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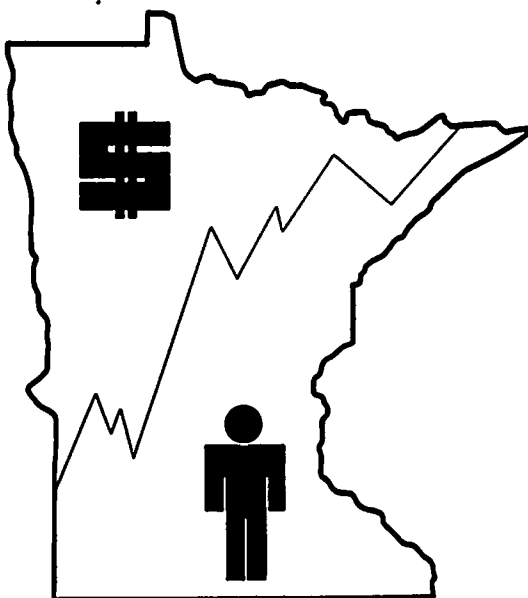
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Expansion and Adaptation of the North Dakota Economic- Demographic Assessment Model (NEDAM) For Minnesota: Technical Description



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Preface

The purpose of the research on which this report was based was to test the adaptability of economic-demographic projection models to alternative geographic settings. This report describes the data sources and procedures employed in adapting an existing North Dakota modeling framework for use in Minnesota. A companion document (Agricultural Economics Report No. 158) describes the logic, structure, data bases, and operational procedures of the North Dakota model.

The authors wish to express their appreciation to several individuals who made significant contributions to the successful completion of the study. In particular, we gratefully acknowledge Ms. Lori Cullen for her skillful and expeditious typing of the report, Ms. Carol VavRosky for preparing the graphic materials, and Ms. Brenda Ekstrom for editorial assistance. The authors gratefully acknowledge the manuscript reviews and valuable suggestions contributed by various faculty members of the Department of Agricultural Economics. Finally, we express our appreciation to the state government officials who provided information essential to the analysis.

Table of Contents

| | <u>Page</u> |
|--|-------------|
| Introduction | 1 |
| Study Area | 3 |
| Problem Statement | 5 |
| Outline of the Report | 8 |
| Methodology | 9 |
| Definition of the Study Area | 10 |
| Community Selection | 10 |
| Functional Economic Regions | 11 |
| Description of the Economic Module | 11 |
| Economic Sector Delineation | 18 |
| I-O Technical and Interdependence Coefficients | 19 |
| Baseline Economic Projection Procedures | 23 |
| Productivity (Gross Business Volume/Employment) Ratios | 29 |
| County and Municipal Employment Allocators | 36 |
| Project-Specific Economic Parameters | 38 |
| Description of the Demographic Module | 41 |
| Population by Age and Gender | 42 |
| Birth Rates | 42 |
| Survival Rates | 44 |
| Migration Rates | 45 |
| Description of the Residential Allocation Module | 46 |
| Modification of the Fiscal Impact Module | 48 |
| Revenue Estimation | 50 |
| State Revenue Sources | 52 |
| Local Revenue Sources | 61 |
| Cost Estimation | 66 |
| State Costs | 67 |
| Local Costs | 68 |
| Evaluation of the Model | 69 |
| Conclusions and Implications | 75 |
| Appendices | |
| A: Procedures and Data Sources Used In the Economic Module | 79 |
| B: Tables for Regions 2-11 and Minnesota | 91 |
| Bibliography | 286 |

List of Tables

| <u>Table No.</u> | | <u>Page</u> |
|----------------------|--|-------------|
| 1. | COUNTIES AND COMMUNITIES FOR MODEL INCLUSION | 12 |
| 2. | FUNCTIONAL ECONOMIC REGIONS FOR MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL | 17 |
| 3. | ECONOMIC SECTORS OF INPUT-OUTPUT MODEL AND ASSOCIATED STANDARD INDUSTRIAL CLASSIFICATION CODES FOR MINNESOTA EXTENSION OF NEDAM . | 20 |
| 4. | INPUT-OUTPUT TECHNICAL COEFFICIENTS FOR 20-SECTOR MODEL, MINNESOTA ECONOMY | 21 |
| 5. | INPUT-OUTPUT INTERDEPENDENCE COEFFICIENTS FOR 20-SECTOR MODEL, MINNESOTA ECONOMY | 24 |
| 6. | SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 1, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS) | 27 |
| 7. | REGRESSION EQUATIONS FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 1, THOUSAND DOLLARS (1980 = BASE DOLLARS) | 28 |
| 8. | PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 1, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS) | 28 |
| 9. | GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 1, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) | 30 |
| 10. | EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 1, 1960-1982 | 32 |
| 11. | GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 1, 1960-1982 (1980 = BASE DOLLARS) | 34 |
| 12. | REGRESSION EQUATIONS FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 1 (1980 = BASE DOLLARS) | 36 |
| 13. | PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 1, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS) | 37 |
| 14. | PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 1, SELECTED YEARS 1980 to 2005 | 39 |
| 15. | FERTILITY RATES FOR KITTSON COUNTY, MINNESOTA, 1980 | 44 |
| 16. | MINNESOTA SURVIVAL RATES BY AGE AND GENDER | 45 |

List of Tables

| <u>Table No.</u> | | <u>Page</u> |
|----------------------|--|-------------|
| 17. | MIGRATION RATES FOR KITSON COUNTY, MINNESOTA, 1980 | 46 |
| 18. | STATE TAX COLLECTIONS AND PERCENT OF TOTAL, MINNESOTA, FISCAL YEARS 1980-1982 | 51 |
| 19. | LOCAL TAX COLLECTIONS AND PERCENT OF TOTAL, MINNESOTA, FISCAL YEARS 1980-1982 | 53 |
| 20. | BASE AND RATE FOR TAXES LEVIED AGAINST MINERALS, AND DISPOSITION OF FUNDS, MINNESOTA, 1982 | 57 |
| 21. | TAX BASE AND RATE FOR LOCAL SALES TAX, AND DISPOSITION OF REVENUES, BY CITY, MINNESOTA, 1982 | 64 |
| 22. | ESTIMATES OF PERSONAL INCOME AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 1, 1960-1982 (THOUSAND DOLLARS) | 72 |
| 23. | COMPARISON OF STATISTICAL TESTS FOR THE ECONOMIC-DEMOGRAPHIC MODEL PERSONAL INCOME ESTIMATION, MINNESOTA REGIONS 1-11 AND STATE, 1960-1982 | 73 |
| 24. | HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 1, SELECTED YEARS 1960 TO 2005 | 76 |

List of Figures

| <u>Figure No.</u> | | <u>Page</u> |
|-----------------------|--|-------------|
| 1. | The Eleven Minnesota Functional Economic Regions | 4 |

Expansion and Adaptation of the North Dakota Economic-Demographic
Assessment Model (NEDAM) for Minnesota:

Technical Description

by

Randal C. Coon, Carlana F. Vocke, and F. Larry Leistritz

Introduction

Minnesota has experienced significant changes in its economic base in recent years. Some of the economic changes have resulted in declines, while others caused growth. Economic declines have occurred more frequently in the outer-state areas as a result of downturns in industries such as taconite mining and snowmobile manufacturing, coupled with the loss of border businesses due to an unfavorable tax climate. On the other hand, recent growth in processing and manufacturing industries, overall, have added to the economic base of the larger urban centers. The prospect of coal-fired electric generation facilities being built to help ease Minnesota's energy dependency would result in a significant economic impact.

Policymakers are requesting and requiring an increasing number of social and economic impact assessments. Federal, state, and local governments are using impact assessments to estimate and evaluate social and economic effects resulting from changes in an area's economic base. In response, a number of socioeconomic impact assessment models have been developed to aid in the evaluation of public and private policies, to estimate the impacts of development or decline of a specific project or industry, and to lend assistance in guiding local and regional planning.

This report describes the modified structure and data base of an existing computerized socioeconomic impact assessment model (North Dakota

Economic-Demographic Assessment Model or NEDAM)¹ for adaptation to Minnesota. NEDAM originally was designed to provide regional and local estimates of economic, demographic, and fiscal changes resulting from alternative scenarios of energy resource development in North Dakota. NEDAM has been adapted successfully for impact assessments in Montana and Wyoming.² These adapted versions of the model may be used to project personal income at the multicounty regional level and estimate employment, population, and public sector costs and revenues at county and community levels. Projections are made on an annual basis for the period 1985 to 2005.

Adapting NEDAM to bordering states allows more thorough analysis of socioeconomic impacts of development or declines having interstate effects. NEDAM offers the potential to analyze economic impacts if the agriculturally intensive Red River Valley, located on the North Dakota-Minnesota border, were to experience development of additional processing facilities for its diverse commodities. Impacts accruing to border cities such as Wahpeton-Breckenridge, Fargo-Moorhead, and Grand Forks-East Grand Forks could also be handled more

¹For a complete description of NEDAM, see Leistriz, F. Larry, William Ransom-Nelson, Richard W. Rathge, Randal C. Coon, Robert A. Chase, Thor A. Hertsgaard, Steve H. Murdock, Rakesh Sharma, and Pai-Sung Yang, North Dakota Economic-Demographic Assessment Model (NEDAM): Technical Description, Agricultural Economics Report No. 158, Department of Agricultural Economics, North Dakota Agricultural Experiment Station, North Dakota State University, Fargo, September 1982.

²Chase, Robert A., Randal C. Coon, Connie L. Chase, Carlana F. Vocke, Rebecca J. Vuchetich, F. Larry Leistriz, Thor A. Hertsgaard, William Ransom-Nelson, Steve H. Murdock, Pai-Sung Yang, and Rakesh Sharma, Expansion and Adaptation of the North Dakota Economic-Demographic Assessment Model (NEDAM) for Montana: Technical Description, Agricultural Economics Miscellaneous Report No. 61, Department of Agricultural Economics, North Dakota Agricultural Experiment Station, North Dakota State University, Fargo, December 1982; and Coon, Randal C., Carlana F. Vocke, Robert A. Chase, Brenda L. Ekstrom, William Ransom-Nelson, Richard W. Rathge, Thor A. Hertsgaard, F. Larry Leistriz, Rebecca J. Vuchetich, and Babu Ranganathan, Expansion and Adaptation of the North Dakota Economic-Demographic Assessment Model (NEDAM) for Wyoming: Technical Description, Agricultural Economics Miscellaneous Report No. 63, Department of Agricultural Economics, North Dakota Agricultural Experiment Station, North Dakota State University, Fargo, May 1983.

accurately through use of such models. Businesses relocating in a neighboring state could be analyzed regardless of whether it was a development or decline to the respective state. In addition, the development of new electric generation facilities located in Minnesota and fired by North Dakota coal would cause measurable socioeconomic impacts to both states. Finally, because the major trade center of Minneapolis-St. Paul serves as a source of specialized equipment used in many resource development projects in North Dakota, total project impacts could be analyzed for both states.

Study Area

The geographic scope of the project encompasses all 87 counties in Minnesota (Figure 1). Minnesota is bounded by North Dakota and South Dakota to the west, Iowa to the south, Wisconsin to the east, and the Canadian provinces of Ontario and Manitoba on the north. The state's total land area is approximately 84,000 square miles, of which about 5,000 square miles are covered with inland water.³ Federal government land holdings are almost 7 percent of the state's total area with the Forest Service owning the most (2,796,092 acres), followed by the Fish and Wildlife Service (329,598 acres), Geological Survey (126,952 acres), Bureau of Land Management (41,945 acres), and Bureau of Indian Affairs (28,698 acres).⁴

The 1980 census population of Minnesota was 4,075,970 inhabitants, and the 1982 adjusted gross personal income was \$45.8 billion.⁵ Minnesota per

³U.S. Bureau of Land Management, Public Land Statistics, U.S. Department of Interior, U.S. Government Printing Office, Washington, D.C., 1981.

⁴Ibid.

⁵Bureau of the Census, 1980 Census of Population--General Social and Economic Characteristics: Minnesota, PC80-1C25, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., August 1983; and Bureau of Economic Analysis, "Survey of Current Business," Vol 63, Number 4, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., April 1983.

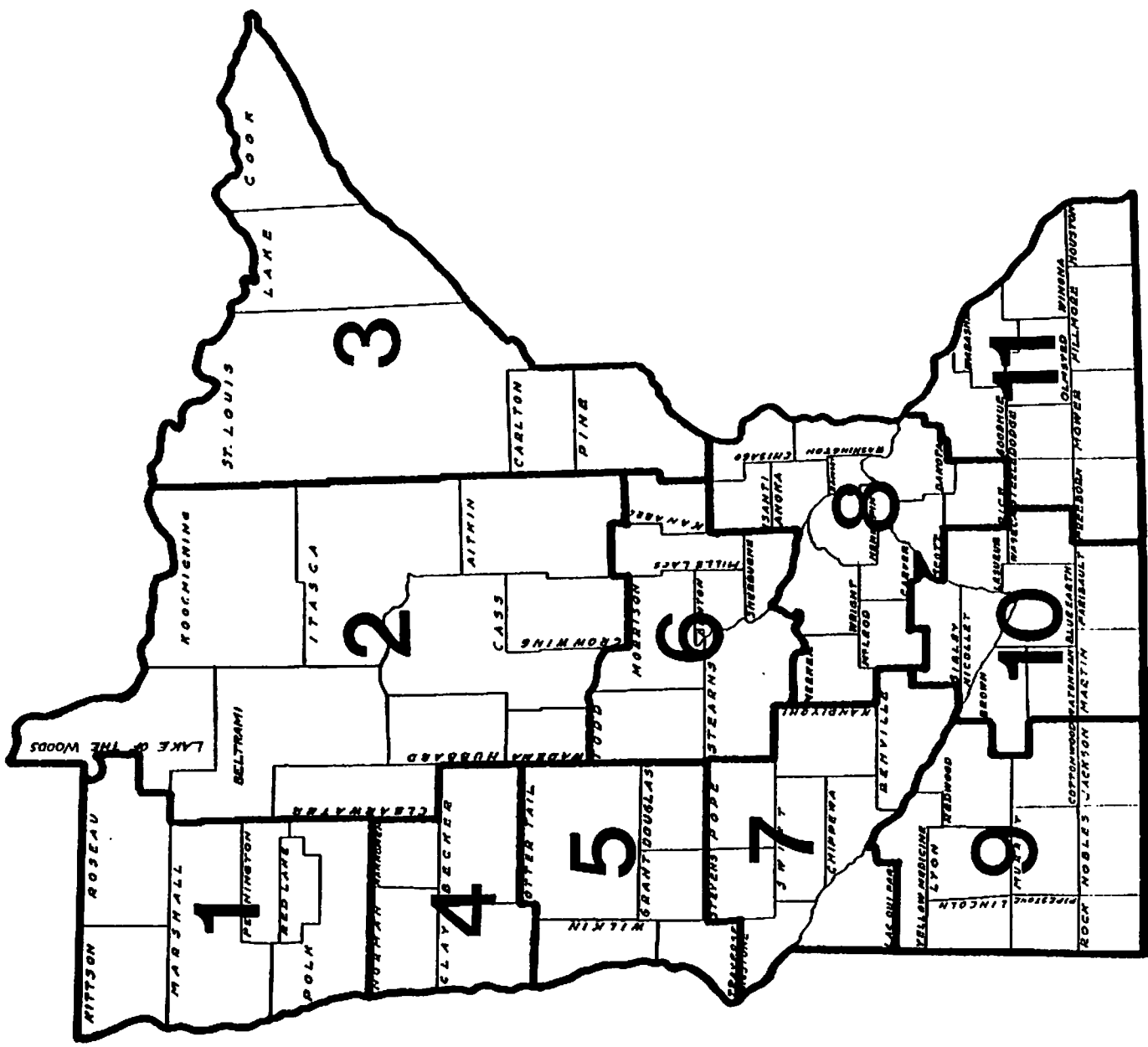


Figure 1. The Eleven Minnesota Functional Economic Regions

capita income ranked eighteenth in the United States at \$11,082 in 1982.⁶ Natural-resource-based industries (agriculture, forestry, mining, and tourism) and manufacturing form the state's economic backbone.

Problem Statement

In recent years, Minnesota has had industries experiencing significant declines, while others have realized growth and development. The recent decline in metal mining activities in Minnesota has caused the loss of not only employment but also the associated tax revenues. Despite the downturn of the mining sector of the economy, manufacturing and processing sectors, overall, have experienced steady growth. The problem of solving the state's energy dependency may give rise to coal-fired electric generation facilities being built in Minnesota. Questions relating to the magnitude, manner, and effects of these economic developments and declines can be answered by a detailed socioeconomic description of the state as it currently exists. An analytical framework must be developed which is capable of assessing the direct and secondary (indirect and induced) socioeconomic impacts associated with alternative scenarios of economic decline or development as proposed by various public and private entities in Minnesota. Likewise, similar questions and analytical requirements are evident in connection with proposed developments of Minnesota minerals or other resources.

In response, a socioeconomic assessment model has been developed to meet these needs in Minnesota. It is a modified version of NEDAM, a model initially developed in 1976 to provide comprehensive information and projections of the economic and demographic effects of various existing and anticipated energy

⁶Bureau of Economic Analysis, 1983, op. cit.

resource developments for state and local policymakers in North Dakota. This computerized, user-interactive model has the capability to make baseline and single- or multiple-project impact forecasts for any designated site in North Dakota. Though the basic structure of NEDAM remains essentially unchanged, model transfer necessitated extensive modification of the economic, demographic, and fiscal/service components.

The development of energy resources has prompted creation of a number of computerized socioeconomic assessment models such as NEDAM.⁷ Although the number of assessment models has dramatically increased, few attempts have been made to adapt such models to settings other than those for which they originally were designed. Yet the need for such transfer and adaptation efforts is all too apparent, given the growing expense of developing an assessment model. In addition to savings in time and money, other advantages of model transfer and adaptation include the opportunity to expand and refine a model's structure and capabilities. Such refinements are seldom possible during initial model development. Given the number of existing models, such adaptations may well be more important than building additional assessment models.

Since all assessment models are developed for specific geographic areas, a successful adaptation effort will require incorporation of and, where appropriate, modification to the unique characteristics (e.g., public revenue and expenditure patterns) of the particular study area. The processes

⁷For a review of selected impact assessment models, see Murdock, Steve H. and F. Larry Leistritz, "Selecting Socioeconomic Assessment Models: A Discussion of Criteria and Selected Models," Journal of Environmental Management, Vol. 10, 1980, pp. 241-252; Leistritz, F. Larry and Steve H. Murdock, The Socioeconomic Impact of Resource Development: Methods for Assessment, Westview Press, Boulder, Colorado, 1981; and Leistritz, F. Larry, Steve H. Murdock, and Robert A. Chase, "Socioeconomic Impact Assessment Models: Review and Evaluation," Impact Assessment Bulletin, Vol. 1, No. 4, 1982, pp. 35-49.

involved in adapting a modeling system may vary from simply the alteration of its data base (i.e., to include data unique to the area of interest) to substantial and complex changes in its computational structure.⁸ An example of a successful transfer and adaptation effort is the Texas Assessment Modeling System (TAMS). Adapted from an earlier version of NEDAM, TAMS essentially retains the basic structure with the exception of extensive modification of the economic subcomponent, since the input-output model incorporated within the North Dakota version did not reflect the economic structure of eastern Texas. The other subcomponents in the model (i.e., demographic, fiscal, and service) were left relatively intact within the TAMS version. The adaptation of the NEDAM version to the Texas environment began in the fall of 1978, and the model became fully operational a year later. The relatively long time period for adaptation was, in large part, a result of extensive development of the Texas input-output model for use within the modeling system. Since its inception, the TAMS version has been widely used by state and local agencies for impact planning purposes.⁹

NEDAM also has been adapted for use in Montana. This adaptation involved a much shorter period of time than the TAMS effort because a new input-output model was not developed. The North Dakota input-output model was

⁸For a description of the major steps in adapting a model and considerations for successful transfer, see House, Peter W. and John McLeod, Large-Scale Models for Policy Evaluation, John Wiley and Sons, New York, 1977; Murdock, Steve H. and F. Larry Leistritz, "Computerized Socioeconomic Assessment Models: Selection, Development, and Adaptation," Unpublished Manuscript, Department of Rural Sociology, Texas A&M University, College Station, 1980; and Chase, Robert A. and F. Larry Leistritz, "A Case Study in Impact Assessment Model Adaptation," Paper presented at the Mid-Continent Regional Science Association meeting, Vail, Colorado, June 1982.

⁹For a more complete discussion of the TAMS adaptation experience, see Murdock, Steve H., Lonnie L. Jones, F. Larry Leistritz, and Donald R. Andrews, "The Texas Assessment Modeling System (TAMS): A Case Study in Model Adaptation," Paper presented at the Conference on Computer Models and Forecasting Growth and Development, Jasper, Alberta, April 1980.

augmented with secondary data to replicate the Montana economy. After the data base for Montana was gathered, the model was basically operational because the major subcomponents were relatively unchanged. The Montana extension of NEDAM has been used extensively for impact analysis of coal extraction and conversion projects.¹⁰

Adaptation of NEDAM to Wyoming was completed in 1983.¹¹ Input-output coefficients developed for the Montana version were used in the Wyoming model. Because it was not necessary to develop a new input-output model, NEDAM adaptation to Wyoming was accomplished in a time period similar to the Montana transfer. The major portion of the adaptation to Wyoming was the development of the data base, because the major subcomponents were left relatively unchanged. Information on site-specific actual and proposed developments in Wyoming was available to construct a comprehensive list of potential projects and their magnitude.¹² These project files were incorporated into the model allowing extensive impact analysis of natural-resource-based development and expansion. The Wyoming model also is useful for analyzing nonresource-based impacts, such as a large military development with the possible deployment of the MX missile.

Outline of the Report

The remainder of this report consists of (1) a description of the methodology for the various data bases incorporated within the NEDAM extension

¹⁰For a complete description of the adaptation of NEDAM to Montana, see Chase, Robert A., et al., 1982, op. cit.

¹¹For a complete description of the adaptation of NEDAM to Wyoming, see Coon, Randal C., et al. 1983, op. cit.

¹²Goodier, John T., Wyoming Mineral Development Monitoring System, Unpublished Data and Update, Wyoming Department of Economic Planning and Development, Cheyenne, January 1983.

and adaptation to Minnesota and a presentation of results from the adapted version, and (2) a concluding discussion on validation of the adapted version of the model.

In addition to the main text of the report, several appendices are provided. These appendices include (1) a discussion of data sources and procedures for the economic module; and (2) a number of input-output (final demands, gross business volumes), employment, and productivity ratio tables.

Methodology

The adapted version of NEDAM, designed to cover the 87 counties of Minnesota, has the capability to incorporate both energy- and nonenergy-related developments and allows for the evaluation of expansion, as well as decline, in the economic base. The user may select any one of the 11 designated functional regions or a group of counties (up to 15 counties) as the basis for model output.

The adapted Minnesota version provides for both baseline and impact projections for the period between 1985 and 2005. Baseline projections produced by the model indicate the expected response of economic and demographic factors in a designated region if the trends of the 1960s and 1970s were to continue to 2005. Given the historical trends of declining farm and ranch numbers and rural population, the baseline projections represent limited economic development opportunities for many areas in the region. These estimates provide the necessary background against which the impacts of resource developments are assessed.

The projections provided by the adapted model allow for the assessment of various socioeconomic impacts of single and multiple developments, decline, or combinations of the two, at alternative sites anywhere in the state.

Essentially, the starting points for these projections are baseline population and economic data from the 1960s and 1970s. All changes from this initial baseline estimate for the years 1985 through 2005 are predicated on the expected expenditure and employment levels resulting from various developments.

The methodology used in expanding NEDAM into Minnesota involves a number of steps:

1. Definition of the study area
2. Description of the economic module
3. Description of the demographic module
4. Description of the residential allocation module
5. Modification of the fiscal impact model parameters

These methods along with their results are described in the following sections.

Definition of the Study Area

Adaptation of NEDAM involved applying the methodology and collecting the appropriate data for all 87 Minnesota counties. Since model reports are furnished at the regional, county, and municipality levels, two major tasks had to be completed:

1. Selection of counties and communities for model inclusion
2. Disaggregation of the study area into functional economic regions

The sources consulted and methods used in defining the study area are described below.

Community Selection

Essentially, the communities selected for model inclusion either were incorporated municipalities having a 1980 population greater than 300 people or unincorporated municipalities with a 1980 count of at least 500 people. A

total of 503 Minnesota communities were included in the extended model. In addition, 41 border communities in North Dakota, South Dakota, Iowa, and Wisconsin were included to account for interstate spillover effects of projects located close to (either side of) the border. Table 1 (and Appendix B, Table 1) lists both the counties and the communities included in the model.

Functional Economic Regions

In the NEDAM adaptation, the user may select either a group of counties or a designated region. The designated regions have been defined as functional economic areas (i.e., retail/wholesale trade areas) where each region is served by a major trade center. After consulting with available sources,¹³ the study area was disaggregated into 11 regions (Table 2). The boundaries of these regions were drawn along county boundaries to conform with available sources of statistical data. Figure 1 shows the study area as divided into 11 functional economic regions.

Description of the Economic Module

The economic module in the adapted version consists of six major components:

1. Economic Sector Delineation
2. Input-Output (I-0) Technical and Interdependence Coefficients
3. Baseline Economic Projections

¹³See Borchert, John R. and Russel B. Adams, Trade Centers and Trade Areas of the Upper Midwest, Urban Report No. 3, Upper Midwest Council, Minneapolis, Minnesota, 1963; Rand-McNally, 1982 Commercial Atlas and Marketing Guide, 113th Edition, Chicago, Illinois, 1982; Chalmers, J. A., E. J. Anderson, T. Beckhelm, and W. Hannigan, "An Empirical Model of Spatial Interaction in Sparsely Populated Regions," Paper presented at 24th Annual Meeting of Regional Science Association, Philadelphia, November 1977; and Bureau of Economic Analysis and U.S. Department of Agriculture, 1972 OBERS Projections: Economic Activity in the United States, Department of Commerce and Economic Research Service, U.S. Government Printing Office, Washington, D.C., 1972.

TABLE 1. COUNTIES AND COMMUNITIES FOR MODEL INCLUSION

| County | Community |
|------------|---|
| Aitkin | Aitkin, Hill City |
| Anoka | Andover, Anoka, Blaine**, Centerville, Circle Pines, Columbia Heights, Coon Rapids, East Bethel, Fridley, Ham Lake, Hilltop, Lexington, Lino Lakes, Ramsey, St. Francis, Spring Lake Park** |
| Becker | Detroit Lakes, Frazee, Lake Park |
| Beltrami | Bemidji, Blackduck, Lower Red Lake* |
| Benton | Foley, St. Cloud**, Sartell**, Sauk Rapids |
| Big Stone | Clinton, Graceville, Ortonville |
| Blue Earth | Amboy, Eagle Lake, Good Thunder, Lake Crystal, Madison Lake, Mankato**, Mapleton, St. Clair |
| Brown | Comfrey**, New Ulm, Sleepy Eye, Springfield |
| Carlton | Carlton, Cloquet, Moose Lake, North Carlton*, Scanlon |
| Carver | Carver, Chanhassen**, Chaska, Cologne, Norwood, Victoria, Waconia, Watertown, Young America |
| Cass | Cass Lake, East Gull Lake, Lake Shore, Pine River, Walker |
| Chippewa | Clara City, Granite Falls**, Montevideo |
| Chisago | Branch, Chisago City, Harris, Lindstrom, North Branch, Rush City, Stacy, Taylors Falls, Wyoming |
| Clay | Barnesville, Dilworth, Glyndon, Hawley, Moorhead, Ulen |
| Clearwater | Bagley, Clearbrook |
| Cook | Grand Marais, West Cook* |
| Cottonwood | Mountain Lake, Westbrook, Windom |
| Crow Wing | Baxter, Brainerd, Crosby, Crosslake, Deerwood, Emily, Ironton, Nisswa, Pequot Lakes, West Crow Wing* |
| Dakota | Apple Valley, Burnsville, Eagan, Farmington, Hastings**, Inver Grove Heights, Lakeville, Mendota Heights, Rosemount, South St. Paul, West St. Paul |

TABLE 1. COUNTIES AND COMMUNITIES FOR MODEL INCLUSION (CONTINUED)

| County | Community |
|-------------|--|
| Dodge | Claremont, Dodge Center, Hayfield, Kasson, Mantorville, West Concord |
| Douglas | Alexandria, Evansville, Osakis** |
| Faribault | Blue Earth, Elmore, Kiester, Minnesota Lake, Wells, Winnebago |
| Fillmore | Chatfield**, Harmony, Lanesboro, Mabel, Preston, Rushford, Rushford Village, Spring Valley |
| Freeborn | Albert Lea, Alden, Clarks Grove, Glenville |
| Goodhue | Cannon Falls, Goodhue, Kenyon, Lake City**, Pine Island**, Red Wing, Wanamingo, Zumbrota |
| Grant | Elbow Lake, Herman, Hoffman |
| Hennepin | Bloomington, Brooklyn Center, Brooklyn Park, Champlin, Corcoran, Crystal, Dayton**, Deephaven, Eden Prairie, Edina, Excelsior, Golden Valley, Greenfield, Greenwood, Hanover**, Hopkins, Independence, Long Lake, Maple Grove, Maple Plain, Medina, Minneapolis, Minnetonka, Minnetonka Beach, Minnetrista, Mound, New Hope, Orono, Osseo, Plymouth, Richfield, Robbinsdale, Rockford**, Rogers, St. Anthony**, St. Bonifacius, St. Louis Park, Shorewood, Spring Park, Tonka Bay, Wayzata, Woodland |
| Houston | Calendonia, Hakah, Houston, La Crescent, Spring Grove |
| Hubbard | Park Rapids |
| Isanti | Braham, Cambridge, Isanti |
| Itasca | Bovey, Bowstring Lake*, Coleraine, Deer Lake*, Deer River, Grand Rapids, Keewatin, La Prairie, Marble, Nashwauk, Northeast Itasca* |
| Jackson | Heron Lake, Jackson, Lakefield |
| Kanabec | Mora |
| Kandiyohi | Atwater, New London, Prinsburg, Raymond, Spicer, Willmar |
| Kittson | Hallock, Karlstad |
| Koochiching | International Falls, Littlefork, Northome, Northwest Koochiching*, Rainy Lake*, South International Falls |

TABLE 1. COUNTIES AND COMMUNITIES FOR MODEL INCLUSION (CONTINUED)

| County | Community |
|-------------------|--|
| Lac qui Parle | Dawson, Madison |
| Lake | Silver Bay, Two Harbors |
| Lake of the Woods | Baudette, Rainy River* |
| Le Sueur | Cleveland, Kasota, Le Center, Le Sueur, Montgomery, New Prague**, Waterville |
| Lincoln | Hendricks, Ivanhoe, Lake Benton, Tyler |
| Lyon | Balaton, Cottonwood, Marshall, Minneota, Tracy |
| McLeod | Brownton, Glencoe, Hutchinson, Lester Prairie, Silver Lake, Stewart, Winsted |
| Mahnomen | Mahnomen |
| Marshall | Argyle, Stephen, Warren |
| Martin | Ceylon, Fairmont, Sherburn, Trimont, Truman, Welcome |
| Meeker | Cosmos, Dassel, Eden Valley**, Grove City, Litchfield, Watkins |
| Mille Lacs | Isle, Milaca, Onamia, Princeton** |
| Morrison | Little Falls, Pierz, Randall, Royalton |
| Mower | Adams, Austin, Brownsdale, Grand Meadow, LeRoy, Lyle |
| Murray | Fulda, Slayton |
| Nicollet | Lafayette, Nicollet, North Mankato, St. Peter |
| Nobles | Adrian, Brewster, Ellsworth |
| Norman | Ada, Halstad, Twin Valley |
| Olmsted | Byron, Chatfield**, Eyota, Oronoco, Rochester, Stewartville |
| Otter Tail | Battle Lake, Fergus Falls, Henning, New York Mills, Parkers Prairie, Pelican Rapids, Perham |
| Pennington | Thief River Falls |
| Pine | Hinckley, Pine City, Rock Creek, Sandstone |
| Pipestone | Edgerton, Jasper**, Pipestone |

TABLE 1. COUNTIES AND COMMUNITIES FOR MODEL INCLUSION (CONTINUED)

| County | Community |
|-----------|---|
| Polk | Crookston, East Grand Forks, Erskine, Fertile, Fosston, McIntosh |
| Pope | Glenwood, Starbuck |
| Ramsey | Arden Hills, Falcon Heights, Lauderdale, Little Canada, Maplewood, Mounds View, New Brighton, North Oaks, North St. Paul, Roseville, St. Anthony**, St. Paul, Shoreview, Spring Lake Park**, Vadnais Heights, White Bear Lake |
| Red Lake | Oklee, Red Lake Falls |
| Redwood | Lamberton, Morgan, Redwood Falls, Sanborn, Wabasso, Walnut Grove |
| Renville | Bird Island, Buffalo Lake, Danube, Fairfax, Franklin, Hector, Morton, Olivia, Renville, Sacred Heart |
| Rice | Faribault, Lonsdale, Morristown, Northfield** |
| Rock | Hills, Luverne |
| Roseau | Greenbush, Roseau, Warroad |
| St. Louis | Aurora, Babbitt, Birch Lake*, Biwabik, Buhl, Chisholm, Cook, Duluth, Ely, Ely Lake*, Eveleth, Floodwood, Gilbert, Heikkila Lake*, Hermontown, Hibbing, Hoyt Lakes, Mountain Iron, Northwest St. Louis*, Pike Lake*, Procter, Sand Lake*, Towner, Virginia |
| Scott | Belle Plaine, Jordan, New Prague**, Prior Lake, Savage, Shakopee |
| Sherburne | Becker, Big Lake, Elk River, St. Cloud**, Zimmerman |
| Sibley | Arlington, Gaylord, Gibbon, Henderson, Winthrop |
| Stearns | Albany, Avon, Belgrade, Brooten, Cold Spring, Eden Valley**, Freeport, Holdingford, Kimball Prairie, Melrose, Paynesville, Richmond, Rockville, St. Cloud**, St. Joseph, Sartell**, Sauk Centre, Waite Park |
| Steele | Blooming Prairie, Ellendale, Medford, Owatonna |
| Stevens | Chokio, Hancock, Morris |
| Swift | Appleton, Benson, Kerkhoven |
| Todd | Bertha, Browerville, Clarissa, Eagle Bend, Long Prairie, Staples** |

TABLE 1. COUNTIES AND COMMUNITIES FOR MODEL INCLUSION (CONTINUED)

| County | Community |
|-----------------|--|
| Traverse | Browns Valley, Wheaton |
| Wabasha | Elgin, Lake City**, Mazeppa, Plainview, Wabasha |
| Wadena | Menahga, Sebeka, Staples**, Verndale, Wadena |
| Waseca | Janesville, New Richland, Waseca |
| Washington | Afton, Bayport, Birchwood Village, Cottage Grove, Dellwood, Forest Lake, Hugo, Lake Elmo, Lakeland, Lake St. Croix Beach, Landfall, Mahtomedi, Marine on St. Croix, Newport, Oakdale, Oak Park Heights, St. Paul Park, Stillwater, Willernie, Woodbury |
| Watonwan | Butterfield, Medelia, St. James |
| Wilkin | Breckenridge |
| Winona | Goodview, Lewiston, Rollingstone, St. Charles, Stockton, Winona |
| Wright | Albertville, Annandale, Buffalo, Cokato, Delano, Hanover**, Howard Lake, Maple Lake, Monticello, Montrose, Rockford**, St. Michael |
| Yellow Medicine | Canby, Clarkfield, Granite Falls** |

BORDER COMMUNITIES

| <u>State</u> | <u>Community</u> |
|--------------|--|
| North Dakota | Cavalier, Fairmont, Fargo, Grafton, Grand Forks, Hillsboro, Kindred, Mayville, Pembina, Wahpeton, West Fargo, Wyndmere |
| South Dakota | Big Stone City, Brookings, Clear Lake, Dell Rapids, Madison, Milbank, Sisseton, Sioux Falls, Watertown, Wilmot |
| Iowa | Armstrong, Charles City, Clear Lake, Estherville, Lake Mills, Mason City, Northwood, Osage, Rock Rapids, Spencer |
| Wisconsin | Arcadia, Hudson, La Crosse, Menomonie, New Richmond, Onalaska, River Falls, Superior, Westby |

*An unincorporated municipality.

**A municipality located in more than one county.

TABLE 2. FUNCTIONAL ECONOMIC REGIONS FOR MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL

| | | | | | | |
|---|-----------------------|----------------------------|------------------------|----------------------|-----------------------------|-------------------------|
| <u>Region 1: East Grand Forks-Thief River Falls</u> | | | | | | |
| | Kittson Marshall | | Pennington Polk | | Red Lake Roseau | |
| <u>Region 2: Bemidji</u> | | | | | | |
| Aitkin Beltrami | Cass Clearwater | Crow Wing Hubbard | Itasca Koochiching | | Lake of the Woods Wadena | |
| <u>Region 3: Duluth</u> | | | | | | |
| | Carlton Cook | | Lake Pine | | St. Louis | |
| <u>Region 4: Moorhead</u> | | | | | | |
| | | Becker Clay | | Mahnomen Norman | | |
| <u>Region 5: Breckenridge-Fergus Falls</u> | | | | | | |
| | Douglas Grant | | Otter Tail Traverse | | Wilkin | |
| <u>Region 6: St. Cloud</u> | | | | | | |
| | Benton Kanabec | Mille Lacs Morrison | | Sherburne Stearns | | Todd |
| <u>Region 7: Willmar</u> | | | | | | |
| | Big Stone Chippewa | Kandiyohi Lac Qui Parle | | Pope Renville | | Stevens Swift |
| <u>Region 8: Minneapolis-St. Paul</u> | | | | | | |
| Anoka Carver | Chisago Dakota | Hennepin Isanti | McLeod Meeker | Ramsey Rice | Scott Washington | Wright |
| <u>Region 9: Marshall</u> | | | | | | |
| | Cottenwood Jackson | Lincoln Lyon | Murray Nobles | Pipestone Redwood | | Rock Yellow Medicine |
| <u>Region 10: Mankato</u> | | | | | | |
| | Blue Earth Brown | Faribault Le Sueur | Martin Nicollet | Sibley Waseca | | Watonwan |
| <u>Region 11: Rochester</u> | | | | | | |
| | Dodge Fillmore | Freeborn Goodhue | Houston Mower | Olmsted Steele | | Wabasha Winona |

4. Productivity Ratios
5. County/Municipal Employment Allocators
6. Project Specific Economic Parameters

Data sources and methods used in the preparation of each of these components, and the results, are presented below.

Economic Sector Delineation

NEDAM uses an input-output model to estimate economic activities associated with projected levels of the historic economic base with alternative scenarios of resource development for the area. Input-output analysis essentially tabulates and describes the linkages or interdependencies between various industrial groups within an economy. As such, the model requires the separation of the economy into these various groups called "sectors." The general framework of the model structures economic activity along two major divisions--suppliers and purchasers. Though these divisions are further subdivided into intermediate (processing) and primary (final payments) sectors and intermediate (processing) and final (final demand) purchasers, a further sector disaggregation is required.

The ideal sector delineation would allow unique recognition of supplier groups, each of which produces a homogeneous good. This ideal, however, is not feasible given the constraints of time, financing, and data. Hence, sector selection was determined to a large extent by the objectives of the study. Since the purpose was primarily to determine the impacts of resource development, most economic sectors such as retail trade and business services did not appear to require detailed disaggregation.

The input-output model used in the adapted version includes the 17 economic sectors of the North Dakota version along with three additional sectors: lumber and associated products, metal mining, and metal processing.

The final sector delineations selected for this study are presented in Table 3. A description of the various sectors, their data sources, and their construction is provided in Appendix A.

I-0 Technical and Interdependence Coefficients

The description and analysis of the economy is based upon three components: transactions table, technical coefficients (direct requirements) table, and interdependence coefficients (direct and indirect requirements) table. Once data describing the commodities' flows between sectors are collected and tabulated, the technical coefficients can be derived easily. The difficulty, however, is preparing a transactions table that accurately describes the interdependencies among the economic sectors. Since the time and expense required to prepare the transactions table based on primary data are considerable, technical coefficients available from the North Dakota version and the Northwestern Colorado Input-Output Model¹⁴ were used to approximate the interindustry relationships in Minnesota. The similarity of the economies of Minnesota and eastern North Dakota suggests that such a transfer is feasible. An existing I-0 model from Colorado was selected as an appropriate source for estimating coefficients in sectors present within the Minnesota regions, but not found in North Dakota (i.e., metallic mining and lumber). Coefficients from this matrix were augmented to the North Dakota matrix so an input-output model replicating the entire Minnesota economy would be available for this adaptation of NEDAM. The technical coefficients developed for Minnesota are provided in Table 4.

¹⁴See Leistriz, et al., 1982, op. cit.; and Gray, S. L., J. R. McKean, and J. C. Weber, The Economy of Northwestern Colorado: Description and Analysis, Technical Report No. 25, Colorado Water Resources Research Institute, Colorado State University, Fort Collins, 1981.

TABLE 3. ECONOMIC SECTORS OF INPUT-OUTPUT MODEL AND ASSOCIATED STANDARD INDUSTRIAL CLASSIFICATION CODES FOR MINNESOTA EXTENSION OF NEDAM

| Economic Sector | SIC Code ^a |
|--|--|
| 1. Agriculture, Livestock | Group 013 - Livestock |
| 2. Agriculture, Crops | All of Major Group 01 - Agricultural Production, Except Group 013 - Livestock |
| 3. Metal Mining | Major Group 10 - Metal Mining |
| 4. Coal Mining | Major Group 12 - Bituminous Coal and Lignite Mining |
| 5. Petroleum and Natural Gas Exploration and Extraction | Major Group 13 - Crude Petroleum and Natural Gas |
| 6. Nonmetallic Mining | Major Group 14 - Mining and Quarrying of Nonmetallic Metal, Except Fuels |
| 7. Contract Construction | Division C - Contract Construction (Major Groups 15, 16, and 17) |
| 8. Lumber and Associated Products | Major Group 08 - Forestry, Major Group 24 - Lumber and Wood Products, Except Furniture, and Major Group 26 - Paper and Allied Products |
| 9. Agricultural Processing and Miscellaneous Manufacturing | Major Group 50 - Wholesale Trade, Major Group 20 - Food and Kindred Products Manufacturing |
| 10. Petroleum Refining | Major Group 29 - Petroleum Refining and Related Industries |
| 11. Metal Processing | Major Group 33 - Primary Metal Manufacturing |
| 12. Transportation | All of Division E - Transportation, Communications, Electric, Gas, and Sanitary Services, Except Major Groups 48 and 49 |
| 13. Communications and Utilities | Major Group 48 - Communication, and Major Group 49 - Electric, Gas, and Sanitary Services, Except Industry No. 4911 |
| 14. Thermal-Electric Power Generation | Industry Number 4911 - Electric Companies and Systems |
| 15. Retail Trade | All of Division F - Wholesale and Retail Trade, Except Major Group 50 - Wholesale Trade |
| 16. Finance, Insurance, and Real Estate | Division G - Finance, Insurance, and Real Estate |
| 17. Business and Personal Services | All of Division H - Services, Except Major Groups 80, 81, 82, 86, and 89 |
| 18. Professional and Social Services | Major Group 80 - Medical and Other Health Services, Major Group 81 - Legal Services, Major Group 82 - Educational Services, Major Group 86 - Nonprofit Membership Organizations, and Major Group 89 - Miscellaneous Services |
| 19. Government | Division I - Government |
| 20. Households | Not Applicable |

^aExecutive Office of the President/Bureau of the Budget, Standard Industrial Classification Manual, 1967, U.S. Government Printing Office, Washington, D.C., 1967.

TABLE 4. INPUT-OUTPUT TECHNICAL COEFFICIENTS FOR 20-SECTOR MODEL, MINNESOTA ECONOMY

| Sector | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining |
|----------------------------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|
| (1) Ag, Livestock | .0937 | .0019 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0742 | .0000 |
| (2) Ag, Crops | .1534 | .0210 | .0000 | .0000 | .0000 | .0001 | .0000 | .0000 | .3476 | .0000 |
| (3) Metal Mining | .0000 | .0000 | .1176 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (4) Coal Mining | .0000 | .0000 | .0004 | .0000 | .0003 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (5) Pet/NG Exp/Ext | .0000 | .0000 | .0000 | .0000 | .0893 | .0000 | .0000 | .0000 | .0000 | .0869 |
| (6) Nonmetallic Mining | .0024 | .0020 | .0012 | .0001 | .0005 | .0348 | .0265 | .0000 | .0006 | .0000 |
| (7) Construction | .0014 | .0175 | .0005 | .0108 | .0857 | .0000 | .0129 | .0438 | .0010 | .0035 |
| (8) Lumber & Assoc Prod | .0000 | .0000 | .0342 | .0000 | .0000 | .0000 | .0000 | .0116 | .0000 | .0000 |
| (9) Ag Proc & Misc Mfg | .2737 | .0693 | .0017 | .0241 | .0000 | .0000 | .0000 | .0080 | .3671 | .0000 |
| (10) Pet Refining | .0000 | .0000 | .0000 | .0168 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (11) Metal Processing | .0000 | .0000 | .0084 | .0000 | .0000 | .0000 | .0000 | .0005 | .0000 | .0000 |
| (12) Transportation | .0042 | .0018 | .0556 | .0031 | .0137 | .0208 | .0051 | .0203 | .0024 | .0033 |
| (13) Comm & Public Util | .0068 | .0035 | .0246 | .0215 | .0230 | .0864 | .0119 | .0236 | .0059 | .0021 |
| (14) Electric Generation | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (15) Retail Trade | .0601 | .2920 | .0013 | .0642 | .0125 | .0965 | .1016 | .0121 | .0090 | .0021 |
| (16) Fin, Ins, Real Estate | .0115 | .0525 | .0122 | .0017 | .0009 | .0170 | .0147 | .0215 | .0044 | .0005 |
| (17) Bus & Pers Service | .0028 | .0253 | .0004 | .0018 | .0004 | .0079 | .0036 | .1249 | .0010 | .0000 |
| (18) Prof & Soc Service | .0027 | .0019 | .0029 | .0066 | .0004 | .0019 | .0012 | .0334 | .0005 | .0002 |
| (19) Government | .0100 | .0202 | .0094 | .0014 | .0004 | .0159 | .0055 | .0049 | .0029 | .0023 |
| (20) Households | .3416 | .4315 | .2295 | .3738 | .1309 | .4259 | .3239 | .2134 | .0431 | .0302 |

- continued -

TABLE 4. INPUT-OUTPUT TECHNICAL COEFFICIENTS FOR 20-SECTOR MODEL, MINNESOTA ECONOMY (CONTINUED)

| Sector | (11) Metal Proc | (12) Trans | (13) Comm & Pub Util | (14) Electric Gen | (15) Retail | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) House- holds |
|----------------------------|-----------------------|---------------|----------------------------|-------------------------|----------------|--------------|-------------------------------|----------------------------|--------------|-------------------------|
| (1) Ag, Livestock | .0000 | .0000 | .0000 | .0000 | .0575 | .0000 | .0000 | .0005 | .0000 | .0097 |
| (2) Ag, Crops | .0000 | .0000 | .0000 | .0000 | .0013 | .0010 | .0000 | .0000 | .0000 | .0001 |
| (3) Metal Mining | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (4) Coal Mining | .0001 | .0000 | .0000 | .1582 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (5) Pet/NG Exp/Ext | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (6) Nonmetallic Mining | .0001 | .0058 | .0007 | .0000 | .0003 | .0002 | .0011 | .0005 | .0000 | .0016 |
| (7) Construction | .0000 | .0013 | .0174 | .0058 | .0093 | .0016 | .0103 | .0147 | .0000 | .0498 |
| (8) Lumber & Assoc Prod | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (9) Ag Proc & Misc Mfg | .0102 | .0000 | .0000 | .0339 | .0002 | .0201 | .0000 | .0010 | .0000 | .0016 |
| (10) Pet Refining | .0000 | .0000 | .0000 | .0075 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (11) Metal Processing | .0130 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (12) Transportation | .0252 | .0014 | .0077 | .0009 | .0067 | .0033 | .0059 | .0019 | .0000 | .0009 |
| (13) Comm & Public Util | .0244 | .0224 | .0414 | .0024 | .0207 | .0434 | .0536 | .0394 | .0000 | .0443 |
| (14) Electric Generation | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (15) Retail Trade | .0021 | .1506 | .0384 | .0079 | .0582 | .0808 | .0911 | .1420 | .0000 | .4129 |
| (16) Fin, Ins, Real Estate | .0094 | .0314 | .0240 | .0513 | .0097 | .0077 | .0267 | .0223 | .0000 | .0961 |
| (17) Bus & Pers Service | .0009 | .0134 | .0050 | .0018 | .0019 | .0278 | .0209 | .0030 | .0000 | .0328 |
| (18) Prof & Soc Service | .0054 | .0014 | .0019 | .0033 | .0015 | .0049 | .0037 | .0347 | .0000 | .0593 |
| (19) Government | .0187 | .1992 | .0398 | .0135 | .0065 | .0184 | .0216 | .0104 | .0000 | .0578 |
| (20) Households | .1738 | .4210 | .4478 | .1207 | .1780 | .6956 | .3697 | .5654 | .0000 | .0682 |

The technical coefficients matrix was subsequently used to derive interdependence coefficients which indicate the total (direct and indirect) input requirements per unit of output. The interdependence coefficients matrix by definition is $(I-A)^{-1}$, where A is the matrix of technical coefficients and I is an identity matrix. Due to its expansion from 17 to 20 sectors (requiring a reinverting of the technical coefficients matrix), the Minnesota version (Table 5) has different interdependence coefficients for comparable sectors than the North Dakota version.

Baseline Economic Projection Procedures

The economic module of the adapted version determines both baseline and impact projections. Baseline projections indicate the level of economic activity (measured by employment, personal income, and sales to final demand) associated with a continuation of current trends in the region's basic sectors. Baseline estimates constitute projections of future economic conditions likely to prevail in the area if no major resource development projects are initiated or closed. These projections are the essential base upon which the changes in economic activity associated with alternative scenarios of resource or industrial development are superimposed.

The general procedures for developing baseline economic projections involved projecting historic sales to final demand for the basic economic sectors through the year 2005. The I-0 technical coefficients were applied to these final demand projections to obtain estimates of total economic activity (gross business volume) in each sector for the respective years. Projected gross business volumes for each sector were divided by the projected productivity ratios for their respective sectors for each year to obtain estimated annual employment. In the final step, regional employment was

TABLE 5. INPUT-OUTPUT INTERDEPENDENCE COEFFICIENTS FOR 20-SECTOR MODEL, MINNESOTA ECONOMY

| Sector | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining |
|----------------------------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|
| (1) Ag, Livestock | 1.2072 | .0774 | .0244 | .0375 | .0159 | .0445 | .0343 | .0287 | .1911 | .0040 |
| (2) Ag, Crops | .3938 | 1.0922 | .0112 | .0285 | .0063 | .0176 | .0134 | .0162 | .6488 | .0016 |
| (3) Metal Mining | .0000 | .0000 | 1.1333 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (4) Coal Mining | .0000 | .0000 | .0005 | 1.0000 | .0003 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (5) Pet/NG Exp/Ext | .0000 | .0000 | .0000 | .0016 | 1.0981 | .0000 | .0000 | .0000 | .0000 | .0954 |
| (6) Nonmetallic Mining | .0084 | .0069 | .0039 | .0031 | .0045 | 1.0396 | .0303 | .0038 | .0063 | .0007 |
| (7) Construction | .0722 | .0794 | .0339 | .0514 | .1148 | .0521 | 1.0501 | .0807 | .0619 | .0168 |
| (8) Lumber & Assoc Prod | .0000 | .0000 | .0392 | .0000 | .0000 | .0000 | .0000 | 1.0117 | .0000 | .0000 |
| (9) Ag Proc & Misc Mfg | .5730 | .1612 | .0193 | .0617 | .0097 | .0272 | .0207 | .0315 | 1.7402 | .0025 |
| (10) Pet Refining | .0000 | .0000 | .0000 | .0168 | .0000 | .0000 | .0000 | .0000 | .0000 | 1.0000 |
| (11) Metal Processing | .0000 | .0000 | .0097 | .0000 | .0000 | .0000 | .0000 | .0005 | .0000 | .0000 |
| (12) Transportation | .0151 | .0113 | .0679 | .0082 | .0180 | .0284 | .0105 | .0258 | .0128 | .0053 |
| (13) Comm & Public Util | .0921 | .0836 | .0696 | .0707 | .0510 | .1557 | .0605 | .0756 | .0767 | .0106 |
| (14) Electric Generation | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (15) Retail Trade | .7072 | .8130 | .2701 | .3975 | .1839 | .5235 | .4101 | .3156 | .6115 | .0458 |
| (16) Fin, Ins, Real Estate | .1526 | .1677 | .0753 | .0767 | .0388 | .1140 | .0837 | .0903 | .1322 | .0101 |
| (17) Bus & Pers Service | .0562 | .0684 | .0277 | .0286 | .0139 | .0430 | .0287 | .1528 | .0514 | .0035 |
| (18) Prof & Soc Service | .0711 | .0644 | .0384 | .0491 | .0210 | .0560 | .0402 | .0714 | .0531 | .0055 |
| (19) Government | .0987 | .0957 | .0626 | .0508 | .0280 | .0853 | .0519 | .0545 | .0796 | .0094 |
| (20) Households | 1.0459 | .9643 | .5249 | .6630 | .3206 | .8428 | .6091 | .5608 | .7862 | .0828 |
| Gross Receipts Multiplier | 4.4935 | 3.6855 | 2.4119 | 2.5453 | 1.9248 | 3.0297 | 2.4435 | 2.5199 | 4.4518 | 1.2940 |

- continued -

TABLE 5. INPUT-OUTPUT INTERDEPENDENCE COEFFICIENTS FOR 20-SECTOR MODEL, MINNESOTA ECONOMY (CONTINUED)

| Sector | (11) Metal Proc | (12) Trans | (13) Comm & Pub Util | (14) Electric Gen | (15) Retail | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) House- holds |
|----------------------------|-----------------------|---------------|----------------------------|-------------------------|----------------|--------------|-------------------------------|----------------------------|--------------|-------------------------|
| (1) Ag, Livestock | .0171 | .0455 | .0379 | .0250 | .0889 | .0617 | .0384 | .0571 | .0000 | .0674 |
| (2) Ag, Crops | .0128 | .0179 | .0152 | .0321 | .0318 | .0368 | .0152 | .0230 | .0000 | .0267 |
| (3) Metal Mining | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (4) Coal Mining | .0001 | .0000 | .0000 | .1582 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (5) Pet/NG Exp/Ext | .0000 | .0000 | .0000 | .0010 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (6) Nonmetallic Mining | .0016 | .0092 | .0044 | .0019 | .0025 | .0050 | .0044 | .0051 | .0000 | .0058 |
| (7) Construction | .0207 | .0496 | .0653 | .0320 | .0348 | .0740 | .0546 | .0787 | .0000 | .0902 |
| (8) Lumber & Assoc Prod | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (9) Ag Proc & Misc Mfg | .0276 | .0277 | .0239 | .0781 | .0452 | .0704 | .0237 | .0363 | .0000 | .0417 |
| (10) Pet Refining | .0000 | .0000 | .0000 | .0102 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (11) Metal Processing | 1.0132 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (12) Transportation | .0280 | 1.0079 | .0135 | .0046 | .0104 | .0120 | .0118 | .0100 | .0000 | .0093 |
| (13) Comm & Public Util | .0509 | .0840 | 1.1006 | .0375 | .0529 | .1322 | .1104 | .1192 | .0000 | .1056 |
| (14) Electric Generation | .0000 | .0000 | .0000 | 1.0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| (15) Retail Trade | .1754 | .5476 | .4318 | .2256 | 1.2735 | .6765 | .4526 | .6669 | .0000 | .7449 |
| (16) Fin, Ins, Real Estate | .0487 | .1205 | .1129 | .0976 | .0578 | 1.1424 | .1085 | .1401 | .0000 | .1681 |
| (17) Bus & Pers Service | .0153 | .0461 | .0375 | .0200 | .0194 | .0766 | 1.0509 | .0455 | .0000 | .0605 |
| (18) Prof & Soc Service | .0274 | .0519 | .0527 | .0300 | .0276 | .0816 | .0497 | 1.1026 | .0000 | .0982 |
| (19) Government | .0495 | .2583 | .0999 | .0443 | .0395 | .1071 | .0774 | .0881 | 1.0000 | .1080 |
| (20) Households | .3401 | .7878 | .7953 | .3953 | .4036 | 1.2019 | .7161 | 1.0438 | .0000 | 1.5526 |
| Gross Receipts Multiplier | 1.8284 | 3.0540 | 2.7909 | 2.1934 | 2.0879 | 3.6782 | 2.7137 | 3.4164 | 1.0000 | 3.0790 |

allocated to counties and municipalities based on each entity's projected share of regional employment.

Baseline final demand projections were developed by first estimating the baseline sales to final demand for each sector for the period 1960 to 1982. The economic baseline for the study region was defined as the export sales of that region's basic producing sectors to the "rest-of-the-world" without any major new resource development projects. The major components of the area's sales to final demand were sales by the agricultural (both crops and livestock), mining, and manufacturing sectors, plus federal government outlays and tourist expenditures. Historical estimates of sales to final demand were developed using data from secondary sources (see Appendix A) and techniques similar to those utilized elsewhere.¹⁵ Final demand vectors for one Minnesota functional economic region (Region 1, East Grand Forks-Thief River Falls) for the years 1960 to 1982 are presented in Table 6. Final demand vectors for the remaining regions and Minnesota totals are included in Appendix B, Tables 2-12. Projections of future baseline activity were based on time series projections of the final demand vectors that existed in 1960 through 1982. Several time series regression analysis techniques were employed for each region and sector for the years 1960 through 1982 to arrive at the best set of projecting equations for the model. Equations estimated by robust regression analysis with an intercept adjustment were selected for use in the model (Table 7 and Appendix B, Tables 13-23). A detailed discussion of the regression analysis is included in Appendix A. As in the North Dakota version, projections for each final demand vector were obtained by linear extrapolations of the regression equations to the year 2005 for the respective sectors (Table 8 and Appendix B, Tables 24-34).

¹⁵Hertsgaard, T. A., R. C. Coon, F. L. Leistritz, and N. L. Dalsted, Developing Economic Impact Projection Models for the Fort Union Coal Region, EPA-908/4-77-009, U.S. Environmental Protection Agency, Denver, Colorado, 1977.

TABLE 6. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 1, 1960-1982, MILLION DOLLARS
(1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households |
| 1960 | 93.7 | 144.3 | -- | 2.1 | 60.4 | 3.1 | 8.8 | 3.1 | 46.7 |
| 1961 | 92.6 | 127.6 | -- | 2.3 | 62.7 | 5.4 | 9.5 | 3.1 | 48.3 |
| 1962 | 91.7 | 134.6 | -- | 2.0 | 64.6 | 7.0 | 9.8 | 3.3 | 55.3 |
| 1963 | 86.8 | 120.7 | -- | 2.0 | 66.5 | 8.9 | 9.9 | 3.2 | 54.6 |
| 1964 | 90.9 | 180.2 | -- | 2.7 | 71.7 | 13.2 | 10.2 | 3.4 | 56.1 |
| 1965 | 92.7 | 201.9 | -- | 3.3 | 76.0 | 16.9 | 10.3 | 3.3 | 60.5 |
| 1966 | 98.9 | 160.1 | -- | 3.0 | 79.7 | 20.3 | 10.2 | 3.5 | 76.0 |
| 1967 | 94.7 | 163.5 | -- | 2.9 | 79.9 | 26.7 | 10.8 | 3.6 | 85.5 |
| 1968 | 90.5 | 143.7 | -- | 3.7 | 78.9 | 40.0 | 10.7 | 3.7 | 92.2 |
| 1969 | 87.2 | 154.0 | -- | 1.4 | 77.4 | 51.3 | 11.6 | 3.9 | 102.6 |
| 1970 | 86.9 | 123.9 | -- | 5.6 | 75.2 | 61.8 | 11.8 | 4.1 | 97.9 |
| 1971 | 87.4 | 186.6 | -- | 7.0 | 75.2 | 61.2 | 12.0 | 4.1 | 107.4 |
| 1972 | 87.6 | 176.8 | -- | 2.0 | 80.3 | 72.5 | 12.1 | 4.1 | 106.4 |
| 1973 | 114.6 | 333.8 | -- | 5.0 | 85.1 | 94.3 | 13.1 | 4.4 | 116.8 |
| 1974 | 92.7 | 436.4 | -- | 1.5 | 89.0 | 107.7 | 13.9 | 4.6 | 116.2 |
| 1975 | 90.0 | 323.4 | -- | 4.4 | 68.6 | 140.7 | 14.1 | 4.7 | 113.8 |
| 1976 | 100.0 | 328.6 | -- | 2.7 | 81.2 | 145.5 | 14.8 | 5.0 | 118.5 |
| 1977 | 89.3 | 340.4 | -- | 2.5 | 83.6 | 156.8 | 15.1 | 5.1 | 118.8 |
| 1978 | 93.8 | 407.7 | -- | 1.7 | 97.7 | 141.9 | 15.6 | 5.2 | 124.6 |
| 1979 | 107.7 | 399.3 | -- | 2.1 | 105.0 | 159.3 | 16.4 | 5.4 | 127.8 |
| 1980 | 103.5 | 314.5 | -- | 2.2 | 86.3 | 175.3 | 16.6 | 5.5 | 146.7 |
| 1981 | 86.0 | 464.8 | -- | 1.8 | 76.5 | 181.4 | 16.4 | 5.4 | 126.3 |
| 1982 | 82.2 | 380.9 | -- | 1.8 | 70.0 | 214.0 | 17.0 | 5.7 | 108.6 |

TABLE 7. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 1, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = 507,598.7 - 210.516(X)$ |
| (2) Ag, Crops | $Y = -28,375,980 + 14,519.3(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = 47,122.32 - 22.8112(X)$ |
| (8) Lumber & Assoc Prod | $Y = -2,401,026 + 1,251.2(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -19,328,910 + 9,853.19(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -743,472.9 + 383.715(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -247,139.2 + 127.548(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -8,906,453 + 4,560.15(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

TABLE 8. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 1, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|-------|-------|-------|-------|-------|
| (1) Ag, Livestock | 90.4 | 89.9 | 88.9 | 87.8 | 86.8 | 85.7 |
| (2) Ag, Crops | 401.3 | 430.3 | 502.9 | 575.5 | 648.1 | 720.7 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 1.9 | 1.9 | 1.8 | 1.6 | 1.5 | 1.4 |
| (8) Lumber & Assoc Prod | 78.9 | 81.4 | 87.6 | 93.9 | 100.1 | 106.4 |
| (9) Ag Proc & Misc Mfg | 200.1 | 219.8 | 269.1 | 318.4 | 367.6 | 416.9 |
| (15) Retail Trade | 17.1 | 17.8 | 19.7 | 21.7 | 23.6 | 25.5 |
| (17) Bus & Pers Service | 4.7 | 4.9 | 5.6 | 6.2 | 6.8 | 7.5 |
| (20) Households | 131.8 | 140.9 | 163.7 | 186.5 | 209.3 | 232.1 |

These projections do not attempt to account for short-term deviations from historical trends. Rather, the projections represent the average final demand values that determine the levels of employment and population.

Productivity (Gross Business Volume/Employment) Ratios

The productivity ratio for each economic sector refers to the gross business volume produced per full-time equivalent worker in that sector. Gross business volume estimates by economic sector were made regionally for the years 1960 to 1982 (Table 9 and Appendix B, Tables 35-45). Productivity ratios for each functional region were determined by dividing each sector's historic gross business volume (estimated by applying the interdependence coefficient matrix to the final demand vectors) by its employment¹⁶ in the corresponding years (Table 10 and Appendix B, Tables 46-56). The resulting estimates of gross business volume per worker for the respective sectors and years are shown in Table 11 and Appendix B, Tables 57-67. Inconsistencies in the data used to disaggregate county employment to sectors sometimes resulted in sectors having gross business volume but no employment and occasionally vice versa.

Ratios of gross business volume per worker were projected through the year 2005 by using a method similar to that utilized in projecting final demand vectors.¹⁷ Robust regression analysis with an intercept adjustment provided estimation equations for each sector and region (Table 12 and Appendix B, Tables 68-78). These equations were used to project gross business volume per worker

¹⁶See Appendix A for data sources used in determining employment.

¹⁷These methods are similar to those employed in North Dakota. For further discussion see, Hertsgaard, T. A., S. H. Murdock, N. E. Toman, M. Henry, and R. Ludtke, REAP Economic-Demographic Model: Technical Description, North Dakota Regional Environmental Assessment Program, Bismarck, 1978; and Toman, N. E., S. H. Murdock, and T. A. Hertsgaard, REAP Economic-Demographic Model Version II: Technical Description, North Dakota Regional Environmental Assessment Program, Bismarck, 1979.

TABLE 9. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION
1, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 130,730 | 199,095 | -- | -- | -- | 2,404 | 30,180 | 61,107 | 86,710 | -- | 30 |
| 1961 | 128,792 | 182,021 | -- | -- | -- | 2,318 | 29,483 | 63,434 | 87,565 | -- | 31 |
| 1962 | 129,104 | 190,576 | -- | -- | -- | 2,409 | 30,563 | 65,356 | 91,326 | -- | 32 |
| 1963 | 122,489 | 174,711 | -- | -- | -- | 2,288 | 29,314 | 67,278 | 89,617 | -- | 33 |
| 1964 | 133,174 | 244,246 | -- | -- | -- | 2,809 | 35,910 | 72,539 | 109,301 | -- | 36 |
| 1965 | 138,179 | 271,253 | -- | -- | -- | 3,059 | 39,363 | 76,889 | 120,601 | -- | 38 |
| 1966 | 144,216 | 230,716 | -- | -- | -- | 2,939 | 38,093 | 80,632 | 124,090 | -- | 40 |
| 1967 | 141,332 | 237,205 | -- | -- | -- | 3,022 | 39,250 | 80,835 | 133,797 | -- | 40 |
| 1968 | 137,716 | 222,726 | -- | -- | -- | 2,994 | 39,562 | 79,823 | 151,608 | -- | 39 |
| 1969 | 137,356 | 240,261 | -- | -- | -- | 3,095 | 39,287 | 78,306 | 171,424 | -- | 39 |
| 1970 | 136,460 | 213,985 | -- | -- | -- | 3,045 | 41,353 | 76,080 | 184,508 | -- | 38 |
| 1971 | 142,508 | 282,554 | -- | -- | -- | 3,577 | 48,663 | 76,080 | 194,292 | -- | 38 |
| 1972 | 144,068 | 279,252 | -- | -- | -- | 3,444 | 43,673 | 81,239 | 212,511 | -- | 40 |
| 1973 | 194,021 | 475,936 | -- | -- | -- | 5,063 | 63,965 | 86,096 | 291,928 | -- | 43 |
| 1974 | 178,115 | 588,094 | -- | -- | -- | 5,581 | 67,983 | 90,041 | 319,303 | -- | 45 |
| 1975 | 171,790 | 484,673 | -- | -- | -- | 4,983 | 62,054 | 69,403 | 356,293 | -- | 34 |
| 1976 | 185,877 | 497,739 | -- | -- | -- | 5,161 | 63,182 | 82,150 | 371,811 | -- | 41 |
| 1977 | 176,144 | 513,800 | -- | -- | -- | 5,230 | 64,072 | 84,578 | 387,347 | -- | 42 |
| 1978 | 184,755 | 579,801 | -- | -- | -- | 5,703 | 69,662 | 98,843 | 375,539 | -- | 49 |
| 1979 | 204,728 | 587,627 | -- | -- | -- | 5,933 | 72,413 | 106,228 | 412,842 | -- | 53 |
| 1980 | 196,914 | 503,946 | -- | -- | -- | 5,454 | 66,679 | 87,310 | 424,821 | -- | 43 |
| 1981 | 186,897 | 664,453 | -- | -- | -- | 6,216 | 74,665 | 77,395 | 448,459 | -- | 38 |
| 1982 | 180,730 | 591,918 | -- | -- | -- | 5,684 | 67,663 | 70,819 | 488,579 | -- | 35 |

- continued -

TABLE 9. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 1, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 5,229 | 31,364 | -- | 252,797 | 53,233 | 30,838 | 25,500 | 32,338 | 353,015 | 1,294,565 |
| 1961 | 5,136 | 30,433 | -- | 242,739 | 51,103 | 30,221 | 24,816 | 31,148 | 341,748 | 1,250,987 |
| 1962 | 5,339 | 31,963 | -- | 254,936 | 53,710 | 31,653 | 26,116 | 32,728 | 360,830 | 1,306,640 |
| 1963 | 5,175 | 30,559 | -- | 241,491 | 50,933 | 30,667 | 25,039 | 31,090 | 343,743 | 1,244,422 |
| 1964 | 6,124 | 36,872 | -- | 298,913 | 62,926 | 36,311 | 29,957 | 38,041 | 414,724 | 1,521,879 |
| 1965 | 6,602 | 39,957 | -- | 325,052 | 68,501 | 38,925 | 32,438 | 41,325 | 450,017 | 1,652,198 |
| 1966 | 6,503 | 39,208 | -- | 310,085 | 65,819 | 38,290 | 32,151 | 40,081 | 444,928 | 1,597,791 |
| 1967 | 6,660 | 40,651 | -- | 321,702 | 68,246 | 39,335 | 33,375 | 41,565 | 463,960 | 1,650,973 |
| 1968 | 6,590 | 40,315 | -- | 315,689 | 67,149 | 38,807 | 33,128 | 41,027 | 461,292 | 1,638,465 |
| 1969 | 6,847 | 42,656 | -- | 336,206 | 71,361 | 40,470 | 35,013 | 43,560 | 491,068 | 1,736,945 |
| 1970 | 6,583 | 40,540 | -- | 315,817 | 67,053 | 38,649 | 33,178 | 41,098 | 464,234 | 1,662,616 |
| 1971 | 7,397 | 46,881 | -- | 374,683 | 79,291 | 43,553 | 38,213 | 48,207 | 540,429 | 1,926,359 |
| 1972 | 7,506 | 46,930 | -- | 372,708 | 79,050 | 44,050 | 38,263 | 48,103 | 538,375 | 1,939,210 |
| 1973 | 10,231 | 65,943 | -- | 544,674 | 114,904 | 59,211 | 52,980 | 69,131 | 756,433 | 2,790,554 |
| 1974 | 11,302 | 73,615 | -- | 621,253 | 130,566 | 66,372 | 58,853 | 77,868 | 842,591 | 3,131,575 |
| 1975 | 9,890 | 64,851 | -- | 540,917 | 113,587 | 57,117 | 51,570 | 68,210 | 743,498 | 2,798,870 |
| 1976 | 10,523 | 67,992 | -- | 562,961 | 118,477 | 60,770 | 54,198 | 71,234 | 776,569 | 2,928,681 |
| 1977 | 10,707 | 69,087 | -- | 573,222 | 120,595 | 62,048 | 55,002 | 72,378 | 787,524 | 2,981,775 |
| 1978 | 11,760 | 75,653 | -- | 631,134 | 132,819 | 68,737 | 60,429 | 79,458 | 862,111 | 3,236,448 |
| 1979 | 12,332 | 78,543 | -- | 650,734 | 137,132 | 71,382 | 62,683 | 82,222 | 892,001 | 3,376,849 |
| 1980 | 11,213 | 72,904 | -- | 597,124 | 125,904 | 64,566 | 58,308 | 76,010 | 837,486 | 3,128,680 |
| 1981 | 12,276 | 81,384 | -- | 691,918 | 144,876 | 71,324 | 64,338 | 86,376 | 931,347 | 3,541,957 |
| 1982 | 11,363 | 74,225 | -- | 626,621 | 131,041 | 65,312 | 58,224 | 78,349 | 841,429 | 3,291,985 |

TABLE 10. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 1, 1960-1982

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 9,388 | -- | -- | -- | -- | 798 | 354 | 2,859 | -- | -- | |
| 1961 | 9,197 | -- | -- | -- | -- | 763 | 353 | 2,857 | -- | -- | |
| 1962 | 9,007 | -- | -- | -- | -- | 771 | 365 | 2,947 | -- | -- | |
| 1963 | 8,816 | -- | -- | -- | -- | 763 | 368 | 2,978 | -- | -- | |
| 1964 | 8,625 | -- | -- | -- | -- | 784 | 358 | 2,897 | -- | -- | |
| 1965 | 8,420 | -- | -- | -- | -- | 928 | 383 | 3,394 | -- | -- | |
| 1966 | 8,214 | -- | -- | -- | -- | 741 | 385 | 3,962 | -- | -- | |
| 1967 | 8,009 | -- | -- | -- | -- | 692 | 714 | 3,559 | -- | -- | |
| 1968 | 7,803 | -- | -- | -- | -- | 740 | 699 | 3,940 | -- | -- | |
| 1969 | 7,598 | -- | -- | -- | -- | 662 | 684 | 5,444 | -- | -- | |
| 1970 | 7,430 | -- | -- | -- | -- | 625 | 676 | 5,293 | -- | -- | |
| 1971 | 7,353 | -- | -- | -- | -- | 916 | 685 | 6,248 | -- | -- | |
| 1972 | 7,232 | -- | -- | -- | -- | 713 | 675 | 6,043 | -- | -- | |
| 1973 | 7,109 | -- | -- | -- | -- | 708 | 977 | 6,059 | -- | -- | |
| 1974 | 6,987 | -- | -- | -- | -- | 718 | 1,617 | 5,770 | -- | -- | |
| 1975 | 7,009 | -- | -- | -- | -- | 903 | 1,532 | 5,579 | -- | -- | |
| 1976 | 7,031 | -- | -- | -- | -- | 878 | 1,596 | 5,945 | -- | -- | |
| 1977 | 7,052 | -- | -- | -- | -- | 901 | 1,510 | 5,812 | -- | -- | |
| 1978 | 7,072 | -- | -- | -- | -- | 986 | 1,560 | 6,474 | -- | -- | |
| 1979 | 7,149 | -- | -- | -- | -- | 1,019 | 1,562 | 6,724 | -- | -- | |
| 1980 | 7,116 | -- | -- | -- | -- | 856 | 1,562 | 5,901 | -- | -- | |
| 1981 | 7,190 | -- | -- | -- | -- | 780 | 1,514 | 6,009 | -- | -- | |
| 1982 | 7,264 | -- | -- | -- | -- | 697 | 1,487 | 5,814 | -- | -- | |

- continued -

TABLE 10. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 1, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 500 | 568 | -- | 3,143 | 449 | 489 | 2,107 | 3,474 | -- |
| 1961 | 470 | 534 | -- | 3,103 | 467 | 505 | 2,177 | 3,572 | -- |
| 1962 | 470 | 534 | -- | 3,170 | 479 | 523 | 2,253 | 3,769 | -- |
| 1963 | 464 | 527 | -- | 3,247 | 485 | 532 | 2,295 | 3,992 | -- |
| 1964 | 475 | 540 | -- | 3,430 | 498 | 566 | 2,438 | 4,244 | -- |
| 1965 | 505 | 563 | -- | 3,517 | 515 | 774 | 2,321 | 4,412 | -- |
| 1966 | 531 | 571 | -- | 3,545 | 544 | 700 | 2,469 | 4,654 | -- |
| 1967 | 546 | 548 | -- | 3,668 | 561 | 771 | 2,814 | 4,772 | -- |
| 1968 | 640 | 539 | -- | 3,680 | 579 | 716 | 14,463 | 4,735 | -- |
| 1969 | 648 | 473 | -- | 4,139 | 627 | 753 | 3,159 | 4,768 | -- |
| 1970 | 639 | 466 | -- | 4,251 | 647 | 791 | 3,320 | 4,988 | -- |
| 1971 | 613 | 610 | -- | 4,362 | 637 | 694 | 3,530 | 5,148 | -- |
| 1972 | 814 | 698 | -- | 4,893 | 652 | 886 | 4,322 | 5,174 | -- |
| 1973 | 643 | 643 | -- | 5,154 | 664 | 1,032 | 3,979 | 5,348 | -- |
| 1974 | 572 | 619 | -- | 4,772 | 711 | 803 | 3,835 | 5,341 | -- |
| 1975 | 609 | 564 | -- | 4,693 | 743 | 787 | 4,071 | 5,481 | -- |
| 1976 | 770 | 533 | -- | 5,121 | 789 | 903 | 4,344 | 5,763 | -- |
| 1977 | 701 | 491 | -- | 5,649 | 804 | 1,194 | 3,917 | 5,835 | -- |
| 1978 | 632 | 644 | -- | 5,804 | 908 | 1,115 | 4,286 | 5,965 | -- |
| 1979 | 663 | 675 | -- | 5,899 | 944 | 1,163 | 4,470 | 5,907 | -- |
| 1980 | 599 | 659 | -- | 5,533 | 981 | 1,132 | 4,868 | 5,989 | -- |
| 1981 | 610 | 672 | -- | 5,660 | 1,043 | 1,199 | 5,153 | 6,136 | -- |
| 1982 | 593 | 653 | -- | 5,628 | 1,060 | 1,216 | 5,229 | 6,002 | -- |

TABLE 11. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA
 REGION 1, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 35,133 | -- | -- | -- | -- | 37,820 | 172,619 | 30,329 | -- | -- |
| 1961 | 33,795 | -- | -- | -- | -- | 38,641 | 179,700 | 30,649 | -- | -- |
| 1962 | 35,492 | -- | -- | -- | -- | 39,641 | 179,058 | 30,989 | -- | -- |
| 1963 | 33,711 | -- | -- | -- | -- | 38,419 | 182,821 | 30,093 | -- | -- |
| 1964 | 43,759 | -- | -- | -- | -- | 45,804 | 202,623 | 37,729 | -- | -- |
| 1965 | 48,626 | -- | -- | -- | -- | 42,417 | 200,755 | 35,534 | -- | -- |
| 1966 | 45,645 | -- | -- | -- | -- | 51,408 | 209,434 | 31,320 | -- | -- |
| 1967 | 47,264 | -- | -- | -- | -- | 56,720 | 113,214 | 37,594 | -- | -- |
| 1968 | 46,193 | -- | -- | -- | -- | 53,462 | 114,196 | 38,479 | -- | -- |
| 1969 | 49,700 | -- | -- | -- | -- | 59,346 | 114,482 | 31,489 | -- | -- |
| 1970 | 47,166 | -- | -- | -- | -- | 66,165 | 112,544 | 34,859 | -- | -- |
| 1971 | 57,808 | -- | -- | -- | -- | 53,126 | 111,066 | 31,097 | -- | -- |
| 1972 | 58,534 | -- | -- | -- | -- | 61,252 | 120,354 | 35,166 | -- | -- |
| 1973 | 94,241 | -- | -- | -- | -- | 90,346 | 88,123 | 48,181 | -- | -- |
| 1974 | 109,662 | -- | -- | -- | -- | 94,684 | 55,684 | 55,338 | -- | -- |
| 1975 | 93,660 | -- | -- | -- | -- | 68,720 | 45,302 | 63,863 | -- | -- |
| 1976 | 97,229 | -- | -- | -- | -- | 71,961 | 51,472 | 62,542 | -- | -- |
| 1977 | 97,837 | -- | -- | -- | -- | 71,112 | 56,012 | 66,646 | -- | -- |
| 1978 | 108,110 | -- | -- | -- | -- | 70,651 | 63,361 | 58,007 | -- | -- |
| 1979 | 110,834 | -- | -- | -- | -- | 71,063 | 68,008 | 61,398 | -- | -- |
| 1980 | 98,491 | -- | -- | -- | -- | 77,896 | 55,896 | 71,991 | -- | -- |
| 1981 | 118,408 | -- | -- | -- | -- | 95,724 | 51,120 | 74,631 | -- | -- |
| 1982 | 106,367 | -- | -- | -- | -- | 97,077 | 47,625 | 84,035 | -- | -- |

- continued -

TABLE 11. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA
REGION 1, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | |
|------|---------------|----------------------------|------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|--|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 10,458 | 55,218 | -- | 80,432 | 118,559 | 63,063 | 12,103 | 9,309 | -- | |
| 1961 | 10,928 | 56,991 | -- | 78,227 | 109,428 | 59,844 | 11,399 | 8,720 | -- | |
| 1962 | 11,360 | 59,856 | -- | 80,421 | 112,129 | 60,522 | 11,592 | 8,683 | -- | |
| 1963 | 11,153 | 57,987 | -- | 74,374 | 105,016 | 57,645 | 10,910 | 7,788 | -- | |
| 1964 | 12,893 | 68,281 | -- | 87,147 | 126,357 | 64,154 | 12,288 | 8,963 | -- | |
| 1965 | 13,073 | 70,972 | -- | 92,423 | 133,012 | 50,291 | 13,976 | 9,367 | -- | |
| 1966 | 12,247 | 68,665 | -- | 87,471 | 120,991 | 54,700 | 13,022 | 8,612 | -- | |
| 1967 | 12,198 | 74,181 | -- | 87,705 | 121,651 | 51,018 | 11,860 | 8,710 | -- | |
| 1968 | 10,297 | 74,796 | -- | 85,785 | 115,974 | 54,200 | 2,291 | 8,665 | -- | |
| 1969 | 10,566 | 90,182 | -- | 81,229 | 113,813 | 53,745 | 11,084 | 9,136 | -- | |
| 1970 | 10,302 | 86,996 | -- | 74,292 | 103,637 | 48,861 | 9,993 | 8,239 | -- | |
| 1971 | 12,067 | 76,854 | -- | 85,897 | 124,476 | 62,756 | 10,825 | 9,364 | -- | |
| 1972 | 9,221 | 67,235 | -- | 76,172 | 121,242 | 49,718 | 8,853 | 9,297 | -- | |
| 1973 | 15,911 | 102,555 | -- | 105,680 | 173,048 | 57,375 | 13,315 | 12,927 | -- | |
| 1974 | 19,759 | 118,926 | -- | 130,187 | 183,637 | 82,655 | 15,346 | 14,579 | -- | |
| 1975 | 16,240 | 114,984 | -- | 115,260 | 152,876 | 72,576 | 12,668 | 12,445 | -- | |
| 1976 | 13,666 | 127,565 | -- | 109,932 | 150,161 | 67,298 | 12,477 | 12,361 | -- | |
| 1977 | 15,274 | 140,707 | -- | 101,473 | 149,994 | 51,966 | 14,042 | 12,404 | -- | |
| 1978 | 18,608 | 117,474 | -- | 108,741 | 146,276 | 61,648 | 14,099 | 13,321 | -- | |
| 1979 | 18,600 | 116,360 | -- | 110,313 | 145,267 | 61,377 | 14,023 | 13,919 | -- | |
| 1980 | 18,720 | 110,628 | -- | 107,920 | 128,343 | 57,037 | 11,978 | 12,692 | -- | |
| 1981 | 20,125 | 121,107 | -- | 122,247 | 138,903 | 59,486 | 12,486 | 14,077 | -- | |
| 1982 | 19,162 | 113,668 | -- | 111,340 | 123,624 | 53,711 | 11,135 | 13,054 | -- | |

TABLE 12. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 1 (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|----------------------------------|
| (1) & (2) Agriculture | $Y = -8,206,795.0 + 4,197.15(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -4,230,903.0 + 2,181.29(X)$ |
| (8) Lumber & Assoc Prod | $Y = 49,373^c$ |
| (9) Ag Proc & Misc Mfg | $Y = -4,382,721.0 + 2,251.19(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -811,119.2 + 419.21(X)$ |
| (13) Comm & Public Utilities | $Y = -6,351,839.0 + 3,264.50(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -3,418,227.0 + 1,782.97(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -2,730,907.0 + 1,444.32(X)$ |
| (17) Bus & Pers Service | $Y = 46,039.86 + 5.404(X)$ |
| (18) Prof & Soc Service | $Y = -97,605.94 + 55.110(X)$ |
| (19) Government | $Y = -544,028.4 + 281.324(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

to the year 2005. The resulting estimates of gross business volume to employment ratios projected through the year 2005 are shown for Region 1 in Table 13 and for the remaining regions in Appendix B, Tables 79-89.

County and Municipal Employment Allocators

Baseline employment is allocated to cities and counties on the basis of each city's or county's projected share of total regional employment. Projected shares for each city were extrapolations of that city's share of

TABLE 13. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 1, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 111,956 | 120,351 | 141,336 | 162,322 | 183,308 | 204,294 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 92,414 | 96,776 | 107,683 | 118,589 | 129,496 | 140,402 |
| (8) Lumber & Assoc Prod | 49,373 | 49,373 | 49,373 | 49,373 | 49,373 | 49,373 |
| (9) Ag Proc & Misc Mfg | 79,138 | 83,640 | 94,896 | 106,152 | 117,408 | 128,664 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 19,755 | 20,593 | 22,689 | 24,786 | 26,882 | 28,978 |
| (13) Comm & Pub Util | 118,400 | 124,929 | 141,252 | 157,574 | 173,897 | 190,219 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 115,620 | 119,185 | 128,100 | 137,015 | 145,930 | 154,845 |
| (16) Fin, Ins, Real Estate | 131,735 | 134,624 | 141,845 | 149,067 | 156,289 | 163,510 |
| (17) Bus & Pers Service | 56,751 | 56,761 | 56,788 | 56,815 | 56,842 | 56,869 |
| (18) Prof & Soc Service | 11,622 | 11,732 | 12,008 | 12,283 | 12,559 | 12,835 |
| (19) Government | 13,556 | 14,118 | 15,525 | 16,932 | 18,338 | 19,745 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

county employment between 1960 and 1980.¹⁸ Since employment data were not available at the subcounty level, population was used as a proxy. Each city's share of employment was based on that city's share of total municipal population in the functional economic region from 1960 to 1980. Cities' shares were used to allocate the region's total nonagricultural employment among the cities in each region to 2005. In similar fashion, the region's agricultural employment was allocated to the counties in the region based on each county's share of the region's agricultural employment from 1960 to 1980. Agricultural employment projections to 2005 were based on the county's share in 1980. County and city allocators used in the adapted version are presented for Region 1 in Table 14 and for the remaining regions in Appendix B, Tables 90-99.

Project-Specific Economic Parameters

Economic activity associated with the construction and operation of resource extraction and conversion projects or similar industry-specific development was assumed to be largely additive to trends in baseline activity. The adapted version first computes the baseline economic activity in the region (along with its counties and municipalities) and then computes the economic activity associated with the development scenario specified by the user. Assessment of the economic impacts of a new project (or several projects) is based on a set of project-specific data assembled for each project. The project data file has been designed to allow rapid updating of information regarding specific projects (e.g., changes in construction timetables and labor requirements) and for the addition of information on new projects.

¹⁸Constraints were imposed on the extrapolation process such that the sum of all shares would equal 1.00 (i.e., 100 percent of regional employment) and that no city or county's share would be less than zero or more than one.

TABLE 14. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 1, SELECTED YEARS 1980 to 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Kittson | Hallock | 0.0329348 | | 0.0315161 | | 0.0301585 | | 0.0288594 | | 0.0276162 | | 0.0264266 | |
| | Karlstad | 0.0218941 | 0.0218944 | 0.0228296 | 0.0227283 | 0.0238051 | 0.0235587 | 0.0248223 | 0.0243857 | 0.0258830 | 0.0252094 | 0.0269890 | 0.026030 |
| Marshall | Argyle | 0.0173699 | | 0.0167071 | | 0.0160695 | | 0.0154563 | | 0.0148665 | | 0.0142992 | |
| | Stephen | 0.0210502 | | 0.0208027 | | 0.0205582 | | 0.0203166 | | 0.0200778 | | 0.0198418 | |
| | Warren | 0.0493436 | | 0.0487893 | | 0.0482413 | | 0.0476994 | | 0.0471636 | | 0.0466338 | |
| Pennington | Thief River Falls | 0.2134306 | 0.2134333 | 0.2215144 | 0.2205313 | 0.2299047 | 0.2275245 | 0.2386126 | 0.2344150 | 0.2476503 | 0.2412052 | 0.2570306 | 0.247898 |
| Polk | Crookston | 0.2022500 | | 0.1980812 | | 0.1939983 | | 0.1899995 | | 0.1860832 | | 0.1822476 | |
| | East Grand Forks | 0.2001136 | 0.2001160 | 0.2054827 | 0.2045708 | 0.2109961 | 0.2088116 | 0.2166572 | 0.2128459 | 0.2224703 | 0.2166806 | 0.2284395 | 0.220323 |
| | Erskine | 0.0137131 | | 0.0132373 | | 0.0127780 | | 0.0123347 | | 0.0119068 | | 0.0114937 | |
| | Fertile | 0.0203704 | | 0.0193733 | | 0.0184250 | | 0.0175231 | | 0.0166654 | | 0.0158496 | |
| | Fosston | 0.0374824 | | 0.0360446 | | 0.0346619 | | 0.0333323 | | 0.0320537 | | 0.0308241 | |
| | McIntosh | 0.0159634 | | 0.0150527 | | 0.0141939 | | 0.0133841 | | 0.0126205 | | 0.0119004 | |
| Red Lake | Oklee | 0.0125645 | | 0.0123165 | | 0.0120735 | | 0.0118353 | | 0.0116018 | | 0.0113729 | |
| | Red Lake Falls | 0.0405997 | 0.0406002 | 0.0409842 | 0.0408023 | 0.0413723 | 0.0409439 | 0.0417641 | 0.0410294 | 0.0421595 | 0.0410623 | 0.0425587 | 0.041047 |
| Roseau | Greenbush | 0.0191512 | 0.0191514 | 0.0194074 | 0.0193212 | 0.0196670 | 0.0194634 | 0.0199301 | 0.0195795 | 0.0201967 | 0.0196711 | 0.0204669 | 0.019740 |
| | Roseau | 0.0532583 | | 0.0527837 | | 0.0523133 | | 0.0518471 | | 0.0513851 | | 0.0509272 | |
| | Warroad | 0.0285044 | | 0.0273419 | | 0.0262268 | | 0.0251571 | | 0.0241311 | | 0.0231470 | |
| SUM OF DECLINING COUNTIES | | 0.5048046 | | 0.4920461 | | 0.4796979 | | 0.4677447 | | 0.4561713 | | 0.4449635 | |
| ONE MINUS DECLINING COUNTIES | | 0.4951954 | | 0.5079539 | | 0.5203021 | | 0.5322553 | | 0.5438287 | | 0.5550365 | |
| SUM OF INCREASING COUNTIES | | 0.4951891 | | 0.5102182 | | 0.5257450 | | 0.5417862 | | 0.5583597 | | 0.5754845 | |
| ADJUSTED TOTAL | | | 0.9999999 | | 0.9999999 | | 0.9999999 | | 1.0000000 | | 0.9999998 | | 1.0000000 |

The final demand vector of the site-specific data file for each project is applied to the input-output model. In the construction phase of a project, this consists of annual expenditures to the contract construction, retail trade, and household sectors. During the operational phase, annual expenditures are to the retail trade and household sectors. The construction phase final demand vector indicates the amount of injection of new dollars into the regional spending stream via the contract construction sector (for bid lettings to local contractors), retail trade sector (for supplies and materials purchased locally), and household sector (for wages and salaries to employees living in the area).

The data file for each energy development project that the user may specify contains the following set of specifications:

1. Project number
2. Start date
3. Location of project
4. Project name and description
5. Number of years after the start of construction that operation begins
6. Land taken for plant and/or mine site
7. Acres mined per year
8. Land taken for urban uses
9. Tons mined per year
10. Kilowatt hours of electricity sold per year
11. Cubic feet of synthetic natural gas sold per year
12. Mine value for property tax purposes
13. State share of Federal coal royalties

14. Project final demand vectors
 - a) Households
 - b) Retail trade
 - c) Construction
15. Direct Labor
 - a) Construction (temporary workers)
 - b) Operation or permanent workers

The project data file format was designed for energy development, although it can be used for other developments (e.g., taconite mine) by including slightly different information.

Economic downturns occurring in specific industries or sectors can be handled easily by using project files. Industrial declines would be handled as if the lower level of production occurred permanently. To accomplish this, the projected baseline final demand vector would be set as a constant value reflecting reduced production. A project file would be developed to allow the industry to resume its growth trend at a point in time when recovery would most likely occur. By handling declines in this manner, the project actually becomes part of the projected baseline economic activity of the region. Projected industry developments beyond baseline growth would be included as additional project files that could be added to the baseline project file.

Description of the Demographic Module

The demographic data base used in the model was composed of four major components:

1. Detailed county population consisting of 75 age cohorts¹⁹
(single-year) by gender

¹⁹Census information consisted of 104 age cohorts from 0 to 103. Cohorts 0 and 1 were added to form the first age cohort and cohorts 75 and over were added to form the last age cohort.

2. Birth rates by county of residence for six female five-year cohorts from 15 to 45 years of age
3. Survival rates of 75 age cohorts²⁰ (single-year) by gender
4. Migration rates by county for age cohorts (single-year) over 64 by gender

The data sources and methods used in the preparation of each of these components are described below.

Population by Age and Gender

Single-year cohort populations were derived from the STF 2A 1980 census data tape for Minnesota.²¹ The population counts are in 75 single-year age groups²² by male and female for each county in 1980.

Birth Rates

Three sets of age-specific birth rates were computed for each county in Minnesota for use in the model. These rates were computed using the general formula:

$$ASFR_i = \frac{(i^B_{1979} + i^B_{1980} + i^B_{1981})/3}{i^{FP}_{1980}}$$

where: $ASFR_i$ = age-specific fertility rates for females in age group (cohort) i ;

$(i^B_{1979, 1980, 1981})/3$ = average number of births to females in age group i in 1979, 1980, and 1981;

i^{FP}_{1980} = female population of age group i in 1980.

²⁰Ibid.

²¹Ibid.

²²Ibid.

Data on births were obtained from the Minnesota Department of Health,²³ and 1980 data on the number of females were obtained from the 1980 STF 2A census data tape for Minnesota. The use of an average number of births for a three-year period is a standard procedure²⁴ used to eliminate the effects of bias due to chance fluctuations in the number of births from year to year.

The three sets of rates computed for the projection period for each county were patterned after completed levels of fertility of 1.8, 2.1, and 2.5 births per female. These total fertility levels are the sum of a set of age-specific fertility rates for women in the childbearing ages that would result if each female were to experience a given set of age-specific rates for each age group as she aged through her reproductive lifetime. Six five-year cohort rates were calculated for each county for 1980. A 25-year national fertility trend for the corresponding six five-year cohorts (i.e., women 15 to 45 years of age) was utilized to project total fertility over time.²⁵ The age-specific national fertility trends were applied to the ratio of county age-specific fertility rates for 1980 for each projection year, resulting in a set of age-specific fertility rates for each county and level of completed fertility.²⁶ An example of county fertility rates for 1980 is provided in Table 15 for Kittson County.

²³Minnesota Center for Health Statistics, Minnesota Health Statistics 1981, Minneapolis, 1981.

²⁴Shryock, H. S., and J. S. Siegel, The Methods and Materials of Demography, U.S. Bureau of the Census, U.S. Government Printing Office, Washington, D.C., 1973.

²⁵Bureau of the Census, Projections of the Population of the United States 1977 to 2050, U.S. Department of Commerce, Current Population Reports P-25, No. 704, U.S. Government Printing Office, Washington, D.C., 1977.

²⁶Tarver, J. D., and T. R. Black, Making County Population Projections: A Detailed Explanation of a Three-Component Method, Illustrated by Reference to Utah Counties, Utah Agricultural Experiment Station, Logan, 1966; and Irwin, Richard, Guide for Local Area Population Projections, U.S. Bureau of the Census, U.S. Government Printing Office, Washington, D.C., 1977.

TABLE 15. FERTILITY RATES^a FOR KITTSON COUNTY, MINNESOTA, 1980

| Age Group | Birth Rate |
|--------------------|------------|
| 15-19 ^b | 0.0414 |
| 20-24 | 0.1877 |
| 25-29 | 0.1460 |
| 30-34 | 0.0694 |
| 35-39 | 0.0103 |
| 40-44 ^c | 0.0103 |

^aUsing national completed levels of fertility of 2.1 births per female.

^bBirths to women less than 15 years of age are included in this category.

^cBirths to women over 44 years of age are included in this category.

Survival Rates

Survival rates for 15 age and gender cohorts (Table 16) were determined from a 1980 life table for Minnesota.²⁷ A 1979 through 1982 average of total deaths in each cohort was used to reduce yearly fluctuations. The survival rates for the 15 age-gender cohorts were disaggregated into 75 single-year age-gender cohorts conforming to the detailed population.

The relatively small variation in mortality from one area to another allowed the application of state survival rates to all of the counties. These rates were computed using the life table survival rate method:

$$S_{x, x+t} = \frac{L_{x+t}}{L_x}$$

where: $S_{x, x+t}$ = probability of a member of a cohort surviving from the time period x to $x+t$;

L_{x+t} = number of persons in the cohort alive at the end of the period, $x+t$;

L_x = number of persons in the cohort alive at the beginning of the period, x .

²⁷Computed from unpublished data supplied by the Minnesota Center for Health Statistics, Minneapolis, 1983. One rate is applied to all individuals over the age of 70; thus, the rate is adjusted upward to avoid inflating deaths in this age category due to its cumulative quality.

TABLE 16. MINNESOTA SURVIVAL RATES BY AGE AND GENDER

| Age | Male | Female |
|-------|---------|---------|
| 0-4 | .990916 | .992323 |
| 5-9 | .999162 | .999385 |
| 10-14 | .998780 | .999078 |
| 15-19 | .996578 | .998710 |
| 20-24 | .995745 | .998545 |
| 25-29 | .996002 | .998537 |
| 30-34 | .996078 | .997493 |
| 35-39 | .993565 | .994784 |
| 40-44 | .987941 | .992418 |
| 45-49 | .977918 | .987186 |
| 50-54 | .961527 | .981356 |
| 55-59 | .946554 | .968281 |
| 60-64 | .902236 | .951824 |
| 65-69 | .841166 | .927631 |
| 70-74 | .956160 | .977685 |
| 75+ | .890000 | .920000 |

$L_x + t$ and L_x are derived from the appropriate column of a standard life table. Survival rates for the 1979 to 1981 period were assumed to prevail throughout the projection period.

Migration Rates

Migration rates were not specified for age-gender cohorts 1 to 65 because the employment-based method determines migration. The interface component, described later in the report, uses a comparison procedure²⁸ between required employment and available work force, ages 15 to 64, to determine yearly net migration for these age groups. The migration of individuals under age 15 is assumed to be a direct result of net work force migration. A profile of a migrating family was developed from survey data and applied to in- and out-migrants providing migration levels for age-gender cohorts from 1 to 14.

²⁸For a more detailed discussion of migration procedures, see pages 41-44 of Leistritz, et al., 1982, op. cit.

Migration rates were utilized for age-gender cohorts (single-year) 65 to 74+. Rates were computed for each county in 1980 from two five-year age-gender cohorts, 65-69 and 70-74+. These rates were computed by using an average of the rates computed by forward and reverse survival rate methods,²⁹ using data from the 1970 census first count, file B and STF 2A for 1980. Migration rates for 1980 were assumed to prevail throughout the projection period. The 1980 net migration rates for Kittson County are provided in Table 17.

TABLE 17. MIGRATION RATES FOR KITTSOON COUNTY, MINNESOTA, 1980

| Age Group | Male | Female |
|-----------|----------|----------|
| 65 | -.074000 | -.042000 |
| 66 | -.074000 | -.042000 |
| 67 | -.074000 | -.042000 |
| 68 | -.074000 | -.042000 |
| 69 | -.074000 | -.042000 |
| 70 | -.004900 | -.001900 |
| 71 | -.004900 | -.001900 |
| 72 | -.004900 | -.001900 |
| 73 | -.004900 | -.001900 |
| 74+ | -.004900 | -.001900 |

Description of the Residential Allocation Module

The residential allocation component of the model estimates the probable settlement patterns of in-migrating workers and their dependents.³⁰ The allocations were made at the municipal level using a gravity model. Use of this model assumed that the number of in-migrants moving to a city will be inversely related to the distance between the city and the employment site.

²⁹Leistritz, F. Larry, and Steven H. Murdock, 1981, op. cit.; Shryock, H. S., and J. S. Siegel, 1973, op. cit.; and Bowles, G. K., C. L. Beale, and E. S. Lee, Net Migration of the Population, 1960-70 by Age, Sex, and Color, University of Georgia Printing Department, Athens, 1975.

³⁰Worker demographic characteristics and labor force participation rates used in the Minnesota version are equivalent to those in the North Dakota version. See Leistritz, et al., 1982, op. cit.

In addition, qualitative factors were assumed to exist among settlements and to affect workers' choices. Previously collected data on settlement patterns of workers were used as a basis for estimating parameters for the gravity model.³¹ In symbolic form, these assumptions may be stated as follows for each site:

$$M_i = \frac{\left[\frac{EB_{t-1} + fEC_{t-2} + EO_{t-1} + EI_{t-1}}{d_{ij}^a} \right] W_i}{\sum_{i=1}^n \left[\frac{EB_{t-1} + fEC_{t-2} + EO_{t-1} + EI_{t-1}}{d_{ij}^a} \right] W_i}$$

where: M_i = the fraction of the project-related employees who reside in city i ;

EB , EC , EO , and EI are baseline, construction, operating, and secondary (indirect and induced) employment, respectively, in the previous year (except for construction employment, which is two years previous);

f = a fraction applied to construction employment in the year $t-2$;

d_{ij}^a = the distance from municipality i to the location of project j raised to the power a ;

W_i = the relative qualitative attractiveness of city i .

The residential allocation calculations by the gravity model include 503 municipalities within Minnesota as an initial set, plus 41 adjoining

³¹Leholm, Arlen G., F. Larry Leistritz, and James S. Wieland, Profile of North Dakota's Electric Power Plant Construction Work Force, Agricultural Economics Statistical Report No. 22, Department of Agricultural Economics, North Dakota Agricultural Experiment Station, North Dakota State University, Fargo, 1976; Mountain West Research, Inc., Construction Worker Profile, Old West Regional Commission, Washington, D.C., December 1975; and Wieland, James S., "Socioeconomic Characteristics and Settlement Patterns Associated with Operating and Construction Work Forces in North Dakota, South Dakota, and Montana," Unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, 1977.

municipalities in North Dakota, South Dakota, Iowa, and Wisconsin.³² Non-Minnesota municipalities are allowed to attract population away from Minnesota during gravity model calculations, but no annual calculations of changes in the population of non-Minnesota cities are made. These cities are assumed to have an employment base equal to their 1980 estimated employment plus construction, operation, and secondary workers that are projected to migrate to these cities.

As in the North Dakota version of the model, the user may specify values for the power "a" to which distance is raised. Separate gravity model allocations are made for each type of worker. Unless the user specifies otherwise, the gravity powers are 1.5 for construction workers, 2.9 for operating workers, and 1.6 for project-related secondary workers. This results in a smaller proportion of construction workers than operating workers being allocated to municipalities near the plant site. Slightly more indirect workers than construction workers are allocated to nearby cities.

The gravity model allocates construction, operation, and secondary workers to communities as a factor of commuting distance to the site of a project, but secondary workers are assumed to both reside and work in the community to which they have been allocated. The residential allocation module is computed for each year there is project-related in-migration, using appropriate previous year's employment of each type for each city.

Modification of the Fiscal Impact Module

Population growth in communities near large-scale developments often results in the need for adjustment in the provision and financing of public services. Fiscal problems resulting from increased service demands and costs

³²For a listing of the municipalities included in the Minnesota adaptation, see Appendix B, Table 1.

lie primarily in the timing of revenue collection in relation to public service costs and in the distribution of those costs and revenues between jurisdictions. Fiscal impact analysis is used to project the changes in revenue and expenditure flows of governmental units which are likely to occur in response to large-scale developments. Governmental units of primary interest are those local jurisdictions which may experience substantial changes in service demand as a result of project development.³³ The primary focus is on the public sector costs and revenues associated with a particular project. Using traditional forms of cash-flow analysis in determining costs and revenues, the typical result of fiscal impact analysis is a statement of net surplus or deficit. The key features of this analysis are an exclusive focus on the revenues received and costs incurred by governmental units, and inclusion of the distribution of costs and revenues through time.³⁴

For estimating revenue flows, the principal methodological alternatives are either to assume that revenues will be directly proportional to population or to employ more detailed models which first estimate the change in the relevant tax base and then apply the appropriate tax rate. On the expenditure side, two general estimation methods are usually employed, the average cost and the marginal cost approaches. The average cost method projects service demands and associated costs for new population only, utilizing averages per immigrant and either national, state, or local service standards. In contrast, the marginal cost method attempts to take existing services into account and project new service requirements and associated costs on the basis of marginal demands (i.e., requirements above those that can be met by existing

³³Muller, Thomas, Fiscal Impacts of Land Development: A Critique of Methods and Review of Issues, URI 98000, The Urban Institute, Washington, D.C., 1975.

³⁴Leistritz, F. Larry and Steve H. Murdock, 1981, op. cit.

services). In selecting either of these approaches, care must be taken to insure that these techniques allow for adequate analysis of the magnitude and timing among different governmental units.

The fiscal implications of an energy development project depend on a number of factors, notably project characteristics (e.g., the magnitude of investment and the size and scheduling of the work force), site area characteristics (e.g., state and local tax structures and capacity of existing service facilities), and the nature of the economic and demographic effects resulting from the project.

Although the basic structure of the North Dakota fiscal impact module remains relatively intact in the Minnesota version, various fiscal functions which estimate the public sector costs and revenues associated with development projects have been modified to conform to those site area characteristics unique to Minnesota. The data sources and methods used in modifying the fiscal model parameters are described below.

Revenue Estimation

The taxation system of Minnesota is very similar to that of North Dakota, thus requiring only slight modification of the fiscal impact module. The three income sources yielding the greatest 1982 revenue for Minnesota were real property taxes (\$1.64 billion), individual income (\$1.56 billion), and sales and use tax (\$.88 billion) (Tables 18 and 19). Together, these three taxes accounted for over \$4.0 billion of the \$5.7 billion collected in state and local taxes, or almost 72 percent of the total.

Changes in Minnesota's state and local tax collections were obtained by applying the appropriate tax rate to the estimated change in the relevant tax base. A discussion of the various tax estimates for the state and local governments used in the Minnesota version are presented below.

TABLE 18. STATE TAX COLLECTIONS AND PERCENT OF TOTAL, MINNESOTA, FISCAL YEARS 1980-1982

| Kind of Tax | 1980 | | 1981 | | 1982 | |
|------------------------------------|-----------------|------------------|-----------------|------------------|-----------------|------------------|
| | Revenue (\$000) | Percent of Total | Revenue (\$000) | Percent of Total | Revenue (\$000) | Percent of Total |
| Income Taxes | | | | | | |
| Individual | 1,271,810 | 39.22 | 1,405,792 | 41.38 | 1,559,319 | 40.93 |
| Corporate | 345,223 | 10.65 | 296,065 | 8.72 | 295,457 | 7.76 |
| Bank Excise | 36,093 | 1.11 | 35,655 | 1.05 | 29,718 | 0.78 |
| Employers Excise Tax | -298 | -- | -111 | -- | -- | -- |
| Estate Taxes | | | | | | |
| Estate | 1,156 | 0.04 | 7,582 | 0.22 | 17,713 | 0.47 |
| Inheritance | 38,810 | 1.20 | 20,585 | 0.61 | 5,603 | 0.15 |
| Gift | 1,955 | 0.06 | 557 | 0.02 | 1,077 | 0.03 |
| Sales and Excise Taxes | | | | | | |
| General Sales and Use | 657,167 | 20.27 | 686,565 | 20.21 | 875,867 | 22.99 |
| Motor Vehicle Excise Tax | 88,698 | 2.74 | 87,083 | 2.56 | 103,767 | 2.72 |
| Highway Gasoline | 202,789 | 6.25 | 230,857 | 6.80 | 257,391 | 6.76 |
| Aviation Gasoline | 2,106 | 0.07 | 2,014 | 0.06 | 1,960 | 0.05 |
| Intoxicating Liquor | 40,537 | 1.25 | 41,194 | 1.21 | 40,898 | 1.07 |
| Fermented Malt Beverages | 11,135 | 0.34 | 11,811 | 0.35 | 11,595 | 0.30 |
| Wine | 2,736 | 0.08 | 2,798 | 0.08 | 2,972 | 0.08 |
| Cigarette | 84,307 | 2.60 | 86,199 | 2.54 | 86,288 | 2.26 |
| Tobacco Products | 2,240 | 0.07 | 2,430 | 0.07 | 2,670 | 0.07 |
| Other | 19,183 | 0.59 | 17,943 | 0.53 | 18,287 | 0.48 |
| Gross Earning Taxes | | | | | | |
| Telephone | 53,568 | 1.65 | 59,684 | 1.76 | 66,509 | 1.75 |
| Telegraph | 729 | 0.02 | 1,000 | 0.03 | 1,484 | 0.04 |
| Railroad, Regular | 8,598 | 0.27 | 12,395 | 0.36 | 36 | -- |
| Railroad, Taconite | 3,634 | 0.11 | 2,985 | 0.09 | 4,961 | 0.13 |
| Freight Line | 1,130 | 0.03 | 1,402 | 0.04 | 494 | 0.01 |
| Insurance Premiums | 62,297 | 1.92 | 62,500 | 1.84 | 73,663 | 1.93 |
| Other | 1,766 | 0.05 | 1,937 | 0.05 | 2,184 | 0.06 |
| Severance and Tonnage Taxes | | | | | | |
| Taconite Production Tax | 88,484 | 2.73 | 87,185 | 2.57 | 99,019 | 2.60 |
| Occupation Tax on Taconite | 14,539 | 0.45 | 12,895 | 0.38 | 12,112 | 0.32 |
| Occupation Tax on Iron Ore | 2,702 | 0.08 | 536 | 0.02 | 1,444 | 0.04 |
| Royalty Tax on Taconite | 5,125 | 0.16 | 4,118 | 0.12 | 5,529 | 0.15 |
| Royalty Tax on Iron Ore | 924 | 0.03 | 711 | 0.02 | 464 | 0.01 |
| Royalty Tax on Misc. Ores | 35 | -- | 33 | -- | 42 | -- |

- continued -

TABLE 18. STATE TAX COLLECTIONS AND PERCENT OF TOTAL, MINNESOTA, FISCAL YEARS 1980-1982 (CONTINUED)

| Kind of Tax | 1980 | | 1981 | | 1982 | |
|----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | Revenue (\$000) | Percent of Total | Revenue (\$000) | Percent of Total | Revenue (\$000) | Percent of Total |
| In Lieu of Property Taxes | | | | | | |
| Motor Vehicle Licenses | 128,293 | 3.96 | 140,845 | 4.15 | 152,889 | 4.01 |
| Aircraft Licenses | 1,455 | 0.04 | 1,447 | 0.04 | 1,186 | 0.03 |
| Airflight Property | 4,293 | 0.13 | 4,442 | 0.13 | 3,873 | 0.10 |
| Licenses and Permits | | | | | | |
| Motor Vehicle Operators | 6,233 | 0.19 | 8,002 | 0.24 | 11,527 | 0.30 |
| Hunting and Fishing | 13,416 | 0.41 | 16,111 | 0.47 | 16,819 | 0.44 |
| Others | 39,816 | 1.23 | 43,679 | 1.28 | 44,879 | 1.18 |
| TOTAL REVENUE | 3,242,684 | 100.00 | 3,396,930 | 100.00 | 3,809,695 | 100.00 |

SOURCE: Minnesota Department of Revenue, Minnesota Tax Handbook: A Profile of State and Local Taxes In Minnesota 1982 Edition, Research Office, St. Paul, August 1982; and Minnesota Department of Revenue, Addendum To 1982 Minnesota Tax Handbook, Research Office, St. Paul, September 1983.

State Revenue Sources.

1. State Personal Income Tax: The state personal income tax estimator is 3.43 percent of total personal income. This was derived by dividing total personal income tax collections for 1978 to 1982 (\$6,586,447,000) by the estimated total personal income for those years (\$192,250,955,000).³⁵ The Minnesota legislature enacted an income surtax of 7 percent for 1982 which was later increased to 10 percent and extended through 1983.³⁶ Minnesota will most

³⁵Minnesota Department of Revenue, Addendum To The 1982 Minnesota Tax Handbook, Research Office, St. Paul, September 1983; Minnesota Department of Revenue, Minnesota Tax Handbook: A Profile of State and Local Taxes In Minnesota 1982 Edition, Research Office, St. Paul, August 1982; Minnesota Department of Revenue, Minnesota Tax Handbook: A Profile of State and Local Taxes In Minnesota 1980-81 Edition, Research Office, St. Paul, January 1981; Minnesota Department of Economic Development and Revenue, 1979 Minnesota Tax Guide, Research Office, St. Paul, 1979; and Department of Revenue, 1981 Minnesota State Individual Income Tax, Bulletin No. 58, Commission of Revenue, St. Paul, August 1983.

³⁶Minnesota Department of Revenue, 1982, op. cit.; Minnesota Department of Revenue, 1983, op. cit.

TABLE 19. LOCAL TAX COLLECTIONS AND PERCENT OF TOTAL, MINNESOTA, FISCAL YEARS 1980-1982

| Kind of Tax | 1980 | | 1981 | | 1982 | |
|------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | Revenue (\$000) | Percent of Total | Revenue (\$000) | Percent of Total | Revenue (\$000) | Percent of Total |
| Property Taxes | | | | | | |
| Real Property | 1,286,912 | 87.55 | 1,324,958 | 86.41 | 1,644,145 | 87.65 |
| Personal Property | 48,426 | 3.29 | 47,563 | 3.10 | 61,222 | 3.26 |
| Special Assessments | 85,185 | 5.80 | 111,263 | 7.26 | 125,290 | 6.68 |
| Mobile Home Property | 5,277 | 0.36 | 3,402 | 0.22 | 4,113 | 0.22 |
| Tree Growth | 227 | 0.02 | 270 | 0.02 | 272 | 0.01 |
| Auxiliary Forest | 18 | -- | 42 | -- | 55 | -- |
| Rural Powerlines | 12,520 | 0.85 | 13,051 | 0.85 | 5,450 | 0.29 |
| Sales Taxes | | | | | | |
| Bloomington | 1,277 | 0.09 | 1,532 | 0.10 | 1,715 | 0.09 |
| Duluth | 4,583 | 0.31 | 4,624 | 0.30 | 4,665 | 0.24 |
| Minneapolis | 3,236 | 0.22 | 2,416 | 0.16 | 2,319 | 0.12 |
| Rochester | 678 | 0.05 | 741 | 0.05 | 791 | 0.04 |
| St. Paul | 331 | 0.02 | 375 | 0.03 | 427 | 0.02 |
| St. Cloud | 48 | -- | 116 | 0.01 | 143 | 0.01 |
| Stadium Commission | 3,193 | 0.22 | 3,077 | 0.20 | 3,348 | 0.18 |
| Gross Earnings Taxes | | | | | | |
| Minneapolis | 5,380 | 0.36 | 6,167 | 0.40 | 7,080 | 0.38 |
| St. Paul | 12,446 | 0.85 | 13,532 | 0.88 | 14,491 | 0.77 |
| Sand and Gravel Taxes | | | | | | |
| | 122 | 0.01 | 154 | 0.01 | 191 | 0.04 |
| TOTAL REVENUE | 1,469,859 | 100.00 | 1,533,283 | 100.00 | 1,875,717 | 100.00 |

SOURCE: Minnesota Department of Revenue, Minnesota Tax Handbook: A Profile of State and Local Taxes In Minnesota 1982 Edition, Research Office, St. Paul, August 1982; and Minnesota Department of Revenue, Addendum To The 1982 Minnesota Tax Handbook, Research Office, St. Paul, September 1983.

likely repeal the income surtax for the 1984 tax year. Disposition of Minnesota income tax is to the State General Fund.

2. State Corporate Income Tax: The corporate income tax estimator is 0.32 percent of the gross business volume of all business sectors. This was determined by comparing the corporate income tax collections for the years 1978 to 1982 (\$1,529,844,000) to the estimated gross business volume of all business

sectors (\$477,281,522,000) for those years.³⁷ All state corporate income tax revenues are deposited in the state general fund.

3. State Sales and Use Tax: The state sales and use tax estimator is 2.44 percent of the gross business volume of the retail trade sector. This estimator was derived by comparing the 1978 to 1982 sales and use tax collections (\$3,373,928,000) to the estimated gross business volume of the retail trade sector (\$138,387,983,000) for the same years.³⁸

Minnesota sales tax applies on the retail sale and rental of tangible personal property. Major exemptions from the sales tax are as follows: food for consumption off premises, clothing, drugs and medications, gasoline, publications issued at intervals of three months or less, motor vehicles, materials used or consumed in agricultural or industrial production, text books, and home heating fuels from November through April. Currently, the only tax on electricity generated in Minnesota (e.g., nuclear generation facilities at Monticello and Prairie Island) is sales tax, which allows the exemptions previously mentioned. The sales tax rate was 5 percent until the 1982 Legislature increased it to 6 percent.³⁹ State sales tax revenues are deposited in the State General Fund.

4. Other State-Collected Taxes: The various highway, liquor, and cigarette and tobacco taxes were estimated on a per capita basis. Per capita estimates were determined from actual tax collections and census

³⁷Minnesota Department of Revenue, 1983, op. cit.; Minnesota Department of Revenue, 1982, op. cit.; Minnesota Department of Revenue, 1981, op. cit.; and Minnesota Department of Economic Development and Revenue, 1979, op. cit.

³⁸Minnesota Department of Revenue, 1983, op. cit.; Minnesota Department of Revenue, 1982, op. cit.; Minnesota Department of Revenue, 1981, op. cit.; and Minnesota Department of Economic Development and Revenue, 1979, op. cit.

³⁹Minnesota Department of Revenue, 1983, op. cit.

populations.⁴⁰ Highway taxes were defined, for purposes of this study, to include revenues from motor vehicle excise tax, highway fuel tax, motor vehicle recycling tax, motor vehicle licenses, and motor vehicle operators permits. The disposition of highway taxes is as follows: motor vehicle excise tax (State General Fund); highway fuel tax (99.25 percent to Highway Users Fund and 0.75 percent to Department of Natural Resources); license and permits (Highway User Tax Distribution Fund).⁴¹

Cigarette and tobacco tax is the levy of 18 cents per pack of cigarettes, 20 percent of wholesale price of cigars, smoking tobacco, chewing tobacco, and tobacco products other than cigarettes, and cigarette distribution licenses.⁴² Revenues from cigarette tax are distributed 89 percent to the State General Fund, 5-1/2 percent to Natural Resources, and 5-1/2 percent to Natural Resources Acceleration Account, while all taxes collected from the tobacco products tax go to the State General Fund. The liquor tax includes the revenues from levies on intoxicating liquor, fermented malt beverages, wine, and alcoholic beverage licenses. All funds from the liquor tax are deposited in the State General Fund. The per capita estimates, in 1980 prices, for the various taxes were:

| | |
|-----------------------------|----------|
| Highway Taxes | \$110.38 |
| Cigarette and Tobacco Taxes | \$ 21.46 |
| Liquor Taxes | \$ 13.48 |

⁴⁰Minnesota Department of Revenue, 1983, op. cit.; Minnesota Department of Revenue, 1982, op. cit.; Minnesota Department of Revenue, 1981, op. cit.; Minnesota Department of Economic Development and Revenue, 1979, op. cit., and Bureau of Census, Census of Population--General Social and Economic Characteristics, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1970, 1980, and 1981.

⁴¹Minnesota Department of Revenue, 1983, op. cit.; and Minnesota Department of Revenue, 1982, op. cit.

⁴²Ibid.

5. Severance and Tonnage Tax: Minerals mined in Minnesota are subject to three state taxes: royalty, occupation, and production.⁴³ In addition to the state taxes, local property taxes apply on certain types of minerals. Minerals subject to royalty taxes are iron ore, taconite, semi-taconite, iron-sulphides, copper-nickel ores, and other ores.⁴⁴ Occupation and production taxes are levied against three mineral groups: iron ore; taconite, semi-taconite; and copper-nickel ores. Tax base, tax rate, and disposition of revenues for the three Minnesota mineral taxes are summarized in Table 20. The three mineral taxes will be discussed in detail below.

- a. Royalty Taxes: Taxes were first imposed on iron ore royalties in 1923 at a rate of 6 percent. Most recent changes in the royalty tax laws were in 1967 when copper-nickel royalties were taxed at 1 percent and in 1971 when royalty tax on taconite was increased to 15 percent and iron ore to 15.5 percent.⁴⁵ All royalties received in connection with exploration or mining are taxed. The tax rate is 15.5 percent for iron ore, 15.0 percent for taconite and semi-taconite, and 1 percent for copper-nickel ore. All revenues from royalty taxes are deposited in the State General Fund.
- b. Occupation Taxes: Value of minerals mined or produced in Minnesota are subject to occupation taxes. Taxes are levied on value of minerals mined or produced less certain statutory or nonstatutory deductions at a rate of 15.5 percent for iron ore, 15.0 percent for taconite and semi-taconite, and 1 percent for

⁴³Minnesota Department of Revenue, 1982, op. cit.

⁴⁴Other ores include silver, gold, platinum, and other precious metals.

⁴⁵Minnesota Department of Revenue, 1982, op. cit.

TABLE 20. BASE AND RATE FOR TAXES LEVIED AGAINST MINERALS, AND DISPOSITION OF FUNDS, MINNESOTA, 1982

| Tax | Mineral | Tax Base | Tax Rate | Disposition |
|------------------|----------------------------|--|----------|---|
| Royalty Taxes | Iron Ore | Royalties received in connection with exploration or mining | 15.5% | State General Fund |
| | Taconite, Semi-Taconite | Royalties received in connection with exploration or mining | 15.0% | State General Fund |
| | Copper-Nickel ^a | Royalties received in connection with exploration or mining | 1.0% | State General Fund |
| Occupation Taxes | Iron Ore | Value of minerals mined less ^b certain deductions | 15.5% | State General Fund with 40% earmarked for elementary and secondary schools, 10% for University of Minnesota, and a constant dollar amount (5% of 1977 proceeds) to Iron Range Resource Rehabilitation Board (IRRRB) |
| | Taconite, Semi-Taconite | Value of minerals mined less ^c certain deductions | 15.0% | State General Fund with 40% earmarked for elementary and secondary schools, 10% for University of Minnesota, and a constant dollar amount (5% of 1977 proceeds) to Iron Range Resource Rehabilitation Board (IRRRB) |

- continued -

TABLE 20. BASE AND RATE FOR TAXES LEVIED AGAINST MINERALS, AND DISPOSITION OF FUNDS, MINNESOTA, 1982
(CONTINUED)

| Tax | Mineral | Tax Base | Tax Rate | Disposition |
|------------------|-----------------------------|--|-------------------------|---|
| Occupation Taxes | Copper-Nickel | Value of minerals mined Ores less ^d certain deductions | 1.0% | State General Fund with 40% earmarked for elementary and secondary schools, 10% for University of Minnesota, and a constant dollar amount (5% of 1977 proceeds) to Iron Range Resource Rehabilitation Board (IRRRB) |
| Production Taxes | Taconite and Iron Sulphides | Extracted Tonnage | \$1.25/ton ^e | \$0.25/ton--taconite cities and towns \$0.123/ton--taconite municipal aid account \$0.06/ton--taconite schools \$0.23/ton--schools qualifying for taconite homestead credit in direct proportion to their lives \$1.55/ton--taconite counties \$0.04/ton--taconite counties road and bridge fund \$0.2575/ton--taconite homestead credit \$0.01/ton--State General Fund \$0.03/ton--IRRRB \$0.02/ton--Range Association of Municipalities and Schools (Remaining revenues go to the Taconite Environmental Protection Fund and the Northeast Protection Fund) |

- continued -

TABLE 20. BASE AND RATE FOR TAXES LEVIED AGAINST MINERALS, AND DISPOSITION OF FUNDS, MINNESOTA, 1982
(CONTINUED)

| Tax | Mineral | Tax Base | Tax Rate | Disposition |
|------------------|---------------|-------------------|---|---|
| Production Taxes | Semi-Taconite | Extracted Tonnage | Sintered in Minnesota-- \$0.05 per gross ton plus 1/10 of \$0.01 for each 1% that iron content exceeds 55% | Various taxing districts in which semi-taconite is located as follows: city or town--22% school districts--50% county--22% State General Fund--6% |
| | | | Sintered outside Minnesota--\$0.10 per gross ton plus 1/10 of \$0.01 per gross ton for each 0.5% that the iron content exceeds 55% | |
| | Copper-Nickel | Extracted Tonnage | \$0.25 per gross ton plus 10% of base tax per ton for each 1/10 of 1% that the average copper-nickel exceeds 1% ^f | Various taxing districts in which copper-nickel is located as follows: city or town--22% school district--50% county--22% State General Fund--6% |

^aA 1% tax also is levied on royalties paid on silver, gold, platinum, and other precious metals.

^bThe minimum rate less labor credit is 14.0%.

^cThe minimum rate less labor credit is 6.75%.

^dThe minimum rate less labor credit is 1.0%.

^eAfter 1977, the base rate increases with changes in steel mill products index. An additional tax of 1.6% is imposed for each percent that the iron content of the product exceeds 62%. The 1981 average rate is \$1.92 per taxable ton.

^fThis composite rate is subject to increase proportional to changes in the current year average monthly wholesale price index above the 1967 index.

SOURCE: Minnesota Department of Revenue, Minnesota Tax Handbook: A Profile of State and Local Taxes In Minnesota, 1982 Edition, Research Office, St. Paul, August 1982.

copper-nickel ores.⁴⁶ Statutory deductions for iron ore included costs of development, mining labor and supplies, administrative expenses, royalty, depreciation of mine plant and equipment, and ad valorem taxes on ore mined. Iron ore nonstatutory deductions are the cost of beneficiation, including labor, supplies, depreciation, interest, plus allowances for stockpile loading, transportation, and marketing. Occupation tax credits are allowed for iron ore for labor which may reduce the effective tax rate to approximately 14.0 percent. Other credits are allowed for research, experimentation and exploration, pollution control, a loss mine (a mine where the iron ore is sold for less than the cost of mining), and price discounting.

Deductions are allowed for processing costs for taconite, semi-taconite, and iron sulphide. A credit is allowed for labor which can reduce the minimum tax rate to 6.75 percent. Additional credits are allowed for (1) research, experimentation and exploration, and (2) pollution control equipment.

Copper-nickel credits are allowed for processing the ore within the state and for research, experimentation, and exploration. Maximum and minimum tax rates for iron ore (15.5 percent and 14.0 percent), taconite and semi-taconite (15.0 percent and 6.75 percent), and copper-nickel ores (1.0 percent and 1.0 percent) have remained unchanged since 1971.⁴⁷ Disposition of occupation tax revenues is earmarked for many funds with education being a primary benefactor (Table 20).

⁴⁶Ibid.

⁴⁷Ibid.

c. Production Taxes: Tonnages of taconite, iron sulphide, semi-taconite, and copper-nickel ores extracted in Minnesota are subject to production taxes. This tax was first imposed in 1881 with increases in the rate occurring frequently. Latest change in this tax was in 1977 when the tax was indexed, based on the price of steel.⁴⁸ Taconite and iron sulphide have a base tax rate of \$1.25 per gross ton with an additional 1 to 6 percent tax imposed for each percent that iron content of the product exceeds 62 percent. Semi-taconite sintered in Minnesota is taxed at a rate of \$.05 per gross ton plus 1/10 of \$.01 for each 1 percent that the iron content exceeds 55 percent, while that sintered outside Minnesota is taxed at a rate of \$.10 per gross ton plus 1/10 of \$.01 per gross ton for each 0.5 percent that the iron content exceeds 55 percent. Base rate for copper-nickel is \$.025 per gross ton plus 10 percent of the base tax per ton for each 1/10 of 1 percent that the average copper-nickel content per ton exceeds 1 percent. This composite rate is subject to increase proportional to changes in the current year average monthly wholesale price index above the 1967 index. Most of the revenues from production taxes are distributed to the areas where the mining occurs (for a detailed breakdown of disposition, see Table 20).

Local Revenue Sources.

1. Ad Valorem Property Tax: The local property tax estimator is 2.21 percent of the market value of the property. This estimator was based on the 1982 state average sales assessment ratio of 23.99 percent and the state

⁴⁸Ibid.

average mill rate of 92.10.⁴⁹ Added property tax revenue was determined by applying the estimator to the projected market value of new business structures and residences.

The estimated investment cost for houses, apartments, and business structures was used as estimated market value for those structures, and the market value for mobile homes was estimated at one-half the purchase price. Capital investment in business structures was estimated by Prestgard⁵⁰ at \$0.22 per dollar of gross business volume. The estimates of investment cost per unit in 1980 prices were equivalent to those used in the North Dakota version:

| | |
|--------------|----------|
| Houses | \$59,157 |
| Apartments | \$26,162 |
| Mobile Homes | \$13,392 |

Minnesota also subjects mined and unmined minerals to the ad valorem property tax. Unmined iron ore is assessed at 50 percent of market value, while low recovery iron is assessed in a range of 30 to 48-1/2 percent.⁵¹ The 1982 state average sales assessment ratio for minerals is 49.59 percent. Using the state average mill rate, a local mineral property tax estimator of 4.57 percent of market value was determined. Applying the estimator to the market value of minerals will yield an estimate of local property tax.

In 1982, Minnesota property tax revenues were distributed in the following manner:⁵²

⁴⁹Department of Revenue, Property Taxes Levied in Minnesota: 1982 Assessments--Taxes Payable in 1983, Property Tax Bulletin No. 12, St. Paul, 1983.

⁵⁰Prestgard, P. G., "Effect of Coal Development on Public Costs in North Dakota," Unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, 1974.

⁵¹Minnesota Department of Revenue, 1982, op. cit.

⁵²Minnesota Department of Education, The ABC's of Minnesota School Finance--Paying for the Schools in 1982-1983, Published by the Publications and Public Information Section, St. Paul, 1983.

| <u>Disposition</u> | <u>Percent</u> |
|--------------------|----------------|
| Schools | 49 |
| Counties | 28 |
| Municipal | 17 |
| Special Districts | 4 |
| Township | 2 |

2. Local Sales Tax: Minnesota has a statutory prohibition against the imposition of any local sales or income tax without the specific legislative authorization. Therefore, there is no local optional sales tax. Local sales taxes specifically authorized are described in Table 21. The most common local sales tax is 3 percent on lodging, although Duluth has a more extensive base and a higher rate and Minneapolis has a Stadium Commission tax. All receipts from local sales taxes go to local governments, except the Stadium Commission revenue which goes to the Metropolitan Sports Facilities Commission.⁵³

3. Transportation Aid: Highway aid is financed from state gasoline tax and motor vehicle license fees. It is distributed through the County State Aid Highway Fund and the Municipal State Aid Street Fund. State transfers, in 1980 dollars, as a per capita share of state highway taxes were:⁵⁴

County Share Per Capita = \$73.65
Municipal Share Per Capita = \$12.17

4. Educational Fund Transfers From State: Transfers from the state to local school districts were in the form of foundation aid, special education aid, and transportation aid. The state formula allowed for a 1982-1983 per pupil unit (.5 for kindergarten, 1.0 for grades 1-6, and 1.4 for grades 7-12)

⁵³Minnesota Department of Revenue, 1982, op. cit.

⁵⁴Minnesota Department of Revenue, 1982, op. cit.

TABLE 21. TAX BASE AND RATE FOR LOCAL SALES TAX, AND DISPOSITION OF REVENUES, BY CITY, MINNESOTA, 1982

| City | Tax Base | Rate | Disposition |
|--------------------|---|--|---|
| Duluth | Retail sale and rental of tangible personal property | 1% piggyback, 3% additional on lodging, plus 1% additional on certain food and beverage and lodging establishments | local government |
| Bloomington | Sales of transient lodging | 3% | local government |
| Minneapolis | Sales of transient lodging, admissions and amusements | 3% | local government |
| Rochester | Sales of transient lodging | 3% | local government |
| St. Cloud | Sales of transient lodging | 3% | local government |
| St. Paul | Sales of transient lodging | 3% | local government |
| Stadium Commission | Sales of transient lodging and liquor receipts | 3% ^a | Metropolitan Sports Facilities Commission |

^aAuthority has been given to the Metropolitan Sports Facility Commission to tax lodging and liquor receipts at a variable rate, currently 3 percent, in the city of Minneapolis.

SOURCE: Minnesota Department of Revenue, Minnesota Tax Handbook: A Profile of State and Local Taxes in Minnesota 1982 Edition, Research Office, St. Paul, August 1982.

revenue of \$1,346.⁵⁵ State basic foundation aid is calculated using the following formula:

$$\begin{aligned} \text{STATE BASIC FOUNDATION AID} &= (\text{BASIC FOUNDATION REVENUE}) - (\text{LOCAL BASIC MAINTENANCE LEVY}) \\ &= (\text{TOTAL PUPIL UNITS X FORMULA ALLOWANCE}) \\ &\quad - (\text{BASIC MAINTENANCE MILL RATE X EQUILIZATION AID REVIEW COMMITTEE VALUATION}) \end{aligned}$$

Because state foundation aid would vary for each school district with the assessed valuation of real property, state average per pupil unit transfers were estimated. Transfers were estimated in 1980 dollars for kindergarten, elementary, and secondary students as follows:⁵⁶

| <u>Grade</u> | <u>Pupil Unit</u> | <u>Transfer/Pupil Unit</u> | <u>Transfer/Pupil</u> |
|--------------|-------------------|----------------------------|-----------------------|
| K | 0.5 | \$781.16 | \$ 390.58 |
| 1-6 | 1.0 | 781.16 | 781.16 |
| 7-12 | 1.4 | 781.16 | 1,093.62 |

5. Local Aids and Shared Taxes Transfer From State: State transfers to local governments are classified as local aids (Local Government Aid, Homestead Credit Aid, Taconite Homestead Credit Aid, Attached Machinery Aid, and Agricultural Aid to School Districts) and shared taxes (Mortgage Registry Tax Aid and Estate Tax Aid). Transfers estimated in 1980 dollars as a per capita share of state local aid and shared taxes were:⁵⁷

County Share Per Capita = \$ 91.93
Municipal Share Per Capita = \$232.07

⁵⁵Minnesota Department of Education, 1983, op. cit.

⁵⁶Ibid.

⁵⁷Minnesota Department of Revenue, 1982, op. cit.

6. Taconite Production Tax Aid Transfer From State: (See State Revenues, Severance and Tonnage Taxes section).

7. Federal Revenue Sharing Transfers: Federal government transfers of general revenue sharing funds were to county and municipal governments. Per capita estimates in 1980 dollars of average federal revenue sharing transfers for counties and municipalities were:⁵⁸

| | |
|----------------|-----------|
| Counties | = \$80.53 |
| Municipalities | = \$81.04 |

8. User Fees: User fees were estimated on the basis of average per household expenditures for water, sewer, and solid waste disposal using Minnesota data. The total average annual user fee per household for these items was estimated at \$153.02 in 1980 dollars for Minnesota.⁵⁹

9. Special Assessments: Revenues from special assessments are estimated by amortizing the capital investments for streets, water, sewer, and solid waste disposal at a 7 percent interest rate for 20 years.⁶⁰

Cost Estimation

The effect of a development project on local government costs is determined by a number of factors, with the extent of local population growth and level of excess capacity in local public service infrastructure being the

⁵⁸Bureau of the Census, Governmental Finances in 1981-82, U.S. Department of Commerce, Government Finances, GF82, No. 5, U.S. Government Printing Office, Washington, D.C., 1983.

⁵⁹Bureau of the Census, 1977 Census of Governments: Finances of Municipalities and Township Governments, U.S. Department of Commerce, GC77(4)-4, Government Finances Volume 4, Number 4, U.S. Government Printing Office, Washington, D.C., May 1979.

⁶⁰Chase, Robert A., Randal C. Coon, F. Larry Leistritz, and William Ransom-Nelson, Fiscal Impact Analysis of Repository Siting In Nevada: Adaptation of the SEARS Model Fiscal Component to the Nevada Test Site, Final Report Submitted to the MITRE Corporation, Department of Agricultural Economics, Agricultural Experiment Station, North Dakota State University, Fargo, September 1983.

most important. A description of cost calculations and cost estimating equations is presented below.

State Costs.

1. Educational Fund Transfers to School Districts: Cost to the state was estimated as the total of per pupil payments (see the local revenue, educational fund transfers from the state section).

2. Highway System Operating Expenditures: Increased operating costs for all highway department functions were estimated on a per capita basis to be \$218.87 in 1980 dollars.⁶¹

3. General Government Functions: The cost of general government functions was determined by subtracting education, transportation, and insurance trust expenditures from total direct expenditures for state government in Minnesota. These costs were estimated on a per capita basis to be \$422.07 in 1980 dollars.⁶²

4. Highway Improvement Costs: Capital costs for highway improvement were estimated on the basis of a per worker immigrating operating worker cost of \$29,987 in 1980 prices and adjusted for inflation annually.⁶³ Costs were assumed to be funded annually and computed on the basis of immigrating operating workers that are additional to the previous year.

5. Highway Fund Transfers to Local Governments: Cost to the state is equal to the county government's increased revenue from this source. (See local revenue section in referring to this transfer payment.)

⁶¹Minnesota Department of Revenue, 1982, op. cit.

⁶²Bureau of the Census, 1983, op. cit.

⁶³Leistritz, F. Larry et al., 1982, op. cit.

Local Costs.

1. Schools: Operating expenditures were estimated as a cost per pupil in 1980 prices where both elementary and secondary per pupil costs were determined to be \$1,382.88.⁶⁴ Expansion costs (i.e., capital investment) were estimated on the basis of \$57 per square foot in 1980 prices. Standards used for required per pupil space were 145 square feet for secondary and 92.5 for elementary.⁶⁵

2. Streets: Operating costs were estimated on the basis of \$4,435 per mile in 1980 prices.⁶⁶ These were assumed to remain constant for all city sizes. The relevant cost per mile is multiplied by the number of new street miles required for a given level of population growth. Expansion requirements for streets were estimated at .0033 miles of street per person, assuming a population at 15 persons per acre in blocks 300 by 300 feet with 50-foot wide streets. Expansion costs (capital investment) were estimated at \$324,486 per mile in 1980 dollars.⁶⁷

3. Distribution and Treatment of Water: Expansion costs of water distribution and treatment facilities were estimated at \$2,306 per capita in 1980 dollars.⁶⁸

⁶⁴Minnesota Department of Education, 1983, op. cit.

⁶⁵Murdock, Steve H., F. Larry Leistritz, Rita Hamm, Robert Chase, and Barbara Kiel, The Socioeconomic Analysis of Repository Siting (SEARS): Technical Description, A Report to the Office of Nuclear Waste Isolation, Battelle Columbus and Department of Energy, Department of Rural Sociology, Texas A&M University, College Station, 1982.

⁶⁶Murdock, Steve H. et al., 1982, op. cit.

⁶⁷Ibid.

⁶⁸North Central Consultants, Inc., Representative Costs of Public Facilities In Energy Development Areas, Working Paper, Jamestown, North Dakota, 1974.

4. Waste-Water Systems and Treatment: Expansion costs of waste-water systems and treatment facilities were estimated at \$246 per capita in 1980 dollars.⁶⁹

5. Solid Waste Disposal: Expansion costs for waste disposal were estimated at \$5.57 per capita in 1980 dollars.⁷⁰

6. Law Enforcement, Fire Protection, and Other Local Government: Operational expenditures for county government functions were estimated on a per capita basis using Minnesota values.⁷¹ The following values were used to estimate regional per capita expenditures in 1980 dollars for city and county services in Minnesota:

- a) City fire protection \$ 22.26
- b) City police protection . . . \$ 39.14
- c) City operating costs \$ 28.38
- d) County social services . . . \$166.46
- e) County law enforcement . . . \$ 21.40
- f) County operating services . \$ 37.15
- g) County highway \$ 52.87

Evaluation of the Model

An important factor in determining a model's usefulness is its degree of reliability in simulating socioeconomic changes in the study region. Confidence in a given impact assessment model can be gained in three general ways: (1) critically assessing its theoretical basis, assumptions, data

⁶⁹Ibid.

⁷⁰Ibid.

⁷¹Bureau of the Census, 1979, op. cit.; and Bureau of the Census, 1977 Census of Governments: Finances of County Government, U.S. Department of Commerce, GC77(4)-3, Governmental Finances Volume 4, Number 3, U.S. Government Printing Office, Washington, D.C., May 1979.

sources, and computational procedures; (2) investigating its response to perturbations; and (3) testing its ability to reproduce historical data.⁷² Most impact assessment models, including NEDAM, have been subjected to the first two types of evaluation. The third general form, historical simulation, was used in evaluating the performance of the Minnesota version of NEDAM. This method involves choosing a past period for which the values of the variables estimated by the model are known. The model was provided with the historical values of the input variables and simulated over this period. The resultant values estimated by the model then were compared to the actual values by applying a number of statistical tests (including Theil's U_1 coefficient, mean absolute error, mean error, and R^2 coefficient)⁷³ to evaluate the "goodness of fit."

The NEDAM adaptation to Minnesota was evaluated by determining how closely the model reproduces historical personal income as reported by the Department of Commerce.⁷⁴ In brief review, the model estimates personal income for each of the years (1960-1982) for the 11 regions and Minnesota using input-output techniques. The interdependence coefficients developed elsewhere in North Dakota⁷⁵ and northwestern Colorado⁷⁶ were applied to final

⁷²Leistritz, F. Larry, Steve H. Murdock, Donald M. Senechal, and Thor A. Hertsgaard, "Computerized Socioeconomic Impact Models: Usefulness and Limitations," Paper presented at Conference on Computer Models for Forecasting Socioeconomic Impacts of Growth and Development, Jasper, Alberta, April 1980.

⁷³Senechal, Donald M., "Analysis of Validity of North Dakota Input-Output Models," unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, 1971; and Martinez Salazar, Angel S., "A Methodology for the Evaluation of the Economic-Demographic Simulation Models," Unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, 1981.

⁷⁴Bureau of Economic Analysis, Personal Income by Place of Residence, Minnesota, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1962, 1965-1981.

⁷⁵Toman, et al., 1979, op. cit.; and Leistritz, et al., 1982 op. cit.

⁷⁶Gray, et al., 1981, op. cit.

demand vectors computed for the state or regions. These estimates of gross business volume (in the household sector row) for each economic sector (or column) are simply those levels of business activity generated by sales for final demand (i.e., exports). The gross business volume for the household sector, except for minor definitional differences, is equivalent to personal income. For each year, the total personal income generated in the region is the summation of personal incomes resulting from final sales (gross business volumes in the household sector row) by the column sectors.

The results of these calculations for each year were compared with estimates of personal income assembled by the Department of Commerce. These results for Minnesota and its 11 regions are presented in Table 22 (and Appendix B, Tables 100-110). The differences, expressed as percentages of the Department of Commerce estimates, indicate consistent patterns for each region and the state. A possible interpretation of this consistency is that the interdependence coefficients were simulating the economy correctly, although gross outputs of the respective sectors were occasionally slightly over- or underestimated.

Statistical tests were used to evaluate performance of the model. Results of these tests are presented for all 11 regions and the state (Table 23). Average absolute difference indicates more variation at the regional level than for the state as a whole, with all but one of the regions having less than a 15 percent difference. The mean average difference indicates that Regions 2, 4, and 8 were slightly underestimated while remaining regions were slightly overestimated. Minnesota personal income was overestimated by the adapted model by 1.04 percent during the 1960 to 1982 period. Standard deviations for the regions range from 3.89 to 10.19, and the state value is 3.20. Theil's coefficients for the regions range from 0.02 to 0.09, and the

TABLE 22. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 1, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|------------------------------|---------------------------------|--------------------------------|--------------------|
| 1960 | -- | 136,756 | -- |
| 1961 | -- | 133,616 | -- |
| 1962 | 136,812 | 143,624 | 5.0 |
| 1963 | -- | 139,029 | -- |
| 1964 | -- | 170,085 | -- |
| 1965 | 163,333 | 188,861 | 15.6 |
| 1966 | 159,552 | 192,581 | 20.7 |
| 1967 | 182,967 | 206,783 | 13.0 |
| 1968 | 178,508 | 214,625 | 20.2 |
| 1969 | 202,641 | 240,385 | 18.6 |
| 1970 | 254,407 | 239,452 | - 5.9 |
| 1971 | 274,174 | 292,432 | 6.7 |
| 1972 | 307,624 | 303,585 | - 1.3 |
| 1973 | 461,648 | 450,846 | - 2.3 |
| 1974 | 496,963 | 546,194 | 9.9 |
| 1975 | 457,556 | 526,437 | 15.1 |
| 1976 | 493,967 | 578,536 | 17.1 |
| 1977 | 518,831 | 621,120 | 19.7 |
| 1978 | 680,543 | 729,739 | 7.2 |
| 1979 | 682,414 | 818,906 | 20.0 |
| 1980 | 799,513 | 837,486 | 4.7 |
| 1981 | 893,712 | 1,026,715 | 14.9 |
| 1982 | -- | 982,633 | -- |
| Average Absolute Difference | | | 12.1 |
| Mean = 11.050 (S.D. = 8.441) | | | |
| U ₁ = 0.063 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

state value is 0.02. These values (all very close to 0.0) indicate the model performs quite well and can be used with confidence for predictive purposes.

The mean average difference indicates the sales for final demand for Regions 2, 4, and 8 were slightly underestimated. Regions 2 and 4 were underestimated by a very insignificant amount (about 1 percent or less), and Region 8 was low by only slightly over 3 percent. Underestimating sales for final demand for a region is quite possible when a major trade center is

TABLE 23. COMPARISON OF STATISTICAL TESTS FOR THE ECONOMIC-DEMOGRAPHIC MODEL PERSONAL INCOME ESTIMATION, MINNESOTA REGIONS 1-11 AND STATE, 1960-1982

| Region | Average Absolute Difference ^a | Mean Average Difference ^b | Standard Deviation ^c | Theil Coefficient ^d |
|--------|--|--------------------------------------|---------------------------------|--------------------------------|
| 1 | 12.11% | 11.05% | 8.44 | 0.06 |
| 2 | 3.47 | - 1.03 | 4.35 | 0.03 |
| 3 | 6.44 | 5.42 | 5.17 | 0.04 |
| 4 | 5.57 | - 0.12 | 6.94 | 0.04 |
| 5 | 10.34 | 10.34 | 6.49 | 0.06 |
| 6 | 4.63 | 3.91 | 4.40 | 0.02 |
| 7 | 14.12 | 14.12 | 7.16 | 0.07 |
| 8 | 4.09 | - 3.07 | 3.89 | 0.03 |
| 9 | 22.01 | 22.01 | 10.19 | 0.09 |
| 10 | 6.97 | 6.71 | 5.02 | 0.04 |
| 11 | 7.29 | 7.29 | 3.44 | 0.04 |
| State | 2.71 | 1.04 | 3.20 | 0.02 |

^aAverage absolute difference is the sum of the absolute values of the percent difference of I-0 estimates and historic data divided by the number of observations.

^bMean average difference is the sum of the percent difference of the I-0 estimate and historic data divided by the number of observations.

^cStandard deviation is for the difference of the I-0 estimate and historic data.

^dTheil's coefficient is calculated using the formula:
$$U_1 = \frac{\sqrt{\frac{1}{T} \sum (y_s - y_a)^2}}{\sqrt{\frac{1}{T} \sum (y_s)^2 + \frac{1}{T} \sum (y_a)^2}}$$

where: T = time period
 y_s = simulated value of Y
 y_a = actual value of Y

located within the area, as is Minneapolis-St. Paul in Region 8. Residents of other regions make expenditures, presumably in major trade centers, for those goods and services not available (perceived or actual) in their communities. Minneapolis-St. Paul also serves as a headquarters for many Midwest-based companies, is a major manufacturing area, and serves the Upper Midwest as a wholesale and retail trade center.

Regions 1, 5, and 7 were slightly overestimated (in the 10 to 15 percent range) with only Region 9 being overstated by more than 20 percent (22.0). All four regions overestimated were along Minnesota's western border. A possible explanation for overstating the economic base is that these regions are experiencing leakages of dollars across the border to North Dakota, South Dakota, or Iowa, in addition to the Minneapolis-St. Paul major trade center. The remaining regions (Regions 3, 6, 10, 11) in Minnesota were estimated quite accurately.⁷⁷ Only Regions 1, 7, and 9 had an absolute average error greater than 11 percent indicating the model estimates personal income very well. Statistical tests on results from all 11 regions indicate the model accurately replicates the Minnesota economy. State level estimates of personal income showed a very small overestimation for the 1960-1982 time period (mean average difference = 1.04 percent). Average absolute difference of state-level personal income estimates from the model and the Department of Commerce was 2.7 percent. This indicates the model was quite accurate for the historical time period.

Although the input-output model invariably underestimates or overstates personal income, the adapted version does appear to "track" consistently with the Department of Commerce data. The results of the principle ex post forecasting error statistic, Theil's inequality coefficient, indicate that the adapted model predicts quite well.⁷⁸ In spite of the slight downward bias in

⁷⁷The mean of the average differences for the four regions is 5.83 percent.

⁷⁸The average Theil U_1 coefficients for the 11 regions and the state were 0.05 and 0.02 respectively. This coefficient is a summary measure, bounded to the interval of 0 and 1. A value of 0 for U_1 indicates perfect prediction, while a value of 1 corresponds to perfect inequality (i.e., between the actual and predicted values). For further discussion on the Theil coefficient, see Leuthold, Raymond M., "On the Use of Theil's Inequality Coefficients," American Journal of Agricultural Economics, Vol. 57, No. 2, 1975, pp. 344-346; and Pindyck, Robert S. and Daniel L. Rubinfeld, Econometric Models and Economic Forecasts, Second Edition, McGraw-Hill, New York, 1981.

the historical comparison, this evaluation does not negate the model for use in impact analysis in the region with the Minneapolis-St. Paul major trade center.

Analyzing the transition from historic data to corresponding model-projected values gives another indication of model performance. Employment and population data were available for evaluating model performance. Employment data for historic and projected time periods were allocated to the economic sectors. The model calculates projected employment by sector, giving values to be compared to the historic employment of each sector. The 1960 to 1982 employment by sector trends compare very well with the 1983 to 2005 projection of employment by sector. Sector employment values tended to show some variations for the 1982 to 1983 period, but regional totals of the projected values were quite close to historic employment levels (Table 24, and Appendix B, Tables 111-121). These data indicate the model captures the economic trends quite well with respect to employment and avoids the problem of unrealistic increases or decreases in employment at the point of transition from historic to model-projected employments.

Conclusions and Implications

The conceptualization, design, development, and application of an integrated socioeconomic impact assessment model is clearly a formidable undertaking. The value of such modeling efforts is increased to the extent that they are applicable to other settings and to the extent that they provide, through the provision of timely and accurate information, useful inputs to the decision-making process. This report has attempted to address such issues by examining the adaptability and validity of one such modeling system.

TABLE 24. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 1, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|--------|--------|--------|--------|----------------------------|--------|--------|--------|--------|--------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 9,388 | 7,430 | 7,116 | 7,190 | 7,264 | 7,149 | 7,074 | 6,924 | 6,813 | 6,727 | 6,659 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 798 | 625 | 856 | 780 | 697 | 778 | 789 | 814 | 834 | 851 | 865 |
| (8) Lumber & Assoc Prod | 354 | 676 | 1,562 | 1,514 | 1,487 | 1,616 | 1,667 | 1,795 | 1,923 | 2,052 | 2,180 |
| (9) Ag Proc & Misc Mfg | 2,859 | 5,293 | 5,901 | 6,009 | 5,814 | 5,984 | 6,131 | 6,438 | 6,679 | 6,874 | 7,035 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 500 | 639 | 599 | 610 | 593 | 606 | 617 | 641 | 661 | 677 | 692 |
| (13) Comm & Pub Utilities | 568 | 466 | 659 | 672 | 653 | 664 | 670 | 683 | 694 | 702 | 709 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 3,143 | 4,251 | 5,533 | 5,660 | 5,628 | 5,710 | 5,908 | 6,356 | 6,746 | 7,088 | 7,390 |
| (16) Fin, Ins, Real Estate | 449 | 647 | 981 | 1,043 | 1,060 | 1,051 | 1,097 | 1,204 | 1,301 | 1,388 | 1,468 |
| (17) Bus & Pers Services | 489 | 791 | 1,132 | 1,199 | 1,216 | 1,200 | 1,274 | 1,458 | 1,642 | 1,825 | 2,008 |
| (18) Prof & Soc Services | 2,107 | 3,320 | 4,868 | 5,153 | 5,229 | 5,355 | 5,645 | 6,347 | 7,017 | 7,658 | 8,272 |
| (19) Government | 3,474 | 4,988 | 5,989 | 6,136 | 6,002 | 6,116 | 6,260 | 6,575 | 6,837 | 7,059 | 7,249 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 24,129 | 29,126 | 35,196 | 35,966 | 35,643 | 36,230 | 37,133 | 39,235 | 41,147 | 42,902 | 44,529 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base Region 1, there was no project employment.

In general, the results suggest that the model examined is adaptable to both sparsely populated rural areas and urban centers and appears to provide reliable projections of economic and demographic change. In contemplating future applications of this modeling system, however, potential users should carefully examine the assumptions inherent in the model's data base. In particular, the projected baseline sales to final demand for each region of interest and the specific development projects applicable to those regions should be carefully reviewed in light of recent events. While the assumptions concerning these factors currently incorporated in the model reflect the most recent information available to the authors, the dynamic nature of resource development in general and of energy markets in particular requires frequent review of assumptions concerning such activities. Should revisions in these assumptions prove desirable for some regions, the model's structure provides for easy alteration of the appropriate data files.

In summary, models such as the one described here are not a substitute for detailed understanding of local conditions, trends, and associated causal forces but rather offer a mechanism for operationalizing such knowledge. Thus, they have the potential to serve as powerful and flexible tools for planners and decision makers.

APPENDIX A

Procedures and Data Sources Used In The Economic Module

Essentially, the procedures and data sources used in the economic module apply to its central feature--the input-output model. This model tabulates and describes the linkages or interdependencies between various industrial groups or sectors within an economy. The input-output model assumes that the level of economic activity in a region is dependent upon its existing basic industries. These industries, which earn income from outside the region, often are termed the region's export base.

The general methods used in estimating and projecting economic activity from the input-output model are as follows:

1. Final Demand Vectors: Data collection of sales for final demand by the region's basic economic sectors;
2. Derivation of Interdependence Coefficients: Indicates the direct, indirect, and induced requirements of the economy's sectors;
3. Estimation of Gross Business Volumes: Multiplication of final demand vectors by interdependence coefficients;
4. Productivity Ratios: Division of gross business volumes by sectoral employment;
5. Baseline Activity Projections: Historic final demand vectors and productivity ratios are projected by regression techniques with results indexed to 1980 base year dollars.

The purpose of this appendix is to discuss these various procedures and present the data sources used in adapting the NEDAM model to Minnesota. The discussion begins with an overview of the procedures used in expanding the input-output model for Minnesota. Following this, the section is divided into the various economic sectors with each containing relevant data sources and a discussion of how the final demand vectors were determined.

Input-Output Model--Interdependence Coefficients

The North Dakota input-output technical and interdependence coefficients used in NEDAM were derived from actual expenditures data collected in 1965 for business firms, households, and units of government in southwestern North Dakota.¹ Energy-related sector coefficients were determined from survey data collected in 1976.² Three economic sectors were added to the model for Minnesota: metal mining, lumber and associated products, and metal processing. Sector delineation and associated Standard Industrial Classification (SIC) codes are presented in Table 3 of the text.

Similarities between the economic base of North Dakota and Minnesota allowed the transfer of input-output interdependence coefficients to Minnesota. Expanding the North Dakota model (17 economic sectors) to represent the Minnesota economy (20 economic sectors) was accomplished by obtaining technical and interdependence coefficients from a recent economic analysis of northwestern Colorado.³ As in North Dakota, these coefficients were derived from actual expenditures data collected in 1974. Similarities between the metal mining, lumber, and metal processing industries in Minnesota and northwestern Colorado justified the use of these coefficients for Minnesota.

¹Sand, L. D., "Analysis of Effects of Income Changes In Intersectoral and Intercommunity Economic Structure," Unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, 1968; Barch, B. L., "Analysis of Intersectoral and Intercommunity Structure in Southwestern North Dakota," Unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, 1968; and Senechal, D. M., "Analysis of Validity of North Dakota Input-Output Models," Unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, 1971.

²Hertsgaard, T. A., Randal C. Coon, F. Larry Leistritz, and Norman L. Dalsted, Developing Economic Impact Projection Models for the Fort Union Coal Region, EPA-908/4-77-009, Environmental Protection Agency, Denver, Colorado, June 1977.

³Gray, S. L., J. R. McKean, and J. C. Weber, The Economy of Northwestern Colorado: Description and Analysis, Technical Report No. 25, Colorado Water Resources Research Institute, Colorado State University, Fort Collins, 1981.

The North Dakota input-output interdependence coefficients, originally for a 13-sector model, were calculated using the following formula:

$$([I - A]_{13 \times 13})^{-1}$$

where: $A_{13 \times 13}$ = Technical coefficients table for 13 sectors;

I = Identity matrix (a matrix consisting of all zeros with the exception of ones in the diagonal).

Expenditure data from a survey of the energy-related industries yielded technical coefficients for four additional economic sectors. These 17-sector interdependence coefficients were calculated as follows:

$$\left[([I - A]_{13 \times 13})^{-1} \right]^{-1} = [I - A]_{13 \times 13}$$

$$I - [I - A]_{13 \times 13} = A_{13 \times 13}$$

The original 13-sector technical coefficients table ($A_{13 \times 13}$) was expanded to $A_{13 \times 17}$ by adding zeros to the matrix.

$$[A]_{13 \times 17} + [A]_{4 \times 17} = [A]_{17 \times 17}$$

where: $[A]_{4 \times 17}$ = Energy sectors technical coefficients table;

$[A]_{17 \times 17}$ = 17-sector technical coefficients table.

Thus, $I - [A]_{17 \times 17} = [I - A]_{17 \times 17}$

and $\left[[I - A]_{17 \times 17} \right]^{-1}$ = Interdependence coefficients for 17 sectors.

Similar methods were used to expand the North Dakota 17-sector input-output model to 20 economic sectors for Minnesota. The technical coefficients for Minnesota's 20-sector economy are presented in Table 4 of the text. Inverting the 20 X 20 technical coefficients matrix for Minnesota yielded the interdependence coefficients (Table 5 of the text).

Indexing

In order to reflect the real economic growth or decline of various sectors over time, the effects of economy-wide inflation must be controlled.

Inflation was removed from final demand vectors by utilizing a price index. The Implicit Price Index (IMP) was selected for this indexing (deflating) approach and used to calculate 1980 base dollar values. The use of the IMP as a deflator assumes that a single index was applicable for all sectors of the economy for a given year. The method is rather simple--dividing current year dollars by their respective IMP resulted in final demand vector values in 1980 base year dollars. Implicit price indices for 1960 to 1982 are presented in Appendix A, Table 1.⁴

Removing inflation from the final demand vectors also reflects real change in productivity ratios. Gross business volumes estimated from 1980 base final demand vectors were subsequently used in calculating productivity ratios. Thus, all economic baseline data in the economic model are expressed in terms of 1980 dollars.

Regression Techniques

Projecting final demand vectors and productivity ratios was done with regression analysis. A great number of regression analysis techniques exist to fit a projection equation (line) from the existing data. A data set can be fit with a straight line (linear regression) or with a curved line (log, quadratic, etc.). Linear regression is more acceptable for economic-demographic model projections as curvilinear regression equations often show very rapid changes in certain portions of their curves. Curvilinear regression equations tend to make projecting models act rather erratic.

The data in the Minnesota extension of NEDAM did not always yield acceptable linear regression equations for model projections (i.e., in some cases the R^2 values were very low). To obtain more acceptable linear

⁴U.S. Department of Commerce, Survey of Current Business, U.S. Government Printing Office, Washington, D.C., various issues.

APPENDIX TABLE 1. GROSS NATIONAL PRODUCT IMPLICIT PRICE DEFLATORS FOR 1967 AND 1980 BASE

| Year | GNP Implicit Price Deflators | |
|------|------------------------------|------------|
| | 1967 = 100 | 1980 = 100 |
| 1960 | 86.9 | 38.74 |
| 1961 | 87.7 | 39.10 |
| 1962 | 89.3 | 39.81 |
| 1963 | 90.7 | 40.44 |
| 1964 | 92.0 | 41.02 |
| 1965 | 94.1 | 41.95 |
| 1966 | 97.1 | 43.29 |
| 1967 | 100.0 | 44.58 |
| 1968 | 104.4 | 46.54 |
| 1969 | 109.8 | 48.95 |
| 1970 | 115.7 | 51.58 |
| 1971 | 121.4 | 54.12 |
| 1972 | 126.5 | 56.40 |
| 1973 | 133.7 | 59.61 |
| 1974 | 145.4 | 64.82 |
| 1975 | 158.8 | 70.80 |
| 1976 | 167.1 | 74.50 |
| 1977 | 176.9 | 78.87 |
| 1978 | 189.8 | 84.62 |
| 1979 | 205.9 | 91.80 |
| 1980 | 224.3 | 100.00 |
| 1981 | 247.3 | 110.23 |
| 1982 | 262.0 | 116.80 |

Source: U.S. Department of Commerce, Survey of Current Business, U.S. Government Printing Office, Washington, D.C., several issues.

regression equations, a regression technique called robust regression was used. Robust regression is a technique where observations near the regression line are weighted higher than those lying a substantial distance away from the line (for a complete description of robust regression, see Leistritz, et al., North Dakota Economic-Demographic Assessment Model (NEDAM): Technical Description, 1982). In addition to robust regression, a robust regression technique with an intercept adjustment was utilized.

Final Demand Vectors

Final demand vectors are sales for final demand by various sectors of the economy. Sectors included as final demand vectors in input-output analysis are referred to as "basic sectors" because they constitute the economic base of the area. The activities that constitute the "basic sectors" in the Minnesota economy include the production of livestock, crops, mining, lumber, and manufacturing within the area, as well as expenditures by the federal government and tourists in the area.

Final demand vectors were calculated for the period 1960 through 1982 at the regional level for Minnesota. Eleven economic regions were used for calculating the economic base in Minnesota (Figure 1 of the text). Basic sector final demand vectors were deflated using the IMP and projected to the year 2005 using linear regression techniques.

Data used in estimating the final demand vectors for the basic sectors in Minnesota were obtained from a wide variety of secondary sources and compiled at county and regional levels. The sources of data and methodology are described below for the basic economic sectors.

Agriculture, Livestock (Sector 1)

The agriculture, livestock final demand vector consists of total receipts from sale of livestock and livestock products. Livestock production data were published each year from 1960 to 1982 at the county level for Minnesota.⁵ State estimates of livestock income also were available for the same period.⁶ Annual livestock sales for Minnesota were allocated to counties

⁵Minnesota Agricultural Statistics Service, Minnesota Agricultural Statistics, U.S. Department of Agriculture, Statistical Reporting Service Cooperating with Minnesota Department of Agriculture, St. Paul, annual reports, 1961-1983.

⁶Ibid.

according to their portion of total state livestock production for each year during the time period. Minnesota's regional final demand vectors were obtained by adding livestock sales receipts for counties in each of the 11 regions.

Agriculture, Crops (Sector 2)

Total receipts for crops and government agricultural payments comprise the agriculture, crops final demand vector. Crop production data were published annually for Minnesota at the county level for 1960 through 1982.⁷ Crop sales and government payments for 1960 to 1982 also were available for Minnesota.⁸ Annual county share of state value of production for major commodities was used to allocate Minnesota's crop sales plus government payments to counties. The total crops receipts and government payments for each county in the region were added to obtain final demand vectors for each of Minnesota's 11 regions.

Metal Mining (Sector 3)

The metal mining final demand vector consists of value of sales of raw metals exported from the producing region. Iron ore is the major metal mined in Minnesota.⁹ Production by county and value of metals mined were available for 1960-1981.¹⁰ Data were not available for 1982 so a trend estimate was calculated. Metals not processed in Minnesota were assumed to be exported as a raw material. The values of metal exports were determined, and county values were aggregated to the regional level.

⁷Ibid.

⁸Ibid.

⁹Bureau of Mines, Minerals Yearbook, Area Reports: Domestic, Volume II, United States Department of the Interior, U.S. Government Printing Office, Washington, D.C., 1981.

¹⁰Bureau of Mines, Minerals Yearbook, Area Reports: Domestic, Volume II, United States Department of the Interior, U.S. Government Printing Office, Washington, D.C., 1960-1981.

Contract Construction (Sector 7)

The construction industry generates sales to final demand primarily in the form of highway construction funded by federal government revenues. The amount of federal expenditures for highway construction was available only at the state level for Minnesota between 1960 and 1967.¹¹ The procedure for reporting these data changed in 1967, and actual federal expenditures for Minnesota were available at county and state level from 1968 to 1980.¹² Federal government outlays for construction in the respective regions for 1960 to 1967 were estimated by allocating state totals on the basis of regional shares reported for 1968 to 1980. Federal expenditures for Minnesota were available for 1981 and 1982¹³ and then allocated to regions on the basis of regional shares reported for 1976 to 1980.

Lumber and Associated Products (Sector 8)

Total receipts from nonlocal sales of lumber and associated products constituted the final demand vector for Sector 8. State value of lumber and forest products was available for 1963 to 1982.¹⁴ Value of lumber and associated products for the earlier years was estimated based on information provided by industry officials.¹⁵ Data were not available to allocate the state

¹¹U.S. Treasury Department, Annual Report of the Secretary of the Treasury on the State of the Finances, U.S. Government Printing Office, Washington, D.C., 1960-1967.

¹²Office of Economic Opportunity, Federal Outlays in Minnesota, National Technical Information Service, U.S. Department of Commerce, Washington, D.C., 1968-1980.

¹³Bureau of the Census, Federal Expenditures by State for Fiscal Years 1981, 1982, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1981, 1982.

¹⁴Minnesota Forest Industries, Inc., Forest Industries Facts and Figures, Minnesota Forest Industries Information Committee, Duluth, 1963-1981; and Forest Industries Council, Minnesota Forest Productivity Report, 1979, Forest Productivity Project, Washington, D.C., 1979.

¹⁵Doug Ford, Telephone Interview, Forest Economist, Minnesota Department of Natural Resources, St. Paul, January 1984.

value of forest products to the regions, so employment in the industry was used.¹⁶ Approximately 90 percent of the lumber cut and lumber products manufactured were assumed to be sold outside the producing region.

Agricultural Processing and Miscellaneous Manufacturing (Sector 9)

Gross output of the agricultural processing and miscellaneous manufacturing sector consists principally of the value of manufacturing, although wholesaling activities also are included in this sector. State- or county-level data were not readily available for this sector. Estimates of total value added by manufacturing and wholesale trade were available at the county level for 1958, 1963, 1967, 1972, and 1977 for Minnesota.¹⁷ Linear extrapolation was used to estimate values for the missing years, and trend projections were used for the 1978 to 1982 period. Data were not available on exports of manufactured products or wholesale trade outside the local region. Estimates of manufactured products and wholesale trade exported were made based on manufacturing and population within each respective region. County data were summed to the regional level, and region value of exports constituted the agricultural processing and miscellaneous manufacturing final demand vector.

Retail Trade (Sector 15)

The retail trade final demand vector consists of three-fourths of the dollar volume of tourism expenditures in the area. The other one-fourth is

¹⁶Bureau of the Census, County Business Patterns Minnesota, United States Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1964-1981.

¹⁷Bureau of the Census, Census of Manufacturing, Minnesota, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1958, 1963, 1967, 1972, and 1977; and Bureau of the Census, Census of Wholesale Trade, Minnesota, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1958, 1963, 1967, 1972, and 1977.

assumed to be the business and personal service final demand vector. State-level tourism estimates were available for 1971 to 1981.¹⁸ Minnesota's tourism expenditures were available for 1974-1976, 1980, and 1981 at the county level.¹⁹ Trend estimates were obtained to backcast the 1971 value to 1960. County share of state tourism for 1974-1976, 1980, and 1981 was used to allocate tourism expenditures in Minnesota to the individual counties for 1960 to 1982. County tourism estimates were added to the regional level and three-fourths of that value yielded the retail trade final demand vector.

Business and Personal Services (Sector 17)

The final demand vector for business and personal services is simply the remaining tourism expenditures (25 percent) after allocation to retail trade.

Households (Sector 20)

The federal government generates basic income to the household sector through payrolls and transfer payments. Federal aid to states and individuals was published annually for Minnesota for 1960 to 1967.²⁰ Defense expenditures, veterans benefits, Old Age and Survivor's Insurance payments, Workman's Compensation, and the federal payroll also were included as basic income.²¹ The household sector final demand vectors for Minnesota were calculated by adding total grants (less highway construction), defense

¹⁸Department of Energy, Planning, and Development, Tourism Division, 1981 Minnesota Tourist-Travel Indicators, Minnesota Tourism Division, St. Paul, 1981.

¹⁹Ibid; Department of Economic Development, Gross Sales in Minnesota, Research Division, Minnesota Department of Economic Development, St. Paul, 1977; and Department of Economic Development, 1976 Lodging Receipts, Research Division, Department of Economic Development, St. Paul, 1976.

²⁰U.S. Treasury Department, 1960-1968, op. cit.

²¹Bureau of Economic Analysis, Personal Income by Place of Residence, Wyoming, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1958-1967.

expenditures (except for construction), veterans benefits, Old Age and Survivor's Insurance, Workman's Compensation, and federal payrolls.

Total federal expenditures were available on a county basis for 1968 to 1980 for Minnesota,²² but only state level expenditures were available for 1981 and 1982.²³ The final demand vector for 1968 to 1980 was calculated as follows: farm payments (included as income in Sector 2), construction outlays, and loans were subtracted from the total federal expenditures to obtain final demand vectors at county and state levels. The regional percentage of the state expenditures during the period 1968 to 1980 was used to allocate the household final demand vector to the regions for 1960 to 1967, and 1981 and 1982.

Employment

Minnesota's employment data were available at the state level for 1960 to 1982 by economic sector.²⁴ State employment data were disaggregated to the counties by creating allocators from County Business Patterns.²⁵ County employment was summed to the regional level to yield regional employment by sector for 1960 to 1982.

²²U.S. Department of Commerce, 1968-1980, op. cit.

²³U.S. Department of Commerce, 1981 and 1982, op. cit.

²⁴Minnesota Department of Economic Security, Minnesota Nonagricultural Wage and Salary Employment Hours and Earnings, Research and Statistical Services Office, in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics, St. Paul, April 1983; Minnesota Department of Economic Security, Minnesota Nonagricultural Wage and Salary Employment, Research and Statistical Services Office, St. Paul, 1950-1983; and U.S. Department of Commerce, Census of Agriculture, Minnesota, Bureau of the Census, U.S. Government Printing Office, Washington, D.C., 1959, 1960, 1969, 1974, and 1978.

²⁵Bureau of the Census, County Business Patterns, Minnesota, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1960-1981.

APPENDIX B
TABLES FOR REGIONS 2-11 AND MINNESOTA

APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980

| Region | County | | | | | City | | | | | |
|--------|----------------|------------|------------|--------|--------|-----------|-------------------|------------------|-------|-------|-------|
| | Number | Name | Population | | | Number | Name | Population | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | |
| 1 | 1 | Kittson | 8,343 | 6,853 | 6,672 | 1 | Hallock | 1,527 | 1,477 | 1,405 | |
| | 2 | Marshall | 14,262 | 13,060 | 13,027 | 2 | Karlstad | 720 | 727 | 934 | |
| | | | | | | 3 | Argyle | 789 | 739 | 741 | |
| | 3 | Pennington | 12,468 | 13,266 | 15,258 | 4 | Stephen | 858 | 904 | 898 | |
| | | | | | | 5 | Warren | 2,007 | 1,999 | 2,105 | |
| | 4 | Polk | 36,182 | 34,435 | 34,844 | 6 | Thief River Falls | 7,151 | 8,618 | 9,105 | |
| | 2 | 5 | Red Lake | 5,830 | 5,388 | 5,471 | 7 | Crookston | 8,546 | 8,312 | 8,628 |
| | | | | | | | 8 | East Grand Forks | 6,998 | 7,607 | 8,537 |
| | | 6 | Roseau | 12,154 | 11,569 | 12,574 | 9 | Erskine | 614 | 571 | 585 |
| | | | | | | | 10 | Fertile | 968 | 955 | 869 |
| 7 | | Aitkin | 12,162 | 11,403 | 13,404 | 11 | Fosston | 1,704 | 1,684 | 1,599 | |
| | | | | | | 12 | McIntosh | 785 | 753 | 681 | |
| 8 | | Beltrami | 23,425 | 26,373 | 30,982 | 13 | Oklee | 529 | 536 | 536 | |
| | | | | | | 14 | Red Lake Falls | 1,520 | 1,740 | 1,732 | |
| 20 | | Bemidji | 9,958 | 11,490 | 10,949 | 15 | Greenbush | 706 | 787 | 817 | |
| | | | | | | 16 | Roseau | 2,146 | 2,552 | 2,272 | |
| 21 | Blackduck | 765 | 595 | 653 | 17 | Warroad | 1,309 | 1,086 | 1,216 | | |
| | | | | | 18 | Aitkin | 1,829 | 1,553 | 1,770 | | |
| 22 | Lower Red Lake | NA | 2,675 | 2,855 | 19 | Hill City | 429 | 357 | 533 | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|---------|------------|------------|----------------|--------|----------------|-----------|------------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 2 | 9 | Cass | 16,720 | 17,323 | 21,050 | 23 | Cass Lake | 1,586 | 1,317 | 1,001 |
| | | | 24 | East Gull Lake | 311 | 440 | 586 | | | |
| | | | 25 | Lake Shore | 264 | 410 | 583 | | | |
| | | | 26 | Pine River | 775 | 803 | 881 | | | |
| | | | 27 | Walker | 1,180 | 1,073 | 970 | | | |
| | 10 | Clearwater | 8,864 | 8,013 | 8,761 | 28 | Bagley | 1,385 | 1,314 | 1,321 |
| | | | 29 | Clearbrook | 650 | 599 | 579 | | | |
| | 11 | Crow Wing | 32,134 | 34,826 | 41,722 | 30 | Baxter | 1,037 | 1,556 | 2,625 |
| | | | | | | 31 | Brainerd | 12,898 | 11,667 | 11,489 |
| | | | | | | 32 | Crosby | 2,629 | 2,241 | 2,218 |
| 33 | | | | | | Crosslake | 165 | 358 | 1,064 | |
| 34 | | | | | | Deerwood | 527 | 448 | 580 | |
| 35 | | | | | | Emily | 351 | 386 | 588 | |
| 36 | | | | | | Ironton | 724 | 562 | 537 | |
| 37 | | | | | | Nisswa | 742 | 1,011 | 1,407 | |
| 38 | | | | | | Pequot Lakes | 461 | 499 | 681 | |
| 39 | | | | | | West Crow Wing | 1,361 | 2,425 | 3,655 | |
| 12 | Hubbard | 9,962 | 10,583 | 14,098 | 40 | Park Rapids | 3,047 | 2,772 | 2,976 | |
| 13 | Itasca | 38,006 | 35,530 | 43,069 | 41 | Bovey | 1,086 | 858 | 813 | |
| | | | | | 42 | Bowstring Lake | NA | 863 | 970 | |
| | | | | | 43 | Coleraine | 1,346 | 1,086 | 1,116 | |
| | | | | | 44 | Deer Lake | NA | 1,317 | 2,733 | |
| | | | | | 45 | Deer River | 992 | 815 | 907 | |
| | | | | | 46 | Grand Rapids | 7,265 | 7,247 | 7,934 | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | |
|--------|--------|-----------------------|-------------|----------------------|--------|--------|---------------------------------|------------------------|-------|-------|-------|
| | Number | Name | Population | | | Number | Name | Population | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | |
| 2 | 13 | Itasca (continued) | | | | 47 | Keewatin | 1,651 | 1,382 | 1,443 | |
| | | | | | | 48 | La Prairie | 243 | 413 | 536 | |
| | | | | | | 49 | Marble | 879 | 682 | 757 | |
| | | | | | | 50 | Nashwauk | 1,712 | 1,341 | 1,419 | |
| | | | | | | 51 | Northeast Itasca | NA | 1,130 | 1,176 | |
| | | 14 | Koochiching | 18,190 | 17,131 | 17,571 | 52 | International Falls | 6,778 | 6,439 | 5,611 |
| | | | | | | 53 | Littlefork | 805 | 824 | 918 | |
| | | | | | | 54 | Northome | 291 | 351 | 312 | |
| | | | | | | 55 | Northwest Koochiching | NA | 600 | 639 | |
| | | | | | | 56 | Rainy Lake | -- | -- | 4,793 | |
| | | | | | | 57 | South International Falls | 2,479 | 2,116 | 2,806 | |
| | | | | | | 58 | Baudette | 1,597 | 1,547 | 1,170 | |
| | | | | | | 59 | Rainy River | NA | 2,036 | 2,226 | |
| | | | | | | 60 | Menahga | 799 | 835 | 980 | |
| | | | 61 | Sebeka | 823 | 668 | 774 | | | | |
| | | | 62 | Staples ^a | -- | 98 | 264 | | | | |
| | | | 63 | Verndale | 606 | 570 | 504 | | | | |
| | | | 64 | Wadena | 4,381 | 4,640 | 4,699 | | | | |
| | 15 | Lake of the Woods | 4,304 | 3,987 | 3,764 | | | | | | |
| | 16 | Wadena | 12,199 | 12,412 | 14,192 | | | | | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | |
|--------|----------|---------|------------|---------|---------|---------|---------------|--------------|---------|--------|-------|
| | Number | Name | Population | | | Number | Name | Population | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | |
| 3 | 17 | Carlton | 27,932 | 28,072 | 29,936 | 65 | Carlton | 862 | 884 | 862 | |
| | | | | | | 66 | Cloquet | 9,013 | 8,699 | 11,142 | |
| | | | | | | 67 | Moose Lake | 1,514 | 1,400 | 1,408 | |
| | | | | | | 68 | North Carlton | NA | 1,794 | 1,362 | |
| | | | | | | 69 | Scanlon | 1,126 | 1,132 | 1,050 | |
| | | 18 | Cook | 3,377 | 3,423 | 4,092 | 70 | Grand Marais | 1,301 | 1,301 | 1,289 |
| | 71 | | | | | | West Cook | NA | 1,642 | 1,404 | |
| | | 19 | Lake | 13,702 | 13,351 | 13,043 | 72 | Silver Bay | 3,723 | 3,504 | 2,917 |
| | 73 | | | | | | Two Harbors | 4,695 | 4,437 | 4,039 | |
| | | 20 | Pine | 17,004 | 16,821 | 19,871 | 74 | Hinckley | 851 | 885 | 963 |
| | 75 | | | | | | Pine City | 1,972 | 2,143 | 2,489 | |
| | 76 | | | | | | Rock Creek | 728 | 815 | 890 | |
| | 77 | | | | | | Sandstone | 1,552 | 1,641 | 1,594 | |
| | | 21 | St. Louis | 231,588 | 220,693 | 222,229 | 78 | Aurora | 2,799 | 2,531 | 2,670 |
| | 79 | | | | | | Babbitt | 2,587 | 3,076 | 2,435 | |
| | 80 | | | | | | Birch Lake | NA | 640 | 699 | |
| | 81 | | | | | | Biwabik | 1,836 | 1,483 | 1,428 | |
| | 82 | | | | | | Buhl | 1,526 | 1,303 | 1,284 | |
| | 83 | | | | | | Chisholm | 7,144 | 5,913 | 5,930 | |
| | 84 | | | | | | Cook | 527 | 687 | 800 | |
| | 85 | | | | | | Duluth | 106,884 | 100,578 | 92,811 | |
| 86 | Ely | | | | | | 5,438 | 4,904 | 4,820 | | |
| 87 | Ely Lake | | | | | | -- | -- | 1,172 | | |
| 88 | Eveleth | | | | | | 5,721 | 4,721 | 5,042 | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|--------------------------|------------|----------|--------|--------|------------------------|------------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 3 | 21 | St. Louis (continued) | | | | 89 | Floodwood | 677 | 650 | 648 |
| | | | | | | 90 | Gilbert | 2,591 | 2,287 | 2,721 |
| | | | | | | 91 | Heikkila Lake | NA | 994 | 1,616 |
| | | | | | | 92 | Hermantown | 5,765 | 6,737 | 6,759 |
| | | | | | | 93 | Hibbing | 17,731 | 16,104 | 21,193 |
| | | | | | | 94 | Hoyt Lakes | 3,186 | 3,634 | 3,186 |
| | | | | | | 95 | Mountain Iron | 1,808 | 1,698 | 4,134 |
| | | | | | | 96 | Northwest St. Louis | NA | 798 | 571 |
| | | | | | | 97 | Pike Lake | 426 | 406 | 640 |
| | | | | | | 98 | Proctor | 2,963 | 3,123 | 3,180 |
| | | | | | | 99 | Sand Lake | NA | 861 | 1,401 |
| | | | 100 | Towner | 878 | 699 | 640 | | | |
| | | | 101 | Virginia | 14,034 | 12,450 | 11,056 | | | |
| 4 | 22 | Becker | 23,959 | 24,372 | 29,336 | 102 | Detroit Lakes | 5,633 | 5,797 | 7,106 |
| | | | | | | 103 | Frazee | 1,083 | 1,015 | 1,284 |
| | | | | | | 104 | Lake Park | 730 | 658 | 716 |
| | 23 | Clay | 39,080 | 46,608 | 49,327 | 105 | Barnesville | 1,632 | 1,782 | 2,207 |
| | | | | | | 106 | Dilworth | 2,102 | 2,321 | 2,585 |
| | | | | | | 107 | Glyndon | 489 | 674 | 882 |
| | | | | | | 108 | Hawley | 1,270 | 1,371 | 1,634 |
| | | | | | | 109 | Moorhead | 22,934 | 29,687 | 29,998 |
| | 24 | Mahnomen | 6,341 | 5,638 | 5,535 | 110 | Ulen | 481 | 486 | 514 |
| | | | | | | 111 | Mahnomen | 1,462 | 1,313 | 1,283 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | | | | | |
|--------|----------|---------|------------|--------|--------|---------------|------------------------|------------|--------|--------|-----|-----------------|--------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | | | | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | | | | | |
| 4 | 25 | Norman | 11,253 | 10,008 | 9,379 | 112 | Ada | 2,064 | 2,076 | 1,971 | | | | | |
| | | | | | | 113 | Halstad | 639 | 598 | 690 | | | | | |
| 5 | 26 | Douglas | 21,313 | 22,910 | 27,839 | 114 | Twin Valley | 841 | 868 | 907 | | | | | |
| | | | | | | 115 | Alexandria | 6,713 | 6,973 | 7,608 | | | | | |
| | | | | | | 116 | Evansville | 411 | 553 | 571 | | | | | |
| | | | | | | 117 | Osakis ^b | 1,396 | 1,306 | 1,355 | | | | | |
| | | | | | | 27 | Grant | 8,870 | 7,462 | 7,171 | 118 | Elbow Lake | 1,521 | 1,484 | 1,358 |
| | | | | | | | | | | | 119 | Herman | 764 | 619 | 600 |
| | | | | | | | | | | | 120 | Hoffman | 605 | 627 | 631 |
| | | | | | | | | | | | 121 | Battle Lake | 733 | 772 | 708 |
| | | | | | | | | | | | 122 | Fergus Falls | 13,733 | 12,443 | 12,519 |
| | | | | | | 28 | Otter Tail | 48,960 | 46,097 | 51,937 | 123 | Henning | 980 | 850 | 832 |
| | | | | | | | | | | | 124 | New York Mills | 828 | 791 | 972 |
| | | | | | | | | | | | 125 | Parkers Prairie | 884 | 882 | 917 |
| | | | | | | | | | | | 126 | Pelican Rapids | 1,693 | 1,835 | 1,867 |
| | | | | | | | | | | | 127 | Perham | 2,019 | 1,933 | 2,086 |
| 29 | Traverse | 7,503 | 6,254 | 5,542 | 128 | Browns Valley | 1,033 | 906 | 887 | | | | | | |
| | | | | | 129 | Wheaton | 2,102 | 2,029 | 1,969 | | | | | | |
| 6 | 30 | Wilkin | 10,650 | 9,389 | 8,454 | 130 | Breckenridge | 4,335 | 4,200 | 3,909 | | | | | |
| | | | | | | 131 | Foley | 1,112 | 1,271 | 1,606 | | | | | |
| 6 | 31 | Benton | 17,287 | 20,841 | 25,187 | 132 | St. Cloud ^c | 3,209 | 4,180 | 4,645 | | | | | |
| | | | | | | 133 | Sartell ^d | 216 | 264 | 1,227 | | | | | |
| | | | | | | 134 | Sauk Rapids | 4,038 | 5,051 | 5,793 | | | | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|------------|------------|--------|---------|--------------------------|------------------------|------------|-------|-------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 6 | 32 | Kanabec | 9,007 | 9,775 | 12,161 | | | | | |
| | 33 | Mille Lacs | 14,560 | 15,703 | 18,430 | 135 | Mora | 2,329 | 2,582 | 2,890 |
| | | | | | | 136 | Isle | 529 | 551 | 573 |
| | | | | | | 137 | Milaca | 1,821 | 1,940 | 2,104 |
| | | | | | | 138 | Onamia | 645 | 670 | 691 |
| | | | | | | 139 | Princeton ^e | 2,353 | 2,531 | 3,146 |
| | 34 | Morrison | 26,641 | 26,949 | 29,311 | 140 | Little Falls | 7,551 | 7,467 | 7,250 |
| | | | | | | 141 | Pierz | 816 | 893 | 1,018 |
| | | | | | | 142 | Randall | 516 | 536 | 527 |
| | | | | | | 143 | Royalton | 580 | 534 | 660 |
| | 35 | Sherburne | 12,861 | 18,344 | 29,908 | 144 | Becker | 279 | 365 | 601 |
| | | | | | | 145 | Big Lake | 610 | 1,015 | 2,210 |
| | | | | | | 146 | Elk River | 1,763 | 2,252 | 6,785 |
| | | | | | | 147 | St. Cloud ^c | 3,166 | 3,918 | 4,421 |
| | | | | | | 148 | Zimmerman | 302 | 495 | 1,074 |
| | 36 | Stearns | 80,345 | 95,400 | 108,161 | 149 | Albany | 1,375 | 1,599 | 1,569 |
| | | | | | | 150 | Avon | 443 | 725 | 804 |
| | | | | | | 151 | Belgrade | 666 | 713 | 805 |
| | | | | | 152 | Brooten | 661 | 615 | 647 | |
| | | | | | 153 | Cold Spring | 1,760 | 2,006 | 2,294 | |
| | | | | | 154 | Eden Valley ^f | 270 | 287 | 291 | |
| | | | | | 155 | Freeport | 615 | 593 | 563 | |
| | | | | | 156 | Holdingsford | 526 | 551 | 635 | |
| | | | | | 157 | Kimball Prairie | 535 | 567 | 651 | |
| | | | | | 158 | Melrose | 2,135 | 2,273 | 2,409 | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | | | | |
|--------|----------|------------------------|------------|------|-----------|-----------|------------------------|------------|----------------------------|----------------------|------------|-------|-------|-------|
| | Number | Name | Population | | | Number | Name | Population | | | | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | | | | |
| 6 | 36 | Stearns (continued) | | | | 159 | Paynesville | 1,754 | 1,920 | 2,140 | | | | |
| | | | | | | 160 | Richmond | 751 | 866 | 867 | | | | |
| | | | | | | 161 | Rockville | 357 | 302 | 597 | | | | |
| | | | | | | 162 | St. Cloud ^c | 27,440 | 31,593 | 33,500 | | | | |
| | | | | | | 163 | St. Joseph | 1,487 | 1,786 | 2,994 | | | | |
| | | | | | | 164 | Sartell ^d | 575 | 1,059 | 2,200 | | | | |
| | | | | | | 165 | Sauk Centre | 3,573 | 3,750 | 3,709 | | | | |
| | | | | | | 166 | Waite Park | 2,016 | 2,824 | 3,496 | | | | |
| | | | | 37 | Todd | 23,119 | 22,114 | 24,991 | 167 | Bertha | 562 | 512 | 510 | |
| | | | | | | | | | 168 | Browerville | 744 | 665 | 693 | |
| | | | | | | | | | 169 | Clarissa | 569 | 599 | 663 | |
| | | | | | | | | | 170 | Eagle Bend | 611 | 557 | 593 | |
| | | | | | | | | | 171 | Long Prairie | 2,414 | 2,416 | 2,859 | |
| | | | | | | | | | 172 | Staples ^a | 2,706 | 2,657 | 2,623 | |
| | | | 7 | 38 | Big Stone | 8,954 | 7,941 | 7,716 | 173 | Clinton | 565 | 608 | 622 | |
| | | | | | | | | | 174 | Graceville | 823 | 735 | 780 | |
| | | | | | | 175 | Ortonville | 2,674 | 2,665 | 2,550 | | | | |
| 39 | Chippewa | 16,320 | | | | 15,109 | 14,941 | 176 | Clara City | 1,358 | 1,491 | 1,574 | | |
| | | | | | | | | 177 | Granite Falls ⁹ | 563 | 643 | 785 | | |
| | | | | | | | | 178 | Montevideo | 5,693 | 5,661 | 5,845 | | |
| | | 40 | | | | Kandiyohi | 29,987 | 30,548 | 36,763 | 179 | Atwater | 899 | 956 | 1,128 |
| | | | | | | | | | | 180 | New London | 721 | 736 | 812 |
| | | | | | | | | | | 181 | Prinsburg | 462 | 448 | 557 |
| | | | | | | | | | | 182 | Raymond | 608 | 589 | 723 |
| | | | | | | | 183 | Spicer | 589 | 586 | 909 | | | |
| | | | | | | | 184 | Willmar | 10,417 | 12,869 | 15,895 | | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | | | | | |
|--------|--------|------------------|------------|--------|--------|--------|--------------|------------|--------|--------|-----|---------|-----|-----|-----|
| | Number | Name | Population | | | Number | Name | Population | | | | | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | | | | | |
| 7 | 41 | Lac Qui Parle | 13,330 | 11,164 | 10,592 | 185 | Dawson | 1,766 | 1,699 | 1,901 | | | | | |
| | | | | | | 186 | Madison | 2,380 | 2,242 | 2,212 | | | | | |
| | 42 | Pope | 11,914 | 11,107 | 11,657 | 187 | Glenwood | 2,631 | 2,584 | 2,523 | | | | | |
| | | | | | | 188 | Starbuck | 1,099 | 1,138 | 1,224 | | | | | |
| | 43 | Renville | 23,249 | 21,139 | 20,401 | 189 | Bird Island | 1,384 | 1,309 | 1,372 | | | | | |
| | | | | | | 190 | Buffalo Lake | 707 | 758 | 782 | | | | | |
| | | | | | | 191 | Danube | 494 | 497 | 590 | | | | | |
| | | | | | | 192 | Fairfax | 1,489 | 1,432 | 1,405 | | | | | |
| | | | | | | 193 | Franklin | 548 | 557 | 512 | | | | | |
| | | | | | | 194 | Hector | 1,297 | 1,178 | 1,252 | | | | | |
| | | | | | | 195 | Morton | 624 | 591 | 549 | | | | | |
| | | | | | | 196 | Olivia | 2,355 | 2,553 | 2,802 | | | | | |
| | | | | | | 197 | Renville | 1,373 | 1,252 | 1,493 | | | | | |
| | | | | | | 198 | Sacred Heart | 696 | 707 | 666 | | | | | |
| | | | | | | 44 | Stevens | 11,262 | 11,218 | 11,322 | 199 | Chokio | 498 | 455 | 559 |
| | | | | | | | | | | | 200 | Hancock | 942 | 806 | 877 |
| | 201 | Morris | 4,199 | 5,366 | 5,367 | | | | | | | | | | |
| | 45 | Swift | 14,936 | 13,177 | 12,920 | 202 | Appleton | 2,172 | 1,789 | 1,842 | | | | | |
| | | | | | | 203 | Benson | 3,678 | 3,484 | 3,656 | | | | | |
| | | | | | | 204 | Kerkhoven | 645 | 641 | 761 | | | | | |
| | | | | | | | | | | | | | | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|--------|------------|---------|---------|--------|-------------------------------|------------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 8 | 46 | Anoka | 85,916 | 154,712 | 195,998 | 205 | Andover | -- | -- | 9,387 |
| | | | | | | 206 | Anoka | 10,562 | 13,293 | 15,634 |
| | | | | | | 207 | Blaineh | 7,565 | 20,568 | 28,558 |
| | | | | | | 208 | Centerville | 338 | 534 | 734 |
| | | | | | | 209 | Circle Pines | 2,789 | 3,902 | 3,321 |
| | | | | | | 210 | Columbia Heights | 17,533 | 23,997 | 20,029 |
| | | | | | | 211 | Coon Rapids | 14,931 | 30,505 | 35,826 |
| | | | | | | 212 | East Bethel | 1,408 | 2,586 | 6,626 |
| | | | | | | 213 | Fridley | 15,173 | 29,233 | 30,228 |
| | | | | | | 214 | Ham Lake | 1,423 | 3,327 | 7,832 |
| | | | | | | 215 | Hilltop | 607 | 1,015 | 817 |
| | | | | | | 216 | Lexington | 1,457 | 2,165 | 2,150 |
| | | | | | | 217 | Lino Lakes | 2,329 | 3,692 | 4,966 |
| | | | | | | 218 | Ramsey | 1,179 | 2,536 | 10,093 |
| | | | | | | 219 | St. Francis | -- | 897 | 1,184 |
| | 47 | Carver | 21,358 | 28,331 | 37,046 | 220 | Spring Lake Park ⁱ | 3,184 | 6,319 | 6,368 |
| | | | | | | 221 | Carver | 467 | 669 | 642 |
| | | | | | | 222 | Chanhassen ^j | 244 | 4,879 | 6,359 |
| | | | | | | 223 | Chaska | 2,501 | 4,352 | 8,346 |
| | | | | | | 224 | Cologne | 454 | 518 | 545 |
| | | | | | | 225 | Norwood | 945 | 1,058 | 1,219 |
| | | | | | | 226 | Victoria | 425 | 850 | 1,425 |
| | | | | | | 227 | Waconia | 2,048 | 2,445 | 2,638 |
| | | | | | | 228 | Watertown | 1,046 | 1,390 | 1,818 |
| | | | | | | 229 | Young America | 477 | 611 | 1,237 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|----------|------------|---------|---------|--------|-----------------------|------------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 8 | 48 | Chisago | 13,419 | 17,492 | 25,717 | 230 | Branch | 516 | 880 | 1,866 |
| | | | | | | 231 | Chisago City | 772 | 1,068 | 1,634 |
| | | | | | | 232 | Harris | 552 | 559 | 678 |
| | | | | | | 233 | Lindstrom | 835 | 1,260 | 1,972 |
| | | | | | | 234 | North Branch | 949 | 1,106 | 1,597 |
| | | | | | | 235 | Rush City | 1,108 | 1,130 | 1,198 |
| | | | | | | 236 | Stacy | 211 | 278 | 996 |
| | | | | | | 237 | Taylors Falls | 546 | 587 | 623 |
| | | | | | | 238 | Wyoming | 435 | 695 | 1,559 |
| | 49 | Dakota | 78,303 | 139,808 | 194,279 | 239 | Apple Valley | -- | 8,502 | 21,818 |
| | | | | | | 240 | Burnsville | -- | 19,940 | 35,674 |
| | | | | | | 241 | Eagan | 3,382 | 10,398 | 20,700 |
| | | | | | | 242 | Farmington | 2,300 | 3,104 | 4,370 |
| | | | | | | 243 | Hastings ^k | 8,965 | 12,195 | 12,827 |
| | | | | | | 244 | Inver Grove Heights | -- | 12,148 | 17,171 |
| | | | | | | 245 | Lakeville | 924 | 7,556 | 14,790 |
| | | | | | | 246 | Mendota Heights | 5,028 | 6,565 | 7,288 |
| | | | | | | 247 | Rosemount | 1,068 | 1,337 | 5,083 |
| | | | | | | 248 | South St. Paul | 22,032 | 25,016 | 21,235 |
| | | | | | | 249 | West St. Paul | 13,101 | 18,802 | 18,527 |
| | 50 | Hennepin | 842,854 | 960,080 | 941,411 | 250 | Bloomington | 50,498 | 81,970 | 81,831 |
| | | | | | | 251 | Brooklyn Center | 24,356 | 35,173 | 31,230 |
| | | | | | | 252 | Brooklyn Park | 10,197 | 26,230 | 43,332 |
| | | | | | | 253 | Champlin | 1,271 | 2,275 | 9,006 |
| | | | | | | 254 | Corcoran | 1,237 | 1,656 | 4,252 |
| | | | | | | 255 | Crystal | 24,283 | 30,925 | 25,543 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | Number | Name | County | | | City | | | | |
|--------|--------|-------------------------|------------|------|------|--------|--------------------------|------------|---------|---------|
| | | | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 8 | 50 | Hennepin (continued) | | | | 256 | Dayton ^l | 456 | 517 | 4,070 |
| | | | | | | 257 | Deephaven | 3,286 | 3,853 | 3,716 |
| | | | | | | 258 | Eden Prairie | -- | 6,938 | 16,263 |
| | | | | | | 259 | Edina | 28,501 | 44,046 | 46,073 |
| | | | | | | 260 | Excelsior | 2,020 | 2,563 | 2,523 |
| | | | | | | 261 | Golden Valley | 14,559 | 24,246 | 22,775 |
| | | | | | | 262 | Greenfield | 639 | 977 | 1,391 |
| | | | | | | 263 | Greenwood | 520 | 587 | 653 |
| | | | | | | 264 | Hanover ^m | 85 | 96 | 248 |
| | | | | | | 265 | Hopkins | 11,370 | 13,428 | 15,336 |
| | | | | | | 266 | Independence | 1,446 | 1,993 | 2,640 |
| | | | | | | 267 | Long Lake | 996 | 1,506 | 1,747 |
| | | | | | | 268 | Maple Grove | 2,213 | 6,275 | 20,525 |
| | | | | | | 269 | Maple Plain | 754 | 1,169 | 1,421 |
| | | | | | | 270 | Medina | 1,472 | 2,396 | 2,623 |
| | | | | | | 271 | Minneapolis | 482,872 | 434,400 | 370,951 |
| | | | | | | 272 | Minnetonka | 25,037 | 25,776 | 38,683 |
| | | | | | | 273 | Minnetonka Beach | 544 | 586 | 575 |
| | | | | | | 274 | Minnetrista | -- | 2,878 | 3,236 |
| | | | | | | 275 | Mound | 5,440 | 7,572 | 9,280 |
| | | | | | | 276 | New Hope | 3,552 | 23,180 | 23,087 |
| | | | | | | 277 | Orono | 5,643 | 6,787 | 6,845 |
| | | | | | | 278 | Osseo | 2,104 | 2,908 | 2,974 |
| | | | | | | 279 | Plymouth | 9,576 | 18,077 | 31,615 |
| | | | | | | 280 | Richfield | 42,523 | 47,231 | 37,851 |
| | | | | | | 281 | Robbinsdale | 16,381 | 16,845 | 14,422 |
| | | | | | | 282 | Rockford ^m | 43 | 162 | 380 |
| | | | | | | 283 | Rogers | 378 | 544 | 652 |
| | | | | | | 284 | St. Anthony ⁿ | 4,744 | 6,886 | 5,619 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | |
|--------|--------|-------------------------|--------|--------|--------|--------|----------------|--------------------------|--------|--------|-------|
| | Number | Name | 1960 | 1970 | 1980 | Number | Name | 1960 | 1970 | 1980 | |
| 8 | 50 | Hennepin (continued) | | | | 285 | St. Bonifacius | 576 | 685 | 857 | |
| | | | | | | 286 | St. Louis Park | 43,310 | 48,883 | 42,931 | |
| | | | | | | 287 | Shorewood | 3,197 | 4,223 | 4,643 | |
| | | | | | | 288 | Spring Park | 668 | 1,087 | 1,465 | |
| | | | | | | 289 | Tonka Bay | 1,204 | 1,397 | 1,354 | |
| | | | | | | 290 | Wayzata | 3,219 | 3,700 | 3,621 | |
| | | | | | | 291 | Woodland | 449 | 544 | 526 | |
| | | | | | | 292 | Braham | 728 | 744 | 1,015 | |
| | | | | | | 293 | Cambridge | 2,728 | 2,720 | 3,170 | |
| | | | | 294 | Isanti | 521 | 679 | 858 | | | |
| | | 51 | Isanti | 13,530 | 16,560 | 23,600 | 295 | Brownton | 698 | 688 | 697 |
| | | | | | | | 296 | Glencoe | 3,216 | 4,217 | 4,396 |
| | | | | | | | 297 | Hutchinson | 6,207 | 8,031 | 9,244 |
| | | 52 | McLeod | 24,401 | 27,662 | 29,657 | 298 | Lester Prairie | 966 | 1,162 | 1,229 |
| | | | | | | | 299 | Silver Lake | 646 | 694 | 698 |
| | | | | | | | 300 | Stewart | 676 | 666 | 616 |
| | | | | | | | 301 | Winsted | 1,163 | 1,266 | 1,522 |
| | | 53 | Meeker | 18,887 | 18,387 | 20,594 | 302 | Cosmos | 487 | 570 | 571 |
| | | | | | | | 303 | Dassel | 863 | 1,058 | 1,066 |
| | | | | | | | 304 | Eden Valley ^f | 523 | 489 | 472 |
| | | | | | | | 305 | Grove City | 466 | 531 | 596 |
| | | | | | | 306 | Litchfield | 5,078 | 5,262 | 5,904 | |
| | | | | | | 307 | Watkins | 744 | 785 | 757 | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | |
|--------|--------|--------|------------|---------|---------|--------|----------------------------------|--------------------------|---------|---------|--------|
| | Number | Name | Population | | | Number | Name | Population | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | |
| 8 | 54 | Ramsey | 422,525 | 476,255 | 459,784 | 308 | Arden Hills | 3,930 | 5,149 | 8,012 | |
| | | | | | | 309 | Falcon Heights | 5,927 | 5,530 | 5,291 | |
| | | | | | | 310 | Lauderdale | 1,676 | 2,530 | 1,985 | |
| | | | | | | 311 | Little Canada | 3,512 | 3,481 | 7,102 | |
| | | | | | | 312 | Maplewood | 18,519 | 25,186 | 26,990 | |
| | | | | | | 313 | Mounds View | 6,416 | 10,599 | 12,593 | |
| | | | | | | 314 | New Brighton | 6,448 | 19,507 | 23,269 | |
| | | | | | | 315 | North Oaks | 803 | 2,002 | 2,846 | |
| | | | | | | 316 | North St. Paul | 8,520 | 11,950 | 11,921 | |
| | | | | | | 317 | Roseville | 23,997 | 34,438 | 35,820 | |
| | | | | | | 318 | St. Anthony ⁿ | 340 | 2,353 | 2,362 | |
| | | | | | | 319 | St. Paul | 313,411 | 309,866 | 270,230 | |
| | | | | | | 320 | Shoreview | 7,157 | 10,978 | 17,300 | |
| | | | | | | 321 | Spring Lake Park ^l | 76 | 98 | 109 | |
| | | | | | | 322 | Vadnais Heights | 2,459 | 3,411 | 5,111 | |
| | | | | | | 323 | White Bear Lake ^o | 12,849 | 23,313 | 22,538 | |
| | | 55 | Rice | 38,988 | 41,582 | 46,087 | 324 | Faribault | 16,926 | 16,595 | 16,241 |
| | | | | | | | 325 | Lonsdale | 541 | 622 | 1,160 |
| | | | | | | | 326 | Morristown ^p | 616 | 659 | 639 |
| | | | | | | | 327 | North Field ^p | 8,707 | 10,235 | 12,562 |
| | | 56 | Scott | 21,909 | 32,423 | 43,784 | 328 | Belle Plaine | 1,931 | 2,328 | 2,754 |
| | | | | | | | 329 | Jordan | 1,479 | 1,836 | 2,663 |
| | | | | | | | 330 | New Prague ^q | 1,614 | 1,731 | 1,898 |
| | | | | | | | 331 | Prior Lake | 848 | 1,114 | 7,284 |
| | | | | | | | 332 | Savage | 1,094 | 3,611 | 3,954 |
| | | | | | | | 333 | Shakopee | 5,201 | 6,876 | 9,941 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|------------|------------|--------|---------|--------|-------------------------|------------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 8 | 57 | Washington | 52,432 | 83,003 | 113,571 | 334 | Afton | 158 | 248 | 2,550 |
| | | | | | | 335 | Bayport | 3,205 | 2,987 | 2,932 |
| | | | | | | 336 | Birchwood Village | 598 | 926 | 1,059 |
| | | | | | | 337 | Cottage Grove | -- | 13,419 | 18,994 |
| | | | | | | 338 | Dellwood | 310 | 524 | 751 |
| | | | | | | 339 | Forest Lake | 2,347 | 3,207 | 4,596 |
| | | | | | | 340 | Hugo | 538 | 751 | 3,771 |
| | | | | | | 341 | Lake Elmo | 550 | 3,565 | 5,296 |
| | | | | | | 342 | Lakeland | 598 | 962 | 1,812 |
| | | | | | | 343 | Lake St. Croix Beach | 716 | 1,111 | 1,176 |
| | | | | | | 344 | Landfall | 437 | 671 | 679 |
| | | | | | | 345 | Mahtomedi | 2,127 | 2,640 | 3,851 |
| | | | | | | 346 | Marine on St. Croix | 454 | 513 | 543 |
| | | | | | | 347 | Newport | 2,349 | 2,922 | 3,323 |
| | | | | | | 348 | Oakdale | -- | 7,795 | 12,123 |
| | | | | | | 349 | Oak Park Heights | 332 | 1,238 | 2,591 |
| | | | | | | 350 | St. Paul Park | 3,267 | 5,587 | 4,864 |
| | | | | | | 351 | Stillwater | 8,310 | 10,191 | 12,290 |
| | | | | | | 352 | Willernie | 664 | 697 | 654 |
| | | | | | | 353 | Woodbury | -- | 6,184 | 10,297 |
| | 58 | Wright | 29,935 | 38,933 | 58,681 | 354 | Albertville | 279 | 451 | 564 |
| | | | | | | 355 | Annandale | 984 | 1,234 | 1,568 |
| | | | | | | 356 | Buffalo | 4,560 | 3,275 | 2,322 |
| | | | | | | 357 | Cokato | 1,356 | 1,735 | 2,056 |
| | | | | | | 358 | Delano | 1,612 | 1,851 | 2,480 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|-----------------------|------------|--------|--------|---------|-----------------------|------------|-------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 8 | 58 | Wright (continued) | | | | 359 | Hanover ^m | 178 | 269 | 399 |
| | | | | | | 360 | Howard Lake | 1,007 | 1,162 | 1,240 |
| | | | | | | 361 | Maple Lake | 1,018 | 1,124 | 1,132 |
| | | | | | | 362 | Monticello | 1,477 | 1,636 | 2,830 |
| | | | | | | 363 | Montrose | 360 | 379 | 762 |
| | | | | | | 364 | Rockford ^m | 490 | 568 | 2,028 |
| | | | | | | 365 | St. Michael | 707 | 1,021 | 1,519 |
| 9 | 59 | Cottonwood | 16,166 | 14,887 | 14,854 | 366 | Mountain Lake | 1,943 | 1,986 | 2,277 |
| | | | | | | 367 | Westbrook | 1,012 | 990 | 978 |
| | | | | | | 368 | Windom | 3,691 | 3,952 | 4,666 |
| | 60 | Jackson | 15,501 | 14,352 | 13,690 | 369 | Heron Lake | 852 | 777 | 783 |
| | | | | | | 370 | Jackson | 3,370 | 3,550 | 3,797 |
| | | | | | | 371 | Lakefield | 1,789 | 1,820 | 1,845 |
| | 61 | Lincoln | 9,651 | 8,143 | 8,207 | 372 | Hendricks | 797 | 712 | 737 |
| | | | | | | 373 | Ivanhoe | 719 | 738 | 761 |
| | | | | | | 374 | Lake Benton | 905 | 759 | 869 |
| | | | | | | 375 | Tyler | 1,138 | 1,069 | 1,353 |
| | | | | | | 376 | Balaton | 723 | 649 | 752 |
| | 62 | Lyon | 22,655 | 24,273 | 25,207 | 377 | Cottonwood | 717 | 794 | 924 |
| | | | | | | 378 | Marshall | 6,681 | 9,886 | 11,161 |
| | | | | | | 379 | Minneota | 1,297 | 1,320 | 1,470 |
| | | | | | | 380 | Tracy | 2,862 | 2,516 | 2,478 |
| 381 | | | | | | Fulda | 1,202 | 1,226 | 1,308 | |
| 63 | Murray | 14,743 | 12,508 | 11,507 | 382 | Slayton | 2,487 | 2,351 | 2,420 | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------------------|------------|------------|---------------------|--------|----------------------------|---------------|------------|-------|-------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 9 | 64 | Nobles | 23,365 | 23,208 | 21,840 | 383 | Adrian | 1,215 | 1,350 | 1,336 |
| | | | 384 | Brewster | 500 | 563 | 559 | | | |
| | | | 385 | Ellsworth | 634 | 588 | 629 | | | |
| | 65 | Pipestone | 13,605 | 12,791 | 11,690 | 386 | Edgerton | 1,019 | 1,119 | 1,123 |
| | | | 387 | Jasper ^r | 850 | 754 | 731 | | | |
| | | | 388 | Pipestone | 5,324 | 5,328 | 4,887 | | | |
| | 66 | Redwood | 21,718 | 20,024 | 19,341 | 389 | Lamberton | 1,141 | 962 | 1,032 |
| | | | | | | 390 | Morgan | 975 | 972 | 975 |
| | | | | | | 391 | Redwood Falls | 4,285 | 4,774 | 5,210 |
| | | | | | | 392 | Sanborn | 521 | 505 | 518 |
| | | | | | | 393 | Wabasso | 789 | 738 | 745 |
| | | | | | | 394 | Walnut Grove | 886 | 756 | 753 |
| | | | | | | 395 | Hills | 516 | 571 | 598 |
| 67 | Rock | 11,864 | 11,346 | 10,703 | 396 | Luverne | 4,249 | 4,703 | 4,568 | |
| | | | | | 397 | Canby | 2,146 | 2,147 | 2,143 | |
| 68 | Yellow Medicine | 15,523 | 14,523 | 13,653 | 398 | Clarkfield | 1,100 | 1,084 | 1,171 | |
| | | | | | 399 | Granite Falls ⁹ | 2,165 | 2,582 | 2,666 | |
| | | | | | 400 | Amboy | 629 | 571 | 606 | |
| 10 | 69 | Blue Earth | 44,385 | 52,322 | 52,314 | 401 | Eagle Lake | 506 | 839 | 1,470 |
| | | | | | | 402 | Good Thunder | 468 | 489 | 560 |
| | | | | | | 403 | Lake Crystal | 1,652 | 1,807 | 2,078 |
| | | | | | | 404 | Madison Lake | 477 | 587 | 592 |
| | | | | | | | | | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|---------------------------|------------|--------|--------|--------|-------------------------|------------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 10 | 69 | Blue Earth (continued) | | | | 405 | Mankato ^s | 23,797 | 30,895 | 28,651 |
| | | | | | | 406 | Mapleton | 1,107 | 1,307 | 1,516 |
| | | | | | | 407 | St. Clair | 373 | 488 | 655 |
| | 70 | Brown | 27,676 | 28,887 | 28,645 | 408 | Comfrey ^t | 616 | 525 | 548 |
| | | | | | | 409 | New Ulm | 11,114 | 13,051 | 13,755 |
| | | | | | | 410 | Sleepy Eye | 3,492 | 3,461 | 3,581 |
| | | | | | | 411 | Springfield | 2,701 | 2,530 | 2,303 |
| | 71 | Faribault | 23,685 | 20,896 | 19,714 | 412 | Blue Earth | 4,200 | 3,965 | 4,132 |
| | | | | | | 413 | Elmore | 1,078 | 910 | 882 |
| | | | | | | 414 | Kiester | 741 | 681 | 670 |
| | | | | | | 415 | Minnesota Lake | 697 | 711 | 744 |
| | | | | | | 416 | Wells | 2,897 | 2,791 | 2,777 |
| | | | | | | 417 | Winnebago | 2,088 | 1,791 | 1,869 |
| | 72 | Le Sueur | 19,906 | 21,332 | 23,434 | 418 | Cleveland | 389 | 492 | 699 |
| | | | | | | 419 | Kasota | 649 | 732 | 739 |
| | | | | | | 420 | Le Center | 1,597 | 1,890 | 1,967 |
| | | | | | | 421 | Le Sueur | 3,310 | 3,745 | 3,763 |
| | | | | | | 422 | Montgomery | 2,118 | 2,281 | 2,349 |
| | | | | | | 423 | New Prague ^q | 919 | 949 | 1,054 |
| | | | | | | 424 | Waterville | 1,623 | 1,539 | 1,717 |
| | 73 | Martin | 26,986 | 24,316 | 24,687 | 425 | Ceylon | 554 | 487 | 543 |
| | | | | | | 426 | Fairmont | 9,745 | 10,751 | 11,506 |
| | | | | | | 427 | Sherburn | 1,227 | 1,190 | 1,275 |
| | | | | | | 428 | Trimont | 942 | 835 | 805 |
| | | | | | | 429 | Truman | 1,256 | 1,137 | 1,392 |
| | | | | | | 430 | Welcome | 733 | 694 | 855 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|----------|----------|------------|---------------|--------|-----------|--------------|------------|-------|-------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 10 | 74 | Nicollet | 23,196 | 24,518 | 26,929 | 431 | Lafayette | 516 | 498 | 507 |
| | | | 432 | Nicollet | 493 | 618 | 709 | | | |
| | | | 433 | North Mankato | 5,927 | 7,347 | 9,145 | | | |
| | | | 434 | St. Peter | 8,484 | 8,339 | 9,056 | | | |
| | 75 | Sibley | 16,228 | 15,845 | 15,448 | 435 | Arlington | 1,601 | 1,823 | 1,779 |
| | | | | | | 436 | Gaylord | 1,631 | 1,720 | 1,933 |
| | | | | | | 437 | Gibbon | 896 | 877 | 787 |
| | | | | | | 438 | Henderson | 728 | 730 | 739 |
| | | | | | | 439 | Winthrop | 1,381 | 1,391 | 1,376 |
| | | | | | | 440 | Janesville | 1,426 | 1,557 | 1,897 |
| | 76 | Waseca | 16,041 | 16,663 | 18,448 | 441 | New Richland | 1,046 | 1,113 | 1,263 |
| | | | | | | 442 | Waseca | 5,898 | 6,789 | 8,219 |
| | | | | | | 443 | Butterfield | 601 | 619 | 634 |
| 77 | Watonwan | 14,460 | 13,298 | 12,361 | 444 | Medelia | 2,190 | 2,316 | 2,130 | |
| | | | | | 445 | St. James | 4,174 | 4,027 | 4,346 | |
| | | | | | 446 | Claremont | 466 | 520 | 591 | |
| 11 | 78 | Dodge | 13,259 | 13,037 | 14,773 | 447 | Dodge Center | 1,441 | 1,603 | 1,816 |
| | | | | | | 448 | Hayfield | 889 | 939 | 1,243 |
| | | | | | | 449 | Kasson | 1,732 | 1,883 | 2,827 |
| | | | | | | 450 | Mantorville | 498 | 479 | 705 |
| | | | | | | 451 | West Concord | 810 | 718 | 762 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | | | | | |
|--------|--------------|----------|------------|--------|--------|--------------------------|------------------------|------------|--------|--------|-----------|------------|--------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | | | | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | | | | | |
| 11 | 79 | Fillmore | 23,768 | 21,916 | 21,930 | 452 | Chatfield ^U | 1,240 | 1,162 | 1,160 | | | | | |
| | | | | | | 453 | Harmony | 1,214 | 1,130 | 1,133 | | | | | |
| | | | | | | 454 | Lanesboro | 1,063 | 850 | 923 | | | | | |
| | | | | | | 455 | Mable | 815 | 888 | 861 | | | | | |
| | | | | | | 456 | Preston | 1,491 | 1,413 | 1,478 | | | | | |
| | | | | | | 457 | Rushford | 1,335 | 1,318 | 1,478 | | | | | |
| | | | | | | 458 | Rushford Village | 581 | 601 | 688 | | | | | |
| | | | | | | 459 | Spring Valley | 2,628 | 2,572 | 2,616 | | | | | |
| | | | | | | 80 | Freeborn | 37,891 | 38,064 | 36,329 | 460 | Albert Lea | 17,108 | 19,418 | 19,200 |
| | | | | | | | | | | | 461 | Alden | 694 | 713 | 687 |
| 462 | Clarks Grove | 353 | 480 | 620 | | | | | | | | | | | |
| 463 | Glenville | 643 | 740 | 851 | | | | | | | | | | | |
| 464 | Cannon Falls | 2,055 | 2,072 | 2,653 | | | | | | | | | | | |
| 465 | Goodhue | 566 | 539 | 657 | | | | | | | | | | | |
| 81 | Goodhue | 33,035 | 34,804 | 38,749 | 466 | Kenyon | 1,624 | 1,575 | 1,529 | | | | | | |
| | | | | | 467 | Lake City ^V | -- | -- | 470 | | | | | | |
| | | | | | 468 | Pine Island ^W | 1,308 | 1,640 | 1,986 | | | | | | |
| | | | | | 469 | Red Wing | 10,528 | 10,441 | 13,736 | | | | | | |
| | | | | | 470 | Wanamingo | 540 | 574 | 717 | | | | | | |
| | | | | | 471 | Zumbrata | 1,830 | 1,929 | 2,129 | | | | | | |
| | | | | | 82 | Houston | 16,588 | 17,556 | 18,382 | 472 | Caledonia | 2,563 | 2,619 | 2,691 | |
| | | | | | | | | | | 473 | Hokah | 685 | 697 | 686 | |
| 474 | Houston | 1,082 | 1,090 | 1,057 | | | | | | | | | | | |
| 475 | La Crescent | 2,624 | 3,296 | 3,674 | | | | | | | | | | | |
| 476 | Spring Grove | 1,342 | 1,290 | 1,275 | | | | | | | | | | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | | | | | | |
|--------|--------|----------|------------|--------|--------|---------|------------------------|------------|--------|--------|-----|------------------|-------|-------|-------|
| | Number | Name | Population | | | Number | Name | Population | | | | | | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 | | | | | |
| 11 | 83 | Mower | 48,498 | 44,919 | 40,390 | 477 | Adams | 806 | 771 | 797 | | | | | |
| | | | | | | 478 | Austin | 27,908 | 26,210 | 23,020 | | | | | |
| | | | | | | 479 | Brownsdale | 622 | 625 | 691 | | | | | |
| | | | | | | 480 | Grand Meadow | 837 | 869 | 965 | | | | | |
| | | | | | | 481 | LeRoy | 971 | 870 | 930 | | | | | |
| | 84 | Olmsted | 65,532 | 84,104 | 92,006 | 482 | Lyle | 607 | 522 | 576 | | | | | |
| | | | | | | 483 | Byron | 660 | 1,419 | 1,715 | | | | | |
| | | | | | | 484 | Chatfield ^u | 601 | 723 | 895 | | | | | |
| | | | | | | 485 | Eyota | 558 | 639 | 1,244 | | | | | |
| | | | | | | 486 | Oronoco | -- | 564 | 574 | | | | | |
| | | | | | | 487 | Rochester | 40,663 | 53,766 | 57,890 | | | | | |
| | | | | | | 488 | Stewartville | 1,670 | 2,802 | 3,925 | | | | | |
| | | | | | | 85 | Steele | 25,029 | 26,931 | 30,328 | 489 | Blooming Prairie | 1,778 | 1,804 | 1,969 |
| | | | | | | | | | | | 490 | Ellendale | 501 | 569 | 555 |
| | | | | | | | | | | | 491 | Medford | 567 | 690 | 775 |
| | 492 | Owatonna | 13,409 | 15,341 | 18,632 | | | | | | | | | | |
| | 86 | Wabasha | 17,007 | 17,224 | 19,335 | | | | | | 493 | Elgin | 521 | 580 | 667 |
| | | | | | | 494 | Lake City ^v | 3,494 | 3,594 | 4,505 | | | | | |
| | | | | | | 495 | Mezeppa | 444 | 498 | 680 | | | | | |
| | | | | | | 496 | Plainview | 1,833 | 2,093 | 2,416 | | | | | |
| 497 | | | | | | Wabasha | 2,500 | 2,371 | 2,372 | | | | | | |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | | | City | | | | |
|--------|--------|--------------|------------|--------|--------|--------|----------------|------------|--------|--------|
| | Number | Name | Population | | | Number | Name | Population | | |
| | | | 1960 | 1970 | 1980 | | | 1960 | 1970 | 1980 |
| 11 | 87 | Winona | 40,937 | 44,409 | 46,256 | | | | | |
| | | | | | | 498 | Goodview | 1,348 | 1,829 | 2,567 |
| | | | | | | 499 | Lewiston | 890 | 1,000 | 1,226 |
| | | | | | | 500 | Rollingstone | 392 | 450 | 528 |
| | | | | | | 501 | St. Charles | 1,882 | 1,942 | 2,184 |
| | | | | | | 502 | Stockton | 242 | 346 | 517 |
| | | | | | | 503 | Winona | 24,895 | 26,438 | 25,075 |
| | | North Dakota | | | | 504 | Cavalier | 1,423 | 1,381 | 1,505 |
| | | | | | | 505 | Fairmont | 503 | 412 | 480 |
| | | | | | | 506 | Fargo | 46,662 | 53,365 | 61,308 |
| | | | | | | 507 | Grafton | 5,885 | 5,946 | 5,293 |
| | | | | | | 508 | Grand Forks | 34,451 | 39,008 | 43,765 |
| | | | | | | 509 | Hillsboro | 1,278 | 1,309 | 1,600 |
| | | | | | | 510 | Kindred | 580 | 495 | 568 |
| | | | | | | 511 | Mayville | 2,168 | 2,554 | 2,255 |
| | | | | | | 512 | Pembina | 625 | 741 | 673 |
| | | | | | | 513 | Wahpeton | 5,876 | 7,076 | 9,064 |
| | | | | | | 514 | West Fargo | 3,421 | 5,161 | 10,099 |
| | | | | | | 515 | Wyndmere | 644 | 516 | 550 |
| | | South Dakota | | | | 516 | Big Stone City | 718 | 631 | 672 |
| | | | | | | 517 | Brookings | 10,558 | 13,717 | 14,951 |
| | | | | | | 518 | Clear Lake | 1,173 | 1,157 | 1,310 |
| | | | | | | 519 | Dell Rapids | 1,863 | 1,991 | 2,389 |
| | | | | | | 520 | Madison | 5,420 | 6,315 | 6,210 |
| | | | | | | 521 | Milbank | 3,500 | 3,727 | 4,120 |

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APPENDIX TABLE 1. COMMUNITIES FOR INCLUSION IN THE MINNESOTA ECONOMIC-DEMOGRAPHIC MODEL AND THEIR POPULATIONS, BY COUNTY AND REGION, 1960, 1970, AND 1980 (CONTINUED)

| Region | County | | | City | | | | | |
|--------|--------|-----------------------------|------------|--------|------|------------------|--------|--------|--------|
| | Number | Name | Population | Number | Name | Population | | | |
| | | | 1960 | 1970 | 1980 | 1960 | 1970 | 1980 | |
| | | South Dakota (continued) | | | | 522 Sisseton | 3,218 | 3,094 | 2,789 |
| | | | | | | 523 Sioux Falls | 65,466 | 72,488 | 81,343 |
| | | | | | | 524 Watertown | 14,077 | 13,388 | 15,649 |
| | | | | | | 525 Wilmot | 545 | 518 | 507 |
| | | Iowa | | | | 526 Armstrong | 958 | 1,061 | 1,153 |
| | | | | | | 527 Charles City | 9,964 | 9,268 | 8,778 |
| | | | | | | 528 Clear Lake | 6,158 | 6,430 | 7,458 |
| | | | | | | 529 Estherville | 7,927 | 8,108 | 7,518 |
| | | | | | | 530 Lake Mills | 1,758 | 2,124 | 2,281 |
| | | | | | | 531 Mason City | 30,642 | 30,491 | 30,144 |
| | | | | | | 532 Northwood | 1,768 | 1,950 | 2,193 |
| | | | | | | 533 Osage | 3,753 | 3,815 | 3,718 |
| | | | | | | 534 Rock Rapids | 2,780 | 2,632 | 2,693 |
| | | | | | | 535 Spencer | 8,864 | 10,278 | 11,726 |
| | | Wisconsin | | | | 536 Arcadia | 2,084 | 2,159 | 2,109 |
| | | | | | | 537 Hudson | 4,325 | 5,049 | 5,434 |
| | | | | | | 538 La Crosse | 45,575 | 51,153 | 48,347 |
| | | | | | | 539 Menomonie | 8,624 | 11,275 | 12,769 |
| | | | | | | 540 New Richmond | 3,316 | 3,707 | 4,306 |
| | | | | | | 541 Onalaska | 3,161 | 4,909 | 9,249 |
| | | | | | | 542 River Falls | 4,578 | 7,238 | 9,036 |
| | | | | | | 543 Superior | 33,563 | 33,237 | 29,571 |
| | | | | | | 544 Westby | 1,544 | 1,568 | 1,797 |

^aCensus population for Staples is reported in Wadena County (Region 2) and Todd County (Region 6). The population for Staples was aggregated for calculations within the economic-demographic model.

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Appendix Table 1 Footnotes Continued

- b Census population for Osakis is reported in Douglas County (Region 5) and Todd County (Region 6). Since a very small number of people were listed in Todd County, the total population was determined for Osakis and reported in Douglas County.
- c Census population for St. Cloud is reported in Benton County (Region 6), Sherburne County (Region 6), and Stearns County (Region 6). The population for St. Cloud was aggregated for calculations within the economic-demographic model.
- d Census population for Sartell is reported in Benton County (Region 6) and Stearns County (Region 6). The population for Sartell was aggregated for calculations within the economic-demographic model.
- e Census population for Princeton was reported in Mille Lacs County (Region 6) and Sherburne County (Region 6). Since a very small number of people were listed in Sherburne County, the total population was determined for Princeton and reported in Mille Lacs County.
- f Census population for Eden Valley was reported in Stearns County (Region 6) and Meeker County (Region 8). The population for Eden Valley was aggregated for calculations within the economic-demographic model.
- g Census population for Granite Falls were reported in Chippewa County (Region 7) and Yellow Medicine County (Region 9). The population for Granite Falls was aggregated for calculations within the economic-demographic model.
- h Census population for Blaine was reported in Anoka County (Region 8) and Ramsey County (Region 8). Since a very small number of people were listed in Ramsey County, the total was determined for Blaine and reported in Anoka County.
- i Census population for Spring Lake Park was reported in Anoka County (Region 8) and Ramsey County (Region 8). The population for Spring Lake Park was aggregated for calculations within the economic-demographic model.
- j Census population for Chanhassen was reported in Carver County (Region 8) and Hennepin (Region 8). Since a very small number of people were listed in Hennepin County, the total was determined for Chanhassen and reported in Carver County.
- k Census population for Hastings was reported in Dakota County (Region 8) and Washington County (Region 8). Since a very small number of people were listed in Washington County, the total was determined for Hastings and reported in Dakota County.
- l Census population for Dayton was reported in Hennepin County (Region 8) and Wright County (Region 8). Since a very small number of people were listed in Wright County, the total was determined for Dayton and reported in Hennepin County.
- m Census populations for Hanover and Rockford were reported in Hennepin County (Region 8) and Wright County (Region 8). The populations for Hanover and Rockford were aggregated for calculations within the economic-demographic model.

Appendix Table 1 Footnotes Continued

ⁿCensus population for St. Anthony was reported in Hennepin County (Region 8) and Ramsey County (Region 8). The population for St. Anthony was aggregated for calculations within the economic-demographic model.

^oCensus population for White Bear Lake was reported in Ramsey County (Region 8) and Washington County (Region 8). Since a very small number of people were listed in Washington County, the total population was determined for White Bear Lake and reported in Ramsey County.

^pCensus population for Northfield was reported in Rice County (Region 8) and Dakota County (Region 8). Since a very small number of people were listed in Dakota County, the total population was determined for Northfield and reported in Rice County.

^qCensus population for New Prague was reported in Scott County (Region 8) and Le Sueur County (Region 10). The population for New Prague was aggregated for calculations within the economic-demographic model.

^rCensus population for Jasper was reported in Pipestone County (Region 9) and Rock County (Region 9). Since a very small number of people were listed in Rock County, the total population was determined for Jasper and reported in Pipestone County.

^sCensus population for Mankato was reported in Blue Earth County (Region 10) and Nicollet County (Region 10). Since a very small number of people were listed in Nicollet County, the total population was determined for Mankato and reported in Blue Earth County.

^tCensus population for Comfrey was reported in Brown County (Region 10) and Cottonwood County (Region 9). Since a very small number of people were listed in Cottonwood County, the total population was determined for Comfrey and reported in Brown County.

^uCensus population for Chatfield was reported in Fillmore County (Region 11) and Olmstad County (Region 11). The population for Chatfield was aggregated for calculations within the economic-demographic model.

^vCensus population for Lake City was reported in Goodhue County (Region 11) and Wabasha County (Region 11). The population for Lake City was aggregated for calculations within the economic-demographic model.

^wCensus population for Pine Island was reported in Goodhue County (Region 11) and Olmstad County (Region 11). Since a very small number of people were listed in Olmstad County, the total population was determined for Pine Island and reported in Goodhue County.

APPENDIX TABLE 2. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 2, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|--|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households | |
| 1960 | 113.1 | 11.1 | 299.9 | 6.2 | 241.4 | 18.3 | 100.9 | 33.6 | 107.9 | |
| 1961 | 113.3 | 8.7 | 258.1 | 6.4 | 251.2 | 17.6 | 104.1 | 34.8 | 111.8 | |
| 1962 | 109.0 | 8.8 | 230.1 | 5.5 | 258.2 | 17.1 | 106.3 | 35.4 | 128.1 | |
| 1963 | 101.9 | 10.4 | 220.1 | 5.9 | 265.8 | 16.6 | 108.6 | 36.1 | 126.4 | |
| 1964 | 105.6 | 11.5 | 222.8 | 7.8 | 286.7 | 21.9 | 110.7 | 36.8 | 129.4 | |
| 1965 | 107.5 | 8.8 | 202.6 | 9.3 | 304.6 | 26.9 | 112.0 | 37.4 | 139.9 | |
| 1966 | 110.0 | 9.2 | 220.6 | 8.8 | 318.5 | 31.4 | 112.3 | 37.4 | 175.8 | |
| 1967 | 105.9 | 8.5 | 171.2 | 8.3 | 319.4 | 42.8 | 118.7 | 39.7 | 197.8 | |
| 1968 | 103.8 | 8.8 | 179.4 | 6.2 | 315.6 | 55.9 | 116.7 | 38.9 | 173.6 | |
| 1969 | 102.6 | 7.4 | 178.5 | 9.6 | 309.3 | 67.2 | 127.3 | 42.5 | 209.2 | |
| 1970 | 100.8 | 16.1 | 180.9 | 2.1 | 301.1 | 77.9 | 130.5 | 43.4 | 200.1 | |
| 1971 | 100.9 | 9.4 | 158.4 | 5.7 | 301.2 | 83.7 | 131.6 | 43.8 | 217.5 | |
| 1972 | 99.5 | 9.0 | 153.0 | 2.8 | 321.5 | 78.5 | 131.9 | 44.0 | 228.5 | |
| 1973 | 130.3 | 18.6 | 184.9 | 5.9 | 340.4 | 107.9 | 143.3 | 47.8 | 260.7 | |
| 1974 | 108.1 | 18.7 | 208.1 | 20.1 | 356.1 | 132.1 | 152.3 | 50.8 | 268.3 | |
| 1975 | 99.2 | 14.3 | 176.1 | 9.6 | 274.3 | 195.2 | 154.1 | 51.4 | 280.5 | |
| 1976 | 109.0 | 18.0 | 209.3 | 12.5 | 325.0 | 193.2 | 161.9 | 54.0 | 306.4 | |
| 1977 | 110.6 | 20.9 | 147.3 | 6.5 | 334.1 | 208.7 | 164.8 | 54.9 | 330.2 | |
| 1978 | 120.8 | 20.7 | 206.8 | 16.9 | 390.8 | 176.1 | 170.4 | 56.8 | 327.7 | |
| 1979 | 131.2 | 22.2 | 180.2 | 21.7 | 419.9 | 187.3 | 180.2 | 60.0 | 329.1 | |
| 1980 | 131.7 | 50.5 | 126.6 | 9.6 | 345.1 | 251.1 | 181.9 | 60.6 | 339.4 | |
| 1981 | 112.7 | 27.9 | 169.0 | 10.6 | 306.0 | 265.1 | 179.8 | 60.0 | 309.7 | |
| 1982 | 117.4 | 21.1 | 171.5 | 10.5 | 280.1 | 320.8 | 184.9 | 61.6 | 278.9 | |

APPENDIX TABLE 3. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 3, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households |
| 1960 | 61.2 | 2.6 | 905.3 | 18.8 | 132.7 | 791.7 | 68.9 | 23.0 | 175.5 |
| 1961 | 60.4 | 2.3 | 771.6 | 19.2 | 138.1 | 802.3 | 71.1 | 23.8 | 181.6 |
| 1962 | 56.0 | 3.0 | 731.7 | 16.6 | 142.2 | 805.3 | 72.6 | 24.1 | 208.2 |
| 1963 | 52.2 | 3.0 | 778.7 | 17.8 | 146.1 | 810.1 | 74.2 | 24.7 | 205.2 |
| 1964 | 54.4 | 3.4 | 863.5 | 23.4 | 157.7 | 815.7 | 75.8 | 25.4 | 210.4 |
| 1965 | 57.0 | 2.4 | 880.1 | 28.1 | 167.6 | 814.5 | 76.8 | 25.5 | 227.4 |
| 1966 | 64.4 | 2.3 | 921.0 | 26.6 | 175.1 | 806.0 | 76.7 | 25.6 | 285.7 |
| 1967 | 62.4 | 2.9 | 873.3 | 24.5 | 175.6 | 802.4 | 81.2 | 27.1 | 321.7 |
| 1968 | 60.2 | 2.6 | 911.5 | 26.4 | 173.6 | 788.1 | 79.7 | 26.6 | 362.7 |
| 1969 | 57.2 | 2.2 | 986.3 | 63.5 | 170.2 | 768.1 | 87.0 | 29.0 | 349.3 |
| 1970 | 55.1 | 2.9 | 927.1 | 27.7 | 165.6 | 747.2 | 89.2 | 29.7 | 366.6 |
| 1971 | 54.5 | 2.6 | 853.5 | 15.7 | 165.6 | 727.1 | 90.0 | 29.9 | 377.5 |
| 1972 | 53.7 | 2.8 | 914.0 | 17.9 | 176.8 | 706.2 | 90.2 | 30.1 | 375.2 |
| 1973 | 69.6 | 4.7 | 1,127.3 | 12.4 | 187.2 | 758.8 | 98.0 | 32.7 | 440.9 |
| 1974 | 59.9 | 3.7 | 1,257.0 | 22.8 | 195.8 | 782.3 | 104.1 | 34.7 | 425.2 |
| 1975 | 55.4 | 3.8 | 1,257.9 | 90.8 | 150.8 | 817.9 | 105.4 | 35.2 | 442.8 |
| 1976 | 60.7 | 4.2 | 1,318.0 | 40.1 | 178.8 | 839.2 | 110.7 | 36.9 | 480.9 |
| 1977 | 61.4 | 3.7 | 844.9 | 14.1 | 183.7 | 861.7 | 112.7 | 37.5 | 516.3 |
| 1978 | 65.5 | 3.4 | 1,716.0 | 22.8 | 215.0 | 841.8 | 116.5 | 38.9 | 484.5 |
| 1979 | 71.4 | 4.1 | 1,961.1 | 29.3 | 230.9 | 924.3 | 123.2 | 41.1 | 492.8 |
| 1980 | 72.3 | 6.7 | 1,560.2 | 18.3 | 189.8 | 950.9 | 124.4 | 41.5 | 490.9 |
| 1981 | 62.1 | 7.1 | 1,701.8 | 19.9 | 168.3 | 947.3 | 123.0 | 41.0 | 468.0 |
| 1982 | 60.4 | 5.7 | 1,726.5 | 19.7 | 154.0 | 1,059.1 | 126.5 | 42.1 | 421.5 |

APPENDIX TABLE 4. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 4, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|--|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households | |
| 1960 | 80.8 | 60.4 | -- | 3.9 | -- | 102.7 | 21.9 | 7.2 | 46.7 | |
| 1961 | 80.8 | 59.3 | -- | 4.1 | -- | 106.4 | 22.5 | 7.4 | 48.3 | |
| 1962 | 81.1 | 51.7 | -- | 3.5 | -- | 108.8 | 23.1 | 7.8 | 55.3 | |
| 1963 | 75.9 | 69.5 | -- | 3.7 | -- | 111.3 | 23.5 | 7.9 | 54.6 | |
| 1964 | 80.0 | 81.2 | -- | 4.9 | -- | 114.6 | 24.1 | 8.0 | 55.8 | |
| 1965 | 82.7 | 92.5 | -- | 6.0 | -- | 116.6 | 24.3 | 8.1 | 60.5 | |
| 1966 | 88.9 | 75.1 | -- | 5.5 | -- | 117.6 | 24.3 | 8.1 | 76.0 | |
| 1967 | 84.6 | 88.2 | -- | 5.2 | -- | 118.4 | 25.8 | 8.5 | 85.5 | |
| 1968 | 81.7 | 88.7 | -- | 14.4 | -- | 131.5 | 25.4 | 8.4 | 77.6 | |
| 1969 | 77.8 | 93.2 | -- | 6.3 | -- | 142.2 | 27.6 | 9.2 | 91.1 | |
| 1970 | 75.6 | 79.5 | -- | 8.3 | -- | 151.0 | 28.3 | 9.5 | 85.1 | |
| 1971 | 75.0 | 94.6 | -- | 1.7 | -- | 159.5 | 28.5 | 9.4 | 91.5 | |
| 1972 | 75.0 | 85.8 | -- | 1.4 | -- | 167.9 | 28.5 | 9.6 | 101.1 | |
| 1973 | 98.5 | 190.9 | -- | 3.4 | -- | 198.1 | 31.0 | 10.4 | 101.5 | |
| 1974 | 81.1 | 208.7 | -- | 1.5 | -- | 218.3 | 33.0 | 11.0 | 102.0 | |
| 1975 | 72.6 | 86.4 | -- | 3.4 | -- | 232.9 | 33.3 | 11.2 | 120.8 | |
| 1976 | 80.7 | 169.5 | -- | 3.1 | -- | 252.9 | 35.2 | 11.7 | 140.1 | |
| 1977 | 73.2 | 162.3 | -- | 1.8 | -- | 268.5 | 35.8 | 11.9 | 139.6 | |
| 1978 | 77.6 | 198.7 | -- | 3.4 | -- | 267.8 | 37.0 | 12.3 | 157.8 | |
| 1979 | 87.9 | 188.9 | -- | 8.1 | -- | 295.3 | 39.1 | 13.0 | 144.4 | |
| 1980 | 87.4 | 199.6 | -- | 20.9 | -- | 292.3 | 39.4 | 13.1 | 151.0 | |
| 1981 | 72.9 | 230.3 | -- | 6.4 | -- | 288.2 | 39.0 | 13.0 | 139.1 | |
| 1982 | 71.6 | 207.0 | -- | 6.4 | -- | 317.3 | 40.2 | 13.4 | 125.3 | |

APPENDIX TABLE 5. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 5, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households |
| 1960 | 179.4 | 76.9 | -- | 3.4 | -- | 53.9 | 32.5 | 10.8 | 48.3 |
| 1961 | 181.8 | 78.8 | -- | 3.3 | -- | 53.2 | 33.5 | 11.3 | 49.9 |
| 1962 | 178.8 | 55.3 | -- | 3.0 | -- | 52.0 | 34.2 | 11.3 | 57.3 |
| 1963 | 166.2 | 83.6 | -- | 3.2 | -- | 50.9 | 34.9 | 11.6 | 56.4 |
| 1964 | 170.6 | 84.6 | -- | 4.1 | -- | 54.9 | 35.6 | 11.9 | 57.8 |
| 1965 | 180.9 | 97.5 | -- | 5.0 | -- | 57.9 | 36.0 | 11.9 | 62.7 |
| 1966 | 193.6 | 84.5 | -- | 4.6 | -- | 60.5 | 36.0 | 12.0 | 78.5 |
| 1967 | 186.6 | 96.0 | -- | 4.5 | -- | 63.0 | 38.1 | 12.8 | 88.4 |
| 1968 | 183.3 | 93.7 | -- | 12.9 | -- | 70.7 | 37.6 | 12.5 | 88.3 |
| 1969 | 182.6 | 92.1 | -- | 7.6 | -- | 77.0 | 40.9 | 13.7 | 94.0 |
| 1970 | 175.8 | 86.7 | -- | 1.2 | -- | 82.2 | 42.1 | 14.0 | 99.7 |
| 1971 | 169.6 | 99.2 | -- | 0.7 | -- | 87.2 | 42.3 | 14.0 | 103.5 |
| 1972 | 174.6 | 82.8 | -- | 3.7 | -- | 92.2 | 42.4 | 14.2 | 114.2 |
| 1973 | 232.2 | 225.5 | -- | 2.3 | -- | 105.0 | 46.1 | 15.4 | 114.6 |
| 1974 | 197.8 | 297.3 | -- | 4.0 | -- | 112.9 | 48.9 | 16.4 | 109.7 |
| 1975 | 198.2 | 167.4 | -- | 6.8 | -- | 118.2 | 49.6 | 16.5 | 118.8 |
| 1976 | 205.4 | 119.9 | -- | 20.7 | -- | 126.6 | 52.1 | 17.3 | 127.7 |
| 1977 | 191.7 | 196.9 | -- | 2.9 | -- | 133.0 | 53.0 | 17.6 | 137.9 |
| 1978 | 200.2 | 179.5 | -- | 1.9 | -- | 132.6 | 54.8 | 18.3 | 135.5 |
| 1979 | 214.2 | 200.4 | -- | 1.5 | -- | 146.2 | 58.0 | 19.3 | 142.4 |
| 1980 | 223.1 | 233.2 | -- | 2.2 | -- | 144.7 | 58.5 | 19.5 | 161.3 |
| 1981 | 193.3 | 219.5 | -- | 4.7 | -- | 142.7 | 57.8 | 19.2 | 133.4 |
| 1982 | 189.0 | 203.9 | -- | 4.6 | -- | 157.1 | 59.5 | 19.9 | 120.2 |

APPENDIX TABLE 6. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 6, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|----------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|--|
| | (1) Ag, Lvstck | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households | |
| 1960 | 303.3 | 34.1 | -- | 8.5 | 84.4 | 201.1 | 31.2 | 10.3 | 102.5 | |
| 1961 | 309.7 | 41.7 | -- | 8.7 | 88.0 | 203.3 | 31.5 | 10.7 | 105.9 | |
| 1962 | 305.2 | 43.5 | -- | 7.5 | 90.4 | 203.7 | 32.9 | 11.1 | 121.3 | |
| 1963 | 289.1 | 43.3 | -- | 8.2 | 93.0 | 204.5 | 33.6 | 11.1 | 119.7 | |
| 1964 | 301.8 | 36.8 | -- | 10.5 | 100.4 | 231.4 | 34.4 | 11.5 | 122.6 | |
| 1965 | 315.9 | 36.9 | -- | 12.9 | 106.6 | 254.8 | 34.6 | 11.4 | 132.8 | |
| 1966 | 336.3 | 48.3 | -- | 12.0 | 111.6 | 275.1 | 34.7 | 11.6 | 166.6 | |
| 1967 | 330.2 | 42.4 | -- | 11.0 | 111.7 | 296.8 | 36.8 | 12.3 | 187.5 | |
| 1968 | 336.7 | 49.2 | -- | 4.3 | 110.4 | 336.1 | 36.1 | 12.0 | 179.4 | |
| 1969 | 339.3 | 42.1 | -- | 3.1 | 108.3 | 368.7 | 39.4 | 13.1 | 202.7 | |
| 1970 | 335.6 | 54.1 | -- | 4.5 | 105.3 | 396.9 | 40.3 | 13.4 | 191.5 | |
| 1971 | 335.9 | 46.6 | -- | 5.2 | 105.3 | 421.7 | 40.7 | 13.5 | 207.9 | |
| 1972 | 339.0 | 50.9 | -- | 6.0 | 112.4 | 442.4 | 40.8 | 13.7 | 237.9 | |
| 1973 | 447.6 | 105.4 | -- | 35.7 | 119.1 | 506.8 | 44.3 | 14.8 | 264.2 | |
| 1974 | 389.5 | 109.1 | -- | 16.8 | 124.7 | 548.0 | 47.1 | 15.7 | 251.3 | |
| 1975 | 416.5 | 66.8 | -- | 21.9 | 96.0 | 592.1 | 47.6 | 15.8 | 262.4 | |
| 1976 | 429.7 | 56.9 | -- | 22.4 | 113.7 | 626.6 | 50.1 | 16.6 | 285.1 | |
| 1977 | 427.8 | 73.5 | -- | 25.0 | 116.9 | 658.8 | 51.0 | 17.0 | 300.4 | |
| 1978 | 449.5 | 71.5 | -- | 11.3 | 136.8 | 645.8 | 52.7 | 17.6 | 289.9 | |
| 1979 | 497.1 | 73.6 | -- | 11.3 | 146.9 | 709.7 | 55.7 | 18.5 | 290.3 | |
| 1980 | 514.7 | 94.1 | -- | 10.9 | 120.8 | 725.4 | 56.3 | 18.8 | 314.5 | |
| 1981 | 454.5 | 112.2 | -- | 12.8 | 107.0 | 721.5 | 55.6 | 18.5 | 280.7 | |
| 1982 | 446.6 | 99.1 | -- | 12.7 | 98.0 | 804.5 | 57.2 | 19.1 | 252.8 | |

APPENDIX TABLE 7. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 7, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households |
| 1960 | 234.4 | 163.1 | -- | 2.8 | -- | 102.5 | 14.5 | 4.9 | 63.5 |
| 1961 | 243.5 | 164.2 | -- | 3.1 | -- | 99.5 | 14.8 | 4.9 | 65.7 |
| 1962 | 240.9 | 167.0 | -- | 2.5 | -- | 95.5 | 15.1 | 5.0 | 75.1 |
| 1963 | 226.0 | 207.2 | -- | 2.7 | -- | 91.7 | 15.6 | 5.2 | 74.2 |
| 1964 | 222.8 | 182.6 | -- | 3.7 | -- | 99.7 | 15.8 | 5.4 | 76.1 |
| 1965 | 241.2 | 209.3 | -- | 4.3 | -- | 106.3 | 16.0 | 5.2 | 82.2 |
| 1966 | 256.2 | 220.8 | -- | 4.2 | -- | 111.8 | 15.9 | 5.3 | 103.3 |
| 1967 | 235.1 | 222.3 | -- | 3.8 | -- | 116.9 | 17.0 | 5.6 | 116.2 |
| 1968 | 230.6 | 217.9 | -- | 1.5 | -- | 127.6 | 16.8 | 5.6 | 115.6 |
| 1969 | 233.5 | 241.5 | -- | 2.0 | -- | 136.1 | 18.2 | 6.1 | 135.4 |
| 1970 | 221.2 | 247.4 | -- | 1.6 | -- | 143.3 | 18.6 | 6.2 | 137.1 |
| 1971 | 219.3 | 233.2 | -- | 2.8 | -- | 150.0 | 18.8 | 6.3 | 136.2 |
| 1972 | 232.4 | 232.8 | -- | 0.9 | -- | 156.7 | 18.8 | 6.2 | 136.7 |
| 1973 | 325.4 | 486.8 | -- | 1.3 | -- | 172.8 | 20.5 | 6.9 | 154.3 |
| 1974 | 265.8 | 532.6 | -- | 2.0 | -- | 181.3 | 21.8 | 7.3 | 150.0 |
| 1975 | 257.8 | 368.4 | -- | 8.2 | -- | 186.4 | 22.0 | 7.3 | 155.5 |
| 1976 | 243.6 | 232.6 | -- | 6.3 | -- | 196.8 | 23.1 | 7.7 | 165.5 |
| 1977 | 225.8 | 394.1 | -- | 7.9 | -- | 204.3 | 23.6 | 7.9 | 187.4 |
| 1978 | 259.4 | 408.8 | -- | 5.9 | -- | 203.7 | 24.3 | 8.2 | 175.5 |
| 1979 | 271.4 | 412.5 | -- | 9.8 | -- | 224.6 | 25.7 | 8.6 | 182.8 |
| 1980 | 278.4 | 468.8 | -- | 14.0 | -- | 222.3 | 26.0 | 8.7 | 199.0 |
| 1981 | 237.0 | 459.0 | -- | 7.2 | -- | 219.2 | 25.7 | 8.5 | 172.5 |
| 1982 | 234.2 | 420.2 | -- | 7.1 | -- | 241.4 | 26.5 | 8.8 | 155.3 |

APPENDIX TABLE 8. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 8, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | Households | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|------------|-------------------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | | (17) Bus & Pers Service |
| 1960 | 407.1 | 93.4 | -- | 87.8 | 542.8 | 8,605.8 | 407.1 | 135.8 | 1,602.7 |
| 1961 | 412.3 | 112.8 | -- | 88.5 | 564.7 | 9,071.4 | 419.9 | 139.9 | 1,658.1 |
| 1962 | 398.4 | 112.3 | -- | 77.1 | 581.3 | 9,444.1 | 428.3 | 142.7 | 1,900.0 |
| 1963 | 369.4 | 107.8 | -- | 83.1 | 598.2 | 9,823.7 | 437.4 | 145.9 | 1,873.9 |
| 1964 | 378.1 | 113.4 | -- | 108.0 | 645.3 | 10,498.0 | 446.9 | 149.0 | 1,919.6 |
| 1965 | 389.3 | 115.9 | -- | 130.9 | 685.1 | 11,061.0 | 452.2 | 150.7 | 2,077.2 |
| 1966 | 408.2 | 135.1 | -- | 122.9 | 716.6 | 11,489.3 | 452.8 | 150.8 | 2,608.7 |
| 1967 | 394.1 | 125.4 | -- | 114.0 | 718.7 | 11,933.6 | 479.1 | 159.7 | 2,935.6 |
| 1968 | 392.8 | 126.8 | -- | 121.8 | 710.4 | 12,278.0 | 470.3 | 156.9 | 4,039.1 |
| 1969 | 387.5 | 127.1 | -- | 117.7 | 696.0 | 12,479.3 | 513.8 | 171.2 | 4,278.7 |
| 1970 | 375.1 | 166.1 | -- | 140.8 | 677.2 | 12,610.5 | 526.6 | 175.5 | 3,597.9 |
| 1971 | 373.4 | 138.6 | -- | 103.7 | 677.6 | 12,733.9 | 530.9 | 177.0 | 3,373.1 |
| 1972 | 386.5 | 163.5 | -- | 80.7 | 723.2 | 12,863.3 | 532.3 | 177.5 | 3,426.6 |
| 1973 | 515.2 | 260.5 | -- | 133.7 | 765.6 | 14,132.2 | 578.1 | 192.8 | 3,649.9 |
| 1974 | 447.7 | 294.2 | -- | 121.9 | 801.0 | 14,772.8 | 614.3 | 204.7 | 3,440.5 |
| 1975 | 407.5 | 221.8 | -- | 154.9 | 617.2 | 15,214.0 | 621.2 | 207.1 | 3,794.6 |
| 1976 | 417.4 | 183.9 | -- | 133.2 | 731.3 | 16,093.0 | 653.0 | 217.7 | 4,120.9 |
| 1977 | 403.2 | 200.5 | -- | 234.9 | 751.6 | 16,684.5 | 664.9 | 221.6 | 4,297.5 |
| 1978 | 440.4 | 225.5 | -- | 153.7 | 879.3 | 16,509.7 | 687.2 | 229.0 | 4,232.9 |
| 1979 | 472.0 | 241.4 | -- | 191.2 | 944.9 | 18,230.0 | 726.5 | 242.2 | 4,237.1 |
| 1980 | 488.9 | 234.8 | -- | 130.0 | 776.4 | 18,201.3 | 733.6 | 244.5 | 4,535.7 |
| 1981 | 430.6 | 283.8 | -- | 132.5 | 688.4 | 18,025.1 | 725.4 | 241.8 | 4,063.4 |
| 1982 | 423.8 | 215.4 | -- | 131.7 | 630.2 | 19,974.1 | 746.1 | 248.7 | 3,659.8 |

APPENDIX TABLE 9. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 9, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households |
| 1960 | 368.1 | 199.5 | -- | 6.7 | -- | 42.1 | 16.0 | 5.4 | 74.9 |
| 1961 | 381.1 | 215.9 | -- | 6.6 | -- | 44.5 | 16.6 | 5.6 | 77.2 |
| 1962 | 382.8 | 212.8 | -- | 5.8 | -- | 46.7 | 17.1 | 5.8 | 88.7 |
| 1963 | 363.5 | 272.5 | -- | 6.2 | -- | 48.7 | 17.3 | 5.7 | 87.3 |
| 1964 | 362.0 | 261.6 | -- | 8.0 | -- | 71.7 | 17.8 | 5.9 | 89.5 |
| 1965 | 391.2 | 233.8 | -- | 9.8 | -- | 93.2 | 17.9 | 6.0 | 96.8 |
| 1966 | 449.3 | 260.6 | -- | 9.2 | -- | 112.5 | 18.0 | 6.0 | 121.7 |
| 1967 | 414.8 | 317.9 | -- | 8.5 | -- | 131.0 | 19.1 | 6.3 | 136.8 |
| 1968 | 410.6 | 297.8 | -- | 12.0 | -- | 145.3 | 19.1 | 6.2 | 141.0 |
| 1969 | 423.1 | 351.8 | -- | 7.6 | -- | 156.7 | 20.4 | 6.7 | 159.8 |
| 1970 | 408.5 | 398.2 | -- | 9.5 | -- | 166.5 | 20.9 | 7.0 | 154.5 |
| 1971 | 405.2 | 337.4 | -- | 16.4 | -- | 175.5 | 21.1 | 7.0 | 158.7 |
| 1972 | 442.0 | 447.0 | -- | 13.8 | -- | 184.8 | 21.1 | 7.1 | 176.8 |
| 1973 | 630.6 | 633.5 | -- | 10.9 | -- | 188.2 | 22.8 | 7.5 | 177.8 |
| 1974 | 503.9 | 728.5 | -- | 4.2 | -- | 185.6 | 24.4 | 8.2 | 179.3 |
| 1975 | 490.0 | 451.1 | -- | 9.3 | -- | 181.4 | 24.6 | 8.2 | 186.9 |
| 1976 | 478.1 | 362.7 | -- | 2.7 | -- | 183.2 | 25.9 | 8.6 | 192.2 |
| 1977 | 435.3 | 494.1 | -- | 7.5 | -- | 183.2 | 26.4 | 8.7 | 222.3 |
| 1978 | 499.2 | 589.6 | -- | 8.9 | -- | 182.7 | 27.2 | 9.1 | 191.3 |
| 1979 | 510.2 | 521.9 | -- | 7.5 | -- | 201.5 | 28.8 | 9.6 | 214.9 |
| 1980 | 505.6 | 592.0 | -- | 13.3 | -- | 199.5 | 29.0 | 9.7 | 233.5 |
| 1981 | 418.9 | 588.7 | -- | 6.7 | -- | 196.7 | 28.8 | 9.6 | 199.7 |
| 1982 | 414.5 | 523.0 | -- | 6.6 | -- | 216.5 | 29.5 | 9.8 | 179.8 |

APPENDIX TABLE 10. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 10, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households |
| 1960 | 332.7 | 192.3 | -- | 9.8 | -- | 232.8 | 19.1 | 6.5 | 107.4 |
| 1961 | 339.4 | 237.9 | -- | 10.0 | -- | 284.4 | 19.7 | 6.6 | 111.3 |
| 1962 | 326.3 | 246.7 | -- | 8.5 | -- | 294.6 | 20.1 | 6.8 | 127.4 |
| 1963 | 312.8 | 254.5 | -- | 9.4 | -- | 304.9 | 20.5 | 6.9 | 125.6 |
| 1964 | 311.3 | 314.7 | -- | 12.2 | -- | 348.6 | 21.0 | 7.1 | 128.7 |
| 1965 | 341.1 | 263.6 | -- | 14.8 | -- | 387.8 | 21.2 | 7.2 | 139.2 |
| 1966 | 363.8 | 314.6 | -- | 13.9 | -- | 421.3 | 21.3 | 7.2 | 174.9 |
| 1967 | 328.2 | 313.1 | -- | 12.8 | -- | 453.3 | 22.4 | 7.4 | 196.7 |
| 1968 | 314.4 | 300.0 | -- | 12.2 | -- | 434.3 | 21.5 | 7.1 | 188.4 |
| 1969 | 326.3 | 317.5 | -- | 4.7 | -- | 507.9 | 23.9 | 8.0 | 264.4 |
| 1970 | 310.8 | 399.4 | -- | 3.9 | -- | 526.9 | 24.8 | 8.3 | 229.2 |
| 1971 | 308.9 | 320.0 | -- | 12.4 | -- | 545.1 | 24.9 | 8.3 | 242.4 |
| 1972 | 335.1 | 406.4 | -- | 19.9 | -- | 564.2 | 25.0 | 8.3 | 255.3 |
| 1973 | 480.8 | 627.6 | -- | 20.3 | -- | 653.9 | 27.2 | 9.1 | 253.3 |
| 1974 | 399.7 | 733.1 | -- | 17.4 | -- | 711.7 | 28.8 | 9.6 | 249.6 |
| 1975 | 364.0 | 481.9 | -- | 54.2 | -- | 752.7 | 29.1 | 9.7 | 253.2 |
| 1976 | 334.2 | 533.2 | -- | 32.8 | -- | 811.3 | 30.6 | 10.2 | 267.1 |
| 1977 | 340.9 | 483.5 | -- | 12.6 | -- | 857.1 | 31.2 | 10.4 | 298.8 |
| 1978 | 385.0 | 575.8 | -- | 12.5 | -- | 854.8 | 32.3 | 10.8 | 275.0 |
| 1979 | 385.6 | 495.9 | -- | 5.0 | -- | 942.6 | 34.1 | 11.3 | 299.7 |
| 1980 | 414.0 | 522.8 | -- | 3.9 | -- | 932.9 | 34.4 | 11.5 | 339.1 |
| 1981 | 356.2 | 460.1 | -- | 10.8 | -- | 919.9 | 34.0 | 11.3 | 280.1 |
| 1982 | 349.7 | 442.6 | -- | 10.7 | -- | 1,012.8 | 35.0 | 11.6 | 252.3 |

APPENDIX TABLE 11. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA REGION 11, 1960-1982, MILLION DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|----------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|--|
| | (1) Ag, Lvstck | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households | |
| 1960 | 510.6 | 129.3 | 10.3 | 17.0 | 144.8 | 853.1 | 111.8 | 37.2 | 155.9 | |
| 1961 | 520.7 | 172.6 | 11.8 | 17.4 | 150.6 | 885.7 | 115.3 | 38.4 | 161.4 | |
| 1962 | 503.1 | 174.6 | 7.8 | 15.1 | 155.0 | 909.3 | 117.6 | 39.2 | 184.9 | |
| 1963 | 475.0 | 183.7 | 11.1 | 16.3 | 159.5 | 934.0 | 120.2 | 40.1 | 182.2 | |
| 1964 | 481.2 | 152.6 | 9.0 | 21.2 | 172.1 | 1,023.4 | 122.6 | 41.0 | 186.7 | |
| 1965 | 500.6 | 208.6 | 12.2 | 25.5 | 182.8 | 1,100.6 | 124.2 | 41.5 | 202.1 | |
| 1966 | 540.5 | 218.5 | 12.0 | 24.0 | 191.0 | 1,163.5 | 124.3 | 41.3 | 253.9 | |
| 1967 | 517.7 | 210.0 | 6.7 | 22.2 | 191.6 | 1,228.4 | 131.4 | 43.7 | 285.6 | |
| 1968 | 520.8 | 196.6 | 2.4 | 23.4 | 189.3 | 1,262.1 | 129.1 | 43.0 | 306.8 | |
| 1969 | 536.1 | 227.4 | 0.4 | 37.8 | 185.7 | 1,281.5 | 141.0 | 47.0 | 313.6 | |
| 1970 | 514.7 | 280.1 | -- | 54.9 | 180.7 | 1,294.1 | 144.4 | 48.0 | 292.0 | |
| 1971 | 514.4 | 230.6 | -- | 30.3 | 180.7 | 1,304.9 | 145.6 | 48.6 | 319.7 | |
| 1972 | 545.6 | 287.9 | -- | 23.8 | 192.9 | 1,314.5 | 146.1 | 48.8 | 328.4 | |
| 1973 | 750.7 | 437.3 | -- | 5.7 | 204.2 | 1,436.2 | 158.7 | 52.8 | 372.8 | |
| 1974 | 631.4 | 512.8 | -- | 8.2 | 213.7 | 1,499.2 | 168.6 | 56.2 | 380.3 | |
| 1975 | 602.1 | 350.7 | -- | 24.0 | 164.5 | 1,562.3 | 170.5 | 56.8 | 403.7 | |
| 1976 | 603.8 | 378.1 | -- | 19.1 | 195.0 | 1,627.5 | 179.2 | 59.7 | 434.9 | |
| 1977 | 608.6 | 321.5 | -- | 13.8 | 200.5 | 1,683.4 | 182.5 | 60.9 | 469.0 | |
| 1978 | 672.2 | 347.6 | -- | 9.2 | 234.5 | 1,659.5 | 188.6 | 62.9 | 434.8 | |
| 1979 | 720.3 | 348.5 | -- | 96.4 | 252.0 | 1,825.9 | 199.3 | 66.4 | 465.5 | |
| 1980 | 744.4 | 340.8 | -- | 18.1 | 207.0 | 1,846.6 | 201.3 | 67.1 | 477.9 | |
| 1981 | 651.5 | 413.0 | -- | 22.0 | 183.6 | 1,831.4 | 199.0 | 66.3 | 432.8 | |
| 1982 | 641.9 | 318.6 | -- | 21.9 | 168.1 | 2,033.7 | 204.7 | 68.2 | 389.8 | |

APPENDIX TABLE 12. SALES FOR FINAL DEMAND, BY ECONOMIC SECTOR, MINNESOTA, 1960-1982, MILLION DOLLARS
(1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | |
|------|---------------------|---------------------|------------------------|---------------|---------------|------------------------------|-------------------------|-------------------------------|--------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (15) Retail Trade | (17) Bus & Pers Service | (20) Households |
| 1960 | 2,684.3 | 1,107.4 | 1,215.5 | 167.5 | 1,206.5 | 11,007.2 | 832.7 | 277.7 | 2,532.0 |
| 1961 | 2,735.5 | 1,221.7 | 1,041.4 | 169.1 | 1,255.2 | 11,573.7 | 858.6 | 286.4 | 2,619.4 |
| 1962 | 2,673.4 | 1,210.5 | 969.6 | 147.5 | 1,291.4 | 11,984.2 | 876.9 | 292.4 | 3,001.8 |
| 1963 | 2,518.5 | 1,356.1 | 1,009.9 | 158.8 | 1,329.1 | 12,405.3 | 895.6 | 298.5 | 2,960.2 |
| 1964 | 2,558.5 | 1,422.5 | 1,095.3 | 206.5 | 1,433.7 | 13,293.0 | 914.9 | 305.2 | 3,032.7 |
| 1965 | 2,700.1 | 1,471.3 | 1,094.9 | 250.3 | 1,522.8 | 14,036.7 | 925.4 | 308.2 | 3,281.5 |
| 1966 | 2,910.1 | 1,529.5 | 1,153.6 | 234.7 | 1,592.5 | 14,609.4 | 926.3 | 308.8 | 4,121.3 |
| 1967 | 2,754.4 | 1,590.2 | 1,051.1 | 217.8 | 1,597.1 | 15,213.3 | 980.5 | 326.8 | 4,637.7 |
| 1968 | 2,731.0 | 1,512.5 | 1,093.3 | 232.3 | 1,578.4 | 15,719.4 | 963.7 | 321.0 | 5,775.5 |
| 1969 | 2,753.4 | 1,656.0 | 1,165.3 | 262.3 | 1,546.9 | 16,036.0 | 1,051.1 | 350.4 | 6,198.6 |
| 1970 | 2,660.1 | 1,854.2 | 1,108.0 | 259.6 | 1,505.0 | 16,258.4 | 1,077.5 | 359.1 | 5,451.3 |
| 1971 | 2,644.9 | 1,698.6 | 1,011.8 | 201.6 | 1,505.5 | 16,449.7 | 1,086.3 | 362.0 | 5,335.2 |
| 1972 | 2,770.9 | 1,945.4 | 1,067.0 | 172.9 | 1,606.9 | 16,643.3 | 1,089.2 | 363.5 | 5,487.4 |
| 1973 | 3,795.3 | 3,324.8 | 1,312.2 | 237.4 | 1,701.6 | 18,354.1 | 1,183.0 | 394.6 | 5,906.9 |
| 1974 | 3,177.9 | 3,875.2 | 1,465.1 | 220.5 | 1,780.0 | 19,251.8 | 1,257.2 | 419.0 | 5,672.2 |
| 1975 | 3,053.2 | 2,535.9 | 1,434.0 | 387.6 | 1,371.5 | 19,993.8 | 1,271.5 | 423.9 | 6,133.2 |
| 1976 | 3,062.6 | 2,387.4 | 1,527.2 | 295.4 | 1,625.0 | 21,095.7 | 1,336.5 | 445.4 | 6,639.5 |
| 1977 | 2,967.7 | 2,691.4 | 992.3 | 329.5 | 1,670.2 | 21,900.1 | 1,360.8 | 453.5 | 7,018.3 |
| 1978 | 3,263.5 | 3,028.6 | 1,922.8 | 248.6 | 1,954.1 | 21,616.4 | 1,406.6 | 469.0 | 6,829.2 |
| 1979 | 3,468.8 | 3,998.5 | 2,141.3 | 384.0 | 2,099.8 | 23,846.6 | 1,486.9 | 495.4 | 6,926.7 |
| 1980 | 3,563.9 | 3,058.0 | 1,686.8 | 243.4 | 1,725.3 | 23,942.3 | 1,501.1 | 500.5 | 7,388.8 |
| 1981 | 3,075.8 | 3,266.5 | 1,870.8 | 235.4 | 1,529.8 | 23,738.5 | 1,484.5 | 494.7 | 6,599.9 |
| 1982 | 3,031.3 | 2,837.8 | 1,898.0 | 233.8 | 1,400.4 | 26,351.3 | 1,527.0 | 509.0 | 5,944.5 |

APPENDIX TABLE 13. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 2, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -700,827.7 + 414.653(X)$ |
| (2) Ag, Crops | $Y = -1,419,141 + 733.119(X)$ |
| (3) Metal Mining | $Y = 7,284,823 - 3,598.75(X)$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = -346,713.1 + 180.185(X)$ |
| (8) Lumber & Assoc Prod | $Y = -9,595,156 + 5,000.28(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -25,134,050 + 12,828.4(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -8,049,589 + 4,155.37(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -2,686,972 + 1,387.03(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -24,065,660 + 12,304.4(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 14. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 3, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|--------------------------------|
| (1) Ag, Livestock | $Y = -626,298.7 + 348.931(X)$ |
| (2) Ag, Crops | $Y = -182,799.4 + 95.5575(X)$ |
| (3) Metal Mining | $Y = -88,629,150 + 45,579(X)$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = 26,395.09 - 3.58157(X)$ |
| (8) Lumber & Assoc Prod | $Y = -5,278,138 + 2,750.55(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -2,498,256 + 1,758.72(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -5,506,576 + 2,842.61(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -1,834,881 + 947.206(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -34,849,200 + 17,824(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 15. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 4, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = 607,429.2 - 267.607(X)$ |
| (2) Ag, Crops | $Y = -15,313,530 + 7,837.37(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = -19,378.18 + 15.4571(X)$ |
| (8) Lumber & Assoc Prod | $Y = 0^b$ |
| (9) Ag Proc & Misc Mfg | $Y = -21,106,620 + 10,805.6(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -1,748,608 + 902.646(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -582,935.8 + 300.91(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -10,314,520 + 5,276.62(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 16. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 5, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -2,489,111 + 1,358.36(X)$ |
| (2) Ag, Crops | $Y = -14,285,860 + 7,321.92(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = 55,737.7 - 26.2011(X)$ |
| (8) Lumber & Assoc Prod | $Y = 0^b$ |
| (9) Ag Proc & Misc Mfg | $Y = -10,573,260 + 5,412.13(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -2,591,027 + 1,337.52(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -866,049.1 + 447.038(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -10,335,520 + 5,287.14(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 17. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 6, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -16,631,770 + 8,633.88(X)$ |
| (2) Ag, Crops | $Y = -4,526,053 + 2,336.12(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = -446,521.6 + 231.527(X)$ |
| (8) Lumber & Assoc Prod | $Y = -3,360,863 + 1,751.37(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -58,993,120 + 30,158.3(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -2,497,261 + 1,289.06(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -830,734.1 + 428.841(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -21,939,980 + 11,217.9(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 18. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 7, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -1,474,813 + 870.611(X)$ |
| (2) Ag, Crops | $Y = -28,107,950 + 14,415.6(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = -457,458.6 + 235.685(X)$ |
| (8) Lumber & Assoc Prod | $Y = 0^b$ |
| (9) Ag Proc & Misc Mfg | $Y = -15,324,550 + 7,850.67(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -1,153,987 + 595.686(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -385,465.1 + 198.956(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -13,169,520 + 6,736.56(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 19. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 8, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -4,331,335 + 2,412.47(X)$ |
| (2) Ag, Crops | $Y = -13,636,000 + 7,006.9(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = -5,003,133 + 2,591.89(X)$ |
| (8) Lumber & Assoc Prod | $Y = -21,578,590 + 11,245.3(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -878,697,000 + 453,019(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -32,477,200 + 5,588.35(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -10,825,520 + 5,588.35(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -292,889,100 + 149,912(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 20. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 9, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -14,233,090 + 7,410.11(X)$ |
| (2) Ag, Crops | $Y = -35,517,200 + 18,215.6(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = -49,942.88 + 29.6868(X)$ |
| (8) Lumber & Assoc Prod | $Y = 0^b$ |
| (9) Ag Proc & Misc Mfg | $Y = -15,620,330 + 7,988.17(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -1,282,121 + 661.899(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -425,610.8 + 219.743(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -15,574,790 + 7,965.23(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 21. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 10, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -4,307,466 + 2,362.83(X)$ |
| (2) Ag, Crops | $Y = -29,258,620 + 15,009.5(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = 44,652.41 - 18.2664(X)$ |
| (8) Lumber & Assoc Prod | $Y = 0^b$ |
| (9) Ag Proc & Misc Mfg | $Y = -70,305,710 + 35,972.2(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -1,522,071 + 785.734(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -494,595.6 + 255.458(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -20,943,420 + 10,718.8(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 22. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 11, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|---------------------------------|
| (1) Ag, Livestock | $Y = -16,133,150 + 8,486.84(X)$ |
| (2) Ag, Crops | $Y = -21,828,340 + 11,199.3(X)$ |
| (3) Metal Mining | $Y = 0^b$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = 129,854.6 - 55.1176(X)$ |
| (8) Lumber & Assoc Prod | $Y = -5,749,575 + 2,996.37(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -95,744,530 + 49,292.5(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -8,903,303 + 4,596.15(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -2,964,323 + 1,530.3(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -33,116,300 + 16,935.8(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 23. REGRESSION EQUATIONS^a FOR PROJECTING FINAL DEMAND VECTORS FOR THE 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Sector | Equation |
|----------------------------|-----------------------------------|
| (1) Ag, Livestock | $Y = -57,709,700 + 30,758.9(X)$ |
| (2) Ag, Crops | $Y = -187,571,800 + 96,227.1(X)$ |
| (3) Metal Mining | $Y = -82,158,220 + 42,391.1(X)$ |
| (4) Coal Mining | $Y = 0^b$ |
| (5) Pet/NG Exp/Ext | $Y = 0^b$ |
| (6) Nonmetallic Mining | $Y = 0^b$ |
| (7) Construction | $Y = -8,971,384 + 4,648.62(X)$ |
| (8) Lumber & Assoc Prod | $Y = -47,947,410 + 24,987(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -1,216,310,000 + 626,445(X)$ |
| (10) Pet Refining | $Y = 0^b$ |
| (11) Metal Processing | $Y = 0^b$ |
| (12) Transportation | $Y = 0^b$ |
| (13) Comm & Pub Util | $Y = 0^b$ |
| (14) Electric Generation | $Y = 0^b$ |
| (15) Retail Trade | $Y = -66,467,860 + 34,312(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 0^b$ |
| (17) Bus & Pers Service | $Y = -22,149,140 + 11,433.9(X)$ |
| (18) Prof & Soc Service | $Y = 0^b$ |
| (19) Government | $Y = 0^b$ |
| (20) Households | $Y = -487,549,400 + 249,467(X)$ |

^aRobust regression with an intercept adjustment technique.

^bAn economic sector having no sales for final demand.

APPENDIX TABLE 24. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 2, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|-------|-------|-------|-------|-------|
| (1) Ag, Livestock | 121.0 | 121.8 | 123.9 | 126.0 | 128.1 | 130.1 |
| (2) Ag, Crops | 33.9 | 35.4 | 39.0 | 42.7 | 46.4 | 50.0 |
| (3) Metal Mining | 152.1 | 144.9 | 126.9 | 108.9 | 90.9 | 72.9 |
| (7) Construction | 10.4 | 10.8 | 11.7 | 12.6 | 13.5 | 14.4 |
| (8) Lumber & Assoc Prod | 315.4 | 325.4 | 350.4 | 375.4 | 400.4 | 425.4 |
| (9) Ag Proc & Misc Mfg | 291.8 | 317.5 | 381.6 | 445.8 | 509.9 | 574.1 |
| (15) Retail Trade | 186.4 | 194.7 | 215.4 | 236.2 | 257.0 | 277.8 |
| (17) Bus & Pers Service | 62.1 | 64.9 | 71.8 | 78.8 | 85.7 | 92.6 |
| (20) Households | 321.7 | 346.3 | 407.8 | 469.3 | 530.8 | 592.4 |

APPENDIX TABLE 25. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 3, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|---------|---------|---------|---------|---------|---------|
| (1) Ag, Livestock | 65.3 | 66.0 | 67.7 | 69.5 | 71.2 | 73.0 |
| (2) Ag, Crops | 6.6 | 6.8 | 7.3 | 7.7 | 8.2 | 8.7 |
| (3) Metal Mining | 1,708.4 | 1,799.6 | 2,027.5 | 2,255.4 | 2,483.3 | 2,711.2 |
| (7) Construction | 19.3 | 19.3 | 19.3 | 19.3 | 19.2 | 19.2 |
| (8) Lumber & Assoc Prod | 173.5 | 179.0 | 192.7 | 206.5 | 220.2 | 234.0 |
| (9) Ag Proc & Misc Mfg | 987.5 | 991.0 | 999.8 | 1,008.6 | 1,017.4 | 1,026.2 |
| (15) Retail Trade | 127.5 | 133.2 | 147.4 | 161.6 | 175.8 | 190.0 |
| (17) Bus & Pers Service | 42.5 | 44.4 | 49.1 | 53.8 | 58.6 | 63.3 |
| (20) Households | 478.0 | 513.6 | 602.7 | 691.9 | 781.0 | 870.1 |

APPENDIX TABLE 26. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 4, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|-------|-------|-------|-------|-------|
| (1) Ag, Livestock | 77.0 | 76.5 | 75.2 | 73.8 | 72.5 | 71.1 |
| (2) Ag, Crops | 220.1 | 235.8 | 275.0 | 314.2 | 353.4 | 392.6 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 11.3 | 11.3 | 11.4 | 11.4 | 11.5 | 11.6 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 310.1 | 331.7 | 385.7 | 439.7 | 493.8 | 547.8 |
| (15) Retail Trade | 40.4 | 42.2 | 46.8 | 51.3 | 55.8 | 60.3 |
| (17) Bus & Pers Service | 13.5 | 14.1 | 15.6 | 17.1 | 18.6 | 20.1 |
| (20) Households | 143.7 | 154.3 | 180.7 | 207.1 | 233.4 | 259.8 |

APPENDIX TABLE 27. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 5, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|-------|-------|-------|-------|-------|
| (1) Ag, Livestock | 203.2 | 205.9 | 212.7 | 219.5 | 226.3 | 233.0 |
| (2) Ag, Crops | 226.2 | 240.8 | 277.4 | 314.0 | 350.7 | 387.3 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 3.8 | 3.8 | 3.6 | 3.5 | 3.4 | 3.2 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 153.6 | 164.4 | 191.5 | 218.5 | 245.6 | 272.6 |
| (15) Retail Trade | 59.9 | 62.6 | 69.3 | 76.0 | 82.7 | 89.4 |
| (17) Bus & Pers Service | 20.0 | 20.9 | 23.1 | 25.3 | 27.6 | 29.8 |
| (20) Households | 143.6 | 154.2 | 180.6 | 207.0 | 233.5 | 259.9 |

APPENDIX TABLE 28. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 6, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|-------|-------|---------|---------|---------|
| (1) Ag, Livestock | 480.6 | 497.8 | 541.0 | 584.2 | 627.4 | 670.5 |
| (2) Ag, Crops | 104.1 | 108.8 | 120.5 | 132.2 | 143.9 | 155.5 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 12.4 | 12.8 | 14.0 | 15.1 | 16.3 | 17.5 |
| (8) Lumber & Assoc Prod | 110.4 | 113.9 | 122.6 | 131.4 | 140.1 | 148.9 |
| (9) Ag Proc & Misc Mfg | 780.6 | 840.9 | 991.7 | 1,142.5 | 1,293.3 | 1,444.1 |
| (15) Retail Trade | 57.7 | 60.2 | 66.7 | 73.1 | 79.6 | 86.0 |
| (17) Bus & Pers Service | 19.2 | 20.1 | 22.2 | 24.4 | 26.5 | 28.7 |
| (20) Households | 293.9 | 316.3 | 372.4 | 428.5 | 484.6 | 540.7 |

APPENDIX TABLE 29. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 7, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|-------|-------|-------|-------|-------|
| (1) Ag, Livestock | 250.7 | 252.5 | 256.8 | 261.2 | 265.5 | 269.9 |
| (2) Ag, Crops | 463.8 | 492.6 | 564.7 | 636.8 | 708.8 | 780.9 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 9.7 | 10.1 | 11.3 | 12.5 | 13.7 | 14.9 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 235.5 | 251.2 | 290.4 | 329.7 | 368.9 | 408.2 |
| (15) Retail Trade | 26.7 | 27.9 | 30.8 | 33.8 | 36.8 | 39.8 |
| (17) Bus & Pers Service | 8.9 | 9.3 | 10.3 | 11.3 | 12.2 | 13.2 |
| (20) Households | 182.3 | 195.8 | 229.5 | 263.2 | 296.9 | 330.5 |

APPENDIX TABLE 30. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 8, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|----------|----------|----------|----------|----------|----------|
| (1) Ag, Livestock | 450.2 | 455.0 | 467.1 | 479.1 | 491.2 | 503.3 |
| (2) Ag, Crops | 251.7 | 265.7 | 300.7 | 335.8 | 370.8 | 405.8 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 134.0 | 139.2 | 152.1 | 165.1 | 178.1 | 191.0 |
| (8) Lumber & Assoc Prod | 709.6 | 732.1 | 788.3 | 844.5 | 900.8 | 957.0 |
| (9) Ag Proc & Misc Mfg | 19,186.7 | 20,092.7 | 22,357.8 | 24,622.9 | 26,888.0 | 29,153.1 |
| (15) Retail Trade | 751.8 | 785.4 | 869.2 | 953.0 | 1,036.8 | 1,120.7 |
| (17) Bus & Pers Service | 250.6 | 261.8 | 289.7 | 317.7 | 345.6 | 373.5 |
| (20) Households | 4,236.5 | 4,536.3 | 5,285.9 | 6,035.4 | 6,785.0 | 7,534.5 |

APPENDIX TABLE 31. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 9, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|-------|-------|-------|-------|-------|
| (1) Ag, Livestock | 453.7 | 468.6 | 505.6 | 542.7 | 579.7 | 616.8 |
| (2) Ag, Crops | 586.1 | 622.6 | 713.6 | 804.7 | 895.8 | 986.9 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 8.9 | 9.0 | 9.1 | 9.3 | 9.4 | 9.5 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 212.2 | 228.2 | 268.1 | 308.1 | 348.0 | 388.0 |
| (15) Retail Trade | 29.8 | 31.1 | 34.4 | 37.7 | 41.0 | 44.3 |
| (17) Bus & Pers Service | 9.9 | 10.4 | 11.5 | 12.6 | 13.7 | 14.8 |
| (20) Households | 212.3 | 228.2 | 268.1 | 307.9 | 347.7 | 387.5 |

APPENDIX TABLE 32. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 10, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|-------|---------|---------|---------|---------|---------|
| (1) Ag, Livestock | 375.7 | 380.4 | 392.2 | 404.0 | 415.8 | 427.6 |
| (2) Ag, Crops | 490.2 | 520.2 | 595.3 | 670.3 | 745.4 | 820.4 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 8.5 | 8.5 | 8.4 | 8.3 | 8.2 | 8.1 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 991.2 | 1,063.1 | 1,243.0 | 1,422.9 | 1,602.7 | 1,782.6 |
| (15) Retail Trade | 35.3 | 36.8 | 40.8 | 44.7 | 48.6 | 52.5 |
| (17) Bus & Pers Service | 11.7 | 12.2 | 13.5 | 14.8 | 16.1 | 17.3 |
| (20) Households | 301.2 | 322.7 | 376.3 | 429.9 | 483.5 | 537.1 |

APPENDIX TABLE 33. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS, MINNESOTA REGION 11, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|---------|---------|---------|---------|---------|---------|
| (1) Ag, Livestock | 687.8 | 704.7 | 747.2 | 789.6 | 832.0 | 874.5 |
| (2) Ag, Crops | 368.7 | 391.1 | 447.1 | 503.1 | 559.1 | 615.1 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- |
| (7) Construction | 20.6 | 20.5 | 20.2 | 20.0 | 19.7 | 19.4 |
| (8) Lumber & Assoc Prod | 189.2 | 195.2 | 210.2 | 225.2 | 240.2 | 255.2 |
| (9) Ag Proc & Misc Mfg | 1,953.2 | 2,051.8 | 2,298.3 | 2,544.7 | 2,791.2 | 3,037.6 |
| (15) Retail Trade | 206.3 | 215.5 | 238.4 | 261.4 | 284.4 | 307.4 |
| (17) Bus & Pers Service | 68.7 | 71.8 | 79.4 | 87.1 | 94.7 | 102.4 |
| (20) Households | 450.5 | 484.3 | 569.0 | 653.7 | 738.4 | 823.0 |

APPENDIX TABLE 34. PROJECTED FINAL DEMAND VECTORS FOR BASIC ECONOMIC SECTORS,
MINNESOTA, SELECTED YEARS 1983 TO 2005, MILLION DOLLARS (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|--------------------------|----------|----------|----------|----------|----------|----------|
| (1) Ag, Livestock | 3,254.4 | 3,316.0 | 3,469.8 | 3,623.5 | 3,777.3 | 3,931.1 |
| (2) Ag, Crops | 3,150.3 | 3,342.8 | 3,823.9 | 4,305.0 | 4,786.2 | 5,267.3 |
| (3) Metal Mining | 1,860.9 | 1,945.7 | 2,157.7 | 2,369.6 | 2,581.6 | 2,793.5 |
| (7) Construction | 242.2 | 251.5 | 274.7 | 298.0 | 321.2 | 344.5 |
| (8) Lumber & Assoc Prod | 1,576.8 | 1,626.8 | 1,751.7 | 1,876.7 | 2,001.6 | 2,126.5 |
| (9) Ag Proc & Misc Mfg | 25,304.0 | 26,556.9 | 29,689.1 | 32,821.3 | 35,953.6 | 39,085.8 |
| (15) Retail Trade | 1,538.5 | 1,607.1 | 1,778.7 | 1,950.3 | 2,121.8 | 2,293.4 |
| (17) Bus & Pers Service | 512.8 | 535.7 | 592.9 | 650.1 | 707.2 | 764.4 |
| (20) Households | 6,894.2 | 7,393.1 | 8,640.5 | 9,887.8 | 11,135.1 | 12,382.5 |

APPENDIX TABLE 35. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 2, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|----------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstck | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 172,881 | 82,489 | 339,877 | 150 | -- | 4,443 | 61,418 | 255,980 | 21,817 | -- | 3,030 |
| 1961 | 172,664 | 79,409 | 292,505 | 129 | -- | 4,340 | 61,310 | 264,257 | 120,169 | -- | 2,630 |
| 1962 | 168,190 | 77,801 | 260,772 | 115 | -- | 4,295 | 61,227 | 270,241 | 117,307 | -- | 2,361 |
| 1963 | 159,751 | 76,484 | 249,439 | 110 | -- | 4,243 | 61,469 | 277,538 | 112,731 | -- | 2,268 |
| 1964 | 166,463 | 83,133 | 252,499 | 111 | -- | 4,488 | 66,307 | 298,788 | 125,237 | -- | 2,304 |
| 1965 | 170,422 | 84,592 | 229,607 | 101 | -- | 4,618 | 69,900 | 316,106 | 135,308 | -- | 2,117 |
| 1966 | 177,599 | 90,320 | 250,006 | 110 | -- | 4,988 | 74,845 | 330,874 | 146,921 | -- | 2,299 |
| 1967 | 175,716 | 95,617 | 194,021 | 86 | -- | 4,971 | 75,407 | 329,848 | 164,623 | -- | 1,821 |
| 1968 | 173,888 | 102,897 | 203,314 | 90 | -- | 4,842 | 71,559 | 326,324 | 185,140 | -- | 1,898 |
| 1969 | 177,884 | 109,504 | 202,294 | 89 | -- | 5,216 | 78,870 | 319,916 | 205,796 | -- | 1,886 |
| 1970 | 177,702 | 124,906 | 205,014 | 90 | -- | 5,041 | 70,975 | 311,714 | 224,206 | -- | 1,906 |
| 1971 | 179,274 | 121,693 | 179,515 | 79 | -- | 5,160 | 75,465 | 310,933 | 233,705 | -- | 1,687 |
| 1972 | 177,687 | 117,868 | 173,395 | 77 | -- | 5,146 | 74,433 | 331,259 | 224,742 | -- | 1,645 |
| 1973 | 225,987 | 161,542 | 209,547 | 92 | -- | 6,177 | 88,610 | 351,631 | 298,323 | -- | 1,964 |
| 1974 | 206,749 | 169,848 | 235,840 | 104 | -- | 6,804 | 106,641 | 368,424 | 329,760 | -- | 2,197 |
| 1975 | 205,241 | 201,044 | 199,574 | 88 | -- | 6,420 | 92,037 | 284,412 | 430,952 | -- | 1,845 |
| 1976 | 221,881 | 209,858 | 237,200 | 105 | -- | 7,107 | 103,925 | 337,007 | 437,477 | -- | 2,193 |
| 1977 | 227,437 | 223,826 | 166,935 | 74 | -- | 6,998 | 99,861 | 343,783 | 465,944 | -- | 1,596 |
| 1978 | 237,344 | 208,339 | 234,366 | 103 | -- | 7,648 | 116,153 | 403,479 | 418,368 | -- | 2,201 |
| 1979 | 253,593 | 221,974 | 204,221 | 90 | -- | 8,015 | 124,844 | 431,877 | 445,140 | -- | 1,958 |
| 1980 | 265,578 | 292,838 | 143,476 | 63 | -- | 7,823 | 111,538 | 354,101 | 557,893 | -- | 1,401 |
| 1981 | 241,303 | 268,741 | 191,528 | 85 | -- | 7,462 | 105,784 | 316,205 | 565,984 | -- | 1,792 |
| 1982 | 254,848 | 298,275 | 194,361 | 86 | -- | 7,555 | 104,408 | 290,100 | 662,724 | -- | 1,804 |

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APPENDIX TABLE 35. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 2, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 31,171 | 72,688 | -- | 484,008 | 94,054 | 97,222 | 53,780 | 64,174 | 672,263 | 2,611,444 |
| 1961 | 28,641 | 71,009 | -- | 481,179 | 92,317 | 98,938 | 53,237 | 62,476 | 661,491 | 2,546,694 |
| 1962 | 27,023 | 71,013 | -- | 487,407 | 92,991 | 100,606 | 53,989 | 62,496 | 672,002 | 2,529,830 |
| 1963 | 26,465 | 70,375 | -- | 485,221 | 92,001 | 101,863 | 53,666 | 61,679 | 663,773 | 2,499,075 |
| 1964 | 27,400 | 73,605 | -- | 505,304 | 96,401 | 106,702 | 56,343 | 64,440 | 693,171 | 2,622,689 |
| 1965 | 26,687 | 75,219 | -- | 518,066 | 99,024 | 110,390 | 58,228 | 65,788 | 714,093 | 2,680,258 |
| 1966 | 28,699 | 81,907 | -- | 559,079 | 108,690 | 115,575 | 63,868 | 72,178 | 793,429 | 2,901,382 |
| 1967 | 25,737 | 81,862 | -- | 574,897 | 110,089 | 118,508 | 64,735 | 72,351 | 810,086 | 2,900,370 |
| 1968 | 26,057 | 80,104 | -- | 560,885 | 107,381 | 116,327 | 62,789 | 70,659 | 780,417 | 2,874,570 |
| 1969 | 26,465 | 85,128 | -- | 606,619 | 115,093 | 121,997 | 66,832 | 75,625 | 846,891 | 3,046,099 |
| 1970 | 26,504 | 84,911 | -- | 611,649 | 115,256 | 122,096 | 66,279 | 75,659 | 841,711 | 3,065,611 |
| 1971 | 25,196 | 85,406 | -- | 619,795 | 116,561 | 122,932 | 67,209 | 76,227 | 858,098 | 3,078,927 |
| 1972 | 25,338 | 87,026 | -- | 627,723 | 118,666 | 126,309 | 69,031 | 77,470 | 876,287 | 3,114,094 |
| 1973 | 29,437 | 101,180 | -- | 731,364 | 139,715 | 140,230 | 79,765 | 91,179 | 1,027,421 | 3,684,155 |
| 1974 | 31,740 | 106,269 | -- | 766,069 | 146,020 | 147,470 | 83,205 | 95,375 | 1,070,536 | 3,873,050 |
| 1975 | 28,113 | 102,326 | -- | 767,670 | 143,810 | 137,629 | 79,425 | 93,528 | 1,057,624 | 3,831,735 |
| 1976 | 32,220 | 113,138 | -- | 832,946 | 158,070 | 151,531 | 88,152 | 102,989 | 1,162,719 | 4,198,512 |
| 1977 | 28,700 | 113,491 | -- | 851,409 | 160,767 | 154,558 | 89,767 | 103,716 | 1,187,046 | 4,225,902 |
| 1978 | 34,104 | 121,213 | -- | 882,884 | 168,559 | 166,007 | 95,502 | 109,563 | 1,240,994 | 4,446,818 |
| 1979 | 33,569 | 124,815 | -- | 917,247 | 174,055 | 174,755 | 98,751 | 112,580 | 1,275,824 | 4,603,296 |
| 1980 | 29,138 | 123,247 | -- | 946,686 | 177,403 | 168,025 | 97,197 | 113,581 | 1,293,451 | 4,683,426 |
| 1981 | 30,349 | 117,421 | -- | 897,888 | 167,131 | 158,889 | 91,008 | 107,895 | 1,216,341 | 4,485,803 |
| 1982 | 30,343 | 116,963 | -- | 906,479 | 167,203 | 157,576 | 89,300 | 107,881 | 1,200,603 | 4,590,503 |

APPENDIX TABLE 36. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 3, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 270,755 | 560,364 | 1,025,976 | 453 | -- | 11,416 | 134,256 | 169,741 | 1,446,221 | -- | 8,847 |
| 1961 | 269,337 | 565,438 | 874,454 | 386 | -- | 11,029 | 131,823 | 169,963 | 1,462,132 | -- | 7,554 |
| 1962 | 265,643 | 566,764 | 829,235 | 366 | -- | 10,956 | 130,464 | 172,547 | 1,465,435 | -- | 7,168 |
| 1963 | 263,236 | 568,967 | 882,501 | 389 | -- | 11,178 | 133,472 | 178,334 | 1,472,626 | -- | 7,626 |
| 1964 | 270,108 | 575,316 | 978,604 | 432 | -- | 11,816 | 144,264 | 193,394 | 1,486,120 | -- | 8,455 |
| 1965 | 275,029 | 575,367 | 997,417 | 440 | -- | 12,170 | 152,168 | 204,061 | 1,486,845 | -- | 8,621 |
| 1966 | 287,416 | 574,770 | 1,043,769 | 461 | -- | 12,660 | 157,847 | 213,252 | 1,479,703 | -- | 9,022 |
| 1967 | 286,024 | 572,874 | 989,711 | 437 | -- | 12,602 | 157,230 | 211,887 | 1,473,178 | -- | 8,559 |
| 1968 | 284,161 | 563,863 | 1,033,003 | 456 | -- | 12,924 | 162,910 | 211,362 | 1,449,328 | -- | 8,929 |
| 1969 | 279,526 | 550,460 | 1,117,773 | 493 | -- | 14,123 | 201,820 | 210,854 | 1,414,674 | -- | 9,652 |
| 1970 | 271,634 | 536,162 | 1,050,682 | 464 | -- | 12,754 | 162,134 | 203,879 | 1,376,021 | -- | 9,076 |
| 1971 | 265,651 | 521,891 | 967,271 | 427 | -- | 12,038 | 146,749 | 200,994 | 1,339,480 | -- | 8,362 |
| 1972 | 262,452 | 509,073 | 1,035,836 | 457 | -- | 12,231 | 150,488 | 214,698 | 1,304,166 | -- | 8,954 |
| 1973 | 302,381 | 556,060 | 1,277,568 | 564 | -- | 13,826 | 163,675 | 233,580 | 1,412,604 | -- | 11,029 |
| 1974 | 298,411 | 567,932 | 1,424,557 | 629 | -- | 14,673 | 179,269 | 247,365 | 1,450,435 | -- | 12,291 |
| 1975 | 302,176 | 590,079 | 1,425,577 | 629 | -- | 16,860 | 250,623 | 201,874 | 1,510,636 | -- | 12,277 |
| 1976 | 316,310 | 608,081 | 1,493,689 | 659 | -- | 16,088 | 207,124 | 232,558 | 1,553,665 | -- | 12,874 |
| 1977 | 311,709 | 617,858 | 957,525 | 422 | -- | 13,833 | 168,879 | 218,969 | 1,585,207 | -- | 8,288 |
| 1978 | 333,532 | 615,907 | 1,944,742 | 858 | -- | 17,348 | 206,450 | 284,782 | 1,569,736 | -- | 16,753 |
| 1979 | 364,373 | 676,080 | 2,222,514 | 981 | -- | 19,211 | 229,560 | 310,476 | 1,722,861 | -- | 19,138 |
| 1980 | 359,401 | 691,222 | 1,768,174 | 780 | -- | 17,345 | 202,912 | 253,181 | 1,760,812 | -- | 15,229 |
| 1981 | 347,635 | 685,901 | 1,928,649 | 851 | -- | 17,620 | 204,589 | 236,980 | 1,749,825 | -- | 16,591 |
| 1982 | 364,245 | 755,169 | 1,956,642 | 863 | -- | 18,079 | 206,735 | 223,481 | 1,941,446 | -- | 16,824 |

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APPENDIX TABLE 36. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 3, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 78,798 | 165,472 | -- | 1,052,516 | 232,144 | 126,330 | 111,831 | 157,644 | 1,566,771 | 7,119,518 |
| 1961 | 70,073 | 158,162 | -- | 1,031,650 | 225,064 | 125,192 | 108,283 | 151,131 | 1,518,003 | 6,879,668 |
| 1962 | 67,688 | 158,343 | -- | 1,042,253 | 226,646 | 126,547 | 109,500 | 151,551 | 1,538,326 | 6,869,423 |
| 1963 | 70,992 | 161,835 | -- | 1,056,993 | 230,346 | 128,994 | 111,397 | 154,561 | 1,562,134 | 6,995,565 |
| 1964 | 77,292 | 170,328 | -- | 1,097,388 | 240,433 | 134,798 | 116,775 | 162,171 | 1,632,870 | 7,300,552 |
| 1965 | 78,907 | 174,440 | -- | 1,121,198 | 245,967 | 138,072 | 120,069 | 165,943 | 1,677,679 | 7,434,376 |
| 1966 | 82,405 | 183,945 | -- | 1,177,298 | 259,392 | 143,910 | 127,908 | 175,180 | 1,793,948 | 7,722,871 |
| 1967 | 79,486 | 184,331 | -- | 1,193,806 | 261,463 | 146,190 | 129,468 | 175,868 | 1,822,350 | 7,705,460 |
| 1968 | 82,189 | 189,823 | -- | 1,222,133 | 268,795 | 148,045 | 133,892 | 181,194 | 1,891,298 | 7,844,292 |
| 1969 | 87,244 | 194,410 | -- | 1,242,204 | 272,486 | 151,292 | 135,717 | 184,718 | 1,915,864 | 7,983,293 |
| 1970 | 82,629 | 188,059 | -- | 1,212,389 | 264,760 | 148,602 | 132,258 | 179,107 | 1,870,701 | 7,701,302 |
| 1971 | 77,349 | 181,804 | -- | 1,183,858 | 257,317 | 146,018 | 128,921 | 173,413 | 1,825,429 | 7,436,956 |
| 1972 | 81,474 | 185,125 | -- | 1,190,083 | 259,863 | 148,438 | 130,770 | 175,978 | 1,844,385 | 7,514,453 |
| 1973 | 97,826 | 213,718 | -- | 1,353,726 | 297,877 | 166,360 | 150,322 | 203,154 | 2,125,661 | 8,579,921 |
| 1974 | 107,046 | 223,735 | -- | 1,399,412 | 308,680 | 173,431 | 155,556 | 211,799 | 2,191,781 | 8,966,995 |
| 1975 | 107,233 | 228,818 | -- | 1,447,003 | 317,500 | 171,731 | 158,475 | 217,323 | 2,260,024 | 9,218,822 |
| 1976 | 112,290 | 238,697 | -- | 1,504,278 | 330,897 | 181,834 | 166,250 | 226,692 | 2,361,577 | 9,563,549 |
| 1977 | 80,671 | 210,225 | -- | 1,410,413 | 302,669 | 172,704 | 152,163 | 201,755 | 2,174,297 | 8,587,570 |
| 1978 | 140,281 | 269,571 | -- | 1,631,416 | 364,788 | 200,674 | 184,464 | 254,058 | 2,595,905 | 10,631,250 |
| 1979 | 158,728 | 296,629 | -- | 1,776,201 | 399,169 | 217,643 | 201,227 | 279,152 | 2,826,310 | 11,720,233 |
| 1980 | 130,716 | 267,201 | -- | 1,669,746 | 368,233 | 201,865 | 183,967 | 253,575 | 2,608,311 | 10,752,642 |
| 1981 | 139,361 | 271,797 | -- | 1,673,706 | 371,138 | 199,881 | 184,731 | 257,527 | 2,621,963 | 10,908,724 |
| 1982 | 141,674 | 276,121 | -- | 1,712,125 | 378,480 | 202,340 | 185,959 | 262,082 | 2,641,559 | 11,283,806 |

APPENDIX TABLE 37. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 4, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 127,348 | 166,524 | -- | -- | -- | 2,219 | 26,449 | -- | 237,942 | -- | -- |
| 1961 | 128,145 | 167,791 | -- | -- | -- | 2,251 | 26,977 | -- | 244,305 | -- | -- |
| 1962 | 128,899 | 161,371 | -- | -- | -- | 2,242 | 26,588 | -- | 247,745 | -- | -- |
| 1963 | 124,473 | 180,383 | -- | -- | -- | 2,342 | 27,946 | -- | 251,981 | -- | -- |
| 1964 | 131,139 | 196,987 | -- | -- | -- | 2,521 | 30,771 | -- | 262,063 | -- | -- |
| 1965 | 136,032 | 211,837 | -- | -- | -- | 2,698 | 33,580 | -- | 269,142 | -- | -- |
| 1966 | 143,388 | 196,331 | -- | -- | -- | 2,711 | 33,580 | -- | 272,267 | -- | -- |
| 1967 | 140,143 | 209,767 | -- | -- | -- | 2,821 | 34,975 | -- | 273,774 | -- | -- |
| 1968 | 138,928 | 217,569 | -- | -- | -- | 3,112 | 44,546 | -- | 294,829 | -- | -- |
| 1969 | 137,471 | 228,224 | -- | -- | -- | 3,021 | 38,114 | -- | 312,454 | -- | -- |
| 1970 | 135,175 | 217,997 | -- | -- | -- | 2,993 | 39,013 | -- | 324,129 | -- | -- |
| 1971 | 137,462 | 239,856 | -- | -- | -- | 2,983 | 34,342 | -- | 341,149 | -- | -- |
| 1972 | 139,032 | 235,950 | -- | -- | -- | 3,021 | 34,726 | -- | 354,747 | -- | -- |
| 1973 | 181,655 | 379,717 | -- | -- | -- | 4,207 | 48,903 | -- | 437,898 | -- | -- |
| 1974 | 166,056 | 405,471 | -- | -- | -- | 4,263 | 48,463 | -- | 466,035 | -- | -- |
| 1975 | 150,486 | 278,562 | -- | -- | -- | 3,609 | 42,756 | -- | 467,698 | -- | -- |
| 1976 | 171,996 | 386,070 | -- | -- | -- | 4,487 | 52,696 | -- | 521,435 | -- | -- |
| 1977 | 165,350 | 385,363 | -- | -- | -- | 4,433 | 51,170 | -- | 543,109 | -- | -- |
| 1978 | 174,749 | 426,951 | -- | -- | -- | 4,874 | 57,721 | -- | 551,135 | -- | -- |
| 1979 | 191,152 | 437,928 | -- | -- | -- | 5,139 | 63,226 | -- | 602,963 | -- | -- |
| 1980 | 191,717 | 447,829 | -- | -- | -- | 5,617 | 77,904 | -- | 599,737 | -- | -- |
| 1981 | 174,466 | 472,464 | -- | -- | -- | 5,172 | 62,724 | -- | 588,425 | -- | -- |
| 1982 | 175,848 | 465,059 | -- | -- | -- | 5,108 | 61,401 | -- | 634,052 | -- | -- |

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APPENDIX TABLE 37. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 4, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 4,006 | 27,490 | -- | 236,583 | 46,259 | 24,879 | 20,793 | 28,598 | 312,372 | 1,261,460 |
| 1961 | 4,065 | 27,915 | -- | 240,080 | 46,906 | 25,320 | 21,111 | 29,010 | 317,212 | 1,281,088 |
| 1962 | 4,085 | 28,271 | -- | 241,493 | 47,199 | 25,777 | 21,469 | 29,283 | 323,116 | 1,287,535 |
| 1963 | 4,240 | 29,442 | -- | 253,932 | 49,654 | 26,908 | 22,335 | 30,629 | 336,075 | 1,340,341 |
| 1964 | 4,508 | 31,292 | -- | 270,556 | 53,026 | 28,332 | 23,742 | 32,640 | 357,148 | 1,424,727 |
| 1965 | 4,761 | 33,224 | -- | 287,128 | 56,503 | 29,783 | 25,284 | 34,727 | 380,559 | 1,505,256 |
| 1966 | 4,810 | 34,024 | -- | 289,318 | 57,227 | 29,917 | 26,160 | 35,402 | 394,812 | 1,519,944 |
| 1967 | 5,008 | 35,894 | -- | 306,463 | 60,574 | 31,630 | 27,721 | 37,397 | 419,034 | 1,585,197 |
| 1968 | 5,155 | 36,363 | -- | 310,161 | 61,355 | 31,847 | 27,821 | 37,801 | 419,887 | 1,629,377 |
| 1969 | 5,357 | 38,341 | -- | 327,504 | 64,735 | 33,952 | 29,503 | 39,885 | 446,048 | 1,704,610 |
| 1970 | 5,257 | 37,226 | -- | 317,570 | 62,498 | 33,368 | 28,457 | 38,565 | 429,855 | 1,672,097 |
| 1971 | 5,519 | 39,362 | -- | 336,888 | 66,585 | 34,900 | 30,200 | 40,975 | 456,397 | 1,766,617 |
| 1972 | 5,615 | 40,288 | -- | 341,989 | 67,831 | 35,513 | 31,021 | 41,839 | 469,382 | 1,800,948 |
| 1973 | 7,605 | 53,937 | -- | 467,186 | 93,501 | 46,545 | 41,293 | 56,928 | 622,471 | 2,441,844 |
| 1974 | 7,815 | 55,482 | -- | 484,117 | 96,607 | 48,468 | 42,332 | 58,604 | 638,174 | 2,521,886 |
| 1975 | 6,690 | 47,732 | -- | 402,859 | 80,088 | 41,783 | 36,569 | 49,377 | 553,439 | 2,161,649 |
| 1976 | 8,211 | 59,136 | -- | 505,276 | 101,287 | 50,672 | 45,519 | 61,905 | 688,675 | 2,657,361 |
| 1977 | 8,205 | 58,963 | -- | 503,608 | 100,862 | 50,715 | 45,274 | 61,635 | 684,971 | 2,663,652 |
| 1978 | 8,879 | 64,483 | -- | 551,808 | 110,852 | 55,006 | 49,798 | 67,624 | 754,124 | 2,877,997 |
| 1979 | 9,230 | 65,780 | -- | 562,879 | 112,755 | 56,428 | 50,326 | 68,825 | 760,475 | 2,987,096 |
| 1980 | 9,504 | 67,896 | -- | 579,981 | 116,282 | 57,855 | 51,995 | 70,958 | 786,148 | 3,063,424 |
| 1981 | 9,312 | 66,646 | -- | 576,815 | 115,430 | 57,682 | 50,956 | 70,078 | 769,821 | 3,019,985 |
| 1982 | 9,289 | 65,461 | -- | 566,177 | 112,964 | 57,119 | 49,608 | 68,623 | 748,217 | 3,018,918 |

APPENDIX TABLE 38. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 5, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 239,500 | 192,142 | -- | -- | -- | 2,890 | 32,043 | -- | 212,798 | -- | -- |
| 1961 | 242,623 | 194,787 | -- | -- | -- | 2,929 | 32,425 | -- | 213,384 | -- | -- |
| 1962 | 237,503 | 167,378 | -- | -- | -- | 2,770 | 30,644 | -- | 206,121 | -- | -- |
| 1963 | 224,294 | 192,617 | -- | -- | -- | 2,856 | 32,084 | -- | 201,555 | -- | -- |
| 1964 | 230,646 | 198,112 | -- | -- | -- | 2,963 | 33,840 | -- | 211,315 | -- | -- |
| 1965 | 245,048 | 218,361 | -- | -- | -- | 3,215 | 37,197 | -- | 224,759 | -- | -- |
| 1966 | 260,926 | 211,268 | -- | -- | -- | 3,327 | 38,251 | -- | 235,115 | -- | -- |
| 1967 | 254,724 | 223,035 | -- | -- | -- | 3,426 | 39,719 | -- | 237,834 | -- | -- |
| 1968 | 252,259 | 224,310 | -- | -- | -- | 3,684 | 48,552 | -- | 249,112 | -- | -- |
| 1969 | 253,038 | 226,579 | -- | -- | -- | 3,591 | 43,894 | -- | 259,723 | -- | -- |
| 1970 | 245,687 | 221,485 | -- | -- | -- | 3,374 | 37,147 | -- | 264,170 | -- | -- |
| 1971 | 240,381 | 236,039 | -- | -- | -- | 3,447 | 37,826 | -- | 271,491 | -- | -- |
| 1972 | 246,943 | 223,673 | -- | -- | -- | 3,561 | 41,324 | -- | 280,931 | -- | -- |
| 1973 | 330,324 | 410,646 | -- | -- | -- | 5,085 | 56,367 | -- | 359,399 | -- | -- |
| 1974 | 295,878 | 480,642 | -- | -- | -- | 5,375 | 61,568 | -- | 364,989 | -- | -- |
| 1975 | 288,095 | 342,664 | -- | -- | -- | 4,657 | 55,403 | -- | 353,974 | -- | -- |
| 1976 | 296,045 | 299,587 | -- | -- | -- | 4,924 | 68,201 | -- | 365,849 | -- | -- |
| 1977 | 286,857 | 382,509 | -- | -- | -- | 4,904 | 55,997 | -- | 381,654 | -- | -- |
| 1978 | 295,687 | 366,584 | -- | -- | -- | 4,818 | 54,037 | -- | 383,001 | -- | -- |
| 1979 | 317,578 | 404,043 | -- | -- | -- | 5,204 | 57,918 | -- | 418,506 | -- | -- |
| 1980 | 331,925 | 442,931 | -- | -- | -- | 5,630 | 63,541 | -- | 427,113 | -- | -- |
| 1981 | 292,638 | 414,199 | -- | -- | -- | 5,182 | 60,244 | -- | 403,199 | -- | -- |
| 1982 | 288,278 | 404,519 | -- | -- | -- | 5,058 | 58,390 | -- | 422,819 | -- | -- |

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APPENDIX TABLE 38. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 5, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 5,218 | 35,303 | -- | 306,002 | 58,852 | 33,113 | 26,883 | 36,868 | 402,079 | 1,583,688 |
| 1961 | 5,296 | 35,901 | -- | 311,465 | 59,817 | 33,980 | 27,346 | 37,478 | 409,056 | 1,606,485 |
| 1962 | 5,044 | 34,367 | -- | 295,785 | 56,519 | 32,596 | 26,289 | 35,649 | 393,901 | 1,524,566 |
| 1963 | 5,166 | 35,477 | -- | 309,648 | 59,136 | 34,045 | 27,111 | 36,991 | 406,371 | 1,567,343 |
| 1964 | 5,326 | 36,545 | -- | 318,458 | 60,887 | 35,009 | 27,908 | 38,086 | 418,300 | 1,617,393 |
| 1965 | 5,724 | 39,394 | -- | 342,593 | 65,941 | 36,953 | 30,158 | 41,169 | 452,188 | 1,742,695 |
| 1966 | 5,946 | 41,332 | -- | 354,247 | 68,676 | 37,960 | 31,904 | 43,079 | 479,338 | 1,811,368 |
| 1967 | 6,125 | 43,079 | -- | 370,544 | 71,731 | 39,959 | 33,344 | 44,896 | 501,803 | 1,870,219 |
| 1968 | 6,226 | 43,611 | -- | 373,648 | 72,484 | 39,921 | 33,670 | 45,346 | 506,731 | 1,899,553 |
| 1969 | 6,325 | 44,485 | -- | 382,523 | 73,776 | 41,615 | 34,350 | 46,188 | 517,221 | 1,933,304 |
| 1970 | 6,230 | 44,118 | -- | 379,787 | 73,046 | 41,631 | 34,144 | 45,768 | 514,642 | 1,911,226 |
| 1971 | 6,373 | 45,357 | -- | 391,503 | 75,466 | 42,615 | 35,132 | 47,143 | 529,818 | 1,962,590 |
| 1972 | 6,462 | 46,170 | -- | 394,181 | 76,218 | 42,977 | 35,881 | 47,796 | 541,789 | 1,987,903 |
| 1973 | 9,149 | 64,671 | -- | 563,739 | 110,924 | 57,948 | 49,990 | 68,365 | 751,822 | 2,838,423 |
| 1974 | 9,556 | 67,954 | -- | 603,680 | 118,347 | 62,190 | 52,304 | 72,219 | 786,563 | 2,981,261 |
| 1975 | 8,285 | 58,717 | -- | 510,459 | 99,140 | 54,348 | 45,277 | 61,410 | 682,076 | 2,564,502 |
| 1976 | 8,228 | 58,054 | -- | 497,946 | 96,275 | 53,763 | 44,718 | 60,087 | 674,273 | 2,527,946 |
| 1977 | 8,893 | 63,802 | -- | 556,353 | 108,253 | 59,028 | 49,369 | 66,851 | 744,799 | 2,769,266 |
| 1978 | 8,814 | 62,957 | -- | 548,384 | 106,273 | 58,892 | 48,639 | 65,807 | 733,487 | 2,737,377 |
| 1979 | 9,541 | 68,022 | -- | 593,095 | 115,131 | 63,325 | 52,503 | 71,200 | 791,454 | 2,967,518 |
| 1980 | 10,217 | 73,556 | -- | 640,232 | 125,078 | 67,377 | 57,076 | 77,209 | 861,327 | 3,183,208 |
| 1981 | 9,344 | 66,647 | -- | 586,012 | 113,415 | 62,716 | 51,295 | 69,864 | 773,085 | 2,907,835 |
| 1982 | 9,189 | 64,819 | -- | 571,702 | 109,993 | 62,115 | 49,531 | 67,783 | 745,497 | 2,859,689 |

APPENDIX TABLE 39. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 6, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 420,005 | 292,525 | -- | -- | -- | 5,347 | 63,685 | 85,387 | 538,005 | -- | 42 |
| 1961 | 429,122 | 304,942 | -- | -- | -- | 5,508 | 65,725 | 89,030 | 547,009 | -- | 44 |
| 1962 | 425,109 | 305,878 | -- | -- | -- | 5,553 | 65,961 | 91,458 | 546,182 | -- | 45 |
| 1963 | 405,864 | 299,870 | -- | -- | -- | 5,443 | 65,658 | 94,088 | 538,378 | -- | 47 |
| 1964 | 426,406 | 315,483 | -- | -- | -- | 5,795 | 71,048 | 101,575 | 591,865 | -- | 50 |
| 1965 | 448,868 | 336,736 | -- | -- | -- | 6,216 | 77,464 | 107,847 | 641,359 | -- | 53 |
| 1966 | 480,665 | 371,369 | -- | -- | -- | 6,783 | 83,620 | 112,906 | 691,768 | -- | 56 |
| 1967 | 478,581 | 377,226 | -- | -- | -- | 6,928 | 85,010 | 113,007 | 726,052 | -- | 56 |
| 1968 | 493,578 | 412,356 | -- | -- | -- | 7,018 | 80,538 | 111,692 | 798,705 | -- | 55 |
| 1969 | 504,203 | 427,471 | -- | -- | -- | 7,301 | 83,028 | 109,567 | 856,837 | -- | 54 |
| 1970 | 505,352 | 457,121 | -- | -- | -- | 7,499 | 85,724 | 106,532 | 905,241 | -- | 53 |
| 1971 | 511,040 | 465,599 | -- | -- | -- | 7,726 | 88,920 | 106,532 | 948,079 | -- | 53 |
| 1972 | 521,343 | 485,878 | -- | -- | -- | 8,137 | 94,901 | 113,715 | 988,070 | -- | 56 |
| 1973 | 672,306 | 631,290 | -- | -- | -- | 10,923 | 145,338 | 120,493 | 1,173,259 | -- | 60 |
| 1974 | 609,254 | 638,778 | -- | -- | -- | 10,105 | 123,574 | 126,159 | 1,211,657 | -- | 62 |
| 1975 | 647,150 | 631,739 | -- | -- | -- | 10,430 | 128,957 | 97,123 | 1,296,740 | -- | 48 |
| 1976 | 671,219 | 649,499 | -- | -- | -- | 10,913 | 135,392 | 115,030 | 1,364,392 | -- | 57 |
| 1977 | 677,672 | 688,304 | -- | -- | -- | 11,396 | 142,989 | 118,268 | 1,422,855 | -- | 58 |
| 1978 | 700,796 | 686,151 | -- | -- | -- | 11,090 | 129,956 | 138,401 | 1,412,342 | -- | 68 |
| 1979 | 771,252 | 748,931 | -- | -- | -- | 11,959 | 138,519 | 148,619 | 1,551,644 | -- | 73 |
| 1980 | 798,018 | 788,681 | -- | -- | -- | 12,379 | 142,083 | 122,213 | 1,592,570 | -- | 60 |
| 1981 | 723,317 | 781,085 | -- | -- | -- | 11,780 | 136,725 | 108,252 | 1,552,362 | -- | 54 |
| 1982 | 726,652 | 816,685 | -- | -- | -- | 11,953 | 136,995 | 99,147 | 1,688,797 | -- | 49 |

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APPENDIX TABLE 39. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 6, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 11,205 | 66,715 | -- | 516,060 | 107,071 | 60,484 | 52,246 | 67,347 | 739,828 | 3,025,947 |
| 1961 | 11,549 | 68,811 | -- | 532,424 | 110,587 | 62,666 | 53,933 | 69,498 | 763,404 | 3,114,251 |
| 1962 | 11,720 | 70,432 | -- | 544,650 | 113,086 | 64,267 | 55,445 | 71,076 | 786,126 | 3,156,985 |
| 1963 | 11,550 | 69,100 | -- | 534,400 | 110,765 | 63,724 | 54,407 | 69,564 | 769,407 | 3,092,261 |
| 1964 | 12,269 | 72,882 | -- | 561,182 | 116,607 | 67,183 | 57,266 | 73,236 | 808,234 | 3,281,079 |
| 1965 | 13,063 | 77,674 | -- | 596,293 | 124,346 | 70,718 | 61,059 | 78,063 | 862,259 | 3,502,017 |
| 1966 | 14,197 | 85,984 | -- | 659,005 | 138,138 | 76,682 | 67,975 | 86,680 | 965,465 | 3,841,291 |
| 1967 | 14,533 | 88,936 | -- | 681,346 | 142,725 | 79,081 | 70,425 | 89,589 | 1,003,699 | 3,957,184 |
| 1968 | 15,020 | 91,688 | -- | 705,283 | 147,938 | 80,721 | 72,219 | 92,664 | 1,030,071 | 4,139,545 |
| 1969 | 15,595 | 96,359 | -- | 742,186 | 155,389 | 84,331 | 75,914 | 97,392 | 1,087,961 | 4,343,582 |
| 1970 | 15,881 | 97,940 | -- | 759,136 | 158,616 | 85,631 | 76,702 | 99,178 | 1,100,193 | 4,460,793 |
| 1971 | 16,284 | 101,049 | -- | 781,476 | 163,531 | 87,534 | 79,212 | 102,295 | 1,138,894 | 4,598,216 |
| 1972 | 17,118 | 107,061 | -- | 824,957 | 173,239 | 92,202 | 84,307 | 108,347 | 1,213,789 | 4,833,114 |
| 1973 | 20,978 | 131,948 | -- | 1,024,287 | 215,301 | 110,033 | 103,365 | 134,380 | 1,495,438 | 5,989,389 |
| 1974 | 20,533 | 128,231 | -- | 999,780 | 209,515 | 109,672 | 100,155 | 130,389 | 1,444,007 | 5,861,865 |
| 1975 | 20,451 | 129,912 | -- | 1,013,437 | 212,112 | 107,110 | 100,957 | 132,444 | 1,470,644 | 5,999,250 |
| 1976 | 21,687 | 136,933 | -- | 1,062,066 | 222,715 | 113,930 | 106,711 | 139,148 | 1,549,085 | 6,298,772 |
| 1977 | 22,527 | 142,722 | -- | 1,108,709 | 232,640 | 118,539 | 111,236 | 145,140 | 1,616,205 | 6,559,253 |
| 1978 | 22,961 | 143,279 | -- | 1,109,757 | 232,947 | 121,631 | 111,876 | 145,410 | 1,614,379 | 6,581,034 |
| 1979 | 24,828 | 153,805 | -- | 1,191,915 | 250,258 | 130,306 | 119,675 | 156,176 | 1,724,569 | 7,122,523 |
| 1980 | 25,084 | 158,965 | -- | 1,241,153 | 260,203 | 131,295 | 123,609 | 162,343 | 1,798,238 | 7,356,886 |
| 1981 | 23,668 | 150,066 | -- | 1,181,129 | 246,695 | 124,522 | 116,027 | 153,467 | 1,690,104 | 6,999,245 |
| 1982 | 23,994 | 151,130 | -- | 1,194,293 | 248,911 | 125,042 | 115,715 | 154,640 | 1,687,114 | 7,181,107 |

APPENDIX TABLE 40. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 7, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 321,033 | 339,215 | -- | -- | -- | 4,251 | 45,660 | -- | 342,451 | -- | -- |
| 1961 | 331,714 | 342,126 | -- | -- | -- | 4,339 | 46,741 | -- | 342,734 | -- | -- |
| 1962 | 328,672 | 341,817 | -- | -- | -- | 4,350 | 46,761 | -- | 335,130 | -- | -- |
| 1963 | 313,069 | 377,390 | -- | -- | -- | 4,480 | 48,800 | -- | 326,453 | -- | -- |
| 1964 | 309,018 | 354,526 | -- | -- | -- | 4,376 | 48,349 | -- | 334,689 | -- | -- |
| 1965 | 335,000 | 395,391 | -- | -- | -- | 4,810 | 53,383 | -- | 361,293 | -- | -- |
| 1966 | 356,464 | 417,987 | -- | -- | -- | 5,169 | 57,520 | -- | 382,190 | -- | -- |
| 1967 | 333,047 | 415,003 | -- | -- | -- | 5,101 | 57,230 | -- | 379,802 | -- | -- |
| 1968 | 329,180 | 415,313 | -- | -- | -- | 5,027 | 54,741 | -- | 395,053 | -- | -- |
| 1969 | 337,629 | 448,334 | -- | -- | -- | 5,402 | 59,738 | -- | 416,222 | -- | -- |
| 1970 | 324,755 | 454,659 | -- | -- | -- | 5,384 | 59,517 | -- | 422,738 | -- | -- |
| 1971 | 322,643 | 442,750 | -- | -- | -- | 5,346 | 59,857 | -- | 431,018 | -- | -- |
| 1972 | 339,671 | 451,804 | -- | -- | -- | 5,439 | 59,231 | -- | 450,097 | -- | -- |
| 1973 | 476,055 | 776,833 | -- | -- | -- | 8,196 | 89,215 | -- | 573,185 | -- | -- |
| 1974 | 409,140 | 808,841 | -- | -- | -- | 8,067 | 89,489 | -- | 561,110 | -- | -- |
| 1975 | 388,349 | 629,898 | -- | -- | -- | 7,119 | 83,204 | -- | 539,299 | -- | -- |
| 1976 | 363,406 | 483,015 | -- | -- | -- | 6,134 | 71,006 | -- | 527,806 | -- | -- |
| 1977 | 357,434 | 657,886 | -- | -- | -- | 7,323 | 86,692 | -- | 557,668 | -- | -- |
| 1978 | 398,222 | 686,467 | -- | -- | -- | 7,577 | 87,117 | -- | 577,746 | -- | -- |
| 1979 | 417,755 | 709,090 | -- | -- | -- | 8,000 | 94,395 | -- | 622,048 | -- | -- |
| 1980 | 431,389 | 772,345 | -- | -- | -- | 8,655 | 105,114 | -- | 631,909 | -- | -- |
| 1981 | 378,006 | 742,516 | -- | -- | -- | 7,859 | 91,603 | -- | 599,949 | -- | -- |
| 1982 | 374,786 | 713,010 | -- | -- | -- | 7,608 | 88,082 | -- | 630,047 | -- | -- |

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APPENDIX TABLE 40. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 7, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 7,523 | 51,268 | -- | 430,180 | 88,950 | 38,949 | 39,606 | 54,858 | 592,677 | 2,356,618 |
| 1961 | 7,662 | 52,235 | -- | 437,819 | 90,538 | 39,530 | 40,399 | 55,888 | 604,618 | 2,396,341 |
| 1962 | 7,687 | 52,906 | -- | 442,993 | 91,641 | 40,035 | 41,094 | 56,585 | 615,874 | 2,405,542 |
| 1963 | 7,869 | 54,568 | -- | 462,956 | 95,523 | 41,920 | 42,366 | 58,606 | 635,139 | 2,469,135 |
| 1964 | 7,678 | 53,124 | -- | 447,754 | 92,402 | 40,828 | 41,220 | 56,854 | 618,143 | 2,408,962 |
| 1965 | 8,404 | 58,225 | -- | 491,464 | 101,627 | 44,206 | 45,218 | 62,432 | 678,097 | 2,639,548 |
| 1966 | 9,028 | 63,218 | -- | 530,379 | 110,115 | 47,497 | 49,388 | 67,729 | 741,928 | 2,838,605 |
| 1967 | 8,922 | 63,221 | -- | 530,777 | 110,052 | 47,781 | 49,550 | 67,635 | 745,760 | 2,813,876 |
| 1968 | 8,909 | 63,046 | -- | 528,915 | 109,738 | 47,671 | 49,359 | 67,430 | 742,810 | 2,817,189 |
| 1969 | 9,538 | 68,188 | -- | 572,314 | 118,766 | 51,650 | 53,563 | 72,910 | 807,252 | 3,021,504 |
| 1970 | 9,528 | 68,290 | -- | 574,472 | 119,117 | 51,937 | 53,617 | 73,020 | 808,366 | 3,025,395 |
| 1971 | 9,432 | 67,442 | -- | 565,802 | 117,303 | 51,292 | 52,895 | 71,988 | 797,439 | 2,995,198 |
| 1972 | 9,695 | 69,054 | -- | 578,386 | 120,035 | 52,216 | 54,124 | 73,724 | 815,570 | 3,079,042 |
| 1973 | 14,370 | 102,138 | -- | 876,259 | 182,117 | 77,487 | 79,775 | 110,534 | 1,199,185 | 4,565,344 |
| 1974 | 14,082 | 100,831 | -- | 875,464 | 181,280 | 77,914 | 78,599 | 109,365 | 1,182,258 | 4,496,436 |
| 1975 | 12,289 | 87,725 | -- | 746,325 | 154,653 | 67,010 | 68,523 | 94,192 | 1,031,960 | 3,910,538 |
| 1976 | 10,761 | 76,906 | -- | 640,489 | 132,715 | 58,450 | 60,275 | 81,677 | 909,430 | 3,422,067 |
| 1977 | 12,642 | 91,800 | -- | 781,483 | 161,940 | 70,472 | 72,047 | 98,455 | 1,087,767 | 4,043,605 |
| 1978 | 13,187 | 94,771 | -- | 808,172 | 167,360 | 72,885 | 74,136 | 101,795 | 1,117,416 | 4,206,841 |
| 1979 | 13,805 | 98,914 | -- | 841,448 | 174,251 | 75,889 | 77,269 | 106,073 | 1,164,527 | 4,403,457 |
| 1980 | 14,717 | 106,079 | -- | 904,979 | 187,561 | 81,226 | 83,044 | 113,956 | 1,252,233 | 4,693,206 |
| 1981 | 13,619 | 97,963 | -- | 842,838 | 174,125 | 76,057 | 76,411 | 105,443 | 1,151,496 | 4,357,877 |
| 1982 | 13,273 | 94,418 | -- | 811,191 | 167,307 | 73,674 | 73,234 | 101,412 | 1,102,379 | 4,250,410 |

APPENDIX TABLE 41. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 8, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 2,311,266 | 5,913,543 | -- | -- | -- | 73,916 | 871,657 | 549,151 | 15,331,504 | -- | 271 |
| 1961 | 2,413,704 | 6,241,172 | -- | -- | -- | 77,502 | 910,562 | 571,307 | 16,151,539 | -- | 282 |
| 1962 | 2,485,352 | 6,483,845 | -- | -- | -- | 80,884 | 944,221 | 588,101 | 16,802,887 | -- | 291 |
| 1963 | 2,522,400 | 6,713,790 | -- | -- | -- | 83,131 | 971,069 | 605,199 | 17,446,176 | -- | 299 |
| 1964 | 2,668,442 | 7,163,484 | -- | -- | -- | 88,726 | 1,048,451 | 652,850 | 18,629,880 | -- | 323 |
| 1965 | 2,802,834 | 7,541,253 | -- | -- | -- | 94,164 | 1,126,059 | 693,115 | 19,625,025 | -- | 343 |
| 1966 | 2,945,493 | 7,862,162 | -- | -- | -- | 100,117 | 1,197,570 | 724,984 | 20,407,298 | -- | 358 |
| 1967 | 3,037,094 | 8,143,892 | -- | -- | -- | 104,469 | 1,244,995 | 727,109 | 21,185,735 | -- | 359 |
| 1968 | 3,174,963 | 8,397,467 | -- | -- | -- | 113,210 | 1,372,927 | 718,711 | 21,829,996 | -- | 355 |
| 1969 | 3,227,069 | 8,534,021 | -- | -- | -- | 115,816 | 1,403,470 | 704,143 | 22,189,054 | -- | 348 |
| 1970 | 3,195,860 | 8,639,156 | -- | -- | -- | 113,538 | 1,375,803 | 685,123 | 22,388,731 | -- | 339 |
| 1971 | 3,199,289 | 8,682,180 | -- | -- | -- | 111,704 | 1,322,162 | 685,528 | 22,588,161 | -- | 339 |
| 1972 | 3,246,028 | 8,800,400 | -- | -- | -- | 112,593 | 1,317,525 | 731,661 | 22,828,132 | -- | 362 |
| 1973 | 3,674,134 | 9,789,337 | -- | -- | -- | 125,580 | 1,494,712 | 774,557 | 25,139,835 | -- | 383 |
| 1974 | 3,707,847 | 10,211,337 | -- | -- | -- | 127,990 | 1,505,655 | 810,371 | 26,215,414 | -- | 401 |
| 1975 | 3,758,457 | 10,409,860 | -- | -- | -- | 132,312 | 1,576,448 | 624,421 | 26,958,513 | -- | 309 |
| 1976 | 3,963,209 | 10,954,100 | -- | -- | -- | 139,467 | 1,646,099 | 739,856 | 28,506,149 | -- | 366 |
| 1977 | 4,077,567 | 11,357,248 | -- | -- | -- | 147,418 | 1,807,998 | 760,393 | 29,540,755 | -- | 376 |
| 1978 | 4,089,799 | 11,285,871 | -- | -- | -- | 144,541 | 1,722,237 | 889,588 | 29,262,756 | -- | 440 |
| 1979 | 4,465,378 | 12,434,939 | -- | -- | -- | 157,321 | 1,879,406 | 955,955 | 32,282,197 | -- | 472 |
| 1980 | 4,493,695 | 12,420,446 | -- | -- | -- | 156,501 | 1,827,769 | 785,484 | 32,247,119 | -- | 388 |
| 1981 | 4,358,331 | 12,322,386 | -- | -- | -- | 152,209 | 1,769,033 | 696,454 | 31,892,154 | -- | 344 |
| 1982 | 4,690,484 | 13,498,542 | -- | -- | -- | 161,455 | 1,842,909 | 637,573 | 35,251,280 | -- | 315 |

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APPENDIX TABLE 41. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 8, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 153,023 | 957,488 | -- | 7,607,352 | 1,579,514 | 804,639 | 709,584 | 967,963 | 10,389,515 | 48,220,324 |
| 1961 | 160,551 | 1,003,977 | -- | 7,978,139 | 1,657,648 | 841,465 | 743,515 | 1,015,430 | 10,886,540 | 50,653,264 |
| 1962 | 167,785 | 1,058,105 | -- | 8,388,527 | 1,746,712 | 879,756 | 787,137 | 1,070,664 | 11,547,872 | 53,032,068 |
| 1963 | 172,544 | 1,083,893 | -- | 8,597,875 | 1,790,228 | 902,045 | 804,236 | 1,096,608 | 11,790,217 | 54,579,644 |
| 1964 | 183,405 | 1,147,619 | -- | 9,093,535 | 1,896,544 | 951,695 | 850,290 | 1,161,088 | 12,453,439 | 57,989,704 |
| 1965 | 193,618 | 1,213,545 | -- | 9,594,631 | 2,005,593 | 999,597 | 900,612 | 1,227,967 | 13,194,508 | 61,212,790 |
| 1966 | 205,281 | 1,307,808 | -- | 10,288,895 | 2,159,884 | 1,060,841 | 980,077 | 1,324,498 | 14,407,833 | 64,973,024 |
| 1967 | 214,025 | 1,376,292 | -- | 10,820,769 | 2,271,725 | 1,111,929 | 1,035,105 | 1,394,229 | 15,253,330 | 67,920,985 |
| 1968 | 228,435 | 1,518,304 | -- | 11,841,690 | 2,501,880 | 1,192,258 | 1,161,093 | 1,540,215 | 17,231,921 | 72,823,332 |
| 1969 | 233,371 | 1,561,127 | -- | 12,195,404 | 2,570,432 | 1,230,378 | 1,195,671 | 1,583,448 | 17,774,157 | 74,517,834 |
| 1970 | 228,913 | 1,502,542 | -- | 11,813,228 | 2,479,425 | 1,200,461 | 1,137,567 | 1,523,887 | 16,856,707 | 73,141,195 |
| 1971 | 227,749 | 1,483,993 | -- | 11,688,741 | 2,450,421 | 1,191,881 | 1,118,883 | 1,505,014 | 16,556,840 | 72,812,811 |
| 1972 | 231,337 | 1,505,041 | -- | 11,844,199 | 2,485,024 | 1,211,070 | 1,135,935 | 1,526,153 | 16,791,836 | 73,767,220 |
| 1973 | 255,003 | 1,656,430 | -- | 13,056,711 | 2,738,788 | 1,328,636 | 1,247,824 | 1,681,313 | 18,449,787 | 81,412,941 |
| 1974 | 261,923 | 1,685,244 | -- | 13,329,938 | 2,789,218 | 1,365,684 | 1,262,290 | 1,709,921 | 18,626,008 | 83,609,143 |
| 1975 | 265,142 | 1,735,452 | -- | 13,741,608 | 2,875,615 | 1,378,092 | 1,301,483 | 1,764,540 | 19,332,323 | 85,854,489 |
| 1976 | 282,322 | 1,845,239 | -- | 14,570,773 | 3,053,300 | 1,469,546 | 1,387,143 | 1,874,268 | 20,575,009 | 91,006,748 |
| 1977 | 293,270 | 1,918,083 | -- | 15,132,512 | 3,173,257 | 1,521,321 | 1,442,014 | 1,947,768 | 21,396,317 | 94,516,190 |
| 1978 | 294,037 | 1,910,109 | -- | 15,062,885 | 3,155,986 | 1,537,619 | 1,437,479 | 1,937,139 | 21,258,061 | 93,988,443 |
| 1979 | 319,404 | 2,057,503 | -- | 16,245,355 | 3,404,371 | 1,654,895 | 1,540,441 | 2,087,265 | 22,750,407 | 102,235,195 |
| 1980 | 317,104 | 2,072,026 | -- | 16,388,622 | 3,432,564 | 1,647,035 | 1,554,837 | 2,106,364 | 23,075,499 | 102,525,328 |
| 1981 | 307,769 | 2,000,131 | -- | 15,889,259 | 3,320,695 | 1,593,110 | 1,491,568 | 2,035,067 | 22,136,888 | 99,965,278 |
| 1982 | 326,873 | 2,098,062 | -- | 16,730,797 | 3,494,621 | 1,662,546 | 1,547,262 | 2,137,539 | 22,949,656 | 107,029,796 |

APPENDIX TABLE 42. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 9, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 474,763 | 392,847 | -- | -- | -- | 5,435 | 59,667 | -- | 320,455 | -- | -- |
| 1961 | 492,399 | 417,517 | -- | -- | -- | 5,685 | 62,190 | -- | 334,851 | -- | -- |
| 1962 | 495,431 | 416,544 | -- | -- | -- | 5,737 | 62,429 | -- | 339,643 | -- | -- |
| 1963 | 477,070 | 475,419 | -- | -- | -- | 6,002 | 66,195 | -- | 341,646 | -- | -- |
| 1964 | 479,071 | 477,948 | -- | -- | -- | 6,129 | 68,760 | -- | 379,211 | -- | -- |
| 1965 | 516,845 | 473,255 | -- | -- | -- | 6,415 | 72,551 | -- | 429,225 | -- | -- |
| 1966 | 594,413 | 538,586 | -- | -- | -- | 7,337 | 81,687 | -- | 501,452 | -- | -- |
| 1967 | 561,838 | 600,021 | -- | -- | -- | 7,630 | 85,573 | -- | 523,784 | -- | -- |
| 1968 | 558,344 | 585,849 | -- | -- | -- | 7,676 | 88,607 | -- | 543,268 | -- | -- |
| 1969 | 581,043 | 657,640 | -- | -- | -- | 8,205 | 91,652 | -- | 579,737 | -- | -- |
| 1970 | 568,646 | 708,829 | -- | -- | -- | 8,495 | 96,438 | -- | 595,755 | -- | -- |
| 1971 | 562,214 | 647,174 | -- | -- | -- | 8,339 | 99,561 | -- | 600,051 | -- | -- |
| 1972 | 618,033 | 787,857 | -- | -- | -- | 9,488 | 110,403 | -- | 655,692 | -- | -- |
| 1973 | 860,931 | 1,068,075 | -- | -- | -- | 12,305 | 136,166 | -- | 799,809 | -- | -- |
| 1974 | 714,875 | 1,120,265 | -- | -- | -- | 11,693 | 127,594 | -- | 738,011 | -- | -- |
| 1975 | 676,527 | 809,368 | -- | -- | -- | 9,835 | 110,352 | -- | 678,452 | -- | -- |
| 1976 | 655,925 | 709,400 | -- | -- | -- | 8,973 | 96,199 | -- | 660,669 | -- | -- |
| 1977 | 616,668 | 836,944 | -- | -- | -- | 9,840 | 111,322 | -- | 658,705 | -- | -- |
| 1978 | 699,149 | 965,312 | -- | -- | -- | 10,900 | 122,210 | -- | 708,627 | -- | -- |
| 1979 | 712,485 | 908,569 | -- | -- | -- | 10,743 | 119,534 | -- | 737,771 | -- | -- |
| 1980 | 713,449 | 982,605 | -- | -- | -- | 11,461 | 132,425 | -- | 743,862 | -- | -- |
| 1981 | 605,469 | 942,044 | -- | -- | -- | 10,295 | 115,739 | -- | 687,221 | -- | -- |
| 1982 | 597,581 | 880,892 | -- | -- | -- | 9,815 | 109,565 | -- | 707,770 | -- | -- |

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APPENDIX TABLE 42. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 9, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 9,348 | 63,565 | -- | 529,619 | 109,857 | 47,205 | 49,590 | 68,261 | 741,169 | 2,871,780 |
| 1961 | 9,791 | 66,608 | -- | 556,141 | 115,341 | 49,540 | 51,945 | 71,589 | 776,362 | 3,009,955 |
| 1962 | 9,915 | 67,891 | -- | 565,133 | 117,288 | 50,428 | 53,104 | 72,869 | 794,594 | 3,051,002 |
| 1963 | 10,315 | 71,132 | -- | 600,575 | 124,418 | 53,357 | 55,562 | 76,706 | 831,627 | 3,190,019 |
| 1964 | 10,511 | 72,237 | -- | 607,820 | 125,974 | 54,112 | 56,287 | 77,712 | 842,488 | 3,258,258 |
| 1965 | 11,002 | 75,148 | -- | 625,365 | 130,004 | 55,556 | 58,512 | 80,539 | 875,665 | 3,410,078 |
| 1966 | 12,656 | 86,819 | -- | 718,473 | 150,058 | 63,139 | 67,818 | 93,036 | 1,015,784 | 3,931,252 |
| 1967 | 13,166 | 91,493 | -- | 764,470 | 159,423 | 67,301 | 71,537 | 98,249 | 1,073,175 | 4,117,656 |
| 1968 | 13,134 | 91,167 | -- | 758,420 | 158,291 | 66,675 | 71,250 | 97,676 | 1,069,226 | 4,109,579 |
| 1969 | 14,227 | 99,551 | -- | 832,214 | 173,682 | 73,218 | 77,953 | 106,877 | 1,170,724 | 4,466,719 |
| 1970 | 14,636 | 102,453 | -- | 863,210 | 179,860 | 76,134 | 80,008 | 110,227 | 1,201,247 | 4,605,930 |
| 1971 | 14,128 | 98,627 | -- | 823,162 | 171,647 | 72,708 | 77,031 | 105,618 | 1,157,048 | 4,437,300 |
| 1972 | 16,182 | 113,656 | -- | 956,439 | 199,707 | 83,876 | 88,878 | 122,306 | 1,335,126 | 5,097,640 |
| 1973 | 21,183 | 146,943 | -- | 1,245,424 | 260,280 | 107,838 | 114,526 | 159,097 | 1,715,656 | 6,648,222 |
| 1974 | 20,279 | 142,932 | -- | 1,232,190 | 256,392 | 107,747 | 111,454 | 155,407 | 1,672,100 | 6,410,930 |
| 1975 | 17,007 | 119,260 | -- | 1,002,273 | 208,912 | 88,385 | 93,337 | 128,247 | 1,401,751 | 5,343,698 |
| 1976 | 15,848 | 111,184 | -- | 926,167 | 192,967 | 82,339 | 87,204 | 119,068 | 1,310,495 | 4,976,431 |
| 1977 | 17,025 | 121,735 | -- | 1,027,799 | 213,974 | 90,995 | 95,790 | 130,945 | 1,442,369 | 5,374,105 |
| 1978 | 18,801 | 132,463 | -- | 1,129,007 | 234,669 | 99,695 | 103,511 | 143,139 | 1,554,231 | 5,921,706 |
| 1979 | 18,671 | 131,806 | -- | 1,112,512 | 231,478 | 98,592 | 103,261 | 141,821 | 1,552,026 | 5,879,263 |
| 1980 | 19,607 | 139,427 | -- | 1,181,560 | 245,899 | 104,428 | 109,413 | 150,242 | 1,645,803 | 6,180,172 |
| 1981 | 17,835 | 126,960 | -- | 1,087,668 | 225,491 | 96,841 | 99,293 | 137,138 | 1,493,091 | 5,645,073 |
| 1982 | 17,104 | 120,533 | -- | 1,029,366 | 213,125 | 92,134 | 93,870 | 129,880 | 1,410,168 | 5,411,798 |

APPENDIX TABLE 43. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 10, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 470,530 | 495,793 | -- | -- | -- | 6,586 | 74,698 | -- | 632,454 | -- | -- |
| 1961 | 492,335 | 581,841 | -- | -- | -- | 7,312 | 82,584 | -- | 733,632 | -- | -- |
| 1962 | 480,229 | 593,337 | -- | -- | -- | 7,376 | 82,870 | -- | 745,960 | -- | -- |
| 1963 | 466,450 | 603,202 | -- | -- | -- | 7,399 | 83,954 | -- | 757,370 | -- | -- |
| 1964 | 478,008 | 696,852 | -- | -- | -- | 8,181 | 94,580 | -- | 842,476 | -- | -- |
| 1965 | 518,339 | 678,532 | -- | -- | -- | 8,467 | 98,790 | -- | 920,032 | -- | -- |
| 1966 | 558,474 | 765,851 | -- | -- | -- | 9,401 | 108,829 | -- | 1,001,032 | -- | -- |
| 1967 | 523,035 | 771,562 | -- | -- | -- | 9,391 | 108,982 | -- | 1,037,018 | -- | -- |
| 1968 | 501,059 | 739,230 | -- | -- | -- | 8,995 | 104,344 | -- | 993,529 | -- | -- |
| 1969 | 535,958 | 812,801 | -- | -- | -- | 9,903 | 110,261 | -- | 1,134,391 | -- | -- |
| 1970 | 524,909 | 907,558 | -- | -- | -- | 10,232 | 112,852 | -- | 1,170,339 | -- | -- |
| 1971 | 521,137 | 832,366 | -- | -- | -- | 10,118 | 117,658 | -- | 1,188,854 | -- | -- |
| 1972 | 564,239 | 949,890 | -- | -- | -- | 11,356 | 136,634 | -- | 1,251,730 | -- | -- |
| 1973 | 774,493 | 1,307,092 | -- | -- | -- | 14,681 | 170,630 | -- | 1,527,011 | -- | -- |
| 1974 | 695,615 | 1,427,804 | -- | -- | -- | 14,988 | 173,432 | -- | 1,598,002 | -- | -- |
| 1975 | 642,445 | 1,166,584 | -- | -- | -- | 14,352 | 192,433 | -- | 1,609,327 | -- | -- |
| 1976 | 621,995 | 1,249,040 | -- | -- | -- | 14,261 | 176,841 | -- | 1,702,715 | -- | -- |
| 1977 | 636,493 | 1,227,708 | -- | -- | -- | 13,839 | 157,894 | -- | 1,779,178 | -- | -- |
| 1978 | 694,941 | 1,343,797 | -- | -- | -- | 14,695 | 166,073 | -- | 1,814,389 | -- | -- |
| 1979 | 707,846 | 1,314,355 | -- | -- | -- | 14,623 | 159,649 | -- | 1,955,610 | -- | -- |
| 1980 | 745,012 | 1,349,676 | -- | -- | -- | 15,184 | 165,655 | -- | 1,960,978 | -- | -- |
| 1981 | 664,116 | 1,248,501 | -- | -- | -- | 14,049 | 157,598 | -- | 1,892,790 | -- | -- |
| 1982 | 670,890 | 1,286,393 | -- | -- | -- | 14,297 | 158,926 | -- | 2,046,798 | -- | -- |

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APPENDIX TABLE 43. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 10, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-----------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 11,555 | 78,236 | -- | 645,269 | 134,478 | 57,798 | 60,192 | 83,136 | 901,515 | 3,652,231 |
| 1961 | 12,876 | 87,089 | -- | 722,431 | 150,688 | 64,303 | 66,758 | 92,732 | 999,553 | 4,094,130 |
| 1962 | 13,049 | 89,053 | -- | 738,535 | 154,138 | 65,842 | 68,476 | 94,785 | 1,026,744 | 4,160,390 |
| 1963 | 13,063 | 89,149 | -- | 741,211 | 154,555 | 66,177 | 68,441 | 94,896 | 1,026,232 | 4,172,093 |
| 1964 | 14,346 | 97,942 | -- | 820,000 | 171,003 | 72,942 | 74,972 | 104,504 | 1,123,934 | 4,599,734 |
| 1965 | 14,849 | 100,707 | -- | 832,689 | 174,170 | 73,957 | 77,027 | 106,959 | 1,154,683 | 4,759,194 |
| 1966 | 16,521 | 113,353 | -- | 937,042 | 196,546 | 82,579 | 87,177 | 120,557 | 1,308,863 | 5,306,223 |
| 1967 | 16,579 | 114,718 | -- | 947,492 | 198,750 | 83,640 | 88,386 | 121,806 | 1,329,102 | 5,350,457 |
| 1968 | 15,884 | 109,901 | -- | 907,753 | 190,405 | 80,138 | 84,672 | 116,690 | 1,273,270 | 5,125,867 |
| 1969 | 17,867 | 125,903 | -- | 1,032,405 | 217,270 | 91,163 | 97,827 | 133,382 | 1,475,498 | 5,794,619 |
| 1970 | 18,479 | 129,096 | -- | 1,074,379 | 225,252 | 95,051 | 99,558 | 137,418 | 1,498,640 | 6,003,754 |
| 1971 | 17,998 | 125,591 | -- | 1,033,059 | 216,989 | 91,492 | 96,918 | 132,951 | 1,460,110 | 5,845,231 |
| 1972 | 19,815 | 138,515 | -- | 1,146,323 | 240,804 | 100,855 | 106,930 | 147,111 | 1,610,481 | 6,424,671 |
| 1973 | 25,681 | 177,323 | -- | 1,485,887 | 311,903 | 129,558 | 136,217 | 189,754 | 2,045,294 | 8,295,514 |
| 1974 | 26,346 | 182,681 | -- | 1,547,968 | 324,143 | 135,436 | 139,904 | 196,000 | 2,101,139 | 8,563,444 |
| 1975 | 23,917 | 164,170 | -- | 1,361,767 | 285,702 | 119,742 | 125,210 | 174,019 | 1,881,999 | 7,761,656 |
| 1976 | 24,722 | 170,518 | -- | 1,421,948 | 298,192 | 125,368 | 130,080 | 181,139 | 1,955,880 | 8,072,688 |
| 1977 | 24,941 | 172,671 | -- | 1,430,470 | 300,627 | 126,258 | 132,114 | 183,104 | 1,988,269 | 8,173,557 |
| 1978 | 26,413 | 181,856 | -- | 1,519,102 | 318,630 | 133,932 | 138,780 | 193,606 | 2,085,309 | 8,631,511 |
| 1979 | 26,819 | 184,270 | -- | 1,526,100 | 320,613 | 134,854 | 140,539 | 195,397 | 2,112,781 | 8,793,443 |
| 1980 | 27,789 | 192,523 | -- | 1,591,493 | 334,744 | 140,358 | 147,618 | 204,227 | 2,221,566 | 9,096,810 |
| 1981 | 25,558 | 175,105 | -- | 1,449,973 | 304,306 | 128,563 | 133,243 | 185,443 | 2,002,724 | 8,381,953 |
| 1982 | 26,204 | 177,313 | -- | 1,468,618 | 308,070 | 130,425 | 133,896 | 187,575 | 2,009,484 | 8,618,882 |

APPENDIX TABLE 44. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 11, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 816,296 | 906,758 | 11,673 | 5 | -- | 13,008 | 149,808 | 146,898 | 1,815,529 | -- | 172 |
| 1961 | 839,015 | 979,573 | 13,373 | 6 | -- | 13,683 | 157,616 | 152,825 | 1,885,663 | -- | 189 |
| 1962 | 824,202 | 990,846 | 8,840 | 4 | -- | 13,775 | 158,012 | 157,119 | 1,918,087 | -- | 154 |
| 1963 | 796,039 | 1,005,894 | 12,580 | 6 | -- | 13,818 | 159,867 | 161,801 | 1,946,689 | -- | 188 |
| 1964 | 819,231 | 1,032,829 | 10,200 | 5 | -- | 14,442 | 170,007 | 174,467 | 2,101,580 | -- | 173 |
| 1965 | 863,471 | 1,152,455 | 13,826 | 6 | -- | 15,759 | 187,594 | 185,417 | 2,257,281 | -- | 209 |
| 1966 | 928,096 | 1,221,284 | 13,600 | 6 | -- | 16,844 | 198,900 | 193,705 | 2,393,582 | -- | 212 |
| 1967 | 914,999 | 1,246,163 | 7,593 | 3 | -- | 17,140 | 201,811 | 194,105 | 2,493,664 | -- | 161 |
| 1968 | 925,215 | 1,255,027 | 2,720 | 1 | -- | 17,411 | 205,780 | 191,609 | 2,552,557 | -- | 118 |
| 1969 | 951,790 | 1,308,009 | 453 | -- | -- | 18,376 | 226,541 | 187,889 | 2,601,112 | -- | 97 |
| 1970 | 931,759 | 1,365,007 | -- | -- | -- | 19,025 | 245,723 | 182,814 | 2,618,736 | -- | 90 |
| 1971 | 930,781 | 1,318,289 | -- | -- | -- | 18,170 | 219,181 | 182,814 | 2,630,094 | -- | 90 |
| 1972 | 975,480 | 1,399,749 | -- | -- | -- | 18,790 | 221,548 | 195,157 | 2,674,554 | -- | 96 |
| 1973 | 1,261,870 | 1,724,240 | -- | -- | -- | 22,111 | 242,322 | 206,589 | 3,030,439 | -- | 102 |
| 1974 | 1,137,607 | 1,801,347 | -- | -- | -- | 22,221 | 248,199 | 216,200 | 3,085,076 | -- | 107 |
| 1975 | 1,102,646 | 1,653,813 | -- | -- | -- | 21,689 | 251,949 | 166,425 | 3,151,816 | -- | 82 |
| 1976 | 1,122,974 | 1,728,292 | -- | -- | -- | 22,487 | 258,874 | 197,281 | 3,273,290 | -- | 98 |
| 1977 | 1,137,685 | 1,705,683 | -- | -- | -- | 22,559 | 256,321 | 202,846 | 3,365,857 | -- | 100 |
| 1978 | 1,211,048 | 1,743,528 | -- | -- | -- | 22,939 | 256,656 | 237,244 | 3,364,789 | -- | 117 |
| 1979 | 1,307,631 | 1,874,079 | -- | -- | -- | 27,328 | 366,815 | 254,948 | 3,686,267 | -- | 126 |
| 1980 | 1,337,148 | 1,887,218 | -- | -- | -- | 25,144 | 284,599 | 209,422 | 3,732,444 | -- | 104 |
| 1981 | 1,223,870 | 1,918,013 | -- | -- | -- | 24,525 | 280,697 | 185,748 | 3,661,740 | -- | 92 |
| 1982 | 1,240,867 | 1,941,189 | -- | -- | -- | 24,778 | 280,099 | 170,067 | 3,991,082 | -- | 84 |

- continued -

APPENDIX TABLE 44. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA REGION 11, 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 27,756 | 162,444 | -- | 1,318,685 | 264,361 | 154,981 | 121,593 | 164,228 | 1,740,204 | 7,814,392 |
| 1961 | 29,172 | 170,959 | -- | 1,392,463 | 279,399 | 162,789 | 128,012 | 173,220 | 1,833,246 | 8,211,196 |
| 1962 | 29,303 | 173,925 | -- | 1,416,235 | 284,242 | 165,950 | 130,623 | 176,112 | 1,872,276 | 8,319,695 |
| 1963 | 29,660 | 174,586 | -- | 1,423,375 | 285,296 | 167,911 | 130,869 | 176,572 | 1,873,571 | 8,358,712 |
| 1964 | 30,859 | 181,219 | -- | 1,469,379 | 295,227 | 173,998 | 135,625 | 182,783 | 1,937,898 | 8,729,911 |
| 1965 | 33,478 | 196,666 | -- | 1,595,574 | 322,088 | 186,223 | 147,351 | 198,975 | 2,108,098 | 9,464,453 |
| 1966 | 35,660 | 211,961 | -- | 1,710,844 | 347,444 | 196,505 | 159,763 | 214,806 | 2,292,730 | 10,135,923 |
| 1967 | 36,084 | 217,682 | -- | 1,759,257 | 356,621 | 202,450 | 164,234 | 220,405 | 2,361,972 | 10,394,339 |
| 1968 | 36,237 | 221,073 | -- | 1,782,313 | 362,229 | 203,506 | 167,085 | 223,923 | 2,407,456 | 10,554,245 |
| 1969 | 37,220 | 228,795 | -- | 1,856,297 | 375,287 | 212,123 | 172,628 | 231,867 | 2,492,339 | 10,900,803 |
| 1970 | 37,523 | 230,832 | -- | 1,885,731 | 380,147 | 214,699 | 173,504 | 234,269 | 2,506,635 | 11,026,485 |
| 1971 | 37,116 | 229,061 | -- | 1,864,226 | 375,961 | 213,476 | 172,664 | 232,171 | 2,496,016 | 10,920,097 |
| 1972 | 38,694 | 238,959 | -- | 1,947,137 | 393,672 | 222,064 | 180,569 | 242,800 | 2,608,186 | 11,357,443 |
| 1973 | 45,728 | 285,229 | -- | 2,335,141 | 474,244 | 258,408 | 216,221 | 292,308 | 3,134,642 | 13,529,572 |
| 1974 | 46,071 | 287,946 | -- | 2,374,433 | 480,297 | 265,848 | 217,904 | 294,885 | 3,157,129 | 13,635,253 |
| 1975 | 43,745 | 276,409 | -- | 2,271,584 | 457,971 | 251,376 | 208,234 | 282,290 | 3,039,340 | 13,179,355 |
| 1976 | 46,067 | 289,942 | -- | 2,378,181 | 479,853 | 266,319 | 219,011 | 295,614 | 3,186,949 | 13,765,218 |
| 1977 | 46,668 | 293,942 | -- | 2,399,453 | 484,588 | 269,668 | 222,356 | 299,054 | 3,236,328 | 13,943,091 |
| 1978 | 48,214 | 299,374 | -- | 2,443,078 | 493,018 | 279,014 | 226,438 | 304,240 | 3,276,287 | 14,205,970 |
| 1979 | 52,887 | 327,435 | -- | 2,658,942 | 537,545 | 301,251 | 246,992 | 331,809 | 3,575,703 | 15,549,737 |
| 1980 | 51,588 | 323,951 | -- | 2,648,170 | 534,325 | 295,543 | 244,258 | 330,054 | 3,557,390 | 15,461,336 |
| 1981 | 49,792 | 313,760 | -- | 2,589,204 | 520,660 | 287,402 | 235,447 | 320,489 | 3,435,627 | 15,047,045 |
| 1982 | 50,450 | 315,293 | -- | 2,600,529 | 522,007 | 287,939 | 234,346 | 321,489 | 3,421,750 | 15,401,953 |

APPENDIX TABLE 45. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA
1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|---------------------|---------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) Ag, Lvstk | (2) Ag, Crops | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 5,755,053 | 9,541,758 | 1,377,525 | 608 | -- | 131,924 | 1,550,068 | 1,268,263 | 21,086,070 | -- | 12,393 |
| 1961 | 5,939,699 | 10,056,454 | 1,180,218 | 521 | -- | 136,876 | 1,606,874 | 1,310,708 | 22,122,887 | -- | 10,730 |
| 1962 | 5,968,486 | 10,296,475 | 1,098,847 | 485 | -- | 140,355 | 1,640,173 | 1,344,516 | 22,816,073 | -- | 10,051 |
| 1963 | 5,874,779 | 10,668,499 | 1,144,519 | 505 | -- | 143,188 | 1,680,123 | 1,384,238 | 23,485,039 | -- | 10,461 |
| 1964 | 6,111,429 | 11,338,655 | 1,241,303 | 548 | -- | 152,249 | 1,812,238 | 1,493,409 | 25,073,417 | -- | 11,341 |
| 1965 | 6,450,133 | 11,939,279 | 1,240,849 | 547 | -- | 161,607 | 1,948,510 | 1,583,536 | 26,471,239 | -- | 11,382 |
| 1966 | 6,877,196 | 12,481,147 | 1,307,374 | 577 | -- | 172,279 | 2,070,790 | 1,656,352 | 27,635,638 | -- | 11,986 |
| 1967 | 6,846,705 | 12,892,425 | 1,191,211 | 526 | -- | 177,508 | 2,130,348 | 1,656,988 | 28,629,346 | -- | 10,995 |
| 1968 | 6,985,121 | 13,156,824 | 1,239,036 | 547 | -- | 187,028 | 2,270,694 | 1,639,723 | 29,531,209 | -- | 11,394 |
| 1969 | 7,123,067 | 13,543,008 | 1,320,634 | 583 | -- | 194,075 | 2,377,513 | 1,610,678 | 30,141,428 | -- | 12,076 |
| 1970 | 7,017,897 | 13,846,697 | 1,255,696 | 554 | -- | 191,365 | 2,326,108 | 1,566,042 | 30,474,697 | -- | 11,501 |
| 1971 | 7,012,808 | 13,790,256 | 1,146,672 | 506 | -- | 188,598 | 2,250,364 | 1,562,776 | 30,766,383 | -- | 10,567 |
| 1972 | 7,234,860 | 14,241,094 | 1,209,230 | 534 | -- | 193,207 | 2,284,869 | 1,667,526 | 31,225,440 | -- | 11,153 |
| 1973 | 8,953,937 | 17,280,848 | 1,487,116 | 656 | -- | 228,183 | 2,700,740 | 1,772,946 | 35,043,437 | -- | 13,579 |
| 1974 | 8,419,880 | 18,220,520 | 1,660,397 | 733 | -- | 231,764 | 2,731,941 | 1,858,257 | 36,339,798 | -- | 15,101 |
| 1975 | 8,333,257 | 17,198,148 | 1,625,151 | 717 | -- | 232,272 | 2,846,327 | 1,443,759 | 37,353,659 | -- | 14,596 |
| 1976 | 8,590,796 | 17,774,390 | 1,730,775 | 764 | -- | 239,994 | 2,879,324 | 1,703,877 | 39,285,049 | -- | 15,627 |
| 1977 | 8,670,900 | 18,597,150 | 1,124,573 | 496 | -- | 247,775 | 3,003,180 | 1,728,638 | 40,688,392 | -- | 10,460 |
| 1978 | 9,019,876 | 18,908,444 | 2,179,108 | 961 | -- | 252,140 | 2,988,636 | 2,052,336 | 40,438,324 | -- | 19,628 |
| 1979 | 9,797,855 | 21,507,756 | 2,426,734 | 1,071 | -- | 280,999 | 3,392,897 | 2,208,305 | 44,613,248 | -- | 21,821 |
| 1980 | 9,864,098 | 20,579,906 | 1,911,650 | 843 | -- | 271,193 | 3,180,191 | 1,811,608 | 44,679,213 | -- | 17,225 |
| 1981 | 9,195,786 | 20,460,291 | 2,120,177 | 935 | -- | 262,337 | 3,058,897 | 1,621,033 | 44,041,928 | -- | 18,912 |
| 1982 | 9,565,239 | 21,651,982 | 2,151,003 | 949 | -- | 271,400 | 3,115,318 | 1,491,186 | 48,465,452 | -- | 19,111 |

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APPENDIX TABLE 45. GROSS BUSINESS VOLUMES OF ECONOMIC SECTORS ESTIMATED BY THE INPUT-OUTPUT MODEL, MINNESOTA 1960-1982, THOUSAND DOLLARS (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | TOTAL |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|-------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 344,843 | 1,712,086 | -- | 13,379,541 | 2,768,869 | 1,476,378 | 1,271,632 | 1,725,470 | 18,412,001 | 81,814,396 |
| 1961 | 344,794 | 1,773,029 | -- | 13,926,118 | 2,879,297 | 1,533,791 | 1,319,300 | 1,789,530 | 19,110,435 | 85,041,159 |
| 1962 | 348,635 | 1,836,303 | -- | 14,418,160 | 2,984,256 | 1,583,352 | 1,373,275 | 1,853,849 | 19,932,272 | 87,645,459 |
| 1963 | 357,037 | 1,870,114 | -- | 14,707,494 | 3,042,839 | 1,617,709 | 1,395,427 | 1,887,897 | 20,238,240 | 89,508,001 |
| 1964 | 379,705 | 1,973,591 | -- | 15,489,852 | 3,211,329 | 1,701,645 | 1,470,333 | 1,991,492 | 21,299,706 | 94,752,132 |
| 1965 | 397,107 | 2,084,271 | -- | 16,330,471 | 3,393,876 | 1,784,438 | 1,556,014 | 2,103,958 | 22,548,668 | 100,005,763 |
| 1966 | 421,712 | 2,249,611 | -- | 17,534,945 | 3,662,089 | 1,892,941 | 1,694,229 | 2,273,284 | 24,639,751 | 106,581,790 |
| 1967 | 426,336 | 2,338,243 | -- | 18,272,142 | 3,811,520 | 1,967,971 | 1,767,950 | 2,364,060 | 25,785,233 | 110,269,378 |
| 1968 | 444,456 | 2,489,433 | -- | 19,336,873 | 4,054,193 | 2,048,498 | 1,900,004 | 2,518,744 | 27,859,839 | 115,673,466 |
| 1969 | 460,051 | 2,584,769 | -- | 20,124,569 | 4,207,983 | 2,132,076 | 1,974,794 | 2,615,660 | 29,022,189 | 119,445,015 |
| 1970 | 452,156 | 2,525,927 | -- | 19,806,807 | 4,124,908 | 2,108,200 | 1,915,209 | 2,558,118 | 28,091,990 | 118,273,719 |
| 1971 | 444,535 | 2,504,550 | -- | 19,662,958 | 4,091,039 | 2,098,475 | 1,897,261 | 2,535,984 | 27,816,276 | 117,779,868 |
| 1972 | 459,230 | 2,577,798 | -- | 20,223,989 | 4,214,075 | 2,159,428 | 1,955,702 | 2,611,610 | 28,645,166 | 120,914,762 |
| 1973 | 537,196 | 2,999,505 | -- | 23,684,632 | 4,939,618 | 2,482,281 | 2,272,312 | 3,056,182 | 33,324,314 | 140,777,304 |
| 1974 | 556,688 | 3,054,892 | -- | 24,234,251 | 5,041,045 | 2,559,985 | 2,302,532 | 3,111,815 | 33,712,063 | 144,051,489 |
| 1975 | 542,769 | 3,015,393 | -- | 23,805,978 | 4,949,114 | 2,474,342 | 2,269,080 | 3,065,593 | 33,454,909 | 142,624,882 |
| 1976 | 572,875 | 3,167,711 | -- | 24,902,719 | 5,184,707 | 2,614,504 | 2,389,247 | 3,213,797 | 35,150,482 | 149,416,448 |
| 1977 | 554,247 | 3,256,512 | -- | 25,775,201 | 5,360,164 | 2,696,282 | 2,467,120 | 3,310,800 | 36,345,859 | 153,837,584 |
| 1978 | 627,451 | 3,355,684 | -- | 26,317,284 | 5,485,820 | 2,793,958 | 2,531,019 | 3,401,790 | 37,091,702 | 157,463,980 |
| 1979 | 692,128 | 3,678,606 | -- | 28,962,139 | 6,039,473 | 3,053,871 | 2,763,839 | 3,736,791 | 40,476,655 | 173,653,976 |
| 1980 | 646,668 | 3,597,738 | -- | 28,389,285 | 5,908,159 | 2,959,547 | 2,711,293 | 3,658,491 | 39,937,043 | 170,123,959 |
| 1981 | 638,832 | 3,467,298 | -- | 27,462,282 | 5,703,025 | 2,856,750 | 2,593,765 | 3,528,188 | 38,213,745 | 165,243,976 |
| 1982 | 659,767 | 3,554,393 | -- | 28,218,246 | 5,853,818 | 2,916,361 | 2,630,995 | 3,617,320 | 38,758,537 | 172,940,869 |

APPENDIX TABLE 46. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 2, 1960-1982

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 9,480 | 4,536 | -- | -- | -- | 1,195 | 7,324 | 4,300 | -- | -- |
| 1961 | 9,287 | 3,764 | -- | -- | -- | 1,143 | 7,320 | 4,297 | -- | -- |
| 1962 | 9,095 | 3,619 | -- | -- | -- | 1,156 | 7,551 | 4,433 | -- | -- |
| 1963 | 8,903 | 3,281 | -- | -- | -- | 1,143 | 7,629 | 4,479 | -- | -- |
| 1964 | 8,710 | 3,440 | -- | -- | -- | 1,175 | 7,423 | 4,358 | -- | -- |
| 1965 | 8,181 | 3,335 | -- | -- | -- | 1,150 | 7,068 | 5,049 | -- | -- |
| 1966 | 7,651 | 3,515 | -- | -- | -- | 2,923 | 7,715 | 5,102 | -- | -- |
| 1967 | 7,12 | 2,917 | -- | -- | -- | 3,167 | 7,782 | 5,054 | -- | -- |
| 1968 | 6,591 | 3,038 | -- | -- | -- | 2,269 | 7,551 | 6,411 | -- | -- |
| 1969 | 6,062 | 2,745 | -- | -- | -- | 2,052 | 7,460 | 6,326 | -- | -- |
| 1970 | 5,928 | 2,758 | -- | -- | -- | 1,938 | 7,369 | 6,150 | -- | -- |
| 1971 | 5,929 | 2,760 | -- | -- | -- | 2,079 | 7,264 | 6,013 | -- | -- |
| 1972 | 5,861 | 2,368 | -- | -- | -- | 1,642 | 7,086 | 6,348 | -- | -- |
| 1973 | 5,797 | 2,424 | -- | -- | -- | 1,763 | 8,468 | 5,873 | -- | -- |
| 1974 | 5,728 | 2,396 | -- | -- | -- | 1,438 | 9,611 | 4,552 | -- | -- |
| 1975 | 5,869 | 2,012 | -- | -- | -- | 1,402 | 8,817 | 4,214 | -- | -- |
| 1976 | 6,015 | 2,350 | -- | -- | -- | 1,641 | 9,529 | 5,718 | -- | -- |
| 1977 | 6,159 | 2,169 | -- | -- | -- | 2,128 | 9,598 | 6,916 | -- | -- |
| 1978 | 6,299 | 1,987 | -- | -- | -- | 2,588 | 10,518 | 5,203 | -- | -- |
| 1979 | 6,367 | 2,056 | -- | -- | -- | 2,674 | 10,532 | 5,404 | -- | -- |
| 1980 | 6,586 | 1,312 | -- | -- | -- | 1,904 | 10,797 | 5,675 | -- | -- |
| 1981 | 6,655 | 1,351 | -- | -- | -- | 1,736 | 10,468 | 5,779 | -- | -- |
| 1982 | 6,723 | 834 | -- | -- | -- | 1,550 | 10,281 | 5,591 | -- | -- |

- continued -

APPENDIX TABLE 46. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 2, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 855 | 1,354 | -- | 6,443 | 876 | 970 | 2,733 | 8,480 | -- |
| 1961 | 804 | 1,273 | -- | 6,361 | 911 | 1,002 | 2,824 | 8,719 | -- |
| 1962 | 805 | 1,274 | -- | 6,498 | 935 | 1,037 | 2,923 | 9,199 | -- |
| 1963 | 794 | 1,257 | -- | 6,657 | 947 | 1,056 | 2,977 | 9,745 | -- |
| 1964 | 813 | 1,286 | -- | 7,031 | 972 | 1,122 | 3,163 | 10,359 | -- |
| 1965 | 772 | 1,372 | -- | 7,153 | 949 | 1,263 | 3,129 | 10,770 | -- |
| 1966 | 970 | 1,265 | -- | 7,427 | 1,053 | 1,490 | 3,163 | 11,443 | -- |
| 1967 | 985 | 1,401 | -- | 7,733 | 1,094 | 1,632 | 3,742 | 12,179 | -- |
| 1968 | 1,201 | 1,230 | -- | 8,058 | 1,025 | 1,606 | 4,007 | 12,143 | -- |
| 1969 | 944 | 1,420 | -- | 8,454 | 1,155 | 1,464 | 4,402 | 12,167 | -- |
| 1970 | 932 | 1,401 | -- | 8,683 | 1,191 | 1,539 | 4,627 | 12,729 | -- |
| 1971 | 1,047 | 1,388 | -- | 9,006 | 1,309 | 1,883 | 5,106 | 13,105 | -- |
| 1972 | 1,039 | 1,470 | -- | 9,618 | 1,397 | 1,894 | 5,598 | 13,312 | -- |
| 1973 | 1,172 | 1,447 | -- | 10,325 | 1,433 | 1,688 | 5,863 | 13,672 | -- |
| 1974 | 1,277 | 1,478 | -- | 10,422 | 1,508 | 1,796 | 6,355 | 13,735 | -- |
| 1975 | 1,294 | 1,230 | -- | 10,905 | 1,389 | 3,319 | 6,055 | 14,176 | -- |
| 1976 | 1,486 | 1,325 | -- | 11,790 | 1,475 | 2,267 | 8,490 | 15,213 | -- |
| 1977 | 1,476 | 1,660 | -- | 12,290 | 1,646 | 2,741 | 7,742 | 15,385 | -- |
| 1978 | 1,662 | 1,489 | -- | 13,126 | 1,661 | 2,474 | 8,766 | 15,755 | -- |
| 1979 | 1,743 | 1,561 | -- | 13,343 | 1,727 | 2,581 | 9,142 | 15,600 | -- |
| 1980 | 1,248 | 1,587 | -- | 13,921 | 1,918 | 3,078 | 9,204 | 15,786 | -- |
| 1981 | 1,271 | 1,618 | -- | 14,239 | 2,039 | 3,259 | 9,743 | 16,174 | -- |
| 1982 | 1,236 | 1,572 | -- | 14,158 | 2,073 | 3,306 | 9,885 | 15,822 | -- |

APPENDIX TABLE 47. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 3, 1960-1982

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 5,265 | 17,579 | -- | -- | -- | 3,344 | 4,091 | 18,159 | -- | -- |
| 1961 | 5,158 | 14,588 | -- | -- | -- | 3,198 | 4,089 | 18,149 | -- | -- |
| 1962 | 5,051 | 14,024 | -- | -- | -- | 3,234 | 4,218 | 18,723 | -- | -- |
| 1963 | 4,944 | 12,716 | -- | -- | -- | 3,198 | 4,262 | 18,916 | -- | -- |
| 1964 | 4,837 | 13,333 | -- | -- | -- | 3,288 | 4,146 | 18,404 | -- | -- |
| 1965 | 4,472 | 14,492 | -- | -- | -- | 5,063 | 4,081 | 19,922 | -- | -- |
| 1966 | 4,106 | 14,676 | -- | -- | -- | 7,145 | 4,297 | 22,669 | -- | -- |
| 1967 | 3,741 | 14,877 | -- | -- | -- | 6,283 | 3,406 | 22,093 | -- | -- |
| 1968 | 3,375 | 15,428 | -- | -- | -- | 4,777 | 4,205 | 20,760 | -- | -- |
| 1969 | 3,010 | 15,159 | -- | -- | -- | 4,583 | 3,884 | 22,148 | -- | -- |
| 1970 | 2,943 | 15,230 | -- | -- | -- | 4,328 | 3,837 | 21,534 | -- | -- |
| 1971 | 2,871 | 14,878 | -- | -- | -- | 4,394 | 3,918 | 20,960 | -- | -- |
| 1972 | 2,803 | 14,139 | -- | -- | -- | 5,000 | 4,014 | 20,808 | -- | -- |
| 1973 | 2,733 | 14,778 | -- | -- | -- | 4,968 | 4,229 | 18,662 | -- | -- |
| 1974 | 2,664 | 14,470 | -- | -- | -- | 3,788 | 4,485 | 16,779 | -- | -- |
| 1975 | 2,799 | 14,374 | -- | -- | -- | 5,373 | 3,439 | 16,167 | -- | -- |
| 1976 | 2,935 | 14,801 | -- | -- | -- | 5,699 | 3,880 | 15,790 | -- | -- |
| 1977 | 3,071 | 12,441 | -- | -- | -- | 6,115 | 3,525 | 15,246 | -- | -- |
| 1978 | 3,205 | 16,491 | -- | -- | -- | 6,080 | 3,637 | 17,099 | -- | -- |
| 1979 | 3,240 | 17,062 | -- | -- | -- | 6,280 | 3,642 | 17,759 | -- | -- |
| 1980 | 3,476 | 16,163 | -- | -- | -- | 5,450 | 3,414 | 15,409 | -- | -- |
| 1981 | 3,512 | 16,649 | -- | -- | -- | 4,969 | 3,310 | 15,691 | -- | -- |
| 1982 | 3,548 | 10,268 | -- | -- | -- | 4,437 | 3,251 | 15,182 | -- | -- |

- continued -

APPENDIX TABLE 47. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 3, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 3,230 | 2,716 | -- | 12,423 | 2,944 | 3,166 | 8,042 | 16,613 | -- |
| 1961 | 3,037 | 2,554 | -- | 12,264 | 3,060 | 3,270 | 8,308 | 17,082 | -- |
| 1962 | 3,040 | 2,557 | -- | 12,529 | 3,139 | 3,385 | 8,600 | 18,023 | -- |
| 1963 | 2,998 | 2,521 | -- | 12,835 | 3,182 | 3,448 | 8,760 | 19,091 | -- |
| 1964 | 3,069 | 2,581 | -- | 13,556 | 3,266 | 3,663 | 9,305 | 20,294 | -- |
| 1965 | 3,163 | 2,497 | -- | 14,163 | 3,205 | 3,714 | 9,024 | 21,101 | -- |
| 1966 | 3,141 | 2,628 | -- | 15,109 | 3,192 | 4,029 | 9,626 | 22,105 | -- |
| 1967 | 2,833 | 2,782 | -- | 15,619 | 3,348 | 4,037 | 10,087 | 23,547 | -- |
| 1968 | 2,118 | 3,412 | -- | 16,196 | 3,438 | 4,220 | 9,339 | 23,121 | -- |
| 1969 | 2,261 | 3,282 | -- | 17,181 | 3,530 | 4,144 | 10,826 | 23,517 | -- |
| 1970 | 2,231 | 3,239 | -- | 17,648 | 3,642 | 4,355 | 11,379 | 24,603 | -- |
| 1971 | 2,370 | 3,382 | -- | 17,613 | 3,544 | 4,710 | 12,372 | 25,843 | -- |
| 1972 | 2,957 | 2,567 | -- | 18,052 | 3,478 | 4,896 | 12,869 | 25,500 | -- |
| 1973 | 2,983 | 3,400 | -- | 18,643 | 3,433 | 4,964 | 13,681 | 26,045 | -- |
| 1974 | 1,463 | 3,711 | -- | 19,760 | 3,346 | 4,506 | 13,958 | 26,077 | -- |
| 1975 | 1,551 | 3,619 | -- | 20,392 | 3,376 | 5,036 | 14,807 | 25,759 | -- |
| 1976 | 1,772 | 3,430 | -- | 21,572 | 3,726 | 5,308 | 15,478 | 25,420 | -- |
| 1977 | 1,882 | 3,720 | -- | 22,284 | 3,735 | 5,470 | 16,053 | 25,319 | -- |
| 1978 | 2,094 | 3,071 | -- | 22,134 | 3,929 | 5,583 | 15,459 | 25,615 | -- |
| 1979 | 2,196 | 3,221 | -- | 22,500 | 4,086 | 5,822 | 16,122 | 25,364 | -- |
| 1980 | 2,172 | 3,065 | -- | 22,586 | 3,960 | 5,060 | 16,800 | 26,326 | -- |
| 1981 | 2,212 | 3,124 | -- | 23,102 | 4,208 | 5,356 | 17,783 | 26,974 | -- |
| 1982 | 2,150 | 3,036 | -- | 22,970 | 4,280 | 5,434 | 18,044 | 26,387 | -- |

APPENDIX TABLE 48. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 4, 1960-1982

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 6,138 | -- | -- | -- | -- | 1,162 | -- | 2,161 | -- | -- | |
| 1961 | 6,013 | -- | -- | -- | -- | 1,111 | -- | 2,159 | -- | -- | |
| 1962 | 5,889 | -- | -- | -- | -- | 1,124 | -- | 2,228 | -- | -- | |
| 1963 | 5,764 | -- | -- | -- | -- | 1,111 | -- | 2,251 | -- | -- | |
| 1964 | 5,639 | -- | -- | -- | -- | 1,143 | -- | 2,190 | -- | -- | |
| 1965 | 5,423 | -- | -- | -- | -- | 1,118 | -- | 2,134 | -- | -- | |
| 1966 | 5,208 | -- | -- | -- | -- | 896 | -- | 2,327 | -- | -- | |
| 1967 | 4,995 | -- | -- | -- | -- | 1,009 | -- | 2,549 | -- | -- | |
| 1968 | 4,780 | -- | -- | -- | -- | 1,098 | -- | 2,495 | -- | -- | |
| 1969 | 4,564 | -- | -- | -- | -- | 1,255 | -- | 3,175 | -- | -- | |
| 1970 | 4,463 | -- | -- | -- | -- | 1,186 | -- | 3,087 | -- | -- | |
| 1971 | 4,362 | -- | -- | -- | -- | 1,198 | -- | 3,252 | -- | -- | |
| 1972 | 4,264 | -- | -- | -- | -- | 1,130 | -- | 3,548 | -- | -- | |
| 1973 | 4,162 | -- | -- | -- | -- | 1,268 | -- | 3,530 | -- | -- | |
| 1974 | 4,062 | -- | -- | -- | -- | 1,098 | -- | 4,512 | -- | -- | |
| 1975 | 4,065 | -- | -- | -- | -- | 1,163 | -- | 3,877 | -- | -- | |
| 1976 | 4,070 | -- | -- | -- | -- | 1,384 | -- | 4,085 | -- | -- | |
| 1977 | 4,075 | -- | -- | -- | -- | 1,507 | -- | 3,684 | -- | -- | |
| 1978 | 4,077 | -- | -- | -- | -- | 1,763 | -- | 3,949 | -- | -- | |
| 1979 | 4,121 | -- | -- | -- | -- | 1,821 | -- | 4,101 | -- | -- | |
| 1980 | 4,085 | -- | -- | -- | -- | 1,286 | -- | 3,932 | -- | -- | |
| 1981 | 4,128 | -- | -- | -- | -- | 1,172 | -- | 4,004 | -- | -- | |
| 1982 | 4,170 | -- | -- | -- | -- | 1,047 | -- | 3,874 | -- | -- | |

- continued -

APPENDIX TABLE 48. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 4, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|--|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 878 | 414 | -- | 3,387 | 449 | 582 | 1,550 | 3,710 | -- | |
| 1961 | 826 | 390 | -- | 3,343 | 467 | 601 | 1,601 | 3,815 | -- | |
| 1962 | 827 | 390 | -- | 3,416 | 479 | 623 | 1,657 | 4,025 | -- | |
| 1963 | 815 | 385 | -- | 3,499 | 485 | 634 | 1,688 | 4,263 | -- | |
| 1964 | 835 | 394 | -- | 3,696 | 498 | 674 | 1,793 | 4,532 | -- | |
| 1965 | 809 | 405 | -- | 3,843 | 525 | 799 | 1,703 | 4,712 | -- | |
| 1966 | 952 | 444 | -- | 4,040 | 555 | 674 | 2,020 | 5,095 | -- | |
| 1967 | 722 | 438 | -- | 4,111 | 547 | 700 | 2,247 | 5,562 | -- | |
| 1968 | 984 | 411 | -- | 4,426 | 566 | 781 | 2,379 | 5,572 | -- | |
| 1969 | 998 | 370 | -- | 4,475 | 622 | 758 | 3,004 | 5,542 | -- | |
| 1970 | 985 | 365 | -- | 4,597 | 642 | 797 | 3,158 | 5,798 | -- | |
| 1971 | 941 | 432 | -- | 4,867 | 654 | 1,036 | 3,195 | 5,904 | -- | |
| 1972 | 1,078 | 486 | -- | 4,665 | 650 | 1,105 | 3,379 | 5,968 | -- | |
| 1973 | 1,262 | 456 | -- | 4,770 | 691 | 1,062 | 3,632 | 6,128 | -- | |
| 1974 | 1,108 | 412 | -- | 5,221 | 672 | 1,082 | 3,380 | 6,085 | -- | |
| 1975 | 1,082 | 456 | -- | 5,302 | 704 | 1,311 | 3,774 | 6,282 | -- | |
| 1976 | 1,292 | 454 | -- | 6,224 | 885 | 1,471 | 4,105 | 6,691 | -- | |
| 1977 | 1,178 | 748 | -- | 6,486 | 839 | 1,227 | 4,842 | 6,912 | -- | |
| 1978 | 1,221 | 795 | -- | 6,490 | 868 | 1,537 | 4,198 | 7,116 | -- | |
| 1979 | 1,281 | 834 | -- | 6,597 | 902 | 1,603 | 4,378 | 7,046 | -- | |
| 1980 | 1,190 | 668 | -- | 6,382 | 979 | 1,656 | 5,921 | 7,206 | -- | |
| 1981 | 1,212 | 680 | -- | 6,528 | 1,040 | 1,753 | 6,267 | 7,383 | -- | |
| 1982 | 1,178 | 661 | -- | 6,491 | 1,058 | 1,779 | 6,359 | 7,222 | -- | |

APPENDIX TABLE 49. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 5, 1960-1982

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 10,203 | -- | -- | -- | -- | 774 | -- | 2,447 | -- | -- |
| 1961 | 9,995 | -- | -- | -- | -- | 740 | -- | 2,446 | -- | -- |
| 1962 | 9,789 | -- | -- | -- | -- | 748 | -- | 2,523 | -- | -- |
| 1963 | 9,581 | -- | -- | -- | -- | 740 | -- | 2,549 | -- | -- |
| 1964 | 9,374 | -- | -- | -- | -- | 761 | -- | 2,480 | -- | -- |
| 1965 | 9,096 | -- | -- | -- | -- | 724 | -- | 2,839 | -- | -- |
| 1966 | 8,816 | -- | -- | -- | -- | 675 | -- | 2,891 | -- | -- |
| 1967 | 8,539 | -- | -- | -- | -- | 825 | -- | 2,951 | -- | -- |
| 1968 | 8,259 | -- | -- | -- | -- | 984 | -- | 3,091 | -- | -- |
| 1969 | 7,981 | -- | -- | -- | -- | 1,124 | -- | 2,831 | -- | -- |
| 1970 | 7,805 | -- | -- | -- | -- | 1,061 | -- | 2,752 | -- | -- |
| 1971 | 7,608 | -- | -- | -- | -- | 1,034 | -- | 3,475 | -- | -- |
| 1972 | 7,422 | -- | -- | -- | -- | 1,008 | -- | 3,457 | -- | -- |
| 1973 | 7,236 | -- | -- | -- | -- | 830 | -- | 3,603 | -- | -- |
| 1974 | 7,049 | -- | -- | -- | -- | 989 | -- | 4,562 | -- | -- |
| 1975 | 7,028 | -- | -- | -- | -- | 966 | -- | 4,233 | -- | -- |
| 1976 | 7,009 | -- | -- | -- | -- | 1,086 | -- | 4,533 | -- | -- |
| 1977 | 6,987 | -- | -- | -- | -- | 1,181 | -- | 4,592 | -- | -- |
| 1978 | 6,966 | -- | -- | -- | -- | 1,340 | -- | 5,067 | -- | -- |
| 1979 | 7,041 | -- | -- | -- | -- | 1,385 | -- | 5,263 | -- | -- |
| 1980 | 6,926 | -- | -- | -- | -- | 1,059 | -- | 5,415 | -- | -- |
| 1981 | 6,998 | -- | -- | -- | -- | 965 | -- | 5,514 | -- | -- |
| 1982 | 7,070 | -- | -- | -- | -- | 862 | -- | 5,335 | -- | -- |

- continued -

APPENDIX TABLE 49. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 5, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | Households |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | |
| 1960 | 552 | 1,238 | -- | 3,623 | 591 | 636 | 1,890 | 3,515 | -- |
| 1961 | 519 | 1,164 | -- | 3,577 | 614 | 657 | 1,952 | 3,614 | -- |
| 1962 | 520 | 1,165 | -- | 3,654 | 630 | 680 | 2,021 | 3,813 | -- |
| 1963 | 513 | 1,149 | -- | 3,744 | 639 | 693 | 2,058 | 4,039 | -- |
| 1964 | 525 | 1,176 | -- | 3,954 | 655 | 736 | 2,187 | 4,293 | -- |
| 1965 | 589 | 1,268 | -- | 4,010 | 660 | 658 | 2,312 | 4,464 | -- |
| 1966 | 1,002 | 893 | -- | 4,119 | 676 | 622 | 2,445 | 4,642 | -- |
| 1967 | 1,019 | 955 | -- | 4,301 | 795 | 691 | 2,528 | 4,815 | -- |
| 1968 | 664 | 1,388 | -- | 4,559 | 904 | 739 | 2,625 | 4,777 | -- |
| 1969 | 705 | 1,324 | -- | 4,841 | 904 | 743 | 2,960 | 4,902 | -- |
| 1970 | 696 | 1,307 | -- | 4,972 | 932 | 781 | 3,111 | 5,129 | -- |
| 1971 | 706 | 1,333 | -- | 5,325 | 876 | 1,124 | 3,327 | 5,378 | -- |
| 1972 | 660 | 1,383 | -- | 5,733 | 910 | 1,573 | 3,594 | 5,486 | -- |
| 1973 | 732 | 1,506 | -- | 5,727 | 996 | 1,241 | 3,647 | 5,596 | -- |
| 1974 | 638 | 1,600 | -- | 5,458 | 831 | 1,134 | 3,503 | 5,597 | -- |
| 1975 | 621 | 1,368 | -- | 5,810 | 876 | 1,149 | 3,503 | 5,756 | -- |
| 1976 | 719 | 1,282 | -- | 5,718 | 925 | 1,660 | 3,767 | 5,989 | -- |
| 1977 | 1,120 | 917 | -- | 6,099 | 970 | 1,159 | 3,765 | 6,086 | -- |
| 1978 | 883 | 1,306 | -- | 6,732 | 1,029 | 1,248 | 3,722 | 6,138 | -- |
| 1979 | 926 | 1,369 | -- | 6,843 | 1,070 | 1,302 | 3,882 | 6,078 | -- |
| 1980 | 975 | 1,171 | -- | 6,897 | 1,120 | 1,120 | 4,967 | 6,121 | -- |
| 1981 | 993 | 1,194 | -- | 7,054 | 1,190 | 1,186 | 5,257 | 6,272 | -- |
| 1982 | 965 | 1,160 | -- | 7,014 | 1,210 | 1,203 | 5,334 | 6,135 | -- |

APPENDIX TABLE 50. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 6, 1960-1982

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 14,847 | -- | -- | -- | -- | 1,991 | 1,061 | 8,589 | -- | -- | |
| 1961 | 14,545 | -- | -- | -- | -- | 1,904 | 1,060 | 8,585 | -- | -- | |
| 1962 | 14,245 | -- | -- | -- | -- | 1,925 | 1,094 | 8,856 | -- | -- | |
| 1963 | 13,943 | -- | -- | -- | -- | 1,904 | 1,105 | 8,947 | -- | -- | |
| 1964 | 13,641 | -- | -- | -- | -- | 1,957 | 1,075 | 8,705 | -- | -- | |
| 1965 | 13,289 | -- | -- | -- | -- | 2,032 | 1,060 | 9,291 | -- | -- | |
| 1966 | 12,935 | -- | -- | -- | -- | 1,985 | 1,064 | 10,912 | -- | -- | |
| 1967 | 12,583 | -- | -- | -- | -- | 1,872 | 1,289 | 10,700 | -- | -- | |
| 1968 | 12,229 | -- | -- | -- | -- | 2,130 | 1,422 | 13,807 | -- | -- | |
| 1969 | 11,877 | -- | -- | -- | -- | 2,291 | 1,573 | 13,627 | -- | -- | |
| 1970 | 11,615 | -- | -- | -- | -- | 2,164 | 1,554 | 13,249 | -- | -- | |
| 1971 | 11,572 | -- | -- | -- | -- | 2,363 | 1,080 | 13,983 | -- | -- | |
| 1972 | 11,418 | -- | -- | -- | -- | 2,236 | 1,314 | 14,158 | -- | -- | |
| 1973 | 11,267 | -- | -- | -- | -- | 2,691 | 1,791 | 14,340 | -- | -- | |
| 1974 | 11,113 | -- | -- | -- | -- | 2,814 | 2,120 | 17,494 | -- | -- | |
| 1975 | 11,222 | -- | -- | -- | -- | 2,855 | 1,822 | 15,798 | -- | -- | |
| 1976 | 11,335 | -- | -- | -- | -- | 3,034 | 1,656 | 16,554 | -- | -- | |
| 1977 | 11,444 | -- | -- | -- | -- | 3,585 | 1,649 | 18,090 | -- | -- | |
| 1978 | 11,553 | -- | -- | -- | -- | 4,335 | 1,981 | 17,684 | -- | -- | |
| 1979 | 11,678 | -- | -- | -- | -- | 4,477 | 1,984 | 18,367 | -- | -- | |
| 1980 | 11,775 | -- | -- | -- | -- | 3,663 | 1,624 | 18,791 | -- | -- | |
| 1981 | 11,898 | -- | -- | -- | -- | 3,339 | 1,575 | 19,135 | -- | -- | |
| 1982 | 12,020 | -- | -- | -- | -- | 2,982 | 1,547 | 18,514 | -- | -- | |

- continued -

APPENDIX TABLE 50. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 6, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 1,497 | 1,286 | -- | 8,303 | 1,029 | 1,059 | 3,921 | 7,415 | -- |
| 1961 | 1,407 | 1,209 | -- | 8,197 | 1,070 | 1,094 | 4,051 | 7,624 | -- |
| 1962 | 1,409 | 1,210 | -- | 8,374 | 1,097 | 1,132 | 4,193 | 8,044 | -- |
| 1963 | 1,389 | 1,193 | -- | 8,579 | 1,112 | 1,153 | 4,271 | 8,521 | -- |
| 1964 | 1,422 | 1,222 | -- | 9,060 | 1,142 | 1,225 | 4,537 | 9,057 | -- |
| 1965 | 1,568 | 1,337 | -- | 9,567 | 1,184 | 1,254 | 4,915 | 9,417 | -- |
| 1966 | 1,558 | 1,331 | -- | 11,282 | 1,287 | 1,177 | 5,488 | 10,105 | -- |
| 1967 | 1,494 | 1,334 | -- | 11,297 | 1,399 | 1,215 | 5,985 | 10,791 | -- |
| 1968 | 1,669 | 1,338 | -- | 11,367 | 1,445 | 1,319 | 5,647 | 10,893 | -- |
| 1969 | 1,965 | 1,415 | -- | 11,497 | 1,588 | 1,597 | 6,105 | 11,877 | -- |
| 1970 | 1,939 | 1,396 | -- | 11,809 | 1,639 | 1,679 | 6,416 | 12,425 | -- |
| 1971 | 1,795 | 1,542 | -- | 13,245 | 1,766 | 1,941 | 7,656 | 13,375 | -- |
| 1972 | 1,548 | 2,046 | -- | 14,240 | 1,839 | 2,052 | 8,204 | 13,817 | -- |
| 1973 | 1,692 | 2,106 | -- | 14,865 | 1,884 | 2,105 | 8,399 | 14,288 | -- |
| 1974 | 1,769 | 1,582 | -- | 14,317 | 1,662 | 2,110 | 10,220 | 14,480 | -- |
| 1975 | 1,553 | 1,852 | -- | 14,847 | 1,760 | 2,014 | 10,478 | 14,959 | -- |
| 1976 | 1,750 | 2,079 | -- | 15,435 | 1,836 | 2,647 | 10,466 | 15,678 | -- |
| 1977 | 2,174 | 2,265 | -- | 16,777 | 1,942 | 2,492 | 11,429 | 16,322 | -- |
| 1978 | 2,508 | 1,947 | -- | 17,367 | 2,211 | 3,066 | 11,880 | 16,504 | -- |
| 1979 | 2,630 | 2,041 | -- | 17,654 | 2,299 | 3,197 | 12,390 | 16,342 | -- |
| 1980 | 2,480 | 2,179 | -- | 18,447 | 2,569 | 3,536 | 12,744 | 16,452 | -- |
| 1981 | 2,527 | 2,221 | -- | 18,868 | 2,730 | 3,743 | 13,489 | 16,857 | -- |
| 1982 | 2,455 | 2,159 | -- | 18,761 | 2,776 | 3,798 | 13,687 | 16,490 | -- |

APPENDIX TABLE 51. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 7, 1960-1982

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 13,342 | -- | -- | -- | -- | 1,501 | -- | 3,683 | -- | -- |
| 1961 | 13,071 | -- | -- | -- | -- | 1,435 | -- | 3,681 | -- | -- |
| 1962 | 12,800 | -- | -- | -- | -- | 1,451 | -- | 3,798 | -- | -- |
| 1963 | 12,529 | -- | -- | -- | -- | 1,435 | -- | 3,837 | -- | -- |
| 1964 | 12,258 | -- | -- | -- | -- | 1,476 | -- | 3,733 | -- | -- |
| 1965 | 11,913 | -- | -- | -- | -- | 1,319 | -- | 4,050 | -- | -- |
| 1966 | 11,569 | -- | -- | -- | -- | 1,484 | -- | 4,070 | -- | -- |
| 1967 | 11,227 | -- | -- | -- | -- | 1,502 | -- | 4,248 | -- | -- |
| 1968 | 10,883 | -- | -- | -- | -- | 1,590 | -- | 5,236 | -- | -- |
| 1969 | 10,538 | -- | -- | -- | -- | 1,602 | -- | 5,498 | -- | -- |
| 1970 | 10,305 | -- | -- | -- | -- | 1,513 | -- | 5,346 | -- | -- |
| 1971 | 10,038 | -- | -- | -- | -- | 1,694 | -- | 6,202 | -- | -- |
| 1972 | 9,787 | -- | -- | -- | -- | 1,545 | -- | 6,869 | -- | -- |
| 1973 | 9,537 | -- | -- | -- | -- | 1,892 | -- | 6,494 | -- | -- |
| 1974 | 9,287 | -- | -- | -- | -- | 1,864 | -- | 8,282 | -- | -- |
| 1975 | 9,319 | -- | -- | -- | -- | 1,935 | -- | 7,251 | -- | -- |
| 1976 | 9,353 | -- | -- | -- | -- | 2,107 | -- | 8,276 | -- | -- |
| 1977 | 9,386 | -- | -- | -- | -- | 1,916 | -- | 8,392 | -- | -- |
| 1978 | 9,416 | -- | -- | -- | -- | 2,155 | -- | 7,971 | -- | -- |
| 1979 | 9,518 | -- | -- | -- | -- | 2,226 | -- | 8,279 | -- | -- |
| 1980 | 9,482 | -- | -- | -- | -- | 1,992 | -- | 9,491 | -- | -- |
| 1981 | 9,581 | -- | -- | -- | -- | 1,816 | -- | 9,665 | -- | -- |
| 1982 | 9,680 | -- | -- | -- | -- | 1,622 | -- | 9,351 | -- | -- |

- continued -

APPENDIX TABLE 51. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 7, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|--|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households | |
| 1960 | 735 | 1,038 | -- | 5,423 | 808 | 671 | 2,053 | 5,234 | -- | |
| 1961 | 691 | 976 | -- | 5,354 | 840 | 694 | 2,121 | 5,381 | -- | |
| 1962 | 691 | 977 | -- | 5,470 | 861 | 718 | 2,195 | 5,678 | -- | |
| 1963 | 682 | 964 | -- | 5,603 | 873 | 731 | 2,236 | 6,014 | -- | |
| 1964 | 698 | 987 | -- | 5,918 | 896 | 777 | 2,375 | 6,393 | -- | |
| 1965 | 725 | 1,052 | -- | 5,779 | 897 | 836 | 2,601 | 6,647 | -- | |
| 1966 | 657 | 1,055 | -- | 6,089 | 973 | 906 | 2,818 | 7,011 | -- | |
| 1967 | 604 | 1,165 | -- | 6,122 | 1,047 | 853 | 3,191 | 7,373 | -- | |
| 1968 | 725 | 1,134 | -- | 6,224 | 1,087 | 747 | 3,760 | 7,292 | -- | |
| 1969 | 819 | 1,061 | -- | 6,445 | 1,200 | 714 | 3,128 | 7,459 | -- | |
| 1970 | 808 | 1,047 | -- | 6,620 | 1,238 | 751 | 3,288 | 7,804 | -- | |
| 1971 | 777 | 1,010 | -- | 6,688 | 1,090 | 1,318 | 3,209 | 7,977 | -- | |
| 1972 | 795 | 1,085 | -- | 6,773 | 1,145 | 1,431 | 3,538 | 8,118 | -- | |
| 1973 | 930 | 1,008 | -- | 7,180 | 1,181 | 1,132 | 3,881 | 8,268 | -- | |
| 1974 | 705 | 864 | -- | 7,274 | 1,245 | 1,524 | 3,589 | 8,244 | -- | |
| 1975 | 693 | 904 | -- | 7,761 | 1,278 | 1,679 | 4,084 | 8,494 | -- | |
| 1976 | 939 | 916 | -- | 7,995 | 1,322 | 1,901 | 4,242 | 8,983 | -- | |
| 1977 | 897 | 1,180 | -- | 7,941 | 1,307 | 1,710 | 4,498 | 9,142 | -- | |
| 1978 | 1,228 | 949 | -- | 8,501 | 1,358 | 2,172 | 4,861 | 9,342 | -- | |
| 1979 | 1,288 | 995 | -- | 8,641 | 1,412 | 2,265 | 5,070 | 9,250 | -- | |
| 1980 | 1,007 | 984 | -- | 8,122 | 1,523 | 1,870 | 5,104 | 9,403 | -- | |
| 1981 | 1,026 | 1,003 | -- | 8,308 | 1,619 | 1,979 | 5,403 | 9,634 | -- | |
| 1982 | 997 | 974 | -- | 8,260 | 1,646 | 2,008 | 5,482 | 9,424 | -- | |

APPENDIX TABLE 52. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 8, 1960-1982

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 20,492 | -- | -- | -- | -- | 44,696 | 18,722 | 237,279 | -- | -- |
| 1961 | 20,075 | -- | -- | -- | -- | 42,747 | 18,712 | 237,148 | -- | -- |
| 1962 | 19,660 | -- | -- | -- | -- | 43,227 | 19,304 | 244,657 | -- | -- |
| 1963 | 19,243 | -- | -- | -- | -- | 42,742 | 19,503 | 247,176 | -- | -- |
| 1964 | 18,827 | -- | -- | -- | -- | 43,949 | 18,975 | 240,485 | -- | -- |
| 1965 | 18,249 | -- | -- | -- | -- | 46,432 | 21,519 | 268,161 | -- | -- |
| 1966 | 17,668 | -- | -- | -- | -- | 45,875 | 22,869 | 285,717 | -- | -- |
| 1967 | 17,089 | -- | -- | -- | -- | 45,500 | 21,667 | 305,919 | -- | -- |
| 1968 | 16,508 | -- | -- | -- | -- | 50,087 | 21,309 | 318,248 | -- | -- |
| 1969 | 15,930 | -- | -- | -- | -- | 54,746 | 23,288 | 331,952 | -- | -- |
| 1970 | 15,578 | -- | -- | -- | -- | 51,705 | 23,004 | 322,755 | -- | -- |
| 1971 | 15,073 | -- | -- | -- | -- | 51,752 | 22,210 | 307,771 | -- | -- |
| 1972 | 14,643 | -- | -- | -- | -- | 50,321 | 23,025 | 311,694 | -- | -- |
| 1973 | 14,216 | -- | -- | -- | -- | 52,443 | 25,100 | 328,001 | -- | -- |
| 1974 | 13,786 | -- | -- | -- | -- | 51,312 | 27,718 | 320,740 | -- | -- |
| 1975 | 14,036 | -- | -- | -- | -- | 48,877 | 25,195 | 304,926 | -- | -- |
| 1976 | 14,287 | -- | -- | -- | -- | 48,364 | 26,418 | 306,392 | -- | -- |
| 1977 | 14,530 | -- | -- | -- | -- | 49,704 | 26,804 | 317,471 | -- | -- |
| 1978 | 14,779 | -- | -- | -- | -- | 56,636 | 30,260 | 336,040 | -- | -- |
| 1979 | 14,939 | -- | -- | -- | -- | 58,502 | 30,299 | 349,025 | -- | -- |
| 1980 | 15,281 | -- | -- | -- | -- | 58,787 | 31,231 | 347,134 | -- | -- |
| 1981 | 15,441 | -- | -- | -- | -- | 53,590 | 30,279 | 353,482 | -- | -- |
| 1982 | 15,599 | -- | -- | -- | -- | 47,861 | 29,737 | 342,023 | -- | -- |

- continued -

APPENDIX TABLE 52. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 8, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 40,798 | 28,691 | -- | 116,562 | 43,520 | 38,498 | 68,993 | 102,662 | -- |
| 1961 | 38,358 | 26,976 | -- | 115,068 | 45,241 | 39,769 | 71,270 | 105,557 | -- |
| 1962 | 38,400 | 27,005 | -- | 117,553 | 46,405 | 41,168 | 73,777 | 111,371 | -- |
| 1963 | 37,866 | 26,630 | -- | 120,433 | 47,042 | 41,931 | 75,146 | 117,975 | -- |
| 1964 | 38,767 | 27,263 | -- | 127,191 | 48,281 | 44,543 | 79,826 | 125,407 | -- |
| 1965 | 38,209 | 27,406 | -- | 130,383 | 48,080 | 46,125 | 82,878 | 130,392 | -- |
| 1966 | 38,890 | 28,801 | -- | 138,331 | 49,204 | 48,693 | 87,395 | 139,046 | -- |
| 1967 | 41,239 | 28,935 | -- | 144,089 | 51,163 | 52,595 | 91,146 | 147,823 | -- |
| 1968 | 42,476 | 28,494 | -- | 152,467 | 52,990 | 55,438 | 89,796 | 150,008 | -- |
| 1969 | 42,397 | 30,126 | -- | 158,689 | 55,648 | 59,980 | 102,793 | 157,569 | -- |
| 1970 | 41,830 | 29,724 | -- | 162,998 | 57,408 | 63,044 | 108,044 | 164,847 | -- |
| 1971 | 42,908 | 30,066 | -- | 169,251 | 61,088 | 64,694 | 115,737 | 173,524 | -- |
| 1972 | 43,092 | 29,395 | -- | 176,475 | 62,325 | 68,958 | 119,656 | 177,260 | -- |
| 1973 | 43,284 | 30,123 | -- | 184,034 | 65,318 | 72,387 | 123,490 | 180,012 | -- |
| 1974 | 45,041 | 30,696 | -- | 187,455 | 65,451 | 74,826 | 127,159 | 180,419 | -- |
| 1975 | 44,081 | 29,089 | -- | 185,834 | 67,249 | 75,605 | 131,542 | 186,309 | -- |
| 1976 | 42,431 | 29,183 | -- | 191,878 | 68,884 | 78,704 | 135,227 | 187,022 | -- |
| 1977 | 41,757 | 28,654 | -- | 203,251 | 72,409 | 84,575 | 145,826 | 193,400 | -- |
| 1978 | 41,288 | 29,444 | -- | 216,600 | 75,121 | 89,899 | 157,116 | 197,137 | -- |
| 1979 | 43,299 | 30,877 | -- | 220,177 | 78,119 | 93,755 | 163,856 | 195,203 | -- |
| 1980 | 44,989 | 32,673 | -- | 226,001 | 82,091 | 101,124 | 170,590 | 202,679 | -- |
| 1981 | 45,833 | 33,306 | -- | 231,158 | 87,237 | 107,041 | 180,571 | 207,666 | -- |
| 1982 | 44,539 | 32,366 | -- | 229,845 | 88,713 | 108,608 | 183,215 | 203,145 | -- |

APPENDIX TABLE 53. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 9, 1960-1982

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 17,290 | -- | -- | -- | -- | 2,068 | -- | 5,730 | -- | -- | |
| 1961 | 16,938 | -- | -- | -- | -- | 1,978 | -- | 5,726 | -- | -- | |
| 1962 | 16,588 | -- | -- | -- | -- | 2,000 | -- | 5,908 | -- | -- | |
| 1963 | 16,236 | -- | -- | -- | -- | 1,978 | -- | 5,969 | -- | -- | |
| 1964 | 15,885 | -- | -- | -- | -- | 2,034 | -- | 5,807 | -- | -- | |
| 1965 | 15,484 | -- | -- | -- | -- | 1,986 | -- | 6,943 | -- | -- | |
| 1966 | 15,083 | -- | -- | -- | -- | 1,940 | -- | 6,820 | -- | -- | |
| 1967 | 14,682 | -- | -- | -- | -- | 2,015 | -- | 7,295 | -- | -- | |
| 1968 | 14,281 | -- | -- | -- | -- | 2,022 | -- | 7,478 | -- | -- | |
| 1969 | 13,880 | -- | -- | -- | -- | 2,074 | -- | 8,148 | -- | -- | |
| 1970 | 13,573 | -- | -- | -- | -- | 1,958 | -- | 7,922 | -- | -- | |
| 1971 | 13,143 | -- | -- | -- | -- | 1,805 | -- | 8,705 | -- | -- | |
| 1972 | 12,772 | -- | -- | -- | -- | 1,894 | -- | 9,679 | -- | -- | |
| 1973 | 12,404 | -- | -- | -- | -- | 1,967 | -- | 9,514 | -- | -- | |
| 1974 | 12,035 | -- | -- | -- | -- | 1,692 | -- | 11,894 | -- | -- | |
| 1975 | 12,208 | -- | -- | -- | -- | 1,831 | -- | 10,619 | -- | -- | |
| 1976 | 12,379 | -- | -- | -- | -- | 2,216 | -- | 11,133 | -- | -- | |
| 1977 | 12,551 | -- | -- | -- | -- | 2,154 | -- | 12,598 | -- | -- | |
| 1978 | 12,720 | -- | -- | -- | -- | 2,447 | -- | 12,931 | -- | -- | |
| 1979 | 12,858 | -- | -- | -- | -- | 2,527 | -- | 13,431 | -- | -- | |
| 1980 | 13,064 | -- | -- | -- | -- | 1,979 | -- | 12,594 | -- | -- | |
| 1981 | 13,201 | -- | -- | -- | -- | 1,804 | -- | 12,824 | -- | -- | |
| 1982 | 13,336 | -- | -- | -- | -- | 1,611 | -- | 12,409 | -- | -- | |

- continued -

APPENDIX TABLE 53. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 9, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 872 | 1,241 | -- | 7,060 | 1,162 | 788 | 1,874 | 5,737 | -- |
| 1961 | 820 | 1,167 | -- | 6,970 | 1,208 | 814 | 1,935 | 5,899 | -- |
| 1962 | 821 | 1,168 | -- | 7,120 | 1,239 | 843 | 2,003 | 6,224 | -- |
| 1963 | 809 | 1,152 | -- | 7,295 | 1,256 | 858 | 2,041 | 6,593 | -- |
| 1964 | 829 | 1,180 | -- | 7,704 | 1,289 | 912 | 2,168 | 7,008 | -- |
| 1965 | 835 | 1,176 | -- | 7,585 | 1,282 | 883 | 2,341 | 7,286 | -- |
| 1966 | 977 | 1,031 | -- | 7,893 | 1,366 | 932 | 2,464 | 7,573 | -- |
| 1967 | 979 | 1,108 | -- | 7,976 | 1,500 | 866 | 2,804 | 7,988 | -- |
| 1968 | 790 | 1,216 | -- | 8,627 | 1,525 | 1,076 | 2,715 | 7,902 | -- |
| 1969 | 892 | 1,215 | -- | 9,065 | 1,510 | 867 | 3,968 | 8,073 | -- |
| 1970 | 880 | 1,199 | -- | 9,311 | 1,558 | 911 | 4,171 | 8,446 | -- |
| 1971 | 962 | 1,303 | -- | 9,407 | 1,615 | 1,118 | 4,247 | 8,747 | -- |
| 1972 | 1,002 | 1,375 | -- | 9,710 | 1,625 | 864 | 4,789 | 8,812 | -- |
| 1973 | 928 | 1,389 | -- | 10,070 | 1,720 | 1,119 | 4,641 | 9,038 | -- |
| 1974 | 1,006 | 826 | -- | 8,630 | 1,625 | 1,298 | 4,156 | 8,973 | -- |
| 1975 | 921 | 786 | -- | 8,812 | 1,600 | 1,251 | 4,429 | 9,200 | -- |
| 1976 | 1,025 | 861 | -- | 9,319 | 1,696 | 1,277 | 4,697 | 9,375 | -- |
| 1977 | 1,132 | 1,012 | -- | 9,585 | 1,727 | 2,069 | 4,451 | 9,464 | -- |
| 1978 | 1,125 | 1,223 | -- | 10,485 | 1,805 | 1,881 | 5,084 | 9,466 | -- |
| 1979 | 1,180 | 1,282 | -- | 10,658 | 1,877 | 1,962 | 5,302 | 9,373 | -- |
| 1980 | 1,380 | 998 | -- | 10,050 | 1,937 | 1,781 | 5,853 | 9,526 | -- |
| 1981 | 1,406 | 1,017 | -- | 10,280 | 2,059 | 1,885 | 6,195 | 9,760 | -- |
| 1982 | 1,366 | 988 | -- | 10,221 | 2,093 | 1,913 | 6,286 | 9,548 | -- |

APPENDIX TABLE 54. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 10, 1960-1982

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 16,504 | -- | -- | -- | -- | 2,735 | -- | 14,075 | -- | -- | |
| 1961 | 16,168 | -- | -- | -- | -- | 2,616 | -- | 14,067 | -- | -- | |
| 1962 | 15,834 | -- | -- | -- | -- | 2,645 | -- | 14,513 | -- | -- | |
| 1963 | 15,498 | -- | -- | -- | -- | 2,616 | -- | 14,662 | -- | -- | |
| 1964 | 15,163 | -- | -- | -- | -- | 2,689 | -- | 14,265 | -- | -- | |
| 1965 | 14,762 | -- | -- | -- | -- | 2,846 | -- | 15,769 | -- | -- | |
| 1966 | 14,360 | -- | -- | -- | -- | 2,897 | -- | 18,188 | -- | -- | |
| 1967 | 13,959 | -- | -- | -- | -- | 3,125 | -- | 19,970 | -- | -- | |
| 1968 | 13,557 | -- | -- | -- | -- | 3,100 | -- | 18,781 | -- | -- | |
| 1969 | 13,156 | -- | -- | -- | -- | 3,206 | -- | 21,095 | -- | -- | |
| 1970 | 12,865 | -- | -- | -- | -- | 3,028 | -- | 20,511 | -- | -- | |
| 1971 | 12,503 | -- | -- | -- | -- | 3,307 | -- | 21,718 | -- | -- | |
| 1972 | 12,174 | -- | -- | -- | -- | 2,980 | -- | 22,877 | -- | -- | |
| 1973 | 11,849 | -- | -- | -- | -- | 3,291 | -- | 24,443 | -- | -- | |
| 1974 | 11,521 | -- | -- | -- | -- | 3,584 | -- | 24,288 | -- | -- | |
| 1975 | 11,633 | -- | -- | -- | -- | 3,030 | -- | 23,970 | -- | -- | |
| 1976 | 11,746 | -- | -- | -- | -- | 3,545 | -- | 25,279 | -- | -- | |
| 1977 | 11,855 | -- | -- | -- | -- | 3,422 | -- | 27,053 | -- | -- | |
| 1978 | 11,967 | -- | -- | -- | -- | 4,060 | -- | 27,492 | -- | -- | |
| 1979 | 12,096 | -- | -- | -- | -- | 4,193 | -- | 28,554 | -- | -- | |
| 1980 | 12,192 | -- | -- | -- | -- | 3,290 | -- | 27,584 | -- | -- | |
| 1981 | 12,319 | -- | -- | -- | -- | 2,999 | -- | 28,088 | -- | -- | |
| 1982 | 12,446 | -- | -- | -- | -- | 2,679 | -- | 27,177 | -- | -- | |

- continued -

APPENDIX TABLE 54. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 10, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 1,645 | 1,988 | -- | 10,069 | 2,262 | 1,385 | 4,769 | 8,081 | -- |
| 1961 | 1,546 | 1,869 | -- | 9,940 | 2,351 | 1,430 | 4,926 | 8,309 | -- |
| 1962 | 1,548 | 1,871 | -- | 10,155 | 2,412 | 1,481 | 5,100 | 8,767 | -- |
| 1963 | 1,527 | 1,845 | -- | 10,404 | 2,445 | 1,508 | 5,194 | 9,287 | -- |
| 1964 | 1,563 | 1,889 | -- | 10,987 | 2,509 | 1,602 | 5,518 | 9,872 | -- |
| 1965 | 1,765 | 1,701 | -- | 11,639 | 2,402 | 1,632 | 5,916 | 10,264 | -- |
| 1966 | 1,840 | 1,609 | -- | 12,132 | 2,500 | 2,081 | 5,617 | 10,791 | -- |
| 1967 | 1,548 | 2,019 | -- | 12,814 | 2,647 | 1,968 | 6,477 | 11,407 | -- |
| 1968 | 1,551 | 1,857 | -- | 13,389 | 2,767 | 2,213 | 6,132 | 11,454 | -- |
| 1969 | 1,888 | 1,925 | -- | 13,734 | 3,033 | 1,729 | 7,861 | 11,885 | -- |
| 1970 | 1,863 | 1,899 | -- | 14,106 | 3,129 | 1,817 | 8,262 | 12,434 | -- |
| 1971 | 1,777 | 1,570 | -- | 14,425 | 2,748 | 2,756 | 8,138 | 12,970 | -- |
| 1972 | 1,639 | 1,850 | -- | 14,676 | 2,583 | 2,347 | 9,124 | 13,218 | -- |
| 1973 | 1,952 | 1,810 | -- | 15,784 | 2,618 | 2,387 | 9,313 | 13,528 | -- |
| 1974 | 1,499 | 1,408 | -- | 15,370 | 2,680 | 2,600 | 9,451 | 13,431 | -- |
| 1975 | 1,498 | 1,511 | -- | 15,633 | 2,698 | 2,757 | 10,207 | 13,802 | -- |
| 1976 | 1,645 | 1,615 | -- | 16,503 | 2,778 | 3,175 | 10,951 | 13,944 | -- |
| 1977 | 1,788 | 1,977 | -- | 17,143 | 2,887 | 2,989 | 10,785 | 14,390 | -- |
| 1978 | 1,977 | 1,971 | -- | 17,367 | 3,101 | 3,339 | 11,423 | 14,632 | -- |
| 1979 | 2,074 | 2,067 | -- | 17,654 | 3,225 | 3,482 | 11,913 | 14,489 | -- |
| 1980 | 2,055 | 1,892 | -- | 18,271 | 3,013 | 3,769 | 14,037 | 14,618 | -- |
| 1981 | 2,093 | 1,928 | -- | 18,688 | 3,201 | 3,990 | 14,858 | 14,977 | -- |
| 1982 | 2,034 | 1,874 | -- | 18,582 | 3,256 | 4,048 | 15,076 | 14,651 | -- |

APPENDIX TABLE 55. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 11, 1960-1982

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 19,814 | 184 | -- | -- | -- | 4,855 | 1,935 | 28,405 | -- | -- |
| 1961 | 19,411 | 153 | -- | -- | -- | 4,643 | 1,934 | 28,390 | -- | -- |
| 1962 | 19,010 | 147 | -- | -- | -- | 4,695 | 1,996 | 29,289 | -- | -- |
| 1963 | 18,606 | 133 | -- | -- | -- | 4,643 | 2,016 | 29,590 | -- | -- |
| 1964 | 18,204 | 140 | -- | -- | -- | 4,774 | 1,962 | 28,789 | -- | -- |
| 1965 | 17,794 | 200 | -- | -- | -- | 5,427 | 2,129 | 28,146 | -- | -- |
| 1966 | 17,386 | 192 | -- | -- | -- | 6,023 | 2,449 | 34,423 | -- | -- |
| 1967 | 16,977 | 113 | -- | -- | -- | 5,760 | 2,606 | 34,541 | -- | -- |
| 1968 | 16,569 | 39 | -- | -- | -- | 6,172 | 2,853 | 35,609 | -- | -- |
| 1969 | 16,159 | 6 | -- | -- | -- | 5,868 | 3,474 | 36,341 | -- | -- |
| 1970 | 15,802 | 6 | -- | -- | -- | 5,542 | 3,432 | 35,334 | -- | -- |
| 1971 | 15,417 | -- | -- | -- | -- | 5,728 | 4,219 | 36,456 | -- | -- |
| 1972 | 15,047 | -- | -- | -- | -- | 5,632 | 4,377 | 38,864 | -- | -- |
| 1973 | 14,676 | -- | -- | -- | -- | 6,175 | 4,370 | 38,694 | -- | -- |
| 1974 | 14,305 | -- | -- | -- | -- | 5,511 | 4,654 | 38,513 | -- | -- |
| 1975 | 14,455 | -- | -- | -- | -- | 4,558 | 2,826 | 38,253 | -- | -- |
| 1976 | 14,610 | -- | -- | -- | -- | 4,823 | 3,580 | 38,897 | -- | -- |
| 1977 | 14,760 | -- | -- | -- | -- | 5,192 | 3,526 | 40,002 | -- | -- |
| 1978 | 14,909 | -- | -- | -- | -- | 6,620 | 4,202 | 42,215 | -- | -- |
| 1979 | 15,070 | -- | -- | -- | -- | 6,838 | 4,208 | 43,846 | -- | -- |
| 1980 | 15,214 | -- | -- | -- | -- | 5,430 | 3,666 | 42,442 | -- | -- |
| 1981 | 15,373 | -- | -- | -- | -- | 4,950 | 3,554 | 43,218 | -- | -- |
| 1982 | 15,531 | -- | -- | -- | -- | 4,421 | 3,480 | 41,817 | -- | -- |

- continued -

APPENDIX TABLE 55. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 11, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 3,901 | 3,044 | -- | 16,426 | 3,081 | 3,680 | 12,405 | 12,405 | -- |
| 1961 | 3,668 | 2,862 | -- | 16,216 | 3,202 | 3,801 | 12,814 | 12,755 | -- |
| 1962 | 3,672 | 2,865 | -- | 16,566 | 3,285 | 3,935 | 13,265 | 13,458 | -- |
| 1963 | 3,621 | 2,825 | -- | 16,972 | 3,330 | 4,008 | 13,511 | 14,256 | -- |
| 1964 | 3,707 | 2,892 | -- | 17,924 | 3,417 | 4,258 | 14,353 | 15,154 | -- |
| 1965 | 3,795 | 2,657 | -- | 18,453 | 3,277 | 4,226 | 14,963 | 15,756 | -- |
| 1966 | 3,744 | 3,006 | -- | 19,528 | 3,406 | 4,277 | 15,855 | 16,636 | -- |
| 1967 | 3,819 | 3,147 | -- | 20,523 | 3,733 | 4,270 | 16,875 | 17,649 | -- |
| 1968 | 3,445 | 3,188 | -- | 21,181 | 4,018 | 5,088 | 16,269 | 17,612 | -- |
| 1969 | 4,332 | 2,841 | -- | 22,169 | 4,310 | 5,169 | 17,370 | 18,029 | -- |
| 1970 | 4,274 | 2,803 | -- | 22,771 | 4,446 | 5,433 | 18,257 | 18,862 | -- |
| 1971 | 4,142 | 2,964 | -- | 23,762 | 4,230 | 6,151 | 19,265 | 19,604 | -- |
| 1972 | 3,603 | 3,396 | -- | 24,573 | 4,363 | 6,372 | 21,233 | 19,852 | -- |
| 1973 | 4,066 | 2,976 | -- | 24,358 | 4,657 | 6,343 | 22,330 | 20,402 | -- |
| 1974 | 3,647 | 2,945 | -- | 23,074 | 4,599 | 6,277 | 22,552 | 20,291 | -- |
| 1975 | 3,285 | 3,557 | -- | 24,201 | 4,746 | 6,980 | 23,563 | 20,848 | -- |
| 1976 | 3,735 | 3,551 | -- | 25,511 | 4,756 | 7,344 | 24,880 | 21,500 | -- |
| 1977 | 4,499 | 3,419 | -- | 27,274 | 4,830 | 7,446 | 26,971 | 21,989 | -- |
| 1978 | 4,627 | 3,714 | -- | 28,166 | 5,244 | 7,856 | 28,565 | 22,227 | -- |
| 1979 | 4,852 | 3,894 | -- | 28,631 | 5,453 | 8,193 | 29,791 | 22,009 | -- |
| 1980 | 4,575 | 3,335 | -- | 28,977 | 6,105 | 8,398 | 31,528 | 22,630 | -- |
| 1981 | 4,660 | 3,400 | -- | 29,638 | 6,488 | 8,889 | 33,372 | 23,186 | -- |
| 1982 | 4,529 | 3,304 | -- | 29,469 | 6,597 | 9,019 | 33,861 | 22,682 | -- |

APPENDIX TABLE 56. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA, 1960-1982

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|-------------------------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber & Assoc Prod | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 142,761 | 22,299 | -- | -- | -- | 65,118 | 33,487 | 327,687 | -- | -- |
| 1961 | 139,858 | 18,505 | -- | -- | -- | 62,278 | 33,468 | 327,506 | -- | -- |
| 1962 | 136,967 | 17,790 | -- | -- | -- | 62,977 | 34,528 | 337,876 | -- | -- |
| 1963 | 134,063 | 16,131 | -- | -- | -- | 62,271 | 34,883 | 341,354 | -- | -- |
| 1964 | 131,163 | 16,913 | -- | -- | -- | 64,029 | 33,939 | 332,114 | -- | -- |
| 1965 | 127,083 | 18,027 | -- | -- | -- | 69,026 | 36,240 | 365,699 | -- | -- |
| 1966 | 122,996 | 18,383 | -- | -- | -- | 72,584 | 38,779 | 397,082 | -- | -- |
| 1967 | 118,922 | 17,907 | -- | -- | -- | 71,748 | 37,463 | 418,880 | -- | -- |
| 1968 | 114,835 | 18,505 | -- | -- | -- | 74,969 | 38,039 | 435,854 | -- | -- |
| 1969 | 110,757 | 17,909 | -- | -- | -- | 79,464 | 40,362 | 456,584 | -- | -- |
| 1970 | 108,308 | 17,993 | -- | -- | -- | 75,050 | 39,870 | 443,933 | -- | -- |
| 1971 | 105,869 | 17,638 | -- | -- | -- | 76,270 | 39,377 | 434,784 | -- | -- |
| 1972 | 103,423 | 16,507 | -- | -- | -- | 74,099 | 40,491 | 444,346 | -- | -- |
| 1973 | 100,986 | 17,202 | -- | -- | -- | 77,996 | 44,935 | 459,213 | -- | -- |
| 1974 | 98,537 | 16,866 | -- | -- | -- | 74,807 | 50,204 | 457,385 | -- | -- |
| 1975 | 99,643 | 16,390 | -- | -- | -- | 72,895 | 43,632 | 434,886 | -- | -- |
| 1976 | 100,770 | 17,151 | -- | -- | -- | 74,778 | 46,659 | 442,603 | -- | -- |
| 1977 | 101,870 | 14,610 | -- | -- | -- | 77,805 | 46,613 | 459,857 | -- | -- |
| 1978 | 102,963 | 18,478 | -- | -- | -- | 89,010 | 52,159 | 482,123 | -- | -- |
| 1979 | 104,077 | 19,118 | -- | -- | -- | 91,942 | 52,227 | 500,753 | -- | -- |
| 1980 | 105,197 | 17,475 | -- | -- | -- | 85,696 | 52,294 | 494,367 | -- | -- |
| 1981 | 106,297 | 18,000 | -- | -- | -- | 78,120 | 50,700 | 503,408 | -- | -- |
| 1982 | 107,389 | 11,102 | -- | -- | -- | 69,769 | 49,793 | 487,088 | -- | -- |

- continued -

APPENDIX TABLE 56. EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA, 1960-1982 (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|---------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 55,463 | 43,578 | -- | 192,863 | 57,171 | 51,924 | 110,337 | 177,325 | -- |
| 1961 | 52,147 | 40,973 | -- | 190,392 | 59,431 | 53,637 | 113,979 | 182,326 | -- |
| 1962 | 52,203 | 41,017 | -- | 194,504 | 60,960 | 55,524 | 117,988 | 192,369 | -- |
| 1963 | 51,477 | 40,447 | -- | 199,268 | 61,797 | 56,554 | 120,178 | 203,775 | -- |
| 1964 | 52,702 | 41,409 | -- | 210,450 | 63,425 | 60,076 | 127,662 | 216,612 | -- |
| 1965 | 52,735 | 41,434 | -- | 216,091 | 62,977 | 62,166 | 132,102 | 225,223 | -- |
| 1966 | 54,263 | 42,635 | -- | 229,494 | 64,757 | 65,582 | 139,362 | 239,101 | -- |
| 1967 | 55,786 | 43,831 | -- | 238,252 | 67,835 | 69,599 | 147,899 | 253,906 | -- |
| 1968 | 56,264 | 44,208 | -- | 250,173 | 70,343 | 73,944 | 157,131 | 255,511 | -- |
| 1969 | 57,850 | 45,453 | -- | 260,689 | 74,127 | 77,917 | 165,575 | 265,789 | -- |
| 1970 | 57,076 | 44,846 | -- | 267,767 | 76,471 | 81,897 | 174,032 | 278,065 | -- |
| 1971 | 58,038 | 45,601 | -- | 277,953 | 79,554 | 87,427 | 185,782 | 291,576 | -- |
| 1972 | 58,229 | 45,751 | -- | 289,408 | 80,967 | 92,379 | 196,306 | 296,517 | -- |
| 1973 | 59,644 | 46,864 | -- | 300,910 | 84,594 | 95,462 | 202,856 | 302,324 | -- |
| 1974 | 58,726 | 46,142 | -- | 301,754 | 84,330 | 97,956 | 208,158 | 302,672 | -- |
| 1975 | 57,188 | 44,934 | -- | 304,189 | 86,420 | 101,888 | 216,513 | 311,065 | -- |
| 1976 | 57,564 | 45,228 | -- | 317,065 | 89,071 | 106,657 | 226,645 | 315,579 | -- |
| 1977 | 58,602 | 46,044 | -- | 334,778 | 93,095 | 113,072 | 240,279 | 324,245 | -- |
| 1978 | 59,246 | 46,551 | -- | 352,771 | 97,234 | 120,170 | 255,360 | 329,898 | -- |
| 1979 | 62,132 | 48,818 | -- | 358,597 | 101,114 | 125,324 | 266,315 | 326,660 | -- |
| 1980 | 62,669 | 49,210 | -- | 365,188 | 106,196 | 132,525 | 281,616 | 336,734 | -- |
| 1981 | 63,844 | 50,163 | -- | 373,521 | 112,853 | 140,279 | 298,092 | 345,020 | -- |
| 1982 | 62,042 | 48,747 | -- | 371,399 | 114,762 | 142,333 | 302,457 | 337,508 | -- |

APPENDIX TABLE 57. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 2, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 26,938 | 74,929 | -- | -- | -- | 51,396 | 34,951 | 28,330 | -- | -- |
| 1961 | 27,143 | 77,711 | -- | -- | -- | 53,640 | 36,101 | 27,966 | -- | -- |
| 1962 | 27,047 | 72,056 | -- | -- | -- | 52,965 | 35,789 | 26,462 | -- | -- |
| 1963 | 26,534 | 76,025 | -- | -- | -- | 53,779 | 36,379 | 25,169 | -- | -- |
| 1964 | 28,656 | 73,401 | -- | -- | -- | 56,431 | 40,252 | 28,737 | -- | -- |
| 1965 | 31,171 | 68,848 | -- | -- | -- | 60,783 | 44,724 | 26,799 | -- | -- |
| 1966 | 35,018 | 71,125 | -- | -- | -- | 25,606 | 42,887 | 28,797 | -- | -- |
| 1967 | 38,103 | 66,514 | -- | -- | -- | 23,810 | 42,386 | 32,573 | -- | -- |
| 1968 | 41,994 | 66,924 | -- | -- | -- | 31,538 | 43,216 | 28,878 | -- | -- |
| 1969 | 47,408 | 73,695 | -- | -- | -- | 38,436 | 42,884 | 32,532 | -- | -- |
| 1970 | 51,047 | 74,334 | -- | -- | -- | 36,623 | 42,301 | 36,456 | -- | -- |
| 1971 | 50,762 | 65,042 | -- | -- | -- | 36,299 | 42,805 | 38,867 | -- | -- |
| 1972 | 50,427 | 73,224 | -- | -- | -- | 45,331 | 46,748 | 35,404 | -- | -- |
| 1973 | 66,850 | 86,447 | -- | -- | -- | 50,261 | 41,525 | 50,796 | -- | -- |
| 1974 | 65,747 | 98,431 | -- | -- | -- | 74,159 | 38,334 | 72,443 | -- | -- |
| 1975 | 69,226 | 99,192 | -- | -- | -- | 65,647 | 32,257 | 102,267 | -- | -- |
| 1976 | 71,777 | 100,936 | -- | -- | -- | 63,330 | 35,366 | 76,509 | -- | -- |
| 1977 | 73,269 | 76,964 | -- | -- | -- | 46,927 | 35,818 | 67,372 | -- | -- |
| 1978 | 70,755 | 117,950 | -- | -- | -- | 44,881 | 38,361 | 80,409 | -- | -- |
| 1979 | 74,692 | 99,329 | -- | -- | -- | 46,688 | 41,006 | 82,372 | -- | -- |
| 1980 | 84,788 | 109,357 | -- | -- | -- | 58,581 | 32,796 | 98,307 | -- | -- |
| 1981 | 76,641 | 141,768 | -- | -- | -- | 60,935 | 30,207 | 97,938 | -- | -- |
| 1982 | 82,273 | 233,047 | -- | -- | -- | 67,360 | 28,217 | 118,534 | -- | -- |

- continued -

APPENDIX TABLE 57. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 2, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | |
|------|--------|-----------------|----------|--------------|---------|--------------------|-----------------|-------|------------|
| | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) |
| | Trans | Comm & Pub Util | Elec Gen | Retail Trade | FIRE | Bus & Pers Service | Prof & Soc Serv | Govt | Households |
| 1960 | 36,457 | 53,684 | -- | 75,122 | 107,368 | 100,229 | 19,678 | 7,568 | -- |
| 1961 | 35,623 | 55,781 | -- | 75,645 | 101,336 | 98,741 | 18,852 | 7,166 | -- |
| 1962 | 33,569 | 55,740 | -- | 75,009 | 99,456 | 97,016 | 18,470 | 6,794 | -- |
| 1963 | 33,331 | 55,986 | -- | 72,889 | 97,150 | 96,461 | 18,027 | 6,329 | -- |
| 1964 | 33,702 | 57,236 | -- | 71,868 | 99,178 | 95,100 | 17,813 | 6,221 | -- |
| 1965 | 34,569 | 54,824 | -- | 72,426 | 104,346 | 87,403 | 18,609 | 6,108 | -- |
| 1966 | 29,587 | 64,749 | -- | 75,277 | 103,219 | 77,567 | 20,192 | 6,308 | -- |
| 1967 | 26,129 | 58,431 | -- | 74,343 | 100,630 | 72,615 | 17,300 | 5,941 | -- |
| 1968 | 21,696 | 65,125 | -- | 69,606 | 104,762 | 72,433 | 15,670 | 5,819 | -- |
| 1969 | 28,035 | 59,949 | -- | 71,755 | 99,648 | 83,331 | 15,182 | 6,216 | -- |
| 1970 | 28,438 | 60,607 | -- | 70,442 | 96,772 | 79,335 | 14,324 | 5,944 | -- |
| 1971 | 24,065 | 61,532 | -- | 68,820 | 89,046 | 65,285 | 13,163 | 5,817 | -- |
| 1972 | 24,387 | 59,201 | -- | 65,265 | 84,943 | 66,689 | 12,331 | 5,820 | -- |
| 1973 | 25,117 | 69,924 | -- | 70,834 | 97,498 | 83,075 | 13,605 | 6,669 | -- |
| 1974 | 24,855 | 71,901 | -- | 73,505 | 96,830 | 82,110 | 13,093 | 6,944 | -- |
| 1975 | 21,726 | 83,192 | -- | 70,396 | 103,535 | 41,467 | 13,117 | 6,598 | -- |
| 1976 | 21,682 | 85,387 | -- | 70,649 | 107,166 | 66,842 | 10,383 | 6,770 | -- |
| 1977 | 19,444 | 68,368 | -- | 69,277 | 97,671 | 56,387 | 11,595 | 6,741 | -- |
| 1978 | 20,520 | 81,406 | -- | 67,262 | 101,480 | 67,101 | 10,895 | 6,954 | -- |
| 1979 | 19,259 | 79,958 | -- | 68,744 | 100,785 | 67,708 | 10,802 | 7,217 | -- |
| 1980 | 23,348 | 77,660 | -- | 68,004 | 92,494 | 54,589 | 10,560 | 7,195 | -- |
| 1981 | 23,878 | 72,572 | -- | 63,058 | 81,967 | 48,754 | 9,341 | 6,671 | -- |
| 1982 | 24,549 | 74,404 | -- | 64,026 | 80,658 | 47,664 | 9,034 | 6,818 | -- |

APPENDIX TABLE 58. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 3, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 157,857 | 58,364 | -- | -- | -- | 40,148 | 41,491 | 79,642 | -- | -- |
| 1961 | 161,841 | 59,943 | -- | -- | -- | 41,220 | 41,566 | 80,563 | -- | -- |
| 1962 | 164,800 | 59,130 | -- | -- | -- | 40,341 | 40,907 | 78,269 | -- | -- |
| 1963 | 168,326 | 69,401 | -- | -- | -- | 41,736 | 41,843 | 77,851 | -- | -- |
| 1964 | 174,783 | 73,397 | -- | -- | -- | 43,876 | 46,646 | 80,750 | -- | -- |
| 1965 | 190,160 | 68,825 | -- | -- | -- | 30,055 | 50,003 | 74,633 | -- | -- |
| 1966 | 209,982 | 71,121 | -- | -- | -- | 22,092 | 49,628 | 65,274 | -- | -- |
| 1967 | 229,590 | 66,526 | -- | -- | -- | 25,025 | 62,210 | 66,681 | -- | -- |
| 1968 | 251,266 | 66,956 | -- | -- | -- | 34,103 | 50,264 | 69,813 | -- | -- |
| 1969 | 275,743 | 73,737 | -- | -- | -- | 44,037 | 54,288 | 63,874 | -- | -- |
| 1970 | 274,480 | 68,988 | -- | -- | -- | 37,462 | 53,135 | 63,900 | -- | -- |
| 1971 | 274,309 | 65,014 | -- | -- | -- | 33,398 | 51,300 | 63,906 | -- | -- |
| 1972 | 275,250 | 73,261 | -- | -- | -- | 30,098 | 53,487 | 62,676 | -- | -- |
| 1973 | 314,102 | 86,451 | -- | -- | -- | 32,946 | 55,233 | 75,694 | -- | -- |
| 1974 | 325,204 | 98,449 | -- | -- | -- | 47,326 | 55,154 | 86,443 | -- | -- |
| 1975 | 318,776 | 99,177 | -- | -- | -- | 46,645 | 58,701 | 93,439 | -- | -- |
| 1976 | 314,954 | 100,918 | -- | -- | -- | 36,344 | 59,938 | 98,396 | -- | -- |
| 1977 | 302,692 | 76,965 | -- | -- | -- | 27,617 | 62,119 | 103,975 | -- | -- |
| 1978 | 296,237 | 117,927 | -- | -- | -- | 33,956 | 78,301 | 91,803 | -- | -- |
| 1979 | 321,127 | 130,261 | -- | -- | -- | 36,554 | 85,249 | 97,013 | -- | -- |
| 1980 | 302,251 | 109,396 | -- | -- | -- | 37,232 | 74,160 | 114,272 | -- | -- |
| 1981 | 294,287 | 115,842 | -- | -- | -- | 41,173 | 71,595 | 111,518 | -- | -- |
| 1982 | 315,506 | 190,557 | -- | -- | -- | 46,593 | 68,742 | 127,878 | -- | -- |

- continued -

APPENDIX TABLE 58. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 3, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | |
|------|--------|-----------------|----------|--------------|--------|--------------------|-----------------|--------|------------|--|
| | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | |
| | Trans | Comm & Pub Util | Elec Gen | Retail Trade | FIRE | Bus & Pers Service | Prof & Soc Serv | Govt | Households | |
| 1960 | 24,396 | 60,925 | -- | 84,723 | 78,853 | 39,902 | 13,906 | 9,489 | -- | |
| 1961 | 23,073 | 61,927 | -- | 84,120 | 73,550 | 38,285 | 13,034 | 8,847 | -- | |
| 1962 | 22,266 | 61,925 | -- | 83,187 | 72,203 | 37,385 | 12,733 | 8,409 | -- | |
| 1963 | 23,680 | 64,195 | -- | 82,352 | 72,390 | 37,411 | 12,717 | 8,096 | -- | |
| 1964 | 25,185 | 65,993 | -- | 80,952 | 73,617 | 36,800 | 12,550 | 7,991 | -- | |
| 1965 | 24,947 | 69,860 | -- | 79,164 | 76,745 | 37,176 | 13,306 | 7,864 | -- | |
| 1966 | 26,235 | 69,994 | -- | 77,920 | 81,263 | 35,719 | 13,288 | 7,925 | -- | |
| 1967 | 28,057 | 66,258 | -- | 76,433 | 78,095 | 36,213 | 12,835 | 7,469 | -- | |
| 1968 | 38,805 | 55,634 | -- | 75,459 | 78,184 | 35,082 | 14,337 | 7,837 | -- | |
| 1969 | 38,586 | 59,235 | -- | 72,301 | 77,192 | 36,509 | 12,536 | 7,855 | -- | |
| 1970 | 37,037 | 58,061 | -- | 68,698 | 72,696 | 34,122 | 11,623 | 7,280 | -- | |
| 1971 | 32,637 | 53,756 | -- | 67,215 | 72,606 | 31,002 | 10,420 | 6,710 | -- | |
| 1972 | 27,553 | 72,117 | -- | 65,925 | 74,716 | 30,318 | 10,162 | 6,901 | -- | |
| 1973 | 32,795 | 62,858 | -- | 72,613 | 86,769 | 33,513 | 10,988 | 7,800 | -- | |
| 1974 | 73,169 | 60,290 | -- | 70,820 | 92,253 | 38,489 | 11,145 | 8,122 | -- | |
| 1975 | 69,138 | 63,227 | -- | 70,959 | 94,046 | 34,101 | 10,703 | 8,437 | -- | |
| 1976 | 63,369 | 69,591 | -- | 69,733 | 88,808 | 34,257 | 10,741 | 8,918 | -- | |
| 1977 | 42,865 | 56,512 | -- | 63,293 | 81,036 | 31,573 | 9,479 | 7,969 | -- | |
| 1978 | 66,992 | 87,780 | -- | 73,706 | 92,845 | 35,944 | 11,932 | 9,918 | -- | |
| 1979 | 72,281 | 92,092 | -- | 78,942 | 97,692 | 37,383 | 12,482 | 11,006 | -- | |
| 1980 | 60,182 | 87,178 | -- | 73,928 | 92,988 | 39,894 | 10,950 | 9,632 | -- | |
| 1981 | 63,002 | 87,003 | -- | 72,449 | 88,198 | 37,319 | 10,388 | 9,547 | -- | |
| 1982 | 65,895 | 90,949 | -- | 74,537 | 88,430 | 37,236 | 10,306 | 9,932 | -- | |

APPENDIX TABLE 59. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 4, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 47,877 | -- | -- | -- | -- | 22,762 | -- | 110,107 | -- | -- | |
| 1961 | 49,216 | -- | -- | -- | -- | 24,282 | -- | 113,157 | -- | -- | |
| 1962 | 49,290 | -- | -- | -- | -- | 23,655 | -- | 111,196 | -- | -- | |
| 1963 | 52,890 | -- | -- | -- | -- | 25,154 | -- | 111,942 | -- | -- | |
| 1964 | 58,189 | -- | -- | -- | -- | 26,921 | -- | 119,663 | -- | -- | |
| 1965 | 64,147 | -- | -- | -- | -- | 30,036 | -- | 126,121 | -- | -- | |
| 1966 | 65,230 | -- | -- | -- | -- | 37,478 | -- | 117,003 | -- | -- | |
| 1967 | 70,052 | -- | -- | -- | -- | 34,663 | -- | 107,404 | -- | -- | |
| 1968 | 74,581 | -- | -- | -- | -- | 40,570 | -- | 118,168 | -- | -- | |
| 1969 | 80,126 | -- | -- | -- | -- | 30,370 | -- | 98,411 | -- | -- | |
| 1970 | 79,133 | -- | -- | -- | -- | 32,895 | -- | 104,998 | -- | -- | |
| 1971 | 86,501 | -- | -- | -- | -- | 28,666 | -- | 104,904 | -- | -- | |
| 1972 | 87,941 | -- | -- | -- | -- | 30,731 | -- | 99,985 | -- | -- | |
| 1973 | 134,880 | -- | -- | -- | -- | 38,567 | -- | 124,050 | -- | -- | |
| 1974 | 140,701 | -- | -- | -- | -- | 44,138 | -- | 103,288 | -- | -- | |
| 1975 | 105,547 | -- | -- | -- | -- | 36,764 | -- | 120,634 | -- | -- | |
| 1976 | 137,117 | -- | -- | -- | -- | 38,075 | -- | 127,646 | -- | -- | |
| 1977 | 135,144 | -- | -- | -- | -- | 33,955 | -- | 147,424 | -- | -- | |
| 1978 | 147,584 | -- | -- | -- | -- | 32,740 | -- | 139,563 | -- | -- | |
| 1979 | 152,652 | -- | -- | -- | -- | 34,720 | -- | 147,028 | -- | -- | |
| 1980 | 156,560 | -- | -- | -- | -- | 60,579 | -- | 152,527 | -- | -- | |
| 1981 | 156,718 | -- | -- | -- | -- | 53,519 | -- | 146,959 | -- | -- | |
| 1982 | 153,695 | -- | -- | -- | -- | 58,645 | -- | 163,669 | -- | -- | |

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APPENDIX TABLE 59. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR,
MINNESOTA REGION 4, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 4,563 | 66,401 | -- | 69,850 | 103,027 | 42,747 | 13,415 | 7,708 | -- |
| 1961 | 4,921 | 71,577 | -- | 71,816 | 100,441 | 42,130 | 13,186 | 7,604 | -- |
| 1962 | 4,940 | 72,490 | -- | 70,695 | 98,537 | 41,376 | 12,957 | 7,275 | -- |
| 1963 | 5,202 | 76,473 | -- | 72,573 | 102,379 | 42,442 | 13,232 | 7,185 | -- |
| 1964 | 5,399 | 79,421 | -- | 73,202 | 106,478 | 42,036 | 13,241 | 7,202 | -- |
| 1965 | 5,885 | 82,035 | -- | 74,715 | 107,625 | 37,275 | 14,847 | 7,370 | -- |
| 1966 | 5,053 | 76,631 | -- | 71,613 | 103,112 | 44,387 | 12,950 | 6,948 | -- |
| 1967 | 6,936 | 81,950 | -- | 74,547 | 110,739 | 45,186 | 12,337 | 6,724 | -- |
| 1968 | 5,239 | 88,474 | -- | 70,077 | 108,401 | 40,777 | 11,694 | 6,784 | -- |
| 1969 | 5,368 | 103,624 | -- | 73,185 | 104,076 | 44,792 | 9,821 | 7,197 | -- |
| 1970 | 5,337 | 101,989 | -- | 69,082 | 97,349 | 41,867 | 9,011 | 6,651 | -- |
| 1971 | 5,865 | 91,116 | -- | 69,219 | 101,812 | 33,687 | 9,452 | 6,940 | -- |
| 1972 | 5,209 | 82,897 | -- | 73,310 | 104,355 | 32,138 | 9,181 | 7,011 | -- |
| 1973 | 6,026 | 118,283 | -- | 97,943 | 135,313 | 43,828 | 11,369 | 9,290 | -- |
| 1974 | 7,053 | 134,665 | -- | 92,725 | 143,760 | 44,795 | 12,524 | 9,631 | -- |
| 1975 | 6,183 | 104,675 | -- | 75,982 | 113,761 | 31,871 | 9,690 | 7,860 | -- |
| 1976 | 6,355 | 130,256 | -- | 81,182 | 114,449 | 34,447 | 11,089 | 9,252 | -- |
| 1977 | 6,965 | 78,828 | -- | 77,645 | 120,217 | 41,333 | 9,350 | 8,917 | -- |
| 1978 | 7,272 | 81,111 | -- | 85,024 | 127,710 | 35,788 | 11,862 | 9,503 | -- |
| 1979 | 7,205 | 78,873 | -- | 85,323 | 125,006 | 35,201 | 11,495 | 9,768 | -- |
| 1980 | 7,987 | 101,641 | -- | 90,878 | 118,776 | 34,937 | 8,781 | 9,847 | -- |
| 1981 | 7,683 | 98,009 | -- | 88,360 | 110,990 | 32,905 | 8,131 | 9,492 | -- |
| 1982 | 7,885 | 99,033 | -- | 87,225 | 106,771 | 32,107 | 7,801 | 9,502 | -- |

APPENDIX TABLE 60. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 5, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 42,305 | -- | -- | -- | -- | 41,399 | -- | 86,963 | -- | -- |
| 1961 | 43,763 | -- | -- | -- | -- | 43,818 | -- | 87,238 | -- | -- |
| 1962 | 41,361 | -- | -- | -- | -- | 40,968 | -- | 81,697 | -- | -- |
| 1963 | 43,514 | -- | -- | -- | -- | 43,357 | -- | 79,072 | -- | -- |
| 1964 | 45,739 | -- | -- | -- | -- | 44,468 | -- | 85,208 | -- | -- |
| 1965 | 50,946 | -- | -- | -- | -- | 51,377 | -- | 79,168 | -- | -- |
| 1966 | 53,561 | -- | -- | -- | -- | 56,668 | -- | 81,327 | -- | -- |
| 1967 | 55,950 | -- | -- | -- | -- | 48,144 | -- | 80,594 | -- | -- |
| 1968 | 57,703 | -- | -- | -- | -- | 49,341 | -- | 80,593 | -- | -- |
| 1969 | 60,095 | -- | -- | -- | -- | 39,052 | -- | 91,742 | -- | -- |
| 1970 | 59,855 | -- | -- | -- | -- | 35,011 | -- | 95,992 | -- | -- |
| 1971 | 62,621 | -- | -- | -- | -- | 36,582 | -- | 78,127 | -- | -- |
| 1972 | 63,408 | -- | -- | -- | -- | 40,996 | -- | 81,264 | -- | -- |
| 1973 | 102,400 | -- | -- | -- | -- | 67,912 | -- | 99,750 | -- | -- |
| 1974 | 110,160 | -- | -- | -- | -- | 62,253 | -- | 80,006 | -- | -- |
| 1975 | 89,749 | -- | -- | -- | -- | 57,353 | -- | 83,622 | -- | -- |
| 1976 | 84,981 | -- | -- | -- | -- | 62,800 | -- | 80,708 | -- | -- |
| 1977 | 95,802 | -- | -- | -- | -- | 47,415 | -- | 83,113 | -- | -- |
| 1978 | 95,072 | -- | -- | -- | -- | 40,326 | -- | 75,587 | -- | -- |
| 1979 | 102,488 | -- | -- | -- | -- | 41,818 | -- | 79,519 | -- | -- |
| 1980 | 111,876 | -- | -- | -- | -- | 60,001 | -- | 78,876 | -- | -- |
| 1981 | 101,006 | -- | -- | -- | -- | 62,429 | -- | 73,123 | -- | -- |
| 1982 | 97,991 | -- | -- | -- | -- | 67,738 | -- | 79,254 | -- | -- |

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APPENDIX TABLE 60. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 5, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | |
|------|--------|-----------------|----------|--------------|---------|--------------------|-----------------|--------|------------|--|
| | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | |
| | Trans | Comm & Pub Util | Elec Gen | Retail Trade | FIRE | Bus & Pers Service | Prof & Soc Serv | Govt | Households | |
| 1960 | 9,453 | 28,516 | -- | 84,461 | 99,580 | 52,064 | 14,224 | 10,489 | -- | |
| 1961 | 10,204 | 30,843 | -- | 87,074 | 97,422 | 51,720 | 14,009 | 10,370 | -- | |
| 1962 | 9,700 | 29,500 | -- | 80,948 | 89,713 | 47,935 | 13,008 | 9,349 | -- | |
| 1963 | 10,070 | 30,876 | -- | 82,705 | 92,545 | 49,127 | 13,173 | 9,158 | -- | |
| 1964 | 10,145 | 31,076 | -- | 80,541 | 92,957 | 47,567 | 12,761 | 8,872 | -- | |
| 1965 | 9,718 | 31,068 | -- | 85,435 | 99,911 | 56,160 | 13,044 | 9,222 | -- | |
| 1966 | 5,934 | 46,284 | -- | 86,003 | 101,592 | 61,029 | 13,049 | 9,280 | -- | |
| 1967 | 6,011 | 45,109 | -- | 86,153 | 90,228 | 57,828 | 13,190 | 9,324 | -- | |
| 1968 | 9,377 | 31,420 | -- | 81,958 | 80,181 | 54,020 | 12,827 | 9,493 | -- | |
| 1969 | 8,972 | 33,599 | -- | 79,017 | 81,611 | 56,009 | 11,605 | 9,422 | -- | |
| 1970 | 8,951 | 33,755 | -- | 76,385 | 78,376 | 53,305 | 10,975 | 8,923 | -- | |
| 1971 | 9,027 | 34,026 | -- | 73,522 | 86,148 | 37,914 | 10,560 | 8,766 | -- | |
| 1972 | 9,791 | 33,384 | -- | 68,756 | 83,756 | 27,322 | 9,984 | 8,712 | -- | |
| 1973 | 12,499 | 42,942 | -- | 98,435 | 111,369 | 46,695 | 13,707 | 12,217 | -- | |
| 1974 | 14,978 | 42,471 | -- | 110,605 | 142,415 | 54,841 | 14,931 | 12,903 | -- | |
| 1975 | 13,341 | 42,922 | -- | 87,859 | 113,174 | 47,300 | 12,925 | 10,669 | -- | |
| 1976 | 11,444 | 45,284 | -- | 87,084 | 104,081 | 32,387 | 11,871 | 10,033 | -- | |
| 1977 | 7,940 | 69,577 | -- | 91,220 | 111,601 | 50,930 | 13,113 | 10,984 | -- | |
| 1978 | 9,982 | 48,206 | -- | 81,459 | 103,278 | 47,189 | 13,068 | 10,721 | -- | |
| 1979 | 10,303 | 49,687 | -- | 86,672 | 107,599 | 48,637 | 13,525 | 11,714 | -- | |
| 1980 | 10,479 | 62,815 | -- | 92,828 | 111,677 | 60,158 | 11,491 | 12,614 | -- | |
| 1981 | 9,410 | 55,818 | -- | 83,075 | 95,307 | 52,880 | 9,757 | 11,139 | -- | |
| 1982 | 9,522 | 55,878 | -- | 81,509 | 90,903 | 51,633 | 9,286 | 11,049 | -- | |

APPENDIX TABLE 61. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 6, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 47,992 | -- | -- | -- | -- | 31,986 | 80,478 | 62,632 | -- | -- |
| 1961 | 50,468 | -- | -- | -- | -- | 34,519 | 83,991 | 63,709 | -- | -- |
| 1962 | 51,315 | -- | -- | -- | -- | 34,265 | 83,600 | 61,667 | -- | -- |
| 1963 | 50,616 | -- | -- | -- | -- | 34,484 | 85,148 | 60,161 | -- | -- |
| 1964 | 54,387 | -- | -- | -- | -- | 36,305 | 94,488 | 67,984 | -- | -- |
| 1965 | 59,117 | -- | -- | -- | -- | 38,122 | 101,742 | 69,030 | -- | -- |
| 1966 | 65,870 | -- | -- | -- | -- | 42,126 | 106,115 | 63,395 | -- | -- |
| 1967 | 68,013 | -- | -- | -- | -- | 45,411 | 87,670 | 67,855 | -- | -- |
| 1968 | 74,081 | -- | -- | -- | -- | 37,811 | 78,546 | 57,848 | -- | -- |
| 1969 | 78,444 | -- | -- | -- | -- | 36,241 | 69,655 | 62,878 | -- | -- |
| 1970 | 82,865 | -- | -- | -- | -- | 39,614 | 68,553 | 68,325 | -- | -- |
| 1971 | 84,397 | -- | -- | -- | -- | 37,630 | 98,641 | 67,802 | -- | -- |
| 1972 | 88,213 | -- | -- | -- | -- | 42,442 | 86,541 | 69,789 | -- | -- |
| 1973 | 115,700 | -- | -- | -- | -- | 54,009 | 67,277 | 81,817 | -- | -- |
| 1974 | 112,304 | -- | -- | -- | -- | 43,914 | 59,509 | 69,261 | -- | -- |
| 1975 | 113,963 | -- | -- | -- | -- | 45,169 | 53,306 | 82,083 | -- | -- |
| 1976 | 116,517 | -- | -- | -- | -- | 44,625 | 69,463 | 82,401 | -- | -- |
| 1977 | 119,362 | -- | -- | -- | -- | 39,885 | 71,721 | 78,615 | -- | -- |
| 1978 | 120,051 | -- | -- | -- | -- | 29,978 | 69,864 | 79,866 | -- | -- |
| 1979 | 130,175 | -- | -- | -- | -- | 30,940 | 74,909 | 84,480 | -- | -- |
| 1980 | 134,752 | -- | -- | -- | -- | 38,789 | 75,254 | 84,716 | -- | -- |
| 1981 | 126,442 | -- | -- | -- | -- | 40,948 | 68,731 | 81,093 | -- | -- |
| 1982 | 128,397 | -- | -- | -- | -- | 45,941 | 64,090 | 91,173 | -- | -- |

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APPENDIX TABLE 61. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 6, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | |
|------|--------|-----------------|----------|--------------|---------|--------------------|-----------------|-------|------------|--|
| | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | |
| | Trans | Comm & Pub Util | Elec Gen | Retail Trade | FIRE | Bus & Pers Service | Prof & Soc Serv | Govt | Households | |
| 1960 | 7,485 | 51,878 | -- | 62,153 | 104,053 | 57,114 | 13,325 | 9,083 | -- | |
| 1961 | 8,208 | 56,916 | -- | 64,954 | 103,352 | 57,282 | 13,314 | 9,116 | -- | |
| 1962 | 8,318 | 58,208 | -- | 65,041 | 103,087 | 56,773 | 13,223 | 8,836 | -- | |
| 1963 | 8,315 | 57,921 | -- | 62,292 | 99,609 | 55,268 | 12,739 | 8,164 | -- | |
| 1964 | 8,628 | 59,642 | -- | 61,941 | 102,108 | 54,843 | 12,622 | 8,086 | -- | |
| 1965 | 8,331 | 58,096 | -- | 62,328 | 105,022 | 56,394 | 12,423 | 8,290 | -- | |
| 1966 | 9,112 | 64,601 | -- | 58,412 | 107,333 | 65,150 | 12,386 | 8,578 | -- | |
| 1967 | 9,728 | 66,669 | -- | 60,312 | 102,019 | 65,087 | 11,767 | 8,302 | -- | |
| 1968 | 8,999 | 68,526 | -- | 62,047 | 102,379 | 61,199 | 12,789 | 8,507 | -- | |
| 1969 | 7,936 | 68,098 | -- | 64,555 | 97,852 | 52,806 | 12,435 | 8,200 | -- | |
| 1970 | 8,190 | 70,158 | -- | 64,285 | 96,776 | 51,001 | 11,955 | 7,982 | -- | |
| 1971 | 9,072 | 65,531 | -- | 59,002 | 92,600 | 45,097 | 10,346 | 7,648 | -- | |
| 1972 | 11,058 | 52,327 | -- | 57,932 | 94,203 | 44,933 | 10,276 | 7,842 | -- | |
| 1973 | 12,398 | 62,653 | -- | 68,906 | 114,279 | 52,272 | 12,307 | 9,405 | -- | |
| 1974 | 11,607 | 81,056 | -- | 69,832 | 126,062 | 51,977 | 9,800 | 9,005 | -- | |
| 1975 | 13,169 | 70,147 | -- | 68,259 | 120,518 | 53,183 | 9,635 | 8,854 | -- | |
| 1976 | 12,393 | 65,865 | -- | 68,809 | 121,304 | 43,041 | 10,196 | 8,875 | -- | |
| 1977 | 10,362 | 63,012 | -- | 66,085 | 119,794 | 47,568 | 9,733 | 8,892 | -- | |
| 1978 | 9,155 | 73,590 | -- | 63,900 | 105,358 | 39,671 | 9,417 | 8,811 | -- | |
| 1979 | 9,440 | 75,358 | -- | 67,515 | 108,855 | 40,759 | 9,659 | 9,557 | -- | |
| 1980 | 10,115 | 72,953 | -- | 67,282 | 101,286 | 37,131 | 9,699 | 9,868 | -- | |
| 1981 | 9,366 | 67,567 | -- | 62,600 | 90,364 | 33,268 | 8,602 | 9,104 | -- | |
| 1982 | 9,774 | 70,000 | -- | 63,658 | 89,665 | 32,923 | 8,454 | 9,378 | -- | |

APPENDIX TABLE 62. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 7, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 49,486 | -- | -- | -- | -- | 30,420 | -- | 92,982 | -- | -- | |
| 1961 | 51,552 | -- | -- | -- | -- | 32,572 | -- | 93,109 | -- | -- | |
| 1962 | 52,382 | -- | -- | -- | -- | 32,227 | -- | 88,239 | -- | -- | |
| 1963 | 55,109 | -- | -- | -- | -- | 34,007 | -- | 85,080 | -- | -- | |
| 1964 | 54,132 | -- | -- | -- | -- | 32,757 | -- | 89,657 | -- | -- | |
| 1965 | 61,310 | -- | -- | -- | -- | 40,472 | -- | 89,208 | -- | -- | |
| 1966 | 66,942 | -- | -- | -- | -- | 38,760 | -- | 93,904 | -- | -- | |
| 1967 | 66,630 | -- | -- | -- | -- | 38,103 | -- | 89,407 | -- | -- | |
| 1968 | 68,409 | -- | -- | -- | -- | 34,428 | -- | 75,449 | -- | -- | |
| 1969 | 74,584 | -- | -- | -- | -- | 37,290 | -- | 75,704 | -- | -- | |
| 1970 | 75,635 | -- | -- | -- | -- | 39,337 | -- | 79,076 | -- | -- | |
| 1971 | 76,250 | -- | -- | -- | -- | 35,335 | -- | 69,497 | -- | -- | |
| 1972 | 80,870 | -- | -- | -- | -- | 38,337 | -- | 65,526 | -- | -- | |
| 1973 | 131,371 | -- | -- | -- | -- | 47,154 | -- | 88,264 | -- | -- | |
| 1974 | 131,149 | -- | -- | -- | -- | 48,009 | -- | 67,751 | -- | -- | |
| 1975 | 109,266 | -- | -- | -- | -- | 42,999 | -- | 74,376 | -- | -- | |
| 1976 | 90,497 | -- | -- | -- | -- | 33,700 | -- | 63,775 | -- | -- | |
| 1977 | 108,174 | -- | -- | -- | -- | 45,246 | -- | 66,452 | -- | -- | |
| 1978 | 115,196 | -- | -- | -- | -- | 40,426 | -- | 72,481 | -- | -- | |
| 1979 | 118,391 | -- | -- | -- | -- | 42,406 | -- | 75,136 | -- | -- | |
| 1980 | 126,949 | -- | -- | -- | -- | 52,768 | -- | 66,580 | -- | -- | |
| 1981 | 116,953 | -- | -- | -- | -- | 50,442 | -- | 62,074 | -- | -- | |
| 1982 | 112,376 | -- | -- | -- | -- | 54,305 | -- | 67,377 | -- | -- | |

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APPENDIX TABLE 62. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR,
MINNESOTA REGION 7, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 10,235 | 49,391 | -- | 79,325 | 110,087 | 58,046 | 19,292 | 10,481 | -- |
| 1961 | 11,088 | 53,519 | -- | 81,774 | 107,783 | 56,960 | 19,047 | 10,386 | -- |
| 1962 | 11,124 | 54,151 | -- | 80,986 | 106,436 | 55,759 | 18,722 | 9,966 | -- |
| 1963 | 11,538 | 56,606 | -- | 82,626 | 109,419 | 57,346 | 18,947 | 9,745 | -- |
| 1964 | 11,000 | 53,824 | -- | 75,660 | 103,127 | 52,546 | 17,356 | 8,893 | -- |
| 1965 | 11,592 | 55,347 | -- | 85,043 | 113,297 | 52,878 | 17,385 | 9,393 | -- |
| 1966 | 13,741 | 59,922 | -- | 87,104 | 113,171 | 52,425 | 17,526 | 9,660 | -- |
| 1967 | 14,772 | 54,267 | -- | 86,700 | 105,112 | 56,015 | 15,528 | 9,173 | -- |
| 1968 | 12,288 | 55,596 | -- | 84,980 | 100,955 | 63,817 | 13,127 | 9,247 | -- |
| 1969 | 11,646 | 64,268 | -- | 88,800 | 98,972 | 72,339 | 17,124 | 9,775 | -- |
| 1970 | 11,792 | 65,224 | -- | 86,778 | 96,217 | 69,157 | 16,307 | 9,357 | -- |
| 1971 | 12,139 | 66,774 | -- | 84,600 | 107,617 | 38,917 | 16,483 | 9,024 | -- |
| 1972 | 12,195 | 63,644 | -- | 85,396 | 104,834 | 36,489 | 15,298 | 9,082 | -- |
| 1973 | 15,452 | 101,327 | -- | 122,042 | 154,206 | 68,451 | 20,555 | 13,369 | -- |
| 1974 | 19,974 | 116,703 | -- | 120,355 | 145,606 | 51,125 | 21,900 | 13,266 | -- |
| 1975 | 17,733 | 97,041 | -- | 96,164 | 121,012 | 39,911 | 16,778 | 11,089 | -- |
| 1976 | 11,460 | 83,959 | -- | 80,111 | 100,390 | 30,747 | 14,209 | 9,092 | -- |
| 1977 | 14,094 | 77,797 | -- | 98,411 | 123,902 | 41,212 | 16,018 | 10,770 | -- |
| 1978 | 10,739 | 99,864 | -- | 95,068 | 123,240 | 33,557 | 15,251 | 10,896 | -- |
| 1979 | 10,718 | 99,411 | -- | 97,379 | 123,407 | 33,505 | 15,240 | 11,467 | -- |
| 1980 | 14,615 | 107,804 | -- | 111,423 | 123,152 | 43,436 | 16,270 | 12,119 | -- |
| 1981 | 13,274 | 97,670 | -- | 101,449 | 107,551 | 38,432 | 14,142 | 10,945 | -- |
| 1982 | 13,313 | 96,938 | -- | 98,207 | 101,645 | 36,690 | 13,359 | 10,761 | -- |

APPENDIX TABLE 63. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 8, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 401,367 | -- | -- | -- | -- | 19,502 | 29,332 | 64,614 | -- | -- | |
| 1961 | 431,127 | -- | -- | -- | -- | 21,301 | 30,532 | 68,107 | -- | -- | |
| 1962 | 456,216 | -- | -- | -- | -- | 21,843 | 30,465 | 68,679 | -- | -- | |
| 1963 | 479,977 | -- | -- | -- | -- | 22,719 | 31,031 | 70,582 | -- | -- | |
| 1964 | 522,225 | -- | -- | -- | -- | 23,856 | 34,406 | 77,468 | -- | -- | |
| 1965 | 566,830 | -- | -- | -- | -- | 24,252 | 32,209 | 73,184 | -- | -- | |
| 1966 | 611,708 | -- | -- | -- | -- | 26,105 | 31,702 | 71,425 | -- | -- | |
| 1967 | 654,280 | -- | -- | -- | -- | 27,363 | 33,558 | 69,253 | -- | -- | |
| 1968 | 701,020 | -- | -- | -- | -- | 27,411 | 33,728 | 68,594 | -- | -- | |
| 1969 | 738,298 | -- | -- | -- | -- | 25,636 | 30,236 | 66,844 | -- | -- | |
| 1970 | 759,726 | -- | -- | -- | -- | 26,609 | 29,783 | 69,368 | -- | -- | |
| 1971 | 788,262 | -- | -- | -- | -- | 25,548 | 30,866 | 73,393 | -- | -- | |
| 1972 | 822,675 | -- | -- | -- | -- | 26,182 | 31,777 | 73,239 | -- | -- | |
| 1973 | 947,065 | -- | -- | -- | -- | 28,502 | 30,859 | 76,646 | -- | -- | |
| 1974 | 1,009,661 | -- | -- | -- | -- | 29,343 | 29,236 | 81,734 | -- | -- | |
| 1975 | 1,009,427 | -- | -- | -- | -- | 32,253 | 24,784 | 88,410 | -- | -- | |
| 1976 | 1,044,118 | -- | -- | -- | -- | 34,036 | 28,006 | 93,038 | -- | -- | |
| 1977 | 1,062,272 | -- | -- | -- | -- | 36,375 | 28,369 | 93,050 | -- | -- | |
| 1978 | 1,040,373 | -- | -- | -- | -- | 30,409 | 29,398 | 87,081 | -- | -- | |
| 1979 | 1,131,288 | -- | -- | -- | -- | 32,125 | 31,551 | 92,492 | -- | -- | |
| 1980 | 1,106,873 | -- | -- | -- | -- | 31,091 | 25,151 | 92,895 | -- | -- | |
| 1981 | 1,080,287 | -- | -- | -- | -- | 33,011 | 23,001 | 90,223 | -- | -- | |
| 1982 | 1,166,038 | -- | -- | -- | -- | 38,505 | 21,440 | 103,067 | -- | -- | |

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APPENDIX TABLE 63. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR,
MINNESOTA REGION 8, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 3,751 | 33,372 | -- | 65,264 | 36,294 | 20,901 | 10,285 | 9,429 | -- |
| 1961 | 4,186 | 37,217 | -- | 69,334 | 36,640 | 21,159 | 10,432 | 9,620 | -- |
| 1962 | 4,369 | 39,182 | -- | 71,360 | 37,641 | 21,370 | 10,669 | 9,613 | -- |
| 1963 | 4,557 | 40,702 | -- | 71,391 | 38,056 | 21,513 | 10,702 | 9,295 | -- |
| 1964 | 4,731 | 42,094 | -- | 71,495 | 39,281 | 21,366 | 10,652 | 9,259 | -- |
| 1965 | 5,067 | 44,280 | -- | 73,588 | 41,714 | 21,671 | 10,867 | 9,418 | -- |
| 1966 | 5,279 | 45,408 | -- | 74,379 | 43,897 | 21,786 | 11,214 | 9,526 | -- |
| 1967 | 5,190 | 47,565 | -- | 75,098 | 44,402 | 21,141 | 11,357 | 9,432 | -- |
| 1968 | 5,378 | 53,285 | -- | 77,667 | 47,214 | 21,506 | 12,930 | 10,268 | -- |
| 1969 | 5,504 | 51,820 | -- | 76,851 | 46,191 | 20,513 | 11,632 | 10,049 | -- |
| 1970 | 5,472 | 50,550 | -- | 72,475 | 43,190 | 19,042 | 10,529 | 9,244 | -- |
| 1971 | 5,308 | 49,358 | -- | 69,062 | 40,113 | 18,423 | 9,667 | 8,673 | -- |
| 1972 | 5,368 | 51,201 | -- | 67,115 | 39,872 | 17,562 | 9,493 | 8,610 | -- |
| 1973 | 5,891 | 54,989 | -- | 70,947 | 41,930 | 18,355 | 10,105 | 9,340 | -- |
| 1974 | 5,815 | 54,901 | -- | 71,110 | 42,615 | 18,251 | 9,927 | 9,477 | -- |
| 1975 | 6,015 | 59,660 | -- | 73,946 | 42,761 | 18,228 | 9,894 | 9,471 | -- |
| 1976 | 6,654 | 63,230 | -- | 75,938 | 44,325 | 18,672 | 10,258 | 10,022 | -- |
| 1977 | 7,023 | 66,939 | -- | 74,452 | 43,824 | 17,988 | 9,889 | 10,071 | -- |
| 1978 | 7,122 | 64,873 | -- | 69,542 | 42,012 | 17,104 | 9,149 | 9,826 | -- |
| 1979 | 7,377 | 66,635 | -- | 73,783 | 43,579 | 17,651 | 9,401 | 10,693 | -- |
| 1980 | 7,048 | 63,417 | -- | 72,516 | 41,814 | 16,287 | 9,114 | 10,393 | -- |
| 1981 | 6,715 | 60,053 | -- | 68,738 | 38,065 | 14,883 | 8,260 | 9,800 | -- |
| 1982 | 7,339 | 64,823 | -- | 72,792 | 39,392 | 15,308 | 8,445 | 10,522 | -- |

APPENDIX TABLE 64. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 9, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 50,180 | -- | -- | -- | -- | 28,853 | -- | 55,926 | -- | -- |
| 1961 | 53,720 | -- | -- | -- | -- | 31,441 | -- | 58,479 | -- | -- |
| 1962 | 54,978 | -- | -- | -- | -- | 31,214 | -- | 57,489 | -- | -- |
| 1963 | 58,665 | -- | -- | -- | -- | 33,466 | -- | 57,237 | -- | -- |
| 1964 | 60,247 | -- | -- | -- | -- | 33,805 | -- | 65,302 | -- | -- |
| 1965 | 63,943 | -- | -- | -- | -- | 36,531 | -- | 61,821 | -- | -- |
| 1966 | 75,118 | -- | -- | -- | -- | 42,107 | -- | 73,527 | -- | -- |
| 1967 | 79,135 | -- | -- | -- | -- | 42,468 | -- | 71,800 | -- | -- |
| 1968 | 80,120 | -- | -- | -- | -- | 43,821 | -- | 72,649 | -- | -- |
| 1969 | 89,242 | -- | -- | -- | -- | 44,191 | -- | 71,151 | -- | -- |
| 1970 | 94,119 | -- | -- | -- | -- | 49,253 | -- | 75,203 | -- | -- |
| 1971 | 92,018 | -- | -- | -- | -- | 55,158 | -- | 68,932 | -- | -- |
| 1972 | 110,076 | -- | -- | -- | -- | 58,291 | -- | 67,744 | -- | -- |
| 1973 | 155,515 | -- | -- | -- | -- | 69,225 | -- | 84,067 | -- | -- |
| 1974 | 152,484 | -- | -- | -- | -- | 75,410 | -- | 62,049 | -- | -- |
| 1975 | 121,715 | -- | -- | -- | -- | 60,269 | -- | 63,890 | -- | -- |
| 1976 | 110,294 | -- | -- | -- | -- | 43,411 | -- | 59,343 | -- | -- |
| 1977 | 115,816 | -- | -- | -- | -- | 51,682 | -- | 52,286 | -- | -- |
| 1978 | 130,854 | -- | -- | -- | -- | 49,943 | -- | 54,801 | -- | -- |
| 1979 | 126,074 | -- | -- | -- | -- | 47,303 | -- | 54,930 | -- | -- |
| 1980 | 129,827 | -- | -- | -- | -- | 66,915 | -- | 59,065 | -- | -- |
| 1981 | 117,227 | -- | -- | -- | -- | 64,157 | -- | 53,589 | -- | -- |
| 1982 | 110,863 | -- | -- | -- | -- | 68,011 | -- | 57,037 | -- | -- |

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APPENDIX TABLE 64. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR,
MINNESOTA REGION 9, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 10,720 | 51,221 | -- | 75,017 | 94,541 | 59,905 | 26,462 | 11,898 | -- |
| 1961 | 11,940 | 57,076 | -- | 79,791 | 95,481 | 60,860 | 26,845 | 12,136 | -- |
| 1962 | 12,077 | 58,126 | -- | 79,373 | 94,663 | 59,820 | 26,512 | 11,708 | -- |
| 1963 | 12,750 | 61,747 | -- | 82,327 | 99,059 | 62,188 | 27,223 | 11,634 | -- |
| 1964 | 12,679 | 61,218 | -- | 78,897 | 97,730 | 59,333 | 25,963 | 11,089 | -- |
| 1965 | 13,176 | 63,901 | -- | 82,448 | 101,407 | 62,917 | 24,994 | 11,054 | -- |
| 1966 | 12,954 | 84,209 | -- | 91,027 | 109,852 | 67,746 | 27,524 | 12,285 | -- |
| 1967 | 13,448 | 82,575 | -- | 95,846 | 106,282 | 77,715 | 25,512 | 12,300 | -- |
| 1968 | 16,625 | 74,973 | -- | 87,912 | 103,797 | 61,966 | 26,243 | 12,361 | -- |
| 1969 | 15,950 | 81,935 | -- | 91,805 | 115,021 | 84,450 | 19,645 | 13,239 | -- |
| 1970 | 16,632 | 85,449 | -- | 92,709 | 115,443 | 83,572 | 19,182 | 13,051 | -- |
| 1971 | 14,686 | 75,692 | -- | 87,505 | 106,283 | 65,034 | 18,138 | 12,075 | -- |
| 1972 | 16,150 | 82,659 | -- | 98,500 | 122,897 | 97,079 | 18,559 | 13,879 | -- |
| 1973 | 22,827 | 105,790 | -- | 123,677 | 151,326 | 96,370 | 24,677 | 17,603 | -- |
| 1974 | 20,158 | 173,041 | -- | 142,780 | 157,780 | 83,010 | 26,818 | 17,319 | -- |
| 1975 | 18,466 | 151,730 | -- | 113,740 | 130,570 | 70,651 | 21,074 | 13,940 | -- |
| 1976 | 15,461 | 129,134 | -- | 99,385 | 113,778 | 64,478 | 18,566 | 12,701 | -- |
| 1977 | 15,040 | 120,292 | -- | 107,230 | 123,899 | 43,980 | 21,521 | 13,836 | -- |
| 1978 | 16,712 | 108,310 | -- | 107,678 | 130,011 | 53,001 | 20,360 | 15,121 | -- |
| 1979 | 15,823 | 102,813 | -- | 104,383 | 123,323 | 50,251 | 19,476 | 15,131 | -- |
| 1980 | 14,208 | 139,706 | -- | 117,568 | 126,948 | 58,634 | 18,693 | 15,772 | -- |
| 1981 | 12,685 | 124,838 | -- | 105,804 | 109,515 | 51,375 | 16,028 | 14,051 | -- |
| 1982 | 12,521 | 121,997 | -- | 100,711 | 101,828 | 48,162 | 14,933 | 13,603 | -- |

APPENDIX TABLE 65. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 10, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|--|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc | |
| 1960 | 58,551 | -- | -- | -- | -- | 27,312 | -- | 44,935 | -- | -- | |
| 1961 | 66,438 | -- | -- | -- | -- | 31,569 | -- | 52,153 | -- | -- | |
| 1962 | 67,801 | -- | -- | -- | -- | 31,331 | -- | 51,399 | -- | -- | |
| 1963 | 69,019 | -- | -- | -- | -- | 32,093 | -- | 51,655 | -- | -- | |
| 1964 | 77,482 | -- | -- | -- | -- | 35,173 | -- | 59,059 | -- | -- | |
| 1965 | 81,078 | -- | -- | -- | -- | 34,712 | -- | 58,344 | -- | -- | |
| 1966 | 92,223 | -- | -- | -- | -- | 37,566 | -- | 55,038 | -- | -- | |
| 1967 | 92,743 | -- | -- | -- | -- | 34,874 | -- | 51,929 | -- | -- | |
| 1968 | 91,487 | -- | -- | -- | -- | 33,659 | -- | 52,901 | -- | -- | |
| 1969 | 102,520 | -- | -- | -- | -- | 34,392 | -- | 53,775 | -- | -- | |
| 1970 | 111,346 | -- | -- | -- | -- | 37,269 | -- | 57,059 | -- | -- | |
| 1971 | 108,254 | -- | -- | -- | -- | 35,578 | -- | 54,740 | -- | -- | |
| 1972 | 124,374 | -- | -- | -- | -- | 45,850 | -- | 54,716 | -- | -- | |
| 1973 | 175,676 | -- | -- | -- | -- | 51,847 | -- | 62,472 | -- | -- | |
| 1974 | 184,309 | -- | -- | -- | -- | 48,391 | -- | 65,794 | -- | -- | |
| 1975 | 155,508 | -- | -- | -- | -- | 63,509 | -- | 67,139 | -- | -- | |
| 1976 | 159,291 | -- | -- | -- | -- | 49,885 | -- | 67,357 | -- | -- | |
| 1977 | 157,250 | -- | -- | -- | -- | 46,141 | -- | 65,766 | -- | -- | |
| 1978 | 170,363 | -- | -- | -- | -- | 40,905 | -- | 65,997 | -- | -- | |
| 1979 | 167,179 | -- | -- | -- | -- | 38,075 | -- | 68,488 | -- | -- | |
| 1980 | 171,808 | -- | -- | -- | -- | 50,351 | -- | 71,091 | -- | -- | |
| 1981 | 155,257 | -- | -- | -- | -- | 52,550 | -- | 67,388 | -- | -- | |
| 1982 | 157,262 | -- | -- | -- | -- | 59,323 | -- | 75,314 | -- | -- | |

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APPENDIX TABLE 65. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR,
MINNESOTA REGION 10, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 7,024 | 39,354 | -- | 64,085 | 59,451 | 41,731 | 12,622 | 10,288 | -- |
| 1961 | 8,329 | 46,597 | -- | 72,679 | 64,095 | 44,967 | 13,552 | 11,160 | -- |
| 1962 | 8,430 | 47,596 | -- | 72,726 | 63,905 | 44,458 | 13,427 | 10,812 | -- |
| 1963 | 8,555 | 48,319 | -- | 71,243 | 63,213 | 43,884 | 13,177 | 10,218 | -- |
| 1964 | 9,179 | 51,849 | -- | 74,634 | 68,156 | 45,532 | 13,587 | 10,586 | -- |
| 1965 | 8,413 | 59,205 | -- | 71,543 | 72,510 | 45,317 | 13,020 | 10,421 | -- |
| 1966 | 8,979 | 70,449 | -- | 77,237 | 78,618 | 39,682 | 15,520 | 11,172 | -- |
| 1967 | 10,710 | 56,819 | -- | 73,942 | 75,085 | 42,500 | 13,646 | 10,678 | -- |
| 1968 | 10,241 | 59,182 | -- | 67,798 | 68,813 | 36,212 | 13,808 | 10,188 | -- |
| 1969 | 9,463 | 65,404 | -- | 75,171 | 71,635 | 52,726 | 12,445 | 11,223 | -- |
| 1970 | 9,919 | 67,981 | -- | 76,165 | 71,988 | 52,312 | 12,050 | 11,052 | -- |
| 1971 | 10,128 | 79,994 | -- | 71,616 | 78,963 | 33,197 | 11,909 | 10,251 | -- |
| 1972 | 12,090 | 74,873 | -- | 78,109 | 93,226 | 42,972 | 11,720 | 11,130 | -- |
| 1973 | 13,156 | 97,969 | -- | 94,139 | 119,138 | 54,276 | 14,627 | 14,027 | -- |
| 1974 | 17,576 | 129,745 | -- | 100,714 | 120,949 | 52,091 | 14,803 | 14,593 | -- |
| 1975 | 15,966 | 108,650 | -- | 87,108 | 105,894 | 43,432 | 12,267 | 12,608 | -- |
| 1976 | 15,029 | 105,584 | -- | 86,163 | 107,341 | 39,486 | 11,878 | 12,990 | -- |
| 1977 | 13,949 | 87,340 | -- | 83,443 | 104,131 | 42,241 | 12,250 | 12,724 | -- |
| 1978 | 13,360 | 92,266 | -- | 87,471 | 102,751 | 40,111 | 12,149 | 13,232 | -- |
| 1979 | 12,931 | 89,149 | -- | 86,445 | 99,415 | 38,729 | 11,797 | 13,486 | -- |
| 1980 | 13,523 | 101,756 | -- | 87,105 | 111,100 | 37,240 | 10,516 | 13,971 | -- |
| 1981 | 12,211 | 90,822 | -- | 77,588 | 95,066 | 32,221 | 8,968 | 12,382 | -- |
| 1982 | 12,883 | 94,617 | -- | 79,034 | 94,616 | 32,220 | 8,881 | 12,803 | -- |

APPENDIX TABLE 66. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA REGION 11, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 86,961 | 63,440 | -- | -- | -- | 30,856 | 75,916 | 63,916 | -- | -- |
| 1961 | 93,689 | 87,405 | -- | -- | -- | 33,947 | 79,020 | 66,420 | -- | -- |
| 1962 | 95,479 | 60,136 | -- | -- | -- | 33,655 | 78,717 | 65,488 | -- | -- |
| 1963 | 96,847 | 94,586 | -- | -- | -- | 34,432 | 80,258 | 65,789 | -- | -- |
| 1964 | 101,739 | 72,857 | -- | -- | -- | 35,611 | 88,923 | 72,999 | -- | -- |
| 1965 | 113,292 | 69,130 | -- | -- | -- | 34,567 | 87,091 | 80,199 | -- | -- |
| 1966 | 123,627 | 70,833 | -- | -- | -- | 33,023 | 79,096 | 69,534 | -- | -- |
| 1967 | 127,299 | 67,195 | -- | -- | -- | 35,037 | 74,484 | 72,194 | -- | -- |
| 1968 | 131,586 | 69,744 | -- | -- | -- | 33,341 | 67,161 | 71,683 | -- | -- |
| 1969 | 139,848 | 75,500 | -- | -- | -- | 38,606 | 54,084 | 71,575 | -- | -- |
| 1970 | 145,347 | -- | -- | -- | -- | 44,338 | 53,267 | 74,114 | -- | -- |
| 1971 | 145,882 | -- | -- | -- | -- | 38,265 | 43,331 | 72,144 | -- | -- |
| 1972 | 157,854 | -- | -- | -- | -- | 39,337 | 44,587 | 68,818 | -- | -- |
| 1973 | 203,469 | -- | -- | -- | -- | 39,242 | 47,274 | 78,318 | -- | -- |
| 1974 | 205,449 | -- | -- | -- | -- | 45,037 | 46,455 | 80,105 | -- | -- |
| 1975 | 190,692 | -- | -- | -- | -- | 55,276 | 58,891 | 82,394 | -- | -- |
| 1976 | 195,159 | -- | -- | -- | -- | 53,675 | 55,106 | 84,153 | -- | -- |
| 1977 | 192,640 | -- | -- | -- | -- | 49,368 | 57,529 | 84,142 | -- | -- |
| 1978 | 198,174 | -- | -- | -- | -- | 38,770 | 56,460 | 79,706 | -- | -- |
| 1979 | 211,129 | -- | -- | -- | -- | 53,644 | 60,587 | 84,073 | -- | -- |
| 1980 | 211,934 | -- | -- | -- | -- | 52,412 | 57,125 | 87,942 | -- | -- |
| 1981 | 204,377 | -- | -- | -- | -- | 56,706 | 52,264 | 84,727 | -- | -- |
| 1982 | 204,884 | -- | -- | -- | -- | 63,356 | 48,730 | 95,442 | -- | -- |

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APPENDIX TABLE 66. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR,
MINNESOTA REGION 11, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | |
|------|---------------|----------------------------|------------------|-------------------------|--------------|-------------------------------|----------------------------|--------------|--------------------|
| | (12) Trans | (13) Comm & Pub Util | (14) Elec Gen | (15) Retail Trade | (16) FIRE | (17) Bus & Pers Service | (18) Prof & Soc Serv | (19) Govt | (20) Households |
| 1960 | 7,115 | 53,365 | -- | 80,280 | 85,804 | 42,114 | 9,802 | 13,239 | -- |
| 1961 | 7,953 | 59,734 | -- | 85,870 | 87,258 | 42,828 | 9,990 | 13,581 | -- |
| 1962 | 7,980 | 60,707 | -- | 85,490 | 86,527 | 42,173 | 9,847 | 13,086 | -- |
| 1963 | 8,191 | 61,800 | -- | 83,866 | 85,674 | 41,894 | 9,686 | 12,386 | -- |
| 1964 | 8,325 | 62,662 | -- | 81,978 | 86,399 | 40,864 | 9,449 | 12,062 | -- |
| 1965 | 8,822 | 74,018 | -- | 86,467 | 98,287 | 44,066 | 9,848 | 12,629 | -- |
| 1966 | 9,525 | 70,513 | -- | 87,610 | 102,009 | 45,945 | 10,077 | 12,912 | -- |
| 1967 | 9,449 | 69,171 | -- | 85,721 | 95,532 | 47,412 | 9,732 | 12,488 | -- |
| 1968 | 10,519 | 69,345 | -- | 84,147 | 90,152 | 39,997 | 10,270 | 12,714 | -- |
| 1969 | 8,592 | 80,533 | -- | 83,734 | 87,074 | 41,038 | 9,938 | 12,861 | -- |
| 1970 | 8,779 | 82,352 | -- | 82,813 | 85,503 | 39,518 | 9,503 | 12,420 | -- |
| 1971 | 8,961 | 77,281 | -- | 78,454 | 88,880 | 34,706 | 8,963 | 11,843 | -- |
| 1972 | 10,739 | 70,365 | -- | 79,239 | 90,230 | 34,850 | 8,504 | 12,231 | -- |
| 1973 | 11,246 | 95,843 | -- | 95,868 | 101,835 | 40,739 | 9,683 | 14,327 | -- |
| 1974 | 12,633 | 97,775 | -- | 102,905 | 104,435 | 42,353 | 9,662 | 14,533 | -- |
| 1975 | 13,317 | 77,708 | -- | 93,863 | 96,496 | 36,014 | 8,837 | 13,540 | -- |
| 1976 | 12,334 | 81,651 | -- | 93,222 | 100,894 | 36,263 | 8,803 | 13,749 | -- |
| 1977 | 10,373 | 85,973 | -- | 87,976 | 100,329 | 36,216 | 8,244 | 13,600 | -- |
| 1978 | 10,420 | 80,607 | -- | 86,739 | 94,016 | 35,516 | 7,927 | 13,688 | -- |
| 1979 | 10,900 | 84,087 | -- | 92,869 | 98,578 | 36,769 | 8,291 | 15,076 | -- |
| 1980 | 11,276 | 97,137 | -- | 91,389 | 87,523 | 35,192 | 7,747 | 14,585 | -- |
| 1981 | 10,685 | 92,282 | -- | 87,361 | 80,250 | 32,332 | 7,055 | 13,823 | -- |
| 1982 | 11,139 | 95,428 | -- | 88,246 | 79,128 | 31,926 | 6,921 | 14,174 | -- |

APPENDIX TABLE 67. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA, 1960-1982 (1980 = BASE DOLLARS)

| Year | Sector | | | | | | | | | |
|------|--------------------|------------------------|-----------------------|--------------------------|------------------------------|---------------|---------------|------------------------------|-------------------------|-----------------------|
| | (1) & (2) Agric | (3) Metal Mining | (4) Coal Mining | (5) Pet/NG Exp/Ext | (6) Nonmetallic Mining | (7) Constr | (8) Lumber | (9) Ag Proc & Misc Mfg | (10) Pet Refining | (11) Metal Proc |
| 1960 | 107,150 | 61,775 | -- | -- | -- | 23,804 | 37,873 | 64,348 | -- | -- |
| 1961 | 114,374 | 63,778 | -- | -- | -- | 25,802 | 39,163 | 67,550 | -- | -- |
| 1962 | 118,751 | 61,768 | -- | -- | -- | 26,044 | 38,940 | 67,528 | -- | -- |
| 1963 | 123,399 | 70,952 | -- | -- | -- | 26,981 | 39,682 | 68,800 | -- | -- |
| 1964 | 133,041 | 73,393 | -- | -- | -- | 28,303 | 44,003 | 75,496 | -- | -- |
| 1965 | 144,704 | 68,833 | -- | -- | -- | 28,229 | 43,696 | 72,385 | -- | -- |
| 1966 | 157,390 | 71,119 | -- | -- | -- | 28,530 | 42,713 | 69,597 | -- | -- |
| 1967 | 165,984 | 66,522 | -- | -- | -- | 29,692 | 44,230 | 68,347 | -- | -- |
| 1968 | 175,399 | 66,957 | -- | -- | -- | 30,288 | 43,106 | 67,755 | -- | -- |
| 1969 | 186,589 | 73,741 | -- | -- | -- | 29,919 | 39,906 | 66,015 | -- | -- |
| 1970 | 192,641 | 69,788 | -- | -- | -- | 30,994 | 39,279 | 68,647 | -- | -- |
| 1971 | 196,498 | 65,011 | -- | -- | -- | 29,505 | 39,688 | 70,762 | -- | -- |
| 1972 | 207,652 | 73,256 | -- | -- | -- | 30,835 | 41,183 | 70,273 | -- | -- |
| 1973 | 259,786 | 86,450 | -- | -- | -- | 34,627 | 39,456 | 76,312 | -- | -- |
| 1974 | 270,359 | 98,446 | -- | -- | -- | 36,520 | 37,014 | 79,451 | -- | -- |
| 1975 | 256,229 | 99,155 | -- | -- | -- | 39,047 | 33,089 | 85,893 | -- | -- |
| 1976 | 261,637 | 100,914 | -- | -- | -- | 38,505 | 36,518 | 88,759 | -- | -- |
| 1977 | 267,675 | 76,973 | -- | -- | -- | 38,599 | 37,085 | 88,481 | -- | -- |
| 1978 | 271,246 | 117,930 | -- | -- | -- | 33,576 | 39,348 | 83,876 | -- | -- |
| 1979 | 300,793 | 126,935 | -- | -- | -- | 36,903 | 42,283 | 89,092 | -- | -- |
| 1980 | 289,400 | 109,393 | -- | -- | -- | 37,110 | 34,643 | 90,377 | -- | -- |
| 1981 | 278,992 | 117,788 | -- | -- | -- | 39,156 | 31,973 | 87,488 | -- | -- |
| 1982 | 290,693 | 193,749 | -- | -- | -- | 44,652 | 29,948 | 99,500 | -- | -- |

- continued -

APPENDIX TABLE 67. GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS, BY ECONOMIC SECTOR, MINNESOTA, 1960-1982 (1980 = BASE DOLLARS) (CONTINUED)

| Year | Sector | | | | | | | | | |
|------|--------|-----------------|----------|--------------|--------|--------------------|-----------------|--------|------------|--|
| | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | |
| | Trans | Comm & Pub Util | Elec Gen | Retail Trade | FIRE | Bus & Pers Service | Prof & Soc Serv | Govt | Households | |
| 1960 | 6,218 | 39,288 | -- | 69,373 | 48,431 | 28,433 | 11,525 | 9,731 | -- | |
| 1961 | 6,612 | 43,273 | -- | 73,144 | 48,448 | 28,596 | 11,575 | 9,815 | -- | |
| 1962 | 6,678 | 44,769 | -- | 74,128 | 48,954 | 28,517 | 11,639 | 9,637 | -- | |
| 1963 | 6,936 | 46,236 | -- | 73,808 | 49,239 | 28,605 | 11,611 | 9,265 | -- | |
| 1964 | 7,205 | 47,661 | -- | 73,603 | 50,632 | 28,325 | 11,517 | 9,194 | -- | |
| 1965 | 7,530 | 50,303 | -- | 75,572 | 53,891 | 28,704 | 11,779 | 9,342 | -- | |
| 1966 | 7,772 | 52,764 | -- | 76,407 | 56,551 | 28,864 | 12,157 | 9,508 | -- | |
| 1967 | 7,642 | 53,347 | -- | 76,692 | 56,188 | 28,276 | 11,954 | 9,311 | -- | |
| 1968 | 7,899 | 56,312 | -- | 77,294 | 57,635 | 27,703 | 12,092 | 9,858 | -- | |
| 1969 | 7,952 | 56,867 | -- | 77,198 | 56,767 | 27,363 | 11,927 | 9,841 | -- | |
| 1970 | 7,922 | 56,324 | -- | 73,970 | 53,941 | 25,742 | 11,005 | 9,200 | -- | |
| 1971 | 7,659 | 54,923 | -- | 70,742 | 51,425 | 24,003 | 10,212 | 8,698 | -- | |
| 1972 | 7,887 | 56,344 | -- | 69,881 | 52,047 | 23,376 | 9,963 | 8,808 | -- | |
| 1973 | 9,007 | 64,004 | -- | 78,710 | 58,392 | 26,003 | 11,202 | 10,109 | -- | |
| 1974 | 9,479 | 66,206 | -- | 80,311 | 59,778 | 26,134 | 11,061 | 10,281 | -- | |
| 1975 | 9,491 | 67,107 | -- | 78,260 | 57,268 | 24,285 | 10,480 | 9,855 | -- | |
| 1976 | 9,952 | 70,039 | -- | 78,541 | 58,209 | 24,513 | 10,542 | 10,184 | -- | |
| 1977 | 9,458 | 70,726 | -- | 76,992 | 57,577 | 23,846 | 10,268 | 10,211 | -- | |
| 1978 | 10,591 | 72,086 | -- | 74,602 | 56,419 | 23,250 | 9,912 | 10,312 | -- | |
| 1979 | 11,140 | 75,353 | -- | 80,765 | 59,729 | 24,368 | 10,378 | 11,439 | -- | |
| 1980 | 10,319 | 73,110 | -- | 77,739 | 55,634 | 22,332 | 9,628 | 10,865 | -- | |
| 1981 | 10,006 | 69,121 | -- | 73,523 | 50,535 | 20,365 | 8,701 | 10,226 | -- | |
| 1982 | 10,634 | 72,915 | -- | 75,978 | 51,008 | 20,490 | 8,699 | 10,718 | -- | |

APPENDIX TABLE 68. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 2, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|----------------------------------|
| (1) & (2) Agriculture | $Y = -5,752,513.0 + 2,944.85(X)$ |
| (3) Metal Mining | $Y = -3,647,818.0 + 1,924.74(X)$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -944,808.6 + 508.602(X)$ |
| (8) Lumber & Assoc Prod | $Y = 30,807^c$ |
| (9) Ag Proc & Misc Mfg | $Y = -7,692,923.0 + 3,936.32(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = 24,212^d$ |
| (13) Comm & Public Utilities | $Y = -2,306,718.0 + 1,202.22(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = 64,026^c$ |
| (16) Fin, Ins, Real Estate | $Y = 774,508.8 - 348.041(X)$ |
| (17) Bus & Pers Service | $Y = 48,209^d$ |
| (18) Prof & Soc Service | $Y = 9,188^d$ |
| (19) Government | $Y = -82,163.69 + 44.956(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using a weighted average of the 1981 and 1982 levels.

^dThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 69. REGRESSION EQUATIONSA FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 3, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|-----------------------------------|
| (1) & (2) Agriculture | $Y = -16,052,330.0 + 8,256.61(X)$ |
| (3) Metal Mining | $Y = -5,420,939.0 + 2,807.44(X)$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = 29,126.55 + 6.330(X)$ |
| (8) Lumber & Assoc Prod | $Y = -2,493,459.0 + 1,294.78(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -3,470,929.0 + 1,811.62(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -4,357,000.0 + 2,231.21(X)$ |
| (13) Comm & Public Utilities | $Y = -2,117,743.0 + 1,113.64(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = 73,493^c$ |
| (16) Fin, Ins, Real Estate | $Y = 81,313^c$ |
| (17) Bus & Pers Service | $Y = 181,217.4 - 72.22(X)$ |
| (18) Prof & Soc Service | $Y = 10,347^c$ |
| (19) Government | $Y = -129,456.7 + 70.248(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 70. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 4, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|-----------------------------------|
| (1) & (2) Agriculture | $Y = -11,287,290.0 + 5,776.35(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -2,070,844.0 + 1,074.42(X)$ |
| (8) Lumber & Assoc Prod | $Y = 10,000,000^b$ |
| (9) Ag Proc & Misc Mfg | $Y = -3,714,100.0 + 1,953.03(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -269,284.2 + 139.897(X)$ |
| (13) Comm & Public Utilities | $Y = -2,085,976.0 + 1,103.25(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -1,524,671.0 + 814.484(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -1,454,107.0 + 790.655(X)$ |
| (17) Bus & Pers Service | $Y = 32,506^c$ |
| (18) Prof & Soc Service | $Y = 7,966^c$ |
| (19) Government | $Y = -261,264.2 + 136.738(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 71. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 5, (1980 = BASE DOLLARS)

| Sector | Equation |
|--------------------------------|----------------------------------|
| (1) & (2) Agriculture | $Y = -6,378,901.0 + 3,272.35(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -1,459,250.0 + 768.747(X)$ |
| (8) Lumber & Assoc Prod | $Y = 10,000,000^b$ |
| (9) Ag Proc & Misc Mfg | $Y = 77,084^c$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = 2,879.832 + 3.495(X)$ |
| (13) Comm & Public Utilities | $Y = -2,383,688.0 + 1,232.64(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -166,242.6 + 127.232(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -1,015,510.0 + 562.749(X)$ |
| (17) Bus & Pers Service | $Y = 153,432.4 - 49.744(X)$ |
| (18) Prof & Soc Service | $Y = 9,522^d$ |
| (19) Government | $Y = -218,827.2 + 116.319(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using the average of the 1980, 1981, and 1982 levels.

^dThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 72. REGRESSION EQUATIONSA FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 6, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|----------------------------------|
| (1) & (2) Agriculture | $Y = -8,675,070.0 + 4,444.69(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -778,841.0 + 414.031(X)$ |
| (8) Lumber & Assoc Prod | $Y = 68,731^c$ |
| (9) Ag Proc & Misc Mfg | $Y = -2,295,463.0 + 1,202.0(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -172,918.6 + 92.211(X)$ |
| (13) Comm & Public Utilities | $Y = -1,343,785.0 + 713.76(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -321,114.0 + 194.663(X)$ |
| (16) Fin, Ins, Real Estate | $Y = 16,295.87 + 39.109(X)$ |
| (17) Bus & Pers Service | $Y = 33,096^d$ |
| (18) Prof & Soc Service | $Y = 8,919^e$ |
| (19) Government | $Y = -87,325.94 + 48.852(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using the 1981 level.

^dThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

^eThe productivity ratio for this sector was projected as a constant using the average of the 1980, 1981, and 1982 levels.

APPENDIX TABLE 73. REGRESSION EQUATIONSA FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 7, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|----------------------------------|
| (1) & (2) Agriculture | $Y = -6,951,329.0 + 3,568.95(X)$ |
| (3) Metal Mining | $Y = 10,000,000b$ |
| (4) Coal Mining | $Y = 10,000,000b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000b$ |
| (7) Construction | $Y = -1,658,070.0 + 863.491(X)$ |
| (8) Lumber & Assoc Prod | $Y = 10,000,000b$ |
| (9) Ag Proc & Misc Mfg | $Y = 64,726c$ |
| (10) Pet Refining | $Y = 10,000,000b$ |
| (11) Metal Processing | $Y = 10,000,000b$ |
| (12) Transportation | $Y = -233,474.9 + 124.79(X)$ |
| (13) Comm & Public Utilities | $Y = -5,031,887.0 + 2,590.96(X)$ |
| (14) Electric Generation | $Y = 10,000,000b$ |
| (15) Retail Trade | $Y = -1,767,517.0 + 944.579(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -822,516.0 + 471.125(X)$ |
| (17) Bus & Pers Service | $Y = 37,561c$ |
| (18) Prof & Soc Service | $Y = 13,751c$ |
| (19) Government | $Y = -142,311.7 + 77.530(X)$ |
| (20) Households | $Y = 10,000,000b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 74. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 8, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|-----------------------------------|
| (1) & (2) Agriculture | $Y = -74,021,980.0 + 37,930.2(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -1,225,507.0 + 635.795(X)$ |
| (8) Lumber & Assoc Prod | $Y = 23,501^c$ |
| (9) Ag Proc & Misc Mfg | $Y = -2,658,539.0 + 1,390.83(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -290,357.6 + 150.122(X)$ |
| (13) Comm & Public Utilities | $Y = -2,815,568.0 + 1,452.97(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -22,960.81 + 47.607(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -273,096.3 + 157.927(X)$ |
| (17) Bus & Pers Service | $Y = 15,096^d$ |
| (18) Prof & Soc Service | $Y = 8,353^d$ |
| (19) Government | $Y = -63,611.36 + 37.279(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using a weighted average of the 1981 and 1982 levels.

^dThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 75. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 9, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|----------------------------------|
| (1) & (2) Agriculture | $Y = -8,265,338.0 + 4,232.53(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -3,591,250.0 + 1,846.75(X)$ |
| (8) Lumber & Assoc Prod | $Y = 10,000,000^b$ |
| (9) Ag Proc & Misc Mfg | $Y = 57,013^c$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -420,746.5 + 219.023(X)$ |
| (13) Comm & Public Utilities | $Y = -6,353,420.0 + 3,272.22(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -2,952,023.0 + 1,544.7(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -3,330,333.0 + 1,738.06(X)$ |
| (17) Bus & Pers Service | $Y = 49,769^d$ |
| (18) Prof & Soc Service | $Y = 15,481^d$ |
| (19) Government | $Y = -297,478.6 + 157.473(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using a weighted average of the 1981 and 1982 levels.

^dThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 76. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 10, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|-----------------------------------|
| (1) & (2) Agriculture | $Y = -11,805,500.0 + 6,040.86(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -2,221,793.0 + 1,149.05(X)$ |
| (8) Lumber & Assoc Prod | $Y = 10,000,000^b$ |
| (9) Ag Proc & Misc Mfg | $Y = -2,014,285.0 + 1,053.13(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -562,457.7 + 290.424(X)$ |
| (13) Comm & Public Utilities | $Y = -4,982,938.0 + 2,563.69(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -1,506,220.0 + 801.344(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -4,379,373.0 + 2,261.3(X)$ |
| (17) Bus & Pers Service | $Y = 32,221^c$ |
| (18) Prof & Soc Service | $Y = 8,955^d$ |
| (19) Government | $Y = -288,543.3 + 152.244(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

^cThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

^dThe productivity ratio for this sector was projected as a constant using a weighted average of the 1981 and 1982 levels.

APPENDIX TABLE 77. REGRESSION EQUATIONSA FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA REGION 11, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|-----------------------------------|
| (1) & (2) Agriculture | $Y = -12,468,070.0 + 6,398.35(X)$ |
| (3) Metal Mining | $Y = 10,000,000^b$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -2,436,148.0 + 1,261.05(X)$ |
| (8) Lumber & Assoc Prod | $Y = 53,197^c$ |
| (9) Ag Proc & Misc Mfg | $Y = -2,079,824.0 + 1,095.0(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -328,240.6 + 171.264(X)$ |
| (13) Comm & Public Utilities | $Y = -3,073,917.0 + 1,599.63(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -585,018.7 + 340.241(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -495,783.1 + 291.814(X)$ |
| (17) Bus & Pers Service | $Y = 32,129^d$ |
| (18) Prof & Soc Service | $Y = 6,988^d$ |
| (19) Government | $Y = -146,397.6 + 81.066(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

aRobust regression with an intercept adjustment technique.

bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

cThe productivity ratio for this sector was projected as a constant using a weighted average of the 1981 and 1982 levels.

dThe productivity ratio for this sector was projected as a constant using the average of the 1981 and 1982 levels.

APPENDIX TABLE 78. REGRESSION EQUATIONS^a FOR PROJECTING GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR 20-SECTOR INPUT-OUTPUT MODEL, MINNESOTA, (1980 = BASE DOLLARS)

| Sector | Equation |
|------------------------------|----------------------------------|
| (1) & (2) Agriculture | $Y = -18,279,150.0 + 9,371.8(X)$ |
| (3) Metal Mining | $Y = -5,272,772.0 + 2,732.5(X)$ |
| (4) Coal Mining | $Y = 10,000,000^b$ |
| (5) Pet/NG Exp/Ext | $Y = 10,000,000^b$ |
| (6) Nonmetallic Mining | $Y = 10,000,000^b$ |
| (7) Construction | $Y = -1,341,739.0 + 697.651(X)$ |
| (8) Lumber & Assoc Prod | $Y = 714,819.0 - 344.589(X)$ |
| (9) Ag Proc & Misc Mfg | $Y = -2,403,822.0 + 1,260.11(X)$ |
| (10) Pet Refining | $Y = 10,000,000^b$ |
| (11) Metal Processing | $Y = 10,000,000^b$ |
| (12) Transportation | $Y = -380,424.6 + 197.246(X)$ |
| (13) Comm & Public Utilities | $Y = -3,420,568.0 + 1,762.89(X)$ |
| (14) Electric Generation | $Y = 10,000,000^b$ |
| (15) Retail Trade | $Y = -322,333.4 + 200.949(X)$ |
| (16) Fin, Ins, Real Estate | $Y = -576,569.3 + 317.497(X)$ |
| (17) Bus & Pers Service | $Y = 743,350.5 - 364.608(X)$ |
| (18) Prof & Soc Service | $Y = 254,692.9 - 124.020(X)$ |
| (19) Government | $Y = -104,376.1 + 58.041(X)$ |
| (20) Households | $Y = 10,000,000^b$ |

^aRobust regression with an intercept adjustment technique.

^bBecause very little or no employment exists in this sector, arbitrarily large numbers resulting in appropriate levels were used for determining projected employment.

APPENDIX TABLE 79. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 2, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 84,180 | 90,069 | 104,794 | 119,518 | 134,242 | 148,966 |
| (3) Metal Mining | 167,017 | 170,866 | 180,490 | 190,114 | 199,737 | 209,361 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 63,241 | 64,258 | 66,801 | 69,344 | 71,887 | 74,430 |
| (8) Lumber & Assoc Prod | 30,807 | 30,807 | 30,807 | 30,807 | 30,807 | 30,807 |
| (9) Ag Proc & Misc Mfg | 108,863 | 116,736 | 136,417 | 156,099 | 175,781 | 195,462 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 24,214 | 24,214 | 24,214 | 24,214 | 24,214 | 24,214 |
| (13) Comm & Pub Util | 76,082 | 78,486 | 84,498 | 90,509 | 96,520 | 102,531 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 64,026 | 64,026 | 64,026 | 64,026 | 64,026 | 64,026 |
| (16) Fin, Ins, Real Estate | 84,692 | 83,995 | 82,255 | 80,515 | 78,775 | 77,035 |
| (17) Bus & Pers Service | 48,209 | 48,209 | 48,209 | 48,209 | 48,209 | 48,209 |
| (18) Prof & Soc Service | 9,188 | 9,188 | 9,188 | 9,188 | 9,188 | 9,188 |
| (19) Government | 6,939 | 7,029 | 7,254 | 7,479 | 7,703 | 7,928 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 80. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 3, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 312,271 | 328,784 | 370,067 | 411,350 | 452,633 | 493,916 |
| (3) Metal Mining | 143,407 | 149,022 | 163,059 | 177,096 | 191,134 | 205,171 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 41,673 | 41,685 | 41,717 | 41,749 | 41,780 | 41,812 |
| (8) Lumber & Assoc Prod | 72,795 | 75,385 | 81,858 | 88,332 | 94,806 | 101,280 |
| (9) Ag Proc & Misc Mfy | 119,702 | 123,325 | 132,383 | 141,441 | 150,499 | 159,557 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 65,258 | 69,721 | 80,877 | 92,033 | 103,189 | 114,345 |
| (13) Comm & Pub Util | 89,491 | 91,719 | 97,287 | 102,855 | 108,423 | 113,992 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 73,493 | 73,493 | 73,493 | 73,493 | 73,493 | 73,493 |
| (16) Fin, Ins, Real Estate | 81,313 | 81,313 | 81,313 | 81,313 | 81,313 | 81,313 |
| (17) Bus & Pers Service | 38,077 | 37,933 | 37,572 | 37,211 | 36,850 | 36,489 |
| (18) Prof & Soc Service | 10,347 | 10,347 | 10,347 | 10,347 | 10,347 | 10,347 |
| (19) Government | 9,775 | 9,915 | 10,267 | 10,618 | 10,969 | 11,320 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 81. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 4, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 161,436 | 172,988 | 201,870 | 230,752 | 259,634 | 288,515 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 58,750 | 60,899 | 66,271 | 71,643 | 77,016 | 82,388 |
| (8) Lumber & Assoc Prod | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (9) Ag Proc & Misc Mfg | 156,805 | 160,712 | 170,477 | 180,242 | 190,007 | 199,772 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 7,992 | 8,271 | 8,971 | 9,670 | 10,370 | 11,069 |
| (13) Comm & Pub Util | 100,666 | 102,872 | 108,388 | 113,905 | 119,421 | 124,937 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 89,636 | 91,265 | 95,338 | 99,410 | 103,483 | 107,555 |
| (16) Fin, Ins, Real Estate | 112,971 | 114,553 | 118,506 | 122,459 | 126,412 | 130,366 |
| (17) Bus & Pers Service | 32,506 | 32,506 | 32,506 | 32,506 | 32,506 | 32,506 |
| (18) Prof & Soc Service | 7,966 | 7,966 | 7,966 | 7,966 | 7,966 | 7,966 |
| (19) Government | 9,751 | 10,024 | 10,708 | 11,391 | 12,075 | 12,759 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 82. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 5, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 106,897 | 113,441 | 129,803 | 146,165 | 162,527 | 178,888 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 64,407 | 65,944 | 69,788 | 73,632 | 77,475 | 81,319 |
| (8) Lumber & Assoc Prod | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (9) Ag Proc & Misc Mfy | 77,084 | 77,084 | 77,084 | 77,084 | 77,084 | 77,084 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 9,807 | 9,814 | 9,831 | 9,849 | 9,866 | 9,884 |
| (13) Comm & Pub Util | 59,404 | 61,870 | 68,033 | 74,196 | 80,359 | 86,523 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 85,931 | 86,186 | 86,822 | 87,458 | 88,094 | 88,730 |
| (16) Fin, Ins, Real Estate | 99,859 | 100,984 | 103,798 | 106,612 | 109,425 | 112,239 |
| (17) Bus & Pers Service | 54,840 | 54,740 | 54,492 | 54,243 | 53,994 | 53,745 |
| (18) Prof & Soc Service | 9,522 | 9,522 | 9,522 | 9,522 | 9,522 | 9,522 |
| (19) Government | 11,717 | 11,950 | 12,531 | 13,113 | 13,694 | 14,276 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 83. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 6, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS) .

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 134,306 | 143,195 | 165,418 | 187,642 | 209,865 | 232,089 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 42,768 | 43,597 | 45,667 | 47,737 | 49,807 | 51,877 |
| (8) Lumber & Assoc Prod | 68,731 | 68,731 | 68,731 | 68,731 | 68,731 | 68,731 |
| (9) Ag Proc & Misc Mfg | 86,901 | 89,305 | 95,315 | 101,325 | 107,335 | 113,345 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 9,844 | 10,028 | 10,489 | 10,950 | 11,411 | 11,872 |
| (13) Comm & Pub Util | 70,887 | 72,315 | 75,884 | 79,452 | 83,021 | 86,590 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 64,708 | 65,097 | 66,071 | 67,044 | 68,017 | 68,991 |
| (16) Fin, Ins, Real Estate | 93,810 | 93,888 | 94,084 | 94,279 | 94,475 | 94,670 |
| (17) Bus & Pers Service | 33,096 | 33,096 | 33,096 | 33,096 | 33,096 | 33,096 |
| (18) Prof & Soc Service | 8,918 | 8,918 | 8,918 | 8,918 | 8,918 | 8,918 |
| (19) Government | 9,499 | 9,596 | 9,841 | 10,085 | 10,329 | 10,573 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 84. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 7, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 122,330 | 129,468 | 147,313 | 165,157 | 183,002 | 200,847 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 53,369 | 55,096 | 59,414 | 63,731 | 68,049 | 72,366 |
| (8) Lumber & Assoc Prod | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (9) Ag Proc & Misc Mfy | 64,726 | 64,726 | 64,726 | 64,726 | 64,726 | 64,726 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 13,859 | 14,108 | 14,732 | 15,356 | 15,980 | 16,604 |
| (13) Comm & Pub Util | 103,396 | 108,578 | 121,532 | 134,487 | 147,442 | 160,397 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 104,639 | 106,528 | 111,251 | 115,974 | 120,696 | 125,419 |
| (16) Fin, Ins, Real Estate | 111,254 | 112,196 | 114,552 | 116,907 | 119,263 | 121,619 |
| (17) Bus & Pers Service | 37,561 | 37,561 | 37,561 | 37,561 | 37,561 | 37,561 |
| (18) Prof & Soc Service | 13,751 | 13,751 | 13,751 | 13,751 | 13,751 | 13,751 |
| (19) Government | 11,353 | 11,508 | 11,895 | 12,283 | 12,671 | 13,058 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 85. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 8, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 1,155,676 | 1,231,537 | 1,421,188 | 1,610,839 | 1,800,490 | 1,990,141 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 37,639 | 38,910 | 42,089 | 45,268 | 48,447 | 51,626 |
| (8) Lumber & Assoc Prod | 23,501 | 23,501 | 23,501 | 23,501 | 23,501 | 23,501 |
| (9) Ag Proc & Misc Mfy | 98,086 | 100,868 | 107,822 | 114,776 | 121,730 | 128,684 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 7,184 | 7,484 | 8,235 | 8,986 | 9,736 | 10,487 |
| (13) Comm & Pub Util | 64,219 | 67,124 | 74,389 | 81,654 | 88,919 | 96,184 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 71,396 | 71,491 | 71,730 | 71,968 | 72,206 | 72,444 |
| (16) Fin, Ins, Real Estate | 39,915 | 40,231 | 41,021 | 41,810 | 42,600 | 43,390 |
| (17) Bus & Pers Service | 15,096 | 15,096 | 15,096 | 15,096 | 15,096 | 15,096 |
| (18) Prof & Soc Service | 8,353 | 8,353 | 8,353 | 8,353 | 8,353 | 8,353 |
| (19) Government | 10,276 | 10,350 | 10,537 | 10,723 | 10,909 | 11,096 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 86. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 9, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 123,536 | 132,002 | 153,164 | 174,327 | 195,489 | 216,652 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 69,009 | 72,702 | 81,936 | 91,170 | 100,403 | 109,637 |
| (8) Lumber & Assoc Prod | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (9) Ag Proc & Misc Mfg | 57,013 | 57,013 | 57,013 | 57,013 | 57,013 | 57,013 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 13,357 | 13,795 | 14,890 | 15,985 | 17,080 | 18,176 |
| (13) Comm & Pub Util | 132,120 | 138,664 | 155,026 | 171,387 | 187,748 | 204,109 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 109,572 | 112,662 | 120,385 | 128,109 | 135,832 | 143,556 |
| (16) Fin, Ins, Real Estate | 114,502 | 117,978 | 126,668 | 135,359 | 144,049 | 152,739 |
| (17) Bus & Pers Service | 49,769 | 49,769 | 49,769 | 49,769 | 49,769 | 49,769 |
| (18) Prof & Soc Service | 15,481 | 15,481 | 15,481 | 15,481 | 15,481 | 15,481 |
| (19) Government | 14,633 | 14,948 | 15,735 | 16,523 | 17,310 | 18,097 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 87. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 10, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 167,485 | 179,566 | 209,771 | 239,975 | 270,179 | 300,383 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 55,624 | 57,922 | 63,667 | 69,413 | 75,158 | 80,903 |
| (8) Lumber & Assoc Prod | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (9) Ag Proc & Misc Mfy | 73,019 | 75,125 | 80,391 | 85,656 | 90,922 | 96,188 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 13,163 | 13,744 | 15,196 | 16,648 | 18,100 | 19,552 |
| (13) Comm & Pub Util | 98,296 | 103,423 | 116,241 | 129,060 | 141,878 | 154,697 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 82,044 | 83,646 | 87,653 | 91,660 | 95,667 | 99,673 |
| (16) Fin, Ins, Real Estate | 102,524 | 107,046 | 118,353 | 129,659 | 140,966 | 152,272 |
| (17) Bus & Pers Service | 32,221 | 32,221 | 32,221 | 32,221 | 32,221 | 32,221 |
| (18) Prof & Soc Service | 8,955 | 8,955 | 8,955 | 8,955 | 8,955 | 8,955 |
| (19) Government | 13,204 | 13,509 | 14,270 | 15,031 | 15,792 | 16,554 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 88. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA REGION 11, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 213,460 | 226,256 | 258,248 | 290,240 | 322,232 | 354,223 |
| (3) Metal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 63,253 | 65,775 | 72,080 | 78,386 | 84,691 | 90,996 |
| (8) Lumber & Assoc Prod | 53,197 | 53,197 | 53,197 | 53,197 | 53,197 | 53,197 |
| (9) Ag Proc & Misc Mfy | 91,166 | 93,356 | 98,831 | 104,306 | 109,781 | 115,256 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 11,205 | 11,547 | 12,403 | 13,260 | 14,116 | 14,972 |
| (13) Comm & Pub Util | 96,550 | 99,749 | 107,747 | 115,745 | 123,743 | 131,742 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 89,339 | 90,019 | 91,721 | 93,422 | 95,123 | 96,824 |
| (16) Fin, Ins, Real Estate | 82,592 | 83,176 | 84,635 | 86,094 | 87,553 | 89,012 |
| (17) Bus & Pers Service | 32,129 | 32,129 | 32,129 | 32,129 | 32,129 | 32,129 |
| (18) Prof & Soc Service | 6,988 | 6,988 | 6,988 | 6,988 | 6,988 | 6,988 |
| (19) Government | 14,275 | 14,437 | 14,843 | 15,248 | 15,653 | 16,059 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 89. PROJECTED GROSS BUSINESS VOLUME TO EMPLOYMENT (PRODUCTIVITY) RATIOS FOR MINNESOTA, SELECTED YEARS 1983 TO 2005 (1980 = BASE DOLLARS)

| Sector | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
|----------------------------|------------|------------|------------|------------|------------|------------|
| (1)&(2) Agriculture | 295,758 | 314,501 | 361,360 | 408,219 | 455,078 | 501,937 |
| (3) Metal Mining | 143,043 | 148,508 | 162,171 | 175,833 | 189,496 | 203,158 |
| (4) Coal Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (5) Pet/NG Exp/Ext | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (6) Nonmetallic Mining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (7) Construction | 41,005 | 42,401 | 45,889 | 49,377 | 52,865 | 56,354 |
| (8) Lumber & Assoc Prod | 31,844 | 31,154 | 29,432 | 27,709 | 25,986 | 24,263 |
| (9) Ag Proc & Misc Mfg | 93,716 | 96,236 | 102,537 | 108,837 | 115,138 | 121,438 |
| (10) Pet Refining | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (11) Metal Processing | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (12) Transportation | 10,517 | 10,912 | 11,898 | 12,884 | 13,870 | 14,856 |
| (13) Comm & Pub Util | 73,480 | 77,006 | 85,820 | 94,635 | 103,449 | 112,264 |
| (14) Electric Generation | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |
| (15) Retail Trade | 75,948 | 76,349 | 77,354 | 78,359 | 79,364 | 80,368 |
| (16) Fin, Ins, Real Estate | 52,710 | 53,345 | 54,932 | 56,520 | 58,107 | 59,695 |
| (17) Bus & Pers Service | 20,697 | 19,968 | 18,145 | 16,322 | 14,499 | 12,676 |
| (18) Prof & Soc Service | 8,885 | 8,637 | 8,017 | 7,397 | 6,777 | 6,157 |
| (19) Government | 10,661 | 10,777 | 11,067 | 11,358 | 11,648 | 11,938 |
| (20) Households | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 | 10,000,000 |

APPENDIX TABLE 90. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 2, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Aitkin | Aitkin | 0.0184373 | | 0.0180099 | | 0.0175923 | | 0.0171845 | | 0.0167861 | | 0.0163970 | |
| | Hill City | 0.0055520 | 0.0055521 | 0.0057729 | 0.0055900 | 0.0060025 | 0.0055447 | 0.0062413 | 0.0054090 | 0.0064896 | 0.0051788 | 0.0067477 | 0.004855 |
| Beltrami | Bemidji | 0.1140514 | 0.1140525 | 0.1150205 | 0.1113771 | 0.1159977 | 0.1071508 | 0.1169832 | 0.1013824 | 0.1179773 | 0.0941472 | 0.1189797 | 0.085610 |
| | Blackduck | 0.0068020 | | 0.0064391 | | 0.0060955 | | 0.0057703 | | 0.0054624 | | 0.0051709 | |
| | Lower Red Lake | 0.0297389 | 0.0297392 | 0.0297692 | 0.0288263 | 0.0297996 | 0.0275269 | 0.0298300 | 0.0258519 | 0.0298604 | 0.0238289 | 0.0298909 | 0.021507 |
| Cass | Cass Lake | 0.0104270 | | 0.0091530 | | 0.0080347 | | 0.0070530 | | 0.0061913 | | 0.0054349 | |
| | East Gull Lake | 0.0061041 | 0.0061041 | 0.0070433 | 0.0068202 | 0.0081271 | 0.0075073 | 0.0093776 | 0.0081270 | 0.0108206 | 0.0086350 | 0.0124856 | 0.008984 |
| | Lake Shore | 0.0060728 | 0.0060729 | 0.0072909 | 0.0070599 | 0.0087532 | 0.0080857 | 0.0105089 | 0.0091075 | 0.0126167 | 0.0100683 | 0.0151473 | 0.010899 |
| | Pine River | 0.0091768 | 0.0091769 | 0.0093322 | 0.0090366 | 0.0094902 | 0.0087664 | 0.0096508 | 0.0083638 | 0.0098142 | 0.0078318 | 0.0099803 | 0.007181 |
| | Walker | 0.0101041 | | 0.0094753 | | 0.0088856 | | 0.0083327 | | 0.0078141 | | 0.0073278 | |
| Clearwater | Bagley | 0.0137603 | | 0.0133925 | | 0.0130347 | | 0.0126863 | | 0.0123473 | | 0.0120174 | |
| | Clearbrook | 0.0060312 | | 0.0057705 | | 0.0055212 | | 0.0052826 | | 0.0050543 | | 0.0048359 | |
| Crow Wing | Baxter | 0.0273434 | 0.0273437 | 0.0339676 | 0.0328916 | 0.0421964 | 0.0389782 | 0.0524187 | 0.0454282 | 0.0651174 | 0.0519644 | 0.0808925 | 0.058205 |
| | Brainerd | 0.1196758 | | 0.1145037 | | 0.1095552 | | 0.1048205 | | 0.1002905 | | 0.0959563 | |
| | Crosby | 0.0231039 | | 0.0218073 | | 0.0205834 | | 0.0194282 | | 0.0183379 | | 0.0173087 | |
| | Crosslake | 0.0110830 | 0.0110831 | 0.0173938 | 0.0168429 | 0.0272980 | 0.0252161 | 0.0428418 | 0.0371284 | 0.0672362 | 0.0536553 | 0.1055212 | 0.075926 |
| | Deerwood | 0.0060416 | 0.0060416 | 0.0060944 | 0.0059013 | 0.0061476 | 0.0056787 | 0.0062013 | 0.0053743 | 0.0062555 | 0.0049919 | 0.0063101 | 0.004540 |
| | Emily | 0.0061250 | 0.0061250 | 0.0068627 | 0.0066453 | 0.0076893 | 0.0071029 | 0.0086154 | 0.0074665 | 0.0096532 | 0.0077033 | 0.0108159 | 0.007782 |
| | Ironton | 0.0055937 | | 0.0051125 | | 0.0046726 | | 0.0042707 | | 0.0039033 | | 0.0035675 | |
| | Nisswa | 0.0146560 | 0.0146562 | 0.0169380 | 0.0164015 | 0.0195753 | 0.0180823 | 0.0226231 | 0.0196061 | 0.0261456 | 0.0208645 | 0.0302165 | 0.021742 |

- continued -

230

APPENDIX TABLE 90. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 2, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|-------------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Crow Wing | Pequot Lakes | 0.0070936 | 0.0070937 | 0.0077020 | 0.0074580 | 0.0083625 | 0.0077247 | 0.0090797 | 0.0078688 | 0.0098584 | 0.0078671 | 0.0107038 | 0.007702 |
| | West Crow Wing | 0.0380725 | 0.0380728 | 0.0480000 | 0.0464796 | 0.0605163 | 0.0559008 | 0.0762962 | 0.0661213 | 0.0961908 | 0.0767613 | 0.1212729 | 0.087260 |
| Hubbard | Park Rapids | 0.0309996 | | 0.0303508 | | 0.0297155 | | 0.0290936 | | 0.0284846 | | 0.0278884 | |
| Itasca | Bovey | 0.0084687 | | 0.0077581 | | 0.0071071 | | 0.0065107 | | 0.0059644 | | 0.0054640 | |
| | Bowstring Lake | 0.0101039 | 0.0101040 | 0.0102460 | 0.0099214 | 0.0103900 | 0.0095976 | 0.0105361 | 0.0091310 | 0.0106842 | 0.0085261 | 0.0108344 | 0.007796 |
| | Coleraine | 0.0116249 | | 0.0109249 | | 0.0102670 | | 0.0096488 | | 0.0090678 | | 0.0085218 | |
| | Deer Lake | 0.0284684 | 0.0284687 | 0.0336512 | 0.0325853 | 0.0397774 | 0.0367437 | 0.0470190 | 0.0407486 | 0.0555790 | 0.0443526 | 0.0656972 | 0.047271 |
| | Deer River | 0.0094478 | | 0.0090987 | | 0.0087625 | | 0.0084387 | | 0.0081268 | | 0.0078265 | |
| | Grand Rapids | 0.0826429 | 0.0826437 | 0.0832033 | 0.0805678 | 0.0837675 | 0.0773787 | 0.0843355 | 0.0730886 | 0.0849074 | 0.0677570 | 0.0854831 | 0.061508 |
| | Keewatin | 0.0150311 | | 0.0143134 | | 0.0136300 | | 0.0129793 | | 0.0123596 | | 0.0117694 | |
| | La Prairie | 0.0055832 | 0.0055833 | 0.0067011 | 0.0064889 | 0.0080428 | 0.0074294 | 0.0096532 | 0.0083659 | 0.0115860 | 0.0092458 | 0.0139058 | 0.010006 |
| | Marble | 0.0078853 | | 0.0074812 | | 0.0070977 | | 0.0067340 | | 0.0063888 | | 0.0060614 | |
| | Nashwauk | 0.0147811 | | 0.0138899 | | 0.0130525 | | 0.0122655 | | 0.0115260 | | 0.0108311 | |
| | Northeast Itasca | 0.0122499 | | 0.0121853 | | 0.0121211 | | 0.0120572 | | 0.0119937 | | 0.0119305 | |
| Koochiching | International Falls | 0.0584473 | | 0.0549063 | | 0.0515799 | | 0.0484550 | | 0.0455194 | | 0.0427617 | |
| | Little Fork | 0.0095622 | 0.0095623 | 0.0097378 | 0.0094293 | 0.0099166 | 0.0091603 | 0.0100987 | 0.0087520 | 0.0102842 | 0.0082069 | 0.0104730 | 0.007536 |
| | Northome | 0.0032499 | 0.0032499 | 0.0032569 | 0.0031538 | 0.0032640 | 0.0030150 | 0.0032710 | 0.0028348 | 0.0032781 | 0.0026160 | 0.0032852 | 0.002364 |
| | Northwest Koochiching | 0.0066562 | 0.0066563 | 0.0066594 | 0.0064485 | 0.0066627 | 0.0061545 | 0.0066659 | 0.0057769 | 0.0066691 | 0.0053220 | 0.0066724 | 0.004801 |
| | Rainy Lake | 0.0499265 | | 0.0491705 | | 0.0484259 | | 0.0476927 | | 0.0469705 | | 0.0462592 | |
| | South International Falls | 0.0292283 | 0.0292286 | 0.0296912 | 0.0287507 | 0.0301615 | 0.0278611 | 0.0306391 | 0.0265531 | 0.0311243 | 0.0248376 | 0.0316172 | 0.022750 |

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APPENDIX TABLE 90. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 2, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Lake of the Woods | Baudette | 0.0121874 | | 0.0111046 | | 0.0101181 | | 0.0092192 | | 0.0084001 | | 0.0076538 | |
| | Rainy River | 0.0231872 | 0.0231875 | 0.0233512 | 0.0226115 | 0.0235163 | 0.0217228 | 0.0236826 | 0.0205243 | 0.0238501 | 0.0190326 | 0.0240187 | 0.017282 |
| Wadena | Menahga | 0.0102083 | 0.0102084 | 0.0105802 | 0.0102451 | 0.0109658 | 0.0101295 | 0.0113654 | 0.0098497 | 0.0117795 | 0.0094002 | 0.0122087 | 0.008785 |
| | Sebeka | 0.0080624 | | 0.0078194 | | 0.0075837 | | 0.0073551 | | 0.0071335 | | 0.0069184 | |
| | Staples | 0.0027499 | 0.0027500 | 0.0034697 | 0.0033598 | 0.0043778 | 0.0040439 | 0.0055236 | 0.0047870 | 0.0069693 | 0.0055615 | 0.0087933 | 0.016327 |
| | Verndale | 0.0052499 | | 0.0049376 | | 0.0046439 | | 0.0043676 | | 0.0041078 | | 0.0038634 | |
| | Wadena | 0.0489469 | 0.0489474 | 0.0490576 | 0.0475036 | 0.0491685 | 0.0454185 | 0.0492796 | 0.0427077 | 0.0493910 | 0.0394146 | 0.0495026 | 0.035619 |
| SUM OF DECLINING COUNTIES | | 0.4582967 | | 0.4376041 | | 0.4180799 | | 0.3996457 | | 0.3822297 | | 0.3657655 | |
| ONE MINUS DECLINING COUNTIES | | 0.5417033 | | 0.5623959 | | 0.5819201 | | 0.6003543 | | 0.6177703 | | 0.6342345 | |
| SUM OF INCREASING COUNTIES | | 0.5416980 | | 0.5807926 | | 0.6299659 | | 0.6927371 | | 0.7741373 | | 0.8814557 | |
| ADJUSTED TOTAL | | | 0.9999996 | | 0.9999994 | | 0.9999998 | | 0.9999998 | | 0.9999997 | | 0.9999999 |

APPENDIX TABLE 91. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 3, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|-----------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Carlton | Carlton | 0.0041393 | 0.0041394 | 0.0041953 | 0.0041262 | 0.0042521 | 0.0040885 | 0.0043097 | 0.0040274 | 0.0043681 | 0.0039443 | 0.0044272 | 0.003840 |
| | Cloquet | 0.0535035 | 0.0535044 | 0.0571804 | 0.0562378 | 0.0611099 | 0.0587575 | 0.0653095 | 0.0610312 | 0.0697978 | 0.0630255 | 0.0745941 | 0.064706 |
| | Moose Lake | 0.0067613 | | 0.0067296 | | 0.0066981 | | 0.0066667 | | 0.0066355 | | 0.0066045 | |
| | North Carlton | 0.0065404 | | 0.0061878 | | 0.0058542 | | 0.0055386 | | 0.0052400 | | 0.0049575 | |
| | Scanlon | 0.0050421 | | 0.0050219 | | 0.0050018 | | 0.0049817 | | 0.0049618 | | 0.0049419 | |
| Cook | Grand Marais | 0.0061897 | 0.0061898 | 0.0062590 | 0.0061559 | 0.0063291 | 0.0060855 | 0.0064000 | 0.0059807 | 0.0064716 | 0.0058437 | 0.0065441 | 0.005677 |
| | West Cook | 0.0067421 | | 0.0065710 | | 0.0064044 | | 0.0062419 | | 0.0060836 | | 0.0059292 | |
| Lake | Silver Bay | 0.0140075 | | 0.0133572 | | 0.0127371 | | 0.0121457 | | 0.0115818 | | 0.0110441 | |
| | Two Harbors | 0.0193954 | | 0.0189322 | | 0.0184801 | | 0.0180388 | | 0.0176080 | | 0.0171875 | |
| Pine | Hinckley | 0.0046243 | 0.0046244 | 0.0048341 | 0.0047544 | 0.0050533 | 0.0048588 | 0.0052826 | 0.0049365 | 0.0055222 | 0.0049864 | 0.0057727 | 0.005007 |
| | Pine City | 0.0119522 | 0.0119524 | 0.0128401 | 0.0126285 | 0.0137940 | 0.0132630 | 0.0148188 | 0.0138480 | 0.0159197 | 0.0143750 | 0.0171023 | 0.014835 |
| | Rock Creek | 0.0042738 | 0.0042739 | 0.0045548 | 0.0044797 | 0.0048543 | 0.0046675 | 0.0051735 | 0.0048346 | 0.0055137 | 0.0049787 | 0.0058762 | 0.005097 |
| | Sandstone | 0.0076544 | 0.0076545 | 0.0078100 | 0.0076813 | 0.0079688 | 0.0076621 | 0.0081309 | 0.0075982 | 0.0082962 | 0.0074912 | 0.0084649 | 0.007343 |
| St. Louis | Aurora | 0.0128214 | 0.0128216 | 0.0128427 | 0.0126310 | 0.0128640 | 0.0123688 | 0.0128853 | 0.0120412 | 0.0129067 | 0.0116544 | 0.0129281 | 0.011214 |
| | Babbitt | 0.0116930 | | 0.0116733 | | 0.0116536 | | 0.0116340 | | 0.0116144 | | 0.0115949 | |
| | Birch Lake | 0.0033566 | 0.0033566 | 0.0034779 | 0.0034205 | 0.0036035 | 0.0034648 | 0.0037338 | 0.0034892 | 0.0038687 | 0.0034933 | 0.0040085 | 0.003477 |
| | Biwabik | 0.0068573 | | 0.0065269 | | 0.0062125 | | 0.0059132 | | 0.0056283 | | 0.0053572 | |
| | Buhl | 0.0061658 | | 0.0059853 | | 0.0058101 | | 0.0056400 | | 0.0054749 | | 0.0053146 | |
| | Chisholm | 0.0284761 | | 0.0275487 | | 0.0266515 | | 0.0257836 | | 0.0249439 | | 0.0241316 | |
| | Cook | 0.0038416 | 0.0038416 | 0.0043219 | 0.0042506 | 0.0048622 | 0.0046750 | 0.0054701 | 0.0051117 | 0.0061539 | 0.0055569 | 0.0069233 | 0.006006 |
| | Duluth | 0.4456816 | | 0.4360532 | | 0.4266326 | | 0.4174157 | | 0.4083979 | | 0.3995749 | |
| | Ely | 0.0231458 | | 0.0227624 | | 0.0223853 | | 0.0220144 | | 0.0216497 | | 0.0212910 | |
| | Ely Lake | 0.0056279 | 0.0056280 | 0.0057041 | 0.0056101 | 0.0057813 | 0.0055588 | 0.0058596 | 0.0054758 | 0.0059390 | 0.0053627 | 0.0060194 | 0.005221 |

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APPENDIX TABLE 91. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 3, SELECTED YEARS 1990 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|-----------|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| St. Louis | Eveleth | 0.0242118 | | 0.0237768 | | 0.0233496 | | 0.0229300 | | 0.0225180 | | 0.0221134 | |
| | Floodwood | 0.0031117 | 0.0031117 | 0.0031195 | 0.0030681 | 0.0031273 | 0.0030069 | 0.0031352 | 0.0029298 | 0.0031430 | 0.0028381 | 0.0031509 | 0.002733 |
| | Gilbert | 0.0130662 | 0.0130664 | 0.0134062 | 0.0131852 | 0.0137550 | 0.0132255 | 0.0141130 | 0.0131884 | 0.0144802 | 0.0130753 | 0.0148570 | 0.012888 |
| | Heikkila Lake | 0.0077600 | 0.0077602 | 0.0088812 | 0.0087348 | 0.0101643 | 0.0097730 | 0.0116327 | 0.0108707 | 0.0133134 | 0.0123216 | 0.0152368 | 0.013217 |
| | Hermantown | 0.0324568 | 0.0324574 | 0.0342310 | 0.0336667 | 0.0361021 | 0.0347124 | 0.0380755 | 0.0355813 | 0.0401568 | 0.0362605 | 0.0423519 | 0.036738 |
| | Hibbing | 0.1017674 | 0.1017691 | 0.1078485 | 0.1060708 | 0.1142930 | 0.1098934 | 0.1211227 | 0.1131881 | 0.1283604 | 0.1159061 | 0.1360306 | 0.117999 |
| | Hoyt Lakes | 0.0152990 | 0.0152993 | 0.0155062 | 0.0152506 | 0.0157162 | 0.0151112 | 0.0159290 | 0.0148855 | 0.0161447 | 0.0145782 | 0.0163633 | 0.014194 |
| | Mountain Iron | 0.0198513 | 0.0198516 | 0.0247413 | 0.0243335 | 0.0308359 | 0.0296489 | 0.0384318 | 0.0359142 | 0.0478988 | 0.0432514 | 0.0596978 | 0.051785 |
| | Northwest St. Louis | 0.0027420 | | 0.0025560 | | 0.0023827 | | 0.0022211 | | 0.0020705 | | 0.0019300 | |
| | Pike Lake | 0.0030733 | 0.0030733 | 0.0034485 | 0.0033917 | 0.0038696 | 0.0037207 | 0.0043421 | 0.0040577 | 0.0048724 | 0.0043996 | 0.0054673 | 0.004743 |
| | Proctor | 0.0152701 | 0.0152704 | 0.0157528 | 0.0154931 | 0.0162507 | 0.0156252 | 0.0167644 | 0.0156662 | 0.0172942 | 0.0155162 | 0.0178409 | 0.015476 |
| | Sand Lake | 0.0067276 | 0.0067277 | 0.0077013 | 0.0075743 | 0.0088158 | 0.0084765 | 0.0100917 | 0.0094306 | 0.0115522 | 0.0104314 | 0.0132241 | 0.011471 |
| | Towner | 0.0030733 | | 0.0028782 | | 0.0026955 | | 0.0025243 | | 0.0023641 | | 0.0022140 | |
| | Virginia | 0.0530912 | | 0.0506956 | | 0.0484080 | | 0.0462236 | | 0.0441379 | | 0.0421462 | |
| | SUM OF DECLINING COUNTIES | 0.6636264 | | 0.6472557 | | 0.6313567 | | 0.6159133 | | 0.6009099 | | 0.5863323 | |
| | ONE MINUS DECLINING COUNTIES | 0.3363736 | | 0.3527443 | | 0.3686433 | | 0.3840867 | | 0.3990901 | | 0.4136677 | |
| | SUM OF INCREASING COUNTIES | 0.3363675 | | 0.3586562 | | 0.3834019 | | 0.4110113 | | 0.4419730 | | 0.4768813 | |
| | ADJUSTED TOTAL | | 0.9999995 | | 0.9999997 | | 0.9999998 | | 0.9999997 | | 0.9999998 | | 0.9999999 |

APPENDIX TABLE 92. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 4, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Becker | Detroit Lakes | 0.1372414 | 0.1372420 | 0.1375046 | 0.1371946 | 0.1377681 | 0.1370373 | 0.1380321 | 0.1367764 | 0.1382967 | 0.1364174 | 0.1385617 | 0.135965 |
| | Frazee | 0.0247986 | | 0.0244637 | | 0.0241333 | | 0.0238074 | | 0.0234859 | | 0.0231687 | |
| | Lake Park | 0.0138285 | | 0.0130102 | | 0.0122403 | | 0.0115160 | | 0.0108345 | | 0.0101934 | |
| Clay | Barnesville | 0.0426244 | 0.0426246 | 0.0434549 | 0.0433569 | 0.0443015 | 0.0440665 | 0.0451645 | 0.0447537 | 0.0460445 | 0.0454188 | 0.0469415 | 0.046062 |
| | Dilworth | 0.0499256 | | 0.0497040 | | 0.0494834 | | 0.0492637 | | 0.0490451 | | 0.0488273 | |
| | Glyndon | 0.0170346 | 0.0170347 | 0.0186630 | 0.0186210 | 0.0204472 | 0.0203387 | 0.0224018 | 0.0221981 | 0.0245434 | 0.0242099 | 0.0268897 | 0.026386 |
| | Hawley | 0.0315582 | 0.0315583 | 0.0317749 | 0.0317033 | 0.0319931 | 0.0318234 | 0.0322128 | 0.0319198 | 0.0324340 | 0.0319933 | 0.0326567 | 0.032045 |
| | Moorhead | 0.5793669 | 0.5793697 | 0.5857560 | 0.5844358 | 0.5922165 | 0.5890751 | 0.5987483 | 0.5933017 | 0.6053521 | 0.5971265 | 0.6120278 | 0.600559 |
| | Ulen | 0.0099272 | | 0.0095420 | | 0.0091718 | | 0.0088160 | | 0.0084740 | | 0.0081452 | |
| | Mahnomen | Mahnomen | 0.0247793 | | 0.0226736 | | 0.0207468 | | 0.0189837 | | 0.0173705 | | 0.0158943 |
| Norman | Ada | 0.0380671 | | 0.0355758 | | 0.0332476 | | 0.0310717 | | 0.0290382 | | 0.0271378 | |
| | Halstad | 0.0133264 | | 0.0128428 | | 0.0123768 | | 0.0119277 | | 0.0114949 | | 0.0110777 | |
| | Twin Valley | 0.0175174 | | 0.0168766 | | 0.0162591 | | 0.0156643 | | 0.0150912 | | 0.0145391 | |
| SUM OF DECLINING COUNTIES | | 0.1921700 | | 0.1846885 | | 0.1776590 | | 0.1710504 | | 0.1648341 | | 0.1589836 | |
| ONE MINUS DECLINING COUNTIES | | 0.8078300 | | 0.8153115 | | 0.8223410 | | 0.8289496 | | 0.8351659 | | 0.8410164 | |
| SUM OF INCREASING COUNTIES | | 0.8078254 | | 0.8171532 | | 0.8267263 | | 0.8365595 | | 0.8466705 | | 0.8570774 | |
| ADJUSTED TOTAL | | | 0.9999991 | | 1.0000000 | | 0.9999998 | | 0.9999993 | | 0.9999999 | | 1.0000000 |

APPENDIX TABLE 93. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 5, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Douglas | Alexandria | 0.1961364 | 0.1961383 | 0.2036117 | 0.2026456 | 0.2113720 | 0.2090240 | 0.2194280 | 0.2152705 | 0.2277911 | 0.2213817 | 0.2364728 | 0.227354 |
| | Evansville | 0.0147205 | 0.0147206 | 0.0160796 | 0.0160033 | 0.0175642 | 0.0173691 | 0.0191859 | 0.0188224 | 0.0209574 | 0.0203677 | 0.0228924 | 0.022010 |
| | Osakis | 0.0349326 | | 0.0348860 | | 0.0348395 | | 0.0347930 | | 0.0347466 | | 0.0347003 | |
| Grant | Elbow Lake | 0.0350099 | | 0.0342405 | | 0.0334881 | | 0.0327522 | | 0.0320324 | | 0.0313285 | |
| | Herman | 0.0154683 | | 0.0146509 | | 0.0138767 | | 0.0131434 | | 0.0124488 | | 0.0117910 | |
| | Hoffman | 0.0162673 | 0.0162675 | 0.0165402 | 0.0164617 | 0.0168176 | 0.0166308 | 0.0170997 | 0.0167757 | 0.0173866 | 0.0168974 | 0.0176782 | 0.016997 |
| Otter Tail | Battle Lake | 0.0182526 | | 0.0182060 | | 0.0181595 | | 0.0181131 | | 0.0180668 | | 0.0180207 | |
| | Fergus Falls | 0.3227460 | | 0.3172993 | | 0.3119444 | | 0.3066800 | | 0.3015044 | | 0.2964161 | |
| | Henning | 0.0214494 | | 0.0207155 | | 0.0200068 | | 0.0193223 | | 0.0186612 | | 0.0180228 | |
| | New York Mills | 0.0250586 | 0.0250588 | 0.0262435 | 0.0261190 | 0.0274845 | 0.0271792 | 0.0287842 | 0.0282388 | 0.0301453 | 0.0292971 | 0.0315708 | 0.030353 |
| | Parkers Prairie | 0.0236407 | 0.0236409 | 0.0240047 | 0.0238908 | 0.0243743 | 0.0241035 | 0.0247496 | 0.0242806 | 0.0251307 | 0.0244236 | 0.0255176 | 0.024534 |
| | Pelican Rapids | 0.0481318 | 0.0481322 | 0.0496261 | 0.0493906 | 0.0511668 | 0.0505984 | 0.0527553 | 0.0517558 | 0.0543931 | 0.0528627 | 0.0560819 | 0.053919 |
| | Perham | 0.0537777 | 0.0537782 | 0.0545510 | 0.0542922 | 0.0553354 | 0.0547207 | 0.0561312 | 0.0550676 | 0.0569383 | 0.0553362 | 0.0577571 | 0.055530 |
| Traverse | Browns Valley | 0.0228673 | | 0.0221476 | | 0.0214506 | | 0.0207756 | | 0.0201217 | | 0.0194885 | |
| | Wheaton | 0.0507618 | | 0.0502455 | | 0.0497345 | | 0.0492286 | | 0.0487279 | | 0.0482324 | |
| Wilkin | Breckenridge | 0.1007758 | | 0.0988058 | | 0.0968744 | | 0.0949806 | | 0.0931239 | | 0.0913034 | |
| SUM OF DECLINING COUNTIES | | 0.6222634 | | 0.6111969 | | 0.6003742 | | 0.5897886 | | 0.5794337 | | 0.5693033 | |
| ONE MINUS DECLINING COUNTIES | | 0.3777366 | | 0.3888031 | | 0.3996258 | | 0.4102114 | | 0.4205663 | | 0.4306967 | |
| SUM OF INCREASING COUNTIES | | 0.3777328 | | 0.3906567 | | 0.4041147 | | 0.4181337 | | 0.4327423 | | 0.4479706 | |
| ADJUSTED TOTAL | | | 0.9999998 | | 0.9999999 | | 0.9999997 | | 0.9999999 | | 0.9999999 | | 1.000000 |

APPENDIX TABLE 94. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 6, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Benton | Foley | 0.0139249 | 0.0139250 | 0.0142009 | 0.0134405 | 0.0144824 | 0.0127087 | 0.0147695 | 0.0117773 | 0.0150623 | 0.0107027 | 0.0153609 | 0.009545 |
| | St. Cloud | 0.0402744 | 0.0402748 | 0.0410959 | 0.0388952 | 0.0419340 | 0.0367982 | 0.0427892 | 0.0341205 | 0.0436619 | 0.0310244 | 0.0445524 | 0.027683 |
| | Sartell | 0.0106387 | 0.0106388 | 0.0152793 | 0.0144611 | 0.0219440 | 0.0192564 | 0.0315158 | 0.0251309 | 0.0452627 | 0.0321619 | 0.0650059 | 0.040392 |
| | Sauk Rapids | 0.0502281 | 0.0502284 | 0.0511381 | 0.0483997 | 0.0520646 | 0.0456881 | 0.0530080 | 0.0422690 | 0.0539684 | 0.0383478 | 0.0549452 | 0.034142 |
| Kanabec | Mora | 0.0250579 | | 0.0246032 | | 0.0241567 | | 0.0237184 | | 0.0232880 | | 0.0228654 | |
| Mille Lacs | Isle | 0.0049682 | | 0.0047151 | | 0.0044749 | | 0.0042469 | | 0.0040305 | | 0.0038252 | |
| | Milaca | 0.0182428 | | 0.0175950 | | 0.0169703 | | 0.0163677 | | 0.0157865 | | 0.0152250 | |
| | Onamia | 0.0059913 | | 0.0056705 | | 0.0053668 | | 0.0050793 | | 0.0048073 | | 0.0045498 | |
| | Princeton | 0.0272775 | 0.0272777 | 0.0272869 | 0.0258257 | 0.0272962 | 0.0239532 | 0.0273056 | 0.0217737 | 0.0273150 | 0.0194089 | 0.0273243 | 0.016978 |
| Morrison | Little Falls | 0.0628614 | | 0.0578872 | | 0.0533066 | | 0.0490884 | | 0.0452041 | | 0.0416270 | |
| | Pierz | 0.0088266 | | 0.0086781 | | 0.0085320 | | 0.0083884 | | 0.0082473 | | 0.0081085 | |
| | Randall | 0.0045694 | | 0.0042733 | | 0.0039964 | | 0.0037374 | | 0.0034952 | | 0.0032627 | |
| | Royalton | 0.0057225 | | 0.0054984 | | 0.0052830 | | 0.0050760 | | 0.0048771 | | 0.0046861 | |
| Sherburne | Becker | 0.0052110 | 0.0052110 | 0.0058729 | 0.0055584 | 0.0066189 | 0.0058083 | 0.0074596 | 0.0059484 | 0.0084072 | 0.0059738 | 0.0094751 | 0.005887 |
| | Big Lake | 0.0191619 | 0.0191620 | 0.0245934 | 0.0232764 | 0.0315645 | 0.0276987 | 0.0405115 | 0.0323042 | 0.0519947 | 0.0369453 | 0.0667329 | 0.041465 |
| | Elk River | 0.0588294 | 0.0588298 | 0.0766537 | 0.0725489 | 0.0998784 | 0.0876459 | 0.1301399 | 0.1037746 | 0.1695701 | 0.1204898 | 0.2209470 | 0.137289 |
| | St. Cloud | 0.0383323 | 0.0383326 | 0.0387643 | 0.0366885 | 0.0392011 | 0.0344000 | 0.0396429 | 0.0316116 | 0.0400897 | 0.0284861 | 0.0405414 | 0.025191 |
| | Zimmerman | 0.0093122 | 0.0093122 | 0.0118964 | 0.0112593 | 0.0151977 | 0.0133364 | 0.0194152 | 0.0154819 | 0.0248031 | 0.0176241 | 0.0316862 | 0.019689 |
| Stearns | Albany | 0.0136041 | | 0.0130802 | | 0.0125765 | | 0.0120922 | | 0.0116265 | | 0.0111788 | |
| | Avon | 0.0069711 | 0.0069711 | 0.0075271 | 0.0071240 | 0.0081274 | 0.0071320 | 0.0087757 | 0.0069978 | 0.0094756 | 0.0067330 | 0.0102314 | 0.006357 |
| | Belgrade | 0.0069798 | | 0.0068083 | | 0.0066410 | | 0.0064778 | | 0.0063186 | | 0.0061634 | |
| | Brooklyn | 0.0056098 | | 0.0051909 | | 0.0048032 | | 0.0044445 | | 0.0041125 | | 0.0038054 | |

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APPENDIX TABLE 94. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 6, SELECTED YEARS 1930 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Stearns | Cold Spring | 0.0198902 | | 0.0197708 | | 0.0196521 | | 0.0195342 | | 0.0194169 | | 0.0193003 | |
| | Eden Valley | 0.0025231 | | 0.0023916 | | 0.0022669 | | 0.0021487 | | 0.0020367 | | 0.0019305 | |
| | Freeport | 0.0048815 | | 0.0044420 | | 0.0040420 | | 0.0036781 | | 0.0033469 | | 0.0030455 | |
| | Holdingsford | 0.0055058 | | 0.0053688 | | 0.0052353 | | 0.0051051 | | 0.0049781 | | 0.0048543 | |
| | Kimball Prairie | 0.0056445 | | 0.0055150 | | 0.0053885 | | 0.0052649 | | 0.0051442 | | 0.0050262 | |
| | Melrose | 0.0208873 | | 0.0200266 | | 0.0192014 | | 0.0184101 | | 0.0176515 | | 0.0169241 | |
| | Paynesville | 0.0185550 | | 0.0181414 | | 0.0177371 | | 0.0173417 | | 0.0169552 | | 0.0165773 | |
| | Richmond | 0.0075174 | | 0.0072489 | | 0.0069901 | | 0.0067405 | | 0.0064998 | | 0.0062673 | |
| | Rockville | 0.0051763 | 0.0051763 | 0.0054759 | 0.0051827 | 0.0057929 | 0.0050834 | 0.0061283 | 0.0048867 | 0.0064830 | 0.0046066 | 0.0068583 | 0.004262 |
| | St. Cloud | 0.2904631 | | 0.2840344 | | 0.2777480 | | 0.2716008 | | 0.2655896 | | 0.2597114 | |
| | St. Joseph | 0.0259596 | 0.0259597 | 0.0287671 | 0.0272267 | 0.0318784 | 0.0279742 | 0.0353262 | 0.0281694 | 0.0391468 | 0.0278162 | 0.0433807 | 0.026955 |
| | Sartell | 0.0190750 | 0.0190751 | 0.0248180 | 0.0234890 | 0.0322901 | 0.0283354 | 0.0420118 | 0.0335006 | 0.0546605 | 0.0388396 | 0.0711175 | 0.044190 |
| | Sauk Center | 0.0321590 | | 0.0301977 | | 0.0283560 | | 0.0266266 | | 0.0250027 | | 0.0234773 | |
| | Waite Park | 0.0303121 | 0.0303123 | 0.0323594 | 0.0306266 | 0.0345449 | 0.0303141 | 0.0368782 | 0.0294070 | 0.0393689 | 0.0279740 | 0.0420283 | 0.026115 |
| Todd | Bertha | 0.0044220 | | 0.0040150 | | 0.0036455 | | 0.0033101 | | 0.0030055 | | 0.0027289 | |
| | Browerville | 0.0060087 | | 0.0054914 | | 0.0050187 | | 0.0045866 | | 0.0041918 | | 0.0038309 | |
| | Clarissa | 0.0057486 | | 0.0055562 | | 0.0053702 | | 0.0051904 | | 0.0050167 | | 0.0048483 | |
| | Eagle Bend | 0.0051416 | | 0.0047475 | | 0.0043837 | | 0.0040477 | | 0.0037374 | | 0.0034510 | |
| | Long Prairie | 0.0247891 | | 0.0240572 | | 0.0233469 | | 0.0226575 | | 0.0219886 | | 0.0213393 | |
| | Staples | 0.0227428 | | 0.0209931 | | 0.0193780 | | 0.0178872 | | 0.0165110 | | 0.0152402 | |
| SUM OF DECLINING COUNTIES | | 0.6393129 | | 0.6159974 | | 0.5938672 | | 0.5728466 | | 0.5528659 | | 0.5338587 | |
| ONE MINUS DECLINING COUNTIES | | 0.3606871 | | 0.3840026 | | 0.4061328 | | 0.4271534 | | 0.4471341 | | 0.4661413 | |
| SUM OF INCREASING COUNTIES | | 0.3606840 | | 0.4057288 | | 0.4628153 | | 0.5356770 | | 0.6292697 | | 0.7501873 | |
| ADJUSTED TOTAL | | | 0.9999995 | | 0.9999998 | | 0.9999998 | | 0.9999998 | | 0.9999995 | | 0.9999999 |

APPENDIX TABLE 95. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 7, SELECTED YEARS 1990 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Big Stone | Clinton | 0.0096397 | | 0.0095452 | | 0.0094517 | | 0.0093592 | | 0.0092675 | | 0.0091767 | |
| | Graceville | 0.0120883 | | 0.0115300 | | 0.0109975 | | 0.0104895 | | 0.0100050 | | 0.0095429 | |
| | Ortonville | 0.0395195 | | 0.0377525 | | 0.0360645 | | 0.0344520 | | 0.0329116 | | 0.0314400 | |
| Chippewa | Clara City | 0.0243936 | 0.0243937 | 0.0244677 | 0.0241980 | 0.0245419 | 0.0239182 | 0.0246164 | 0.0235646 | 0.0246911 | 0.0231471 | 0.0247660 | 0.022675 |
| | Granite Falls | 0.0121657 | 0.0121657 | 0.0127795 | 0.0126387 | 0.0134243 | 0.0130831 | 0.0141017 | 0.0134992 | 0.0148132 | 0.0138870 | 0.0155607 | 0.014247 |
| | Montevideo | 0.0905849 | | 0.0881467 | | 0.0857742 | | 0.0834655 | | 0.0812189 | | 0.0790328 | |
| Kandiyohi | Atwater | 0.0174817 | 0.0174817 | 0.0178859 | 0.0176887 | 0.0182994 | 0.0178343 | 0.0187226 | 0.0179225 | 0.0191555 | 0.0179577 | 0.0195984 | 0.017943 |
| | New London | 0.0125843 | | 0.0125321 | | 0.0124801 | | 0.0124283 | | 0.0123767 | | 0.0123254 | |
| | Prinsburg | 0.0086321 | 0.0086322 | 0.0087440 | 0.0086476 | 0.0088573 | 0.0086322 | 0.0089720 | 0.0085887 | 0.0090883 | 0.0085200 | 0.0092060 | 0.008429 |
| | Raymond | 0.0112048 | 0.0112049 | 0.0113111 | 0.0111864 | 0.0114183 | 0.0111281 | 0.0115265 | 0.0110340 | 0.0116357 | 0.0109082 | 0.0117460 | 0.010754 |
| | Spicer | 0.0140875 | 0.0140875 | 0.0151787 | 0.0150114 | 0.0163544 | 0.0159388 | 0.0176212 | 0.0168684 | 0.0189862 | 0.0177990 | 0.0204569 | 0.018729 |
| | Willmar | 0.2463391 | 0.2463400 | 0.2646686 | 0.2617513 | 0.2843621 | 0.2771345 | 0.3055211 | 0.2924673 | 0.3282543 | 0.3077285 | 0.3526790 | 0.322897 |
| Lac Qui Parle | Dawson | 0.0294614 | | 0.0290095 | | 0.0285646 | | 0.0281265 | | 0.0276951 | | 0.0272703 | |
| | Madison | 0.0342813 | | 0.0325386 | | 0.0308844 | | 0.0293144 | | 0.0278242 | | 0.0264098 | |
| Pope | Glenwood | 0.0391011 | | 0.0374048 | | 0.0357821 | | 0.0342298 | | 0.0327449 | | 0.0313243 | |
| | Starbuck | 0.0189694 | | 0.0188382 | | 0.0187079 | | 0.0185785 | | 0.0184500 | | 0.0183223 | |
| Kenville | Bird Island | 0.0212631 | | 0.0205102 | | 0.0197840 | | 0.0190835 | | 0.0184078 | | 0.0177560 | |
| | Buffalo Lake | 0.0121193 | | 0.0120148 | | 0.0119111 | | 0.0118083 | | 0.0117064 | | 0.0116054 | |
| | Danube | 0.0091437 | 0.0091437 | 0.0092404 | 0.0091386 | 0.0093382 | 0.0091009 | 0.0094370 | 0.0090338 | 0.0095368 | 0.0089405 | 0.0096377 | 0.008824 |
| | Fairfax | 0.0217745 | | 0.0207459 | | 0.0197660 | | 0.0188323 | | 0.0179427 | | 0.0170951 | |

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APPENDIX TABLE 95. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 7, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|---------|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| | Franklin | 0.0079349 | | 0.0075414 | | 0.0071675 | | 0.0068120 | | 0.0064742 | | 0.0061532 | |
| | Hector | 0.0194033 | | 0.0185922 | | 0.0178151 | | 0.0170704 | | 0.0163568 | | 0.0156731 | |
| | Morton | 0.0085083 | | 0.0079658 | | 0.0074579 | | 0.0069824 | | 0.0065372 | | 0.0061203 | |
| | Olivia | 0.0434243 | 0.0434245 | 0.0438420 | 0.0433587 | 0.0442636 | 0.0431385 | 0.0446893 | 0.0427799 | 0.0451191 | 0.0422978 | 0.0455531 | 0.041706 |
| | Renville | 0.0231383 | | 0.0228412 | | 0.0225478 | | 0.0222583 | | 0.0219725 | | 0.0216903 | |
| | Sacred Heart | 0.0103216 | | 0.0098685 | | 0.0094353 | | 0.0090212 | | 0.0086252 | | 0.0082466 | |
| Stevens | Chokio | 0.0086633 | | 0.0086202 | | 0.0085774 | | 0.0085347 | | 0.0084923 | | 0.0084500 | |
| | Hancock | 0.0135916 | | 0.0129062 | | 0.0122553 | | 0.0116373 | | 0.0110504 | | 0.0104931 | |
| | Morris | 0.0831769 | 0.0831771 | 0.0854945 | 0.0845521 | 0.0878767 | 0.0856431 | 0.0903253 | 0.0864660 | 0.0928423 | 0.0870368 | 0.0954292 | 0.087371 |
| Swift | Appleton | 0.0285471 | | 0.0264825 | | 0.0245672 | | 0.0227904 | | 0.0211422 | | 0.0196131 | |
| | Benson | 0.0566602 | | 0.0546910 | | 0.0527903 | | 0.0509557 | | 0.0491848 | | 0.0474754 | |
| | Kerkhoven | 0.0117939 | 0.0117939 | 0.0118824 | 0.0117514 | 0.0119715 | 0.0116672 | 0.0120613 | 0.0115460 | 0.0121518 | 0.0113920 | 0.0122430 | 0.011209 |
| | SUM OF DECLINING COUNTIES | 0.5181547 | | 0.5000772 | | 0.4827812 | | 0.4662296 | | 0.4503856 | | 0.4352158 | |
| | ONE MINUS DECLINING COUNTIES | 0.4818453 | | 0.4999228 | | 0.5172188 | | 0.5337704 | | 0.5496144 | | 0.5647842 | |
| | SUM OF INCREASING COUNTIES | 0.4818431 | | 0.5054945 | | 0.5307075 | | 0.5575943 | | 0.5862742 | | 0.6168758 | |
| | ADJUSTED TOTAL | | 0.9999995 | | 0.9999998 | | 0.9999999 | | 0.9999999 | | 0.9999998 | | 1.000000 |

APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Anoka | Andover | 0.0047010 | | 0.0044430 | | 0.0041992 | | 0.0039687 | | 0.0037509 | | 0.0035450 | |
| | Anoka | 0.0078295 | 0.0078296 | 0.0081620 | 0.0073978 | 0.0085087 | 0.0067141 | 0.0088701 | 0.0058296 | 0.0092468 | 0.0048202 | 0.0096396 | 0.003780 |
| | Blaine | 0.0143018 | 0.0143021 | 0.0188411 | 0.0170771 | 0.0248210 | 0.0195860 | 0.0326990 | 0.0214904 | 0.0430773 | 0.0224554 | 0.0567496 | 0.022253 |
| | Centerville | 0.0003676 | 0.0003676 | 0.0004217 | 0.0003822 | 0.0004839 | 0.0003818 | 0.0005551 | 0.0003648 | 0.0006369 | 0.0003320 | 0.0007307 | 0.000287 |
| | Circle Pines | 0.0016632 | | 0.0016420 | | 0.0016211 | | 0.0016005 | | 0.0015801 | | 0.0015600 | |
| | Columbia Heights | 0.0100306 | | 0.0098008 | | 0.0095763 | | 0.0093569 | | 0.0091426 | | 0.0089332 | |
| | Coon Rapids | 0.0179415 | 0.0179418 | 0.0211042 | 0.0191283 | 0.0248245 | 0.0195887 | 0.0292006 | 0.0191912 | 0.0343480 | 0.0179050 | 0.0404029 | 0.015843 |
| | East Bethel | 0.0033183 | 0.0033183 | 0.0046191 | 0.0041867 | 0.0064299 | 0.0050738 | 0.0089506 | 0.0058825 | 0.0124595 | 0.0064949 | 0.0173439 | 0.006801 |
| | Fridley | 0.0151381 | 0.0151383 | 0.0169976 | 0.0154062 | 0.0190856 | 0.0150602 | 0.0214301 | 0.0140843 | 0.0240626 | 0.0125434 | 0.0270185 | 0.010595 |
| | Ham Lake | 0.0039223 | 0.0039223 | 0.0056779 | 0.0051463 | 0.0082194 | 0.0064859 | 0.0118986 | 0.0078200 | 0.0172245 | 0.0089788 | 0.0249344 | 0.009777 |
| | Hilltop | 0.0004092 | 0.0004092 | 0.0004165 | 0.0003775 | 0.0004240 | 0.0003346 | 0.0004316 | 0.0002837 | 0.0004394 | 0.0002290 | 0.0004473 | 0.000175 |
| | Lexington | 0.0010767 | 0.0010767 | 0.0011216 | 0.0010166 | 0.0011683 | 0.0009219 | 0.0012170 | 0.0007998 | 0.0012677 | 0.0006608 | 0.0013205 | 0.000518 |
| | Lino Lakes | 0.0024870 | 0.0024870 | 0.0028403 | 0.0025744 | 0.0032438 | 0.0025597 | 0.0037047 | 0.0024348 | 0.0042310 | 0.0022055 | 0.0048321 | 0.001895 |
| | Ramsey | 0.0050545 | 0.0050546 | 0.0081713 | 0.0074062 | 0.0132099 | 0.0104238 | 0.0213556 | 0.0140353 | 0.0345240 | 0.0179967 | 0.0558124 | 0.021886 |
| | St. Francis | 0.0005930 | 0.0005930 | 0.0006007 | 0.0005444 | 0.0006085 | 0.0004802 | 0.0006164 | 0.0004051 | 0.0006245 | 0.0003255 | 0.0006326 | 0.000248 |
| | Spring Lake Park | 0.0031891 | 0.0031892 | 0.0035844 | 0.0032488 | 0.0040286 | 0.0031789 | 0.0045279 | 0.0029759 | 0.0050891 | 0.0026529 | 0.0057199 | 0.002243 |
| | Carver | Carver | 0.0003215 | 0.0003215 | 0.0003290 | 0.0002982 | 0.0003367 | 0.0002657 | 0.0003446 | 0.0002265 | 0.0003527 | 0.0001838 | 0.0003609 |
| Chanhassen | | 0.0031846 | 0.0031846 | 0.0068004 | 0.0061637 | 0.0145218 | 0.0114590 | 0.0310101 | 0.0203805 | 0.0662197 | 0.0345190 | 0.1414070 | 0.055450 |
| Chaska | | 0.0041796 | 0.0041797 | 0.0053390 | 0.0048392 | 0.0068201 | 0.0053816 | 0.0087119 | 0.0057256 | 0.0111285 | 0.0058011 | 0.0142155 | 0.005574 |
| Cologne | | 0.0002729 | | 0.0002700 | | 0.0002671 | | 0.0002643 | | 0.0002614 | | 0.0002586 | |
| Norwood | | 0.0006105 | 0.0006105 | 0.0006149 | 0.0005573 | 0.0006193 | 0.0004887 | 0.0006238 | 0.0004100 | 0.0006283 | 0.0003275 | 0.0006329 | 0.000248 |

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APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|---------------------|----------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Carver | Victoria | 0.0007136 | 0.0007137 | 0.0009127 | 0.0008272 | 0.0011673 | 0.0009211 | 0.0014928 | 0.0009811 | 0.0019092 | 0.0009952 | 0.0024417 | 0.010957 |
| | Waconia | 0.0013211 | 0.0013211 | 0.0013302 | 0.0012056 | 0.0013393 | 0.0010568 | 0.0013485 | 0.0008863 | 0.0013577 | 0.0007078 | 0.0013671 | 0.000536 |
| | Watertown | 0.0009105 | 0.0009105 | 0.0009880 | 0.0008955 | 0.0010722 | 0.0008460 | 0.0011635 | 0.0007647 | 0.0012626 | 0.0006582 | 0.0013701 | 0.000537 |
| | Young America | 0.0006195 | 0.0006195 | 0.0007430 | 0.0006734 | 0.0008911 | 0.0007031 | 0.0010687 | 0.0007024 | 0.0012818 | 0.0006682 | 0.0015373 | 0.000603 |
| Chisago | Branch | 0.0009345 | 0.0009345 | 0.0012179 | 0.0011039 | 0.0015874 | 0.0012526 | 0.0020689 | 0.0013597 | 0.0026964 | 0.0014056 | 0.0035142 | 0.001378 |
| | Chisago | 0.0008183 | 0.0008183 | 0.0009328 | 0.0008455 | 0.0010634 | 0.0008391 | 0.0012122 | 0.0007967 | 0.0013819 | 0.0007204 | 0.0015753 | 0.010618 |
| | Harris | 0.0003395 | | 0.0003378 | | 0.0003361 | | 0.0003344 | | 0.0003328 | | 0.0003311 | |
| | Lindstrom | 0.0009876 | 0.0009876 | 0.0011571 | 0.0010488 | 0.0013557 | 0.0010697 | 0.0015884 | 0.0010439 | 0.0018610 | 0.0009701 | 0.0021804 | 0.000855 |
| | North Branch | 0.0007998 | 0.0007998 | 0.0008609 | 0.0007803 | 0.0009267 | 0.0007313 | 0.0009976 | 0.0006556 | 0.0010738 | 0.0005598 | 0.0011559 | 0.000453 |
| | Rish City | 0.0006000 | | 0.0005782 | | 0.0005573 | | 0.0005371 | | 0.0005176 | | 0.0004988 | |
| | Stacy | 0.0004988 | 0.0004988 | 0.0006949 | 0.0006298 | 0.0009680 | 0.0007639 | 0.0013485 | 0.0008863 | 0.0018786 | 0.0009793 | 0.0026171 | 0.001026 |
| | Taylor's Falls | 0.0003120 | | 0.0003048 | | 0.0002977 | | 0.0002908 | | 0.0002840 | | 0.0002775 | |
| | Wyoming | 0.0007808 | 0.0007808 | 0.0010153 | 0.0009202 | 0.0013203 | 0.0010418 | 0.0017169 | 0.0011284 | 0.0022326 | 0.0011638 | 0.0029033 | 0.001138 |
| | Dakota | Apple Valley | 0.0109264 | 0.0109266 | 0.0130703 | 0.0118466 | 0.0156348 | 0.0123372 | 0.0187025 | 0.0122917 | 0.0223721 | 0.0116622 | 0.0267618 |
| Burnsville | | 0.0178657 | 0.0178660 | 0.0195282 | 0.0176998 | 0.0213454 | 0.0168434 | 0.0233317 | 0.0153341 | 0.0255028 | 0.0132941 | 0.0278760 | 0.010931 |
| Eagen | | 0.0103666 | 0.0103667 | 0.0154106 | 0.0139677 | 0.0229088 | 0.0180770 | 0.0340553 | 0.0223818 | 0.0506254 | 0.0263901 | 0.0752579 | 0.029511 |
| Farmington | | 0.0021885 | 0.0021885 | 0.0024284 | 0.0022010 | 0.0026946 | 0.0021262 | 0.0029899 | 0.0019650 | 0.0033177 | 0.0017294 | 0.0036813 | 0.001444 |
| Hastings | | 0.0064237 | 0.0064238 | 0.0066399 | 0.0060183 | 0.0068634 | 0.0054158 | 0.0070944 | 0.0046626 | 0.0073332 | 0.0038227 | 0.0075801 | 0.002972 |
| Inver Grove Heights | | 0.0085992 | 0.0085993 | 0.0088616 | 0.0080319 | 0.0091321 | 0.0072060 | 0.0094108 | 0.0061850 | 0.0096980 | 0.0050554 | 0.0099940 | 0.003919 |
| Lakeville | | 0.0074068 | 0.0074069 | 0.0140020 | 0.0126910 | 0.0264697 | 0.0208869 | 0.0500389 | 0.0328865 | 0.0945944 | 0.0493102 | 0.1788232 | 0.070122 |

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APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|----------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Hennepin | Mendota | 0.0036498 | 0.0036499 | 0.0037849 | 0.0034306 | 0.0039251 | 0.0030972 | 0.0040704 | 0.0026751 | 0.0042211 | 0.0022004 | 0.0043773 | 0.001716 |
| | Rosemount | 0.0025456 | 0.0025456 | 0.0035535 | 0.0032208 | 0.0049605 | 0.0039143 | 0.0069246 | 0.0045510 | 0.0096665 | 0.0050389 | 0.0134943 | 0.005291 |
| | South St. Paul | 0.0106346 | | 0.0099587 | | 0.0093259 | | 0.0087332 | | 0.0081782 | | 0.0076585 | |
| | West St. Paul | 0.0092783 | 0.0092785 | 0.0095626 | 0.0086673 | 0.0098557 | 0.0077770 | 0.0101577 | 0.0066759 | 0.0104690 | 0.0054573 | 0.0107899 | 0.004231 |
| | Bloomington | 0.0409814 | 0.0409820 | 0.0437001 | 0.0396086 | 0.0465993 | 0.0367709 | 0.0496907 | 0.0326577 | 0.0529873 | 0.0276212 | 0.0565025 | 0.022156 |
| | Brooklyn Center | 0.0156401 | 0.0156403 | 0.0157295 | 0.0142568 | 0.0158194 | 0.0124829 | 0.0159099 | 0.0104563 | 0.0160009 | 0.0083410 | 0.0160924 | 0.006310 |
| | Brooklyn Park | 0.0217005 | 0.0217008 | 0.0294467 | 0.0266897 | 0.0399580 | 0.0315304 | 0.0542215 | 0.0356355 | 0.0735765 | 0.0383540 | 0.0998405 | 0.039150 |
| | Champlin | 0.0045102 | 0.0045103 | 0.0069547 | 0.0063036 | 0.0107241 | 0.0084623 | 0.0165365 | 0.0108681 | 0.0254991 | 0.0132922 | 0.0393194 | 0.015418 |
| | Corcoran | 0.0021294 | 0.0021294 | 0.0027403 | 0.0024837 | 0.0035265 | 0.0027827 | 0.0045382 | 0.0029826 | 0.0058401 | 0.0030444 | 0.0075155 | 0.002947 |
| | Crystal | 0.0127920 | | 0.0122438 | | 0.0117191 | | 0.0112169 | | 0.0107362 | | 0.0102761 | |
| | Dayton | 0.0020382 | 0.0020383 | 0.0033296 | 0.0030179 | 0.0054392 | 0.0042920 | 0.0088855 | 0.0058397 | 0.0145152 | 0.0075665 | 0.0237117 | 0.009298 |
| | Deephaven | 0.0018610 | | 0.0018138 | | 0.0017677 | | 0.0017229 | | 0.0016792 | | 0.0016365 | |
| | Eden Prairie | 0.0081445 | 0.0081446 | 0.0095244 | 0.0086327 | 0.0111382 | 0.0087890 | 0.0130254 | 0.0085605 | 0.0152323 | 0.0079403 | 0.0178132 | 0.006985 |
| | Edina | 0.0230731 | 0.0230734 | 0.0245887 | 0.0222865 | 0.0262038 | 0.0206771 | 0.0279251 | 0.0183530 | 0.0297594 | 0.0155130 | 0.0317142 | 0.012436 |
| | Excelsior | 0.0012635 | | 0.0012624 | | 0.0012614 | | 0.0012603 | | 0.0012592 | | 0.0012581 | |
| | Golden Valley | 0.0114057 | 0.0114058 | 0.0120555 | 0.0109268 | 0.0127424 | 0.0100549 | 0.0134684 | 0.0088517 | 0.0142358 | 0.0074209 | 0.0150469 | 0.005900 |
| | Greenfield | 0.0006966 | 0.0006966 | 0.0007997 | 0.0007248 | 0.0009181 | 0.0007244 | 0.0010539 | 0.0006927 | 0.0012099 | 0.0006307 | 0.0013893 | 0.000545 |
| | Greenwood | 0.0003270 | 0.0003270 | 0.0003272 | 0.0002966 | 0.0003273 | 0.0002583 | 0.0003275 | 0.0002152 | 0.0003277 | 0.0001708 | 0.0003273 | 0.000129 |
| | Hanover | 0.0001242 | 0.0001242 | 0.0001534 | 0.0001390 | 0.0001895 | 0.0001495 | 0.0002341 | 0.0001538 | 0.0002891 | 0.0001507 | 0.0003571 | 0.000140 |
| | Hopkins | 0.0076802 | 0.0076804 | 0.0078225 | 0.0070901 | 0.0079674 | 0.0062870 | 0.0081150 | 0.0053334 | 0.0082654 | 0.0043086 | 0.0084185 | 0.003301 |

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APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|----------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Hennepin | Independence | 0.0013221 | 0.0013221 | 0.0014525 | 0.0013165 | 0.0015957 | 0.0012592 | 0.0017531 | 0.0011522 | 0.0019260 | 0.0010040 | 0.0021159 | 0.000830 |
| | Long Lake | 0.0008749 | 0.0008749 | 0.0009516 | 0.0008625 | 0.0010350 | 0.0008167 | 0.0011257 | 0.0007399 | 0.0012244 | 0.0006383 | 0.0013317 | 0.000522 |
| | Maple Grove | 0.0102789 | 0.0102791 | 0.0169535 | 0.0153662 | 0.0279620 | 0.0220645 | 0.0461188 | 0.0303102 | 0.0760655 | 0.0396515 | 0.1254579 | 0.049196 |
| | Maple Plain | 0.0007116 | 0.0007116 | 0.0007880 | 0.0007143 | 0.0008726 | 0.0006886 | 0.0009663 | 0.0006351 | 0.0010701 | 0.0005578 | 0.0011850 | 0.000465 |
| | Medina | 0.0013136 | 0.0013136 | 0.0014344 | 0.0013001 | 0.0015663 | 0.0012359 | 0.0017103 | 0.0011241 | 0.0018676 | 0.0009735 | 0.0020394 | 0.000800 |
| | Minneapolis | 0.1857734 | | 0.1643765 | | 0.1454440 | | 0.1286922 | | 0.1138697 | | 0.1007545 | |
| | Minnetonka | 0.0193726 | 0.0193729 | 0.0204130 | 0.0185018 | 0.0215094 | 0.0169728 | 0.0226646 | 0.0148956 | 0.0238818 | 0.0124491 | 0.0251644 | 0.009362 |
| | Minnetonka Beach | 0.0002880 | | 0.0002760 | | 0.0002644 | | 0.0002534 | | 0.0002429 | | 0.0002327 | |
| | Minnetrista | 0.0016206 | | 0.0015772 | | 0.0015350 | | 0.0014939 | | 0.0014539 | | 0.0014150 | |
| | Mound | 0.0046475 | 0.0046475 | 0.0050198 | 0.0045498 | 0.0054220 | 0.0042784 | 0.0058564 | 0.0038490 | 0.0063257 | 0.0032974 | 0.0068325 | 0.002579 |
| | New Hope | 0.0115620 | 0.0115622 | 0.0174479 | 0.0158143 | 0.0263300 | 0.0207767 | 0.0397338 | 0.0261139 | 0.0599610 | 0.0312565 | 0.0904851 | 0.035482 |
| | Orono | 0.0034280 | | 0.0034001 | | 0.0033724 | | 0.0033450 | | 0.0033178 | | 0.0032907 | |
| | Osseo | 0.0014894 | 0.0014894 | 0.0015348 | 0.0013911 | 0.0015817 | 0.0012481 | 0.0016300 | 0.0010713 | 0.0016797 | 0.0008756 | 0.0017310 | 0.000679 |
| | Plymouth | 0.0158326 | 0.0158329 | 0.0201704 | 0.0182819 | 0.0256965 | 0.0202768 | 0.0327367 | 0.0215152 | 0.0417057 | 0.0217404 | 0.0531319 | 0.020335 |
| | Richfield | 0.0189559 | | 0.0174017 | | 0.0159750 | | 0.0146652 | | 0.0134629 | | 0.0123591 | |
| | Robbinsdale | 0.0072226 | | 0.0066122 | | 0.0060535 | | 0.0055419 | | 0.0050736 | | 0.0046449 | |
| | Rockford | 0.0001903 | 0.0001903 | 0.0003101 | 0.0002811 | 0.0005053 | 0.0003988 | 0.0008235 | 0.0005412 | 0.0013418 | 0.0006995 | 0.0021866 | 0.000857 |
| | Rogers | 0.0003265 | 0.0003265 | 0.0003537 | 0.0003205 | 0.0003831 | 0.0003023 | 0.0004149 | 0.0002727 | 0.0004494 | 0.0002342 | 0.0004867 | 0.000191 |
| | St. Anthony | 0.0028140 | | 0.0027745 | | 0.0027356 | | 0.0026972 | | 0.0026594 | | 0.0026221 | |
| | St. Bonifacius | 0.0004292 | 0.0004292 | 0.0004480 | 0.0004060 | 0.0004676 | 0.0003690 | 0.0004881 | 0.0003208 | 0.0005095 | 0.0002656 | 0.0005318 | 0.000205 |

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APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|----------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Hennepin | St. Louis Park | 0.0215000 | | 0.0202754 | | 0.0191205 | | 0.0180314 | | 0.0170044 | | 0.0160359 | |
| | Shorewood | 0.0023252 | 0.0023252 | 0.0024124 | 0.0021866 | 0.0025030 | 0.0019751 | 0.0025969 | 0.0017067 | 0.0026943 | 0.0014045 | 0.0027954 | 0.001096 |
| | Spring Park | 0.0007337 | 0.0007337 | 0.0008438 | 0.0007648 | 0.0009705 | 0.0007658 | 0.0011162 | 0.0007336 | 0.0012838 | 0.0006692 | 0.0014766 | 0.001579 |
| | Tonka Bay | 0.0006781 | | 0.0006600 | | 0.0006423 | | 0.0006252 | | 0.0006084 | | 0.0005922 | |
| | Wayzata | 0.0018134 | | 0.0017651 | | 0.0017180 | | 0.0016722 | | 0.0016276 | | 0.0015842 | |
| | Woodland | 0.0002634 | | 0.0002590 | | 0.0002547 | | 0.0002504 | | 0.0002462 | | 0.0002421 | |
| Isanti | Braham | 0.0005083 | 0.0005083 | 0.0005220 | 0.0004732 | 0.0005361 | 0.0004230 | 0.0005506 | 0.0003619 | 0.0005654 | 0.0002948 | 0.0005807 | 0.000223 |
| | Cambridge | 0.0015875 | | 0.0015578 | | 0.0015286 | | 0.0015000 | | 0.0014719 | | 0.0014443 | |
| | Isanti | 0.0004297 | 0.0004297 | 0.0004600 | 0.0004170 | 0.0004925 | 0.0003887 | 0.0005273 | 0.0003466 | 0.0005646 | 0.0002943 | 0.0006045 | 0.0003237 |
| McLeod | Brownton | 0.0003491 | | 0.0003298 | | 0.0003116 | | 0.0002944 | | 0.0002781 | | 0.0002628 | |
| | Glencoe | 0.0022015 | 0.0022015 | 0.0022498 | 0.0020391 | 0.0022991 | 0.0018142 | 0.0023495 | 0.0015441 | 0.0024010 | 0.0012516 | 0.0024537 | 0.001962 |
| | Hutchinson | 0.0046293 | 0.0046294 | 0.0048333 | 0.0043808 | 0.0050463 | 0.0039820 | 0.0052637 | 0.0034627 | 0.0055008 | 0.0028675 | 0.0057432 | 0.002252 |
| | Lester Prairie | 0.0006155 | 0.0006155 | 0.0006178 | 0.0005600 | 0.0006201 | 0.0004893 | 0.0006224 | 0.0004091 | 0.0006248 | 0.0003257 | 0.0006271 | 0.000245 |
| | Silver Lake | 0.0003496 | | 0.0003368 | | 0.0003246 | | 0.0003127 | | 0.0003014 | | 0.0002904 | |
| | Stewart | 0.0003085 | | 0.0002849 | | 0.0002630 | | 0.0002429 | | 0.0002243 | | 0.0002071 | |
| | Winsted | 0.0007622 | 0.0007622 | 0.0007705 | 0.0006984 | 0.0007789 | 0.0006146 | 0.0007873 | 0.0005174 | 0.0007959 | 0.0004149 | 0.0008045 | 0.000315 |
| | Worship | 0.0002860 | | 0.0002812 | | 0.0002766 | | 0.0002720 | | 0.0002675 | | 0.0002631 | |
| Meeker | Dassel | 0.0005339 | | 0.0005319 | | 0.0005300 | | 0.0005281 | | 0.0005262 | | 0.0005242 | |
| | Eden Valley | 0.0002364 | | 0.0002177 | | 0.0002006 | | 0.0001848 | | 0.0001702 | | 0.0001568 | |
| | Grove City | 0.0002985 | 0.0002985 | 0.0003000 | 0.0002719 | 0.0003015 | 0.0002379 | 0.0003030 | 0.0001992 | 0.0003046 | 0.0001588 | 0.0003061 | 0.000120 |
| | Litchfield | 0.0029567 | | 0.0029018 | | 0.0028478 | | 0.0027949 | | 0.0027429 | | 0.0026919 | |
| | Watkins | 0.0003791 | | 0.0003599 | | 0.0003416 | | 0.0003242 | | 0.0003078 | | 0.0002921 | |

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APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|--------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Ramsey | Arden Hills | 0.0040124 | 0.0040125 | 0.0045313 | 0.0041071 | 0.0051174 | 0.0040381 | 0.0057792 | 0.0037982 | 0.0065266 | 0.0034022 | 0.0073707 | 0.002890 |
| | Falcon Heights | 0.0026498 | | 0.0024343 | | 0.0022363 | | 0.0020544 | | 0.0018873 | | 0.0017338 | |
| | Lauderdale | 0.0009941 | | 0.0009801 | | 0.0009664 | | 0.0009528 | | 0.0009394 | | 0.0009262 | |
| | Little Canada | 0.0035566 | 0.0035567 | 0.0040085 | 0.0036332 | 0.0045177 | 0.0035649 | 0.0050917 | 0.0033464 | 0.0057385 | 0.0029914 | 0.0064676 | 0.002536 |
| | Maplewood | 0.0135165 | 0.0135168 | 0.0140361 | 0.0127219 | 0.0145756 | 0.0115015 | 0.0151359 | 0.0099476 | 0.0157177 | 0.0081933 | 0.0163218 | 0.006430 |
| | Mounds View | 0.0063066 | 0.0063067 | 0.0070549 | 0.0063944 | 0.0078921 | 0.0062276 | 0.0088287 | 0.0058024 | 0.0098763 | 0.0051483 | 0.0110483 | 0.004332 |
| | New Brighton | 0.0116531 | 0.0116533 | 0.0151797 | 0.0137585 | 0.0197736 | 0.0156031 | 0.0257577 | 0.0169285 | 0.0335529 | 0.0174905 | 0.0437071 | 0.017139 |
| | North Oaks | 0.0014253 | 0.0014253 | 0.0018482 | 0.0016752 | 0.0023968 | 0.0018913 | 0.0031080 | 0.0020427 | 0.0040304 | 0.0021010 | 0.0052265 | 0.002049 |
| | North St. Paul | 0.0059700 | 0.0059701 | 0.0061366 | 0.0055620 | 0.0063078 | 0.0049774 | 0.0064838 | 0.0042613 | 0.0066647 | 0.0034742 | 0.0068507 | 0.002686 |
| | Roseville | 0.0179385 | 0.0179388 | 0.0187397 | 0.0169051 | 0.0195766 | 0.0154477 | 0.0204509 | 0.0134408 | 0.0213643 | 0.0111368 | 0.0223184 | 0.008752 |
| | St. Anthony | 0.0011829 | 0.0011829 | 0.0018150 | 0.0016451 | 0.0027849 | 0.0021976 | 0.0042732 | 0.0028084 | 0.0065567 | 0.0034179 | 0.0100605 | 0.003945 |
| | St. Paul | 0.1353320 | | 0.1232510 | | 0.1122485 | | 0.1022282 | | 0.0931023 | | 0.0847911 | |
| | Shoreview | 0.0086638 | 0.0086639 | 0.0102098 | 0.0092539 | 0.0120318 | 0.0094942 | 0.0141789 | 0.0093187 | 0.0167092 | 0.0087102 | 0.0196910 | 0.007721 |
| | Spring Lake Park | 0.0000546 | 0.0000546 | 0.0000565 | 0.0000512 | 0.0000584 | 0.0000461 | 0.0000604 | 0.0000397 | 0.0000625 | 0.0000326 | 0.0000646 | 0.000025 |
| | Vadnais Heights | 0.0025596 | 0.0025596 | 0.0029046 | 0.0026326 | 0.0032961 | 0.0026009 | 0.0037405 | 0.0024583 | 0.0042447 | 0.0022127 | 0.0048169 | 0.001889 |
| | White Bear Lake | 0.0112871 | 0.0112873 | 0.0122766 | 0.0111272 | 0.0133529 | 0.0105366 | 0.0145235 | 0.0095452 | 0.0157968 | 0.0082345 | 0.0171816 | 0.006737 |
| Rice | Faribault | 0.0081335 | | 0.0076082 | | 0.0071167 | | 0.0066570 | | 0.0062270 | | 0.0058248 | |
| | Lonsdale | 0.0005809 | 0.0005809 | 0.0006644 | 0.0006022 | 0.0007598 | 0.0005996 | 0.0008690 | 0.0005711 | 0.0009939 | 0.0005181 | 0.0011366 | 0.000446 |
| | Morristown | 0.0003200 | | 0.0003052 | | 0.0002911 | | 0.0002777 | | 0.0002649 | | 0.0002526 | |
| | Northfield | 0.0062911 | 0.0062912 | 0.0065164 | 0.0059063 | 0.0067497 | 0.0053261 | 0.0069915 | 0.0045949 | 0.0072419 | 0.0037751 | 0.0075013 | 0.002941 |

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APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|--------|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Scott | Belle Plaine | 0.0013792 | 0.0013792 | 0.0014245 | 0.0012911 | 0.0014713 | 0.0011609 | 0.0015196 | 0.0009987 | 0.0015694 | 0.0008181 | 0.0016210 | 0.000636 |
| | Jordan | 0.0013336 | 0.0013337 | 0.0014601 | 0.0013234 | 0.0015985 | 0.0012613 | 0.0017500 | 0.0011501 | 0.0019159 | 0.0009987 | 0.0020976 | 0.000323 |
| | New Prague | 0.0009505 | | 0.0009355 | | 0.0009207 | | 0.0009062 | | 0.0008919 | | 0.0008778 | |
| | Prior Lake | 0.0036479 | 0.0036479 | 0.0059022 | 0.0053496 | 0.0095498 | 0.0075357 | 0.0154517 | 0.0101552 | 0.0250008 | 0.0130324 | 0.0404514 | 0.015362 |
| | Savage | 0.0019802 | 0.0019802 | 0.0025804 | 0.0023388 | 0.0033627 | 0.0026535 | 0.0043820 | 0.0028800 | 0.0057104 | 0.0029767 | 0.0074414 | 0.002918 |
| | Shakopee | 0.0049784 | 0.0049785 | 0.0055323 | 0.0050144 | 0.0061479 | 0.0048512 | 0.0068320 | 0.0044901 | 0.0075922 | 0.0039576 | 0.0084369 | 0.003308 |
| | Washington | Afton | 0.0012770 | 0.0012771 | 0.0024191 | 0.0021926 | 0.0045826 | 0.0036161 | 0.0086810 | 0.0057053 | 0.0164447 | 0.0085723 | 0.0311516 |
| | Bayport | 0.0014684 | | 0.0013572 | | 0.0012545 | | 0.0011595 | | 0.0010718 | | 0.0009907 | |
| | Birchwood Village | 0.0005303 | 0.0005304 | 0.0005782 | 0.0005241 | 0.0006304 | 0.0004974 | 0.0006873 | 0.0004517 | 0.0007494 | 0.0003906 | 0.0008170 | 0.000320 |
| | Cottage Grove | 0.0095122 | 0.0095124 | 0.0098060 | 0.0088879 | 0.0101088 | 0.0079768 | 0.0104210 | 0.0068489 | 0.0107428 | 0.0056000 | 0.0110746 | 0.004343 |
| | Dellwood | 0.0003761 | 0.0003761 | 0.0004435 | 0.0004019 | 0.0005229 | 0.0004126 | 0.0006165 | 0.0004052 | 0.0007270 | 0.0003790 | 0.0008572 | 0.000336 |
| | Forest Lake | 0.0023017 | 0.0023017 | 0.0025733 | 0.0023324 | 0.0028770 | 0.0022702 | 0.0032166 | 0.0021140 | 0.0035962 | 0.0018746 | 0.0040207 | 0.001577 |
| | Hugo | 0.0018885 | 0.0018885 | 0.0029042 | 0.0026322 | 0.0044660 | 0.0035241 | 0.0068679 | 0.0045137 | 0.0105615 | 0.0055055 | 0.0162416 | 0.006369 |
| | Lake Elmo | 0.0026522 | 0.0026523 | 0.0044157 | 0.0040022 | 0.0073515 | 0.0058010 | 0.0122393 | 0.0080439 | 0.0203770 | 0.0106221 | 0.0339250 | 0.013303 |
| | Lakeland | 0.0009074 | 0.0009075 | 0.0011315 | 0.0010256 | 0.0014110 | 0.0011134 | 0.0017594 | 0.0011563 | 0.0021939 | 0.0011436 | 0.0027356 | 0.001073 |
| | Lake St. Croix Beach | 0.0005889 | 0.0005889 | 0.0006301 | 0.0005711 | 0.0006742 | 0.0005320 | 0.0007213 | 0.0004741 | 0.0007718 | 0.0004023 | 0.0008258 | 0.000324 |
| | Landfall | 0.0003400 | 0.0003401 | 0.0003588 | 0.0003252 | 0.0003786 | 0.0002988 | 0.0003995 | 0.0002626 | 0.0004216 | 0.0002198 | 0.0004448 | 0.000171 |
| | Mahtomedi | 0.0019286 | 0.0019286 | 0.0021143 | 0.0019164 | 0.0023180 | 0.0018291 | 0.0025412 | 0.0016701 | 0.0027860 | 0.0014523 | 0.0030543 | 0.001193 |
| | Marine on St. Croix | 0.0002719 | | 0.0002688 | | 0.0002656 | | 0.0002626 | | 0.0002595 | | 0.0002565 | |

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APPENDIX TABLE 96. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 8, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Washington | Newport | 0.0016642 | 0.0016642 | 0.0017153 | 0.0015547 | 0.0017680 | 0.0013951 | 0.0018224 | 0.0011977 | 0.0018784 | 0.0009792 | 0.0019361 | 0.000759 |
| | Oakdale | 0.0060712 | 0.0060713 | 0.0064078 | 0.0058078 | 0.0067630 | 0.0053366 | 0.0071379 | 0.0046912 | 0.0075336 | 0.0039271 | 0.0079513 | 0.00312 |
| | Oak Park Heights | 0.0012976 | 0.0012976 | 0.0020497 | 0.0018578 | 0.0032379 | 0.0025550 | 0.0051148 | 0.0033615 | 0.0080796 | 0.0042117 | 0.0127631 | 0.005305 |
| | St. Paul Park | 0.0024359 | 0.0024359 | 0.0025430 | 0.0023049 | 0.0026549 | 0.0020949 | 0.0027717 | 0.0018216 | 0.0028936 | 0.0015084 | 0.0030209 | 0.001135 |
| | Stillwater | 0.0061548 | 0.0061549 | 0.0064149 | 0.0058143 | 0.0066859 | 0.0052758 | 0.0069684 | 0.0045798 | 0.0072629 | 0.0037860 | 0.0075697 | 0.002368 |
| | Willernie | 0.0003275 | | 0.0003084 | | 0.0002903 | | 0.0002734 | | 0.0002574 | | 0.0002423 | |
| | Woodbury | 0.0051567 | 0.0051568 | 0.0055363 | 0.0050179 | 0.0059437 | 0.0046901 | 0.0063812 | 0.0041939 | 0.0068509 | 0.0035712 | 0.0073551 | 0.002394 |
| Wright | Albertville | 0.0002825 | 0.0002825 | 0.0003183 | 0.0002885 | 0.0003587 | 0.0002831 | 0.0004043 | 0.0002657 | 0.0004556 | 0.0002375 | 0.0005134 | 0.000201 |
| | Annandale | 0.0007852 | 0.0007853 | 0.0008338 | 0.0007558 | 0.0008854 | 0.0006987 | 0.0009402 | 0.0006179 | 0.0009984 | 0.0005204 | 0.0010601 | 0.000416 |
| | Buffalo | 0.0011629 | | 0.0009284 | | 0.0007412 | | 0.0005918 | | 0.0004725 | | 0.0003772 | |
| | Cokato | 0.0010296 | 0.0010297 | 0.0010798 | 0.0009787 | 0.0011325 | 0.0008936 | 0.0011877 | 0.0007806 | 0.0012456 | 0.0006493 | 0.0013064 | 0.000512 |
| | Delano | 0.0012420 | 0.0012420 | 0.0013073 | 0.0011849 | 0.0013760 | 0.0010858 | 0.0014484 | 0.0009519 | 0.0015246 | 0.0007947 | 0.0016047 | 0.000629 |
| | Hanover | 0.0001998 | 0.0001998 | 0.0002311 | 0.0002094 | 0.0002672 | 0.0002109 | 0.0003090 | 0.0002031 | 0.0003574 | 0.0001863 | 0.0004133 | 0.000162 |
| | Howard Lake | 0.0006210 | | 0.0006183 | | 0.0006155 | | 0.0006128 | | 0.0006101 | | 0.0006074 | |
| | Maple Lake | 0.0005669 | | 0.0005502 | | 0.0005340 | | 0.0005183 | | 0.0005030 | | 0.0004882 | |
| | Monticello | 0.0014173 | 0.0014173 | 0.0015759 | 0.0014284 | 0.0017523 | 0.0013827 | 0.0019485 | 0.0012806 | 0.0021666 | 0.0011294 | 0.0024092 | 0.000945 |
| | Montrose | 0.0003816 | 0.0003816 | 0.0004350 | 0.0003943 | 0.0004959 | 0.0003913 | 0.0005654 | 0.0003716 | 0.0006445 | 0.0003360 | 0.0007347 | 0.000292 |
| | Rockford | 0.0010156 | 0.0010156 | 0.0013691 | 0.0012409 | 0.0018456 | 0.0014563 | 0.0024879 | 0.0016351 | 0.0033538 | 0.0017483 | 0.0045210 | 0.001772 |
| | St. Michael | 0.0007607 | 0.0007607 | 0.0008704 | 0.0007890 | 0.0009960 | 0.0007859 | 0.0011397 | 0.0007490 | 0.0013041 | 0.0006798 | 0.0014922 | 0.000585 |
| | SUM OF DECLINING COUNTIES | | 0.4486119 | | 0.4083795 | | 0.3721488 | | 0.3395016 | | 0.3100652 | | 0.2835073 |
| ONE MINUS DECLINING COUNTIES | | 0.5513881 | | 0.5916205 | | 0.6278512 | | 0.6604984 | | 0.6899348 | | 0.7164927 | |
| SUM OF INCREASING COUNTIES | | 0.5513787 | | 0.6527339 | | 0.7956669 | | 1.0049877 | | 1.3235378 | | 1.8271875 | |
| ADJUSTED TOTAL | | | 0.9999993 | | 0.9999993 | | 0.9999985 | | 0.9999996 | | 1.0000095 | | 1.000012 |

APPENDIX TABLE 97. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 9, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Cottonwood | Mountain Lake | 0.0333756 | 0.0333761 | 0.0336982 | 0.0332721 | 0.0340239 | 0.0330256 | 0.0343527 | 0.0326491 | 0.0346848 | 0.0321550 | 0.0350201 | 0.031555 |
| | Westbrook | 0.0143353 | | 0.0137928 | | 0.0132709 | | 0.0127686 | | 0.0122854 | | 0.0118205 | |
| | Windom | 0.0683928 | 0.0683939 | 0.0703746 | 0.0694848 | 0.0724138 | 0.0702892 | 0.0745122 | 0.0708170 | 0.0766713 | 0.0710793 | 0.0788929 | 0.071088 |
| Jackson | Heron Lake | 0.0114770 | | 0.0109048 | | 0.0103610 | | 0.0098444 | | 0.0093535 | | 0.0088872 | |
| | Jackson | 0.0556557 | | 0.0556441 | | 0.0556324 | | 0.0556207 | | 0.0556090 | | 0.0555974 | |
| | Lakefield | 0.0270437 | | 0.0264465 | | 0.0258625 | | 0.0252914 | | 0.0247330 | | 0.0241868 | |
| Lincoln | Hendricks | 0.0108028 | | 0.0102800 | | 0.0097826 | | 0.0093092 | | 0.0088587 | | 0.0084300 | |
| | Ivanhoe | 0.0111546 | | 0.0109793 | | 0.0108067 | | 0.0106369 | | 0.0104697 | | 0.0103051 | |
| | Lake Benton | 0.0127376 | | 0.0122359 | | 0.0117540 | | 0.0112911 | | 0.0108464 | | 0.0104192 | |
| Lyon | Tyler | 0.0198319 | 0.0198322 | 0.0200960 | 0.0198419 | 0.0203635 | 0.0197661 | 0.0206347 | 0.0196114 | 0.0209094 | 0.0193844 | 0.0211878 | 0.019092 |
| | Balaton | 0.0110227 | | 0.0108022 | | 0.0105861 | | 0.0103744 | | 0.0101669 | | 0.0099636 | |
| | Cottonwood | 0.0135439 | 0.0135441 | 0.0140035 | 0.0138265 | 0.0144788 | 0.0140540 | 0.0149702 | 0.0142278 | 0.0154782 | 0.0143493 | 0.0160035 | 0.014420 |
| | Marshall | 0.1635926 | 0.1635954 | 0.1804817 | 0.1781998 | 0.1991141 | 0.1932722 | 0.2196706 | 0.2087767 | 0.2423489 | 0.2246731 | 0.2673688 | 0.240918 |
| | Minneota | 0.0215470 | 0.0215474 | 0.0215743 | 0.0213015 | 0.0216017 | 0.0209679 | 0.0216291 | 0.0205564 | 0.0216565 | 0.0200770 | 0.0216840 | 0.019539 |
| | Tracy | 0.0363220 | | 0.0340004 | | 0.0318272 | | 0.0297928 | | 0.0278885 | | 0.0261060 | |
| Murray | Fulda | 0.0191724 | | 0.0190024 | | 0.0188339 | | 0.0186669 | | 0.0185014 | | 0.0183373 | |
| | Slayton | 0.0354719 | | 0.0341881 | | 0.0329508 | | 0.0317583 | | 0.0306089 | | 0.0295011 | |
| Nobles | Adrian | 0.0195828 | | 0.0194598 | | 0.0193376 | | 0.0192161 | | 0.0190954 | | 0.0189755 | |
| | Brewster | 0.0081937 | | 0.0081761 | | 0.0081586 | | 0.0081410 | | 0.0081236 | | 0.0081061 | |
| | Ellsworth | 0.0092198 | | 0.0089293 | | 0.0086479 | | 0.0083755 | | 0.0081116 | | 0.0078560 | |

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APPENDIX TABLE 97. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 9, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Pipestone | Edgerton | 0.0164607 | | 0.0163665 | | 0.0162729 | | 0.0161797 | | 0.0160871 | | 0.0159951 | |
| | Jasper | 0.0107149 | | 0.0100131 | | 0.0093572 | | 0.0087444 | | 0.0081716 | | 0.0076364 | |
| | Pipestone | 0.0716326 | | 0.0680406 | | 0.0646287 | | 0.0613879 | | 0.0583096 | | 0.0553856 | |
| Redwood | Lamberton | 0.0151268 | | 0.0143154 | | 0.0135475 | | 0.0128207 | | 0.0121330 | | 0.0114821 | |
| | Morgan | 0.0142914 | | 0.0138685 | | 0.0134582 | | 0.0130600 | | 0.0126735 | | 0.0122986 | |
| | Redwood Falls | 0.0763654 | 0.0763666 | 0.0778165 | 0.0768326 | 0.0792953 | 0.0769687 | 0.0808021 | 0.0767950 | 0.0823376 | 0.0763323 | 0.0839023 | 0.075602 |
| | Sanborn | 0.0075927 | | 0.0073574 | | 0.0071295 | | 0.0069085 | | 0.0066944 | | 0.0064870 | |
| | Wabasso | 0.0109201 | | 0.0104460 | | 0.0099926 | | 0.0095588 | | 0.0091438 | | 0.0087469 | |
| | Walnut Grove | 0.0110373 | | 0.0102840 | | 0.0095820 | | 0.0089280 | | 0.0083186 | | 0.0077508 | |
| Rock | Hills | 0.0087653 | 0.0087654 | 0.0088254 | 0.0087138 | 0.0088859 | 0.0086252 | 0.0089468 | 0.0085032 | 0.0090082 | 0.0083512 | 0.0090700 | 0.008173 |
| | Luverne | 0.0669568 | | 0.0661623 | | 0.0653772 | | 0.0646015 | | 0.0638349 | | 0.0630774 | |
| Yellow Medicine | Canby | 0.0314117 | | 0.0304716 | | 0.0295596 | | 0.0286750 | | 0.0278168 | | 0.0269843 | |
| | Clarkfield | 0.0171643 | | 0.0169189 | | 0.0166771 | | 0.0164387 | | 0.0162037 | | 0.0159721 | |
| | Granite Falls | 0.0390774 | 0.0390780 | 0.0399467 | 0.0394416 | 0.0408354 | 0.0396373 | 0.0417438 | 0.0396736 | 0.0426724 | 0.0395601 | 0.0436218 | 0.039306 |
| SUM OF DECLINING COUNTIES | | 0.5555007 | | 0.5390854 | | 0.5233940 | | 0.5083898 | | 0.4940385 | | 0.4803075 | |
| ONE MINUS DECLINING COUNTIES | | 0.4444993 | | 0.4609146 | | 0.4766060 | | 0.4916102 | | 0.5059615 | | 0.5196925 | |
| SUM OF INCREASING COUNTIES | | 0.4444916 | | 0.4668167 | | 0.4910121 | | 0.5172621 | | 0.5457671 | | 0.5767509 | |
| ADJUSTED TOTAL | | | 0.9999996 | | 0.9999998 | | 0.9999999 | | 0.9999998 | | 0.9999999 | | 1.000000 |

APPENDIX TABLE 98. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 10, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------|----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Blue Earth | Amboy | 0.0043109 | | 0.0041112 | | 0.0039208 | | 0.0037392 | | 0.0035660 | | 0.0034008 | |
| | Eagle Lake | 0.0104570 | 0.0104571 | 0.0131415 | 0.0130556 | 0.0165152 | 0.0162564 | 0.0207549 | 0.0201864 | 0.0260831 | 0.0249941 | 0.0327791 | 0.030852 |
| | Good Thunder | 0.0039836 | 0.0039836 | 0.0040106 | 0.0039844 | 0.0040377 | 0.0039745 | 0.0040651 | 0.0039537 | 0.0040926 | 0.0039217 | 0.0041203 | 0.003878 |
| | Lake Crystal | 0.0147822 | 0.0147823 | 0.0150693 | 0.0149708 | 0.0153621 | 0.0151214 | 0.0156605 | 0.0152315 | 0.0159647 | 0.0152981 | 0.0162748 | 0.015318 |
| | Madison Lake | 0.0042113 | 0.0042114 | 0.0042787 | 0.0042508 | 0.0043473 | 0.0042791 | 0.0044169 | 0.0042959 | 0.0044876 | 0.0043002 | 0.0045594 | 0.004291 |
| | Mankato | 0.2038137 | 0.2038156 | 0.2055107 | 0.2041672 | 0.2072220 | 0.2039755 | 0.2089473 | 0.2032236 | 0.2106870 | 0.2018906 | 0.2124411 | 0.199951 |
| | Mapleton | 0.0107843 | 0.0107844 | 0.0112299 | 0.0111565 | 0.0116939 | 0.0115107 | 0.0121771 | 0.0118435 | 0.0126802 | 0.0121508 | 0.0132042 | 0.012428 |
| | St. Clair | 0.0046595 | 0.0046595 | 0.0051632 | 0.0051294 | 0.0057213 | 0.0056317 | 0.0063398 | 0.0061662 | 0.0070252 | 0.0067319 | 0.0077846 | 0.007327 |
| Brown | Comfrey | 0.0038983 | | 0.0036444 | | 0.0034070 | | 0.0031851 | | 0.0029776 | | 0.0027837 | |
| | New Ulm | 0.0978490 | 0.0978498 | 0.0993460 | 0.0986965 | 0.1008661 | 0.0992859 | 0.1024094 | 0.0996041 | 0.1039762 | 0.0996351 | 0.1055672 | 0.099360 |
| | Sleepy Eye | 0.0254743 | | 0.0246764 | | 0.0239036 | | 0.0231549 | | 0.0224297 | | 0.0217272 | |
| | Springfield | 0.0163829 | | 0.0151542 | | 0.0140175 | | 0.0129662 | | 0.0119937 | | 0.0110941 | |
| Faribault | Blue Earth | 0.0293940 | | 0.0281795 | | 0.0270152 | | 0.0258991 | | 0.0248290 | | 0.0238032 | |
| | Elmore | 0.0062743 | | 0.0057442 | | 0.0052588 | | 0.0048144 | | 0.0044076 | | 0.0040352 | |
| | Kiester | 0.0047662 | | 0.0044739 | | 0.0041995 | | 0.0039419 | | 0.0037002 | | 0.0034732 | |
| | Minnesota Lake | 0.0052926 | | 0.0051785 | | 0.0050668 | | 0.0049576 | | 0.0048507 | | 0.0047461 | |
| | Wells | 0.0197548 | | 0.0188160 | | 0.0179218 | | 0.0170701 | | 0.0162589 | | 0.0154862 | |
| | Winnebago | 0.0132956 | | 0.0124487 | | 0.0116558 | | 0.0109134 | | 0.0102183 | | 0.0095674 | |
| Le Sueur | Cleveland | 0.0049724 | 0.0049725 | 0.0055417 | 0.0055055 | 0.0061762 | 0.0060795 | 0.0068834 | 0.0066948 | 0.0076715 | 0.0073512 | 0.0085498 | 0.008047 |
| | Kasota | 0.0052570 | | 0.0052274 | | 0.0051980 | | 0.0051687 | | 0.0051396 | | 0.0051107 | |
| | Le Center | 0.0139925 | 0.0139926 | 0.0141894 | 0.0140967 | 0.0143892 | 0.0141637 | 0.0145917 | 0.0141920 | 0.0147971 | 0.0141793 | 0.0150054 | 0.014123 |
| | Le Sueur | 0.0267690 | | 0.0266076 | | 0.0264473 | | 0.0262878 | | 0.0261294 | | 0.0259719 | |
| | Montgomery | 0.0167102 | | 0.0165070 | | 0.0163063 | | 0.0161080 | | 0.0159121 | | 0.0157187 | |
| | New Prague | 0.0074979 | | 0.0074691 | | 0.0074404 | | 0.0074118 | | 0.0073834 | | 0.0073550 | |
| | Waterville | 0.0122143 | | 0.0119077 | | 0.0116088 | | 0.0113174 | | 0.0110334 | | 0.0107564 | |

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APPENDIX TABLE 98. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 10, SELECTED YEARS 1980 TO 2005 (CONTINUE)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Martin | Ceylon | 0.0038628 | | 0.0036997 | | 0.0035435 | | 0.0033940 | | 0.0032507 | | 0.0031135 | |
| | Fairmont | 0.0818504 | 0.0818512 | 0.0821304 | 0.0815935 | 0.0824113 | 0.0811201 | 0.0826932 | 0.0804279 | 0.0829760 | 0.0795116 | 0.0832598 | 0.073364 |
| | Sherburn | 0.0090700 | | 0.0088150 | | 0.0085671 | | 0.0083263 | | 0.0080922 | | 0.0078646 | |
| | Trimont | 0.0057266 | | 0.0053000 | | 0.0049053 | | 0.0045399 | | 0.0042017 | | 0.0038888 | |
| | Truman | 0.0099023 | | 0.0097802 | | 0.0096596 | | 0.0095404 | | 0.0094228 | | 0.0093065 | |
| | Welcone | 0.0060823 | 0.0060823 | 0.0060845 | 0.0060448 | 0.0060868 | 0.0059915 | 0.0060891 | 0.0059223 | 0.0060914 | 0.0058371 | 0.0060937 | 0.005735 |
| Hicollet | Lafayette | 0.0036067 | | 0.0034566 | | 0.0033127 | | 0.0031748 | | 0.0030427 | | 0.0029160 | |
| | Hicollet | 0.0050435 | 0.0050436 | 0.0053166 | 0.0052818 | 0.0056044 | 0.0055166 | 0.0059077 | 0.0057459 | 0.0062275 | 0.0059675 | 0.0065647 | 0.006179 |
| | North Mankato | 0.0650548 | 0.0650554 | 0.0697932 | 0.0693369 | 0.0748768 | 0.0737038 | 0.0803307 | 0.0781302 | 0.0861819 | 0.0825837 | 0.0924593 | 0.087023 |
| | St. Peter | 0.0644220 | | 0.0630326 | | 0.0616733 | | 0.0603433 | | 0.0590419 | | 0.0577686 | |
| Sibley | Arlington | 0.0126553 | | 0.0125074 | | 0.0123612 | | 0.0122167 | | 0.0120739 | | 0.0119328 | |
| | Gaylord | 0.0137507 | 0.0137508 | 0.0138107 | 0.0137204 | 0.0138709 | 0.0136536 | 0.0139315 | 0.0135498 | 0.0139922 | 0.0134080 | 0.0140533 | 0.013227 |
| | Gibbon | 0.0055985 | | 0.0052172 | | 0.0048618 | | 0.0045307 | | 0.0042221 | | 0.0039345 | |
| | Henderson | 0.0052570 | | 0.0050795 | | 0.0049079 | | 0.0047421 | | 0.0045819 | | 0.0044271 | |
| | Winthrop | 0.0097885 | | 0.0094139 | | 0.0090537 | | 0.0087072 | | 0.0083740 | | 0.0080535 | |
| Waseca | Janesville | 0.0134947 | 0.0134949 | 0.0139508 | 0.0138596 | 0.0144223 | 0.0141963 | 0.0149097 | 0.0145012 | 0.0154135 | 0.0147700 | 0.0159344 | 0.014998 |
| | New Richland | 0.0089846 | 0.0089847 | 0.0090660 | 0.0090067 | 0.0091481 | 0.0090048 | 0.0092310 | 0.0089781 | 0.0093146 | 0.0089257 | 0.0093989 | 0.008846 |
| | Waseca | 0.0584674 | 0.0584680 | 0.0611490 | 0.0607493 | 0.0639536 | 0.0629516 | 0.0668868 | 0.0650545 | 0.0699545 | 0.0670338 | 0.0731630 | 0.063861 |
| Watsonwan | Butterfield | 0.0045101 | | 0.0043999 | | 0.0042923 | | 0.0041874 | | 0.0040850 | | 0.0039851 | |
| | Medelia | 0.0151523 | | 0.0144847 | | 0.0138465 | | 0.0132365 | | 0.0126533 | | 0.0120958 | |
| | St. James | 0.0309163 | | 0.0300621 | | 0.0292315 | | 0.0284239 | | 0.0276385 | | 0.0268749 | |
| SUM OF DECLINING COUNTIES | | 0.3777600 | | 0.3653939 | | 0.3535833 | | 0.3422982 | | 0.3315095 | | 0.3211911 | |
| ONE MINUS DECLINING COUNTIES | | 0.6222400 | | 0.6346061 | | 0.6464167 | | 0.6577018 | | 0.6684905 | | 0.6788089 | |
| SUM OF INCREASING COUNTIES | | 0.6222337 | | 0.6387820 | | 0.6567050 | | 0.6762254 | | 0.6976167 | | 0.7212127 | |
| ADJUSTED TOTAL | | | 0.9999994 | | 0.9999998 | | 0.9999998 | | 0.9999998 | | 0.9999998 | | 1.0000000 |

APPENDIX TABLE 99. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 11, SELECTED YEARS 1980 TO 2005

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|----------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Dodge | Claremont | 0.0025607 | 0.0025608 | 0.0026000 | 0.0025645 | 0.0026398 | 0.0025565 | 0.0026802 | 0.0025377 | 0.0027212 | 0.0025087 | 0.0027629 | 0.0024700 |
| | Dodge Center | 0.0078686 | 0.0078687 | 0.0079764 | 0.0078675 | 0.0080857 | 0.0078307 | 0.0081965 | 0.0077607 | 0.0083089 | 0.0076601 | 0.0084227 | 0.0075310 |
| | Hayfield | 0.0053859 | 0.0053859 | 0.0056033 | 0.0055269 | 0.0058296 | 0.0056457 | 0.0060650 | 0.0057426 | 0.0063099 | 0.0058173 | 0.0065647 | 0.0053700 |
| | Kasson | 0.0122491 | 0.0122493 | 0.0132464 | 0.0130656 | 0.0143248 | 0.0138730 | 0.0154911 | 0.0146675 | 0.0167523 | 0.0154443 | 0.0181162 | 0.0161900 |
| | Mantorville | 0.0030547 | 0.0030548 | 0.0031880 | 0.0031445 | 0.0033270 | 0.0032221 | 0.0034721 | 0.0032875 | 0.0036235 | 0.0033406 | 0.0037816 | 0.0033810 |
| | West Concord | 0.0033017 | | 0.0031111 | | 0.0029314 | | 0.0027621 | | 0.0026026 | | 0.0024523 | |
| Fillmore | Chatfield | 0.0050262 | | 0.0047293 | | 0.0044500 | | 0.0041871 | | 0.0039398 | | 0.0037071 | |
| | Harmony | 0.0049092 | | 0.0046165 | | 0.0043413 | | 0.0040825 | | 0.0038391 | | 0.0036102 | |
| | Lanesboro | 0.0039993 | | 0.0036936 | | 0.0034113 | | 0.0031506 | | 0.0029097 | | 0.0026873 | |
| | Mabel | 0.0037307 | | 0.0036187 | | 0.0035100 | | 0.0034046 | | 0.0033024 | | 0.0032033 | |
| | Preston | 0.0064041 | | 0.0061138 | | 0.0058366 | | 0.0055719 | | 0.0053193 | | 0.0050781 | |
| | Rushford | 0.0064041 | | 0.0062850 | | 0.0061681 | | 0.0060534 | | 0.0059409 | | 0.0058304 | |
| Freeborn | Rushford Village | 0.0029811 | | 0.0029753 | | 0.0029695 | | 0.0029637 | | 0.0029579 | | 0.0029521 | |
| | Spring Valley | 0.0113350 | | 0.0108324 | | 0.0103521 | | 0.0098930 | | 0.0094544 | | 0.0090351 | |
| | Albert Lea | 0.0831928 | | 0.0819240 | | 0.0806745 | | 0.0794440 | | 0.0782323 | | 0.0770391 | |
| | Alden | 0.0029767 | | 0.0028408 | | 0.0027111 | | 0.0025872 | | 0.0024691 | | 0.0023563 | |
| | Clarks Grove | 0.0026864 | 0.0026865 | 0.0029589 | 0.0029185 | 0.0032590 | 0.0031562 | 0.0035895 | 0.0033987 | 0.0039536 | 0.0036449 | 0.0043545 | 0.0033940 |
| | Glenville | 0.0036874 | 0.0036874 | 0.0037840 | 0.0037323 | 0.0038831 | 0.0037606 | 0.0039848 | 0.0037729 | 0.0040892 | 0.0037699 | 0.0041953 | 0.0037520 |
| Goodhue | Cannon Falls | 0.0114954 | 0.0114955 | 0.0117234 | 0.0115634 | 0.0119560 | 0.0115789 | 0.0121932 | 0.0115449 | 0.0124351 | 0.0114642 | 0.0126818 | 0.0113300 |
| | Goodhue | 0.0028468 | | 0.0028271 | | 0.0028075 | | 0.0027881 | | 0.0027688 | | 0.0027497 | |
| | Kenyon | 0.0066251 | | 0.0062438 | | 0.0058844 | | 0.0055457 | | 0.0052265 | | 0.0049257 | |
| | Lake City | 0.0020365 | | 0.0019484 | | 0.0018642 | | 0.0017835 | | 0.0017064 | | 0.0016326 | |
| | Pine Island | 0.0086051 | 0.0086052 | 0.0091390 | 0.0090143 | 0.0097059 | 0.0093998 | 0.0103081 | 0.0097600 | 0.0109476 | 0.0100928 | 0.0116258 | 0.0103900 |
| | Red Wing | 0.0595170 | 0.0595178 | 0.0608581 | 0.0600276 | 0.0622294 | 0.0602667 | 0.0636315 | 0.0602484 | 0.0650654 | 0.0599853 | 0.0665315 | 0.0594800 |

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APPENDIX TABLE 99. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 11, SELECTED YEARS 1980 TO 2005 (CONTINUED)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|---------|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Goodhue | Wanamingo | 0.0031067 | 0.0031067 | 0.0031906 | 0.0031471 | 0.0032768 | 0.0031735 | 0.0033654 | 0.0031864 | 0.0034563 | 0.0031864 | 0.0035497 | 0.003174 |
| | Zumbata | 0.0092249 | | 0.0091662 | | 0.0091080 | | 0.0090501 | | 0.0089925 | | 0.0089354 | |
| Houston | Caledonia | 0.0116600 | | 0.0112925 | | 0.0109365 | | 0.0105918 | | 0.0102580 | | 0.0099346 | |
| | Hokah | 0.0029724 | | 0.0028449 | | 0.0027229 | | 0.0026061 | | 0.0024943 | | 0.0023873 | |
| | Houston | 0.0045799 | | 0.0043563 | | 0.0041436 | | 0.0039413 | | 0.0037489 | | 0.0035659 | |
| | La Crescent | 0.0159190 | 0.0159192 | 0.0165675 | 0.0163414 | 0.0172424 | 0.0166986 | 0.0179448 | 0.0169908 | 0.0186759 | 0.0172177 | 0.0194367 | 0.017379 |
| | Spring Grove | 0.0055245 | | 0.0052184 | | 0.0049292 | | 0.0046560 | | 0.0043980 | | 0.0041542 | |
| | Adams | 0.0034534 | | 0.0032948 | | 0.0031434 | | 0.0029991 | | 0.0028613 | | 0.0027299 | |
| Hower | Austin | 0.0997447 | | 0.0909460 | | 0.0829234 | | 0.0756086 | | 0.0689389 | | 0.0628577 | |
| | Brownsdale | 0.0029941 | | 0.0029409 | | 0.0028887 | | 0.0028374 | | 0.0027871 | | 0.0027376 | |
| | Grand Meadow | 0.0041813 | | 0.0041454 | | 0.0041097 | | 0.0040744 | | 0.0040394 | | 0.0040046 | |
| | LeRoy | 0.0040297 | | 0.0038140 | | 0.0036099 | | 0.0034168 | | 0.0032339 | | 0.0030609 | |
| | Lyle | 0.0024958 | | 0.0023568 | | 0.0022255 | | 0.0021015 | | 0.0019844 | | 0.0018739 | |
| | Byron | 0.0074310 | 0.0074311 | 0.0090266 | 0.0089034 | 0.0109649 | 0.0106191 | 0.0133194 | 0.0126112 | 0.0161794 | 0.0149162 | 0.0196536 | 0.017573 |
| Olmsted | Chatfield | 0.0038780 | 0.0038780 | 0.0040987 | 0.0040427 | 0.0043319 | 0.0041953 | 0.0045784 | 0.0043350 | 0.0048390 | 0.0044611 | 0.0051143 | 0.004573 |
| | Eyota | 0.0053901 | 0.0053902 | 0.0063015 | 0.0062155 | 0.0073670 | 0.0071346 | 0.0086126 | 0.0081547 | 0.0100688 | 0.0092827 | 0.0117713 | 0.010525 |
| | Oronoco | 0.0024871 | | 0.0023900 | | 0.0022967 | | 0.0022071 | | 0.0021209 | | 0.0020381 | |
| | Rochester | 0.2508304 | 0.2508339 | 0.2621372 | 0.2585599 | 0.2739538 | 0.2653131 | 0.2863032 | 0.2710811 | 0.2992091 | 0.2758476 | 0.3126969 | 0.279594 |
| | Stewartville | 0.0170068 | 0.0170070 | 0.0201466 | 0.0198717 | 0.0238661 | 0.0231133 | 0.0282723 | 0.0267691 | 0.0334920 | 0.0308770 | 0.0396753 | 0.035475 |
| Steele | Blooming Prairie | 0.0085316 | | 0.0083735 | | 0.0082184 | | 0.0080661 | | 0.0079167 | | 0.0077700 | |
| | Ellendale | 0.0024048 | | 0.0023604 | | 0.0023169 | | 0.0022741 | | 0.0022322 | | 0.0021910 | |
| | Medford | 0.0033580 | 0.0033581 | 0.0034739 | 0.0034265 | 0.0035937 | 0.0034803 | 0.0037177 | 0.0035200 | 0.0038459 | 0.0035456 | 0.0039786 | 0.003557 |
| | Dwatonna | 0.0807320 | 0.0807332 | 0.0838614 | 0.0827170 | 0.0871119 | 0.0843644 | 0.0904886 | 0.0856774 | 0.0939961 | 0.0866571 | 0.0976396 | 0.087303 |

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APPENDIX TABLE 99. PROJECTED AND ADJUSTED CITY SHARE OF REGIONAL EMPLOYMENT BY CITY AND COUNTY, MINNESOTA REGION 11, SELECTED YEARS 1980 TO 2005 (CONTINUE)

| County | City | 1980 | | 1985 | | 1990 | | 1995 | | 2000 | | 2005 | |
|------------------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted | Projected | Adjusted |
| Wabasha | Elgin | 0.0028901 | 0.0028901 | 0.0029412 | 0.0029011 | 0.0029933 | 0.0028989 | 0.0030463 | 0.0028843 | 0.0031002 | 0.0028581 | 0.0031551 | 0.002821 |
| | Lake City | 0.0195200 | 0.0195203 | 0.0199009 | 0.0196293 | 0.0202892 | 0.0196492 | 0.0206851 | 0.0195853 | 0.0210887 | 0.0194421 | 0.0215002 | 0.019224 |
| | Mezeppa | 0.0029464 | 0.0029464 | 0.0031360 | 0.0030932 | 0.0033377 | 0.0032325 | 0.0035525 | 0.0033636 | 0.0037810 | 0.0034858 | 0.0040243 | 0.003598 |
| | Plainview | 0.0104683 | 0.0104684 | 0.0107314 | 0.0105850 | 0.0110011 | 0.0106542 | 0.0112777 | 0.0106781 | 0.0115612 | 0.0106585 | 0.0118518 | 0.010597 |
| | Wabasha | 0.0102778 | | 0.0097049 | | 0.0091640 | | 0.0086533 | | 0.0081710 | | 0.0077155 | |
| Winona | Goodview | 0.0111226 | 0.0111227 | 0.0125008 | 0.0123302 | 0.0140498 | 0.0136067 | 0.0157907 | 0.0149512 | 0.0177474 | 0.0163617 | 0.0199465 | 0.017835 |
| | Lewiston | 0.0053122 | 0.0053122 | 0.0055061 | 0.0054310 | 0.0057072 | 0.0055272 | 0.0059155 | 0.0056010 | 0.0061315 | 0.0056528 | 0.0063554 | 0.005683 |
| | Rollingstone | 0.0022878 | 0.0022878 | 0.0023581 | 0.0023259 | 0.0024305 | 0.0023538 | 0.0025051 | 0.0023719 | 0.0025820 | 0.0023804 | 0.0026613 | 0.002380 |
| | St. Charles | 0.0094632 | | 0.0093971 | | 0.0093315 | | 0.0092664 | | 0.0092017 | | 0.0091375 | |
| | Stockton | 0.0022401 | 0.0022402 | 0.0025911 | 0.0025558 | 0.0029972 | 0.0029026 | 0.0034668 | 0.0032825 | 0.0040100 | 0.0036969 | 0.0046384 | 0.004147 |
| | Winona | 0.1086489 | | 0.1041375 | | 0.0998134 | | 0.0956689 | | 0.0916964 | | 0.0878890 | |
| SUM OF DECLINING COUNTIES | | 0.4384427 | | 0.4184987 | | 0.3997930 | | 0.3822358 | | 0.3657442 | | 0.3502419 | |
| ONE MINUS DECLINING COUNTIES | | 0.5615573 | | 0.5815013 | | 0.6002070 | | 0.6177642 | | 0.6342558 | | 0.6497581 | |
| SUM OF INCREASING COUNTIES | | 0.5615492 | | 0.5895464 | | 0.6197542 | | 0.6524535 | | 0.6879706 | | 0.7266874 | |
| ADJUSTED TOTAL | | | 0.9999997 | | 0.9999998 | | 0.9999999 | | 0.9999996 | | 0.9999998 | | 1.0000000 |

APPENDIX TABLE 100. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 2, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|------------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 260,417 | -- |
| 1961 | -- | 258,608 | -- |
| 1962 | 276,403 | 267,536 | - 3.2 |
| 1963 | -- | 268,384 | -- |
| 1964 | -- | 284,349 | -- |
| 1965 | 297,960 | 299,634 | 0.6 |
| 1966 | 318,154 | 343,480 | 8.0 |
| 1967 | 338,031 | 361,172 | 6.8 |
| 1968 | 364,843 | 363,215 | - 0.4 |
| 1969 | 402,604 | 414,510 | 3.0 |
| 1970 | 442,856 | 434,162 | - 2.0 |
| 1971 | 480,062 | 464,370 | - 3.3 |
| 1972 | 524,683 | 494,286 | - 5.8 |
| 1973 | 608,392 | 612,435 | 0.7 |
| 1974 | 675,695 | 693,837 | 2.7 |
| 1975 | 747,909 | 748,763 | 0.1 |
| 1976 | 877,401 | 866,170 | - 1.3 |
| 1977 | 976,211 | 936,165 | - 4.1 |
| 1978 | 1,089,407 | 1,050,114 | - 3.6 |
| 1979 | 1,220,824 | 1,171,125 | - 4.1 |
| 1980 | 1,331,118 | 1,293,451 | - 2.8 |
| 1981 | 1,488,385 | 1,340,788 | - 9.9 |
| 1982 | -- | 1,402,441 | -- |
| Average Absolute Difference | | | 3.5 |
| Mean = -1.033 (S.D. = 4.347) | | | |
| U ₁ = 0.027 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 101. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 3, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|-----------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 606,959 | -- |
| 1961 | -- | 593,510 | -- |
| 1962 | 599,261 | 612,451 | 2.2 |
| 1963 | -- | 631,739 | -- |
| 1964 | -- | 669,776 | -- |
| 1965 | 681,387 | 703,786 | 3.3 |
| 1966 | 724,301 | 776,648 | 7.2 |
| 1967 | 768,136 | 812,366 | 5.8 |
| 1968 | 818,893 | 880,221 | 7.5 |
| 1969 | 827,328 | 937,894 | 13.4 |
| 1970 | 951,373 | 964,879 | 1.4 |
| 1971 | 1,009,273 | 987,902 | - 2.1 |
| 1972 | 1,079,370 | 1,040,274 | - 3.6 |
| 1973 | 1,187,261 | 1,267,085 | 6.7 |
| 1974 | 1,298,913 | 1,420,699 | 9.4 |
| 1975 | 1,481,878 | 1,600,105 | 8.0 |
| 1976 | 1,710,447 | 1,759,393 | 2.9 |
| 1977 | 1,776,479 | 1,714,830 | - 3.5 |
| 1978 | 2,042,004 | 2,196,643 | 7.6 |
| 1979 | 2,267,991 | 2,594,554 | 14.4 |
| 1980 | 2,413,441 | 2,608,311 | 8.1 |
| 1981 | 2,654,163 | 2,890,121 | 8.9 |
| 1982 | -- | 3,085,430 | -- |
| Average Absolute Difference | | | 6.4 |
| Mean = 5.422 (S.D. = 5.173) | | | |
| U ₁ = 0.041 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 102. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 4, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|------------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 121,045 | -- |
| 1961 | -- | 124,076 | -- |
| 1962 | 136,588 | 128,633 | - 5.8 |
| 1963 | -- | 135,937 | -- |
| 1964 | -- | 146,500 | -- |
| 1965 | 166,540 | 159,664 | - 4.1 |
| 1966 | 170,051 | 170,912 | 0.5 |
| 1967 | 188,198 | 186,755 | - 0.8 |
| 1968 | 195,995 | 195,370 | - 0.3 |
| 1969 | 215,601 | 218,346 | 1.3 |
| 1970 | 250,444 | 221,751 | -11.5 |
| 1971 | 266,444 | 246,954 | - 7.3 |
| 1972 | 289,419 | 264,717 | - 8.5 |
| 1973 | 408,649 | 371,038 | - 9.2 |
| 1974 | 429,621 | 413,688 | - 3.7 |
| 1975 | 388,795 | 391,809 | 0.8 |
| 1976 | 479,335 | 513,066 | 7.0 |
| 1977 | 510,344 | 540,202 | 5.9 |
| 1978 | 616,789 | 638,086 | 3.5 |
| 1979 | 624,625 | 698,146 | 11.8 |
| 1980 | 707,259 | 786,148 | 11.2 |
| 1981 | 793,195 | 848,636 | 7.0 |
| 1982 | -- | 873,784 | -- |
| Average Absolute Difference | | | 5.6 |
| Mean = -0.122 (S.D. = 6.942) | | | |
| U ₁ = 0.039 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 103. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 5, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|------------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 155,777 | -- |
| 1961 | -- | 159,923 | -- |
| 1962 | 143,431 | 156,798 | 9.3 |
| 1963 | -- | 164,322 | -- |
| 1964 | -- | 171,597 | -- |
| 1965 | 170,751 | 189,715 | 11.1 |
| 1966 | 176,286 | 207,563 | 17.7 |
| 1967 | 189,918 | 223,716 | 17.8 |
| 1968 | 201,311 | 235,807 | 17.1 |
| 1969 | 222,048 | 235,177 | 5.9 |
| 1970 | 252,364 | 265,385 | 5.2 |
| 1971 | 277,890 | 286,780 | 3.2 |
| 1972 | 301,695 | 305,577 | 1.3 |
| 1973 | 446,884 | 448,154 | 0.3 |
| 1974 | 459,939 | 509,814 | 10.8 |
| 1975 | 443,658 | 482,857 | 8.8 |
| 1976 | 448,304 | 510,537 | 13.9 |
| 1977 | 535,002 | 587,516 | 9.8 |
| 1978 | 573,816 | 620,750 | 8.2 |
| 1979 | 632,195 | 726,488 | 14.9 |
| 1980 | 688,378 | 861,327 | 25.1 |
| 1981 | 805,769 | 852,258 | 5.8 |
| 1982 | -- | 870,732 | -- |
| Average Absolute Difference | | | 10.3 |
| Mean = 10.344 (S.D. = 6.491) | | | |
| U ₁ = 0.062 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 104. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 6, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|-----------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 286,601 | -- |
| 1961 | -- | 298,493 | -- |
| 1962 | 286,943 | 312,965 | 9.1 |
| 1963 | -- | 311,113 | -- |
| 1964 | -- | 331,530 | -- |
| 1965 | 339,145 | 361,700 | 6.7 |
| 1966 | 373,533 | 417,903 | 11.9 |
| 1967 | 406,603 | 447,464 | 10.0 |
| 1968 | 456,415 | 479,412 | 5.0 |
| 1969 | 516,174 | 532,524 | 3.2 |
| 1970 | 574,552 | 567,469 | - 1.2 |
| 1971 | 619,344 | 616,301 | - 0.5 |
| 1972 | 677,515 | 684,590 | 1.0 |
| 1973 | 834,557 | 891,397 | 6.8 |
| 1974 | 921,350 | 936,009 | 1.6 |
| 1975 | 1,010,557 | 1,041,291 | 3.0 |
| 1976 | 1,054,679 | 1,154,055 | 9.4 |
| 1977 | 1,227,163 | 1,274,663 | 3.9 |
| 1978 | 1,382,528 | 1,366,170 | - 1.2 |
| 1979 | 1,571,642 | 1,583,193 | 0.7 |
| 1980 | 1,720,901 | 1,798,238 | 4.5 |
| 1981 | 1,933,442 | 1,863,030 | - 3.6 |
| 1982 | -- | 1,970,561 | -- |
| Average Absolute Difference | | | 4.6 |
| Mean = 3.906 (S.D. = 4.400) | | | |
| U ₁ = 0.021 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 105. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 7, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|------------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 229,609 | -- |
| 1961 | -- | 236,396 | -- |
| 1962 | 187,746 | 245,190 | 30.6 |
| 1963 | -- | 256,866 | -- |
| 1964 | -- | 253,530 | -- |
| 1965 | 256,696 | 284,516 | 10.8 |
| 1966 | 276,594 | 321,158 | 16.1 |
| 1967 | 278,029 | 332,450 | 19.6 |
| 1968 | 298,887 | 345,671 | 15.7 |
| 1969 | 328,267 | 395,173 | 20.4 |
| 1970 | 372,682 | 416,905 | 11.9 |
| 1971 | 383,865 | 431,575 | 12.4 |
| 1972 | 422,650 | 460,025 | 8.8 |
| 1973 | 695,640 | 714,910 | 2.8 |
| 1974 | 682,929 | 766,225 | 12.2 |
| 1975 | 675,488 | 730,638 | 8.2 |
| 1976 | 571,883 | 677,524 | 18.5 |
| 1977 | 817,456 | 857,833 | 4.9 |
| 1978 | 867,230 | 945,528 | 9.0 |
| 1979 | 945,675 | 1,069,018 | 13.0 |
| 1980 | 983,656 | 1,252,233 | 27.3 |
| 1981 | 1,132,748 | 1,269,185 | 12.0 |
| 1982 | -- | 1,287,611 | -- |
| Average Absolute Difference | | | 14.1 |
| Mean = 14.122 (S.D. = 7.160) | | | |
| U ₁ = 0.069 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 106. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 8, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|------------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 4,024,927 | -- |
| 1961 | -- | 4,256,590 | -- |
| 1962 | 4,692,652 | 4,597,202 | - 2.0 |
| 1963 | -- | 4,767,968 | -- |
| 1964 | -- | 5,108,350 | -- |
| 1965 | 5,760,188 | 5,535,077 | - 3.9 |
| 1966 | 6,313,759 | 6,237,127 | - 1.2 |
| 1967 | 6,884,702 | 6,799,956 | - 1.2 |
| 1968 | 7,619,246 | 8,019,724 | 5.3 |
| 1969 | 8,484,226 | 8,700,395 | 2.5 |
| 1970 | 9,133,746 | 8,694,707 | - 4.8 |
| 1971 | 9,682,834 | 8,960,516 | - 7.5 |
| 1972 | 10,324,131 | 9,470,577 | - 8.3 |
| 1973 | 11,509,262 | 10,997,903 | - 4.4 |
| 1974 | 12,631,099 | 12,073,306 | - 4.4 |
| 1975 | 13,633,599 | 13,687,275 | 0.4 |
| 1976 | 15,183,020 | 15,328,456 | 1.0 |
| 1977 | 17,038,654 | 16,875,248 | - 1.0 |
| 1978 | 19,135,660 | 17,988,666 | - 6.0 |
| 1979 | 21,839,915 | 20,884,845 | - 4.4 |
| 1980 | 24,442,731 | 23,075,499 | - 5.6 |
| 1981 | 27,033,406 | 24,401,441 | - 9.7 |
| 1982 | -- | 26,805,334 | -- |
| Average Absolute Difference | | | 4.1 |
| Mean = -3.067 (S.D. = 3.888) | | | |
| U ₁ = 0.031 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 107. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 9, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|-------------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 287,115 | -- |
| 1961 | -- | 303,577 | -- |
| 1962 | 242,345 | 316,293 | 30.5 |
| 1963 | -- | 336,303 | -- |
| 1964 | -- | 345,554 | -- |
| 1965 | 338,789 | 367,320 | 8.4 |
| 1966 | 370,705 | 439,757 | 18.6 |
| 1967 | 361,199 | 478,402 | 32.4 |
| 1968 | 392,700 | 497,602 | 26.7 |
| 1969 | 436,003 | 573,026 | 31.4 |
| 1970 | 499,169 | 619,637 | 24.1 |
| 1971 | 504,327 | 626,247 | 24.2 |
| 1972 | 580,590 | 752,977 | 29.7 |
| 1973 | 834,817 | 1,022,732 | 22.5 |
| 1974 | 769,394 | 1,083,742 | 40.9 |
| 1975 | 808,680 | 992,373 | 22.7 |
| 1976 | 773,853 | 976,342 | 26.2 |
| 1977 | 1,120,333 | 1,137,553 | 1.5 |
| 1978 | 1,163,823 | 1,315,155 | 13.0 |
| 1979 | 1,292,194 | 1,424,831 | 10.3 |
| 1980 | 1,320,233 | 1,645,803 | 24.7 |
| 1981 | 1,520,022 | 1,645,798 | 8.3 |
| 1982 | -- | 1,647,136 | -- |
| Average Absolute Difference | | | 22.0 |
| Mean = 22.006 (S.D. = 10.188) | | | |
| U ₁ = 0.091 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 108. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 10, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|-----------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 349,252 | -- |
| 1961 | -- | 390,779 | -- |
| 1962 | 371,721 | 408,727 | 10.0 |
| 1963 | -- | 328,530 | -- |
| 1964 | -- | 461,049 | -- |
| 1965 | 496,170 | 484,423 | - 2.4 |
| 1966 | 550,134 | 566,590 | 3.0 |
| 1967 | 551,353 | 592,556 | 7.5 |
| 1968 | 596,003 | 613,448 | 2.9 |
| 1969 | 652,741 | 722,153 | 10.6 |
| 1970 | 736,615 | 772,973 | 4.9 |
| 1971 | 760,860 | 790,274 | 3.9 |
| 1972 | 839,739 | 908,315 | 8.2 |
| 1973 | 1,166,992 | 1,219,179 | 4.5 |
| 1974 | 1,185,408 | 1,361,983 | 14.9 |
| 1975 | 1,237,973 | 1,332,539 | 7.6 |
| 1976 | 1,281,783 | 1,457,101 | 13.7 |
| 1977 | 1,565,656 | 1,568,181 | 0.2 |
| 1978 | 1,647,655 | 1,764,500 | 7.1 |
| 1979 | 1,832,913 | 1,939,499 | 5.8 |
| 1980 | 1,912,667 | 2,221,566 | 16.2 |
| 1981 | 2,161,768 | 2,207,697 | 2.1 |
| 1982 | -- | 2,347,079 | -- |
| Average Absolute Difference | | | 7.0 |
| Mean = 6.706 (S.D. = 5.015) | | | |
| U ₁ = 0.043 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 109. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA REGION 11, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|-----------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 674,175 | -- |
| 1961 | -- | 716,796 | -- |
| 1962 | 703,696 | 745,330 | 5.9 |
| 1963 | -- | 757,709 | -- |
| 1964 | -- | 794,966 | -- |
| 1965 | 819,669 | 884,359 | 7.9 |
| 1966 | 895,652 | 992,578 | 10.8 |
| 1967 | 944,732 | 1,052,933 | 11.5 |
| 1968 | 1,040,253 | 1,120,484 | 7.7 |
| 1969 | 1,135,638 | 1,219,946 | 7.4 |
| 1970 | 1,248,120 | 1,292,970 | 3.6 |
| 1971 | 1,305,046 | 1,350,810 | 3.5 |
| 1972 | 1,427,197 | 1,470,984 | 3.1 |
| 1973 | 1,732,462 | 1,868,545 | 7.9 |
| 1974 | 1,800,071 | 2,046,443 | 13.7 |
| 1975 | 1,948,921 | 2,151,842 | 10.4 |
| 1976 | 2,138,632 | 2,374,278 | 11.0 |
| 1977 | 2,475,992 | 2,552,475 | 3.1 |
| 1978 | 2,712,664 | 2,772,297 | 2.2 |
| 1979 | 3,024,344 | 3,282,442 | 8.5 |
| 1980 | 3,270,428 | 3,557,390 | 8.8 |
| 1981 | 3,643,135 | 3,787,262 | 4.0 |
| 1982 | -- | 3,996,617 | -- |
| Average Absolute Difference | | | 7.3 |
| Mean = 7.278 (S.D. = 3.438) | | | |
| U ₁ = 0.036 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 110. ESTIMATES OF PERSONAL INCOME^a AND DIFFERENCES IN ESTIMATES, MINNESOTA, 1960-1982 (THOUSAND DOLLARS)

| Year | Department of Commerce Estimate | Input-Output Analysis Estimate | Percent Difference |
|-----------------------------|------------------------------------|-----------------------------------|--------------------|
| 1960 | -- | 7,132,851 | -- |
| 1961 | -- | 7,472,237 | -- |
| 1962 | 7,777,598 | 7,935,007 | 2.0 |
| 1963 | -- | 8,184,337 | -- |
| 1964 | -- | 8,737,128 | -- |
| 1965 | 9,490,628 | 9,459,177 | - 0.3 |
| 1966 | 10,328,721 | 10,666,547 | 3.3 |
| 1967 | 11,093,868 | 11,495,091 | 3.6 |
| 1968 | 12,163,054 | 12,965,901 | 6.6 |
| 1969 | 13,468,271 | 14,206,291 | 5.5 |
| 1970 | 14,721,328 | 14,489,916 | - 1.6 |
| 1971 | 15,564,119 | 15,054,170 | - 3.3 |
| 1972 | 16,774,613 | 16,155,861 | - 3.7 |
| 1973 | 19,886,564 | 19,864,614 | - 0.1 |
| 1974 | 21,351,382 | 21,852,084 | 2.3 |
| 1975 | 22,835,014 | 23,686,040 | 3.7 |
| 1976 | 25,013,304 | 26,187,027 | 4.7 |
| 1977 | 28,562,121 | 28,665,950 | 0.4 |
| 1978 | 31,912,119 | 31,387,187 | - 1.6 |
| 1979 | 35,934,732 | 36,193,287 | 0.7 |
| 1980 | 39,590,325 | 39,937,043 | 0.9 |
| 1981 | 44,059,745 | 42,123,019 | - 4.4 |
| 1982 | -- | 45,270,023 | -- |
| Average Absolute Difference | | | 2.7 |
| Mean = 1.039 (S.D. = 3.199) | | | |
| U ₁ = 0.015 | | | |

^aThe input-output personal income estimates are in current-year dollars to correspond with Department of Commerce estimates.

APPENDIX TABLE 111. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 2, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|---------------|---------------|---------------|---------------|----------------------------|---------------|---------------|---------------|---------------|----------------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 9,480 | 5,928 | 6,586 | 6,655 | 6,723 | 6,589 | 6,472 | 6,237 | 6,060 | 5,922 | 5,811 |
| (3) Metal Mining | 4,536 | 2,758 | 1,312 | 1,351 | 834 | 1,032 | 961 | 797 | 649 | 516 | 395 |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 1,195 | 1,938 | 1,904 | 1,736 | 1,550 | 1,738 | 1,794 | 1,927 | 2,050 | 2,164 | 2,270 |
| (8) Lumber & Assoc Prod | 7,324 | 7,369 | 10,797 | 10,468 | 10,281 | 10,551 | 10,870 | 11,669 | 12,467 | 13,265 | 14,063 |
| (9) Ag Proc & Misc Mfg | 4,300 | 6,150 | 5,675 | 5,779 | 5,591 | 5,687 | 5,706 | 5,744 | 5,773 | 5,795 | 5,813 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 855 | 932 | 1,248 | 1,271 | 1,236 | 1,247 | 1,266 | 1,316 | 1,365 | 1,415 | 1,464 |
| (13) Comm & Pub Utilities | 1,354 | 1,401 | 1,587 | 1,618 | 1,572 | 1,605 | 1,630 | 1,685 | 1,733 | 1,775 | 1,812 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 6,443 | 8,683 | 13,921 | 14,239 | 14,158 | 14,706 | 15,471 | 17,384 | 19,297 | 21,210 | 23,124 |
| (16) Fin, Ins, Real Estate | 876 | 1,191 | 1,918 | 2,039 | 2,073 | 2,068 | 2,193 | 2,515 | 2,851 | 3,202 | 3,569 |
| (17) Bus & Pers Services | 970 | 1,539 | 3,078 | 3,259 | 3,306 | 3,426 | 3,579 | 3,961 | 4,344 | 4,726 | 5,108 |
| (18) Prof & Soc Services | 2,733 | 4,627 | 9,204 | 9,743 | 9,885 | 10,327 | 10,844 | 12,137 | 13,430 | 14,723 | 16,015 |
| (19) Government | 8,480 | 12,729 | 15,786 | 16,174 | 15,822 | 16,224 | 16,810 | 18,212 | 19,529 | 20,769 | 21,940 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 48,546 | 55,245 | 73,016 | 74,332 | 73,031 | 75,199 | 77,596 | 83,583 | 89,547 | 95,481 | 101,383 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 2, there was no project employment.

APPENDIX TABLE 112. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 3, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|----------------|----------------|----------------|----------------|----------------------------|----------------|----------------|----------------|----------------|----------------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 5,265 | 2,943 | 3,476 | 3,512 | 3,548 | 3,439 | 3,302 | 3,015 | 2,784 | 2,596 | 2,440 |
| (3) Metal Mining | 17,579 | 15,230 | 16,163 | 16,649 | 10,268 | 13,501 | 13,686 | 14,091 | 14,433 | 14,724 | 14,976 |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 3,344 | 4,328 | 5,450 | 4,969 | 4,437 | 5,001 | 5,175 | 5,611 | 6,045 | 6,479 | 6,912 |
| (8) Lumber & Assoc Prod | 4,091 | 3,837 | 3,414 | 3,310 | 3,251 | 3,331 | 3,337 | 3,353 | 3,366 | 3,377 | 3,386 |
| (9) Ag Proc & Misc Mfg | 18,159 | 21,534 | 15,409 | 15,691 | 15,182 | 15,225 | 14,861 | 14,038 | 13,321 | 12,690 | 12,130 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 3,230 | 2,231 | 2,172 | 2,212 | 2,150 | 2,155 | 2,115 | 2,033 | 1,972 | 1,923 | 1,884 |
| (13) Comm & Pub Utilities | 2,716 | 3,239 | 3,065 | 3,124 | 3,036 | 3,100 | 3,149 | 3,261 | 3,361 | 3,451 | 3,532 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 12,423 | 17,648 | 22,586 | 23,102 | 22,970 | 23,364 | 24,232 | 26,403 | 28,573 | 30,744 | 32,914 |
| (16) Fin, Ins, Real Estate | 2,944 | 3,642 | 3,960 | 4,208 | 4,280 | 4,672 | 4,850 | 5,295 | 5,741 | 6,186 | 6,632 |
| (17) Bus & Pers Services | 3,166 | 4,355 | 5,060 | 5,356 | 5,434 | 5,391 | 5,619 | 6,196 | 6,784 | 7,383 | 7,995 |
| (18) Prof & Soc Services | 8,042 | 11,379 | 16,800 | 17,783 | 18,044 | 18,250 | 19,013 | 20,920 | 22,827 | 24,734 | 26,642 |
| (19) Government | 16,613 | 24,603 | 26,326 | 26,974 | 26,387 | 26,909 | 27,596 | 29,232 | 30,759 | 32,189 | 33,530 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 97,572 | 114,969 | 123,881 | 126,890 | 118,987 | 124,338 | 126,936 | 133,448 | 139,966 | 146,477 | 152,973 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 3, there was no project employment.

APPENDIX TABLE 113. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 4, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|---|---------------------|---------------|---------------|---------------|---------------|----------------------------|---------------|---------------|---------------|---------------|---------------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 6,138 | 4,463 | 4,085 | 4,128 | 4,170 | 4,094 | 4,034 | 3,913 | 3,823 | 3,753 | 3,696 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 1,162 | 1,186 | 1,286 | 1,172 | 1,047 | 1,177 | 1,195 | 1,235 | 1,269 | 1,298 | 1,323 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfy | 2,161 | 3,087 | 3,932 | 4,004 | 3,874 | 4,002 | 4,156 | 4,510 | 4,826 | 5,109 | 5,364 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 878 | 985 | 1,190 | 1,212 | 1,178 | 1,208 | 1,236 | 1,299 | 1,352 | 1,398 | 1,439 |
| (13) Comm & Pub Utilities | 414 | 365 | 668 | 680 | 661 | 683 | 709 | 770 | 825 | 875 | 920 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 3,387 | 4,597 | 6,382 | 6,528 | 6,491 | 6,608 | 6,885 | 7,536 | 8,133 | 8,683 | 9,192 |
| (16) Fin, Ins, Real Estate | 449 | 642 | 979 | 1,040 | 1,058 | 1,050 | 1,099 | 1,218 | 1,328 | 1,432 | 1,530 |
| (17) Bus & Pers Services | 582 | 797 | 1,656 | 1,753 | 1,779 | 1,824 | 1,930 | 2,196 | 2,462 | 2,728 | 2,994 |
| (18) Prof & Soc Services | 1,550 | 3,158 | 5,921 | 6,267 | 6,359 | 6,587 | 6,993 | 8,009 | 9,025 | 10,040 | 11,056 |
| (19) Government | 3,710 | 5,798 | 7,206 | 7,383 | 7,222 | 7,395 | 7,634 | 8,180 | 8,661 | 9,087 | 9,468 |
| (20) Households Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 20,431 | 25,078 | 33,305 | 34,167 | 33,839 | 34,628 | 35,873 | 38,866 | 41,703 | 44,403 | 46,982 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 4, there was no project employment.

APPENDIX TABLE 114. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 5, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|--------|--------|--------|--------|----------------------------|--------|--------|--------|--------|--------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 10,203 | 7,805 | 6,926 | 6,998 | 7,070 | 6,930 | 6,812 | 6,568 | 6,379 | 6,228 | 6,105 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 774 | 1,061 | 1,059 | 965 | 862 | 967 | 991 | 1,046 | 1,096 | 1,140 | 1,181 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 2,447 | 2,752 | 5,415 | 5,514 | 5,335 | 5,570 | 5,873 | 6,630 | 7,387 | 8,144 | 8,900 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 552 | 696 | 975 | 993 | 965 | 1,002 | 1,050 | 1,171 | 1,291 | 1,410 | 1,529 |
| (13) Comm & Pub Utilities | 1,238 | 1,307 | 1,171 | 1,194 | 1,160 | 1,181 | 1,193 | 1,220 | 1,242 | 1,260 | 1,276 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 3,623 | 4,972 | 6,897 | 7,054 | 7,014 | 7,161 | 7,513 | 8,382 | 9,239 | 10,084 | 10,916 |
| (16) Fin, Ins, Real Estate | 591 | 932 | 1,120 | 1,190 | 1,210 | 1,195 | 1,244 | 1,363 | 1,475 | 1,582 | 1,683 |
| (17) Bus & Pers Services | 636 | 781 | 1,120 | 1,186 | 1,203 | 1,199 | 1,262 | 1,421 | 1,581 | 1,743 | 1,907 |
| (18) Prof & Soc Services | 1,890 | 3,111 | 4,967 | 5,257 | 5,334 | 5,678 | 5,979 | 6,731 | 7,484 | 8,236 | 8,988 |
| (19) Government | 3,515 | 5,129 | 6,121 | 6,272 | 6,135 | 6,277 | 6,476 | 6,943 | 7,368 | 7,757 | 8,114 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 25,469 | 28,546 | 35,771 | 36,623 | 36,288 | 37,160 | 38,393 | 41,474 | 44,541 | 47,585 | 50,601 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 5, there was no project employment.

APPENDIX TABLE 115. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 6, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|--------|--------|--------|--------|----------------------------|---------|---------|---------|---------|---------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 14,847 | 11,615 | 11,775 | 11,898 | 12,020 | 11,824 | 11,694 | 11,429 | 11,226 | 11,067 | 10,938 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 1,991 | 2,164 | 3,663 | 3,339 | 2,982 | 3,338 | 3,464 | 3,760 | 4,031 | 4,279 | 4,507 |
| (8) Lumber & Assoc Prod | 1,061 | 1,554 | 1,624 | 1,575 | 1,547 | 1,624 | 1,676 | 1,805 | 1,934 | 2,063 | 2,192 |
| (9) Ag Proc & Misc Mfg | 8,589 | 13,249 | 18,791 | 19,135 | 18,514 | 19,213 | 20,004 | 21,806 | 23,395 | 24,805 | 26,066 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 1,497 | 1,939 | 2,480 | 2,527 | 2,455 | 2,536 | 2,631 | 2,856 | 3,061 | 3,250 | 3,424 |
| (13) Comm & Pub Utilities | 1,286 | 1,396 | 2,179 | 2,221 | 2,159 | 2,231 | 2,318 | 2,522 | 2,708 | 2,878 | 3,033 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 8,303 | 11,809 | 18,447 | 18,868 | 18,761 | 19,207 | 20,238 | 22,761 | 25,211 | 27,592 | 29,905 |
| (16) Fin, Ins, Real Estate | 1,029 | 1,639 | 2,569 | 2,730 | 2,776 | 2,770 | 2,935 | 3,348 | 3,759 | 4,168 | 4,576 |
| (17) Bus & Pers Services | 1,059 | 1,679 | 3,536 | 3,743 | 3,798 | 3,945 | 4,164 | 4,712 | 5,259 | 5,807 | 6,354 |
| (18) Prof & Soc Services | 3,921 | 6,416 | 12,744 | 13,489 | 13,687 | 13,693 | 14,513 | 16,564 | 18,616 | 20,667 | 22,718 |
| (19) Government | 7,415 | 12,425 | 16,452 | 16,857 | 16,490 | 17,023 | 17,867 | 19,903 | 21,840 | 23,685 | 25,446 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 50,998 | 65,885 | 94,260 | 96,382 | 95,189 | 97,404 | 101,505 | 111,466 | 121,040 | 130,261 | 139,159 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 6, there was no project employment.

APPENDIX TABLE 116. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 7, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|---------------|---------------|---------------|---------------|----------------------------|---------------|---------------|---------------|---------------|---------------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 13,342 | 10,305 | 9,482 | 9,581 | 9,680 | 9,507 | 9,378 | 9,110 | 8,900 | 8,731 | 8,592 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 1,501 | 1,513 | 1,992 | 1,816 | 1,622 | 1,827 | 1,864 | 1,945 | 2,016 | 2,078 | 2,132 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 3,683 | 5,346 | 9,491 | 9,665 | 9,351 | 9,848 | 10,367 | 11,665 | 12,963 | 14,261 | 15,559 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 735 | 808 | 1,007 | 1,026 | 997 | 1,026 | 1,058 | 1,132 | 1,200 | 1,262 | 1,320 |
| (13) Comm & Pub Utilities | 1,038 | 1,047 | 984 | 1,003 | 974 | 988 | 990 | 994 | 998 | 1,000 | 1,003 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 5,423 | 6,620 | 8,122 | 8,308 | 8,260 | 8,373 | 8,658 | 9,329 | 9,945 | 10,512 | 11,037 |
| (16) Fin, Ins, Real Estate | 808 | 1,238 | 1,523 | 1,619 | 1,646 | 1,628 | 1,700 | 1,874 | 2,042 | 2,202 | 2,357 |
| (17) Bus & Pers Services | 671 | 751 | 1,870 | 1,979 | 2,008 | 2,105 | 2,215 | 2,491 | 2,767 | 3,043 | 3,319 |
| (18) Prof & Soc Services | 2,053 | 3,288 | 5,104 | 5,403 | 5,482 | 5,794 | 6,100 | 6,865 | 7,630 | 8,395 | 9,161 |
| (19) Government | 5,234 | 7,804 | 9,403 | 9,634 | 9,424 | 9,672 | 10,041 | 10,920 | 11,743 | 12,516 | 13,243 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 34,488 | 38,720 | 48,978 | 50,034 | 49,444 | 50,768 | 52,370 | 56,325 | 60,203 | 64,001 | 67,723 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 7, there was no project employment.

APPENDIX TABLE 117. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 8, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|-----------|-----------|-----------|-----------|----------------------------|-----------|-----------|-----------|-----------|-----------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 20,492 | 15,578 | 15,281 | 15,441 | 15,599 | 15,291 | 15,014 | 14,452 | 14,021 | 13,682 | 13,407 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 44,696 | 51,705 | 58,787 | 53,590 | 47,861 | 49,420 | 50,211 | 51,979 | 53,500 | 54,820 | 55,979 |
| (8) Lumber & Assoc Prod | 18,722 | 23,004 | 31,231 | 30,279 | 29,737 | 30,548 | 31,516 | 33,936 | 36,357 | 38,777 | 41,198 |
| (9) Ag Proc & Misc Mfg | 237,279 | 322,755 | 347,134 | 353,482 | 342,023 | 345,909 | 352,201 | 366,509 | 379,084 | 390,222 | 400,156 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 40,798 | 41,830 | 44,989 | 45,833 | 44,539 | 45,255 | 45,541 | 46,166 | 46,687 | 47,127 | 47,504 |
| (13) Comm & Pub Utilities | 28,691 | 29,724 | 32,673 | 33,306 | 32,366 | 32,867 | 33,050 | 33,445 | 33,770 | 34,041 | 34,272 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 116,562 | 162,998 | 226,001 | 231,158 | 229,845 | 234,762 | 246,327 | 275,106 | 303,695 | 332,095 | 360,308 |
| (16) Fin, Ins, Real Estate | 43,520 | 57,408 | 82,091 | 87,237 | 88,713 | 87,823 | 91,579 | 100,718 | 109,512 | 117,980 | 126,139 |
| (17) Bus & Pers Services | 38,498 | 63,044 | 101,124 | 107,041 | 108,608 | 110,971 | 116,398 | 129,964 | 143,531 | 157,098 | 170,664 |
| (18) Prof & Soc Services | 68,993 | 108,044 | 170,590 | 180,571 | 183,215 | 188,233 | 198,061 | 222,631 | 247,201 | 271,771 | 296,341 |
| (19) Government | 102,662 | 164,847 | 202,679 | 207,666 | 203,145 | 209,042 | 218,164 | 240,405 | 261,873 | 282,607 | 302,645 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 760,913 | 1,040,937 | 1,312,580 | 1,345,604 | 1,325,651 | 1,350,119 | 1,398,062 | 1,515,313 | 1,629,230 | 1,740,221 | 1,848,614 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 8, there was no project employment.

APPENDIX TABLE 118. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 9, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|--------|--------|--------|--------|----------------------------|--------|--------|--------|--------|--------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 17,290 | 13,573 | 13,064 | 13,201 | 13,336 | 13,071 | 12,850 | 12,404 | 12,066 | 11,801 | 11,588 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 2,068 | 1,958 | 1,979 | 1,804 | 1,611 | 1,775 | 1,775 | 1,774 | 1,773 | 1,772 | 1,772 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 5,730 | 7,922 | 12,594 | 12,824 | 12,409 | 12,881 | 13,634 | 15,515 | 17,396 | 19,278 | 21,159 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 872 | 880 | 1,380 | 1,406 | 1,366 | 1,399 | 1,428 | 1,492 | 1,547 | 1,595 | 1,638 |
| (13) Comm & Pub Utilities | 1,241 | 1,199 | 998 | 1,017 | 988 | 1,004 | 1,011 | 1,024 | 1,035 | 1,044 | 1,051 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 7,060 | 9,311 | 10,050 | 10,280 | 10,221 | 10,325 | 10,607 | 11,248 | 11,812 | 12,312 | 12,758 |
| (16) Fin, Ins, Real Estate | 1,162 | 1,558 | 1,937 | 2,059 | 2,093 | 2,051 | 2,103 | 2,221 | 2,324 | 2,414 | 2,495 |
| (17) Bus & Pers Services | 788 | 911 | 1,781 | 1,885 | 1,913 | 2,021 | 2,134 | 2,415 | 2,696 | 2,978 | 3,259 |
| (18) Prof & Soc Services | 1,874 | 4,171 | 5,853 | 6,195 | 6,286 | 6,705 | 7,084 | 8,033 | 8,981 | 9,930 | 10,878 |
| (19) Government | 5,737 | 8,446 | 9,526 | 9,760 | 9,548 | 9,780 | 10,111 | 10,881 | 11,577 | 12,211 | 12,789 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 43,822 | 49,929 | 59,162 | 60,431 | 59,771 | 61,013 | 62,735 | 67,006 | 71,208 | 75,334 | 79,386 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 9, there was no project employment.

APPENDIX TABLE 119. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 10, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|---------------|----------------|----------------|----------------|----------------------------|----------------|----------------|----------------|----------------|----------------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 16,504 | 12,865 | 12,192 | 12,319 | 12,446 | 12,186 | 11,952 | 11,487 | 11,138 | 10,868 | 10,652 |
| (3) Metal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 2,735 | 3,028 | 3,290 | 2,999 | 2,679 | 2,973 | 3,014 | 3,101 | 3,174 | 3,236 | 3,289 |
| (8) Lumber & Assoc Prod | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (9) Ag Proc & Misc Mfg | 14,075 | 20,511 | 27,584 | 28,088 | 27,177 | 27,853 | 28,852 | 31,120 | 33,110 | 34,869 | 36,436 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 1,645 | 1,863 | 2,055 | 2,093 | 2,034 | 2,074 | 2,099 | 2,154 | 2,199 | 2,237 | 2,270 |
| (13) Comm & Pub Utilities | 1,988 | 1,899 | 1,892 | 1,928 | 1,874 | 1,903 | 1,914 | 1,937 | 1,955 | 1,970 | 1,982 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 10,069 | 14,106 | 18,271 | 18,688 | 18,582 | 18,873 | 19,587 | 21,256 | 22,780 | 24,176 | 25,459 |
| (16) Fin, Ins, Real Estate | 2,262 | 3,129 | 3,013 | 3,201 | 3,256 | 3,172 | 3,216 | 3,310 | 3,388 | 3,454 | 3,509 |
| (17) Bus & Pers Services | 1,385 | 1,817 | 3,769 | 3,990 | 4,048 | 4,254 | 4,498 | 5,110 | 5,721 | 6,333 | 6,944 |
| (18) Prof & Soc Services | 4,769 | 8,262 | 14,037 | 14,858 | 15,076 | 15,901 | 16,823 | 19,130 | 21,436 | 23,743 | 26,049 |
| (19) Government | 8,081 | 12,434 | 14,618 | 14,977 | 14,651 | 15,008 | 15,519 | 16,703 | 17,766 | 18,728 | 19,600 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 63,513 | 79,914 | 100,721 | 103,141 | 101,823 | 104,196 | 107,474 | 115,308 | 122,669 | 129,613 | 136,191 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 10, there was no project employment.

APPENDIX TABLE 120. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA REGION 11, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment | | | | | |
|----------------------------|---------------------|----------------|----------------|----------------|----------------|----------------------------|----------------|----------------|----------------|----------------|----------------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 19,814 | 15,802 | 15,214 | 15,373 | 15,531 | 15,241 | 15,001 | 14,507 | 14,122 | 13,813 | 13,560 |
| (3) Metal Mining | 184 | 6 | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 4,855 | 5,542 | 5,430 | 4,950 | 4,421 | 4,558 | 4,581 | 4,632 | 4,674 | 4,711 | 4,742 |
| (8) Lumber & Assoc Prod | 1,935 | 3,432 | 3,666 | 3,554 | 3,490 | 3,599 | 3,713 | 3,998 | 4,283 | 3,568 | 4,852 |
| (9) Ag Proc & Misc Mfg | 28,405 | 35,334 | 42,442 | 43,218 | 41,817 | 42,654 | 43,656 | 45,968 | 48,037 | 49,899 | 51,584 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 3,901 | 4,274 | 4,575 | 4,660 | 4,529 | 4,623 | 4,691 | 4,845 | 4,979 | 5,097 | 5,202 |
| (13) Comm & Pub Utilities | 3,044 | 2,803 | 3,335 | 3,400 | 3,304 | 3,372 | 3,423 | 3,537 | 3,634 | 3,720 | 3,794 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 16,426 | 22,771 | 28,977 | 29,638 | 29,469 | 29,976 | 31,201 | 34,184 | 37,058 | 39,829 | 42,503 |
| (16) Fin, Ins, Real Estate | 3,081 | 4,446 | 6,105 | 6,488 | 6,597 | 6,525 | 6,797 | 7,462 | 8,104 | 8,725 | 9,325 |
| (17) Bus & Pers Services | 3,680 | 5,433 | 8,398 | 8,889 | 9,019 | 9,252 | 9,685 | 10,767 | 11,850 | 12,932 | 14,014 |
| (18) Prof & Soc Services | 12,405 | 18,257 | 31,528 | 33,372 | 33,861 | 34,923 | 36,646 | 40,953 | 45,260 | 49,568 | 53,875 |
| (19) Government | 12,405 | 18,862 | 22,630 | 23,186 | 22,682 | 23,267 | 24,131 | 26,208 | 28,175 | 30,040 | 31,811 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^a | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 110,135 | 136,962 | 172,300 | 176,728 | 174,720 | 177,989 | 183,525 | 197,060 | 210,176 | 222,900 | 235,263 |

^aProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of Region 11, there was no project employment.

APPENDIX TABLE 121. HISTORIC AND MODEL-PROJECTED EMPLOYMENT BY ECONOMIC SECTOR, MINNESOTA, SELECTED YEARS 1960 TO 2005

| Sector | Historic Employment | | | | | Model-Projected Employment ^a | | | | | |
|----------------------------|---------------------|------------------|------------------|------------------|------------------|---|------------------|------------------|------------------|------------------|------------------|
| | 1960 | 1970 | 1980 | 1981 | 1982 | 1983 | 1985 | 1990 | 1995 | 2000 | 2005 |
| (1) & (2) Agriculture | 142,761 | 108,308 | 105,197 | 106,297 | 107,389 | 105,321 | 103,583 | 100,046 | 97,332 | 95,188 | 93,448 |
| (3) Metal Mining | 22,299 | 17,993 | 17,475 | 18,000 | 11,102 | 14,533 | 14,647 | 14,888 | 15,082 | 15,240 | 15,371 |
| (4) Coal Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (5) Pet/NG Exp/Ext | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (6) Nonmetallic Mining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (7) Construction | 65,118 | 75,050 | 85,696 | 78,120 | 69,769 | 73,552 | 74,853 | 77,824 | 80,462 | 82,828 | 84,972 |
| (8) Lumber & Assoc Prod | 33,487 | 39,870 | 52,294 | 50,700 | 49,793 | 51,269 | 52,779 | 56,556 | 60,330 | 64,102 | 67,871 |
| (9) Ag Proc & Misc Mfg | 327,687 | 443,933 | 494,367 | 503,408 | 487,088 | 494,826 | 505,441 | 529,943 | 551,971 | 571,946 | 590,202 |
| (10) Pet Refining | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (11) Metal Processing | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (12) Transportation | 55,463 | 57,076 | 62,669 | 63,844 | 62,042 | 63,131 | 63,732 | 65,105 | 66,314 | 67,391 | 68,366 |
| (13) Comm & Pub Utilities | 43,578 | 44,846 | 49,210 | 50,163 | 48,747 | 49,598 | 50,057 | 51,078 | 51,955 | 52,716 | 53,384 |
| (14) Elec Generation | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| (15) Retail | 192,863 | 267,767 | 365,188 | 373,521 | 371,399 | 379,065 | 396,627 | 439,945 | 482,489 | 524,325 | 565,506 |
| (16) Fin, Ins, Real Estate | 57,171 | 76,471 | 106,196 | 112,853 | 114,762 | 114,005 | 118,813 | 130,528 | 141,825 | 152,733 | 163,283 |
| (17) Bus & Pers Services | 51,924 | 81,897 | 132,525 | 140,279 | 142,333 | 145,588 | 152,758 | 170,691 | 188,637 | 206,596 | 224,566 |
| (18) Prof & Soc Services | 110,337 | 174,032 | 281,616 | 298,092 | 302,457 | 311,446 | 327,701 | 368,320 | 408,907 | 449,465 | 489,995 |
| (19) Government | 177,325 | 278,065 | 336,734 | 345,020 | 337,508 | 346,713 | 360,609 | 394,162 | 426,128 | 456,648 | 485,835 |
| (20) Households | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| Project ^b | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL | 1,280,013 | 1,665,308 | 2,089,167 | 2,140,297 | 2,104,389 | 2,149,044 | 2,221,602 | 2,399,084 | 2,571,430 | 2,739,178 | 2,902,804 |

^aThe Minnesota adaptation of NEDAM does not project state level data, therefore, regional model-projected employments were summed to obtain Minnesota totals.

^bProject employment refers to direct employment associated with a site-specific single- or multiple-project development. Because no developments were included in either the historic or projected economic base of any state region, there was no project employment.

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