fisheries
Food-Bakery-Dairy stores
Hospitals
General Merchandise Retailing
Eating and Drinking Places
Other transportation

The largest employment generator was Furniture, Lumber & Wood products, accounting for 44% of the employment in 1970. This fact and the high location quotient certainly highlights this as the most important activity for this development area.

Other strengths are identified in the following industries:

Trucking Service and Warehousing
Agriculture-Forestry-Fishing
Eating & Drinking Places
Mining
Construction
Utilities & Sanitary Services
Food-Bakery-Dairy Stores
Wholesale Trade
Public Administration

Northome/Mizpah

The strongest industry in this area is Wholesale Trade. According to the 1970 Census data, the majority of employed were residing outside of either Northome or Mizpah. The next most important industry was Education, Private the third largest job generator. However, there was no recollection of many jobs generated by this activity by local residents. The third most important was Repair Services, employing fifteen persons in Northome. A fourth significant activity was Agriculture-Forestry-Fishing. Medical & Other Health Services (except Hospitals) can be considered as one of the top five industries in the Northome area. Other relatively significant industries are:

Construction
Furniture, Lumber & Wood Products
Communications
Education...Government

Border-Birchdale-Clementson

Mining ranked as the number one industry, which was highly significant compared to the Koochiching County employment in mining overall. Other industries with large location quotients (above 4.000) included Other Transportation, Agriculture-Forestry-Fishing, and General Merchandise Retailing. Others considered basic to the area include:

Repair Services
Furniture, Lumber & Wood Products
Welfare, Religious & Nonprofit member organizations
Legal, Engineering, and Misc. Professional Services
Hospitals
Construction
Public Administration

Table 16

LITTLEFORK TRADE AREA: EMPLOYED BY INDUSTRY, 1970

	Littlefork	Big Falls	Nett Lake Res. (NE)	ED 4 (NE)	ED 5 (NE)	ED 6 (NE)	ED 23 (S)	E 22 (NW)	Total
Agriculture, Forestry, and Fisheries	18	7	2	1	12	3	5	3	51
Mining	0	0	-	-	1	-	-	2	3
Construction	11	11	1	1	8	2	7	2	43
Manufacturing									
Furniture, lumber and wood products	70	106	4	2	27	8	8	9	234
Fabricated metal, incl. nonspecific metals		4							4
Other durable goods	5	0	1	-	5	1			12
Printing, publishing and allied industries			-	-	1	-			1
Other nondurable goods, including non-spec. mfg.	19	0	14	8	123	35		2	201
Transportation, Communications, and Public Utilities									
Railroads and railway express service	7	0	1	1	9	2			20
Trucking service and warehousing		6							6
Other transportation			1	-	6	2		2	11
Communications			1	-	6	2	1		10
Utilities and sanitary services		4	-	-	3	1			8
Wholesale Trade		0	-	-	1	-	5		6
Retail Trade									
Food, bakery, and dairy stores	22	12	1	1	10	3			49
Eating and drinking places	13	20	1	-	7	2	1		44
General merchandise retailing	10	0	-	-	3	1		1	15
Motor vehicles retail and service stations	10	6	1	-	5	2			24
Other retail trade	5	3	2	1	13	4			28
Finance, Insurance, and Real Estate									
Banking and credit agencies			1	-	7	2			10
Insurance, real estate, and other finance			-	-	1	-			1
Services									
Repair services			1	1	9	3		2	16
Private households			-	-	1	-			1
Other personal services	4		2	1	14	4	3		28
Entertainment and recreation services			-	-	2	1			3
Hospitals	26		1	1	11	3		2	44
Medical and other health serv. except hospitals			-	-	2	1	3		6
Education :									
Elementary, secondary schools and colleges									
Government	34	17	3	1	19	5	6	2	87
Private			-	-	1	-	1		2
Other education and kindred services			-	-	1	-			1
Welfare, religious & non-profit member organizations			-	-	1	-		1	2
Legal, engineering, and misc. professional services			-	-	2	1		1	4
Public Administration	18	11	1	1	10	3	2	2	48
Total	272	207	39	20	321	91	42	31	1,023

ED = 1970 Census Enumeration District

Source: 1970 Census of Population, 4th count summary tape.

Table 17

BIG FALLS TRADE AREA: EMPLOYED BY INDUSTRY, 1970

	Big Falls	ED 23 (S)	ED 22 (NW)	Total
Agriculture, Forestry, and Fisheries	7	5	3	15
Mining	0	-	2	2
Construction	11	7	2	20
Manufacturing				
Furniture, lumber and wood products	106	8	9	123
Fabricated metal, incl. nonspecific metals	4			4
Other nondurable goods, incl. non-spec. mfg.	0		2	2
Transportation, Communications, and Public Utilities				
Trucking service and warehousing	6			6
Other transportation			2	2
Communications		1		1
Utilities and sanitary services	4			4
Wholesale Trade	0	5		5
Retail Trade				
Food, bakery, and dairy stores	12			12
Eating and drinking places	20	1		21
General merchandise retailing			1	1
Motor vehicles retail and service stations	6			6
Other retail trade	3			3
Services				
Repair services			2	2
Other personal services		3		3
Hospitals			2	2
Medical & other health serv. except hospitals		3		3
Education (sub-total)				
Elementary, secondary schools and colleges				
Government	17	6	2	25
Private		1		1
Welfare, religious & non-profit member organizations			1	1
Legal, engineering, and misc. professional services			1	1
Public Administration	11	2	2	15
Total	207	42	31	280

ED = 1970 Census Enumeration District

Source: 1970 Census of Population, 4th count summary tape.

Table 18

NORTHOME-MIZPAH TRADE AREA: EMPLOYED BY INDUSTRY, 1970

	Northome	Mizpah	ED 23 (S)	ED 24 (S)	Total
Agriculture, Forestry and Fisheries			4	16	20
Mining			-	-	-
Construction			6	21	27
Manufacturing					
Furniture, lumber and wood products	9	4	7	27	47
Other durable goods		3			3
Transportation, Communications, and Public Utilities					
Communications			1	4	5
Utilities and sanitary services	4				4
Wholesale Trade		6	5	17	28
Retail Trade					
Eating and drinking places	7		1	3	11
Other retail trade	9				9
Services					
Repair services	15				15
Other personal services	5		2	9	16
Medical & other health serv. except hospitals	7		2	8	17
Education (sub-total)					
Elementary, secondary schools and colleges					
Government		13	6	21	40
Private	20	7	1	2	30
Welfare, religious & non-profit member organizations	5				5
Public Administration		5	2	8	15
Total	81	38	37	136	292

ED = 1970 Census Enumeration District

Source: 1970 Census of Population, 4th count summary tape.

Table 19

BORDER-BIRCHDALE-CLEMENTSON TRADE AREA: EMPLOYED BY INDUSTRY, 1970

	ED 21 (NW)	ED 22 (NW)	Total
Agriculture, Forestry, and Fisheries	12	2	14
Mining	10	2	12
Construction	7	1	8
Manufacturing			
Furniture, lumber and wood products	29	5	34
Other nondurable goods, including non-spec. mfg.	8	2	10
Transportation, Communications, and Public Utilities			
Other transportation	6	1	7
Retail Trade			
General merchandise retailing	5	1	6
Services			
Repair services	7	1	8
Hospitals	8	2	10
Education (sub-total)			
Elementary, secondary schools and colleges Government	8	2	10
Welfare, religious & non-profit member organizations	4	1	5
Legal, engineering, and misc. professional services	3	1	4
Public Administration	6	1	7
Total	113	22	135

ED = 1970 Census Enumeration District

Source: 1970 Census of Population, 4th count summary tape.

Industrial Market Analysis For Timber Resources

Introduction

Market analysis has different meanings depending upon the type of market analysis being undertaken. Since this analysis is dealing with an industrial objective, the definition of market will be concerned with firms primarily interested in products and services related to industrial goods. The other side of the market concept, of course, deals with consumer goods which are used primarily by individuals and families.

The understanding of industrial markets for the products, services and factors for facilitating the operation of an enterprise must involve some thought about the characteristics of the market. In the case of industrial markets, we can summarize the major components necssary in the understanding of the markets which we will be interested in. These are 1) the number of business firms with demonstrated or latent need for goods or services used by the firms; 2) funds or credit available for their purchase; and 3) willingness to spend funds to satisfy needs. We have most of the data available to us regarding the number, size, and location of firms. It is another story regarding information about such intangibles as who influence decisions on purchasing and what the likely need is for certain products and services. The intangible of ability to purchase is also not readily known. Thus, the available data limits the analysis of industrial markets in this report.

Past studies of the region are another source for marketing data. One such study... Flakeboard Feasibility Study.. by Pope-Reid & Associates about Cook and Lake Counties of the Arrowhead Region, provide information about products and resources that can be used in this study at hand. Another study ... Arrowhead Region Timber Resources.... also contains information on specific firms showing their annual purchases in carloads by species from the Arrowhead Region. Thus, some market information is available for identifying potential markets. A word of caution is necessary, however. Decisions about individual projects should be made with additional feasibility studies that are beyond the capacity of this report.

The U.S. Census of Manufacturers, 1972 contains data on the number of establishments, employees and payroll by industry. Other information available from this source includes: number, man-hours, and wages of production workers; cost of materials, value of shipments, and capital expenditures by industry. In addition, this source indicates the value added by the process of manufacturing. This type of information is helpful to understand the impact of manufacturing on the value of products and raw materials produced in an area.

Another study recently completed is a draft final report entitled, "Minnesota Timber Resource Study" prepared for the Legislative Committee on Minnesota Resources. It is authored by George Banzhaf & Company, Milwaukee, Wisconsin. Excerpts of the report are included here in summary and paraphrased from the chapter covering the topic of Future Forest Products Demand. The data is preliminary and subject to revision and verification.

Products

Products identified in a survey of secondary wood industries within the Arrowhead Region are listed below, as reported in the Arrowhead Region Timber Resources, 1978 study.

Product	SIC Number	No. of Producers Responding
Lumber	2421	2
Millwork (moldings)	2431	2
Interior frames	2439	2
Pallets	2448	2
Crating & blocking	2449	1
Fencing	2499	1
Stakes	2499	1
Other	2499	1
Furniture & Cabinets	2511	3

Other information was obtained on the nature of sales (geographically and volume), wood residues, and the major markets for the wood species purchased from the region. Highlights of the results are presented as follows:

Sales data from producers responding:

Total sales	$2,300,000	100%
Sales in Arrowhead Region	391,000	17
Sales outside Region, but within Minnesota	345,000	15
Sales outside Minnesota	1,541,000	67

Wood Residues

-More than 2400 tons were produced annually by Regional firms.

-Over 95% of all residues were simply disposed of for unproductive purposes.

-Only two firms (of nine firms responding in survey) utilized any portion of their residues; neither one used more than 14% of the residues.

-Residues were used for the following purposes:

1. Input for manufacturing pulp, hardboard, or roofing felt.
2. Household fuel.

-The major potentials for wood residues are:

1. Fuel for energy.
2. Input for other production processes.

Major Markets for Wood Purchased from Region:

-There were purchases of 250,000 cords from Arrowhead Region producers.

-Approximately 150 different firms purchase this region's wood production.

-The 150 firms are scattered among six states (Wisconsin, Illinois, Michigan, Minnesota, Nebraska).

-Hardwoods purchases account for 90%.

-Nearly one-half of these purchases are for these species.

Aspen-13.3%, Soft Maple-11.4%, White Birch-11.0%, Basswood-10.3%.

-Only 11.8% of purchases were by Minnesota firms.

-Wisconsin firms purchased 38% of total surveyed.

(Note: Above survey did not include purchases by such major Minnesota firms as Blandin Paper, Boise Cascade, Potlatch, Conwed, Superwood, Hoerner-Waldorf, etc.)

North Central Market For Wood Products Manufacturing

The U.S. Census of Manufacturers presents data on the nature of wood products manufacturing in the North Central States, a twelve-state region of the U.S.A. This source is the primary one for facts about the structure of the economy and therefore provide information essential both for government and business. It provides measures of potential markets in terms of areas, kinds of business, and kinds of products. The census obtains for every manufacturing plant with one employee or more, data on its input of labor, materials, and capital; its output of proudcts and services, its location, and other characteristics. The North Central Region of the U.S.A. is the most important region in terms of value added by manufacture, accounting for the largest percent (34.9%) of any of the four regions. The major metropolitan areas in this region include: Chicago, Detroit, Cleveland, St. Louis, Minneapolis-St. Paul, Milwaukee, and Cincinnati, all within the top twenty ranked in value added by manufacture. Value added is a measure which compares the relative economic importance of manufacturing among industries and geographic areas. It is an accounting concept that involves such items as: total cost of materials, supplies, fuel, electric energy, cost of resales, etc., which are then subtracted from the value of shipments. The final figure is then adjusted by the net change in finished products and work-in-process inventories throughout the year.

The following summary provides information about the types of plants that produce products requiring the type of raw materials and resources found in Koochiching County. The figures indicate the magnitude of the manufacturing activity and also presents an overall average of the elements necessary in the processing of products using the resources found in Koochiching County as well as other areas in North Central region.

Highlights of Wood Products Manufacturing in the North Central U.S.A.

Paper Mills, Excluding Building Paper

-There were 88 paper mills (excluding paper) in the North Central States in 1972.

-These 88 firms employed 37,300 people, an average of 424 per establishment.

-Payroll totaled $419,400,000.

-Average payroll per employee was $11,244.

-The 88 firms had 30,100 production workers...80.7% of total employees, averaging 342 per establishment.

-The production workers recorded 66,700 man-hours.

-Average payroll per production worker was $10,801.

-Average wage per man-hour was $4.87.

-Average cost of materials per establishment was $10,880,682.

-Average value of shipments per establisment was $19,617,045.

-Average new capital expenditures per establishment was $915,909.

Building Paper and Board Establishments

-There 29 establishments manufacturing building paper & board in the North Central States.

-They employed 3,500 people, averaging 121 per establishment.

-Average payroll per employee was $9,514.

-Production workers number 3,000 with an average wage of $9,100.

-The average number of production workers per establishment was 103.

-Average wage per man-hour was $4.33.

-Average cost of materials per establishment was $2,244,828.

-Average value of shipments per establishment was $5 million.

-Average capital expenditure (new) per establishment was $193,103.

Other Nondurable Goods. Total

There were 5,331 establishments in 1972 in the North Central States.

-Total number of employees was 476,400.

-Average payroll was $9,262 per employee.

-Average payroll per establishment was $827,706.

-Production workers numbered 364,300 with an average wage of $8,488.

-Average wage per man-hour was $4.16.

-Average cost of materials was $2,495,967.

-Average value of shipments per establishment was $4,349,390.

-Average new capital expenditure was $180,116 per establishment.

-Average number of employees per establishment was 89.

-Average number of production workers per establishment was 68.

Furniture, Lumber & Wood Products

-There were 7,415 establishments in this industrial category in the North Central States in 1972.

-These establishments employed 228,300 persons or 31 per establishment.

-Average payroll per establishment was $235,172 and $7,638 per employee.

-Production workers numbered 185,000 or 25 per establishment.

-Average wage per production worker was $6,633.

-Average wage per man-hour was $2.69.

-Average cost of materials per establishment was $497,896.

-Average value of shipments was $945,232 per establishment.

-Average new capital expenditures was $25,840 per establishment.

Logging Camps:

-Total number of logging camps in the North Central States was 1,121 in 1972.

-Total employees was 4,400 or 4 per establishment.

-Payroll amounted to $22,500,000 or $20,071 per establishment.

-Payroll per employee averaged $5,114.

-Production workers averaged $4,610 in annual wages and $2.78 per man-hour.

-Production workers averaged just under 4 per establishment (3.7).

-Average cost of materials per establishment was $57,449.

-Average value of shipments per establishment was $100,268.

-Average new capital expenditure per establishment was $6,958.

Wood Products and Related Markets

A study of wood products feasibility for Cook and Lake Counties in Minnesota was conducted by the environmental firm of Pope-Reid Associates, Inc. contracted by the Minnesota Department of Economic Development. The report included an analysis of wood requirements for various manufactured products and their market potential. An excerpt from this study is included here.

Hardboard Products-

The market for this product is concentrated in the residential construction and residential remodeling area (60%). Industrial use of hardboard makes up the remaining 40% of this market. The general market trend is for annual growth in consumption of 3% through 1983.

Flakeboard Products-

The major markets for this product are in new residential and also non-residential construction. Industrial consumers and residential remodeling are also considered good markets for flakeboard.

The market trend for new residential construction is projected to increase 22.5% per year from 1979 through 1987.

The projected average annual demand for floor decking and wall and roof sheathing in the U.S. from 1978-1979, in terms of millions of square feet is:

3/8" 8,812 MMSF

1/2" 6,609 MMSF

The North Central U.S. demand is projected for the same period to be:

3/8" 2,089 MMSF

1/2" 1,567 MMSF

Plywood Products-

The markets for plywood are in construction, manufacturing and shipping. The market trend has been declining for plywood in the roof sheathing market, where plywood once had a 92% share. It has now dropped to 85% (1979) due to the use of board and waferboard by building contractors. The American Plywood Association predicts that plywood demand can still be made to grow at a rate of 3 to 4% per year.

Wood Preserving-

The prime markets for wood preserving appear to be in telephone poles and railroad crossties. The market trend is predicted to follow closely the overall U.S. GNP growth rate, but at a slightly lower rate.

Furniture-

Furniture markets are limited to households, offices and stores. There are no specific trend data available. The general economy will dictate the level of demand here.

Matching of Supply with Potential Products

Based on a feasibility study for a flakeboard plant in Cook County, it is known what wood requirements are desireable for certain wood products. Following is a listing of the products and the necessary wood requirements that are available in Koochiching County.

Products	Wood Requirements
Hardboard	Aspen and other broadleaf species. (Sound quality but some center and surface defects permitted).
Flakeboard	Aspen, basswood. Sound quality but some center and surface defects.
Veneer and plywood	
Face	Basswood, Birch, Maple, Oak, Ash, Elm.
Core	Basswood, Balsam Poplar, (Sound green timber)
Wood Preserving	Northern White Cedar (Sound green timber)

Furniture blanks	Broadleaves, especially quality hardwoods. (Sound green timber or small quantities of recently dead trees within 2-3 years).
Energy generation	Oak, Birch, Maple, Ash (Sound, partly defective green or recently dead).
Wood Chips	Balsam, Ash, Birch, Maple, Oak (Sound, partly defective, recently defective).

Demand for Wood Products

Introduction

An analysis of demand can enable us to determine the volumes of timber products likely to be consumed under certain assumptions on population and economic growth, technological changes and institutional changes, and also on trends in prices of timber products.

A large percentage of softwood lumber and plywood (one-third) and a substantial volume of other timber products such as hardwood plywood, particleboard, and insulation board, were used in the production of new housing. By analyzing the demand for housing by the source of demand (new households, vacancies, and replacements) we can focus on the nature of the demand for timber products that are needed.

U.S. Forest Service Estimates

According to estimates by the U.S. Forest Service, demand for new housing in the U.S.A. will increase to an annual peak of 2,590,000 units during the 1980's and decline thereafter. Household formations will also decline in importance. Vacancies, another major component of housing demand, has varied in the past 30 years but has stablized at about 3.5% and is assumed to remain at this level in the future. The third major component of demand is housing replacement. This refers to the replacement of units due to fire, flood or other disaster and also those retired because of abandonment due to delapidation, energy inefficiency, unfavorable location or other factors. It is in this category that demand will overcome household formation demand during the first decade of the twenty-first century (2000-2010). See Table 20.

Projections of type of housing units by the Forest Service, indicate average annual units to be declining in all types. The ratio of single-family to multi-family, however, will drop from 75 percent of total conventional units to 70 percent from the 1980's to the 2020's. Multi-family units will increase in share from 25% to 30% during the same period. Mobile homes will not vary in share, capturing between 10 and 12% of the total production during the projection period (Table 21).

The demand for lumber in Koochiching County for residential purposes does not appear to approach the volumes shown if per capita consumption were to follow the national average. Based on the average of the building permits for residential construction for the period of 1977-1979, the total demand for lumber would be 1,500,000 board feet (Table 21). According to the per capita consumption of timber products nationally, and the population level of Koochiching County, the need for lumber should be 3,960,000 board feet (Table 22). Therefore, the markets must be much broader in scope. The State of Minnesota is estimated to need 895,532,000 board feet of lumber in the year 1980, based on a per capita consumption rate of 220 board feet (Table 23).

Table 20

Average Annual Demand for New Housing in U.S.A.

(in thousands of units)

Period	Total Demand	Household Formations	Vacancies-Coventional Units	Net Replacements
1960-69	1648	1039	-23	591
1970-77	2145	1532	120	415
1980-89	2590	1570	190	760
1990-89	2240	1060	150	970
2000-09	2300	1010	140	1080
2010-19	2270	910	130	1160
2020-29	1980	600	100	1220

Source: U.S. Department of Commerce, Bureau of Census

Estimates of Vacancies & Replacements by Forest Service

Table 21

Needed, Based on Amount of Estimate of
Koochiching County Timber Products Consumed Per Housing Unit, 1980

Product	Single-Family	Two-Family	Three-Family	Four-Family	Total
Lumber-					
Board Feet Per Unit	11,633	6,283	6,283	6,283	--
Ave. Permits Per Year	124.4	1.7	.3	1.3	--
Lumber Needed Per Permit	11,633	12,566	18,849	25,132	--
Lumber Needed Per Type of Housing	1,447,145	21,362	5,655	32,672	1,506,834
Plywood 3/8 in.-					
In Squre Feet Per Type of Housing	5,834	6,492	9,738	12,984	--
Ave. Permits Per Year (1977-1979)	124.4	1.7	.3	1.3	--
Total Plywood Needed In Square Ft.	725,696	11,036	2,921	16,879	756,532
Board-					
Board Needed Per Type of Housing in Square Feet	1,912	3,824	5,736	7,648	--
Ave. Permits Per Year (1977-1979)	124.4	1.7	.3	1.3	--
Total Board Needed in Square Feet	237,853	6,501	1,721	9,942	256,017

Source: U.S. Department of Agriculture, Forest Service, Calculations by ARDC

Table 22

Koochiching County Lumber Demand

Year	Population	Per Capita Average Consumption of Lumber (Bd. Ft)	Average Consumption Of Lumber Kooch County (Bd. Ft.)
1970	17,100	193	3,300,300
1975	17,500	194	3,395,000
1980	18,000	220	3,960,000
1985	18,300	233	4,263,900
1990	18,400	238	4,379,200
1995	18,300	234	4,282,200
2000	17,800	230	4,094,000

Source: Minnesota State Demographer

U.S. Forest Service

Calculations by ARDC

Table 23

Estimate of State Demand for Lumber

Year	Population	Per Capita Consumption (in Bd. Ft)	Aggregate Consumption of Lumber (in Bd. Ft.)
1970	3,806,100	193	735,577,300
1975	3,921,000	194	760,674,000
1980	4,070,600	220	895,532,000
1990	4,329,700	238	1,030,468,000
2000	4,539,600	230	1,041,808,000

Source: Minnesota State Demographer

U.S. Forest Service

ARDC Calculations

Future Demand for Forest Products

The following is excerpted from a draft copy of a report "Minnesota Timber Resource Study" by George Banzhaf & Company and is subject to verification and review by the Legislative Commission on Minnesota Resources.

World-

Even though economic growth has slowed world-wide, economic forecasts for demand for forest products will continue to grow at a modest pace throughout the decade of the 1980's. This will mean a high demand on forest resources. Such products as housing and paper and paperboard will keep up with the rate of general growth of the economy during the 1980's but decline slightly during the 1990's.

Prices will rise for wood products as the cost of the major raw material increases. This will not mean a serious discouraging effect on the demand for forest products due to the still desireable characteristics of forest products for many uses, rapidly increasing prices for substitutes (plastics) and consumer preference. Due to problems on a regional basis worldwide such as inaccessibility, difficulty in processing, and political developments, the prime area for expansion will be North America.

USA-

High energy costs, inflation, and shortages of natural resources are all factors that indicate constricting growth of the real GNP in the USA for the next two decades. Industrial use of wood products for packaging, crating, furniture, and fixtures earmarks attention to the "Index of Industrial Production" as a key indicator of wood products demand. Based on this assumption, the growth of the overall index of industrial production is forecast to grow by 4.7% (compound annual average) for the 1980's and then decline to

3% in the 1990's.

Growth of furniture and fixtures production slowed sharply in the mid-1970's and is expected to grow even slower in the 1980's. It may climb back to an annual rate of 4.1% by the 1990's.

A strong demand for housing is anticipated due to a bounce back from the recent sharp drop and also is a strong fundamental demand for housing.

Softwood Lumber Demand-

Nationally, softwood lumber consumption is expected to continue its steady growth throughout the 1980's and 1990's. Attention should be focused on the most important end-use market...residential construction... but nonresidential construction is mentioned as a much less volatile market and is not subjected to the swings in residential construction experienced in the past. The key areas of nonresidential end-uses are industrial consumption and repairs-and-alterations. Geographically, shifts in regional softwood lumber consumption form the Northeast and North Central to the South and West have occurred during the past 20 years, but the northern demand levels have increased.

Hardwood Lumber Demand-

Due to a resurgence of underground coal mining and increased consumption in general industrial applications, the demand for hardwood consumption will grow during the next 20 years. Limited growth is forecast for Furniture-and-Fixtures demand, but is not expected to surpass the 1978-1979 levels. The limiting factor, of course, was the substitution of particleboard and hardboard during the 1970's. Demand is expected to grow for low-grade hardwoods in pallet, crate, dunnage, and packaging production in the latter 1980's.

Hardboard and Hardboard Siding Demand-

This sector, with its major end-use in residential construction, will continue to be sensitive to the volatility of the housing industry. Non-siding demand is expected to grow at a rate similar to the overall economy.

Particleboard, Waferboard, and Oriented Strandboard Demand-

This group of wood products was a recent growth phenomenon in the 1970's and was concentrated in new residential construction and repairs-and-alterations in the late 1970's. Although residential construction comprised 80% of the total demand in the late 1970's, it is forecast to drop to 50% in the late 1980's with repairs-and-alterations demand replacing it with 30% of the demand in the early 1980's. Industrial use will grow in packaging and crating.

Paper and Paperboard Demand-

A bright outlook is predicted for Minnesota's pulp and paper industry with the growth in printing and writing papers demand. The primary reasons for the above-average growth is the surge in magazine advertising and special interest magazines, the proliferation of paper-intensive office equipment such as copiers, and computers. Coated papers imports have risen 70% recently, pointing out an opportunity to displace these imports with domestic production.

The outlook for other grades of paper is not as bright, due to present over-capacity and slow growth projected for end-use demand, especially in the building paper and board sector. Recycled boards production does not promise to be very good, which is anticipated to experience only gradual market expansion and which will be limited to major population centers.

Minnesota-

Generally, Minnesota is in a favorable position to share in the national markets. The key factors for this optimisim rest with our available forest resource, a developed infrastructure, and a trained labor pool. Production costs are competitive with those in other parts of North America. Although overseas exports are not feasible for Minnesota producers, they can serve domestic markets.

Softwood Lumber-

Minnesota, in the 1970's, enjoyed a lower increase in the harvest price of softwood stumpage, compared to the West Coast and the South. This points out an opportunity for Minnesota lumber producers to find wider margins, thus stimulating development of marginal softwood timber reserves.

Hardwood Lumber-

An advantage appears likely for low-grade hardwood sawtimber markets to be very competitive. The strongest bulk hardwood lumber markets in the 1980's will be industrial pallet stock and railroad ties.

Hardboard-

Due to the location of three hardboard mills in Minnesota supplying 14% of the nations capacity, the state has a very significant role in the hardboard production future. Even though Minnesota has the wood resources to support additional hardboard mills, it is unlikely that the firms will witness significant hardboard capacity expansionduring the next 20 years because of the recent capacity additions and the weak demand in 1980 and 1981.

Phenolic Particleboard, Waferboard, and Oriented Strandboard (OSB)-

Minnesota will enjoy a leadership position in the reconstituted structural panel industry in 1981 with its three new waferboard and OSB mills and the expansion of another. Its major competitor is plywood, which is open to competition by the low-cast waferboard and OSB. Estimates of market shared have been 25 percent as a reasonable and achieveable goal. Long range growth depends on wood costs regarding the competitive advantage of Minnesota's mills.

Pulp and Paper-

Minnesota's share in supplying the national demand for paper and paperboard products has dropped since the mid-1960's. Costs per ton of production were higher due to problems with old mills. Changes in the cost position relative to the Pacific Northwest and Canada and also with the South, will be favorable, to Minnesota. The result will be a halt in the mild decline in market share and will either rise slightly or maintain its current level.

VI. RESOURCE POTENTIALS

VI. RESOURCE POTENTIALS

This section describes the various resources of labor, natural, and the suitable industrial sites within the county and the individual development areas. Data used varies with each type of resource. The labor force information is based on 1970 Census data which is based on where the person resided and the official labor force estimates prepared by the Minnesota Department of Economic Security agency records. Wage rates were obtained from the State agency records and the U. S. Bureau of Labor's prevailing wage rates based on their official decision of what the rates are for certain occupations in certain areas of the nation. The data is published in the Federal Register. Selected occupations associated with the construction industry are shown in Appendix D.

A. LABOR RESOURCES

Labor Force:

The labor force of Koochiching County numbered 7,800 in 1979. It ranged between 7,500 in February and 8,000 in September. For the six months of 1980, the labor force has averaged 8,200, varying from a low of 7,700 in March to 8,700 in June.

The labor force has grown 18.5% since 1970 (6,580 to 7,800). This is just under the regional growth rate of 21% over the same period. It was also less than the State rate (27%) and the national rate of 24.4%.

Employment growth has lagged behind the labor force as a whole growing at a rate of only 16.5% compared to the rates of 20.2% for the Region, 27% for the State, and 23.3% for the nation.

The number of employed numbered 7,300 persons in 1979. During the first six months of 1980, employment has averaged 7,200 which is the same level as in 1979.

The number of unemployed averaged 500 persons in 1979. During the first six months of 1980, it averaged 1,000 compared to 500 in the same period in 1979. The previous highest level of unemployed was in 1975 when 601 persons were unemployed, the same year in which the national unemployment level peaked since 1970.

Growth in unemployed from 1970 to 1979 has been rather alarming for all levels of government. It was the worst for Koochiching County (58.2%) compared to 42% for the Region, 26.5% for the State and 46.3% for the nation.

The percent unemployed is again on the rise for Koochiching County. During the past ten years, the percent unemployed has ranged from a low of 4.3% in 1972 to a high of 8.3% in 1975. The county rate peaked again in the same year of the national high - 1975. This was a year in which there were various government sponsored extension programs for unemployment claims. Another factor that must be considered in the high 1975 unemployment level was the downturn in automobile production, which caused a slowdown in demand for those products associated with the wood industry, such as insulation, door panels, trunk floors, etc.

Trade Area Labor Force

The size of the labor force in the trade areas was estimated by using 1970 Census figures as a base and then applying ratios to the 1970 Census figures based on the 1979 annual labor force estimates by the Minnesota Department of Economic Security. The resulting estimate for each trade area is therefore in terms of an average annual figure. Since the 1970 Census labor force figures were representative of only one day in the month of April, we should not use this figure for our analysis as a true picture to base decisions upon. Therefore, we must settle for data that is more consistent with the periodic data from the State which enables us to judge the relative size of the labor force on a monthly basis.

Littlefork Area:

The Littlefork area labor force numbers 1,362, a 17.5% increase over the equivalent level of 1,159 (annually) in 1970. A significant increase in the number of unemployed from 26 to 41 occurred, resulting in a rise in the unemployment rate from 2.2% in 1970 to 3.0% in 1979.

	April 1, 1970	Annual 1970	Annual Estimate 1979
Number of employed	1027	1133	1321
No. of Unemployed	42	26	41
Pct. unemployed	3.9	2.2	3.0

Big Falls Area:

The Big Falls area labor force is estimated at 478 in 1979, an increase of 17.7% since 1970. The number of unemployed rose from 10 to 16, a 60% increase. The unemployment rate went from 2.5% in 1970 to 3.4% in 1979.

	April 1, 1970	Annual 1970	Annual Estimate 1979
Number of employed	359	396	462
No. of unemployed	16	10	16
Pct. unemployed	4.3	2.5	3.4

Northome Area:

The Northome Area labor force is estimated to be 590 in 1979, up from 482 in 1970 (22.4%). The number of unemployed, which was realtively large in 1970 at 67, is now estimated to be 106 in 1979, an increase of 58.2%. The unemployment rate rose from 13.9% to 18.0% from 1970 to 1979.

	April 1, 1970	Annual 1970	Annual Estimate 1979
Number of employed	376	415	484
No. of unemployed	107	67	106
Pct. unemployed	22.2	13.9	18.0

Border Area:

The Border Area labor force is estimated at 253 in 1979, up from 210 in 1970, an increase of 20.5%. Unemployment rose from 18 to 29 or 61%. The rate of unemployment went from 8.6% in 1970 to 11.5% in 1979.

	April 1, 1970	Annual 1970	Annual Estimate 1979
Number of employed	174	192	224
	29	18	29
Pct. unemployed	14.3	8.6	11.5

Labor Supply:

Another look at the labor force reveals that in addition to the basic size, number of employed, and unemployed, there are certain characteristics about those that are seeking work that may be important to know. Data are collected by the Minnesota Department of Economic Security (MDES) and are published periodically. From one of these reports..."Summary of Characteristics of the Active Application File, By Area Office"...we can stüdy the nature of those persons who are looking for work who registered in the International Falls Job Service office.

First of all, the total number of individuals who registered was 278 in May 1980. This is down from the 537 who were registered in May of 1979. The majority of the people were in the age group of 25-44; 164 (59%) in 1970 and 212 (39%) in 1979. Two out of every five had a high school education. One third (31%) had 13 or more years of education in May 1980 compared to about one fourth in May of 1979. The decline in numbers of registered minority, hadicapped and economically disadvantaged was quite pronounced from 1979 to 1980.

	Total Registered	By Education 12th Grade	13th Plus	By Age 19 to 21	22 to 24	25 to 44	45 to 54
May 1980	278	119	87	3	62	164	32
Percent of total	100	42	31	1	23	59	12
May 1979	537	246	121	117	105	212	37
Percent of total	100	46	23	22	20	40	7

The occupational and skill experience characteristics seem to cluster around three occupational categories; structural work, Clerical, and Other Services. Structural work experience includes such activities as welding, electrical assemply, painting, plastering, excavation, and construction jobs. Clerical includes stenographers, file clerks, bookkeepers, cashiers, shipping/receiving clerks, typists, and miscellaneous office machine operators. Other Services includes food, beverage and personal service occupations such as waiters, waitresses, bartenders, coors kitchen workers, barbers, hairdressers, host & hostesses, laundry and dry cleaning operations, security guards, porters, janitors, police officers, and fire fighters.

A comparison of the registrant claims in the International Falls office between the last twelve-month period follows:

	May 1980 #	May 1980 %	May 1979 #	May 1979 %
Professional, technical & Mana gerial	14	5	36	7
Clerical	42	16	61	12
Sales	18	7	41	8
Domestic	5	2	37	7
Other services	49	18	56	11
Farm, Forestry, Fisheries	10	4	16	3
Processing	3	1	1	1
Machine trades	18	7	26	5
Bench work	10	4	10	2
Structural work	92	33	190	36
Motor freight & Transp.	14	5	38	7
Pkg. & Material handling	3	1	23	5
Other	0	0	2	1
Totals	278	100	537	100

TRAINING:

Koochiching County is located in an area of the country where concern about labor, education, business and government has resulted in a cooperative effort to solve the problems of matching up training with jobs that are available. A network of agencies and individual business and governmental leaders exists in the form of a regional board that combines and supports efforts that develop vocational opportunities in the region. It helps coordinate services and activities where voids exist. The board works closely with the area vocational-technical directors to recommend new courses to meet current demands, to determine different ways to unite and use existing education programs and facilities, and to propose how to spend allocated dollars so that the entire region could best develop and balance its post-secondary and adult vocational education system.

Within this framework and training climate, the existing institutions are closely coordinated which provides every opportunity at solving training problems. One of the efforts of the Northeastern Vocational Operating Board (NEVO) is an informational program regarding the name, location, and programs of the facilities located in the region. Adult vocational education is a very strong part of the educational system. Facilities of almost every type are used throughout the region. Some of these include: Area vocational-technical institutes, various community facilities, local business, industry and government facilities, local school districts, new or expanding industries, other educational institutions, rehabilitation centers, vocational centers, etc.

Higher education facilities and programs are also liberally available in the region and includes such levels and facilities as:

The University of Minnesota, Duluth

State Community Colleges;

Rainy River Community College, Int'l Falls
Itasca Community College, Grand Rapids
Hibbing Community College, Hibbing
Mesabi Community College, Virginia
Vermilion Community College, Ely

Private Four-Year College;

College of St. Scholastica, Duluth

State University;

Bemidji State University, Bemidji

A listing of the names, locations, and contact persons is contained in the Appendix C of this report. Each institution should be contacted for information on programs and services.

Wages:

Data on wages are available from several sources. The most current data are from the Minnesota Department of Economic Security - Minnesota Wage Data by County - 1979. A summary of data for Koochiching County from the 1970, 1977, and 1979 reports is provided in Table 24.

Table 24

KOOCHICHING COUNTY AND STATE OF MINNESOTA MONTHLY WAGES

OCCUPATION/YEAR	YEAR	EMPLOYEES	KOOCHICHING COUNTY MIDDLE RANGE	KOOCHICHING COUNTY MEDIAN	STATE MEDIAN
Janitor:	1979	22	$1118-1118	$1118	$884
	1970	29	*	584	485
Laborer:	1979	55	650-1224	780	832
	1970	292	*	515	525
Waitress:	1979	44	458-501	490	347
	1970	NA			248
Cashier or Teller	1977	24	477-657	530	500
Cook	1977	20	442-615	562	506
Janitor	1977	20	*	988	804
Laborer	1977	31	451-602	503	822
Nurse Aide - Hosp.	1977	57	530-679	633	544
" , Gen. Duty	1977				
" , (RN)Hosp.	1977	22	926-1016	943	1009
" , Licensed					
" Practical -Hosp.	1977	25	688-830	756	702
Waitress	1977	41	407-426	425	331
Carpenter, Maint.	1970	78	*	728	853
Clerk, experienced	1970	33	373-473	427	425
Electrician, Maint.	1970	43	*	742	735
Equip. Oper., light	1970	34	*	549	572
Nurse Aide, Hosp.	1970	27	265-317	291	340
Plumber, Maint.	1970	38	*	728	995
Trades Helper, Maint.	1970	30	*	563	608

*Middle Range Same as Median

Source: Minnesota Department of Economic Security, Wage Data by County.

An excellent source of county income data is the Personal Income figures reported periodically by the U.S. Department of Commerce's Bureau of Economic Analysis, Regional Economic Information System. The data is presented in several ways including; total personal income by industry, derivation of personal income, (and by per capita personal income for each of the years from 1973-1978). The following shows the total 1978 personal income in dollars as well as a percentage breakdown by industry in Koochiching County.

	KOOCHICHING COUNTY		STATE
Industry	Dollars	Percent	Percent
Ag. , For., Fish.	$ 368,000	0.49	0.32
Construction	2,602,000	3.48	6.58
Manufacturing	35,109,000	47.02	24.09
Nondurable goods	30,585,000	40.96	9.45
Durable goods	4,524,000	6.06	14.64
Transpt. Pub. Ut.	3,639,000	4.87	7.79
Wholesale trade	1,045,000	1.40	7.95
Retail trade	8,317,000	11.14	10.15
Fin., Insur., Real estate	1,717,000	2.30	5.62
Services	8,647,000	11.58	15.12
Governemtn & Gov. Enterp.	12,419,000	16.63	13.69
Federal, civilian	2,677,000	3.59	2.18
Federal, military	264,000	.35	.27
State & Local	9,478,000	12.69	11.24

Per capita income has risen from $3,560 in 1973 to $6,104 in 1978. This is an increase of $2,544 or 71.5%. The per capita income for the State of Minnesota rose only 54.6% during the same period.

Wage information also exists on minimum wages for federal and federally assisted construction. This comes from the U.S. Department of Labor in the form of general wage determination decisions of the Secretary of Labor. The Labor Department studies local wage conditions for basic hourly wage rates and fringe benefits which are determined to be prevailing for the classes of laborers and mechanics employed on construction projects and in localities specified. The authority of the Secretary of Labor to make these decisions is from the provisions in the Davis-Bacon Act of 1931, as amended, and other statutes referred to in 29 CFR 1.1 and other sources. The general wage decisions are effective from their date of publication in the Federal Register. The wage rates contained in the publication shall be the minimum paid under such contract by contractors and subcontractors. There are modifications and supersedeas decisions which are also published in the Federal Register and are effective with their date of publication. Any person, organization or governmental agency having an interest in the wages determined as prevailing is encouraged to submit wage rate information for consideration by the Department of Labor. Further information may be obtained by writing to the:

U.S. Department of Labor
Employment Standards Administration
Wage & Hour Division
Office of Government Contract Wage Standards
Division of Construction Wage Determination
Washington, D. C. 20210

An excerpt from the latest publication of wage decisions is presented in the Appendix D.

B. NATURAL RESOURCES

This section discusses the natural resources of timber and peat, the two major resources in the area. The type of resources are identified in terms of data and maps from several sources such as the Minnesota Department of Natural Resources, the U. S. Forest Service, the Minnesota Land Management Information System (MLMIS), and the Koochiching County Land Commissioner. The amount and location of these resources are also from the above sources.

Timber:

The largest natural resource, in terms of acreage, in Koochiching County is commercial forest land. There were 1,278,900 acres or 63.9% in all types of commercial forest ownership in 1977 according to the U. S. Forest Service in their report, "Timber Resources of Minnesota's Aspen-Birch Unit, 1977". The majority (46.7%) of this land was under State of Minnesota ownership. Local governments own 21.4% of the commercial forest land. The forest industry owns the last major chunk with 17.8%. Together, these sources account for nearly 86% of all commercial forest land acreage in the County. (See Figure 4, Commercial Forest Land Ownership.)

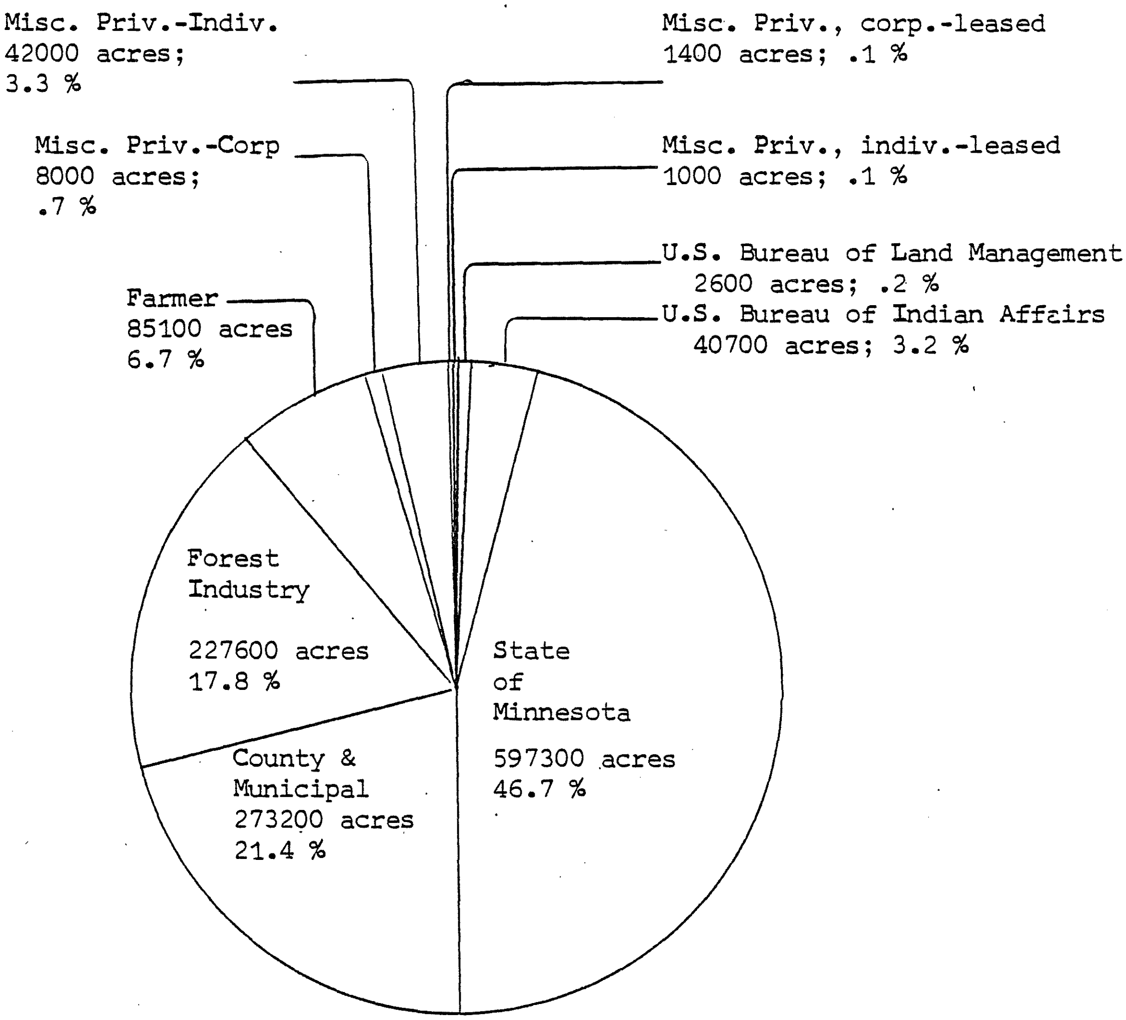
There was a decline in total forest land of over 74,000 acres or 4% from 1960 to 1977. But in commercial forest land, there was an even greater decline of 296,100 acres, or 19%. (See Table 25.)

Sawtimber stands more than doubled during this 17-year period from 94,900 acres to 193,700 acres. Poletimber lost acreage (132,800 acres) as did seedlings and saplings (97,400 acres). Overall, all stands declined by 296,100 acres or 18.8%. (See Table 26.)

Softwoods growing stock were being cut at a rate higher than the net annual growth. The greatest deficit was in the Tamarack (26,101 cords) and Black Spruce (23,241 cords). The hardwoods growing stock had an overall net annual growth greater than net annual drain resulting in a growth rate of a surplus 36,684 cords. This indicates that hardwoods should hold the greater potential in the county. The most prolific species - Quaking Aspen - had the greatest net annual growth (126,557 cords) but it also had the greatest net annual drain (139,089 cords). (See Table 27.)

Figure 4

COMMERCIAL FOREST LAND OWNERSHIP IN KOOCHICHING COUNTY, 1977



Source: U.S. Forest Service
Timber Resources of Minnesota's Aspen-Birch Unit, 1977; Table 3, page 13.

A forest cover map is provided that shows tree species in the county. The information was prepared by the Minnesota Land Management Information staff. The information was based on data from the U. S. Forest Survey by the North Central Forest Experiment Station. Aerial photos for 160 acre cells which had at least 10% cover of tree crowns were used. Ten codes were used:

0 Non-forested

1 White, Red, or Jack Pine

2 Spruce-Fir

3 Oak-Hickory

4 Elm-Ash-Cottonwood

5 Maple-Birch-Basswood

6 Aspen-Birch

7 Unproductive

8 Reserved

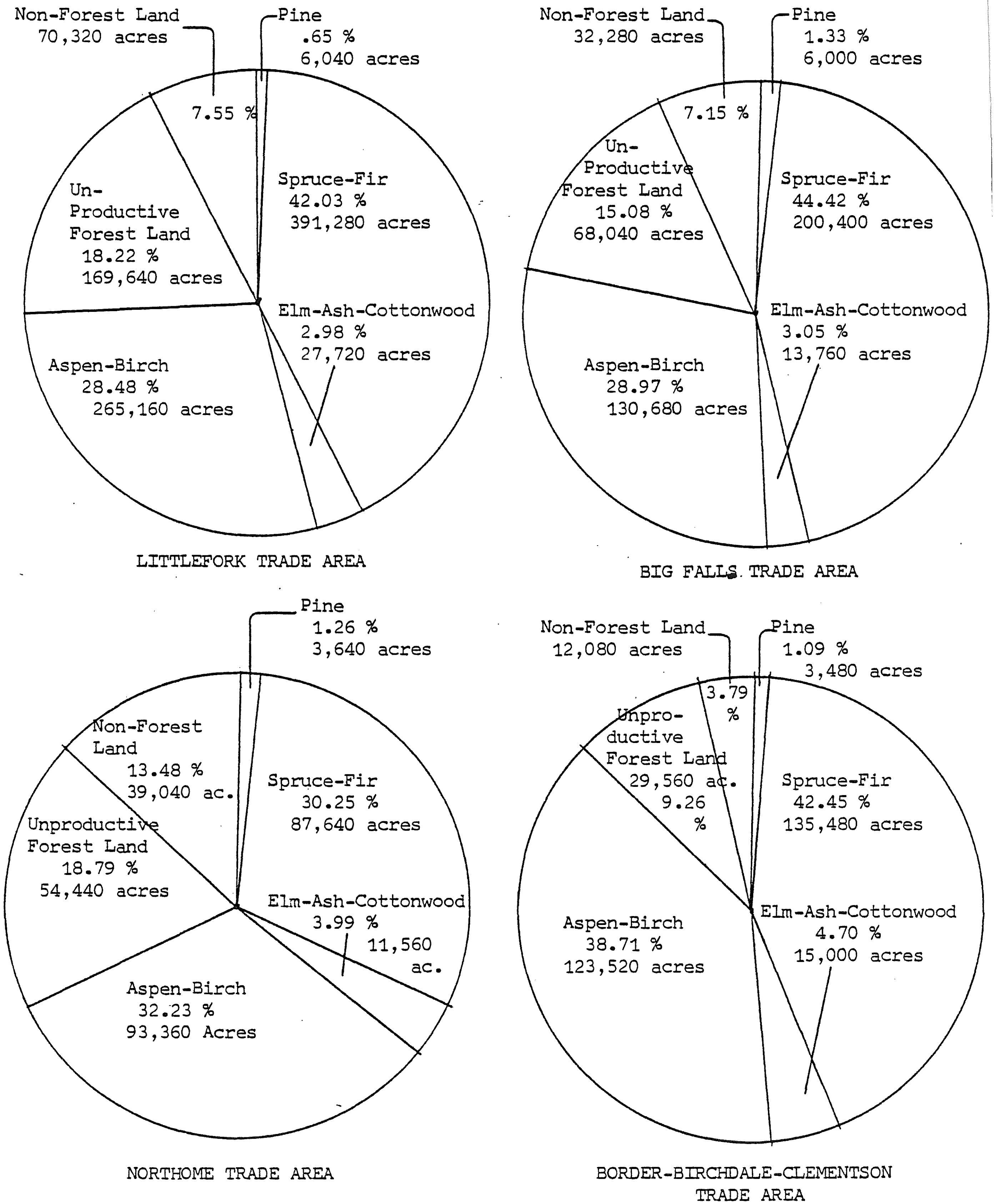
9 Non-forested (based on 160 acre cells, i.e., may have certain 40-acre cells that had 10% crown cover, but no 10% crown cover for the entire 160 acre cell)

Map 3 shows the location of the major tree species in the County. The system of overlays depicting the trade areas is a little different than the summary of tree species by trade areas shown in the accompanying figure. The MLMIS computer summary used the closest township and range coordinates that approximated the trade area boundaries established for this report. There are areas, especially outside of Koochiching County that will not be included in the forest cover data summaries shown in Figure 5.

NOTE: Maps 3, 4, & 5 will be a separate sheet and will be tucked in an envelope attached to the back inside cover!

Figure 5

FOREST COVER BY MAJOR TREE SPECIES BY TRADE AREA



Source: Minnesota Land Management Information System (MLMIS)

Table 25

COMPARISON OF SUMMARY STATISTICS FOR 1960 AND 1977
(THOUSAND ACRES)

Characteristic	1960	1977	Change #	Change %
Total Land Area	2,002.6	2,001.3	- 1.3	- .06
Non-forest	133.9	207.0	73.1	54.59
Total Forest Land	1,868.7	1,794.3	- 74.4	- 3.98
Commercial Forest Land	1,575.0	1,278.9	-296.1	18.80
Productive and Reserved	-	12.9	12.9	-
Non-productive	293.7	502.5	208.8	71.09

Source: U. S. Forest Service

Table 26

AREA OF COMMERCIAL FOREST LAND BY STAND SIZE CLASS
IN KOOCHICHING COUNTY, MN IN 1960 AND 1977
(THOUSAND ACRES)

	1962	1977	Change #	Change %
Sawtimber	94.9	193.7	98.8	104.21
Poletimber	722.3	589.2	-132.8	- 18.39
Seedlings and Saplings	580.6	483.2	- 97.4	- 16.78
Now Stocked	177.2	12.8	-164.4	- 92.78
All Stands	1,575.0	1,278.9	-296.1	- 18.80

Source: U. S. Forest Service, North Central Forest Experiment Station, Timber Resources of Minnesota's Aspen-Birch Unit, 1977.

Table 27

NET ANNUAL GROWING STOCK, DRAIN AND SURPLUS (DEFICIT) ON COMMERCIAL FOREST LAND IN KOOCHICHING COUNTY, 1976 (IN CORDS PER YEAR)

Species	Net Annual Growth	Net Annual Drain	Surplus or (Deficit)
SOFTWOODS			
White Pine	3,165	3,506	(341)
Red Pine	6,785	6,203	582
Jack Pine	7,975	19,392	(11,417)
White Spruce	17,481	8,924	8,557
Black Spruce	48,696	71,937	(23,241)
Balsam Fir	63,456	47,215	16,241
Tamarack	(1,671)	24,430	(26,101)
N. White Cedar	41,253	13,620	27,633
Other Softwoods			
Total Softwoods	187,139	195,228	(8,089)
HARDWOODS			
Select White Oaks	506	25	481
Select Red Oaks	-	671	-
Other Red Oaks	-	-	-
Yellow Birch	13	-	13
Hard Maple	354	76	278
Soft Maple	481	114	367
Ash	4,899	1,329	3,570
Balsam Poplar	42,671	8,076	34,595
Paper Birch	9,519	6,101	3,418
Bigtooth Aspen	253	570	(317)
Quaking Aspen	126,557	139,089	(12,532)
Basswood	1,557	405	1,152
Elm	8,532	2,114	6,418
Select Hardwoods	-	13	(13)
Other Hardwoods	(76)	-	(76)
Non-Comm. Species	-	-	-
Total Hardwoods	195,266	158,582	36,684
ALL SPECIES	382,405	353,810	28,595

Source: North Central Forest Experiment Station, Resource Bulletin NC-43.

Total growing stock in Koochiching County was less in 1977 than in 1960, dropping by 2,512,367 cords. The bulk of this decline was in softwoods (89%) and more specifically in Black Spruce (1.5 million cords). Total hardwoods declined by a net volume of 286,000 cords. The largest volume loss was in Quaking Aspec (427,405 cords). There were some gains, particularly in Ash (174,418 cords, 37%), and in Soft Maple (11,361 cords, 73%).

The key data regarding potential of the timber industry harvest volumes lies in the determination of recommended annual harvest of growing stock by species. The study by ARDC revealed conflicting methods of determining this important fact. The first set of figures were obtained from the Minnesota Department of Natural Resources (DNR) who developed estimates of recommended annual harvest in cooperation with the U.S. Forest Service's North Central Forest Experiment Station. Their (DNR) figures are the only ones available for all types of commercial forest ownership in Koochiching County. The Koochiching County Land Commissioner reviewed the recommended annual harvest figures produced by the DNR and differed in his assessment. Based on County Tax-Forfeited land records of growing stock volumes on their permanent plot survey measurements, he calculated a much more optimistic level of annual harvest. Upon rechecking with the U.S. Forest Service personnel in the North Central Forest Experiment Station office in St. Paul, ARDC staff was informed that the County Land Commissioner's figures were not conducive toward sustainable harvest levels. Therefore, two levels of recommendations can be derived from the two sets of data submitted.

Reference to Table 28 on "Recommended Annual Harvest of Growing-Stock Volume on Commercial Forest Land By Species" represents all types of ownership in the County. The estimates are by the DNR and US Forest Service. Recommended

Table 28

RECOMMENDED ANNUAL HARVEST OF GROWING-STOCK VOLUME
ON COMMERCIAL FOREST LAND BY SPECIES
IN KOOCHICHING COUNTY, 1977

Species	Recommended Annual Harvest Cords per Year	Net Annual Drain (1976) Cords	Surplus Cords	Deficit Cords	Net Cords
SOFTWOODS					
White Pine	2,940	3,506		566	
Red Pine	4,827	6,203		1,376	
Jack Pine	6,885	19,392		12,507	
White Spruce	7,243	8,924		1,681	
Black Spruce	32,602	71,937		39,335	
Balsam Fir	34,887	47,215		12,328	
Tamarack	7,307	24,430		17,123	
White Cedar	17,286	13,620	3,666		
Other Softwoods	0	0			
Total Softwoods	113,977	195,228	3,666	84,916	(81,250)
HARDWOODS					
White Oak	374	25	349		
Red Oak	290	671		381	
Hickory	0	0			
Yellow Birch	253	0	253		
Hard Maple	1,217	76	1,141		
Soft Maple	1,500	114	1,386		
Ash	11,954	1,329	10,625		
Balsam Poplar	26,607	8,076	18,531		
Paper Birch	28,403	6,101	22,302		
Quaking Aspen	98,075	139,089		41,014	
Basswood	1,454	405	1,049		
Elm	3,425	2,114	1,311		
Other Hardwoods	11	582		571	
Total Hardwoods	173,563	158,582	56,947	41,966	14,981
TOTAL ALL	287,540	353,810	60,613	126,882	(66,269)
	(A)	(B)			

Source A: Minnesota Department of Natural Resources (DNR), Wayne Hanson, Table #12. Preliminary
B: North Central Forest Experiment Station: Timber Resource of Minnesota's Aspen-Birch Unit, 1977. Table 42, p. 43.

Annual Harvest figures were supplied by the DNR while the net annual drain data was from the U.S. Forest Services report "Timber Resource of Minnesota's Aspen-Birch Unit, 1977; "Table 42, p. 43. Calculations were by ARDC staff. According to these calculations, softwoods are predicted to have a deficit in every species except White Cedar. Hardwoods are predicted to have surplus volumes of growing stock in all species except Quaking Aspen and some Other Hardwoods.

The obvious conclusion is disappointment regarding the Quaking Aspen species, with a deficit of drain over harvest recommended. This species is the area's greatest volume, but it is also the fastest cut species. These statistics indicate possible concentration on management of this species for more effective harvest yields. It also means that local loggers may not expect any additional potential as far as expanded cutting of this species, especially if Quaking Aspen is to be maintained at sustainable levels. Otherwise the species may be depleted from the abundant levels it now enjoys.

If the conditions represented by the DNR and U.S. Forest Service figures are to be followed, there does not appear to be any room for major expansion for the major primary wood processors...the loggers. Attention must then be focused on secondary wood processing activities such as kiln drying operations, and use of wood residue as energy use in fuels.

The largest surplus species...Paper Birch...does not appear at present to offer much potential. It is not used in large quantities now. Those that do use it have criticized its quality and efficiency in the manufacturing process.

The other side of the picture presents a more optimistic story. The Koochiching County Land Commissioner feels that Aspen is the largest surplus in Koochiching County. Instead of the recommended annual harvest on all commercial forest lands of 98,075 cords (estimated by the DNR and USFS), he feels that it should be more like 198,075 cords. He explained that they have never reached their allowable cut on aspen. In fact, he feels that they have developed a surplus of over 256,000 cords (Land Commissioner's figures) in the County since 1972.

The overall trends of declining commercial forest land and the lower growth of aspen (since the 1962 forest survey) and the continued growth in net annual drain of aspen species are factors that all point to caution in the future use and development of the timber resources in Koochiching County.

Opportunities do exist in forestry in the future. The general surplus of aspen and other hardwoods is sufficient to support a significant industrial expansion. This is recently evidenced by the announcements of new plants in Cook, Minnesota (Potlatch) and in Bemidji (Potlatch & Louisiana Pacific) and also an expansion in Grand Rapids (Blandin). These conditions, however, exist in general on a statewide basis. The question remains about the status of the Koochiching County resources to warrant significant local economic development based on its wood resources.

As the general economy improves, the capacity of the existing plants, which has been quite low recently, will gradually increase, causing the local establishe loggers to enjoy increased activity. The present activity is heavily oriented toward pulpwood production and supplies the major mill in International Falls. There are many more market outlets already established that will be demanding increased production levels from local loggers. The demand will be there, as reported by several consultants to local timber industry officials. The Industrial Analysis section of this report covers the market potential aspects.

Peat:

Another major resource besides timber is peat. Koochiching County is located in one of the nation's largest domestic resource areas for peat. Estimates of peat coverage indicate that there are 1,150,000 acres of peatland in the county which is 60% of the total land area. Koochiching County has more peat than any other county in Minnesota. The bogs located here are probably among the largest contiguous peat bogs in the United States. More than 90 percent of the peat in Koochiching County is estimated to be deep peat - over 5 feet in thickness. Almost all the peatlands are in forest use. Trees commonly found on these peatlands include black spruce, tamarack, and northern white cedar. These species are commercially harvested for pulpwood and poles. Most of the peatlands are located within the Pine Island State Forest, the Koochiching State Forest, and Smokey Bear State Forest. There are some peatlands on the Nett Lake Indian Reservation.

Map 4 shows the generalized peatland areas within Koochiching County. The map was prepared by the Minnesota Land Management Information System staff. Four class of peatlands were depicted.

Fuel peat	Peat that can be used for energy purposes (direct burning, conversion to synthetic natural gas, etc.)
Bog peat or Raised bog	A bog with an elevated, convex central area caused by peat accumulation. Usually there is little standing water, although the water table is close to the surface.
Other peat types	Horticultural, agricultural, etc.
Non-peat	Lands not containing a dominant portion of a 40-acre cell classified as peat.

(See Map 4.)

NOTE: Map 4 will be a separate sheet, folded, and tucked into envelope inside back cover!

There is a slight difference in the summary data for peatland acreages shown in Figure 6. This is due to limitations in fitting the trade area boundaries established for this report to the MLMIS data cells for the peatland information. As a result, the data is not exactly comparable to the trade areas, but is sufficiently close to provide a generalized idea of the relative amounts of peatlands in each trade area. (See Figure 6.)

The majority of peat is of the moderately decomposed reed-sedge (hemic) type. It is characterized by its dark reddish-brown color, and comes from sedges, rushes, reeds and woody plants. Current small scale use of hemic peat includes the production of wild rice, vegetables, and sod. Hemic peat is generally considered the best for energy and agricultural uses.

Development Potential:

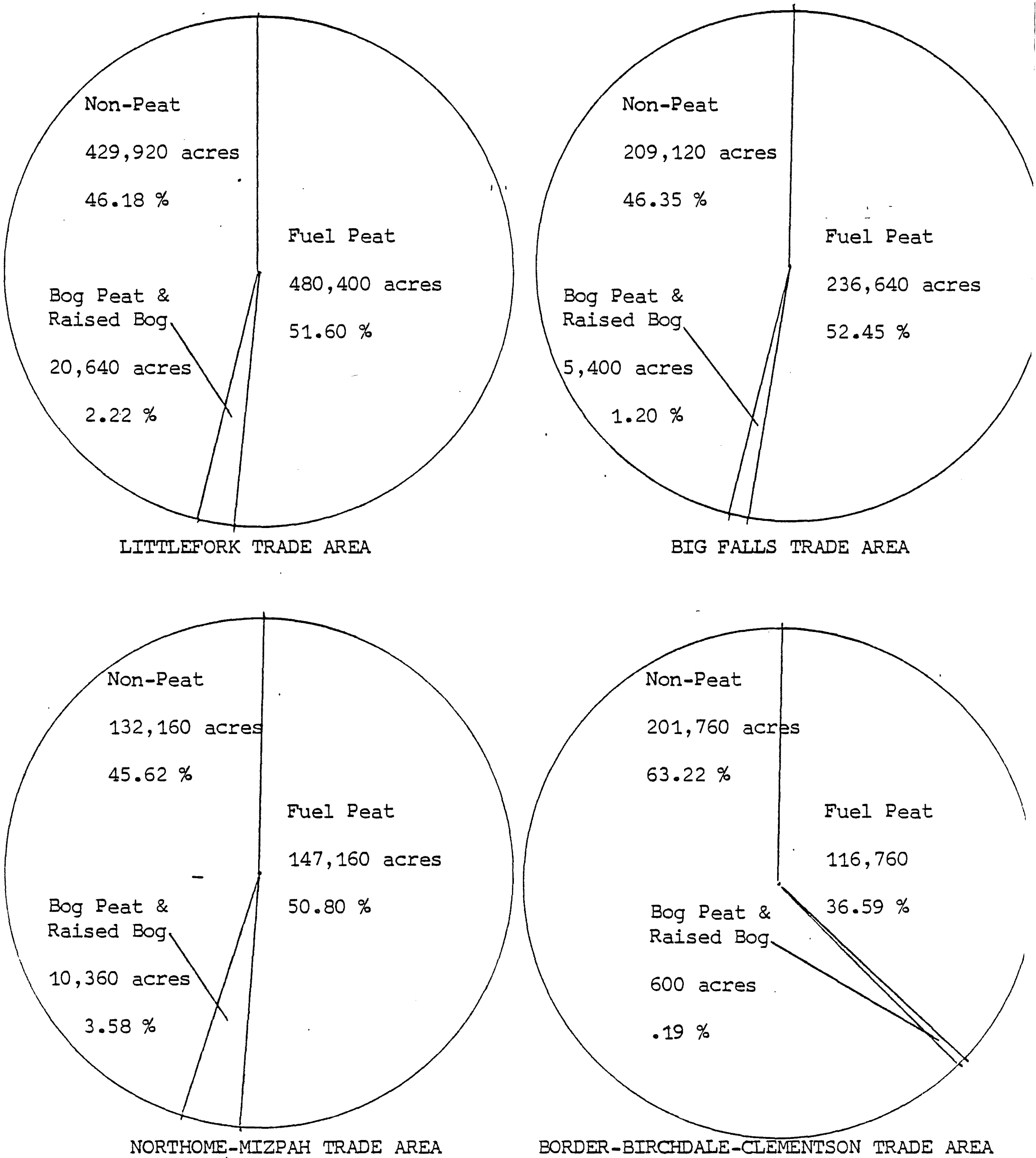
Information from expert consultatnts and available literature reveals that future peat land development options fall into only five different industry groups:

- Agriculture
- Chemical production (including synthetic natural gas)
- Synthetic gas distribution
- Peak coke production
- Peat mining

Agricultural related development would be for crop production, potentially for cold season crops such as spinach, brocolli, carrots, celery, cabbage, and in production of forage grasses and grain. Land clearing and drainage would be needed in order to prepare for sustained crop production. Less important would be such items as wild rice production and horticultural

Figure 6

PEATLAND BY TRADE AREA IN KOOCHICHING COUNTY



Source: Minnesota Land Management Information System (MLMIS)

products, primarily for soil improvement by the home gardener.

Major industrial activities may include:

- activated carbon for waste water filtration
- coke for metallurgical purposes
- chemicals such as furfural, humic acides, and phenols alcohol
- peat gasification

Vast tracts of peat land in Koochiching County are a particularly attractive location for some or all mining activity.

Synthetic Natural Gas Production:

According to a study prepared by the University of Minnesota for the Phase II Peat program of the Minnesota Department of Natural Resources, peat gasification and production of chemical by-products head the list of potential uses for peat.

An example of a pilot plant producing initially 80,000,000 cubic feet of synthetic gas per day with eventual full-scale production of 250,000,000 cubic feet per day capacity was mentioned. A plant this size would represent an economically feasible full-scale gasification plant. Such a plant would require the following:

Annual cost estimates (in 1970 dollars)

Peat Feed	$ 59,000,000
Supplies	29,460,000
Labor	14,700,000
Capital	78,750,000
	$181,910,000

Peat requirement	18,000,000 tons of 30 percent moisture peat annually
Workers required	1,260
Construction labor force	2,700 @ year for 3 years (annual payroll of $105,000,000)

These figures are very sketchy at best. Caution is urged when quoting or using these figures. They are conservative and are based on assumptions that may not be realistic. These figures were based on 1976 dollars and converted back to 1970 dollars for consistency with the economic impact data.

The impact of the peat industry has been estimated showing what would happen in the eight-county study area (Arrowhead Region plus Douglas County in Wisconsin). Individual indicators included were:

Population

Gross output

Employment

Earnings

The impact was based on simultaneous development of five peat industries - crop agriculture, synthetic gas (and chemical) production, synthetic gas distribution, peat coke production, and peat mining. The composit development forecasts showed:

Area population increase of 18,700 persons (by 1986)

Gross output increase of $529,400,000 (in 1970 dollars)

Employment would increase by 12,400 persons

Earnings from wages and salaries would increase by $95,650,000 (1970)

State Policies:

The State of Minnesota has, during the period since 1975, undertaken an extensive Peat Research Program that has produced over 27 separate studies regarding peatland utilization. As a result, interim goals, objectives and policy alternatives have been developed for a sound peatland management policy. They are not comprehensive yet, because energy issues have not been addressed.

The overall goal for management of the peatlands is stated, "To assure the benefits of the land and its resources for the use and enjoyment of present and future generations." The objectives to meet this goal are:

1. To ensure the proper use of the peat resource.
2. To define and develop peatland management units.
3. To control the rate of development.
4. To maintain environmental quality.
5. To ensure land use capabilities.
6. To continue the peat inventory and encourage research.
7. To maintain intergovernmental cooperation.

All peatland development will be managed by these policies:

(I.) Leasing

The DNR will determine which peatlands are available for lease.

Leases will be awarded on basis of a Bid-Proposal process.

(II.) Utilization alternatives for peatlands.

(A) Horticultural leasing.

Size of lease - limited to 3,000 acres.

Rents - will be charged on a per-acre basis.

Royalties - to be based on standard six cubic foot bale.

(B) Agricultural leasing.

Size of lease - limited to 640 acres.

Lease term - 10 years (now) - anticipate extending to 25 years.

Rents - on a per-acre basis.

Royalties - none charged as long as peat is not extracted.

(C) Conservation of peatlands.

Currently working out details.

(D) Chemical/Industrial uses.

Small scale use (640 acre maximum) will be considered.

(E) Forestry Utilization.

Forest uses will be considered. Leases will not be granted for other uses where high potential for forest management exists.

(F) Small-Scale Fuel Development.

DNR would consider a lease if a small-scale demonstration project were proposed.

(G) Large-Scale Fuel Development.

Minnegasco, DNR, and U. S. Department of Energy studies will provide better direction for managing large scale peat extraction activities. Right now, DNR is holding all proposals for fuel purposes in abeyance.

(III.) Speculation

The State of Minnesota Department of Natural Resources is concerned about the possiblity that large tracts of peatlands may be held by developers who wish to speculate on future market conditions. If this happens, land would be unavailable for other uses. The State's policy on this is to require "diligent development" in peat leases. A certain amount of development would be required within a specified time period. If the land were not developed, the lease would be terminated due to violation. Any further requests by that developer would be judged based upon performance.

(IV.) Environmental Monitoring

Since the environmental impacts of peat utilization are not yet fully understood, the State intends to require environmental monitoring on future leases. This is consistent with the Commissioner of Natural Resources' authority to regulate peat development through lease conditions as a part of any lease it grants on state-owned land.

(V.) Reclamation

The experience of the iron ore mined lands and the loss of other land uses as a result, has made reclamation of disturbed peatlands a major concern to the State. The State policy development is leaning toward requiring reclamation through leasing provisions and also require the producers to post bond, pay a surcharge, or some similar mechanism. This method would require a monetary commitment by the developer to cover the costs of reclamation if default occurred. In situations of staged or continuous reclamation, the State would release a portion of the bond or escrow amount, but only on the land area where reclamation activity is performed.

(VI.) The Classification of Peat

The State will continue its policy of leasing peat as a surface interest, at least during the next biennium (1980-81).

(VII.) Burning of Peatlands

In the past, a common practice of land clearing and windrow disposal on newly developed peatlands has been by burning. This often results in a significant or even total loss of the peat resource. All leased use of peatlands will prohibit the practice of burning the peat resource for land preparation.

(VIII.) Drainage of Peatlands

Any proposal to drain peatlands is subject to the permit requirements of Minnesota Statute 105.41 and related laws.

(IX.) Sale of Peatlands

A legislative directive exists that there be no future sale of peatlands by the State to private developers. (Minnesota Statutes Section 92.461.)

Current Status of Development:

Current activities in Koochiching County are concentrated around the proposed development of a peat gasification plant by the Minnesota Gas Company (Minnegasco). This company, in conjunction with the U. S. Department of Energy, is investigating the feasibility of the gasification of peat. The research is attempting to modify coal gasification techniques for peat gasification. Preliminary experimental results from studies conducted by the Institute of Gas Technology in Chicago, Illinois, demonstrate some advantages and disadvantages to the use of peat as a source of energy. Peat when compared to coal is more reactive and creates more marketable oil by-products, but it also produces more carbon dioxide emissions and requires 40% more peat to produce equal amounts of synthetic natural gas.

Laboratory tests must be completed before the next step, a pilot plant, can be constructed. It was hoped that a pilot plant could be built in Minnesota by October 1980. This estimate was made in March 1980. A pilot plant would operate from 1½ to 2 years. During this time, studies would determine where the final site would be and any modifications to the processing techniques necessary before a demonstration plant would be constructed.

Minnegasco has leased 300,00 acres in an area including Koochiching, Lake of the Woods, and Beltrami Counties. Approximately two-thirds of this acreage contains peat.

The status of peat development is very much up in the air. Nobody knows the precise impact on the social and economic development of an area. Generally, it is speculated that smaller plants may have a better impact on an area than a large scale operation. Less resources will be needed and the demands on local communities may be less. These facts cannot be substantiated nor refined yet, since all the research to determine these answers hasn't been completed. Koochiching County stands to benefit, however, primarily because it has the natural resources in sufficient quantities to warrant intense investigation. This is a positive thing and points to a promising future for economic development of the area. Efforts must be made by the local leaders to follow this development closely. Contacts should be made with those companies and governmental agencies involved in the research and investigation. Local information should be made available about the interest and desires for development compatible with local needs.

CLIMATE:

Introduction

International Falls and the surrounding area has gained some degree of notoriety as a cold weather testing site. This is evidenced with the recent activity of a major national company advertising its battery product starting a car located on Black Bay after a long winter. Another company was considering this area for testing of its paint products. The idea has been around for some time that this activity should be explored for further development.

As a part of the Private Industry Council's efforts at identifying potentials for economic development, it has been suggested that a cold weather testing laboratory be established in the area to take advantage of another natural resource - the climate. This section provides a background on some of the climatological data for key stations in the area and a general discussion of past efforts at cold weather testing locally.

Koochiching County Climate

Physical Description:

Koochiching County is located at the extreme northern boundary of the continental United States. Latitude 48^{o} N and Longitude 94^{o} W intersect in Koochiching County near Gemmel. International Falls is located at 48^{o}34' Latitude and 93^{o}24' Longitude. Elevation at the International Falls airport is 1,180 feet above sea level. Drainage is toward Hudson Bay to the north.

The area has a continental-type climate, and is subject to frequent outbreaks of continental polar air, with occasional Arctic outbreaks during the cold season. Pacific air masses produce comparatively mild and dry weather at all seasons.

Temperature:

Mean annual temperatures range from a normal daily maximum of 47.5^{o} to a normal daily minimum of 25.0^{o}. The normal monthly temperature is 36.2^{o}. The record high temperature was 98^{o} (June 1956) and the record low was -46^{o} (January 1968). Normal heating degree days are 10.606. The preceding data on temperature was for International Falls. The mean annual temperature ranges from 36^{o} in the extreme north to 47^{o} along the Mississippi River in Minnesota.

Precipitation:

The normal total precipitation is 24.69 inches. Two-thirds occurs between May and September, the row crop growing months. Statewide, the mean annual precipitation ranges from 32 inches in extreme southeast to 19 inches in extreme northwest portion of the state.

The most rain recorded was 11.26 inches in August 1942, and the lowest was .1 inch in November 1939. The most precipitation during any 24-hour period was 4.87 inches in July 1966.

Snowfall:

Snowfall totals 58.6 inches at International Falls in a normal winter. The most snow in a month was recorded at 31.5 inches in March 1951. The maximum during any single month was 17.0 inches in March 1966. Snow cover of one inch or more occurs on the average of about 140 days during the year.

Storms:

The annual frequency of thunderstorm days is about 30 days. Generally, 80% occur during the heavy rain months of May through September. Tornadoes are not as common to the northern half of Minnesota as they are in the southern half. Overall, an average of 17 have occurred per year since 1953. The southern half has about three to four times as many tornadoes as the northern half. The Koochiching County area has had very few tornadoes.

Agriculture:

The freeze-free gorwing season generally starts about the first week in June and ends about mid-September. The growing season in only from 90 to 100 days. Certain bog areas have had reported freezing temperatures every month of the year. The average number of Growing Degree Days (GDD) over the freeze-free growing season for agricultural areas is less than 2,000 GDD, compared to near 2,700 GDD in southern Minnesota.

Solar radiation varies from an average of about 120 langleys a day in December to nearly 570 langleys a day in July. Sunshine amounts vary from a low in November of nearly 40 percent of possible sunshine hours to a high of about 70 percent in July. The annual average is 58%. The day length varies from near 8.5 hours in December to about 16 hours in June.

The soil freezes about the first week of December and thaws about mid-April. The average maximum depth in the State varies from 3 to 4 feet in the south to about 5 to 6 feet in the north. The forested regions' freezing depth is much shallower.

Data Stations:

The following stations provide certain types of climatological data related to Koochiching County.

Table 29

Data Available	Baudette	Bemidji	Big Falls Ranger Sta.	Indus	Int'l Falls WB/AP	Bigfork	Clementson	Crane Lake Ranger Sta.	Orr Ranger Sta.
Total Precipitation	X	X	X	X	X				
Total Snowfall		X	X		X				
Mean (average) Number Days Precipitation over .1 or over .5 inch	X	X	X	X	X				
Mean (average) Temperature	X	X	X		X				
Mean Daily Maximum Temperature	X	X	X		X				
Mean Daily Minimum Temperature	X	X	X		X				
Highest Temperature Recorded	X	X	X		X				
Lowest Temperature Recorded	X	X	X		X				
Total Precipitation (Stations equipped with Rain Gauges only)						X	X	X	X
Mean (average) Number Days Temperature over 90% or under 32%	X	X	X		X				

Source: Climatography of the United States, No. 86-17, Minnesota

Table 30

MEAN DAILY TEMPERATURES (MAXIMUM/MINIMUM) BY MONTH

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec	Annual
INT'L FALLS													
High	14.1	20.0	31.5	49.5	62.6	72.2	78.3	75.2	64.2	54.2	32.6	19.5	47.8
Low	-7.4	-3.5	9.0	27.5	38.4	48.5	53.8	51.6	41.9	32.2	17.6	0.8	26.0
Spread	21.5	23.5	22.5	22.0	24.2	23.7	24.5	23.6	22.3	21.0	15.0	18.7	21.8
BIG FALLS													
High	17.5	23.4	35.6	52.5	67.0	75.7	81.2	78.3	67.3	56.3	34.9	22.1	51.0
Low	-7.2	-5.1	7.8	26.3	38.0	48.5	53.6	51.3	42.3	32.5	17.4	0.2	25.5
Spread	24.7	28.5	27.8	26.2	29.0	27.2	27.6	27.0	25.0	23.8	17.5	21.9	25.5
BAUDETTE													
High	13.9	19.8	33.8	51.1	65.6	74.6	80.3	77.7	67.2	54.4	34.2	19.9	49.4
Low	-8.5	-4.9	8.5	26.6	39.1	49.4	54.5	51.7	43.1	32.7	17.5	3.7	26.1
Spread	22.4	24.7	25.3	24.5	26.5	25.2	25.8	26.0	24.1	21.7	16.7	16.2	23.3
BEMIDJI													
High	15.7	20.8	33.2	51.4	65.8	74.1	80.7	77.9	67.2	55.3	35.4	22.0	50.0
Low	-6.1	-4.4	9.4	27.4	40.1	50.5	55.7	54.0	43.9	33.6	17.7	1.5	26.9
Spread	21.8	25.2	23.8	24.0	25.7	23.6	25.0	23.9	23.3	21.7	17.7	20.5	23.1

Note: These temperatures are averages for each month. The period of record varies with each station and type of data recorded: Int'l Falls - 21 years; Big Falls - 29 years; Baudette - 49 years; Bemidji - 42 years. (Data are current through 1960.)

Source: Climatography of the United States No. 86-17, Minnesota.

Table 31

ANNUAL TEMPERATURE

Station	Highest	Lowest	Spread (in degrees)
Baudette	103	-49	152
Bemidji	107	-50	157
Big Falls	106	-53	159
Int'l Falls	98	-41	139

Table 32

MONTHLY TEMPERATURE EXTREMES

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
BAUDETTE												
High	50	59	76	91	96	102	103	97	94	84	68	52
Low	-49	-47	-37	-14	14	27	34	28	17	-8	-26	-45
Spread	99	106	113	105	82	75	69	69	77	92	94	97
BEMIDJI												
High	57	58	84	91	100	101	107	101	103	88	80	62
Low	-50	-48	-40	-13	15	26	37	30	18	-1	-30	-45
Spread	107	106	124	104	85	75	70	71	85	89	110	107
BIG FALLS												
High	54	62	83	92	97	105	106	98	98	88	69	59
Low	-46	-53	-40	-19	15	27	34	25	18	-12	-27	-51
Spread	100	115	123	111	82	78	72	73	80	100	96	110
INT'L FALLS												
High	48	53	76	93	91	98	97	95	91	86	68	57
Low	-41	-38	-34	-14	18	29	38	32	20	7	-27	-41
Spread	89	91	110	107	73	69	59	63	71	79	95	98

Note: These temperatures are the extreme temperatures recorded for each month. They do not occur every year. The period of record for each station is: Baudette - 47 years; Bemidji - 39 years; Big Falls - 28 years, Int'l Falls - 21 years. Data are current through 1960.

Source: Climatography of the United States No. 86-17, Minnesota.

Past Efforts at Cold Weather Testing

The Boise Cascade Corporation has carried on weathering testing in the past, but has now shut down most of these activities. They conducted, at one time, moisture migration through building materials types in their cold room insulite laboratory and also did some outdoor exposure testing.

The climate in northern Minnesota has ideal daily temperature variations. The day-night temperature cycle usually indicates clear and sunny conditions which was helpful in observing crack resistance. These conditions could be likened to the testing laboratories located in the southern USA which advertise attributes of high temperatures.

Efforts have been made toward establishing a peat testing laboratory but have not been successful. State Department officials (Minnesota) have opted for the scattered peat research activities presently existing (U of M-Twin Cities, UMD, IRRRB, etc.). However, local reports have revealed instances where peat samples had to be sent as far away as California. Better communications and/or information technology transfer is needed.

Other types of research and development are being carried out in the Region. In the City of Grand Rapids, the North Central Forest Experiment Station at the North Central School campus has carried out research on many agricultural project, including development of food for cattle and sheep from aspen bark. Peat research has been conducted at the University of Minnesota at Duluth. The Iron Range Resources and Rehabilitation office is currently active in studies of peat.

C. LOCATION OF SUITABLE INDUSTRIAL SITES

Industrial sites in Koochiching County are concentrated in the International Falls area and others are scattered throughout the county in the form of sawmills and logging operations. There are no developed modern industrial parks outside of the International Falls, where the majority of manufacturing activity is located. This section will examine the land use classification of the county and trade areas, transportation characteristics, and the infrastructure of the communities and potential industrial areas.

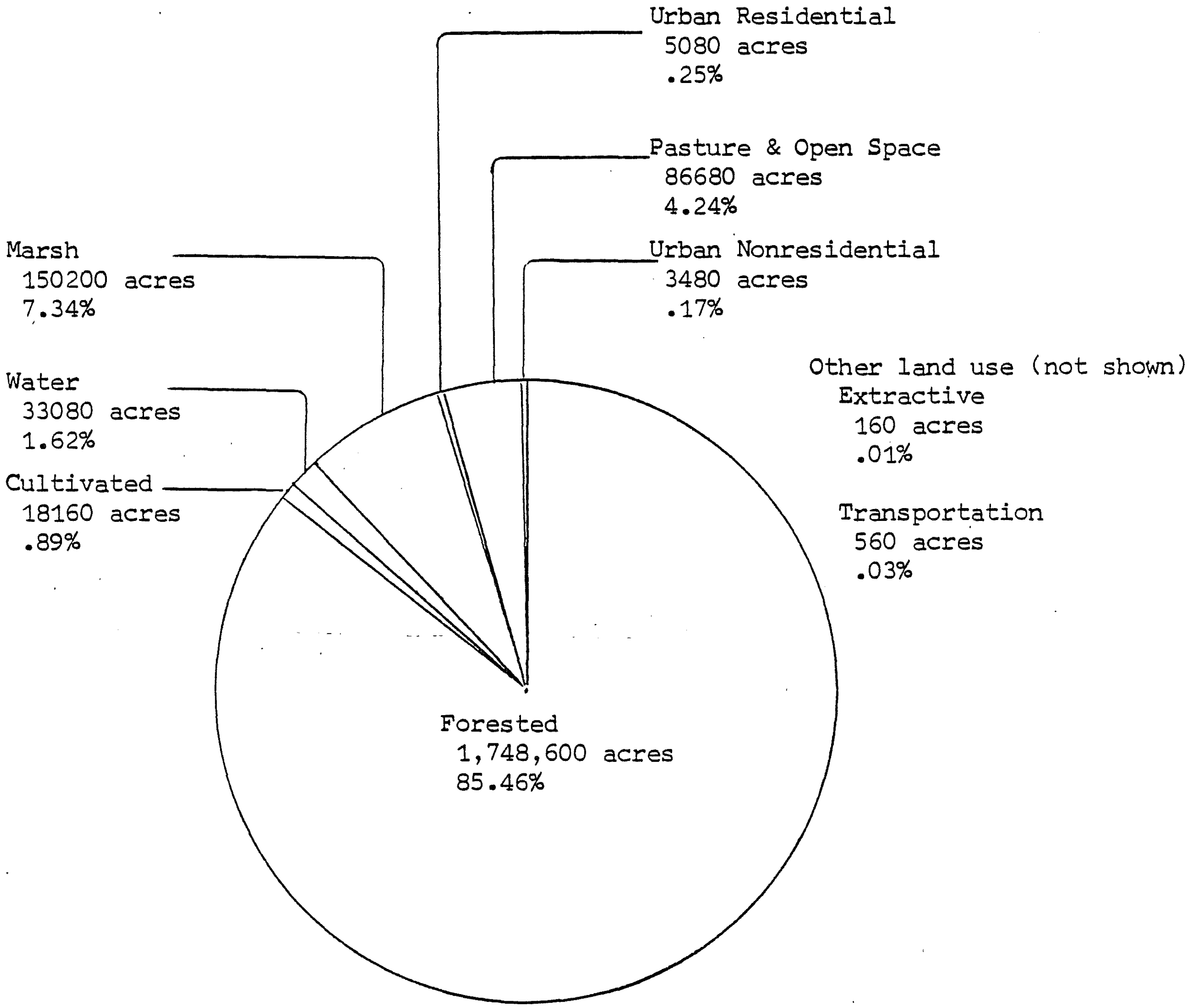
1. Land Classification.

The majority of the land use in Koochiching County is in forest cover. Over 1.7 million acres or 85% of the land is so classified. Another 7% is in marshlands which are grassy wet places with little peat accumulation and have much standing or slowly moving water. The land classification that indicates industrial use is termed "urban nonresidential". There are only 3,480 acres classified as such in the whole county, accounting for only .17% of total land area.

Within the trade areas, the Northome area contains the largest area in Urban Nonresidential (920 acres). Big Falls contains 760 acres, if we subtract the Big Falls acreage from the total Littlefork trade area, the Littlefork area would have the third largest acreage (640 acres). Since the classification is not broken down to differentiate between commercial and industrial land, we have to assume that the amount of industrial land is proportionate to the total urban nonresidential acreage among the four trade areas. (See Figures 7 and 8.)

KOOCHICHING COUNTY GENERAL LAND USE CLASSIFICATION

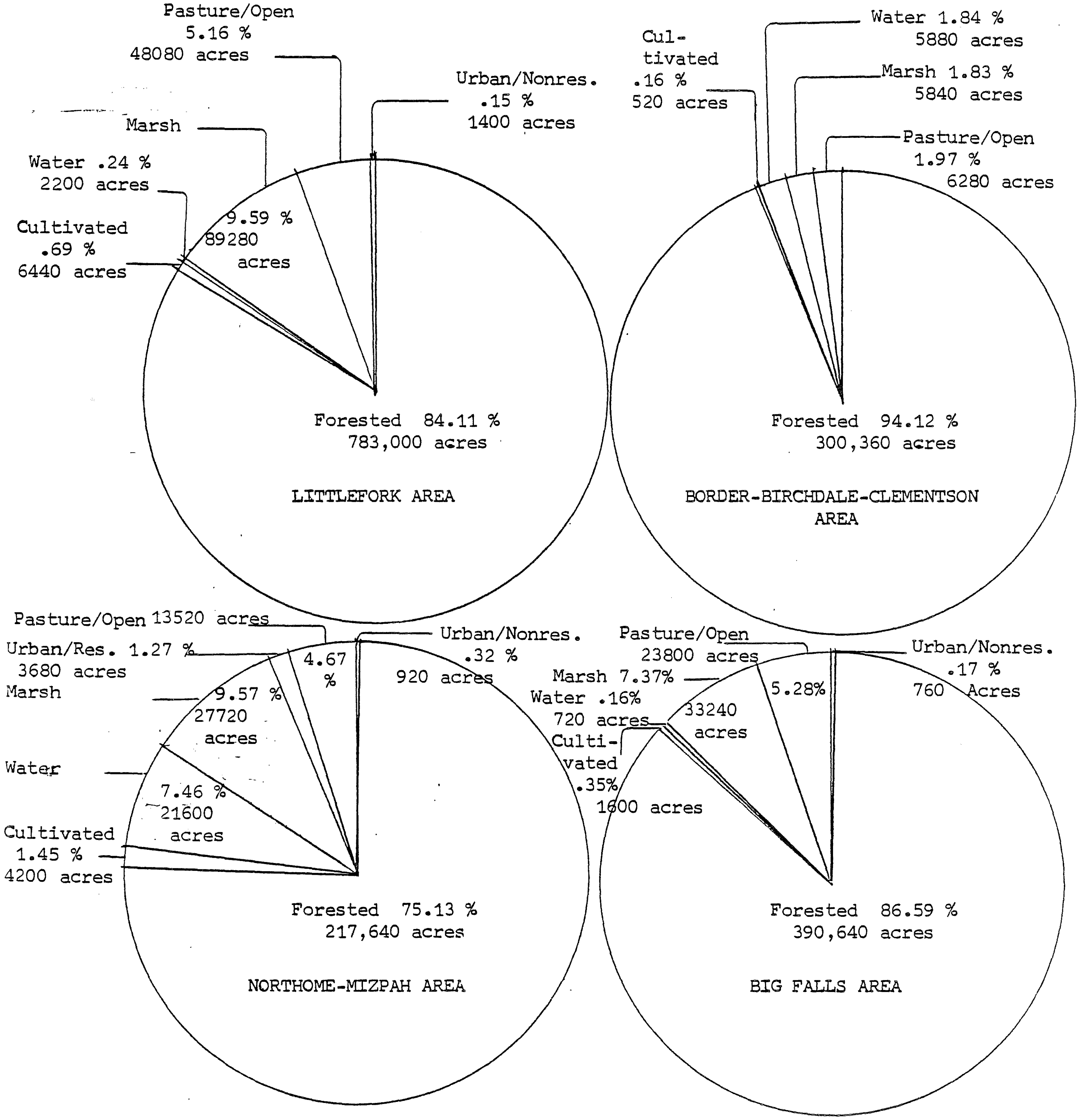
Figure 7



Source: Minnesota Land Management Information System (MLMIS)

Figure 8

LAND USE CLASSIFICATION BY TRADE AREA



Source: Minnesota Land Management Information System (MLMIS).

Map 5 shows the generalized land use classification for the Koochiching County area. It was prepared by the Minnesota Land Management Information System (MLMIS) staff. Data summaries showing the relative amount of land use acreage by trade area was based upon aggregating data by township and range cells which results in a slight difference from the trade areas shown in the map overlay. However, the purpose of the map is to show the generalized land use patterns in each trade area. The accompanying Figure 8 shows the relative amounts of acreage by trade area for planning purposes.

A more accurate source of information is from the Community Profiles prepared by the local development groups. However, only two sites were mentioned with size information: Northome - 80 acres estimated, and Border-Birchdale-Clementson-the Broder school building - 3.5 acres. The county zoning map listed zoned areas as either light industry or heavy industry. Not all these areas are currently being used for industrial use. The following listing summarizes the industrial zoned land by trade area:

Border-Birchdale-Clementson

(3.5 acres)

A recent request of the Border-Birchdale-Clementson

Development Association to have the Border School site rezoned from Agricultural to Light Industrial was approved.

Northome-Mizpah

Three locations are zoned for heavy industrial:

Site #1 - North of Bartlett Lake and south of US 71 (40 acres)

Site #2 - North of Northome and west of US 71 (40 acres)

Site #3 - On US 71/MN TH 1, southwest of Northome (40 acres)

NOTE: Map 5 will be a separate sheet .... will be tucked into envelope inside back cover!

Big Falls

One site zoned heavy industrial, north edge of city (Grand Falls)

(Approximately 800 acres)

Littlefork

One site on a spur road off CSAH 77, southwest of Littlefork - approximately 160 acres

One site on CSAH 77 southwest of Littlefork - approximately 290 acres

One site on CSAH 8, southeast of Littlefork - approximately 80 acres

2. Transportation Resources

This section provides information on the highways and rail systems in Koochiching County. The highway information identifies the functional use classification of the roads according to 1975 classifications by the Minnesota Department of Transportation. It is an estimate of the likely use of the road for the next 5 to 10 years. Also included are springtime weight restrictions supplied by the Koochiching County Highway Engineer. Rail information on the level of traffic movement and weight restrictions concludes this section.

This information is useful in determining the capacity and limitations of the local transportation systems for economic development planning. If heavy demands are discovered from potential industrial use, it will give the local development leaders an idea of where the transportation needs necessary for proper inclusion in capital improvement planning. Adequate time for planning and development can then be allotted to pursue the economic development process.

TRANSPORATION RESOURCES

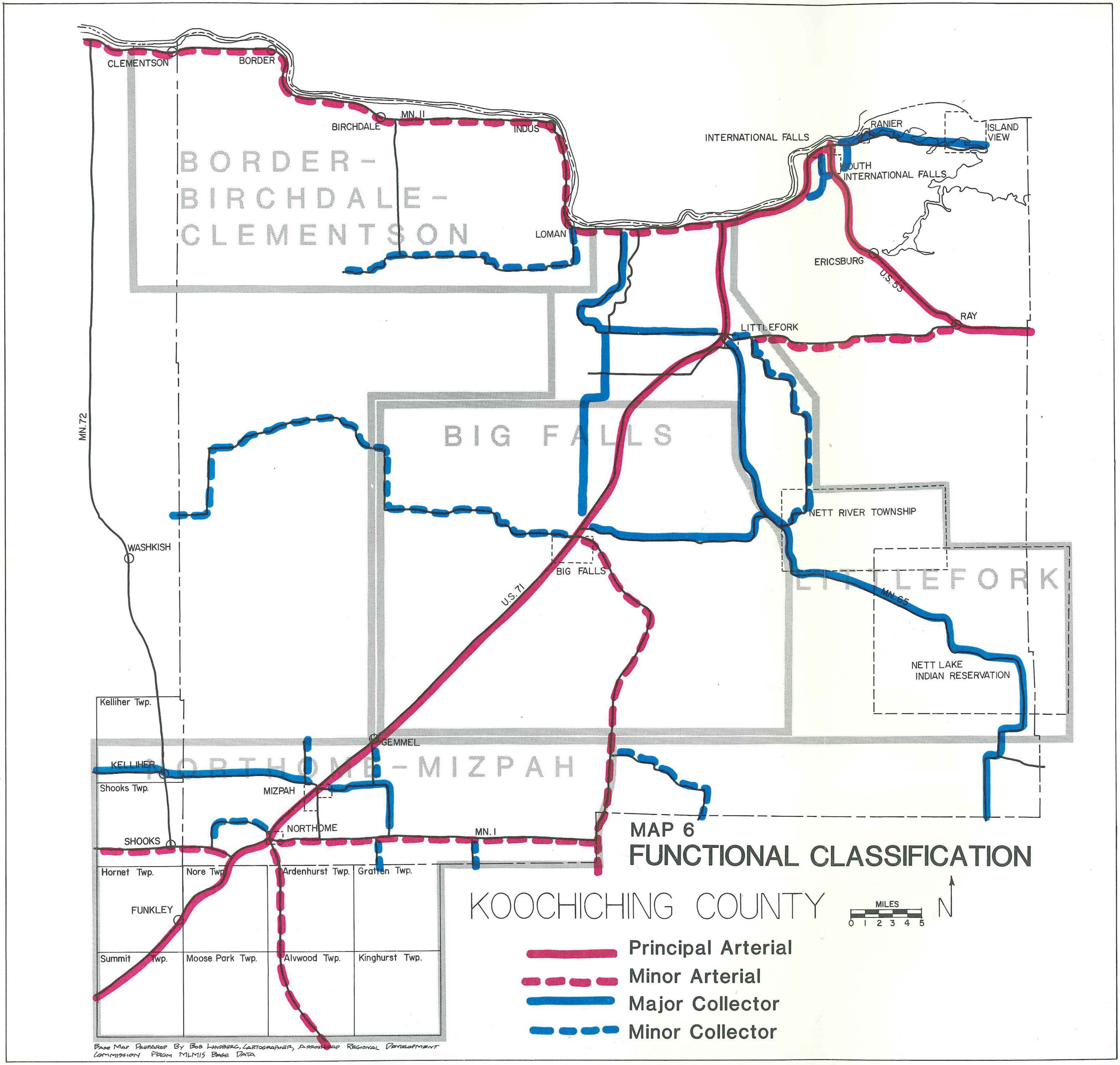
Highways

Certain characteristics of the Koochiching County roadway system are important to consider in determining the potential for various types of development. The following inventory data concerning the roadway system has been compiled from the Koochiching County Engineer's office and the Minnesota Department of Transportation. The county roadway system is described below and illustrated in Maps 6 and 7.

Functional Classification (Map 6) is the grouping of highways into classes or systems, according to the character of service they are intended to provide:

- -Principal Arterials serve large cities and corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel. Minnesota Trunk Highways 53 and 71 are the principal arterials in Koochiching County
- -Minor Arterials provide intercounty service linking cities, larger towns and other traffic generators such as major resort areas that are capable of attract-travel over long distances. Minnesota Trunk Highways 11, 217, 6, and 1 are minor arterials serving Koochiching County.
- -Major Collectors serve the more important intracounty travel corridors linking larger towns and other traffic generators not served by the arterial highway network.
- -Minor Collectors provide service to smaller communities, link locally important traffic generators with their rural hinterland and bring all developed areas within a reasonable distance of a Collector road.
- -Local roads primarily provide access to adjacent land and serve travel over relatively short distances.

In Koochiching County, the State Trunk Highway network consists primarily of arterials, and the County road system consists primarily of collectors and local roads.

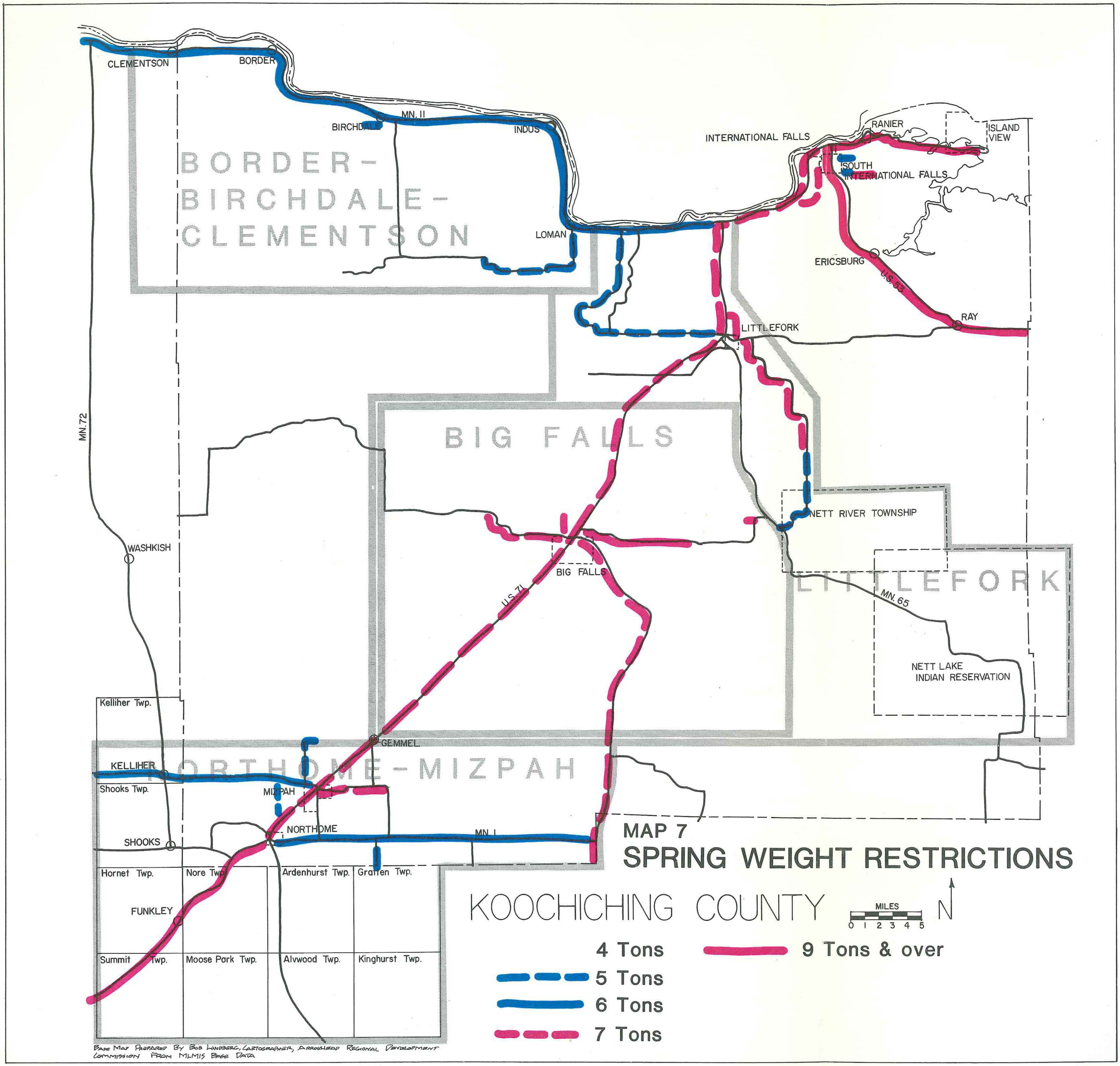

CLEMENTSON
BORDER
BIRCHDALE
MN. 11
INDUS
BORDER-BIRCHDALE-CLEMENTSON
LOMAN
INTERNATIONAL FALLS
RANIER
ISLAND VIEW
SOUTH INTERNATIONAL FALLS
ERICSBURG
U.S. 53
RAY
LITTLEFORK
MN. 72
BIG FALLS
WASHKISH
NETT RIVER TOWNSHIP
LITTLEFORK
MN. 65
U.S. 71
NETT LAKE INDIAN RESERVATION
Kelliher Twp.
GEMMEL
KELLIHER
NORTHOME-MIZPAH
Shooks Twp.
MIZPAH
NORTHOME
SHOOKS
MN. 1
Hornet Twp.
Nore Twp.
Ardenhurst Twp.
Gratten Twp.
FUNKLEY
Summit Twp.
Moose Park Twp.
Alvwood Twp.
Kinghurst Twp.
MAP 6
FUNCTIONAL CLASSIFICATION
KOOCHICHING COUNTY
MILES
0 1 2 3 4 5
N
Principal Arterial
Minor Arterial
Major Collector
Minor Collector
Base Map Prepared By Bob Lindberg, Cartographer, Arrowhead Regional Development Commission From MLMIS Base Data

Springtime Weight Restrictions (Map 7) is the per axle load carrying capacity of a roadway during the spring thaw. These restrictions may have an impact on the potential for some types of industrial development. In addition, the following is a list of posted bridges that have less than a legal load carrying capacity:

Table 33

BRIDGES (POSTED) WITH LESS THAN LEGAL LOAD CARRYING CAPACITY

Bridge #	Road #	Feature Crossed	Length	Width
1624	CSAH 75	Littlefork River	196.0	17.0
1800	CR 77	Bear River	46.3	24.6
3522	Twp. Road	Ester Brook	76.0	20.6
3523	CR 57	Valley River	75.0	18.2
3570	CSAH 18	Rapid River	169.1	19.1
5788	CSAH 3	E. Br. Rat Root River	47.3	22.7
6414	CSAH 30	Sturgeon River	150.0	19.0
6595	Two. Rd.	Rat Root River	71.0	20.4
7096	CSAH 5	Big Fork River	151.5	19.6
7939	CR 78	Bear River	30.7	18.5
7942	CR 82	W. Br. Black River	99.0	18.6
7943	Cr 82	W. Br. Black River	56.5	18.7
L4612	Twp. Road	Cross River	31.3	15.0
L4616	Twp. Road	W. Br. Rat Root River	54.9	15.0
36505	CR 99	Rat Root River	58.0	24.0
36506	CR 101	Black River	76.00	22.9
L7307	Twp. Road	Black River	30.0	15.2
L4609	CR 86	W. Br. Black River	18.3	22.7
88840	CR 14	Stream	21.0	18.9
88847	CR 67	Billy Creek	14.0	20.8
88849	CR 76	Stream	16.5	20.5
93194	CR 67	Billy Creek	12.0	20.0



CLEMENTSON
BORDER
BIRCHDALE
MN. 11
INDUS
BORDER-
BIRCHDALE-
CLEMENTSON
LOMAN
INTERNATIONAL FALLS
RANIER
ISLAND VIEW
SOUTH INTERNATIONAL FALLS
ERICSBURG
U.S. 53
RAY
LITTLEFORK
MN. 72
BIG FALLS
NETT RIVER TOWNSHIP
WASHKISH
BIG FALLS
U.S. 71
LITTLEFORK
MN. 65
NETT LAKE
INDIAN RESERVATION
Kelliher Twp.
GEMMEL
KELLIHER
NORTHOME-MIZPAH
Shooks Twp.
MIZPAH
NORTHOME
SHOOKS
MN. 1
Hornet Twp.
Nore Twp.
Ardenhurst Twp.
Gratten Twp.
FUNKLEY
Summit Twp.
Moose Park Twp.
Alvwood Twp.
Kinghurst Twp.
MAP 7
SPRING WEIGHT RESTRICTIONS
KOOCHICHING COUNTY
MILES
0 1 2 3 4 5
N
4 Tons
5 Tons
6 Tons
7 Tons
9 Tons & over
Base Map Prepared By Bob Lindberg, Cartographer, Arrowhead Regional Development Commission From MLMIS Base Data

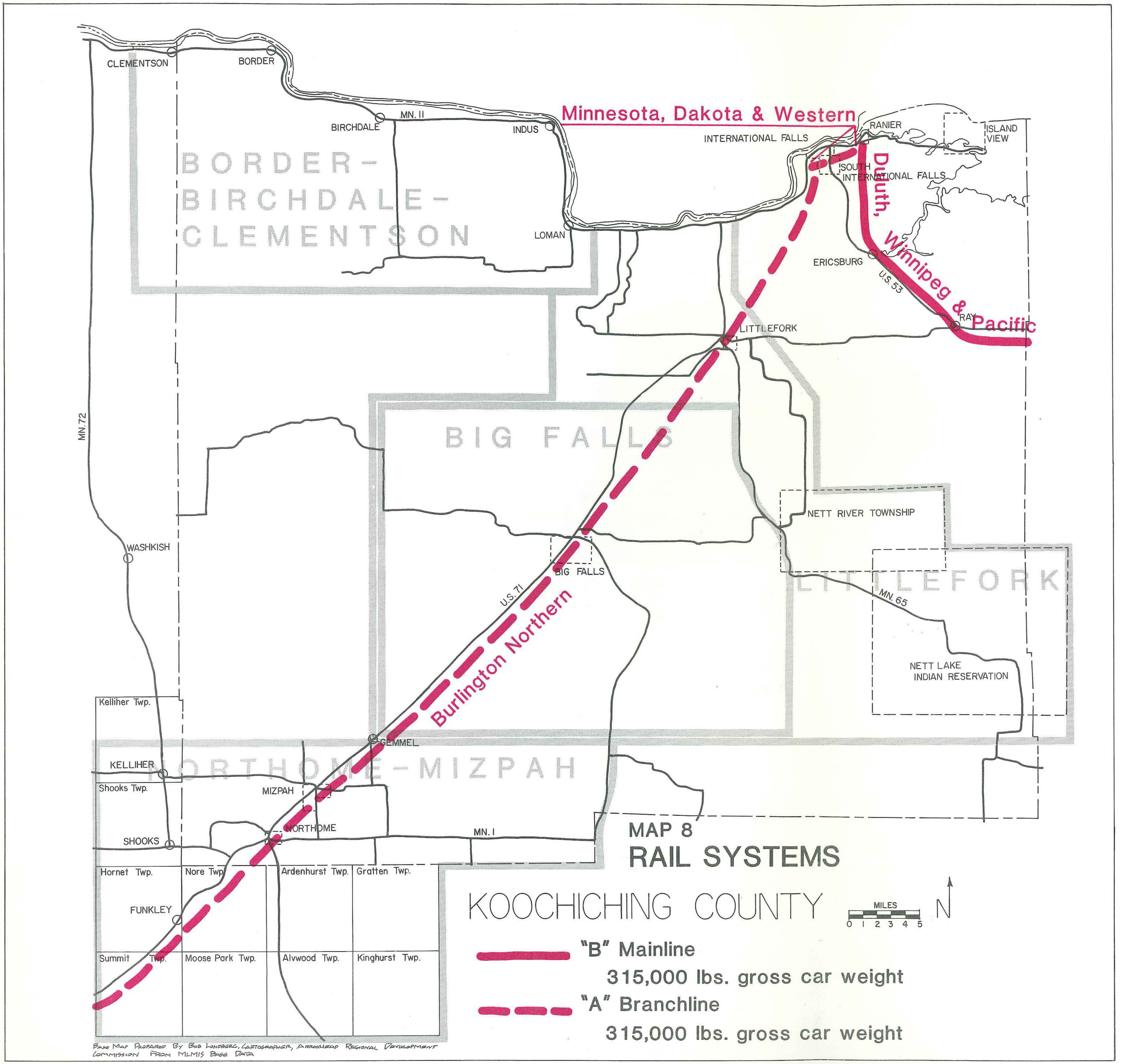
Rail

The rail system within Koochiching County is shown in Map 8. As identified on the map, the Duluth Winnipeg and Pacific (DWP) extends through the northeastern corner of the county from Ranier through Ericsburg and Ray. The Burlington Northern (BN) extends diagonally through the county from International Falls and Northome. The Minnesota, Dakota and Western extends from International Falls to Ranier, connecting the DWP and BN lines.

Level of traffic movement and weight restrictions by route are important in the analysis of the rail system. Map 8 shows traffic density on county rail lines based on the US/DOT breakdown listed below:

A Mainlines	-20 million or more gross tons -three or more daily passenger operations in each direction. -major Transportation Zone connectivity
B Mainlines	-At least five, but less than 20 million gross tons
A Branchlines	-At least one, but less than five million gross tons
B Branchlines	-Less than one million gross tons
Defense-Essential Branchlines	-A or B Branchlines required for the shipment of oversized military loads

None of the rail lines in Koochiching County are classified as anticipated subjects of abandonment petitions.



MAP 8
RAIL SYSTEMS
KOOCHICHING COUNTY
Minnesota, Dakota & Western
Duluth, Winnipeg & Pacific
Burlington Northern
"B" Mainline
315,000 lbs. gross car weight
"A" Branchline
315,000 lbs. gross car weight
MILES
0 1 2 3 4 5
N
BORDER-
BIRCHDALE-
CLEMENTSON
BIG FALLS
LITTLEFORK
NORTHOME-MIZPAH
CLEMENTSON
BORDER
BIRCHDALE
MN. 11
INDUS
LOMAN
INTERNATIONAL FALLS
RANIER
ISLAND VIEW
SOUTH INTERNATIONAL FALLS
ERICSBURG
U.S. 53
RAY
LITTLEFORK
MN. 72
WASHKISH
NETT RIVER TOWNSHIP
BIG FALLS
U.S. 71
MN. 65
NETT LAKE INDIAN RESERVATION
Kelliher Twp.
KELLIHER
GEMMEL
Shooks Twp.
MIZPAH
NORTHOME
SHOOKS
MN. 1
Hornet Twp.
Nore Twp.
Ardenhurst Twp.
Gratten Twp.
FUNKLEY
Summit Twp.
Moose Park Twp.
Alvwood Twp.
Kinghurst Twp.
Base Map Prepared By Bob Lindberg, Cartographer, Arrowhead Regional Development Commission From MLMIS Base Data

3. Infrastructure

Infrastructure refers to the general conditions existing in a community that enable or hinder the economic development process. Basic to all this is the availability of utilities. These include sanitary sewers and treatment facilities, water supply, treatment and distribution facilities, and natural gas, electric, and telephone service.

Most of this information can be obtained in an inventory or community profile prepared and kept up-to-date by the local development corporation members. The information is preliminary for a potential developer, but more important, it gives the local community an idea what has to be done to prepare for eventual economic development. It will help determine the time necessary to bring about development. Therefore, basic planning efforts may be centered around this assessment.

Following is a cursory assessment of known facts about the four development areas and their main communities or locations for future economic development potential.

Littlefork Development Area

Sanitary Sewer System:

Littlefork has existing storm and sanitary sewer system, with some normal infiltration. The sanitary sewer lines are in satisfactory condition. Future extension of the main line and replacement of some existing lines may be necessary in the near future. A lift station is needed to serve the growth areas of the community.

Water Supply:

Littlefork has two wells which are approximately 30 years old. The older pump is scheduled for replacement. The city has constructed a new water treatment plant for improving the quality of the water. More softening is required, but is left up to the individual user.

The distribution system is in good shape. Some extensions and replacement will be needed. Storage capacity of 50,000 gallons in an elevated tank. Last estimate of customer connections was 250, with 40 structures not being served.

The transportation system of Littlefork appears adequate. It has been suggested that Front Street be continued in a circular fashion next to the Littlefork River until it comes out on C Street. Extending Second Street to C Street would also be beneficial. Another street which should be extended is behind the hospital and would tie in with Highway 217.

Industrial development is suggested for Littlefork in a site located east and north of Highway 217 just east of the high school. An industrial park complex has been proposed for the community. Other industrial uses such as the area south of Second Street would remain the same.

Commercial development is anticipated to remain the same (see commercial analysis). Physically, an addition has been proposed to fill in the Third and Fourth Street blocks along Main Street to centralize the businesses into one compact area.

Big Falls

Sanitary Sewer System:

The sanitary system of Big Falls is fairly new and no unusual problems are anticipated. A new lift station should be provided to serve the growth area of the community. The sewage plant should be upgraded.

Water Supply System:

Three wells produce the water supply for Big Falls. The distribution system is quite old. Larger mains are needed on some lines. Last count listed 165 customer connections with 35 structures not served.

Transportation System:

Minor changes are proposed in the northwest corner of the City north of Second Street north and in the south part of the City to provide access for future residential expansion.

Industrial Development:

No industrial sites have been proposed for Big Falls. However, any potential industrial development could easily take place in a corridor between Highway 71 and the railroad. In addition to available land, there is also a railroad spur track on the site.

Commercial Development:

For land use purposes, consolidation of any new development is suggested for the central business area.

Northome-Mizpah

Sanitary Sewer System:

The sanitary sewer system in Northome is in relatively good condition other than routine repair and maintenance. A new lift station may be required. A completely new sewage treatment facility will be required.

Water Supply System:

Northome has three drilled wells. The water is extremely hard and high in iron. Additions to the water treatment plant have been recommended. The existing water mains are in fair shape. There were 102 customer connections with 16 structures not served.

Industrial Development:

Industrial development space may be limited as far as new industry is concerned. Adequate space exists within the already existing industrial facilities along the railroad tracks.

Border-Birchdale-Clementson

There are no sketch plans for this area. However, the community profile indicates the industrial site currently considered for development is located in the old Border School building. The site includes 3.5 acres. Water storage capacity is 1600 gallons. The water is extremely hard in quality. The sewage treatment plant has a capacity of 2500 gallons per day. The site is served by the North Star Electric Company of Baudette, MN. Gas service is by LP gas from the Solar Gas Company of Baudette. The Northwestern Bell system provides phone service.

The area is served by the Canadian National Railroad. Truck service is provided by the Baudette Transfer Company which has a local terminal. United Parcel Service is available. An airport in Baudette provides both commercial and charter services. The highway serving the area is State TH 11. Load limits of roads in the area are from 5 to 9 tons in the spring season. Distance to the U. S. Interstate system is 145 miles (I-29). It is about 209 miles to I-35 near Cloquet.

VII. ECONOMIC DEVELOPMENT NEEDS AND OPPORTUNITIES

VII. ECONOMIC DEVELOPMENT NEEDS AND OPPORTUNITIES

This section identifies shortages, deficiencies, and other problems in the resources of the county and trade areas. Opportunities are highlighted from the commercial and industrial analysis sections as they relate to the economic development potential of the trade areas. The basic value of this section is to provide indicators of the preliminary efforts necessary to build up weak areas, or at least recognize where the weaknesses are in the resources, and also to build upon the strengths and opportunities evidenced in the commercial and industrial sectors.

The format follows the order of the Resources section and treats labor, natural resources, and industrial sites needs. Opportunities are discussed from both the technical analysis point of view as well as from local development group contacts and their input.

A. NEEDS

1. Labor Force Needs

Generally, the Labor force is small and scattered in the rural areas of the County. This is an important fact to recognize. The areas of Northome and Border-Birchdale-Clementson might be considered areas short in job opportunities. They both exhibit high unemployment rates, 18.0% and 11.5% respectively in the 1979 estimate. The trends in labor force growth indicated a general growth in the total labor force of about 20%, but a significantly higher increase in the number of unemployed. Unemployment rose at nearly 60% in all areas of the county.

The labor supply declined sharply from May of 1979 to May of 1980, nearly a 50% drop. In terms of education, a larger percentage of persons registered had 13 years plus education in 1980 than in 1979. There were also significant differences in the age structure of the registered unemployed between 1979 and 1980. The greatest change occurred in the youngest age group (19 to 21). This group comprised 22% in 1979 compared to only 1% in 1980. The older age group of 25 to 44 now comprises 59% compared to only 40% in 1979.

The occupational characteristics reveal an evident shortage in job opportunities in structural work, Clerical, and Other Services type of work.

The County Business Patterns analysis identifies gaps in the employment structure by industry category between Koochiching County and the State of Minnesota economies. A 10-year period was chosed for the analysis to allow us to see the trends developed by industrial category. The logic used in the analysis was that a gap or shortage occurs whenever the percent of employment by industry in the county is less than the percent employment in the same industry for the State.

Shortages observed from the accompanying Table 30 indicate the following industries that are below the average employment levels in comparison to the State economy.

Mining

Construction

Transportation, Communications, Utilities

Trade

Finance, Insurance, Real Estate

Services.

There have been some improvements in the trends of certain industries in Koochiching County. The following industries have closed the gap between 1967 and 1977:

Agriculture

Transportation, Communications, Utilities

Trade

Services.

Overall, the County has reduced the gap in total employment of all industries. The shortage dropped from 1216 persons in 1967 to 983 in 1977 for Koochiching County. The greatest improvement was in Transportation, Communications and Utilities which increased employment by 125 persons or 98% over the 1967 level. The gap dropped from 105 in 1967 to only 8 in 1977. Trade improved with an increase of 419 employees or 71% over 1967. Services increased by 504 or 164%.

Table 34

COUNTY BUSINESS PATTERNS

EMPLOYMENT GAP BY INDUSTRY

KOOCHICHING COUNTY VERSUS STATE

	1967				1977			
	County Employed	State	GAP		County Employed	State	GAP	
			State Norm	County* GAP			State Norm	County* GAP
Agriculture	D	.3%	11	11	19	.3%	13	0
Mining	D	1.4	50	50	D	1.2	53	53
Construction	53	5.1	181	128	62	5.0	222	160
Manufacturing	2,338	32.4	1,152	0	2,157	26.7	1,187	0
Transportation, Communications, Utilities	126	6.5	231	105	250	5.8	258	8
Trade	592	29.4	1,046	454	1,011	30.5	1,356	345
Finance, Insurance, Real Estate	90	6.2	221	131	123	7.0	311	188
Services	307	18.1	644	337	811	23.4	1,040	229
Total	3,557	100.0%	xxx	1,216	4,446	100.0%	xxx	983

Note: GAP is defined as the number of jobs required to achieve employment distribution similar to state among industries.

*Calculated by subtracting numbers in state norm column from those in county employed column.

Source: County Business Patterns, Minnesota, 1967 and 1977 Prepared: May 1980

Examination of the wage data from the Minnesota Department of Economic Security's Wage Data by County report, reveals lower median monthly wages in Koochiching County than the State for the following occupations:

Laborer
Nurse, General Duty (RN) - Hospitals
Carpenter, Maintenance
Equipment Operator, light
Nurse Aide-Hospital
Plumber, Maintenance
Trades Helper, Maintenance

Personal income appears to fall short of the State structure in terms of percentage of personal income derived from total earnings. The shortages occur in the following industry sectors:

Construction

Durable Goods Manufacturing (stone-clay-glass-concrete products, professional-photographic-time keeping equipment, Motor vehicles & other transportation equipment, Electrical machinery -equipment & supplies, Machinery-except electrical, Fabricated metal industries, Primary Metal)

Transportation - Public Utilities

Wholesale Trade

Finance - Insurance - Real Estate

2. Natural Resource Needs

TIMBER

Analysis of the timber resources revealed a difference of opinion regarding the surplus and defict status of timber species. The differing sources are the Minnesota Department of Natural Resources (DNR), the US Forest Service, North Central Forest Experiment Station, and the Koochiching County Land Commissioner's office. The DNR and Forest Service state that their estimates of allowable cut are based on a sustainable harvest level and that the County estimate for harvest is not sustainable. The County

Land Commissioner has documentation of the County Tax-Forfeited Lands which indicate a surplus of aspen. His reasoning is based on a different method of calculating recommended annual harvest and personal knowledge of the harvesting volumes cut during the past eight years.

Therefore, according to the County records, there are deficits in only two species; White and Black Spruce, and Jack Pine. On the other hand, the DNR and U.S. Forest calculations indicate deficits in recommended annual harvest compared to net annual drain by species in all the softwood categories except White Cedar. The hardwood situation is much better, with surplus amounts available in all categories except Red Oak, Quaking Aspen, and other hardwoods. The species of utmost concern is the Aspen. In order to put some perspective on the availability of timber resources in Koochiching County, we may observe that the County and Municipal lands comprise 21% of total commercial forest acreage, while the State has 47%, Federal 3%, private forest industry 18%, and all other ownership, 11%.

3. Industrial Sites Needs

Industrial sites are concentrated primarily in the International Falls urban area. Some sites are located in the smaller communities in the form of saw mills and other general small, localized operations. Wood processing industries are located at Big Falls, Littlefork, and at Northome.

According to 1969 records of the Minnesota Land Management Information System (MLMIS), there were 8,720 acres classified as urban in the County, comprising only .4% of the general land use. The urban classification includes both urban residential and urban nonresidential or mixed-residential land uses. Therefore, the exact acreage of industrial land is not known. A survey of the local development corporations indicated the following on industrial activities:

Border-Birchdale-Clementson has a site of 3.5 acres with a building, the former Border School. The land in this development area is classified mostly open space (O-1) with Agriculture Forestry (AF-1), Low Density Residential Agriculture (R-1) and a small portion of Medium Density Residential (R-2) at Birchdale.

Littlefork has two areas zoned for industry. One is on CSAH 77, SW of Littlefork and the other on CSAH 8, SE of Littlefork. The remainder of the land use is mostly open space and Agriculture Forestry with some Medium Density Residential land use within Littlefork itself.

Big Falls has one area zoned industrial at the north edge of town. The remainder of the land use is open space with patches of low density residential agriculture and medium density residential in the Big Falls proper and along the Big Fork River (west) and CSAH 31 (east).

The Northome-Mizpah area has three industrial zoned places. The first is located north of Bartlett Lake and just south of Hwy 71. The second is located north of the City of Northome and West of Hwy 71. The third is located on Hwy's 71/1 and south west of Northome.

The general conclusion that must be made is that there is very little industrial land currently zoned. The land that is zoned industrial is used by relatively small wood processing operations. The current situation with industrial sites has not been a problem, simply because the local leaders have not anticipated industrial development.

B. OPPORTUNITIES

1. Commercial Opportunities

a. Littlefork

General Merchandise:

Littlefork could support up to 7,600 square feet of general merchandise space by 1985. This includes store types such as variety stores, discount stores, and catalog stores. Although the average store size for general merchandise stores in neighborhood retail centers is 10,160 square feet, stores of this type can be developed with as little as 2,500 square feet. Littlefork currently has one variety store. It is estimated that Littlefork could also support a catalog store of about 4,800 square feet.

Apparel and Accessories:

Littlefork could support up to 3,400 square feet of clothing store space by 1985. Stores in this category include family wear, ladies wear, men's wear, children's wear, and shoe stores. Littlefork currently has one family clothing store. It is estimated that Littlefork could support an additional clothing store in one of the other clothing categories of about 2,000 square feet.

Furniture, Home Appliances:

Littlefork could support up to 3,900 square feet of furniture and home appliance store space by 1985. There are currently two stores which include this type of merchandise. It is recommended that any new space be an expansion of existing businesses.

Miscellaneous Retail:

Littlefork could support up to 6,400 square feet of miscellaneous retail space by 1985. This includes store types such as jewelry, hobby, records, books, sporting goods, camera, gifts, cosmetics, and other specialty stores. The average size varies from about 1,000 to 2,000 square feet of space. There is currently one variety store in Littlefork plus merchandise line types selling miscellaneous items in other stores in the community. There may be room for more specialty stores and expansions of the existing variety store and other stores selling miscellaneous retail items. A survey of the consumers should determine the nature of goods demanded in this retail type.

Hardware and Building Materials:

The present sales indicate support for up to 13,500 square feet of space. There are two hardware and building materials stores in Littlefork now. With an average of about 6,000 square feet of space per store size, it is recommended that some expansion may be possible for the two stores by 1985.

Food Stores:

Littlefork's sales volume can support between 8,200 and 8,500 square feet of retail floor space in this category. Two grocery stores now carry on business in town. Sales volume now is barely enough to support the two existing independent supermarkets. The smallest median floor space is about 5,400 for this type of business.

Drug Stores:

The projected population levels indicate support for approximately 3,500 square feet of floor space by 1985. There is currently one pharmacy in Littlefork. The median store size for this type of activity is 4,000 square feet, but can range from 1,200 to 6,900 square feet in size. Depending upon the size of the existing drug store, there may be potential for some expansion.

Eating and Drinking Places:

This trade area could support about 3,700 square feet of space for restaurants (with or without liquor) or other food service places, including fast foods and other small places. There is only one restaurant in town now. Depending upon the present floor space, there may be room for expansion of one or two new small establishments during the next five years.

b. Big Falls

Apparel and Accessories:

This trade area could possibly support a small to average size family clothing store. There is no store of this type in town. Total retail floor space warranted for this type of business is about 1,100 square feet.

Miscellaneous Retail:

An examination of potential trade area strength warrants about 1,300 square feet of space. There are no single specialty stores in Big Falls, but some of this trade may be absorbed in the Red Owl store, the Standard service station, and in the local hardware store.

Eating and Drinking Establishments:

The trade area warrants up to 1,200 square feet of space for eating and drinking places by 1985. With only one cafe in town, and with the size of an average restaurant (without liquor) of 2,400 square feet, very little expansion can be indicated. Some of the smaller restaurants can get by with less than 900 square feet (independents).

None of the other categories of retail trade offer much potential for expansion. The sales volumes simply do not warrant further expansion.

c. Northome-Mizpah

General Merchandise:

The Northome-Mizpah trade area could support up to 7,000 square feet of retail floor space by 1985. The type of stores it could support would most likely be a variety store and possibly one catalog store. There is a general store in Mizpah, indicating possible expansion potential, depending upon its size. A new catalog store could fill a void for the remaining floor space warranted.

Apparel and Accessories:

This trade area could support up to 2,400 square feet in a family type apparel store. There does not appear to be any stores of this type in the trade area, indicating a need for possibly one or two such stores. A family store plus one specialty store (children's, ladies specialty or read-to-wear, or menswear) might be considered.

Furniture and Home Appliances:

Support of up to 3,300 square feet could be accommodated by this trade area. One such store is currently operating in Northome, indicating potential expansion.

Miscellaneous Retail:

A fair amount of support is evident in this trade area, up to 4,500 square feet, for miscellaneous retail activity. The average size for a store in this category is 1,800 square feet. Types of stores in this group include: sporting goods, books, stationery, jewelry, hobby and game, camera and photographic supply, gift-novelty-souvenir, sewing-needlework, florists. There is one antique store existing in Northome.

Hardware and Building Materials:

The trade area can support up to 13,000 square feet of floor space in this retail activity. Currently there are two stores in this category, both in Northome. Depending upon the size of these two businesses, there may be room for some expansion.

Drug Stores:

There is support for up to 2,800 square feet of retail space. One drug store is in business. Although the average floor space for this type of activity is 4,000 square feet, some independent pharmacy operations can get by with 1,200 square feet.

Eating and Drinking Places:

There is enough support for nearly 5,000 square feet of floor space. Currently, there are two establishments in operation. If these two businesses are near the average in floor space (2,400 square feet) there may be room for expansion. The low range of average floor space is 900 square feet (without liquor) and 1,000 square feet (with liquor).

d. Border-Birchdale-Indus-Loman

The trade area is unable to support any single retail category. However, by examining the prevalent demands of consumers in the area, there may be potential for establishment of one or two stores that carry a variety of the retail items needed by the consumers. These two stores must be located in one or two communities, i.e., there cannot be two stores in each community in the trade area. Birchdale appears to have the most business activity in this area. Baudette is the major retail center for this area.

2. Industrial Opportunities

The industrial analysis identified the economic structure of Koochiching County in terms of employment indicators by industry. The strength of the County economy was tied to the forest products industry. Based on the assumption that there are opportunities in strength, we must mention the Paper and Allied Products Manufacturing industry. The major activity, of course, is in the major paper and paperboard mill in International Falls. Continued support of this industry is beneficial to the economic health of the County. This industry provides over 40% of the total earnings (1978) in the County. It is the largest export industry in the county. This is perhaps the most important factor comprising the strength of this industry in the county since it is the production of products above and beyond the local consumption need that brings in outside capital to the county. Continued support of this industry also affects the economic life of its supporting industries such as Lumber and Furniture manufacturing, other Pulp and Paper manufacturing, Railroads, and Wholesale Trade.

Another opportunity lies in the Furniture, Lumber & Wood Products manufacturing industry, which ranked as the second strongest industry in the county. Its strength lies in the fact that it is related to the forest products industry and also in its export status. It depends upon input from other supporting industries such as; Agricultural Services, Forestry, Pulp and Paper manufacturing, Primary Metals, Fabricated metals, Railroad Transportation, Wholesale Trade, and Finance-Insurance-Real Estate. Continued growth in these supporting industries can be beneficial to the Furniture, Lumber and Wood Products industries due to more efficient production and possibly lower costs.

Another importnat industry to Koochiching County is Tourism. This is reflected in the high rank of Other Personal Services. Employment in Koochiching County is more than for local consumption, thus establishing this industry as one of exporting services. This industry is a high growth industry also with potential at its doorstep in the Voyageurs National Park and surrounding recreation and wilderness amenities.

The Education industry contains potential for future economic development. It already has secured a position of strength in the county economy in employment growth. Support industries connected with this industry include: Finance-Insurance-Real Estate, Electric Utilities, Construction, Medical and Educational Services, Printing and Publishing, Communications, and Food & Kindred Products manufacturing.

Another potential may exist in secondary wood processing, depending upon which set of recommended annual harvest figures are used. If the State figures are accepted with their resulting low surplus estimates, attention should be concentrated on such activities as kiln-drying and development of wood by-products and residues for energy and fuels.

If the County Land Commissioner's figures are used there would be sufficient surplus harvest potential to consider expansion of current timber harvesting activities. With the opening of new waferboard plants in nearby Bemidji, and Cook, and expansion at Grand Rapids, the prospective markets are bright.

There appears to be potential for cold weather testing operations in the area, due to favorable weather conditions of temperature, temperature extremes, substantial temperature variations within a 24-hour period, clear sky periods, etc. The area has been used as a test site for automotive batteries, and possibly other products. The Boise Cascade Corporation has developed research programs but has reduced their activities and staff, leaving excellent facilities idle.

Since testing has not occurred at a constant level for more than one product, the demand has not been sufficient to maintain a permanent facility in the area. Most testing laboratories have developed simulated cold rooms that negate the need for moving products to a cold climate location. However, with today's energy situation and the rampant inflation trend, there may be a demand for natural weather conditions testing. Efforts should be made now to explore this further.

One initial step that can be taken is to organize a local task force of interested persons that have some expertise in the field of cold weather testing. The task would be to examine the nature of testing that has been done in the past and explore a variety of products and potentials that warrant use of the area for testing purposes. The theme may not be exclusively related to cold weather testing, but should also include scientific testing of other materials. There has been a need for special testing of peat samples that has gone unmet, resulting in the transportation of samples all the way to California. A multi-purpose facility could serve the needs of a variety of private industry as well as state and federal government.

A problem with facilities arises immediately. Although Boise Cascade Corporation has constructed fine lab facilities, they have now rented the space to other tenants who are not using the lab facilities for scientific purposes. Perhaps arrangements could be made to refurbish these facilities and negotiate the space for scientific research purposes.

Another potential facility would be the Rainy River Community College. There is very little laboratory facility space available, but perhaps a program could be developed that would serve the needs of the community in the area of cold weather testing.

VIII. TRADE AREA DEVELOPMENT OBJECTIVES AND PRIORITIES

VIII. TRADE AREA DEVELOPMENT OBJECTIVES AND PRIORITIES

This section will bring together the information presented in the previous sections and establish objectives and priorities for development in each of the trade areas of Koochiching County. Objectives are ideas that are believed to bring out economic development in an area. They are based on the commercial and industrial analyses of these areas, its resources and needs. Objectives also describe what has to be done and where the community is going in terms of economic development. Priorities are the placement of emphasis on what should be accomplished first.

A. LITTLEFORK TRADE AREA

The industry most important to the Littlefork area is Furniture, Lumber and Wood Products manufacturing. This should be the priority objective in any development effort, whether to expand or create new industry related to the existing manufacturing operations. Many of the same products mentioned in Northome-Mizpah objectives could very well apply here.

Development in the hospital sector has some potential, since it would enhance the regional services provision it now enjoys.

General merchandise retailing could become an important objective with possible attention given to expansion of a variety store or creating a new catalog store. Other Commercial objectives should consider new clothing store, expansion of furniture and home appliance store, new specialty store, hardware expansion, drug store expansion, and new eating and drinking places.

Other transportation potential lies in such activities as further development of the air facility, or consideration of other transportation modes as pipelines, freight forwarding, packing and crating, or stockyard facilities.

The resources of the Littlefork area are adequate. The area is the largest trade area in the county outside of International Falls. Its labor force is the largest and has the lowest unemployment rate among the four trade areas. Thus, job opportunities appear adequate.

The natural resources are abundant, with the trade area containing 84% forest cover.

Industrial sites are primarily occupied by the sawmills and lumber operations in the area. In terms of zoned industrial land, this area ranks third among the three trade areas in total acreage. Transportation facilities are adequate with a principal arterial highway (US 71) and a minor arterial (TH 217) providing key access. A major collector route (TH 65) provides access from the south and another (CSAH 1) provides access from the west. Rail is present in the form of the Burlington Northern, which is classified as a class "A" branchline with a 315-pound gross car weight capacity.

The road restrictions are in effect in the spring limiting the principal arterials to 7-ton weight capacity. The CSAH 1 restrictions are set at 5 tons.

Current action on city improvements is underway regarding watermains, sanitary sewer, and a watertower, laying the groundwork for future development. This is a positive step and can pay long-range dividends for economic and community development.

B. BIG FALLS TRADE AREA

The major strength in the Big Falls trade area is logging and sawmills. Continued activity in this sector is the primary objective. Trucking services and warehousing are also a high ranking activity. This activity is closely allied to the transport of local wood production and should continue to play a key supporting role.

A strong potential for the Big Falls area would be for a county transportation service center. The key elements are present with its central location in the county, intersecting highways, and rail transportation all contributing for centralized operations. One objective would be to explore the possiblity of developing this area as a central area for wood chipping operations. It seems logical to develop this area as a central processing source for delivery to the major mills in either International Falls or Grand Rapids.

Eating and drinking show up as an important sector in the Big Falls area. This would tend to suggest either expanding or developing a new facility for serving the transient traffic passing through, such as a truck stop or truck terminal. The location of Big Falls on the major route in Koochiching County (US 71) provides a steady flow of traffic for this type of development. Other retail objectives includes a new family clothing store, and expansion or creation of space for specialty items.

Some infrastructure improvements may be desirable in the area of emergency services. The concern has been expressed by citizens about fire and police protective services. Water supply system development should be another public capital improvement item, especially in the distribution system.

Commercial development seems to have the greatest warranted retail floor space in the Hardware-Building Materials and Food Stores businesses. However, none of the business categories indicated warranted space in excess of median store size, based on the standards for other urban areas nationally. The local merchants should check their total floor space to see if any expansion may be supported.

C. NORTHOME-MIZPAH TRADE AREA

Preliminary analysis indicates further information is necessary to discover commercial expansion potential. Types of business that should be checked for future expansion are:

General Merchandise
Hardware and Building Materials
Apparel and Accessories
Furniture and Home Appliances
Miscellaneous Retail (specialty stores, i.e., used merchandise, gift, book, stationery, jewelry, hobby, camera and photo, needlework, etc.)
Eating and Drinking Places

A survey of the local area merchants should be undertaken to determine the present amount of floor space in each of the above categories. A comparison then should be made with the warranted floor space indicated in the commercial analysis section of this report. (Table 14) The percentages of potential sales captured in the trade area and the average sales per square foot of retail space should also be verified with the local merchants before the share of potential sales figures are used.

Industrial objectives should follow activities related to the Furniture-Lumber-Wood Products manufacturing industry. Expansion of current activities is a strong possibility. Manufacturing of parts for furniture items is a distinct possiblity. Other products that might be considered are:

Compressed fuel logs (briquettes)
Woodenware and Novelties (pie and picnic plates, forks and spoons, cocktail stirrers and paddles, dishes and platters, round and oval boxes of graduated sizes with tight covers, steak planks, break and carving or cutting boards, humidors, etc.)
Wood educational and miscellaneous toys
Wood fencing and poles (snow fences, garden fences, stockade fences, rustic picket fences, shadowbox fences, trellis, etc.)

Another objective is to develop additional Repair Services. This segment includes such activities as:

Autotmotive rental and leasing
Utility trailer and recreational vehicle rental
Body repair shops
General automotive repair shops
Car washes
Electrical Repair Shops (radio, TV, etc.)
Furniture repair
Miscellaneous repair (antique repair and resoration, camer repair, engine repair, farm machinery repair, gunsmith shops, locksmith shops, motorcycle repair service, tent repair shops, tractor repair, etc.)

Hospital and related Medical Services ranks as a promising industrial sector and is very important in the Northome-Mizpah trade area. The primary activity at present is the Northome Nursing Home. Another nursing home is located in the trade area in Kelliher (Good Samaritan Center). Hospitals are within 45 miles; Bemidji Community Hospital and North Itasca Hospital in Big Fork.

Other realted health services include:

Physicians
Dentists
Chiropractors
Optometrists
Other Health Practitioners (chiropodists, dieticians, midwives, nurses, nutritionists, occupation therapids, podiatrists, physiotherapists, psychologists, etc.)
Medical and Dental laboratories
Outpatient Care facilities (family planning clinics, group health associations, health maintenance organizations, rehabilitation centers, etc.
Blood banks

D. BORDER-BIRCHDALE-CLEMENTSON TRADE AREA

This trade area is the smallest in area and in population. Commercial objectives appear limited, but must be scrutinized with a local survey to determine the amount of expansion warranted. Limited potential is indicated for Hardware-Building Materials, General Merchandise, and Food Stores floor space, most probable in a store that provides a variety of items in these categories.

Industrial objectives appear likely in Furniture, Lumber and Wood Products manufacturing. One of the suggestions of the local development group was to consider the production of parts for furniture manufacturing, using the area's wood resources. Initial discussions have discovered a market for these small wood braces for wood furniture frames. This type of activity is compatible with the strengths of the economy and the resources should be able to support a small manufacturing operation.

Sewing activities are another potential for the area. It is a small scale operation and seems to fit well with the local development group assessments.

Preliminary research has already been done on market development and technology. Equipment can be obtained either by sale or rent for a reasonable cost. Promotion of this industry is warranted. Sewing activities have gone on in the past in the Iron Range communities of Eveleth, Gilbert and Chisholm. Efforts should be made to explore further possibilities of equipment procurement from operations recently closed down.

Development in the energy field is another possiblity. Preliminary research into production of methanol from wood appears to be an opportunity. This activity may have support from a local co-op company in the area. A nagging problem with efficient use of electrical power has existed for the local energy users in the past. Approximately one-half of the available power that is purchased each year is not used by consumers in the area. To offset this inequity, alternative power sources should be explored. Hydroelectric power has been suggested with the Rainy River as a local resource. Conversion of hydrogen into energy use may also be explored.

Other development objectives may be directed at such activities as Mining (possible gravel pit operations); Othe r Transporation (water, air, pipelines, and transportation services); Agricultural Production (sunflower seeds, grass seed, etc.); General Merchandise Retailing (discount stores, department stores, and variety stores); Welfare-Religious-Nonprofit Member Organizations (individual and family services, vocational rehabilitation, child development, homes for children, aged, retarded, and social services); Legal-Engineering-Miscellaneous Professional Services; Hospitals; Construction; and Public Administration.

General-Peat Development Objectives and Priorities

Although current development of peat resources is very sketchy, it would be wise to become acquainted with the progress of those actively pursuing development programs. The single-most important effort to date is the Minnegasco program. The present activity appears to be in a stage similar to the early research that the taconite mining industry was, in the late 1940's. Similar impacts and development potential could occur in the development of a giant peat industry if all predictions mature at once.

A very important objective, which would apply to each of the trade areas in the county, would be to organize a task force for the purpose of expanding the awareness of all residents in the county regarding the progress of peat development. The task force should be prepared to gather all pertinent information on peat development, provide an opportunity for local analysis of potentials and problems, and mobilize an education program for the residents of the area.

The priority for this activity should be immediate. There has been considerable effort in peat research programs in Minnesota in the late 1970's, indicating that some preparation should be made by local areas to use the available information for the long-range planning of economic development in the areas where the peat resource is most plentiful - Koochiching County.

General - Cold Weather Testing

The Private Industry Council should proceed to organize a task force to explore the potential for establishing a research and development center. Members of the task force could come from several sources, i.e., Private Industry Council members, Boise Cascade Corporation (present and retired individuals associated with research and development), Rainy River Community College, local government (city and county), state legislators, state and federal agency representatives (Forest Service, Extension Service, IRRRB, etc.) and private citizens interested in the project. The objective would be to develop a proposal for establishing a research and development center for the area. Information should be gathered that would identify types of research that would be probable. An inventory of past testing known to have been carried out in the area should be developed, which should aid in determining the types of likely research activities. A search should also be made of other R & D facilities to learn what types can be developed for this area. Finally, a promotional program should be developed that would present key information relevant to a potential private entrepreneur or to some specific state or federal government agency to establish a research and development facility in the area.

IX. FINANCIAL RESOURCES

IX. FINANCIAL RESOURCES

One of the greatest problems in industrial development is to obtain money for projects which have been found worthy of implementation. Many projects fail for lack of suitable financing, or they may get started without adequate financing. In most cases, if the project is sound and of high profitability, financing from one source or another is available. Many sources and types of funding are available and suitable in certain cases. Some of these sources are

Private financial community

Local government

State government

Federal government

Private Financial Community

The first place to check is with your local commercial bank. It is here that local activities are best known and the banking officers most interested in economic development projects. They are the primary source of temporary short-term loans or construction loan financing. Lending policies, however, vary greatly from one bank to another. It pays to shop around. Commercial banks are always operated by and for the stockholder and thus are looking out for their interests.

Another source is the insurance companies. Of the approximate 2,000 companies nationwide, about 5% to 7.5% will consider lending on industrial development projects. They have wide real estate investment powers and huge resources to draw upon. They are also a multiple transaction source, meaning they are able to finance a variety of different transactions in the development process. Other factors attributed to insurance companies are:

They have broad lending powers,

They have great flexibility,

They will finance projects that banks and other lenders may not touch,

They may have a preference for equity or ownership participation.

Local Government

Local government (municipalities) has at its resource, certain financing powers. Among these are the powers to incur debt. The two most likely types of debt sources are; 1) the municipal revenue bond and 2) the tax increment financing program. Both may be used for the general purpose of improving the economic and industrial development of their communities.

Municipal Revenue Bonds;

These bonds were authorized by the Minnesota Industrial Development Act (M.S.A. 474.01 et. seq.). City councils are authorized to issue revenue bonds and use proceeds to acquire and construct industrial sites and factories. These facilities are then leased to private industry and the rentals are used to retire the bonds.

The issues may be made up to $10,000,000 and still be tax exempt from state and federal taxation. However, if the project cost is over $1 million, a certificate must be filed with the Internal Revenue Service (IRS) that elects the $10,000,000 limitation instead of $1 million.

Financing with municipal revenue bonds may be done by several approaches. The four most common are: loan, lease with purchase option, lease-leaseback, and installment sale.

The major advantage of using the municipal revenue bonds is that the interest on the bond issued is not subject to state or federal income tax.

A disadvantage exists because the issuer must be cautious on which companies are chosen. It is equally attractive to substantial companies as well as to "fly-by-night" operators.

There are seven general steps to be followed. A summary of selected segments of this process follows. The issuer is cautioned to get in touch with their own local municipal attorney or hire a competent bond counsel before proceeding with this approach.

1) The private company and the underwriter hold preliminary discussions about industrial development bonds. They then consult with a bond counsel and the company counsel. If feasible, they contact the issuer (the municipality) to adopt an intent resolution.

2) Review draft of financial agreement and prepare preliminary official statement to be used in selling industrial development bonds.

3) Review second draft of financial agreement and first draft of official statement.

4) Board of directors of company approves transaction.

5) Underwriter makes public distribution of preliminary official statement.

6) Pricing conference held. Corporate trustee chosen. Issuer's governing body adopts a bond resolution and designates handling of final negotiations and the closing.

7) All parties complete and assemble remaining documents for closing.

8) The closing is held.

The optimum time for completing financing is six to ten weeks.

Tax Increment Financing;

This program is used for financing urban renewal and redevelopment activities. It is authorized by the Minnesota Housing and Redevelopment Act of 1969; and the Municipal Development District Act of 1974.

This program emphasizes locally-financed redevelopment. As such, it needs a local development plan.

The steps in the Tax Increment Financing process include:

1) Designate a Development District.
2) Create an advisory board.
3) Issue bonds (general obligation).
4) Prepare a Tax Increment Financing Plan.

There are several advantages of using Tax Increment Financing:

1) It stabilizes the tax base of property values (it freezes the tax base).
2) It unites private investment with public goals by assuring the immediate use and redevelopment of the area chosen.
3) It increases local control.
4) It increases revenues after bond retirement.
5) There are no loss of tax revenues.
6) No outside subsidy is needed.
7) There is a "Pass Through Effect" during repayment.

There are also some problems associated with the program:

1) It requires developer commitment at an early stage.
2) Immediate tax revenues above the frozen base are not available to other tax jurisdictions.
3) There is a risk of default.
4) A risk of economic calamity exists.
5) There may be a tendency for overuse of the resource.

State Government

The State of Minnesota Department of Economic Development provides assistance in packaging financial programs from existing resources. There are four sources that are currently in operation or being developed.

The Area Redevelopment Administration Program:

Under Chapter 472, a limited amount of funds ($160,000) are available for loans for new businesses or for expanding businesses. The loans may be for the purchase of land, buildings, machinery and equipment and for the construction of a new building or expansion of present facilities. Loans are made to the local development corporation or area redevelopment agency in a community or county. Where such agencies do not exist, the loan can be made directly to the business with a resolution from the local unit of government.

The funds may not be used for working capital. The State of Minnesota will participate up to 20% of the total project cost using an interest rate of 7¼%. The borrower must contribute 10% of his own funds. The remaining 30% can come from any other source such as SBA, FmHA, banks, insurance companies, etc. The term of the loan is 20 years for land and buildings and from 7 - 10 years on equipment. Interest rates are reviewed once a year based on average rates of return data from the State Board of Investments.

The Small Business Finance Agency Program:

This program consists of two parts; assistance for pollution control projects, and industrial revenue bonding. The State guarantees bonding for 100% to businesses cited by the Minnesota Pollution Control Agency (MPCA). It is not for start-up of new businesses. One other stipulation requires that the firm must be profitable for at least three of the last five years.

The industrial revenue bond program assistance is not in operation yet. It is beign designed so that small projects can be served. An attractive feature is that the State Department of Economic Development will package several small projects, up to $30, million, to cut the cost and improve the chances of more small projects being underwritten by bond firms. The barrier preventing start-up of this program is the provision that the State must provide 10% in reserves to match the loan funds authorized in Chapter 547 of the 1979 laws which created the Small Business Finance Agency. Final authority in approving applications rests with the Commissioner of the State Department of Securities. The initial contact should be with the

DED Field Representative for our area: Mr. Gene Groth.
Box 727
303 East 19th Street
Hibbing, Mn 55746
Phone: 218-262-3895

or the State Office contact: Mr. Alan A. Madsen
480 Cedar Street
St. Paul, Mn 55101
Phone: 612-296-0622

Revolving Loan Fund;

The State of Minnesota Department of Economic Development has $1.2 million available for business loans. Only 28 counties classified as distressed are eligible for these funds. Koochiching County is eligible. The program is funded by the U.S. Department of Commerce's Economic Development Administration "304" program. The terms and conditions are similar to the previously mentioned ARA program. The interest rate is currently 7¼%. The term of the loan is from 7 - 10 years. There is a maximum amount of $250,000 or 20% of the total project cost for each project. The same contact people will answer inquiries and provide assistance to those interested in using this program.

Municipal Industrial Revenue Bond Program;

The Department of Economic Development will also provide assistance to municipal leaders in development of financial packages using this program. The description is contained under the Local Government section presented previously.

Federal Government

The federal government has 1,123 programs which it administers through 57 agencies. Information on each of these programs is contained in a publication called the Catalog of Federal Domestic Assistance. Copies have been distributed to most Mayors and County Board Chairman, and others. Most libraries should also have a copy. An excerpt of those programs most likely to be of assistance to Koochiching County economic development efforts is provided here.

Farmers Home Administration (FmHA);

The programs of this agency are mainly for agriculture and rural housing. A few may be useful to local industry. Two programs are mentioned here as realistic funding sources and have been used extensively in the Arrowhead Region.

BUSINESS AND INDUSTRIAL LOANS

This program assists public, private or cooperative organizations organized for profit or non-profit, Indian Tribes or individuals in rural areas to obtain quality loans for the purpose of improving, developing, or financing business, industry and employment and improving the economic and environmental climate in rural communities including pollution abatement and control.

The type of assistance available is guaranteed and or insured loans. They may be used as sole financial assistance with FmHA or in joint financing with other federal, state, private and quasi-public financial institutions.

To be eligible, an applicant may be a cooperative, corporation, partnership, trust or other legal entity organized and operated on a profit or nonprofit basis; an Indian tribe; a municipality, county or other political subdivision of a state; or an individual in rural areas.

An applicant must provide evidence of legal capacity, economic feasibility and financial responsibility relative to the activity for which assistance is requested.

It takes from 60 to 90 days to obtain eventual approval of an application. The program has provided an average of $758,000 for project loans and has ranged from $11,000 to $50 million. The total amount of loan monies available was estimated to be $1,076,000,000 in FY in 1980 and is expected to be about $751,000,000 in FY 1981.

Further information can be obtained by contacting a representative at the FmHA District office in Grand Rapids, Mn:

Mr. Ralph Maki
District Director
Room 4
Soder's Mini Mall
18 W. 3rd Street
Grand Rapids, Mn 55744
Phone: 218-326-0561

A local contact is:

Allan J. Palmquist
County Supvs'r (Int'l Falls)
109 Federal Bldg
Baudette, Mn 56623
Phone: 218-634-1824

COMMUNITY FACILITY LOANS

This program lists as its objectives; to construct, enlarge, extend, or otherwise improve community facilities/essential services to rural residents. Facilities include those providing overall community development such as fire and rescue services, transportation, traffic control, community, social, cultural, health and recreational benefits; industrial park sites, access ways, and utility extensions. All facilities financed with FMHA funds shall be for public use.

To be eligible, you must be a state agency, political and quasi-political subdivisions of States and associations including corporations, Indian tribes on Federal and State reservations and other federally recognized Indian tribes and existing private corporations.

For further information see the local and Dist. office contact persons.

The Small Business Administration;

STATE AND LOCAL DEVELOPMENT COMPANY LOANS (501 and 502 LOANS)

This program's objective is to make Federal funds available to State and loeal development companies to provide long-term financing to small business concerns located in their areas. Both State and local development companies are corporations chartered for the purpose of promoting economic growth within specific areas. Loans to State development companies are to assist small businesses with equity, capital, and long-term financing. Loans to local development companies are for the purchase of land, buildings, machinery, and equipment, or for constructing, expanding, or modernizing buildings. Loans are not available to local development companies to provide small businesses with working capital or for refinancing purposes. Loans to State development companies may not exceed 20 years and loans to local development companies may not exceed 25 years.

To be eligible, local development companies must be incorporated under general State corporation statute, either on a profit, or nonprofit basis, for the purpose of promoting economic growth in a particular community.

The average loan during FY 1980 was $152,572 representing 267 loans nationwide for a total of $40,736,692. Obligations for FY 1981 are estimated to increase. Direct loan money available should be $291 million and guaranteed loan funds should be $3.8 billion. These figures are to include requests from another program...the regular small business loan program which had 16,360 loans approved nationwide in FY 1980.

Contacting the SBA office for further information may be through the Duluth Area Chamber of Commerce, which makes arrangements for meetings with the Minneapolis area office representative who comes to Duluth monthly or directly with the Minneapolis office. The addresses are:

Duluth Area Chamber of Commerce
Pioneer Hall
Duluth, Mn 55802
Phone # 218-722-5501

Small Business Administration (SBA)
12 South Sixth Street (Plymouth Bldg.)
Minneapolis, Mn 55402
Phone # 612-725-4242

One additional source of assistance from SBA is the Service Corps of Retired Executives (SCORE). There is no financial assistance provided here, but consultation about small business management problems is available for merely the cost of expenses of the SCORE representative. There are currently four local chapters in the Arrowhead Region. The one closest to the Koochiching County area is the Grand Rapids Chamber of Commerce. You may contact:

Mr. Claude Titus, Manager
401 North Pokegama Avenue
Grand Rapids, Mn 55744
Phone: 218-326-6619

Economic Development Administration;

ECONOMIC DEVELOPMENT-BUSINESS DEVELOPMENT ASSISTANCE

The most practical source of funding assistance from this agency is the direct and guaranteed loan program. It is similar to the SBA program but is applied to larger projects .... in excess of $500,000. Interest rates are set every quarter, so the potential applicant must obtain the latest rate at the time of actual processing. Timing is typically from 1 to 2 years to process the loan.

The objective of this program is to sustain industrial and commercial viability in EDA designated areas by providing financial assistance to businesses that create or retain permanent jobs, expand or establish plants in redevelopment areas for projects where financial assistance is not available from other sources, on terms and conditions that would permit accomplishment of the project and further economic development in the area.

Long-term business development loans up to 65% of the cost of the project may be used for the acquisition of fixed assets only (ie., land, building, machinery, and equipment, including land preparation and building rehabilitation). Funds may be used for most kinds of new industrial or commercial facilities or to expand one already in existance. Loans for working capital needs are not limited by statute, but are available only for short periods. In addition, the government will guarantee up to 90% of the unpaid balance of loans for the acquisition of fixed assets or for working capital; and up to 90% of the rental payments required by guaranteed lease.

Eligible applicants may be any individual, private or public corporation, or Indian tribe as long as the project is physically located in an area designated eligible under the EDA Act. Restrictions are placed on firms who have relocated their facilities within the last three years; contemplate relocating; or produce a product or service for which there is a sustained and prolonged excess of supply over demand.

Approval or disapproval will be made within 90 to 120 calendar days after receipt of application.

EDA obligated an estimated $27,923,000 in FY 1980. The range of financial assistance given under this program was $260,000 to $5,200,000. The average was $1,500,000.

In fiscal year 1979, 46 business loans and 109 guarantees were made.

The initial contact should be with the local area representative;

Mr. Jack Arnold
U.S. Dept. of Commerce, Economic Development Administration
Federal Bldg.
Duluth, Mn 55801
Phone: 218-727-6692, ext. 326.

Koochiching County Eligibility:

These programs are available for Koochiching County development purposes. The only restriction is on the type of eligible applicant. Your private sources, including the local banks, usually deal directly with the private business person. The remaining programs may be used by either general purpose units of government or local development groups organized under the State of Minnesota corporate statutes.

A grouping of the eligible applicants and the types of programs that may be used may be of assistance in determining which program may be used.

Private Business:

- Commercial banks - short-term loans
- Insurance companies - wide variety of financing ventures
- Small Business Finance Agency Program (DED)
- Revolving Loan Fund (DED)
- Business and Industrial Loans (FmHA)

Local Development Corporations:

- State and Local Development Company Loans (501 and 502 loans) (DED)
- Economic Development - Business Development Assistance (EDA)

Local Government:

- Municipal Revenue Bonds (DED)
- Tax Increment Financing (DED)
- Business and Industrial Loans (FmHA)
- Community Facility Loans (FmHA)
- Economic Development-Business Development Assistance (EDA)

APPENDICES

APPENDIX A

LIST OF LOCAL DEVELOPMENT GROUP MEMBERSHIPS

1. Littlefork area is represented by:

   The Littlefork Industrial Development Corporation
   c/o State Bank of Littlefork
   Chairman, M. Jay Beasley
   Littlefork, MN 56653

   Mary Thydean, Secretary

   Other Members: James McCarthy, Alfreda Anderson, Leroy Winkel, Anton Imhof, Dale Peterson, Raymond Johnson, Richard Hardwig, Harold Running, and Ernie Reinarz.

   The City of Littlefork also has a group known as: Citizen's Industrial Development Committee and acts as the operative arm of the City Council. Its secretary is Alfreda Anderson.

2. Big Falls area is represented by:

   <u>Koochiching County</u>

   Oscar Bergstrom
   Rt 9, Box 586
   Int'l Falls, MN 56649
   377-4482

   Renee Hahn - Chairperson
   Mizpah, MN 56660
   897-5906

   Sandra Jones
   Northome, MN 56661
   897-5263

   Nancy Fortier - Secretary
   Box 3b W. Rt.
   Northome, MN 56661
   897-5747

   Darlene Luoma - Vice Chairperson
   Box 311
   Big Falls, MN 56627
   276-2228

   Barbara Erickson
   Margie, MN 56658
   276-2396

   <u>Itasca County</u>

   Edna Shepard
   Box 269
   Bovey, MN 55709
   245-2485

   Lawrence Shepard
   Box 269
   Bovey, MN 55709
   245-2485

   Jim Lester-Treasurer
   P. O. Box 36
   Effie, MN 56639

   George Schmeltzer
   Adahi Resort - Island Lake
   Northome, MN 56661
   897-5713

   Lucille Cook
   3535 River Rd.
   Grand Rapids, MN 55744
   326-6890

   Joseph Gorece
   805 Sixth Ave. SW
   Grand Rapids, MN 55744

Koochiching County

Etta Erickson
Rt 3
Baudette, MN 56623
634-2773

Cheryl Thueson
Northome, MN 56661
897-5763

Itasca County

Don Taylor - Chairperson of Standing Committee
Deer River, MN 56636
246-2303

Ed Vogt
Box 154
Marble, MN 55764
247-7935

3. The Northome-Mizpah Area is represented by:

Northome Commercial Club
Chairman, Jim Fedorko

Other Members: Al Erickson, Robert Good, Bernie Elhard, Allen Curb, Orville Curb, Wayne Skoe, Earl Skoe, James A. Fedorko Henry Elhard, Elmer Anderson, Steve Dahl, Larry Reinarz, Gary Fisher, Robert Malterud, Dave Stienhorst, Otto Jourdan, Veir Wood, Alvin Johnson, Gordon Franklin, Jack Ungerecht, Robert Neff, Kenny Kininger, Floyd Little, Harvey Latteral, and Donald Latteral.

4. Border-Birchdale-Clementson Area

This area is represented by the Border-Birchdale-Clementson Development Association.

Alvin Hasbargen, President
Birchdale, MN 56629

Other Members: David Imes, Janice Imes, Ken Hasbargen, Winnie Hasbargen, Reuben Nelson, Audrey Nelson, Albert Hasbargen, Mildred Hasbargen, April Hasbargen, Ellen Hasbargen, Jeannette Hasbargen, Roy E. Sunne, Weslie Hasbargen, Darline Sunne, Robert Coope, Charles Hasbargen, Sr., Peggy Hasbargen, Keith Hasbargen, Carrie Hasbargen, Diedra Hasbargen, Theresa Hasbargen, Charlie Chasbargen, Jr., Etta Erickson, La Mont Erickson, Alden C. Anderson, Ruth Anderson, Wayne Hasbargen, Fred G. Lafky, Linda L. Lafky, Milton Benike, Dorothy Bauman, Keith Bauman, Richard McGrath, Peggy McGrath, Theresa Bilyeu, Glen Bilyeu, Rick Bilyeu, Ron Sievers, Kathie Siever, and Ron Anderson.

APPENDIX B

INDUSTRIAL ANALYSIS METHODOLOGY

Introduction

The purpose of this section is to provide some materials and information about the economy that will assist in understanding the area and aid in arriving at a series of goals and objectives. Using an economic base technique with employment data from the U.S. Census of population, we can examine the breakdowns of the economy from the employment standpoint. Employment data are used because they are readily available and are a pretty good measure of economic conditions of an area. Employment is the primary means of sustaining the population levels and economic activity in the Koochiching County area.

The data are arranged in general format in Tables 1 and 2 that will enable us to take a logical approach in our analysis of the sectors of the economy. The first level of analysis is with the County as a whole, including the major cities of International Falls and South International Falls. This approach allows us to examine the economy with the full influence of the major economic activities in the two large cities. Further outside data can then be used to further examine some alternatives that may have direct bearings on the potentials existing in the Koochiching County area.

A second level of analysis will then examine specific local areas within the county. This method pinpoints the geographic levels of economic activity and allows us to observe the concentrations of activity by local areas. Local development groups will then have a set of data from which to base their own local strategies.

Table 3 is the first step at analyzing the results of the employment patterns. The industry sectors are ranked by size of employment for both 1960 and 1970. An arbitrary cutoff point was establiched at a level of 2% for each separate sector.

TABLE 1: EMPLOYMENT, EMPLOYMENT COEFFICIENTS AND LOCATION QUOTIENT FOR KOOCHICHING COUNTY AND STATE OF MINNESOTA, 1960

INDUSTRY	EMPLOYMENT			COEFFICIENT		LOCATION QUOTIENT	
	County	Rank	State	County	State		Rank
Agri., For., & Fisheries	454	2	178447	.0818	.1447	.5653	18
Mining	5	29	17549	.0009	.0143	.0630	28
Construction	162	9	68048	.0292	.0552	.5290	20
Furniture, lumber, & wood products	321	4	10667	.0578	.0087	6.6437	2
Other durable goods	8	28	34495	.0014	.0280	.0500	29
Food & Kindred Prod.	43	22	57899	.0077	.0470	.1639	27
Printing, Publ.	72	17	25271	.0130	.0205	.6342	15
Other nondurable goods	2000	1	19720	.3602	.0160	22.5125	1
Railroads & Railway express serv.	153	10	29206	.0276	.0237	1.1646	5
Trucking service & warehousing	33	25	18239	.0059	.0148	.3987	24
Other transportation	36	24	13763	.0065	.0112	.5804	17
Communications	62	18	13447	.0112	.0109	1.0276	9
Utilities & Sanitary Services	40	23	15192	.0072	.0124	.5807	16
Wholesale trade	49	20	52207	.0088	.0424	.2076	26
Food, Bakery & Dairy stores	139	11	29819	.0250	.0242	1.0331	8
Eating & Drinking Places	170	7	36356	.0306	.0295	1.0373	7
Other retail trade	415	3	122838	.0747	.0986	.7500	14
Finance, insurance, & real estate	103	13	50349	.0185	.0409	.4524	23

TABLE 1: EMPLOYMENT, EMPLOYMENT COEFFICIENTS AND LOCATION QUOTIENT...CONTINUED.

INDUSTRY	EMPLOYMENT County	Rank	State	COEFFICIENT County	State	LOCATION QUOTIENT	Rank
Business services	13	27	11871	.0023	.0097	.2372	25
Repair services	85	16	16673	.0153	.0136	1.1250	6
Private households	165	8	28781	.0297	.0234	1.2693	3
Other Personal Serv.	117	12	31738	.0211	.0258	.8179	13
Entertainment & recreation serv.	33	26	8881	.0059	.0072	.8195	12
Hospitals	93	14	43986	.0167	.0357	.4678	21
Educ.: el., sec., & colleges; govt.	288	5	53575	.0519	.0435	1.1931	4
Educ.: el., sec., & colleges; private	44	21	18213	.0079	.0148	.5338	19
Welfare, religious, & nonprofit mbr. org.	91	15	20648	.0164	.0168	.9762	10
Legal, Engineering, & Misc. member org.	60	19	29336	.0108	.0238	.4538	22
Public admin.	194	6	46987	.0349	.0381	.9161	11
Industries not rptd.	105	-	37037	.0189	.0301	.6279	
Total	5553		1233408	1.0000	1.0000	1.0000	

Source: 1960 Census of Population

TABLE 2: EMPLOYMENT, EMPLOYMENT COEFFICIENTS AND LOCATION QUOTIENT FOR KOOCHICHING COUNTY AND STATE OF MINNESOTA, 1970

INDUSTRY	EMPLOYMENT			COEFFICIENT		LOCATION	
	County	Rank	State	County	State	QUOTIENT	Rank
Agri., for., & fisheries	131	12	111030	.0231	.0758	.3047	30
Mining	19	31	14008	.0033	.0096	.3438	29
Construction	215	7	82759	.0379	.0565	.6708	22
Furniture, lumber, & wood products	425	3	10761	.0749	.0073	10.2603	2
Fabricated metal	4	35	27372	.0007	.0187	.0374	34
Other durable goods	59	23	33835	.0104	.0231	.4502	25
Food & kindred Prod.	5	33T	45575	.0009	.0311	.0289	35
Printing, publishing, & allied industries	10	32	26709	.0018	.0182	.0989	32
Other nondurable goods (ie. paper mfg.)	1793	1	41541	.3159	.0284	11.1232	1
Railroads & Railway express serv.	114	14	18745	.0201	.0128	1.5703	4
Trucking Service & warehousing	34	29	22270	.0060	.0152	.3947	27
Other Transportation	49	26	18503	.0086	.0126	.6825	20
Communications	51	24	16456	.0090	.0112	.8036	15
Utilities & sanitary Services	50	25	20030	.0088	.0137	.6423	23
Wholesale trade	70	19	70525	.0123	.0482	.2552	31
Food, bakery & dairy stores	156	10	36190	.0275	.0247	1.1134	6
Eating & drinking places	184	8	50906	.0324	.0348	.9310	11
General merchandise retailing	62	22	43099	.0109	.0294	.3707	28
Motor vehicles retail & service stations	143	11	34009	.0252	.0232	1.0862	8
Other retail trade	293	4	87850	.0516	.0600	.8600	14

TABLE 2: EMPLOYMENT, EMPLOYMENT COEFFICIENTS AND LOCATION QUOTIENTS...CONTINUED 1970

INDUSTRY	EMPLOYMENT			COEFFICIENT		LOCATION	
	County	Rank	State	County	State	QUOTIENT	Rank
Banking & credit agencies	65	20T	22871	.0115	.0156	.7372	16
Insurance, real estate & other finance	72	17T	45106	.0127	.0308	.4123	26
Business services	5	33T	27637	.0009	.0189	.0476	33
Repair services	85	15	20351	.0150	.0139	1.0791	9
Private households	41	27	15660	.0072	.0107	.6729	21
Other personal ser.	264	5	39082	.0465	.0267	1.7416	3
Entertainment & rec.	35	28	10586	.0062	.0072	.8611	13
Hospitals	181	9	65976	.0319	.0451	.7073	18
Medical & other hlth. servcs ex. hosp.	130	13	38184	.0229	.0261	.8774	12
Educ.: el., sec., & colleges; Govnm't,.	451	2	95283	.0795	.0651	1.2212	5
Educ.: el., sec., & colleges; private	78	16	28901	.0137	.0197	.6954	19
Other educ., & kindred services	28	30	6937	.0049	.0047	1.0426	10
Welfare, religious, & nonprofit member org.	72	17T	25778	.0127	.0176	.7216	17
Legal, engineering, & misc. professional serv	65	20T	30778	.0115	.0210	.5476	24
Public administration	237	6	55541	.0418	.0379	1.1029	7
Total	5676		1464273	1.0000	1.0000	1.0000	

Source: 1970 Census of Population

The resulting list included close to 80% for both years. This enabled us to examine the nature of change in the economy during the decade of the 1960's.

Table 4 applies the technique of location quotient analysis and we find a different ranking which clearly identifies the strong, export oriented industries and how they have fared over the ten-year period. A clue as to the relative strengths between absolute employment figures and the location quotient results also becomes clear. Although an industry may employ quite a few people in the county, that does not necessarily tell us that that industry is any "stronger" than an other that employs less. It is the ability of an industry to bring in outside finance capital that is important to the local economy.

Table 5 provides a clue as to the type of industries that might be attracted to the area for import substitution purposes. This means that these industrial sectors should be examined to see if the products and services that are currently being imported could indeed be produced or supplied locally.

TOP RANKED INDUSTRIES BY EMPLOYMENT, 1960-1970 (Table 3)

The industry providing the greatest number of job opportunities in the county is the "other nondurable goods" manufacturing sector. Accouding to the U.S. Census Bureau, this sector includes the following industry categories:

Tobacco manufacturers
Paper & allied products manufacturing
Petroleum refining
Rubber & miscellaneous plastics products
Leather & leather products manufacturing

Of these categories, we can reasonably conclude that the majority of employment in Koochiching County would be in the Paper and allied industries sector. In fact, the only firm that can be identified in the Minnesota Directory of Manufacturers for 1979-1980 is the Boise Cascade Corporation in International Falls. This firm is classified as the "Paper, except building paper", Building paper and building mills" (SIC 2621 and SIC 2661, respectively).

This industry has remained at the top for both 1970 and 1960, but has declined slightly in terms of percentage of employment generated in the county. The number employed declined from 2000 to 1793, a 10.4% drop.

The next largest job generator, Education: elementary, secondary, and colleges-government, climbed from fifth place in 1960 to second in 1970. The percentage gain was 56.6% and the percentage distribution of employed persons rose from 5.19% to 7.95%. Rainy River Community College is located in International Falls. The previous second place industry, in 1960, was Agriculture, Forestry, and Fisheries. The number employed dropped by 71% and the relative distribution declined from 8.18% in 1960 to 2.31% in 1970. Its ranking was eleventh among the thirteen industries listed in 1970. This industry declined also in the State but not as severe as in Koochiching County. The State employment dropped only 38% during the same ten-year period.

The third largest employer is the Furniture, lumber, and wood products manufacturing sector. Its growth was 32.4% and employed a larger percentage of the 1970 total than in 1960... 7.49% compared to 5.78%. It rose in rank from fourth to third by 1970. Some of the firms listed in the State Manufacturers Directory include:

Boise Cascade--Mannila Mills; Big Falls
Green Forest Inc.; Littlefork
Battle River Wood Mills; Northome
Bergstrom Logging Co.; Loman
Page & Hill Forest Products; Big Falls
Minnesota Cedar Products Co.; Northome
Tomczak Lumber Co.; Ray
Biondich Forest Products; Int'l Falls
Ole Thompson & Son; Int'l Falls

TABLE 3: TOP RANKED INDUSTRIES BY EMPLOYMENT IN KOOCHICHING COUNTY, 1960 & 1970

	INDUSTRY	NUMBER EMPLOYED	RANK	% OF TOTAL EMPLOYED
1960	Other nondurable goods	2000	1	36.02
	Agriculture, forestry, fisheries	454	2	8.18
	Other retail trade	415	3	7.47
	Furniture, lumber, wood products	321	4	5.78
	Education: el., sec., college: gov't	288	5	5.19
	Public administration	194	6	3.49
	Eating & drinking places	170	7	3.06
	Private households	165	8	2.97
	Construction	162	9	2.92
	Railroads & reilway expr. serv.	153	10	2.76
	Food, bakery & dairy stores	139	11	2.50
	Total	4461		80.34
1970	Other nondurable goods	1793	1	31.59
	Education: el., sec., college: gov't	451	2	7.95
	Furniture, lumber, wood products	425	3	7.49
	Other retail trade	293	4	5.16
	Other personal services	264	5	4.65
	Public administration	237	6	4.18
	Construction	215	7	3.79
	Eating & drinking places	184	8	3.24
	Hospitals	181	9	3.19
	Food, bakery & dairy stores	156	10	2.75
	*Motor veh. retail & serv. stations	143	11	2.52
	Agriculture, forestry, fisheries	131	12	2.31
	**Medical & other health services	130	13	2.29

TABLE #3: TOP RANKED INDUSTRIES BY EMPLOYMENT IN KOOCHICHING COUNTY, 1960 & 1970
Continued....

INDUSTRY	NUMBER EMPLOYED	RANK	% OF TOTAL EMPLOYED
Railroads, railway service	114	14	2.01
TOTAL	4453		78.47

*Included in "other Retail Trade" in 1960

**Included in "Hospitals" in 1960.

Source: U.S. Census of Population

There were some new industries among the top in 1970 compared to 1960. Hospital employment, Motor vehicles retail and service stations, and Medical & other health services all show up for the first time among the top employment generators.

TOP RANKED INDUSTRIES BY LOCATION QUOTIENT (TABLE 4)

The two strongest industries in the county were the same in both years... Other nondurable goods and Furniture, lumber, and wood products manufacturing. The spread between the location quotients has narrowed during the two census periods indicating perhaps a shift in the economic growth trends for these two industries. (see shift-share analysis)

Other personal services appear in third place in 1970 but not among the top in 1960, as a basic industry. Although this industry is not in the manufacturing sector, it does provide services in excess of the local needs. The types of industries included here are:

SIC 70 Hotels, rooming houses, camps, & other lodging places
SIC 72 Personal services; ie. laundry, cleaning, & garment services
shoe repair shops, etc.
photographic studies, portrait beauty shops
barber shops
funeral service
miscellaneous personal services, ie.
steam baths, reducing salons, health clubs, clothing rental, locket rental, coin-operated service machine operations, college clearing-houses, seamstresses, tax return preparation, etc.

Railroads and railway express service has remained in about the same role of strength, increasing in relative importance over the 1960 economic scene. A similar trend is observed in Education; elementary, secondary & colleges-government. This may be attributed to the development of the Rainy River Community College over this period of time. Public administration also shows up in the 1970 ranking, but not in the 1960 list.

TABLE 4: TOP RANKED INDUSTRIES BY LOCATION QUOTIENT IN KOOCHICHING COUNTY, 1960 & 1970

	INDUSTRY	% OF TOTAL EMPLOYMENT	LOCATION QUOTIENT	RANK
1960	Other nondurable goods	36.02	22.5125	1
	Furniture, lumber, wood products	5.78	6.6437	2
	Private house holds	2.97	1.2693	3
	Educ.: el., sec., colleges; gov't	5.19	1.1931	4
	Railroads & railway express service	2.76	1.1646	5
	Repair services	1.53	1.1250	6
	Eating and drinking places	3.06	1.0373	7
	Food, bakery and dairy stores	2.50	1.0331	8
	Communications	1.12	1.0276	9
		60.93		
1970	Other nondurable goods	31.59	11.1232	1
	Furniture, lumber, wood products	7.49	10.2603	2
	Other personal services	4.65	1.7416	3
	Railroads, reilway express service	2.01	1.5703	4
	Educ.: el., sec., colleges: gov't	7.95	1.2212	5
	Food, bakery, dairy stores	2.75	1.1134	6
	Public administration	4.18	1.1029	7
	Motor veh. retail & serv. stations	2.52	1.0862	8
	Repair services	1.50	1.0791	9
	Educ.: other educ. services	.49	1.0426	10
		65.13		

Source: U. S. Census of Population

BOTTOM RANKED INDUSTRIES BY LOCATION QUOTIENT, 1960 - 1970 (TABLE 5)

The industries listed here have the lowest location quotients and are considered to be less important to the local economy than to the State economy. They are in business to serve the other local industries. They can also be thought of as importing products and services. This information indicates that the local development efforts could be directed to determining which industries might be attracted to the Koochiching County area to replace the need for importing these products or services.

The cutoff level of the location quotient was arbitrarily set at .7500. Below that point, it was felt that the industry might be considered weak enough to be import or local service oriented.

The 1960 listing contains 14 industries and the 1970 list has 20. Small differences occur because of classification changes from one census to the next. Nevertheless, each list represents about 20 percent of the total employment each year for the county.

The industries that ranked lowest in 1970 were also, generally, ranked low in 1960. A few that appear in the 1970 list are merely more detailed sectors of industries that were shown in the 1960 list. Only one industry stands out as a significant change...the Private household services sector. This sector was actually ranked in the top industries list in 1960. Another, ... welfare, religious and nonprofit organizations....slipped from the 1960 level of a middle category industry, ie. one having niether export strength nor import status. The mere fact that is is listed in the lowest ranking in 1970 indicates that its status as an industry is weakening in the county.

TABLE 5: BOTTOM RANKED INDUSTRIES BY LOCATION QUOTIENT IN KOOCHICHING COUNTY, 1960 & 1970

	INDUSTRY	% OF TOTAL EMPLOYMENT	LOCATION QUOTIENT	RANK
1960	Other durable goods	0.14	.0500	29
	Mining	0.09	.0630	28
	Food & kindred products	0.77	.1639	27
	Wholesale trade	0.88	.2076	26
	Business services	0.23	.2372	25
	Trucking Services & Warehousing	0.59	.3987	24
	Finance, insurance, & realestate	1.85	.4524	23
	Legal, engineering, misc. prof. serv.	1.08	.4538	22
	Hospitals	1.67	.4678	21
	Construction	2.92	.5290	20
	Education: El., Sec., Col.; Private	0.79	.5338	19
	Agriculture, forestry, fisheries	8.18	.5653	18
	Other transportation	0.65	.5804	17
	Utilities & sanitary services	0.72	.5807	16
		20.56		
1970	Food & kindred products	0.09	.0289	35
	Fabricated metal	0.07	.0374	34
	Business services	0.09	.0476	33
	Printing, publishing, & allied ind.	0.18	.0989	32
	Wholesale trade	1.23	.2552	31
	Agriculture, forestry, fisheries	2.31	.3047	30
	Mining	0.33	.3438	29
	General merchandise retailing	1.09	.3707	28
	Trucking services & warehousing	0.60	.3947	27
	Insurance, real estate, other finance	1.27	.4123	26
	Other durable goods manufacturing	1.04	.4502	25
	Legal, engineering, misc. prof. serv.	1.15	.5476	24
	Utilities & Sanitary services	0.88	.6423	23
	Construction	3.79	.6708	22
	Private households	0.72	.6729	21
	Other transportation	0.86	.6825	20
	Education: El., Sec., Col.; Private	1.37	.6954	19
	Hospitals	3.19	.7073	18
	Welfare, religious & nonprofit org.	1.27	.7216	17
	Banking & Credit agencies	1.15	.7372	16
		22.68		

Source: U.S. Census of Population

Shift-Share Analysis

Through the technique of shift-share analysis we will be able to examine some of the forces that made the economy change during the decade of the 1960s. Many of local industries are subject to the fluctuations in the ntional demands of the same industries. Using shift-share, we will be able to identify which of these were so affected. If an industry nationwide experienced a change, it is natural to expect that impetus to be reflected in the fortunes of that same industry locally. Analysis of each industry will soon indicate the relation between local industry change and trends of change in that same industry nationwide. This type of change is referred to as the "Proportional Shift". One advantage in understanding this technique is that by following the national trends of an industry, we can make certain judgements about that industry and how we can expect it to change locally. Thus, it has some predictive value.

Another part of this analysis deals with the type of change that can be described as a "competitive advantage." Every region of the nations economy has a certain characteristic about it that gives it a competitive advantage. This may be a mere geographic location or a superior labor force within high skills and high productivity. Competitive advantages shift over time as evidenced by the fact that industries do move according to new competitive advantages. This type of change is referred to as a "Differential Shift."

The components used in the shift-share technique are, again, employment data over the two census years of 1960 and 1970. The comparison is between the economies of Koochiching County and the State of Minnesota.

Competitive Factor

Using the state's economy as the basis for measurement, the change in employment from 1960 to 1970 can be calculated (column 2 divided by column 3) to obtain a factor (column 4). This factor indicates the change in employment for the state. Multiplying the employment figures in column 5 (Koochiching County employment in 1960) by this factor, produces an estimate of employment for Koochiching County of what employment should be in 1970 (column 6) if the same forces in the state were affecting the Koochiching County economy. By subtracting the employment figures in column 6 from those in column for Koochiching County, we arrive at a level of employment "differential" that may be attributed to competitive advantage or disadvantage inherent in Koochiching County with respect to the state's economy.

A summary of our findings reveals that the following industries experienced a competitive advantage over the period of 1960 and 1970 in Koochiching County.

	Employees Gained	Rank
Mining	15	6 T
Construction	18	5
Furniture, lumber & wood products mfg.	101	2
Other durable goods mfg.	51	4
Railroads & railway express service	15	6 T
Other transportation	0	12
Wholesale trade	3	10
Other personal services	120	1
Hospitals	90	3
Education: elementary, secondary, colleges; priv.	8	8
Legal, engineering, & misc. professional services	2	11
Public administration	7	9
TOTAL GAIN	340	

The following experienced a decline in competitive advantage:

	Employees Lost	Rank
Agriculture, forestry, & fisheries	-151	28
Food and kindred products	- 29	21
Printing, publishing & allied industries	- 66	27
Other nondurable goods mfg.	-2420	29
Trucking service & warehousing	- 7	15
Communications	- 25	18
Utilities & sanitary services	- 28	20
Food, bakery & dairy stores, retail	- 13	16
Eating & drinking places	- 54	24
Other retail trade	- 60	25
Finance, insurance, real estate	- 2	13
Business services	- 26	19
Private households	- 49	23
Entertainment & recreation services	- 5	14
Education: elementary, secondary, colleges; government	- 62	26
Welfare, religious, nonprofit member organization	- 42	22
TOTAL LOST	-3098	
NET CHANGE	-2628	

As can be seen from the above summaries, there are more losers than gainers among Koochiching County industries. Among the gainers, the leader was in the "Furniture, lumber & wood products" manufacturing sector. This appears logical, since the raw materials are close at hand. The figures mean that those industries that gained, did so at a rate greater than would be attributed to state growth trends only. On the other hand, the losers lost more employees than would have been expected if state trends were the only factor.

Proportional Shift

This shift is explained by the nature of the mix of high growth and low growth industries in the local economy. It shows the results of how an industry does locally related to the participation in an economy with benefits or drawbacks of having growth or non-growth industries located in the county.

The calculation of the employment shift is based on comparisons of the state growth in employment for all industries as a whole with the individual changes by industry. A factor is derived by subtracting the individual industry decimal changes from the state growth for all industries as a whole (constant factor). The resulting figure is the clue as to whether or not that particular industry is classified as a growth or non-growth industry, at least from the state economy perspective. By applying the resulting factor to the 1960 employment data by industry, we then determine the increase or decrease in employment that would be expected in Koochiching County due to its mix of high growth or low growth industries.

The changes which are attributed to Koochiching County's makeup of its high and low growth industry mix is summarized as follows:

High growth industries:	Employees Gained	Rank
Construction	5	13
Other nondurable goods mfg.	1839	1
Trucking service & warehousing	2	18
Other transportation	6	10 T
Communications	3	16 T
Utilities & sanitary services	6	10 T
Wholesale trade	8	9
Food, bakery, & dairy stores, retail	4	15
Eating, drinking places	36	5
Other retail trade	68	4
Finance, insurance, & real estate	17	7
Business services	15	8
Repair services	3	16 T
Other personal services	6	10 T
Entertainment & recreation services	1	19
Hospitals	110	3
Education: el., sec., colleges; gov't	171	2
Education: el., sec., colleges; gov't	18	6
Welfare, religious, nonprofit mbr. org.	6	10T
TOTAL GAIN	2324	

Low growth industries:

	Employees Lost	Rank
Agriculture, forestry, fisheries	-257	29
Mining	- 2	21 T
Furniture, lumber & wood products mfg.	- 57	26
Other durable goods mfg.	- 2	21 T
Food & kindred products mfg.	- 17	25
Printing & publishing & allied products	- 9	23 T
Railroads & railway express service	- 84	27
Private household services	-107	28
Legal, engineering, & misc. professional service	- 9	23 T
Public administration	- 1	20
TOTAL LOST	-545	
NET CHANGE	1779	

Total Shift Share Summary

Now that the two components have been analyzed separately, we can now make some conclusions about the direction of the county economy between 1960 and 1970.

The total employment change in the county during the 1960s was an increase of 123 employees. The growth of the state economy was reflected in an increase of 18.72% during the same period. Applying this growth rate to the 1960 county total of 5,553 employed, the anticipated increase in the county, if it shared the state's growth on an equal basis, would have been 1,040 persons. Thus, the difference between the anticipated increase of 1,040 and the actual increase of only 123 show s net downward shift in the number of employed of 917 persons.

Using the same technique in the anlaysis of the differential shift or competitive component, we can observe from the table that the total of 2,628 employees can be attributed to the loss of competitive advantage. If this figure is subtracted form the 1,040 anticipated level (where competitive advantages were assumed to be maintained in the county) we discover that the county actually could be said to have lost 3,668 people employed due to the county having concentrated on industries that are declining in the state.

An off-setting factor that softens the blow of the declining economy is the positive gains attributed to the good industry mix as shown in the proportional shift component. The tally of the individual industries shows a net shift of 1,779 employees. As can be seen from the previous listing of high and low growth industries, there are almost twice as many high growth industries in the county than low growth type.

The combined shift reveals a net loss of 849 employees due to the force of competitive losses and a good industry mix of high growth industries.

Conclusions

The first conclusion to be made is that the Koochiching County economy showed a decline during the decade of the 1960s. This decline was due largely to the loss of its overall competitive advantage. Factors commonly attributed to the competitive advantage included: taxing policies, access to markets, geographic situation, cost and price factors, raw materials, labor, available capital, etc. There was strong evidence that the mix of industries saved the county from further deterioration and decline.

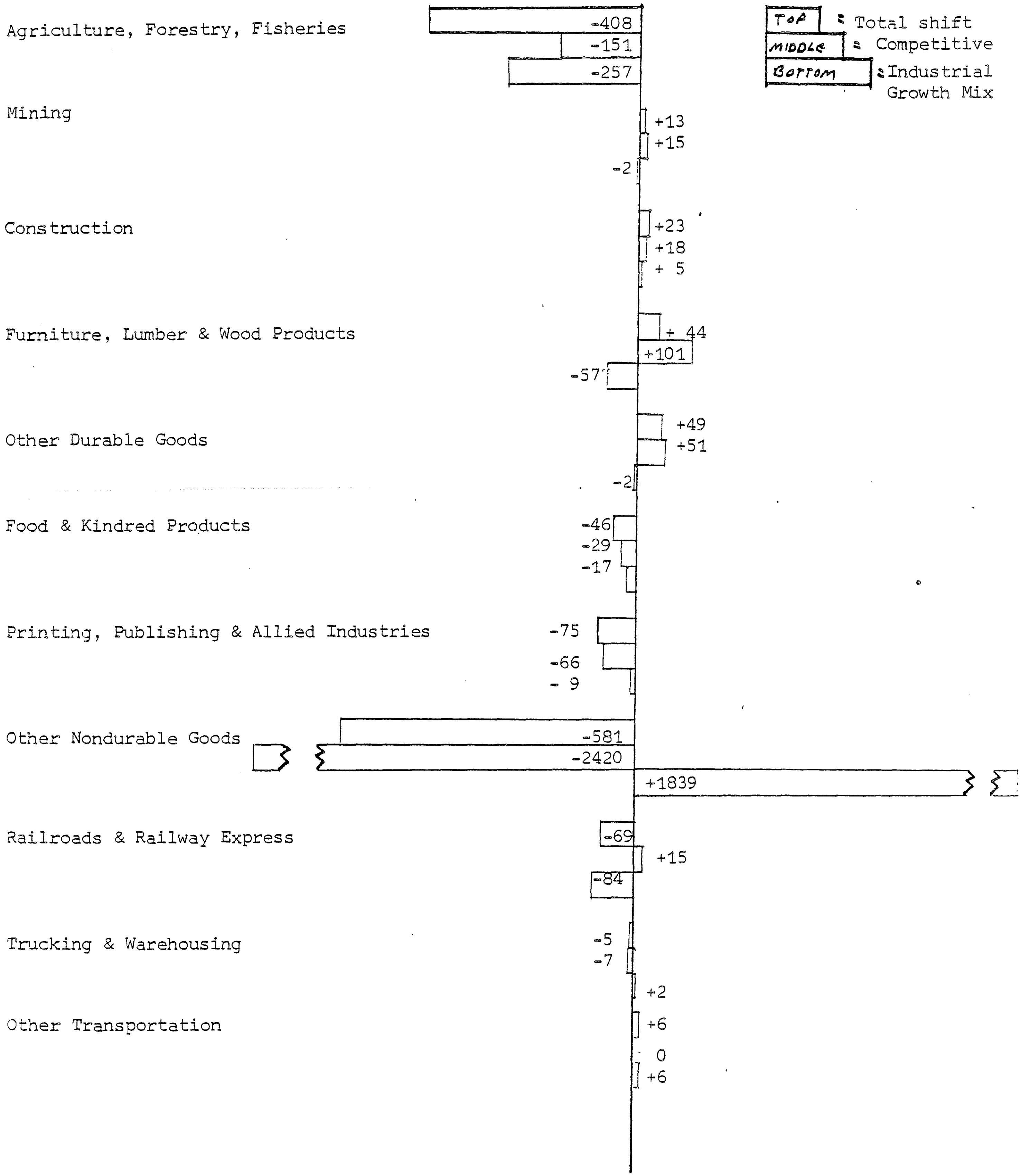
A second conclusion lies in the strengths exhibited in those industries with a positive competitive advantage. The tourism industry holds one of the advantageous positions as reflected in the other personal services industry. The furniture, lumber and wood products industry holds another strong position.

A third conclusion might be made regarding the status of the competitive environment. The problems are the type that can be analyzed and changed through governmental and private agency action. Future studies such as input output analysis can aid in overcoming some of the negative features of the differntial or competitive shift analysis.

The fourth conclusion rises out of the positive nature of the porportional shift analysis. The other nondurable goods manufacturing industry, of which the county's major industry--Boise Cascade Corporation.. is classified is a high growth industry statewide and also appears as a significant industry in the location quotient analysis. This combination of facts indicate this industry as a likely place to look for opportunities.
A fifth conclusion, the educational industry dealing with elementary, secondary and college on the governmental level also shows up as a high growth industry. This warrants further study as to what opportunities may be developed. It also enjoys a positive competitive position.

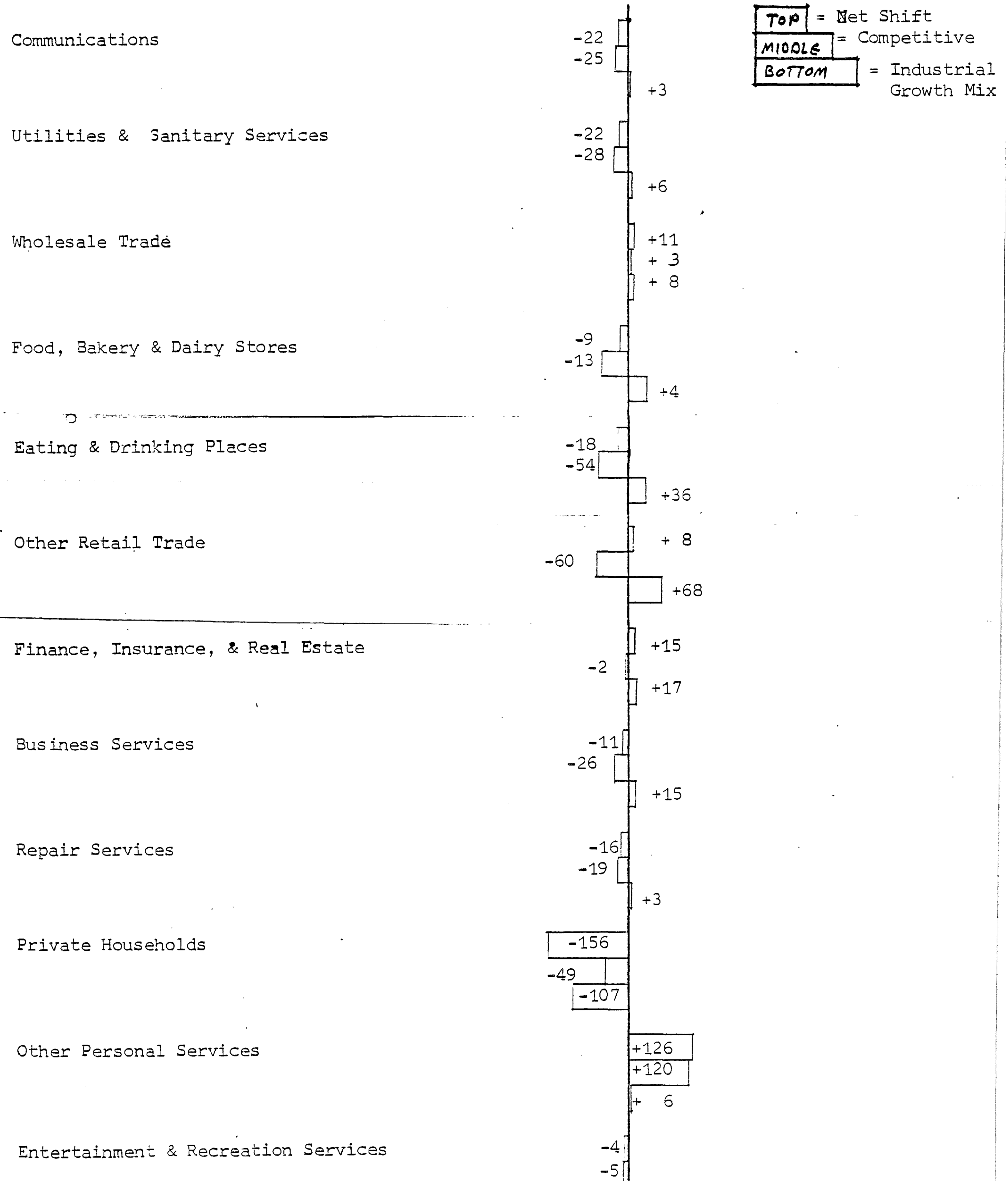
The last conclusion points to consideration of the Hospitals/Medical & Other Health related industry which enjoyed growth in both the competitive advantage and high growth industry mix situations during the 1960s. Overall, it ranked as the number one growth industry in the country.

SHIFT-SHARE ANALYSIS OF KOOCHICHING COUNTY EMPLOYED, 1960-1970.

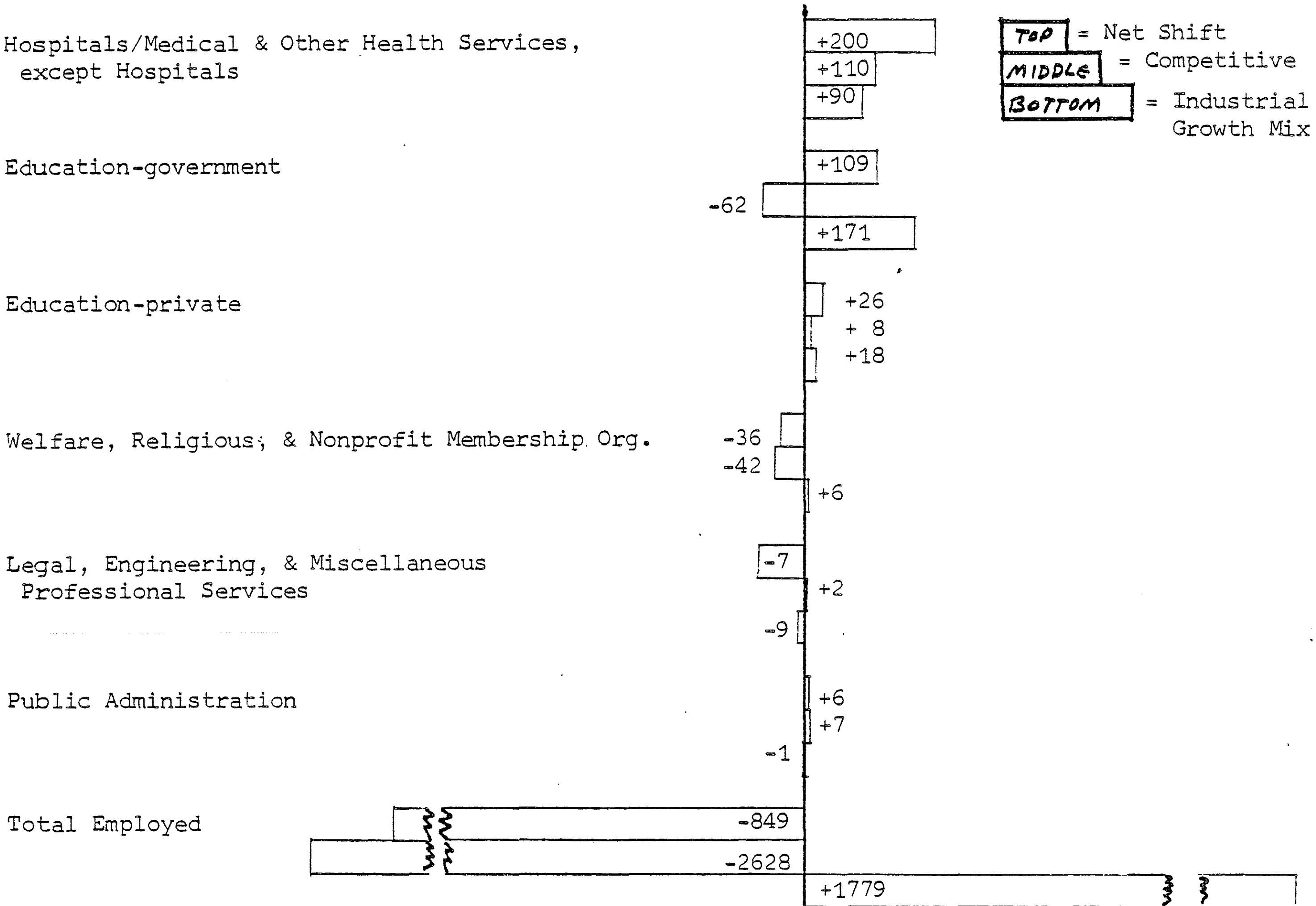


Source: U.S. Census of Population, 1960, 1970.

SHIFT-SHARE ANALYSIS.......CONTINUED.



Source: U.S. Census of Population, 1960, 1970.



Source: U.S. Census of Population, 1960, 1970.

APPENDIX C

LIST OF TRAINING RESOURCES AND CONTACTS

Area Vocational-Technical Institutes

Hibbing Area Vocational-Technical Institute (HAVTI)
2900 East Beltline
Hibbing, MN 55746
Director: Mr. William Magajna
Phone: 218/262-3824

Eveleth Area Vocational-Technical Institute (EAVTI)
Highway 53
Eveleth, MN 55734
Director: Mr. Edward F. Russ
Phone: 218/741-3302

Duluth Area Vocational-Technical Institute (DAVTI)
2101 Trinity Road
Duluth, MN 55811
Director: Eldon T. Johns (Trinity Road Campus)
Sigurd Randa (London Road Campus)
Phone: 218/722-2801

Adult Vocational Education

Hibbing - contact Charlotte Skibicki
Adult Vocational Education Director
(see HAVTI address above)

Eveleth - contact Lee E. Billings, Jr.
Adult Vocational Education Director
(see EAVTI address above)

Duluth - contact Dr. Rodger E. Palmer
Adult Vocational Education Director
Independent School District 709
Lake Avenue and Second Street
Duluth, MN 55802
Phone: 218/723-4135

Higher Education

University of Minnesota, Duluth
Dr. Robert Heller, Provost
515 Administration Building
Duluth, MN 55812
Phone: 218/726-8000

State Community Colleges:

Rainy River Community College
Dr. Carl C. Andersen, President
International Falls, MN 56649
Phone: 218/283-8491

Hibbing Community College
Dr. Jennis Bapst, President
1515 East 25th Street
Hibbing, MN 55746
Phone: 218/262-3877

Itasca Community College
Mr. Philip J. Anderson, President
Route 3
Grand Rapids, MN 55744
Phone: 218/326-0311

Mesabi Community College
Mr. Gilbert Staupe, President
9th Avenue and West Chestnut
Virginia, MN 55792
Phone: 218/741-9200

Vermilion Community College
Dr. Ralph R. Doty, President
1900 East Camp Street
Ely, MN 55731
Phone: 218/365-3256

Private Four-year College:

College of St. Scholastica
Dr. Bruce Stender, President
Duluth, MN 55811
218/728-3631

State University:

Bemidji State University
Dr. Rebecca Stafford, President
Bemidji, MN 56601
Phone: 218/755-2011

Private Business School:

Duluth Business University, Inc.
418 West Superior Street
Duluth, MN 55802
Phone: 218/722-3361

Management Training for Progress and Development
2001 London Road
Duluth, MN 55812
Phone: 218/728-6491

Senior Corps of Retired Executives (SCORE) Chapters:

Grand Rapids - contact	Chamber of Commerce Grand Rapids Area 401 N. Pokegama Avenue Grand Rapids, MN 55744 Phone: 218/326-6619
Hibbing - contact	Hibbing Area Chamber of Commerce Great Northern Square Hibbing, MN 55746 Phone: 218/263-7611
Virginia - contact	Virginia Area Chamber of Commerce 233 Chestnut Virginia, MN 55792 Phone: 218/741-2117
Duluth - contact	Duluth Area Chamber of Commerce Pioneer Hall Duluth, MN 55802 Phone: 218/722-5501

APPENDIX D

MINIMUM WAGES FOR FEDERAL & FEDERALLY ASSISTED CONSTRUCTION;
GENERAL WAGE DETERMINATION DECISIONS, FOR KOOCHICHING COUNTY

Reference No.	Description of Work	Basic Hourly Rate	Fringe Benefit Payments: H & W	Pension	Vacation	Educ. or Apprent.
1	Plumbers & Steamfitters	13.225	.75	.75	--	--
2	Roofers					
	1st Roofer	11.42	.52	.96	--	--
	2nd Roofer	11.09	.52	.96	--	--
3	Sheet Metal Workers	12.59	.52	.96	--	--
4	Truck Drivers: Site Preparation, Education & Incidential Paving:					
	Group 1*	9.17	.65	.50	--	--
	Group 2	8.77	.65	.50	--	--
	Group 3	8.67	.65	.50	--	--
	Group 4	8.47	.65	.50	--	--

*See Notes at end of table

Source: U.S. Department of Labor, Decision No. MN 79-2025-Mod. #2, 44 FR 26484 May 4, 1980 as published in FR Vol. 45, No. 47, Page 15010, Dated March 7, 1980

5	Electricians	11.83	4%	6%	11%	1½%

Source: U.S. Department of Labor, Decision No. MN 79-2025, Mod. #1 (44 FR 26484-May 4, 1979) as published in Fed. Reg. Vol. 44, No. 122, June 22, 1979

6	Carpenters & Piledrivermen	7.32	.30	--	--	--
7	Cement Masons	10.35	.40	.15	--	--
8	Ironworkers	12.00	.40	.60	--	.02
9	Linemen	11.28	4%	6%	11%	1 1/3%
10	Painters:					
	Brush	10.81	.40	.40	--	.11
	Structural Steel & Bridges	11.41	.40	.40	--	.11

Reference No.	Description of Work	Basic Hourly Rate		Fringe Benefit Payments H & W	Pension	Vacation	Edu or Appr
11	Laborers:						
	Class 1**	8.25		.35	.15	--	--
	2	8.35		.35	.15	--	--
	3	8.40		.35	.15	--	--
	4	8.50		.35	.15	--	--
	5	8.60		.35	.15	--	--
	6	8.65		.35	.15	--	--
	7	8.70		.35	.15	--	--
	8	8.75		.35	.15	--	--
12 (east half) 13 (west half)	Power Equipment Operators:	(12)*	(13)*				
	Group 1**	15.00	14.55	.70	.55	--	.05
	2	11.71	10.37	.70	.55	--	.05
	3	11.35	9.72	.70	.55	--	.05
	4	11.23	9.58	.70	.55	--	.05
	5	11.13	9.50	.70	.55	--	.05
	6	10.25	8.97	.70	.55	--	.05
	7	9.75	8.57	.70	.55	--	.05

* North-South line from Canadian Border to Pelland, the western righ-of-way of U.S. 71 from Pelland to Big Falls, and MN Highway 6

** See Notes at end of table

Source: U.S. Department of Labor, Decision No. MN 79-2026, Dated May 4, 1980 in 44 FR 26492

Reference No.	Description of Work	Basic Hourly Rate	H & W	Pension	Vacation	Edu or Appr
14	Truck Drivers					
	Group 1*	8.02	.40	.50	--	--
	2	7.72	.40	.50	--	--
	3	7.62	.40	.50	--	--
	4	7.42	.40	.50	--	--

* See Notes at end of table

Source: U.S. Department of Labor, Decision No. MN 79-2026, Dated May 4, 1979 in 44 FR 26492

Reference No.	Description of Work	Basic Hourly Rate	H & W	Pension	Vacation	Edu or Appr
15	Asbestos Workers	11.10	.40	.50	1.15	--
16	Boilermakers	12.30	.85	1.00	--	.02
17	Bricklayers & Stonemasons	11.95	.60	.30	--	--
18	Carpenters:					
	Building Const.	10.85	.40	--	--	--
	Site Preparation, Education & Incidential Paving	7.32	.30	--	--	--

Reference No.	Description of Work	Basic Hourly Rate	Fringe Benefit Payments H & W	Pension	Vacation	Educ. or Apprent.
19	Cement Masons & Plasters:					
	Building Const.	11.60	.60	.30	--	--
20	Electricians	11.28	4%	6%	11%	1½%
21	Glaziers	9.60	.40	.40	Two weeks	--
22	Laborers:					
	Building Const. Common Laborer	9.90	.35	.15	--	--
	Carpenters & Mason Tender, Morthr Mixer, Bricklayer Tender & Jackhammer	10.00	.35	.15	--	--
	Pipelayer (non-metallic)	10.25	.35	.15	--	--
23	Marble, Tile & Terrazzo Workers:					
	Marble Setters	11.555	.655	.53	--	--
	Tile Setters	11.50	.62	.50	--	--
	Marble Finishers	9.35	.37	.50	--	--
	Tile Finishers	10.65	.62	.50	--	--

Source: U.S. Department of Labor, Decision No. MN 79-2025, as published in 44 FR 26484- May 4, 1979

24	Painters:					
	Brush, Tapers & Rollers	10.81	.40	.40	--	.11
	Spray, structural steel, tapers & paperhangers	11.41	.40	.40	--	.11
25	Plumbers & Steamfitters	13.90	--	--	--	--
26	Roofers:					
	1st Roofer	10.66	.52	.55	--	--
	2nd Roofer	10.36	.52	.55	--	--
27	Sheet Metal Workers	10.92	.52	.55	--	--
28	Truck Drivers:					
	Building Const.	9.90	--	--	--	--

Reference No.	Description of Work	Basic Hourly Rate		Fringe Benefit Payments H & W	Pension	Vacation	Edu or Appr
29	Laborers: Site Preparation, Excav. & Indidential Paving						
	Class 1	8.25		.35	.15	.25	--
	2	8.35		.35	.15	.25	--
	3	8.40		.35	.15	.25	--
	4	8.50		.35	.15	.25	--
	5	8.60		.35	.15	.25	--
	6	8.65		.35	.15	.25	--
	7	8.70		.35	.15	.25	--
	8	8.75		.35	.15	.25	--
30 (east half) 31 (west half)	Power Equipment Operators:	(30)	(31)				
	Group 1	15.00	14.55	.70	.55	--	.05
	2	11.71	10.37	.70	.55	--	.05
	3	11.35	9.72	.70	.55	--	.05
	4	11.23	9.58	.70	.55	--	.05
	5	11.13	9.50	.70	.55	--	.05
	6	10.25	8.97	.70	.55	--	.05
	7	9.75	8.57	.70	.55	--	.05

Source: U.S. Department of Labor, Decision No. MN 79-2025, as published in Fed. Reg. Vol. 44, MN 88, May 4, 1979

Notes to Minimum Wages for Federal and Federally Assisted Construction Data

Truck Drivers:

Group 1 - Driver (hauling machinery for employers's own use, including operation of hand & power operated winches); Truck train mechanic, Welder; Tractor-Trailer; Off-Road Truck.

Group 2 - Tri-axle (including 4-axles); Dump Dry Batch Hauler; Tank Truck (gas, oil, road oil & water); Boom & "A" Frame; Ready Mix Concrete; Slurry Driver.

Group 3 - Bituminous Distributor; (1-man operation); Tandem Axle.

Group 4 - Bituminous Distributor Spray (rear-end oiler); Dumpman; Greaser & Truck Serviceman; Tank Truck Helper (gas, oil, road oil & water) Teamster and Stableman. Tractor Operator (wheel type used for any purpose) Pilot Car Driver, Self-Propeller Packer; Slurry Operator; Single Axle Trucks.

Laborers:

Class 1 - Skilled Laborers, Bricklayer & Carpenter Tenders; Drill Runner Helpers; Laborers Wrecking & Demolition, Landscape Pipe Handler (water, gas, cast iron), Salamander Heater & Blower Tender, Sod Layer & Nurseryman; Stonemason Tender.

Class 2 - Bituminous Shoveler, Bottom Man (sewer, water, or gas trench), Cement Coverman (batch trucks); Cement Handler (bulk or bag); Chain Saw Man, Compaction Equipment (hand operated), Concrete Mixer (1 bag); Concrete Vibrator, Conduit Layers (w/o wiring); Drill Runner (heavy including churn driver dumper, wagon truck, etc.); Jackhammerman, Joint Sawer, Kettleman (bituminous or lead), Mortar Mixer Paving Buster, Power Buggy; Tunnel Laborer (atmospheric pressure).

Class 3 - Form Setters (municipal type curb & sidewalk) formsetter (pavement).

Class 4 - Bituminous Tamper, Caisson Work & Cofferdam.

Class 5 - Bituminous Raker, Floater & Utility Man; Leadman.

Class 6 - Nozzleman; (cunnite).

Class 7 - Pipelayer, (sewer, water & gas).

Class 8 - Powerman, Tunnel Miner.

Decision No. MN 79-2026

Power Equipment Operators

Group 1 - Helicopter Pilot

Group 2 - Crane with over 135' boom, excluding jib, bragline and/or other similar equipment w/shovel type controls 3 cu. yds. & over mfg. rages capacity.

Group 3 - Cableway op., concrete mixer, stationary plant over 35E, derrick, bragline and/or similar equipment with shovel type control up to 3 cu. yds. mfg. rates capacity, dredge operator or engineer, dredge operator (power) & yds. & over. crader or motor patrol finishing earth & bituminous, locomotive crane operator, master mechanic, mixer (paving) concrete paving op., road mile., Op., incl. power supply, mucking machine, including mucking operations conway or similar type, refrigeration plant engineer, tandem scruper, tractor operator, (boom type), Truck crane Operator, Tugboat 100 HP & over.

Group 4 - Dual tractor, Elevating Grader Operator, Pumpcrete Operator, Scraper Operator, truck capacity 32 cu. yes & over, self-propelled. Traveling soil stablizer.

Group 5 - Air track rock drill, Asphalt Bituminous Stablizer Plant op., Crushing Plant Op., or Gravel washing, crushing and screening plant op., dope machine op., drill rigs, heavy rotary or churn or cable drill, engineer in charge of plant requiring first class license, fork lift or lumber stacker, front end loader op., loader op., over 1 cu. yds., hoist engineer, hydraulic tree planter, lanucherman, locomovtive, all types, mechanic or welder, multiple machines, such as air compressors, welding machines, generators, pumps or crane oilers, paving breaker or tamping machines operator (power-driven-mighty might or similar type, pick-up sweeper, 1 cu. yd. & over hopper capacity, pipeline wrapping, cleaning or bending machine operator, power plant engineer, power actuated horizontal horing machine, over 6" op., pugmill op., roller, 8 tons and over, rubber tired farm tractor, backhoe att., sheep foot op., tie tamper & hallast machine op., tractor op., over D2, TD6 or similar HP with power take-off, tractor op., over 50 hp without power take-off, trenching machine op. (sewer, water, gas) turnapull op., (or similar type) well point installation, dismatling or repair mechanic.

Group 6 - Air compressor op., 375 CFR or over, bituminous spreader and bituminous finishing machine op., concrete dist. & spreader op., finishing machine longitudinal float op., joint machine op., spray, concrete mixer op., 14S and under, concrete op. (Multi. Blade), cur mach. op., pine grade op., form trench digger, front end loader op. (up to & incl. 1 cu. yd), grader op. (motar patro), gunite op. augars and boring mach. op. power actuated jacks op., pump op., roller op., self-propelled chip spreader, shoudering mach. op., stump chipper op., tractor op. (D2, TD6 or similar hp with power take-off).

Group 7 - Brakeman, switchman, conveyor op., deckhand, fireman, tank car heater op., gravel screening plant op., greaser leverman, mech. helper, mech. space heater, oiler, self-prop. vib. pactor op. sheen foot roller tractor op. 50 hp or less w/o power take-off, truck crane oiler.

APPENDIX E

SIGNIFICANCE OF THE PRIMARY FOREST INDUSTRY OF NORTHEASTERN MINNESOTA.

COUNTY TABLES

	Seven County Summary	Aitkin	Carlton	Cook	Itasca	Koochiching	Lake	St. Louis
INCOME (1975)								
(1) Covered wages from all private sources	$ 839,311,093	$ 9,936,932	$ 53,100,909	$ 5,061,115	$ 90,113,581	$ 39,425,373	$ 30,505,752	$ 611,167,431
(2) Forest employment wages (estimated)	$ 70,185,064	$ 1,386,631	$ 24,693,904	$ 829,308	$ 16,177,470	$ 22,598,163	$ 1,067,390	$ 3,432,198
(3) Private wages as a percent of total	8.4%	14.0%	46.5%	16.4%	17.9%	57.3%	3.5%	0.6%
(4) Private wages as a percent of the seven county area	100%	1.2%	6.3%	0.6%	10.7%	4.7%	3.6%	72.8%
(5) Total Personal income	$1,700,419,000	$ 44,615,000	$ 124,793,000	$ 16,744,000	$ 167,874,000	$ 77,465,000	$ 59,020,000	$ 1,209,908,000
(6) Per capita personal income	$ 5,136	$ 3,598	$ 4,318	$ 4,784	$ 4,599	$ 4,401	$ 4,372	$ 5,532
PRIMARY WOOD PRODUCTS (Selected data)								
(7) Sawmill output in MBF (1971)								
(a) Softwood	29,002(MBF)	800(MBF)	89(MBF)	3,349(MBF)	9,778(MBF)	166(MBF)	8,245(MBF)	6,575(MBF)
(b) Hardwood	38,334(MBF)	7,267(MBF)	166(MBF)	994(MBF)	23,057(MBF)	343(MBF)	1,310(MBF)	5,197(MBF)
(8) Value of sawn products at the mill (1975 prices)	$ 7,999,187	$ 900,761	$ 25,901	$ 491,115	$ 3,297,257	$ 52,238	$ 1,693,492	$ 1,538,423
(9) Cords of pulpwood cut in the county (1975)	926,200	50,100	24,300	29,700	115,800	292,300	73,700	340,300
(10) Estimated stumpage value of pulpwood (1975)	$ 4,592,399	$ 320,630	$ 156,652	$ 160,821	$ 464,542	$ 1,605,352	$ 496,683	$ 1,387,719
(11) Value of pulpwood when loaded at shipping points (1975)	$ 22,104,228	$ 1,067,130	$ 541,352	$ 717,746	$ 2,504,467	$ 8,136,677	$ 2,217,383	$ 6,919,473
POPULATION AND EMPLOYMENT (1975)								
(12) Population (Estimated)	331,100	12,400	28,900	3,500	36,500	17,600	13,500	218,700
(13) Percent of population in the labor force	37%	34%	36%	40%	33%	36%	36%	38%
(14) Persons in the labor force (Estimated)	122,367	4,216	10,404	1,400	12,045	6,336	4,860	83,106
(15) Covered employment in primary wood processing industry	7,367	192	2,626	117	1,638	2,149	157	488
(16) Percent of labor force employed in primary wood processing	6.0%	4.6%	25.2%	8.4%	13.6%	33.9%	3.2%	0.6%
DEPENDENCY QUOTIENT								
(17) Percent of county income and employment due to area forest production	11.6%	8.9%	47.9%	16.3%	26.6%	65.8%	6.2%	1.2%

Sources of data for the county tables:

Lines 1-3. The data shown are covered employment figures. Source: Minnesota Department of Employment Services. The data do not include fringe benefits and therefore will not agree with the data given in Table 2 which does include fringes.

Line 4 Self explanatory.

Lines 5, 6 U.S. Department of Commerce computer printout. A copy is available in the Bureau Office at UMD.

Lines 7a, 7b Minnesota Department of Natural Resources, survey of harvesters and sawmills taken in 1970-71.

Line 8. Estimated by the authors from Iron Range Resources and Rehabilitation Commission price data and the 1970-71 DNR survey noted in the narrative.

Line 9. Blyth, James E., **Pulpwood Production in the Lake States by County, 1975.** North Central Forest Experiment Station, U.S.D.A., St. Paul, Minnesota. Research Note NC-212, 1976.

Lines 10, 11. Estimated by the authors from the IRRRC price data and Blyth, op. cit.

Lines 12-16. U.S. Department of Commerce and the Minnesota Department of Employment Services.

Line 17. Estimated by the authors. The dependency ratio applies the employment multiplier to the proportion of the county labor force working in primary forest production. Thus, if employment be taken as a proxy for income, the ratio might be labeled: Forest Income Dependency Ratio. The authors decided to label the ratio "Percent of County Income and Employment Due to Area Forest Production. (Dependency Quotient.)"

Source: University of Minnesota, Duluth; Income Generation in the Primary Forest Industries of Northeastern Minnesota.

APPENDIX F

ARROWHEAD REGIONAL DEVELOPMENT COMMISSION CONTACTS

The ARDC has thee major divisions ... Physical Planning, Human Resources Planning, and Metropolitan Planning. In addition to these planning functions, an Administrative Division includes the Executive Director, David A. Martin, and the Director of Operations, Tom Renier.

In the Physical Planning Division, headed by Randy Lasky, several functions are carried out by its staff members. Most general questions should be directed to the Division Director, Randy Lasky. However, if you have a specific question on a particular program, you may contact any of the staff members listed in this section.

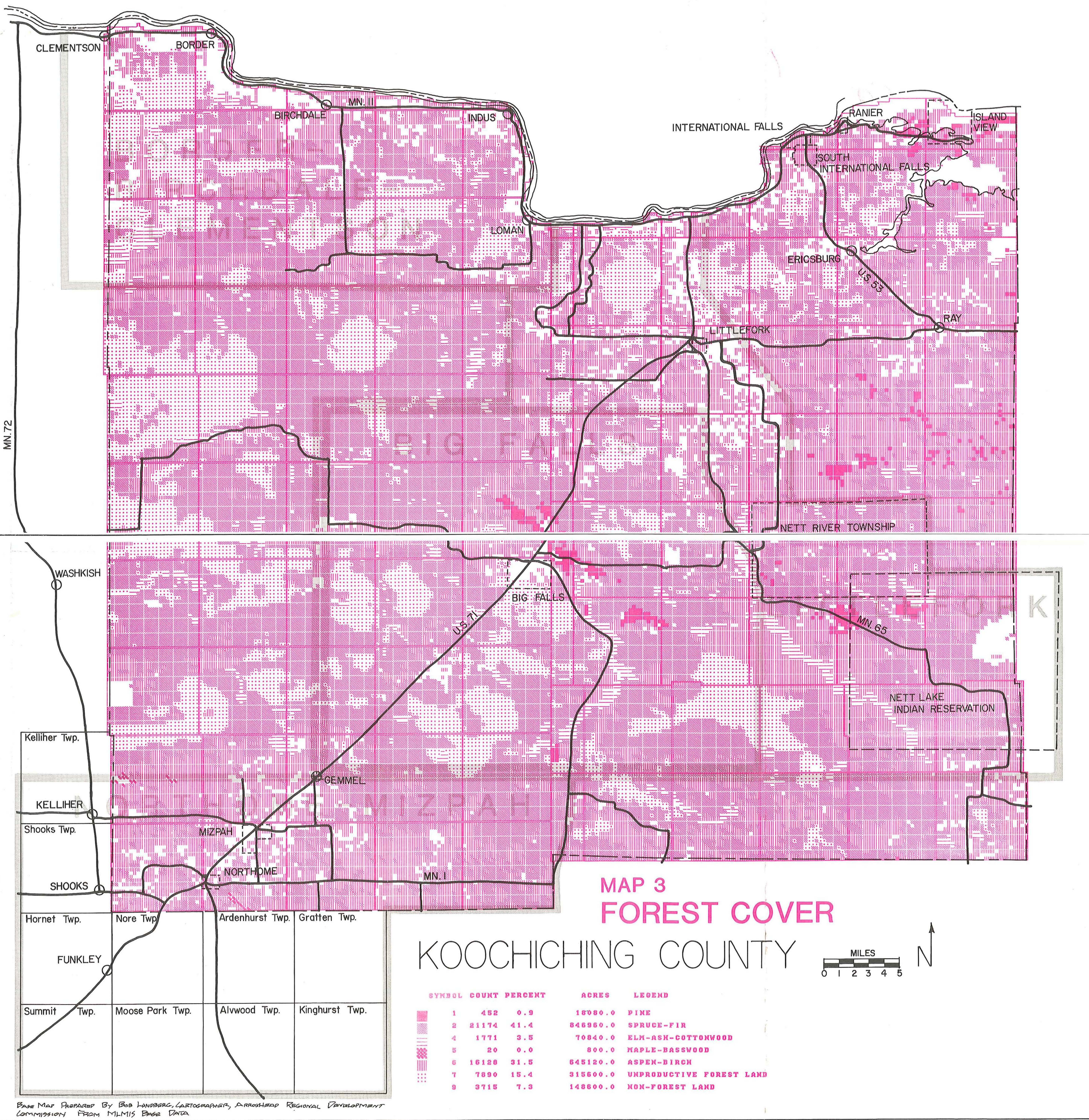
Sewer and Water Facilities (EPA) Community Development Block Grants (HUD CDBG) Recreation Planning (LAWCON) Comprehensive Planning (HUD 701) Koochiching County - General Staff Contact	Bob Louiseau, 722-5545, Ext. 21
Housing (HUD) Transportation (DOT) Community Development Block Grants (HUD CDBG)	Mary Durward, Ext. 20
Economic Data Demographic Data Statistics County Economic Development Strategies Rural Fire Hall Construction Loans A-95 Review	Bill Bolander, Ext. 49
EDA Loans and Grants State ARA Financing Programs Tax Increment Financing Municipal Revenue Bonds Downtown Development Urban Development Action Program	Tom Mullins, Ext. 19

Forestry Planning and Management Energy Planning	Steve Krmpotich, Ext. 37
Senior Citizen Centers and Program	Kathy Johnson, Ext. 10 Cindy Conkins, Ext. 23
Emergency Medical Services	Terry Hill, Ext. 27

The Commission members are also good resource people to contact regarding the local issues that need to be aired. The grass roots approach begins with local concerns and can be brought to the attention of the Commission through the members representing local areas. If you have any concerns about the development of your local area, you may contact the ARDC members listed:

ARDC Board Member --	Commissioner Innis E. Nesbitt 109 Park Avenue International Falls, MN 56649 283-3316 (residence)
Communities under 10,000 population --	Mayor Robert Bennet 518 Fifth Avenue International Falls, MN 56649
Township Officials --	Commissioner Clarence Sundberg 415 Sixth St. International Falls, MN 56649
County Commissioner --	Innis E. Nesbitt 109 Park Avenue International Falls, MN 56649
ARDC Forestry Committee --	Richard Stapleton Koochiching County Land Commissioner Koochiching County Court House International Falls, MN 56649
ARDC Aging Committee --	Pat Stadum International Falls, MN 56649
ARDC Housing Committee --	Delmer Anderson Northome, MN 56661

ARDC Land Resources Advisory Committee --	Carl Kjemperud Littlefork, MN 56653
ARDC Transportation Advisory Committee --	Doug Grindall International Falls, MN 56649
ARDC Criminal Justice Committee --	Richard Ellison, Int'l Falls Clarence Sundberg, Int'l Falls
ARDC Emergency Medical Services Committee --	Sue Hemstad International Falls, MN 56649

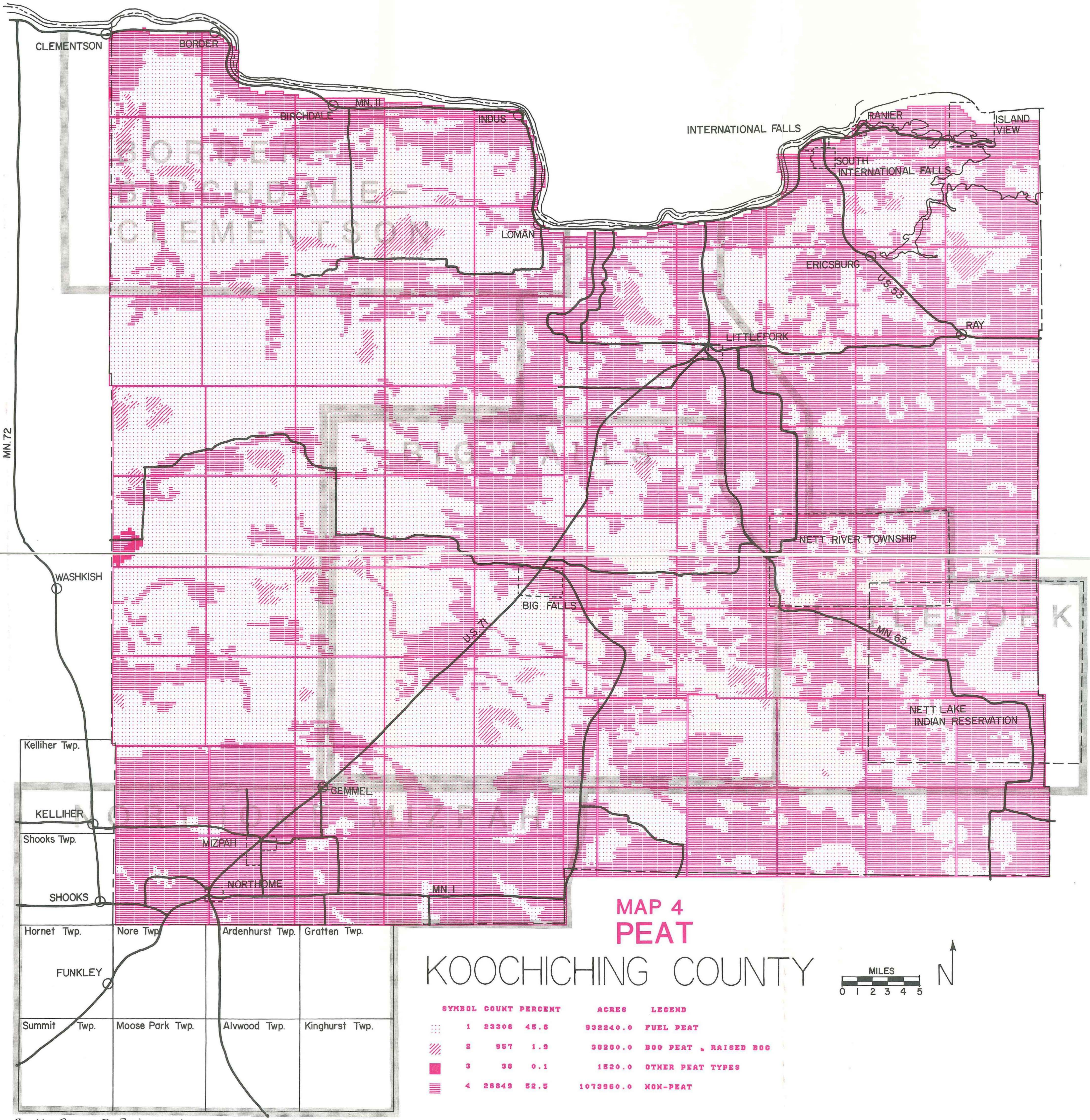


MAP 3
FOREST COVER

KOOCHICHING COUNTY

SYMBOL	COUNT	PERCENT	ACRES	LEGEND
1	452	0.9	18080.0	PINE
2	21174	41.4	846960.0	SPRUCE-FIR
4	1771	3.5	70840.0	ELM-ASH-COTTONWOOD
5	20	0.0	800.0	MAPLE-BASSWOOD
6	16128	31.5	645120.0	ASPEN-BIRCH
7	7890	15.4	315600.0	UNPRODUCTIVE FOREST LAND
9	3715	7.3	148600.0	NON-FOREST LAND

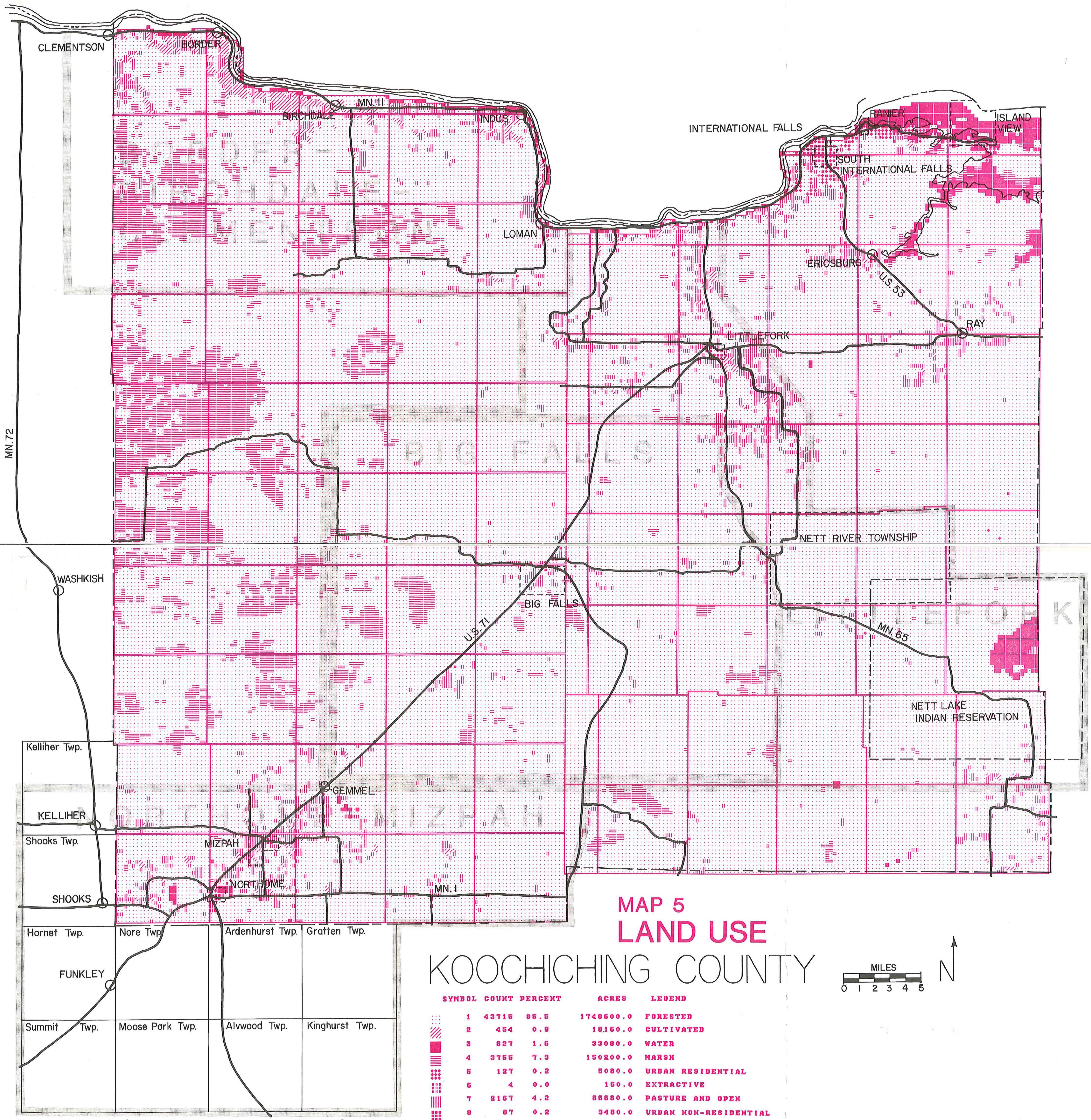
Base Map Prepared By Bob Landberg, Cartographer, Arrowhead Regional Development Commission From MLMIS Base Data



MAP 4
PEAT
KOOCHICHING COUNTY

SYMBOL	COUNT	PERCENT	ACRES	LEGEND
1	23306	45.6	932240.0	FUEL PEAT
2	957	1.9	38280.0	BOG PEAT & RAISED BOG
3	38	0.1	1520.0	OTHER PEAT TYPES
4	26849	52.5	1073960.0	NON-PEAT

Base Map Prepared By Bob Landberg, Cartographer, Arrowhead Regional Development Commission From MLMIS Base Data



MAP 5
LAND USE
KOOCHICHING COUNTY

SYMBOL	COUNT	PERCENT	ACRES	LEGEND
1	43715	85.5	1748600.0	FORESTED
2	454	0.9	18160.0	CULTIVATED
3	827	1.6	33080.0	WATER
4	3755	7.3	150200.0	MARSH
5	127	0.2	5080.0	URBAN RESIDENTIAL
6	4	0.0	160.0	EXTRACTIVE
7	2167	4.2	86680.0	PASTURE AND OPEN
8	87	0.2	3480.0	URBAN NON-RESIDENTIAL
9	14	0.0	560.0	TRANSPORTATION

Base Map Prepared By Bob Lindberg, Cartographer, Arrowhead Regional Development Commission From MLMIS Base Data