



Minnesota Regional Transit  
Board: Records.

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REGIONAL TRANSIT BOARD

270 Metro Square Building  
St. Paul, Minnesota 55101  
612/292-8789

MEETING OF THE REGIONAL TRANSIT BOARD

Monday, February 10, 1986  
Council Chambers  
4:00 p.m.

AGENDA

1. Call to Order and Roll Call
2. Approval of Agenda
3. CONSENT LIST - 2 Resolutions 86-5  
86-6
4. REPORT OF THE POLICY COMMITTEE Todd Lefko,  
Chair
  - a. Presentation on Phase I Report,  
Transit Service Needs Assessment  
(information only) *Need Motion* OK
5. REPORT OF THE ADMINISTRATION AND FINANCE COMMITTEE Ruth Franklin,  
Chair
6. OTHER BUSINESS
  - a. Chairman's Report
  - b. Members' Reports
  - c. Staff Reports
7. PUBLIC COMMENT

Elliott Perovich  
Chairman

S Bertland  
J Martha  
L J  
Armi Etzel

Mary  
Brant  
KT  
J H  
C F  
Peter F  
F Robina  
Gray Falls  
Kueh

REGIONAL TRANSIT BOARD  
ROLL CALL AND ATTENDANCE SHEET

DATE: 2/10/86

BOARD OR COMMITTEE RTB

MEMBER NAME	PRESENT	Res. VOTE	Res. VOTE	VOTE	VOTE	VOTE
Chairman	✓	✓	✓			
Kenneth Bedeau	✓	✓	✓			
Doris Caranicas	✓	✓	✓			
Ruth Franklin	✓	✓	✓			
Alison Fuhr	_____					
Paul Joyce	✓	✓	✓			
Edward Kranz	✓	✓	✓			
Todd Lefko	✓	✓	✓			
Bernard Skrebes	✓	✓	✓			

REGIONAL TRANSIT BOARD

270 Metro Square Building, St. Paul, Minnesota 55101

Minutes of the Meeting of the  
REGIONAL TRANSIT BOARD  
Metropolitan Council Chambers  
January 27, 1986

BOARD MEMBERS PRESENT: Vice Chair Doris Caranicas; Kenneth Bedeau, Ruth Franklin, Alison Fuhr, Paul Joyce, Edward Kranz, Todd Lefko and Bernard Skrebes

OTHERS PRESENT: Judy Hollander, Mary Fitzgerald, Judith McCourt, Katie Turnbull, Cindy Fish, Liz Carpenter, Bob Dietrick and Mike Kuehn, Regional Transit Board Staff; Emil Brandt, Metropolitan Council; Greg Failor, Metropolitan Transit Commission; and Tim Marx, legal counsel

The meeting was called to order at 4:00 p.m. and roll taken. Joyce moved approval of the agenda; Bedeau seconded the motion. Motion carried unanimously.

Fuhr moved approval of the minutes of the December 16, 1985, and January 6, 1986, meetings; Bedeau seconded the motion. Motion carried unanimously.

1986 COMPENSATION AND BENEFIT PACKAGE, RESOLUTION NO. 86-3

The board reviewed the chairman's memorandum, dated January 21, 1986, which describes the proposed compensation and benefits for the staff for calendar year 1986. The proposed plan includes a salary increase of 3.75 percent for each employee at his or her anniversary date, an increased dependent health insurance contribution, and the addition of Martin Luther King day as a paid holiday. Skrebes moved:

That the Regional Transit Board approve the Resolution 86-3 establishing compensation and benefits for the Regional Transit Board staff for calendar year 1986.

Fuhr seconded the motion. Franklin stated that she feels merit pay increases are much more important to employee morale and to the overall benefit of the agency than across-the-board increases. She understands that 3.75 percent is a cost of living figure. Sometime within the first quarter there will be a merit pay performance evaluation system developed and she encouraged staff to establish that as fast as possible because no two people perform exactly alike and they should be compensated based on performance. She would not vote against the package, but wants the staff's efforts to be recognized. Caranicas said this was discussed at the board's executive session and those present agreed with Franklin's comments on what should happen. Roll call vote was taken on the motion and resolution. The motion carried unanimously (Kranz not present).

CONSENT LIST

Project Development Report/Environmental Assessment Bridge Replacement and Improvements on 2.5 Mile Section of Trunk Highway 5 in Eden Prairie, Minnesota

Joyce moved that the chairman's recommended consent list be approved; Lefko seconded the motion. The motion carried unanimously.

REPORT OF THE POLICY COMMITTEE

Committee Chair Lefko said the next meeting of the Policy Committee will be February 12. At that time they will begin an work on an overview of the Metropolitan Transit Commission. He invited other members to attend.

REPORT OF ADMINISTRATION AND FINANCE COMMITTEE

NEW SPACE LEASE

Committee Chair Franklin reviewed the committee report dated January 21, 1986, noting that there has been a change in the MBE and WBE requirements in the lease. The percentage of the total construction contract is increased from seven to ten percent. Johnson said the representatives of the metro agencies are attempting to resolve the problem of remaining in Metro Square Building until the new facility is completed.

Franklin moved:

That, with a change of the MBE and WBE Requirements of Article 21.00 from "seven percent (7%)" to "ten percent (10%) of the total construction contract amount," the Regional Transit Board approve the lease with MGC Limited Partnership for office space in the Metropolitan Government Center, to be constructed at Fourth and Sibley Streets in the City of St. Paul for the term as provided therein and authorize the chairman and executive director to execute said lease subject to action February 6 by the Three-Agency New Space Policy Committee affirming execution.

Skrebes seconded the motion. Vote was taken; the motion carried unanimously.

DEPUTY TREASURER APPOINTMENT, RESOLUTION NO. 86-4

Committee Chair Franklin reviewed the January 21, 1986, committee report and moved:

That the Regional Transit Board approve Resolution 86-4 appointing the director of administration as deputy treasurer of the Regional Transit Board.

Joyce seconded the motion. Roll call vote was taken. The motion carried unanimously.

## RENEWAL OF PUBLIC OFFICIALS LIABILITY INSURANCE

Committee Chair Franklin reviewed the committee report dated January 21, 1986, and moved:

That the Regional Transit Board approve renewal of the Public Official's Liability Policy in a coverage amount of \$1,000,000, deductible of \$5,000, with Lloyd's of London through the Cedarleaf, Cedarleaf, and Cedarleaf Agency for the annual premium of \$7,027.50.

Fuhr seconded the motion. Skrebes noted that if less expensive coverage can be found, Lloyd's of London will cancel the policy. Franklin said payment of the deductible amount is the responsibility of the board. Vote was taken; the motion carried unanimously.

## OTHER BUSINESS

### CHAIRMAN'S REPORT

Vice Chair Caranicas noted that a February calendar had been distributed, suggesting board meetings on the second and fourth Mondays because of the committee schedules and because February 17, which is ordinarily a meeting day, is a holiday. Kranz moved that the board meetings in February be held on the 10th and 24th. Franklin seconded the motion. Motion carried unanimously.

Hollander noted that the Policy Committee meeting on February 26 conflicts with the State of the Region conference. She will work with the committee chair to schedule an alternative date for the meeting. The Administrative and Finance Committee will meet on Thursday, February 20.

### MEMBERS REPORT

Joyce reported that by invitation he and Dirk deVries spoke to the Citizens League on January 15 regarding the light rail transit situation. The league has a transit committee restudying the issue. They discussed the decisions the board made in terms of going to preliminary engineering and made it clear that no decision has been made on whether or not to proceed with construction. Preliminary engineering would provide better information on which to base that decision. Rep. Schreiber spoke to the group, but he was first on the agenda and left before the rest of the discussion. deVries said he had been asked to discuss the Metropolitan Council process on reviewing the RTB's decision. Joyce said he put the RTB process in the context of the Transportation Policy Plan and the Metropolitan Development Investment Framework. Schreiber had commented that no planning had been done and that the RTB had come up with the decision shortly after it was formed. Joyce described to the league committee the four years of planning, involving every governmental unit within the three corridors.

Caranicas said she has taken I-94 between Minneapolis and St. Paul to the University and traffic is stop-and-go. That would not happen with LRT.

Skrebes said that on the 11th he and Mark Ryan spoke to the Minneapolis Blind committee. They were concerned about Metro Mobility. There has been a lot of false information sent out, particularly to the blind. He and Ryan tried to alleviate their fears. They also complained about taxi drivers not looking for passengers. Skrebes suggested that they wait outside the door because drivers are ticketed if they leave their cabs in the downtown area. Lefko said that

within the next couple of weeks staff will begin putting out a newsletter to providers. Hollander said Metro Mobility puts out a periodic newsletter and they are preparing a special newsletter to explain that service will not be terminated.

Lefko said the Policy Committee will be discussing Rideshare, I-494 and the MTC. It will not duplicate the activities of the Joint RTB/MTC Committee. The Policy Committee will look at all facets of MTC in order to acquire better information for the board and review how types of service are delivered.

There was discussion of possible alternatives to the condemnation of the Arby's/Mr. Steak site along I-394. The vice-chair directed staff to report back to the board with more information.

Hollander introduced Jeff Smith, Joe Newton, Liz Carpenter and Dan Schifsky.

There being no further business, Fuhr moved and Lefko seconded that the meeting be adjourned. The meeting adjourned at 4:50 p.m.

Respectfully submitted,

Mary Fitzgerald  
Secretary

REGIONAL TRANSIT BOARD

Suite 270 Metro Square Building, Saint Paul, Minnesota 55101

DATE: February 4, 1986  
TO: Regional Transit Board  
FROM: Elliott Perovich, Chair  
SUBJECT: Consent List

The following resolutions have been prepared by the staff and reviewed by the chair of the Regional Transit Board. In my opinion, these resolutions meet the standards of consent referrals adopted by the board in its bylaws.

RESOLUTION 86\_\_

AUTHORIZING THE EXECUTIVE DIRECTOR TO ENTER INTO AGREEMENT WITH  
THE MINNESOTA DEPARTMENT OF TRANSPORTATION FOR FEDERAL FUNDING  
PARTICIPATION IN ITS RIDESHARING PROGRAM

This resolution is required for the Executive Director to enter into agreement with the Minnesota Department of Transportation to transfer funds to the Regional Transit Board for funding its ridesharing program.

RESOLUTION 86\_\_

AUTHORIZING THE EXECUTIVE DIRECTOR TO ENTER INTO AGREEMENT WITH  
THE MINNESOTA DEPARTMENT OF TRANSPORTATION FOR THE TRANSFER OF FUNDS  
FROM THE MINNESOTA DEPARTMENT OF TRANSPORTATION TO THE REGIONAL TRANSIT BOARD

This resolution is required for the Executive Director to enter into contract with the Minnesota Department of Transportation to transfer funds for contractual obligations incurred with the assumption of program responsibilities under M.S. 473.384, 473.386, and 473.388.

JM:jmo

REGIONAL TRANSIT BOARD

Suite 270 Metro Square Building, St. Paul, MN 55101

RESOLUTION NO. 86-5

RESOLUTION

AUTHORIZING THE EXECUTIVE DIRECTOR TO ENTER INTO AGREEMENT WITH  
THE MINNESOTA DEPARTMENT OF TRANSPORTATION FOR FEDERAL FUNDING  
PARTICIPATION IN ITS RIDESHARING PROGRAM

WHEREAS, the Regional Transit Board has assumed responsibility for ridesharing programs in the Twin Cities Metropolitan Area as specified in M.S. 473.375, Subd. 11; and

WHEREAS, the Regional Transit Board has included ridesharing as a program element in its 1986 work program; and

WHEREAS, the Metropolitan Council has included Federal Aid urban funding for the ridesharing program in its approved 1986 Transportation Improvement Program; and

WHEREAS, the Commissioner of Transportation, under M.S. 161.36, may act as an agent for any governmental subdivision of the State of Minnesota in accepting federal aid on its behalf; and

WHEREAS, the Regional Transit Board wishes to utilize available federal aid participation to fund ridesharing services in the metropolitan area.

NOW, THEREFORE, BE IT RESOLVED that the Regional Transit Board authorizes the Executive Director to enter into agreement with the Minnesota Department of Transportation for federal funding participation in the ridesharing program.

Adopted this \_\_\_\_\_ day of \_\_\_\_\_, 1986.

\_\_\_\_\_  
Elliott Perovich, Chairman

\_\_\_\_\_  
Mary Fitzgerald, Secretary

REGIONAL TRANSIT BOARD

Suite 270 Metro Square Building, St. Paul, MN 55101

RESOLUTION NO. 86-6

RESOLUTION

AUTHORIZING THE EXECUTIVE DIRECTOR TO ENTER INTO AGREEMENT WITH  
THE MINNESOTA DEPARTMENT OF TRANSPORTATION FOR THE TRANSFER OF FUNDS  
FROM THE MINNESOTA DEPARTMENT OF TRANSPORTATION TO THE REGIONAL TRANSIT BOARD

WHEREAS, the Regional Transit Board has certified to the Commissioner of Transportation its readiness to assume responsibility for contracts in the Metropolitan area under M.S. 473.384, 473.386, and 473.388; and

WHEREAS, the Regional Transit Board has adopted amended Resolutions No. 85-19, 85-20, and 85-21 designating an effective certification date of February 28, 1986; and

WHEREAS, the Commissioner of Transportation shall, upon receiving certification from the Regional Transit Board, transfer funds appropriated to him in a sufficient amount to permit the Regional Transit Board to pay obligations of contracts made by the Commissioner of Transportation under Section 174.24, 174.31, and 174.265 in the metropolitan area and all subsequent contracts made by the Regional Transit Board under M.S. 473.384, 473.386 and 473.388; and

WHEREAS, the Regional Transit Board wishes to receive funds from the Commissioner of Transportation to cover its contractual obligations.

NOW, THEREFORE, BE IT RESOLVED that the Regional Transit Board authorizes the Executive Director to enter into agreement with the Department of Transportation for the transfer of funds to the Regional Transit Board to cover contractual obligations made by the Commissioner of Transportation under M.S. 174.24, 174.31 and 174.265 in the metropolitan area and all subsequent contracts made by the Regional Transit Board under M.S. 473.384, 473.386 and 473.388.

Adopted this \_\_\_\_\_ day of \_\_\_\_\_, 1986.

\_\_\_\_\_  
Elliott Perovich, Chairman

\_\_\_\_\_  
Mary Fitzgerald, Secretary

REGIONAL TRANSIT BOARD

Suite 270 Metro Square Building, Saint Paul, Minnesota 55101

DATE: February 10, 1986  
TO: Regional Transit Board  
FROM: Todd Lefko  
SUBJECT: Phase I Report, Service Needs Assessment

At it February 10, 1986, meeting, the board will hear a presentation on the draft Phase I Report, Transit Service Needs Assessment

RECOMMENDATION

That the Regional Transit Board accept the draft Phase I Report, Transit Service Needs Assessment for the purpose of receiving public comment.

TL/mf

KTB 2/10 Board  
Mtg. copy

**PHASE I REPORT  
TRANSIT SERVICE NEEDS  
ASSESSMENT**



TRANSIT SERVICE NEEDS ASSESSMENT

DRAFT FINAL REPORT

JANUARY, 1986

Prepared by the  
REGIONAL TRANSIT BOARD

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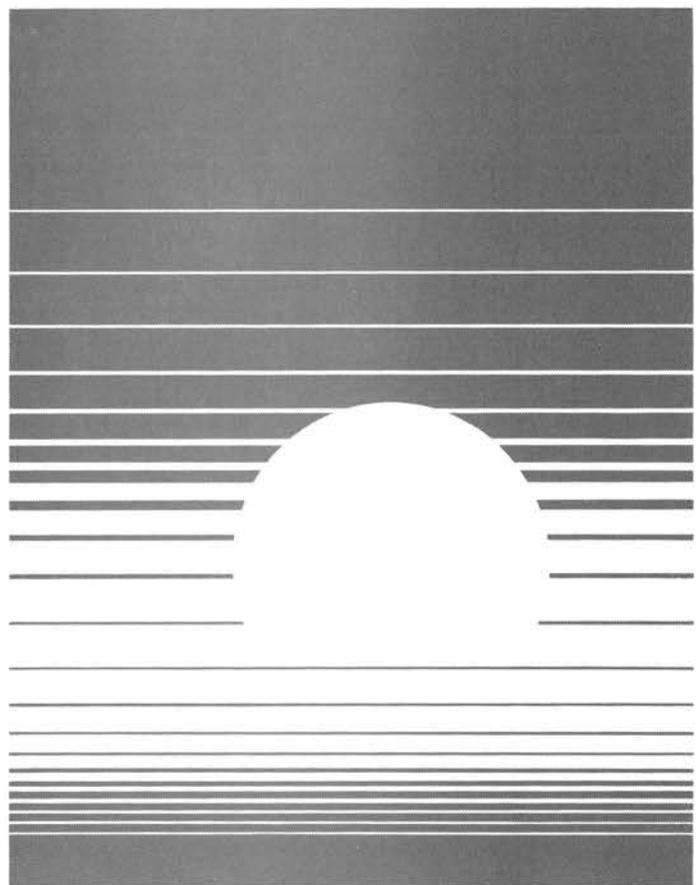
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**CHAPTER ONE**  
INTRODUCTION AND OVERVIEW

## A. Introduction

This report presents the results of Phase I of the Regional Transit Board's Transit Service Needs Assessment. The Transit Service Needs Assessment provides for the overall evaluation of transit needs and services in the Twin Cities metropolitan area. Phase I represents a comprehensive analysis of the overall transit needs of the region for purposes of focusing on more detailed analysis in Phase II. The Phase I final report presents the background to the study, the process utilized, a discussion of the comprehensive Phase I technical analysis, the results of this analysis and recommendations for Phase II.

This report summarizes the results of a series of technical memorandums which have been prepared detailing each of the major elements of the study. These should be consulted if a more complete discussion of each element of the Transit Service Needs Assessment is desired.

## B. Regional Transit Board and the Transit Service Needs Assessment

### Overview

In 1984 the Minnesota Legislature, responding to the findings and recommendations of its Legislative Study Commission on Metropolitan Transit, created the Regional Transit Board (RTB). The RTB is responsible for mid-range transit planning, policy making, and transit administration in the seven-county Twin Cities metropolitan area.

The RTB enabling legislation identifies a number of responsibilities and duties the RTB shall perform. The RTB fulfills these responsibilities through the examination of transit needs and services, transit policy development, providing for community participation, administering and distributing public funds for transit services, and facilitating new and alternative transit services. The RTB works with the Metropolitan Council, the Metropolitan Transit Commission, other providers, the Minnesota Department of Transportation, and local communities in carrying out these charges.

Both the legislature and the RTB identified the necessity to thoroughly examine existing transit needs and services as the first step in developing improvements or alternatives in the transit system. To address this issue in a coordinated and comprehensive fashion, the RTB undertook the Transit Service Needs Assessment. The purpose of the Transit Service Needs Assessment is to conduct an overall evaluation of transit needs and services in the metropolitan area.

The focus of the Transit Service Needs Assessment is on short to mid-range planning or roughly the five to ten year planning horizon. It is being coordinated with the longer-range (ten to twenty years) planning activities of the Metropolitan Council and the shorter range activities of the different service providers.

The RTB initially developed a work program and a Request for Proposal (RFP) for professional consultant services in the spring of 1985. A consultant selection committee, composed of representatives from the RTB, the Metropolitan Council, the Transportation Advisory Board, and the private sector, assisted the RTB in reviewing the proposals and selecting a consultant. The consultant team of Strgar-Roscoe-Fausch, Inc., with Colle and McVoy, Frank Koppelman and a Strategic Planning Group of national experts were selected.

The work program divided the Transit Service Needs Assessment into two phases. Phase I, which this report covers, focused on a metropolitan-wide analysis of transit needs and services. Phase I was conducted from August 1985 to January 1986. Phase II, which will be conducted over the six-month period from February to August 1986, will provide a more detailed level of analysis of specific geographical and market segments. These two phases will be followed by a Phase III which will consider implementation of the recommendations.

The Transit Service Needs Assessment was split into two phases to allow for an overall evaluation of the metropolitan area to be conducted first. Phase I focused on the needs of the entire region and putting the needs of different areas in perspective. The results of this analysis will be used to develop the scope of Phase II, which will focus more detailed analysis on areas of greatest need.

The approach taken in the Transit Service Needs Assessment recognizes that many studies, both at a corridor and subarea level, have been conducted in the past. It is not the intent of this project to duplicate the work done, but rather to build upon past efforts, update data, coordinate with those in progress, examine new population, employment and land use forecasts, and focus on areas which have not been previously examined.

While building on past activities, the Transit Service Needs Assessment represents a new and innovative approach to transit planning in the metropolitan area. It represents one of the first efforts in the country to address transit planning from the perspective of a service need and market approach rather than the attributes of technology.

As noted, the Transit Service Needs Assessment is being conducted in two phases. Phase I examined transit needs and services from a region-wide perspective. The basic approach used in Phase I is shown in Figure 1. This figure presents the four main components of the Phase I analysis. These are described briefly below and explained in greater detail in subsequent chapters.

#### Public Involvement

Public involvement was accomplished through Public Forums and Planner/Administrator Forums in each of the eight RTB districts. The purpose of these forums was to obtain input on transit issues, concerns and needs within all areas of the region. Notices of the meetings were sent to city officials, organizations, providers, social service and private-non-profit agencies, and the general public. They were also advertised in the local media. In addition, the RTB chairman held a series of six meetings to discuss the RTB and the status of various programs, including the Transit Service Needs Assessment.

A total of 20 meetings were held between September and November of 1985 with approximately 200 people attending. A wide variety of issues and concerns were raised, providing valuable insight into the transit needs of the different areas.

#### Market Research

One of the unique elements of the Transit Service Needs Assessment was the use of market research techniques to assist in the identification of different transit markets and their characteristics. Four transit market groups were identified, each one comprised of more specific market segments. These were used throughout the technical analysis.

Focus Groups, which are a marketing research technique which provides qualitative information on individual's attitudes and perceptions about certain things, were used in Phase I. The Focus Groups provided a starting point for understanding consumers' perspectives on existing transit services and needs, gaining insight into current travel behavior and the decision-making processes used by the different market groups, identifying important service attributes and evaluating transit with respect to these attributes, and exploring different market groups reaction to possible changes in transit service.

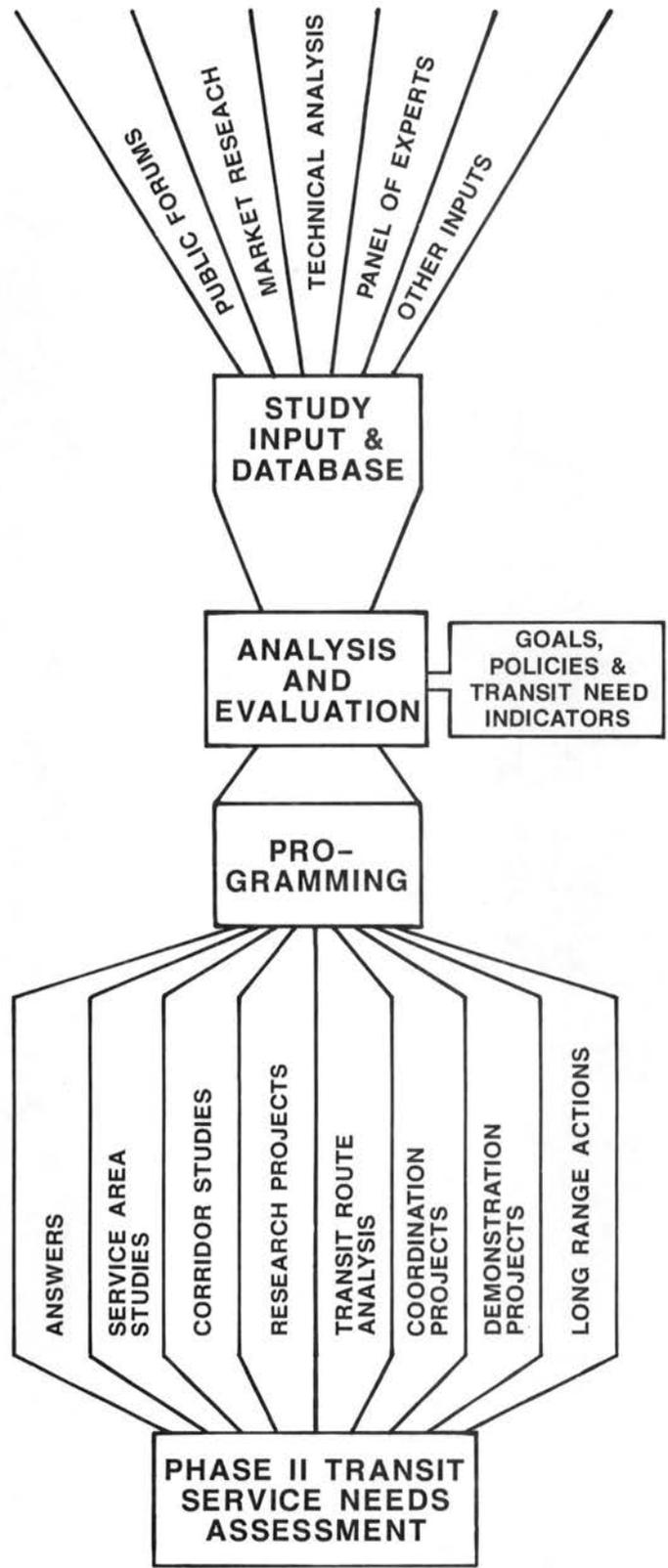


FIGURE 1  
PHASE I PROCESS

A total of eight Focus Groups were conducted during Phase I. These were composed of representatives from eight market segments. It is anticipated that more detailed, quantifiable survey techniques will be used in Phase II of the Transit Service Needs Assessment.

#### Technical Analysis

A detailed technical analysis was conducted as the major portion of the Phase I activities. Figure 2 outlines the general approach taken in the technical analysis.

The first step in the process was the development of a database containing a wide range of information including socio-economic, demographic and travel data. This information was used to define the transit planning subareas and rings and the geographic and user market segments. Information in the database was then aggregated by the transit planning subareas and market segments.

Three concurrent activities were then undertaken. These included the development and analysis of travel desires by subarea, sectors and market segments; the development and analysis of socio-economic and demographic characteristics by subarea; and the development of provider data by route, service and subarea. The combination of the results of these steps were the development of a set of transit need indicators. These were used to evaluate transit service needs by subareas, sectors and market segments. The last step in the Phase I process was the establishment of results and recommendations.

#### National Expertise

A Strategic Planning Group (SPG) composed of national experts in different areas of transit planning, financing and service alternatives was utilized during Phase I. The purpose of the SPG was to assist in fine tuning the technical approach and analysis techniques and to provide a national perspective. The SPG met three times during Phase I. The first meeting focused on refining the technical analysis approach, identifying key data needs, assisting with the identification of the market groups and segments and refining the definitions. The second meeting focused on a review of data collection and market research activities, further refinement of the process, assistance with development of the need indicators and preliminary evaluation of key indicators. The third meeting centered on review of the needs analysis, assistance with the identification of major findings and preliminary discussion of the recommendations and Phase II projects.

Members of the Strategic Planning Group participating and their area of expertise in Phase I included:

Frank Koppelman, Northwestern University, Market Research  
Dick Pratt, Richard H. Pratt Consultant, Inc., Transportation System  
Analysis  
Gary Brosch, Rice Center, Transit Financing  
Joe Schofer, Northwestern University, Transit System Evaluation  
Patrick Mayworm, Ecosometrics, Inc., Transit System Research  
Sam Zimmerman, Urban Mass Transportation Administration, Transit Policy  
and National Experience

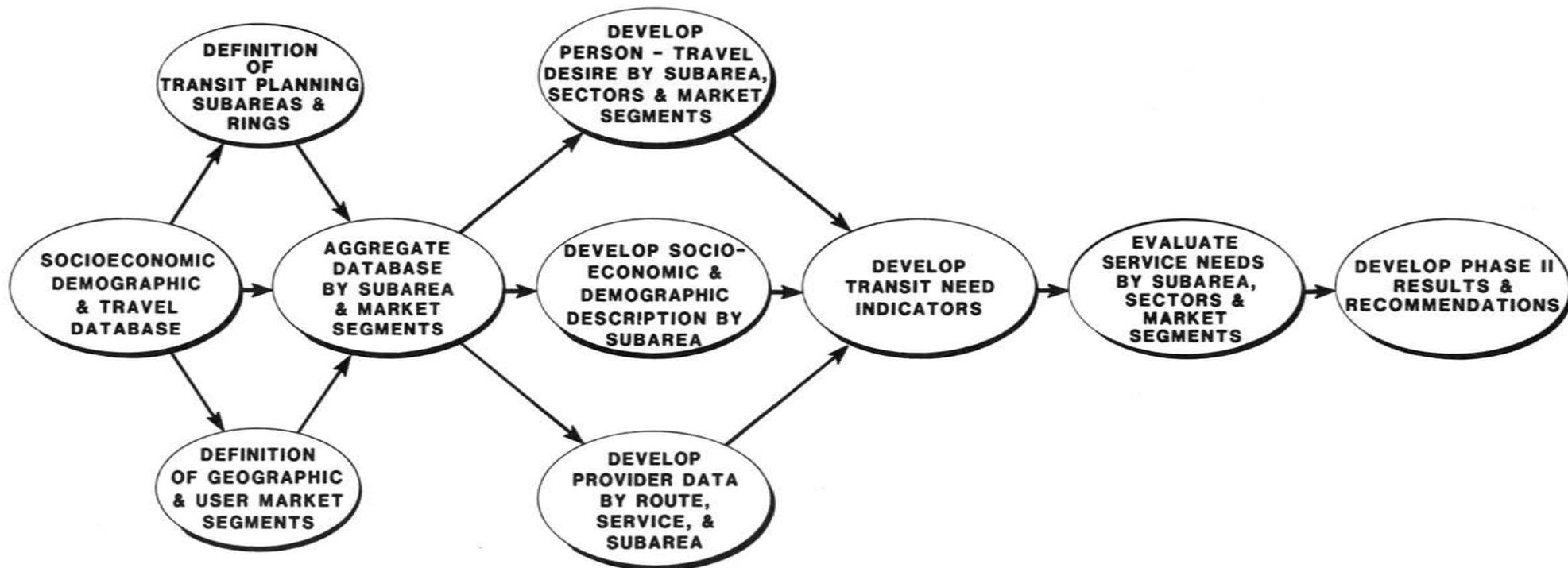


FIGURE 2  
GENERALIZED PHASE I APPROACH

Project Management Team: A local Project Management Team (PMT) was formed at the initiation of the Transit Service Needs Assessment in August 1985. The PMT is composed of representatives from transit-related organizations and jurisdictions in the metropolitan area. The Project Management Team met regularly throughout Phase I and was involved in all aspects of the study.

The following individuals served on the Project Management Team:

Nacho Diaz, Metropolitan Council  
Jim Daire, City of Minneapolis  
Steven Grochala and Peggy Reichert, City of St. Paul  
Randy Halvorson and Donna Allan, Minnesota Department of Transportation  
Scott Dickson, Metropolitan Transit Commission  
Randi Alcott and Marcia Diers, Minnesota Rideshare  
Roger Peterson, Association of Metropolitan Municipalities  
Dave Jessup, City of Woodbury  
Lee Starr, City of Coon Rapids  
Frank Boyles, City of Plymouth  
Larry Lee, City of Bloomington  
Roger Huss, University of Minnesota

#### Summary

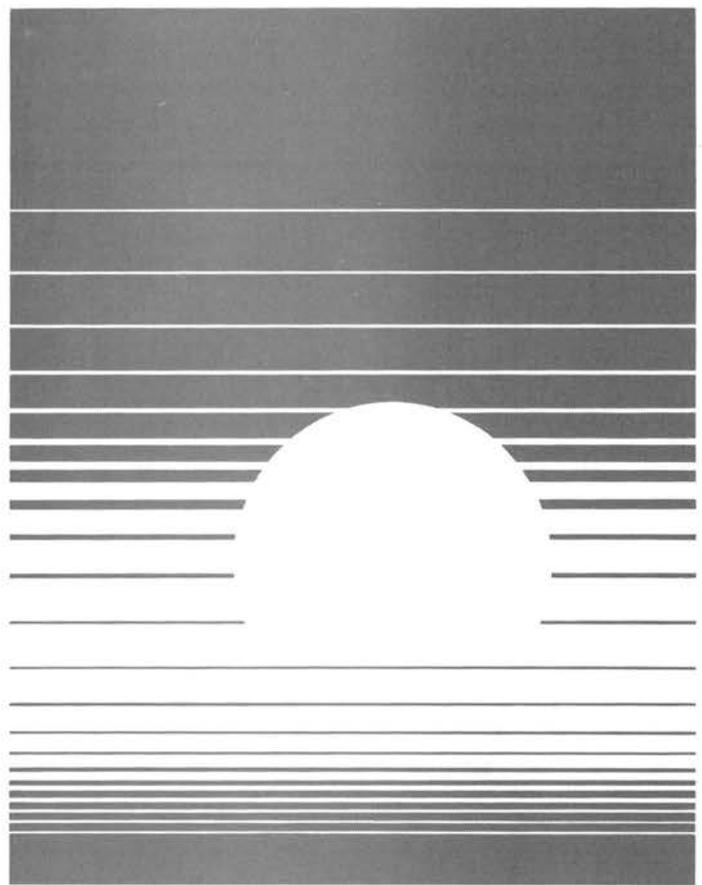
These activities represent the major elements of the analysis conducted during Phase I. As shown in Figure 1, these different elements were then analyzed and evaluated and a set of results and recommendations were developed. Each of these elements and the analysis process is discussed in detail in the following sections of this report.

### C. Organization of the Phase I Report

The remainder of this report is divided into eight chapters. Following the introduction, the second chapter reviews the roles and responsibilities of organizations in transit planning and policy making. A description of the existing transit services in the metropolitan area is provided in the third chapter. This is followed by a description of alternative transit service concepts which might be applicable in the area. The fifth chapter identifies the transit need indicators used in the Transit Service Needs Assessment. The sixth chapter completes the analysis of transit service needs in the area. The seventh chapter contains the results of Phase I. This is followed by the recommendations. The appendices contain the detailed socio-economic and demographic data for each jurisdiction, an annotated bibliography of transit reports and a glossary.

The Phase I report is based on thirteen technical memorandums prepared on each of the major work activities. These technical memorandums, which are listed below, are available under separate cover.

- Technical Memorandum Number 1 - Agency Roles and Responsibilities, Goals and Policies in Transit
- Technical Memorandum Number 2 - Public Input: Public and Planner/Administrative Forums
- Technical Memorandum Number 3 - Market Research--Focus Groups
- Technical Memorandum Number 4 - Transit Providers in the Metro Area
- Technical Memorandum Number 5 - Socio-Economic, Demographic Profile and Travel Characteristics
- Technical Memorandum Number 6 - RTB Transit Service Needs Assessment Data Base
- Technical Memorandum Number 7 - Short-term Changes
- Technical Memorandum Number 8 - Transit Service Concepts
- Technical Memorandum Number 9 - Transit Needs Analysis
- Technical Memorandum Number 10 - PMT Minutes
- Technical Memorandum Number 11 - SPG Minutes
- Technical Memorandum Number 12 - Annotated Bibliography
- Technical Memorandum Number 13 - Glossary



**CHAPTER TWO**  
ROLES AND RESPONSIBILITIES

## A. Introduction

An important part of transit planning is understanding the roles and responsibilities of the various agencies. This chapter identifies the roles and responsibilities of agencies involved in transit planning and service delivery in the metropolitan area. These agencies are all involved in transit planning or service delivery to differing degrees and determine the function, character, and structure of the transit network in the metropolitan area. These agencies are: the Metropolitan Council, the Regional Transit Board (RTB), the Minnesota Department of Transportation, and the Metropolitan Transit Commission.

In general, the roles and responsibilities of these agencies can be summarized as follows: The Metropolitan Council, which is the Metropolitan Planning Organization (MPO), is responsible for long-range (10-20 years) highway and transit planning. The Regional Transit Board is responsible for mid-range (5-10 years) transit planning, policy making and administration of transit programs in the metropolitan area. The Minnesota Department of Transportation (Mn/DOT) is responsible for the construction, operation and maintenance of highways and major roadways in the metropolitan area which are used heavily by transit. Mn/DOT also has a number of related transit program administration functions especially outside the metropolitan area. The Metropolitan Transit Commission (MTC) is the public operator of transit services within the metropolitan area.

A more detailed discussion of these agencies and their adopted goals and policies is provided in "Technical Memorandum Number 1: Agency Roles and Responsibilities, Goals and Policies in Transit." The remainder of this section discusses the role and responsibility of each agency in more detail.

## B. Agencies

### Metropolitan Council

The Metropolitan Council has been designated by the Federal Government as the Metropolitan Planning Organization (MPO) for the Twin Cities area. Created in 1967 by the Minnesota Legislature, the Council is responsible for guiding the orderly development of the 3,000 square mile metropolitan area.

The Metropolitan Council plays a major role in determining priorities among projects, funding and financing. The Council is accountable by law to the State Legislature. To conduct planning activities and to coordinate planning by both government and the private sector, the legislature requires the Council to:

- a) Prepare and maintain a Metropolitan Development Guide. The guide serves as a long-range regional plan upon which to base development and metropolitan systems implementation decisions. (The Council is in the process of updating this document.)
- b) Review applications for federal and state funds to assure consistency with the regional development goals, policies and programs described in the Metropolitan Development Guide.
- c) Prepare policy plans which give clear direction to the regional commissions and agencies which operate public transit, regional parks, airports, housing and water quality management activities.
- d) Approve financial proposals, capital programs and detailed plans of regional agencies.
- e) Review long-range local government plans and require local plans to be consistent with regional sewer, park, airport and transportation plans.
- f) Conduct urban research in broad-ranging areas and present findings to the legislature.
- g) Provide technical assistance to other governmental units.
- h) Provide information to the public on matters pertaining to the region and its development.

In transportation, the Metropolitan Council is responsible for both long-range highway and transit planning in the metropolitan area. The Council is also responsible for reviewing and approving transit projects and funding. These functions are conducted in accordance with the policy and goals in the Metropolitan Development Guide, specifically those in the Transportation Chapter. The Guide attempts to control future growth in the metropolitan area for the efficient use of existing metropolitan and local investments without sacrificing the existing quality of life. The Metropolitan Development Investment Framework (MDIF), which is in the process of being rewritten, provides the general overall policies, while the Transportation Section relates these specifically to highways, transit and air transportation.

As noted, the Council is currently rewriting the Metropolitan Development Investment Framework. The MDIF establishes the overall direction for future development in the metropolitan area and contains guidelines for making decisions about investments in metropolitan systems--sewers, parks, airports, transit and highways--to support orderly growth and development and presents the Council's approach to guiding development and change in the metropolitan area. Specific chapters deal with each of the topical areas. The Council's current goals and policies dealing with transit are contained in the Development Guide/Policy Plan Chapter on Transportation. It is anticipated that these will be modified once the revised MDIF has been completed.

The six goals and policies relating to transit contained in the Transportation Chapter are outlined below:

Goal One: Provide transportation facilities and service to promote the orderly and economic development of the metropolitan area. Related Policies:

- o Transportation facilities should be planned, designed and operated to promote and serve development that is consistent with the Development Framework chapter of the Metropolitan Development Guide.
- o Transportation investments should be made on the basis of need and the ability of the metropolitan area to finance and maintain these investments in relation to other metropolitan systems needs and investments over time.

Goal Two: Provide metropolitan residents with good accessibility to the sub-regional and regional opportunities. Related Policy:

- o Transportation planning and investment should provide for the efficient regional movement of goods and the incorporation of goods movement systems into the design of major activity centers.

Goal Three: Provide residents of the urban area, as defined in the Development Framework, with cost effective, convenient and attractive alternative choice of transportation to both subregional and regional activities. Related Policies:

- o Transportation facilities should be planned, designed and operated to function in a manner compatible with adjacent land use; in those instances where the function of a facility and adjacent land use have become incompatible, affected agencies and local units of government should establish a program to mitigate this incompatibility.
- o Transportation systems should be developed and managed to utilize existing investments more effectively.
- o Demonstration projects should test new service and pricing/financing concepts or strategies, and contain an evaluation program sufficient to assess the performance and further applicability of project objectives.

Goal Four: Utilize transportation to strengthen the two metro centers as the major employment, financial, institutional, retail, cultural, entertainment, medical and service centers for the Metropolitan area, the State of Minnesota and the Upper Midwest. Related Policy:

- o Transportation planning and investment should provide for the efficient regional movement of goods and the incorporation of goods movement system into the design of major activity centers.

Goal Five: Provide transportation facilities and services that produce positive impacts upon the social, economic and physical environment, and conserve the supply of metropolitan energy resources. Related Policies:

- o Transportation should be provided that is responsive to the special needs of the young, disabled and economically handicapped living in the Metropolitan Area.
- o Safety standards must be a major consideration in the planning, design, operation and maintenance of transportation facilities and services.
- o Transportation facilities should be planned, designed and operated to minimize the disruption of neighborhoods.

Goal Six: Maintain a regional transportation planning and programming process that is responsive to the needs and interests of metropolitan residents, groups, counties, municipalities and affected agencies--with sufficient opportunity provided for them to participate in policy and implementation decisions. Related Policies:

- o Citizen and public involvement should be promoted in the formation of transportation policy and implementation decisions.
- o Consistency with state, federal and regional environmental plans, policies and standards should be a major consideration in the planning, design and operation of transportation projects and facilities.

The Metropolitan Council utilizes a number of citizen advisory committees, 13 at present, to assist in the development and review of plans, grant applications and special projects. The Transportation Advisory Board (TAB) is the Council Committee which deals with transportation.

The TAB, which was created in 1974, provides a forum for state, regional and local officials, and private citizens to discuss transportation issues. Responsibilities of the Transportation Advisory Board include participation in the preparation and modification of the Transportation System Management Plan, review and comment on the statewide transportation plan, participation in the preparation of the Five Year Transit Development Program of the MTC and the participation in the Transportation Improvement Program (TIP). The TAB is also involved in a wide spectrum of planning activities and participates in the review of transit studies and projects.

## Regional Transit Board

The Regional Transit Board was created by the Minnesota Legislature in 1984 to consolidate metropolitan transit planning, financing, and the arranging of transit services. The RTB is responsible for short- to mid-range transit planning, policy making, administration, and facilitating new and alternative transit services. The major functions and activities of the RTB as specified in the enabling legislation include:

- o To prepare transit implementation plans
- o To prepare and present required transit budgets, financial plans and staffing plans
- o To execute and administer paratransit project contracts and to assume rideshare program responsibilities
- o To appoint members to the Metropolitan Transit Commission (MTC)
- o To request, review and approve the MTC budget
- o To assume Replacement Services (Opt-Out) program responsibilities
- o To conduct research and render advice on transportation issues.

The Regional Transit Board is comprised of eight board members and a chairman. The board, which represents the eight metropolitan districts shown in Figure 3, is appointed by the Metropolitan Council. The Regional Transit Board Chairman is appointed by the Governor.

One of the first activities undertaken by the Regional Transit Board was the development of an Interim Implementation Plan (IIP). The IIP, which was required by legislation, represents a three-year work plan which contains the RTB's mission, goals and policies. The IIP outlines the RTB's interim transit service plan, staffing plan and financial plan. The Mission Statement of the Regional Transit Board, adopted on November 5, 1984, states:

The Regional Transit Board directs, coordinates and prioritizes transit services in the Twin Cities Metropolitan Area through needs assessment, policy development, distribution of public funds, facilitation of the implementation of programs and research and demonstration. This mission is accomplished within the direction of the legislature and the long-range transportation policy planning role of the Metropolitan Council. The RTB facilitates the implementation of transit service programs recognizing the transit operating role of the Metropolitan Transit Commission and other transit service providers; and the need for continuous involvement of local units of government and the public.

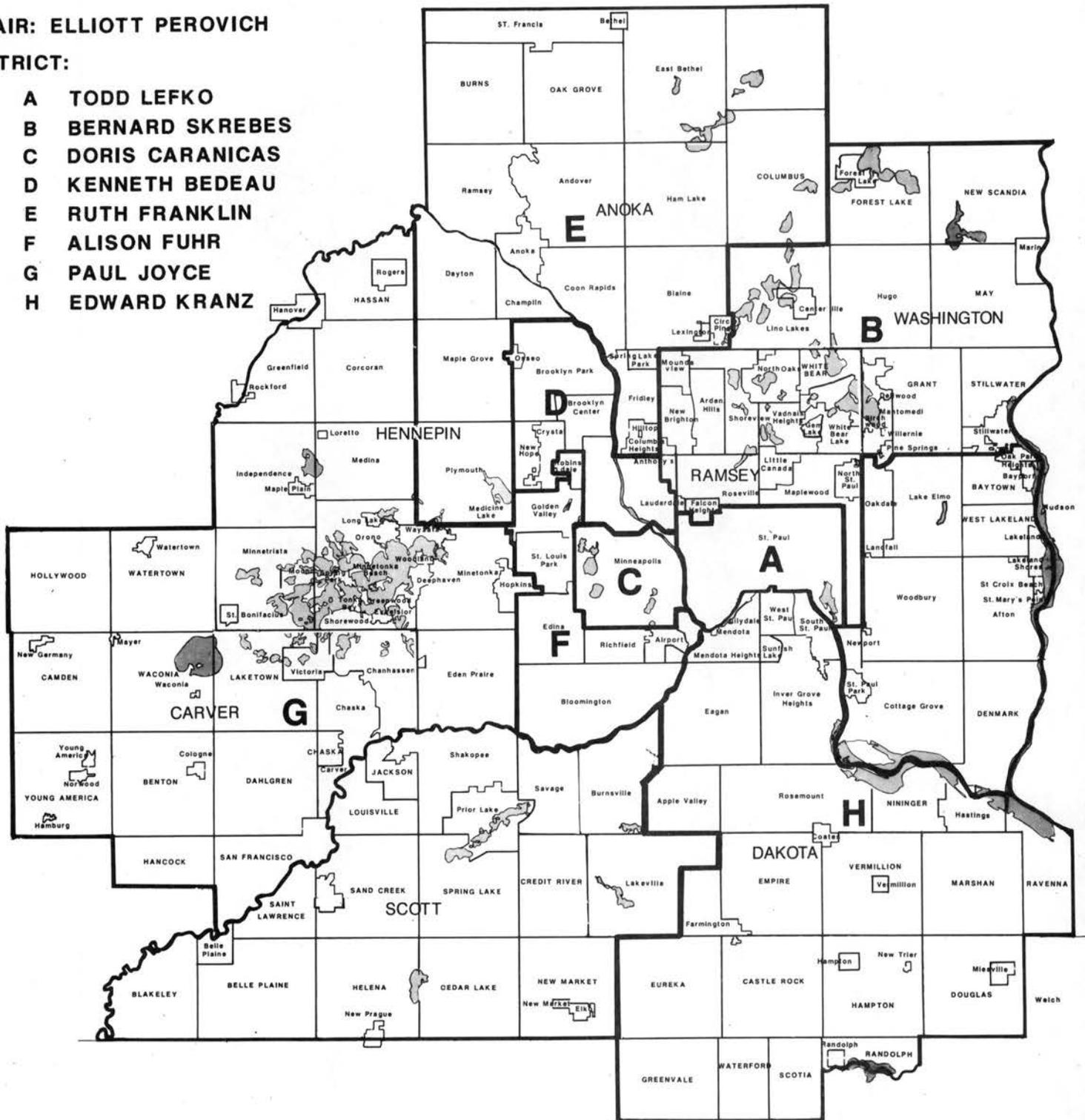
In creating the RTB, the legislature established four goals to guide the RTB. These are:

1. To provide, to the greatest feasible extent, a basic level of mobility for all people in the metropolitan area.
2. To arrange, to the greatest feasible extent, for the provision of a comprehensive set of transit and paratransit services to meet the needs of all people in the metropolitan area.

**CHAIR: ELLIOTT PEROVICH**

**DISTRICT:**

- A TODD LEFKO**
- B BERNARD SKREBES**
- C DORIS CARANICAS**
- D KENNETH BEDEAU**
- E RUTH FRANKLIN**
- F ALISON FUHR**
- G PAUL JOYCE**
- H EDWARD KRANZ**



**FIGURE 3  
REGIONAL TRANSIT BOARD  
MEMBERS AND DISTRICTS**

3. To cooperate with private and public transit providers to assure the most efficient and coordinated use of existing and planned transit resources.
4. To maintain public mobility in the event of emergencies or energy shortages.

As part of the Interim Implementation Plan, the RTB developed a set of policies to be used to guide the RTB during the interim period. These policies, which were based on existing policies of metropolitan transit agencies, are presented below.

1. The Regional Transit Board (RTB) shall develop all plans, policies and programs in a manner that will meet all mandated schedules and will assure timely decisions and service implementations.
2. The RTB shall develop plans, policies and programs consistent with the Metropolitan Council's Transportation Policy Plan.
3. RTB programming decisions shall be made on the basis of transit service needs, the availability of financial resources, and adopted RTB transit policies and plans.
4. Transit service needs assessments shall be conducted for all transit programs, including type of service, location, schedule, level of service, and level of investment. These assessments shall consider alternative service concepts or operations strategies, involve representatives of affected users and governmental agencies and evaluate alternatives against specific performance objectives, including Metropolitan Council transportation policies.
5. The primary objective of the RTB shall be the setting of priorities for the allocation of available financial resources among the competing transit service needs in the Twin Cities Metropolitan Area.
6. Transit investment priorities shall be given to: a) travel corridors with the highest congestion and poorest travel times to downtown Minneapolis and St. Paul; b) areas with the highest level of unmet needs; and c) areas with the highest density of population dependent on transit.
7. Transit service needs assessments and transit investment decisions shall recognize and balance the special service needs of the central cities, suburban and exurban areas in the Metropolitan Area.
8. Individual transit programs shall be planned, managed and evaluated to use all funds effectively and efficiently.
9. The most cost-effective transit providers, whether public or private, shall be selected to provide specific transit services.
10. Metropolitan transit services shall be responsible to the needs of the young, disabled, elderly and economically disadvantaged.

11. A stable funding program shall be developed in support of the funding goals established by legislation.
12. A transit fare structure shall be established that will be equitable and in balance with the cost of transit service and available funding levels.
13. The RTB shall develop and maintain a continuous and comprehensive transit decision-making process in cooperation with local units of government, interested individuals, organizations and agencies.
14. The RTB shall encourage and support new and innovative transit service programs through a regular research, demonstration and evaluation program.

#### Minnesota Department of Transportation (Mn/DOT)

The Minnesota Department of Transportation (Mn/DOT) was created in 1976 by the Minnesota Legislature to provide a balanced and coordinated multi-modal transportation system for the state. Mn/DOT assumed the responsibilities of a number of separate departments, providing a unified transportation planning program for the state.

Mn/DOT has authority to locate, improve, maintain, construct and reconstruct a system of trunk highways and interstate routes. Each year Mn/DOT prepares a two-year highway improvement construction program and a four-year highway improvement program. Mn/DOT submits design layouts and final plans for projects in the metropolitan area to the Metropolitan Council for review. These are then incorporated into the federally required Transportation Improvement Program (TIP). Mn/DOT also submits Environmental Assessment Worksheets (EAW) and Environmental Impact Statements (EIS) on highway projects to the RTB for review.

Mn/DOT is involved in transit planning and services in a number of different ways. Within the metropolitan area the Central Office and two district offices, District 5 and District 9, perform different roles. The district offices are responsible for planning, designing and construction of highway projects. Transit is one of the elements considered during the planning process. The Central Office deals with transit through consideration in the highway planning process and through the Office of Transit. Within the metropolitan area the Office of Transit provides assistance with planning projects as requested. The Office of Transit is responsible for the administration of financial operating assistance to public and private operators outside the metropolitan area.

The Minnesota Department of Transportation has adopted five goals relating to transit. These are outlined below:

1. To provide access to transit for persons who have no alternative mode of transit available.
2. To increase efficiency and productivity of public transit systems.

3. Where such activities are cost effective to alleviate problems of automobile congestion and energy consumption, and to promote desirable land use.
4. To maintain a state commitment to public transportation.
5. Consistent with the above objectives, to meet the needs of individual transit systems.

#### Metropolitan Transit Commission (MTC)

The Metropolitan Transit Commission (MTC) was created by the Minnesota Legislature in 1967 as the region's public transit agency. The legislation creating the RTB refocused the role and composition of the MTC. The MTC is the public transit operating agency and service provider in the metropolitan area. As such, it provides the majority of regular route transit service in the area. The MTC's operation also includes major maintenance facilities, routes and schedule planning, information distribution and marketing and other service related activities.

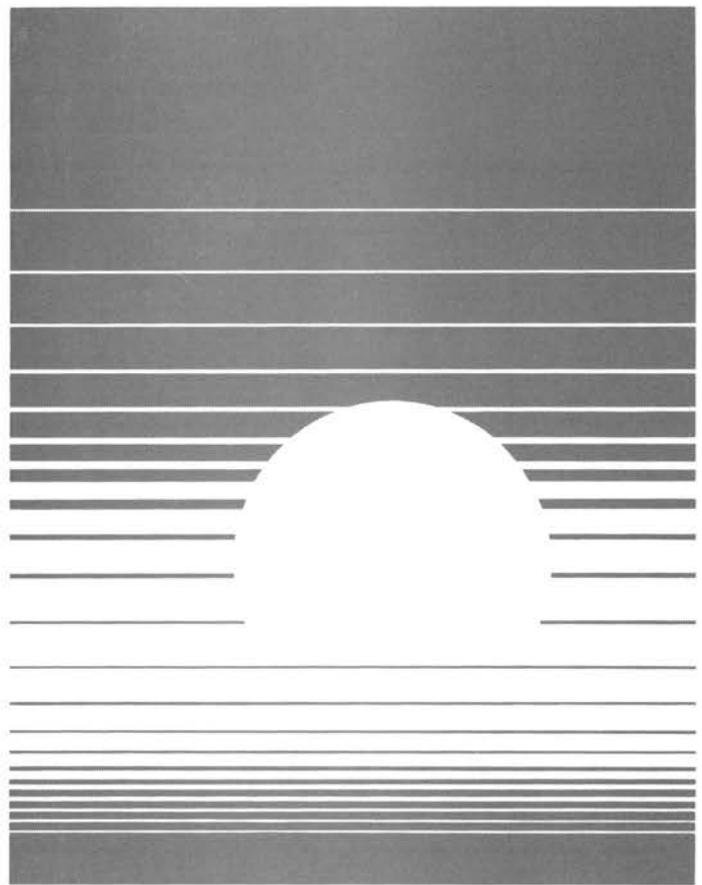
The MTC's goals, as outlined in the 1984 Transit Development Program, are as follows:

- Goal 1: An integrated public transportation system, comprehensive in scope to provide mobility for the general population, with special emphasis on the transit dependent, and the ability to provide continued public mobility in the event of major disruptions in the availability of motor vehicle fuel and during other emergencies.
- Goal 2: A coordinated network of special services for the elderly, handicapped, and others with special transportation needs, to be implemented in the most cost-efficient manner using existing public and private providers of service.
- Goal 3: Increased vehicle occupancy through marketing programs encouraging more extensive use of transit, paratransit, and ridesharing, with the objective of reducing the use of vehicles occupied by only one person, especially during peak travel times.
- Goal 4: A well-maintained modern vehicle fleet, clean and comfortable, providing reliable service which is attractive to the rider and economical to operate.
- Goal 5: Adequately staffed, properly equipped and well-maintained garage and overhaul facilities to service the MTC fleet of 40-foot and articulated buses, Project Mobility vehicles and paratransit buses and vans.
- Goal 6: Well-maintained and attractive facilities to expedite the movement of transit, paratransit and ridesharing vehicles; provide for inter-modal use of the transit system; and facilitate use by the handicapped, transit dependent, and general population.

Goal 7: The fullest and most efficient use of public resources and investments in public transit and paratransit through provision of a high level of service in areas with large number of transit dependents and a high density of demand for service, placing special emphasis on increasing the number of regular riders.

Goal 8: A reasonable balance between public subsidy and level of service, with operating revenues proportioned to the cost of providing the service; the fare structure established to be affordable by the users, and easily administered and understood; and to minimize any disparities in the subsidy per passenger.

The MTC has further refined these goals with specific policies under each. In addition, the MTC has developed a set of performance standards for its regular route service. These standards deal with financial, service, safety, manpower and maintenance indicators. A detailed description of the MTC's policies and performance standards are provided in "Technical Memorandum Number 1 - Agency Roles and Responsibilities, Goals and Policies in Transit."



**CHAPTER THREE**  
EXISTING TRANSIT SERVICES

## A. Introduction

This chapter presents information on the transit providers and transit services available in the metropolitan area. All types of transit services are addressed including: regular route, paratransit, rideshare, and volunteer services. Specific providers include the Metropolitan Transit Commission (MTC), Medicine Lake Lines, North Suburban, Valley Transit, Metro Mobility, Minnesota Rideshare, the University of Minnesota, private rideshare programs, community and county providers and social service and private-non-profit agencies. All of this information is described in detail in the RTB's extensive computerized data base developed as part of the Transit Service Needs Assessment. Data are stored in three basic categories--regular route, paratransit, and agency programs. Information in this section was obtained from a wide variety of sources including: detailed data from providers, a special survey conducted by the RTB of social service and private-non-profit agencies, and information from the Minnesota Department of Transportation. To provide a uniform comparison, data from 1984 was used for all providers.

A summary of all the different providers is presented in Table 1. This includes both the regular route operators, both public and private, the different paratransit services and the social service and private-non-profit organizations providing transportation services.

The following paragraph presents the basic information on each provider. A more detailed description is contained in "Technical Memorandum Number 4: Transit Providers in the Twin Cities Metropolitan Area."

Table 1

Transit Providers in the Metropolitan Area

Regular Route

Public

- o Metropolitan Transit Commission

Private

- o Medicine Lake Lines
- o North Suburban
- o Valley Transit

Private Fixed Route Circulators

- o Metropolitan Airports Commission
- o 3M Headquarters Shuttle
- o State of Minnesota--Space Center Shuttle

Private Over-the-Road Bus Operators

Paratransit Programs

- o Metro Mobility
- o Minnesota Rideshare
- o Eden Prairie Rideshare Program
- o University of Minnesota Carpool Services
- o Private Employer Rideshare Programs
- o County Programs
- o Community Programs
- o Social Service and Private-Non-Profit Organizations

## B. Regular Route Transit Services

Regular route transit is characterized by service provided on fixed routes and schedules. The service is usually operated on the local and regional street system. Regular route services include both local and express or limited stop service and can be provided with a wide variety of vehicles. In the Twin Cities, diesel buses, both the standard 40 foot bus and the larger 60-foot articulated vehicles, are used for regular route service.

Four providers operate regular route service in the metropolitan area. These include the Metropolitan Transit Commission, the publicly-owned transit system, and three private operators, Medicine Lake Lines, North Suburban Lines and Valley Transit. A map illustrating the regular transit routes operated by these providers is contained in the back pocket.

### Metropolitan Transit Commission (MTC)

#### General Description

The Metropolitan Transit Commission (MTC) is the largest provider of regular fixed route transit service in the metropolitan area. The MTC is the publicly-owned bus system. The MTC service area covers approximately 2,000 square miles and encompasses 86 of the 197 Minor Civil Divisions (MCD) in the metropolitan area. MCDs represent municipalities, both cities and townships. The MTC operates 116 bus routes for a total of approximately 1,400 route miles. The system's radial route structure focuses primarily on the three main hubs of downtown Minneapolis, downtown St. Paul and the University of Minnesota. Within this system the MTC operates a wide range of services including local and express routes. These are identified in Table 2 and briefly described below.

#### Routes and Services

Table 2  
MTC Services

Service Type	Service Area	Minneapolis and Suburbs	St. Paul and Suburbs	Total
Local Service	Radial Routes Serving Downtown	25	18	43
Express Service	Routes Serving Downtown	35	15	50
Local Service	Crosstown Routes	7	4	11
Express Service	Routes Serving the University of Minnesota	9	2	11
Total		76	39	115

Source: Metropolitan Transit Commission

Local Bus Service. Local bus service is operated on a radial route structure focusing on the three major hubs. The route structure and service schedules allow buses from different routes to meet at these hubs to allow for

transferring between buses. The MTC operates 54 local routes with 25 focusing on downtown Minneapolis, 18 on downtown St. Paul, and 11 providing crosstown services. This local bus service comprises the backbone of the MTC's system.

**Express Bus Service.** The MTC operates 61 express routes oriented to weekday peak hour service. These routes operate short segments of local service and then express directly to the downtown areas using the freeways or major roadways. There are 35 express routes serving downtown Minneapolis, 15 express routes serving downtown St. Paul, and 11 express routes serving the University of Minnesota.

**Crosstown Bus Service.** The MTC operates 11 crosstown bus routes linking suburban locations. These routes do not go through either of the downtown areas but rather provide local transit service between major suburban activity centers. There are seven crosstown routes in the suburban areas of Minneapolis and four crosstown routes in the suburban areas of St. Paul.

**University of Minnesota Commuter Express Bus Service.** The MTC operates 11 express bus routes providing commuter express bus service to the Minneapolis campus of the University of Minnesota. The Route 52 commuter service operates during school days at the University of Minnesota and is timed to serve classes and work shifts. The routes make local pickups and then provide express service to the campus. Of the eleven routes, nine serve Minneapolis and its surrounding suburban areas and two routes serve the city of St. Paul and its suburbs.

**Special Service Routes.** In addition to the 116 regularly-scheduled bus routes, the MTC also operates other special routes. In 1984 the MTC provided service for sporting events at the Metropolitan Sports Center in Bloomington, regularly-scheduled bus service to the Minnesota Zoological Gardens in Apple Valley, and subscription bus service to a major employer in Woodbury. The MTC also operated sightseeing tours and charter service throughout the Twin Cities metropolitan area.

#### MTC System Characteristics

This section provides a brief description of the major characteristics of the MTC system. These include fleet size, system miles, number of passengers, operational characteristics and fares. A much more detailed description of these and additional elements is provided "Technical Memorandum Number 4: Transit Providers in the Metropolitan Area."

**Fleet:** In 1984 the MTC had 1,079 buses in its active fleet, including 998 standard 40' transit buses and 81 articulated 60' transit buses. The MTC also had a storage fleet of 101 buses held in inactive reserve for potential service expansion or replacement.

**System Miles:** The MTC's 116 bus routes combine for a total of 1,400 route miles. In 1984 a total of 27,600,000 vehicle miles of service were operated.

**Passengers:** In 1984 a total of 74,400,000 passengers rode the MTC. According to the MTC, approximately 8 percent of these were elderly, 3 percent were handicapped, 5 percent were youth and 84 percent were adults.

Ridership levels on the MTC over the past fifteen years are provided in Table 3 and Figure 4. These show the trends in ridership from 1971 through 1984. The figures reflect the growth in ridership experienced during the 1970's--from 57 million passengers in 1971 to a high of 94 million in 1979. From 1979, into the 1980's, ridership continued to drop to its 1984 level of 74 ~~thousand~~ million passengers. These trends reflect the ridership gains experienced during the oil crises of the 1970's.

**Days and Hours of Operation:** On most local service radial routes serving the two downtowns, MTC service days and hours of operation are as follows: Weekdays, 5:00 a.m. to 1:00 a.m.; Saturdays, 6:00 a.m. to 1:00 a.m.; Sundays and Holidays, 6:00 a.m. to 1:00 a.m. These service hours and schedules vary widely from route to route.

**Fares:** The current MTC fare structure has four fare zones based on rings surrounding the two downtown areas. Fares increase with the distance traveled from the downtown area. Within Zone 1 the MTC has a Dime Fare Zone covering each central business district. This Dime Zone area allows people to ride MTC transit services within the central business districts for \$.10.

The MTC base fare is \$.60 for Zone 1 and goes up in \$.15 increments for Zone 2 and Zone 3. A \$.10 increment is charged for travel into Zone 4. Express routes cost an additional \$.10. The MTC has reduced social fares for the elderly, handicapped and youths during the off-peak periods. Seniors over 65 years of age pay a \$.10 fare. Youths under 18 and over 5 years of age pay a \$.10 fare. Handicapped riders pay a \$.30 fare.

Overlaid on the four fare zone structure is a peak period surcharge. This \$.15 surcharge is applied system-wide on weekdays during the hours of 6:00 a.m. - 9:00 a.m. and 3:30 p.m. - 6:30 p.m. During the peak period times, seniors, students and handicapped individuals must also pay the full fare.

**Transfers:** MTC uses a paper transfer that is punched by the driver according to route. The time of day and direction of travel is recorded on each transfer. Transfers are good for one hour after being issued. A transfer can be used to ride up to four different buses to complete a one-way trip. Drivers of the second and third buses punch the transfer to validate it for continuing use. Transfers are only issued at the time the fare is collected and may not be used to complete round trips. Transfers are accepted between all four regular route providers.

**Employees:** The Metropolitan Transit Commission personnel complement in 1984 totalled 2,299 people including: 1,426 drivers, 441 mechanics and 432 administrative personnel.

### Medicine Lake Lines

#### General Description

Medicine Lake Lines (MLL) is one of three private regular route transit providers in the metropolitan area. Medicine Lake Lines operates fixed route transit service between downtown Minneapolis and the northwest suburbs of

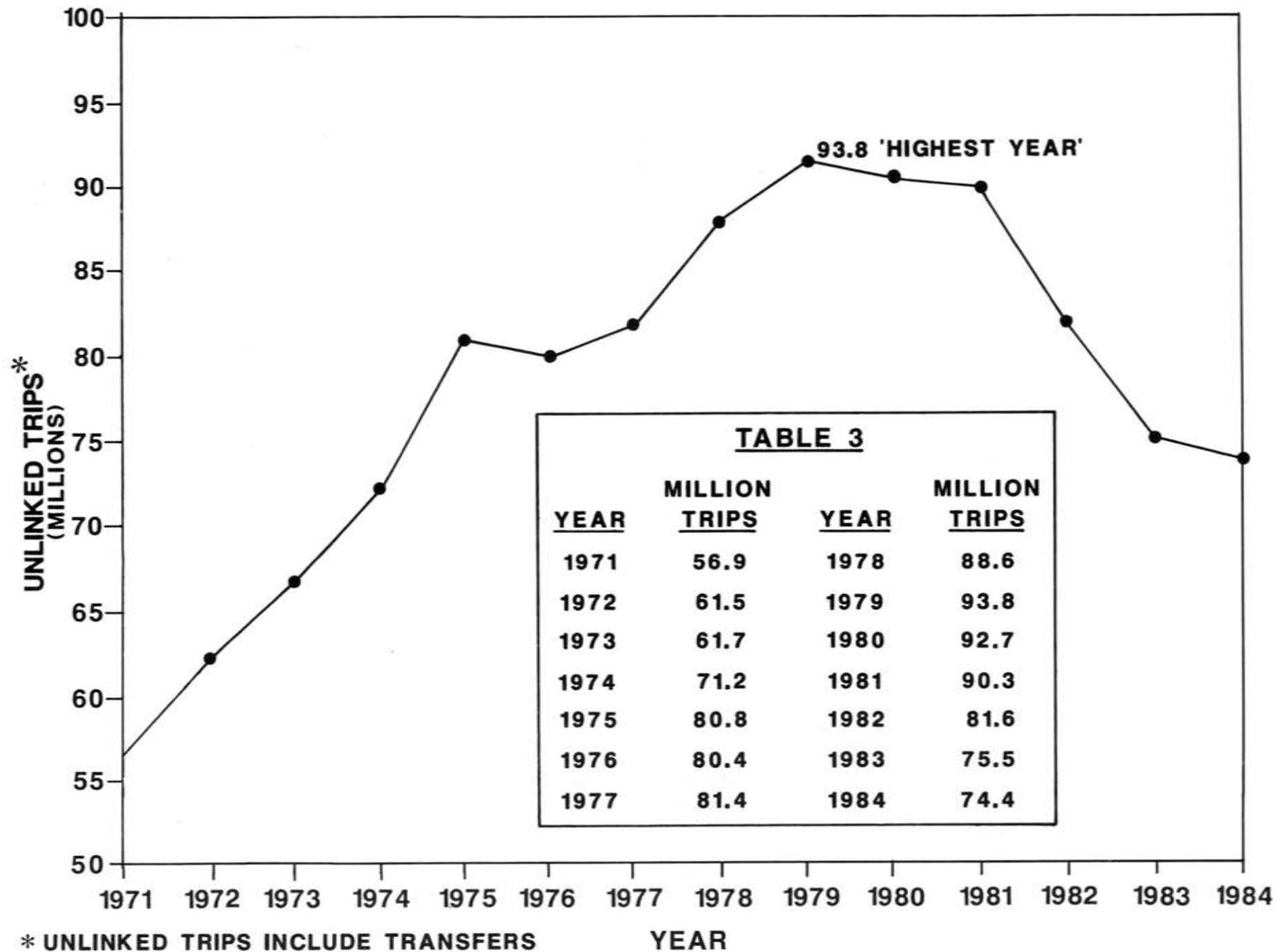


FIGURE 4  
METROPOLITAN TRANSIT COMMISSION  
HISTORICAL RIDERSHIP

Plymouth, Golden Valley, Maple Grove, Medicine Lake, New Hope, Crystal, and Brooklyn Center. In 1984 Medicine Lake Lines carried 360,528 passengers and operated 370,969 miles of bus service.

#### Routes and Services

Medicine Lake Lines operates a number of different types of fixed route transit services including:

- Express peak hour transit service to and from downtown Minneapolis.
- Local all-day transit service to and from downtown Minneapolis.
- Reverse commute local transit service from downtown Minneapolis to employment locations in Plymouth.
- Internal community transit service within the city of Plymouth known as Plymouth Metrolink. The Plymouth Metrolink service is a cooperative transit demonstration project of the City of Plymouth and Medicine Lake Lines.
- Intercampus transit service for the University of Minnesota--Twin Cities Campuses.

Medicine Lake Lines operates 21 peak period trips from the northwest suburbs to downtown Minneapolis. These consist of 18 regular route local service trips and four express route trips. Plymouth Metrolink provides four peak hour local feeder routes in the City of Plymouth that converge in the southeast corner of the city at Highway 55 and County Road 73. At this point, passengers transfer to 40' buses and continue express service to downtown Minneapolis. There are four park-and-ride lots used by Medicine Lake Lines for both services.

During the mid-day and on Saturdays, Plymouth Metrolink operates circulator transit service within the city of Plymouth. The circulator provides hourly transit service to the Ridgedale shopping center in Minnetonka. At Ridgedale connections are made with MTC bus service connecting with downtown Minneapolis and to the Wayzata and Lake Minnetonka area.

Medicine Lake Lines also operates the University of Minnesota intercampus service. It has been providing this service since June of 1983. A variety of transit services are provided to the University's 55,000 students, faculty and staff at the three Twin City campuses on the east bank, west bank and St. Paul campus. The largest component of this transit service is Route No. 13, the inter- and intra-campus east-west bank bus route.

#### Medicine Lake Lines System Characteristics

Fleet: In 1984 Medicine Lake Lines' active fleet for regular route service was comprised of 63 buses. This included 55 standard 40-foot transit buses and 8 mini-coaches. The mini-coaches are used on the Plymouth Metrolink system and the regular 40-foot buses are used on the regular route and University of Minnesota service.

**System Miles:** In 1984 Medicine Lake Lines operated a total of 370,969 vehicle miles of regular route service. The Plymouth Metrolink service provided 169,047 miles and the University of Minnesota service operated by Medicine Lake Lines included 341,366 miles.

**Passengers:** In 1984 a total of 360,528 passengers used Medicine Lake Lines service. A breakdown of passengers by fare paying category reveals 338,617 adult, 16,636 elderly, and 5,275 youth used Medicine Lake Lines in 1984. Plymouth Metrolink served 112,529 passengers in 1984. The University of Minnesota service generated 4,051,736 passengers.

**Days and Hours of Operation:** Medicine Lake Lines regular route service is provided on weekdays between 6:00 a.m. and 7:00 p.m. and Saturdays from 9:00 a.m. to 6:00 p.m. No service is provided on Sundays or holidays. As with MTC service, schedules vary between routes.

Plymouth Metrolink operates commuter service in the morning and afternoon peak periods from 7:00 a.m. to 8:30 a.m. and from 4:30 p.m. to 5:45 p.m. No commuter service is provided on Saturday, Sunday and holidays. The midday circulator operates between 10:00 a.m. and 4:00 p.m. on Monday through Sunday, except holidays.

The University of Minnesota service is provided weekdays from 7:00 a.m. to 12:00 midnight, Saturday from 7:30 a.m. to 12:00 midnight, and Sundays from 8:45 a.m. to 11:00 p.m. during the school year.

**Fares:** Medicine Lake Lines and Plymouth Metrolink fare structures are the same as that described for the MTC. Medicine Lake Lines operating territories lie within fare zones 1 to 3. Reduced social fares for seniors, students and handicapped are also the same as those described earlier.

The University of Minnesota system is free for those boarding and exiting at on-campus bus stops. A \$.60 fare is charged for riders getting on or off between campuses. A \$.15 peak hour surcharge is also required and these stops. To encourage the use of the Como Avenue park-and-ride lot, located at 29th Street and Como Avenue, a special discount fare of \$.30 is charged.

**Transfers:** Transfers are accepted between MTC, Medicine Lake Lines and the Plymouth Metrolink service. A systemwide transfer study conducted by the MTC in the spring 1982 indicated approximately 200 passengers transferring between MLL and MTC buses on a daily basis.

**Employees:** In 1984, Medicine Lake Lines regular route service employee work force totalled 27 employees. This included 19 drivers, 4 maintenance personnel, and 4 administrative personnel. Seven additional drivers are employed for the Plymouth Metrolink service. Twenty-eight employees are used to provide the University of Minnesota service. These include 23 drivers, 2 maintenance employees and 3 administrative employees.

## North Suburban Lines, Inc.

### General Description

The privately owned North Suburban Lines Bus Company operates fixed route transit service between downtown St. Paul and the northern suburban communities of Roseville, Little Canada, Shoreview, Mounds View, Lino Lakes, Centerville, Circle Pines, Lexington, Blaine and Anoka. This includes both local and express services. In 1984 North Suburban Lines carried 272,804 passengers and operated 389,532 miles of bus service.

### Routes and Services

North Suburban Lines operates four bus routes from the northern suburban communities to downtown St. Paul. Two routes provide commuter express service utilizing Interstate 35E and two routes provide local route service utilizing Rice Street.

### Characteristics of North Suburban Lines

**Fleet:** In 1984 North Suburban Lines had 16 buses in its active fleet for use in providing regular route transit service. All of the buses were 40' transit coaches. For the two commuter service routes, North Suburban Lines used 40' highway or over-the-road coaches.

**System Miles:** In 1984, North Suburban Lines operated a total of 389,532 vehicle miles.

**Passengers:** North Suburban Lines generated 272,804 passengers in 1984. A breakdown of passengers by fare paying category reveals 254,776 adult, 12,197 elderly, and 5,831 youth.

**Days and Hours of Operation:** North Suburban Lines operates regular route service only on weekdays. Local service is provided between 6:30 a.m. and 4:45 p.m. Express service operates only in the morning and afternoon peak periods.

**Fares:** North Suburban Lines fare structure is the same as previously discussed. North Suburban Lines operating territories lie within all four fare zones. North Suburban Lines charges a premium fare of \$1.50 per ride on its predominantly non-stop express commuter service routes using highway coaches.

**Transfers:** Transfers are accepted between North Suburban Lines and MTC regular route service. A system-wide transfer study conducted by MTC in spring 1982 showed approximately 100 passengers transferring between North Suburban Lines and MTC buses on a daily basis.

**Employees:** North Suburban Lines workforce totalled 18 people in 1984. This included 13 drivers, 3 maintenance employees and 2 administrative personnel.

## Valley Transit, Inc.

### General Description

Valley Transit, Inc. is a privately operated local transit system contracted through the Metropolitan Transit Commission. Valley Transit, Inc. provides localized transit service to the communities of Stillwater, Oak Park Heights and Bayport.

### Routes and Services

Valley Transit operates two circulator routes in the communities of Stillwater, Oak Park Heights and Bayport. The North Hill Route provides transit service between downtown Stillwater and the residential areas of Stillwater. The South Hill Route ties together the St. Croix Shopping Mall, a senior Housing Complex in Oak Park Heights, and two major employers in the area, Anderson Window and the Stillwater State Prison in Bayport. Valley Transit connects with MTC routes serving downtown St. Paul in downtown Stillwater.

### Characteristics of Valley Transit

**Fleet:** Valley Transit has a fleet of two buses. This includes one 30' transit coach and one school bus that serves as a reserve vehicle.

**System Miles:** In 1984 Valley Transit operated 45,000 total vehicle miles.

**Passengers:** Valley Transit generated 40,450 passengers in 1984. A breakdown of passengers for 1984 by fare paying categories shows 11,991 adults, 18,237 elderly, and 10,222 youth.

**Days and Hours of Operation:** Valley Transit provides service on weekdays from 7:00 a.m. to 5:30 p.m. and Saturdays from 9:00 a.m. to 3:30 p.m. No service is operated on Sunday.

**Fares:** Valley Transit fare structure is coordinated with other regular route transit providers. The base fare is \$.60 and peak fare is \$.75. Reduced fares are offered to senior citizens 65 years of age and over, and students aged 5 to 17. Children under 5 years of age ride free when accompanying a fare paying adult.

**Transfers:** Transfers are accepted between Valley Transit and MTC.

**Employees:** During 1984, Valley Transit reported 2 employees. These are broken down into 1-1/2 drivers and a part-time administrative staff person.

### Park and Ride Lots

There are a total of approximately 122 park-and-ride lots, providing 4,420 parking spaces located throughout the metropolitan area. Figure 5 shows the location of the park-and-ride lots and categorizes the lots by predominate land use and lot ownership. These lots, which include both formal and informal



arrangements, allow free parking to bus patrons and carpoolers who wish to park their private automobiles either ride the transit system or join a car or vanpool.

Of the 122 park-and-ride lots, 8 are owned by the MTC or operated under a long-term lease, 31 are owned by a governmental agency other than the MTC, 36 are part of a shopping center complex, 7 are associated with a private development or business, and 29 involve the use of a church parking facility. The eleven remaining are scheduled for construction.

#### Fixed Route Circulator Service Provided by Local Businesses

Three private circulator services were operated in the metropolitan area in 1984. These systems were developed, funded and operated by the individual businesses or organizations. The three systems are briefly described here.

##### Metropolitan Airports Commission (MAC)

The Metropolitan Airports Commission (MAC) operates a regularly scheduled shuttle bus system between the main terminal at the Twin Cities International Airport and the Hubert H. Humphrey Terminal. Adjacent to the H.H.H. Terminal are two large parking lots for airline/airport employees and the general public. The shuttle bus system provides access between both airport terminals and the two parking lots. MTC bus service connects with the shuttle system at each airport terminal.

Three mini-buses are used to operate the shuttle system. The shuttle makes use of a large tunnel which runs underneath one of the main airport runways, which is restricted to small vehicles only.

MAC contracts with Sterling Cartage to operate the service, which is free for both airport/airline employees and the general public. Service operates 24 hours a day seven days a week.

##### 3M Headquarters Shuttle

The 3M Company operates a regularly scheduled van shuttle service for 3M employees between the main headquarters in Maplewood to office buildings in Woodbury. This three and one-half mile long shuttle service is operated Monday through Friday with vans used in the 3M vanpool program driven by 3M employees. The service is free to 3M employees.

##### State of Minnesota--Space Center Shuttle

This shuttle system is a joint public/private venture between the State of Minnesota and the Space Center providing transit access between the State of Minnesota Capitol area, downtown St. Paul and the Space Center/Department of Natural Resources buildings just east of downtown St. Paul. Vans are used to provide the service, which operates during the workday, Monday through Friday. State of Minnesota employees and employees housed at the Space Center may ride the vans at no charge. Drivers are provided by the Space Center.

### Private Over-the-Road Bus Operators

There are five private over-the-road bus operators providing highway bus transportation on a daily basis in the metropolitan area. Table 4 lists the carriers, the communities they serve, the cost of service, the number of daily trips and initial destination. The routes operated by each carrier and communities served are illustrated in Figure 6.

Table 4  
Private Over-the-Road Bus Service in the Metropolitan Area

Carrier	Communities Served Within the Seven County Area	One-Way Fare	Daily Number of One-Way Trips	Major Destination
Four Star Lines (Route to/ from Morris, MN)	Medina (Hamel)	\$2.15	2	Downtown Mpls.
	Loretto	\$3.30	2	Downtown Mpls.
	Rockford	\$4.15	2	Downtown Mpls.
	Downtown Mpls.	\$2.60	2	Mpls./St. Paul Airport
Greyhound Lines (Route to/from Winona, MN)	Hastings	\$4.20	4	Downtown St. Paul
	Miesville	\$6.35	4	Downtown St. Paul
Greyhound Lines (Route to/from Brainerd)	Anoka	\$3.85	8	Downtown Mpls.
	Osseo	\$3.25	8	Downtown Mpls.
	Downtown Mpls.	\$1.80	8	Downtown St. Paul
Greyhound Lines (Route to/from Duluth- Hibbing)	Forest Lake	\$5.60	3	Downtown St. Paul
	Downtown St. Paul	\$1.80	3	Downtown Mpls.
Greyhound Lines (Route to/from Aberdeen S.D.)	Maple Plain	\$4.50	2	Downtown Mpls.
	Long Lake	\$3.35	2	Downtown Mpls.
	Downtown Mpls.	\$2.60	2	Downtown St. Paul
Greyhound Lines (Route to/from Sioux Falls, S.D.; Omaha, NE)	Belle Plaine	\$8.15	6	Mpls./St. Paul Airport
	Jordan	\$6.90	6	Mpls./St. Paul Airport
	Shakopee	\$5.05	6	Mpls./St. Paul Airport
Jefferson Lines (Route to/from Kansas City, Kansas)	Farmington	\$6.00	3	Downtown St. Paul via Mpls./St. Paul Airport
	Rosemount	\$5.00	3	Downtown St. Paul via Mpls./St. Paul Airport
Jefferson Lines (Route to/from Rochester, MN)	Hampton	\$6.00	4	Downtown St. Paul via Mpls./St. Paul Airport
	Coates	\$5.00	4	Downtown St. Paul via Mpls./St. Paul Airport
Scenic MN Lines (Route to/from Virginia, Hibbing, MN)	East Bethel	\$2.45	2	Downtown Mpls.
	Ham Lake	\$2.45	2	Downtown Mpls.
	Blaine	\$2.00	2	Downtown Mpls.
	Spring Lake Park	\$2.00	2	Downtown Mpls.
	Columbia Heights	-----	2	Downtown Mpls.
Zephyr Lines (Route to/from Watertown, SD)	Norwood	\$7.45	2	Downtown Mpls.
	Cologne	\$6.70	2	Downtown Mpls.
	Chaska	\$4.85	2	Downtown Mpls.

Source: Information provided by the companies listed and compiled  
by the RTB.



### C. Paratransit Programs

Paratransit services are usually defined as demand-responsive transportation offering more flexible and personalized services than conventional fixed-route transit. Paratransit vehicles are often lower capacity and may be wheelchair equipped. Vans, mini-buses, taxis and automobiles are commonly used for paratransit services. A wide variety of paratransit services are provided in the metropolitan area.

Paratransit programs in the Twin Cities include public and private shared-ride demand-responsive service for the elderly and disabled, rideshare matching programs for commuters and students, private employer vanpool programs, county and community paratransit programs, and volunteer driver programs. These services are summarized in this section.

#### Metro Mobility

##### General Description

The largest paratransit service provided in the Twin Cities is Metro Mobility, which is a coordinated transportation system designed to provide public transit for disabled individuals who are unable to use regular route transit services. Metro Mobility provides demand responsive door-through-door service to registered clients.

The Metro Mobility service area includes all of Minneapolis and St. Paul and the first ring suburbs surrounding both cities. Figure 7 outlines the Metro Mobility service area. The Metro Mobility service is operated by one public and several private providers. The public provider is Project Mobility, operated by the MTC. The private providers are: Suburban Paratransit, Morley Bus Company, Blue and White Cab, Citywide Cab, Diamond Cab, Red and White Cab, Yellow Cab and Yellow Taxi.

To use Metro Mobility, an individual must be certified as an eligible rider. The eligibility criteria are: unable to maneuver oneself 1/4 mile or more; or unable to walk up and down the steps of a mainline bus; or unable to wait outdoors for 10 minutes or more; or unable to use or learn to use mainline bus service in the opinion of a competent professional as specified in these rules. In 1984, 10,000 persons were certified to use Metro Mobility. Ridership on Metro Mobility system was 486,800 in 1984.

Requests to use Metro Mobility service are placed through the Metro Mobility Transportation Center which is operated by the Metropolitan Transit Commission. The Transportation Center is responsible for certifying eligible users, receiving trip requests, grouping passengers into vehicles and forwarding requests to appropriate providers.

Requests for service must be made through the Transportation Center between 6:00 a.m. - 1:00 p.m. on the day before the service is needed. The trip requests are coordinated by the Transportation Center dispatchers to provide the most efficient utilization of vehicles. These trips are then forwarded to the appropriate Metro Mobility provider. The Transportation Center can also accommodate standing order requests for service, which enables daily Metro Mobility users to pre-arrange rides with Metro Mobility on a continuous basis.

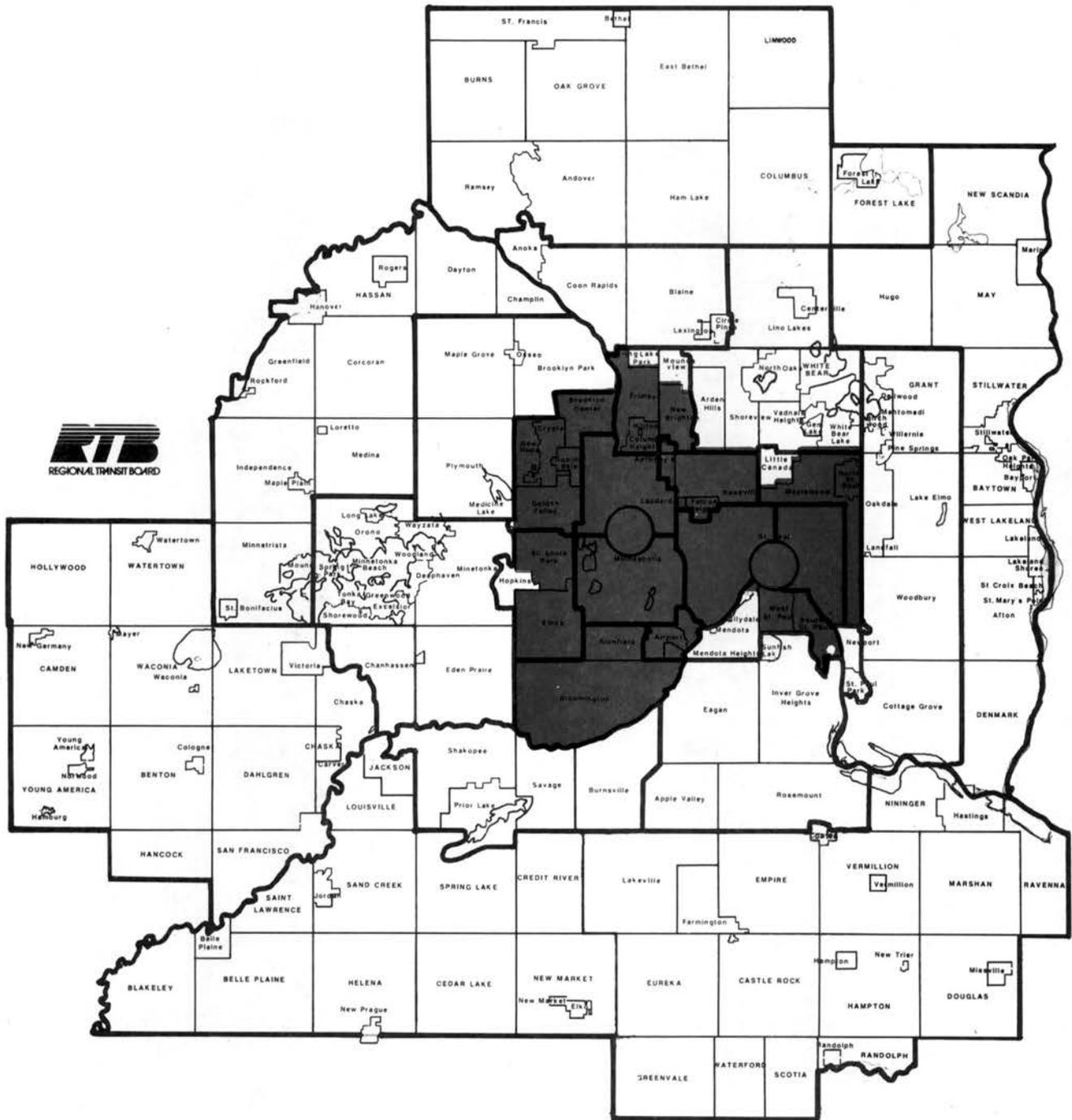


FIGURE 7  
METRO MOBILITY SERVICE AREA



REGIONAL TRANSIT BOARD

CONSULTANT: STRGAR-ROSCOE-FAUSCH, INC.

## Metro Mobility System Characteristics

**Fleet:** Project Mobility, Suburban Paratransit and Morley Bus Company all operate fleets of wheelchair accessible vehicles. The six private taxi companies do not have special accommodations for wheelchairs. The taxi companies usually provide transportation to Metro Mobility passengers not in need of a level changing device.

Forty-five vehicles were used in 1984 for Metro Mobility service, excluding the taxi companies. These included 5 standard buses, 30 small buses, and 10 vans.

**System Miles and Passengers:** In 1984, Metro Mobility operated over 1-1/2 million miles of service. A total of 483,490 passengers used the system in 1984. The mileage figures do not include the six taxicab companies which were unavailable.

**Service Hours:** The Metro Mobility service hours are similar to that of the regular route system in the metropolitan area. Metro Mobility provides service weekdays from 6:00 a.m. to 11:00 p.m., Saturdays from 8:00 a.m. to 11:00 p.m. and Sundays from 8:00 a.m. to 11:00 p.m.

**Fares:** Metro Mobility fares are similar to those charged on regular route service. Fares on Metro Mobility are \$.75 during the peak and \$.60 during the off-peak.

**Employees:** In 1984, the employee workforce for the Metro Mobility Transportation Center, Project Mobility and Suburban Paratransit totalled 90 people. Employee information was unavailable for Morley Bus Company and the taxi companies.

## Rideshare Services

In 1984 there were three publicly sponsored rideshare programs serving the metropolitan area. These were Minnesota Rideshare, the Eden Prairie Chamber of Commerce Rideshare program and the University of Minnesota carpool services. In addition, a number of private businesses operated carpool and vanpool programs. Each of these services are briefly outlined below.

### Minnesota Rideshare

Minnesota Rideshare is operated by the Metropolitan Transit Commission under contract to the Regional Transit Board. Minnesota Rideshare provides a comprehensive range of free ridesharing services throughout the metropolitan area. Services include: 1) rideshare matching; 2) MTC bus information; 3) third party vanpooling leasing; and 4) rideshare marketing, consultation and promotion assistance.

Minnesota Rideshare provides a computerized matching service for people interested in carpooling. Applicants are provided with a match list of names of other applicants with similar home and work locations and work hours. The

computerized matching service, available for both carpooling and vanpooling, takes approximately five to ten working days. According to Minnesota Rideshare, in 1984 a total of 11,000 match lists were processed and 3,200 carpoolers were assisted.

Minnesota Rideshare's matching is done through the development and maintenance of a rideshare database, which contains information on individuals interested in carpooling or vanpooling in the seven county metropolitan area. Minnesota Rideshare updates the database on a regular basis. In 1984 there were approximately 10,919 names in the database; 7,773 of these were new applicants to the database. Minnesota Rideshare estimates that the average life of an organized carpool is approximately 27 months.

Minnesota Rideshare also provides vanpool matching services through the use of third party vanpool leasing. This is done through Vanpool Services, Inc. (VPSI). VPSI can provide either 12 or 15 passenger vans. Vanpoolers pay fares that cover all fixed and operating costs including lease, insurance, licensing, maintenance and fuel, as well as part of the administrative costs. Drivers, who are volunteers, ride free and can use the van for non-work purposes for a nominal mileage charge. In 1984 Minnesota Rideshare had a total of 191 registered vanpools.

Marketing representatives from Minnesota Rideshare are available to assist companies, agencies and institutions in developing and maintaining rideshare programs. Minnesota Rideshare works directly with these groups and provides a wide range of services.

#### Eden Prairie Rideshare Program

The Eden Prairie Chamber of Commerce coordinates a rideshare program for major employers within the City of Eden Prairie. Rideshare matching services are available free of charge to employees of all Eden Prairie-based employment centers. There are 800 names on the active database. Currently there are also three owner/operator vanpools based from employment centers in Eden Prairie.

The rideshare program is a non-profit organization that is funded through the Eden Prairie Chamber of Commerce.

#### University of Minnesota Carpool Services

The University of Minnesota offers a computerized carpool matching service to students, staff and faculty members. Applicant information is updated on a quarterly basis to deal with the changing student population. Of the 41,146 students residing within the metropolitan area enrolled fall quarter of 1984, 521 used the carpool services match list.

#### Private Employer Rideshare Program

A number of private businesses operate their own rideshare programs. These include firms which simply utilize the Minnesota Rideshare program, to those having their own rideshare coordinators, to those providing vans to employees

forming vanpools. In 1984, 17 companies provided vanpool programs for their employees. The participating companies and number of vanpools organized are shown Table 5. These represent a variety of different businesses and different geographical areas. The location of private employers operating their own rideshare programs is shown in Figure 8. The 3M Company, located in Maplewood, has the largest vanpool program, with approximately 117 active vans. 3M was one of the first companies in the country to provide vans to employees. It has been a national model for other companies forming similar programs.

#### County Programs

Five county-based paratransit programs are currently operated in the metropolitan area. Anoka, Carver, Dakota, Scott and Washington counties operate some type of paratransit services. The types of services provided within each county are different, but all are focused primarily on the elderly and handicapped population.

A summary of the types of services provided by each of these programs is provided in Table 6. The information provided includes the system name, a brief description of the key features of the program, the system characteristics and the operating characteristics for 1984. A more detailed description of each system is contained in Technical Memorandum Number 4.

#### Community Programs

Six community-based paratransit programs are operated in the metropolitan area. These systems, which provide primarily local circulation, are operated in Columbia Heights, Hastings, Hopkins, Plymouth, St. Louis Park and White Bear Lake.

A summary of the community programs is also provided in Table 6 with a detailed description contained in Technical Memorandum Number 4.

● VANPOOL PROGRAM  
LOCATION ( See Table 5 )

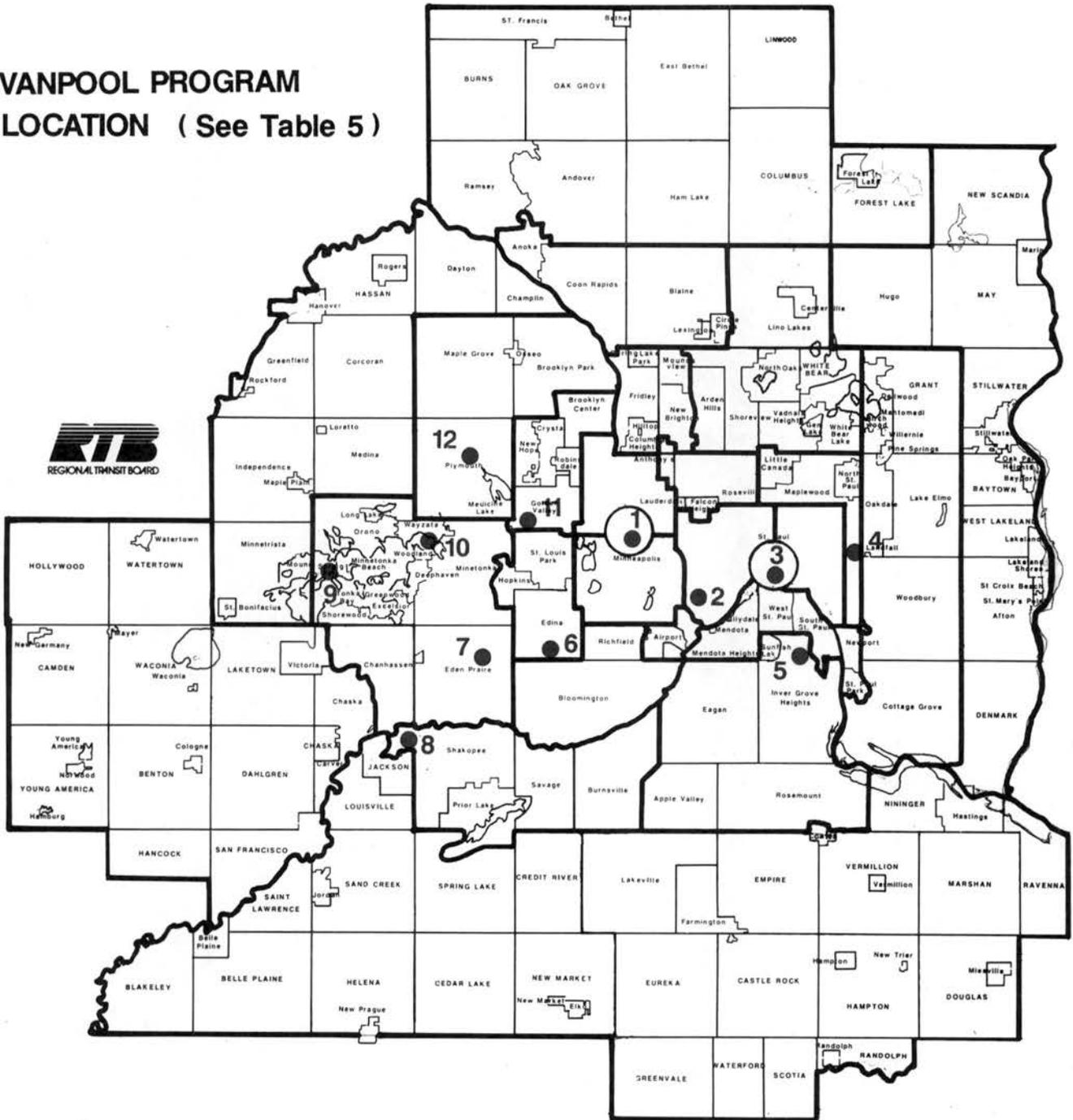


FIGURE 8  
PRIVATE VANPOOL PROGRAMS

Table 5  
Private Employer Vanpool Programs\*

Company/Agency and Location	No. of Vans	Figure 8 Reference
3M Company - Maplewood, State of Minnesota, Central Motor Pool St. Paul	117 32	4 3
Prudential Insurance - Plymouth	27	12
General Mills - Golden Valley	25	11
Northern States Power - Minneapolis	24	1
Cargill, Inc., - Minneapolis and Wayzata	12	10
Cenex - Inver Grove Heights	8	5
City of Shakopee - Shakopee	6	8
National Car Rental - Edina	5	6
Advanced Machine Co. - Spring Park	5	9
Abigail Uniforms - Minneapolis	4	1
BWBR Architects - St. Paul	4	3
First Bank Systems - Minneapolis	4	1
American Hardware Mutual Insurance - Mpls.	3	1
E. A. Sween Co. - Eden Prairie	2	7
Hitchcock Industries - Minneapolis	2	1
Ford Motor Company - St. Paul	1	2

Source: Minnesota Rideshare

\*These figures represent formal company-sponsored vanpool programs. It does not include informal vanpools. The numbers correspond to the numbers in Figure 8, indicating the location of the company.

TABLE 6  
CHARACTERISTICS OF COMMUNITY AND COUNTY PARATRANSIT PROGRAMS

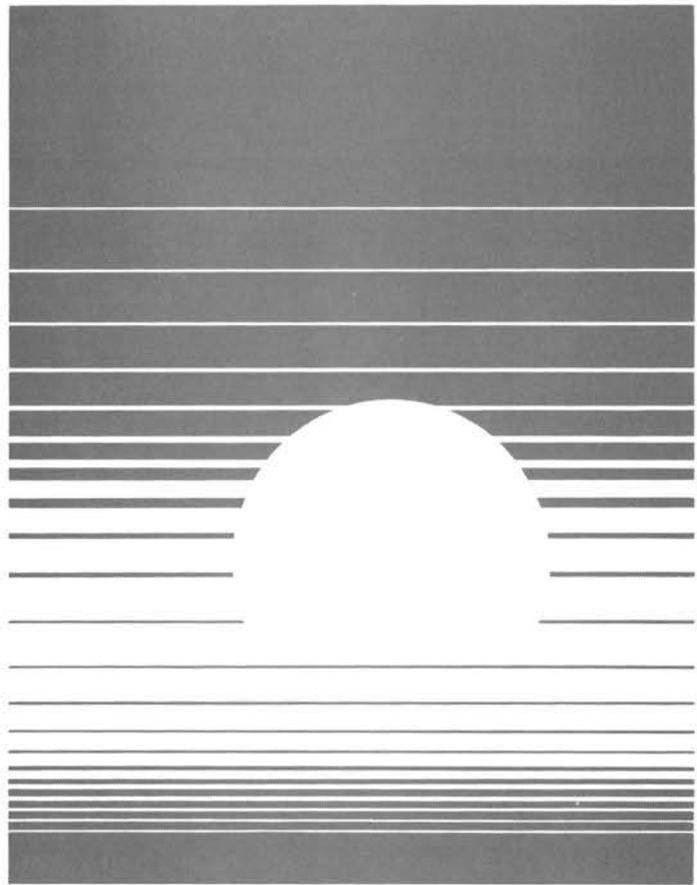
Name	Program Description	Vehicles	Employees	1984 Operating Characteristics		
				Ridership	Miles	Hours
<u>I. COUNTY PROGRAMS</u>						
Anoka County Community Health and Human Services	dial-a-ride for elderly and handicapped	100 volunteer autos	100 volunteer drivers	27,518	158,831	14,011
Carver Area Rural Transportation (CART)	dial-a-ride for elderly and handicapped	4 wheelchair accessible small buses and 70 vounteer autos	6 employees and 70 volunteer drivers	55,000	276,000	18,300
Dakota Area Referral and Transportation for Seniors, Inc. (DARTS)	dial-a-ride for elderly and handicapped	11 small buses (9 wheelchair accessible) and 13 volunteer autos	10 employees	82,174	236,000	14,000
Scott County Transportation Program	dial-a-ride for elderly and handicapped	3 small buses	6 employees	33,724	182,303	11,998
Human Services, Inc., in Washington Co.-- Transporter	dial-a-ride for elderly and handicapped	4 vans and 5 volunteer autos	15 employees	20,588	120,685	6,582
<u>II. COMMUNITY PROGRAMS</u>						
City of Shakopee Transportation Program	dial-a-ride service for residents of Shakopee	2 vans	6 employees	1,062	3,272	1,248
	commuter vanpool program for residents of Shakopee	6 vans	10 volunteer drivers and 1 employee	6,604	20,711	921
Columbia Heights Shared Ride Paratransit System	dial-a-ride for the residents of Columbia Heights and Hilltop	5 taxicabs (as needed)	5 taxi drivers (as needed)	8,101	7,748	658
Hastings Transportation Around the City (TRAC)	dial-a-ride for residents of Hastings	3 small buses (2 are wheelchair accessible)	4 employees	29,964	60,227	6,226
Hopkins Hop-a-Ride	dial-a-ride for elderly	1 small bus that is wheelchair accessible	4 employees	29,604	37,005	3,744
St. Louis Park Emergency Program (STEP)	dial-a-ride for elderly and handicapped	30-40 volunteer autos	30-40 volunteer drivers	2,665	20,404	2,315
White Bear Area Transit	subscription and dial-a-ride service	3 small buses 1 is wheelchair accessible	3 employees	33,529	131,187	5,132

### Social Service and Private Non-Profit Agencies

Many social service agencies and private non-profit organizations provide some type of transportation services to their clients. In many cases, transportation is provided to complement the major services of the organization. Services offered by these organizations include congregate dining for senior citizens, senior day activity centers, local community organizations and transportation to medical clinics, social group and other activities.

In order to obtain a comprehensive knowledge of the social service and private non-profit paratransit services available within the metropolitan area, the RTB conducted a survey of these organizations. A total of 80 surveys were sent out to the various organizations. The response rate was very good and the RTB followed up with agencies not returning the surveys to provide for close to a 100 percent completion rate.

The results of these surveys have been included in the RTB's Transit Service Needs Assessment data base. The summary of each agency and the service they provide is included in "Technical Memorandum 4: Transit Providers in the Twin Cities Metropolitan Area."



**CHAPTER FOUR**  
TRANSIT SERVICE OPTIONS

## A. Introduction

In order to fully understand the complete spectrum of transit service options available for consideration in the area, this chapter outlines the structure of different transit service concepts that are applicable for different geographical areas and market segments in the Twin Cities and outlines a list of possible options to be considered. This discussion concentrates on service, leaving the more detailed treatment of different technologies to subsequent more detailed analysis. The service concepts build on existing transit services in the metropolitan area described in the previous chapter. A summary of the range of potential service concepts are presented here. A complete, detailed discussion is provided in "Technical Memorandum Number 8: Transit Service Options."

## B. Structure of Transit Services

From a market perspective, transit services can generally be categorized by the geographical pattern of the service, the collection and distribution system and the level of service provided. This chapter outlines how transit service can be described using this nomenclature. There are a number of transit service options that can be developed from this structure.

### Geographical Service Description

Transit service options can be described based on the geographical areas they service. Four geographical areas and their corresponding transit service alternate--the Central Business District, Central Cities, suburbs and rural--are described here. The downtown district or central business district (CBD) of a metropolitan area is generally the focus or hub of transit services. Most transit lines either begin and end in the CBD or pass through the CBD en route to other activity centers. The CBD is generally the focus of peak period express service from suburban areas as significant employment concentrations exist in the CBD. Internal circulation within the CBD is also a significant transit market due to the concentration of business, shopping and entertainment activities. The level of service oriented toward the CBD is usually high in terms of the number and frequency of transit vehicles, but limited seating capacity is generally available, especially during peak travel periods.

The central city areas immediately surrounding the CBDs generally receive relatively high levels of transit service. This is oriented to the CBDs along radial routes as well as grid service that provides internal circulation. Express service to the CBD is not usually provided due to the relatively short travel distance. Peak period service to suburban areas is also generally not available directly from central city areas. Such travel typically requires a trip to the CBD and a transfer to another transit route. Generally, the central cities have high concentrations of trip origins, and to a lesser extent, trip destinations. Service area coverage is generally high.

Suburban areas are typically linked to the CBDs and central cities by radial transit lines. These lines may have branches and feeders in the outlying areas linking to trunk routes along major travel corridors. The service tends to be oriented to the peak period and peak direction of travel. Express service is almost exclusively focused on the CBD and operates inbound during the morning peak and outbound in the evening peak. The frequency of service is often significantly reduced during off-peak periods. Travel within suburban areas generally requires a separate circulation system as the radial route and corridor service configuration does not adequately serve the internal travel desires. Direct travel to other suburban areas is generally not available with none or limited crosstown service. The concentrations of trip origins and destinations is quite low compared to the CBD and central city areas. Extensive area coverage is generally not provided.

Rural areas usually are not served by regular route transit. Paratransit services, focusing on the elderly and handicapped, are often provided as are rideshare services. The low densities, long distances between origins, and diverse travel destinations make rural areas difficult to serve.

Transit service in outlying suburban or in free-standing communities is generally limited to peak period service focusing on the CBDs. Travel within these communities requires a separate circulation system.

#### Physical Pattern of Service

The development of transit services with respect to geographic markets usually consider three physical patterns of service:

**Line-Haul Service:** This includes both express and local services. Express line-haul consists of long routes with limited stops operated at relatively high speeds along major travel corridors primarily to city centers. Local line-haul consists of a mixture of length, orientation and speeds and represents the most common transit service available. Circumferential and crosstown service is also part of this category. Line-haul service may require a feeder service to provide connections at either end of the trip.

**Short-Haul Service:** These generally consist of relatively low speed local circulators that operate strictly within limited areas such as suburban communities, campuses and Central Business Districts. These services are often linked with line-haul services to act as collection systems. In outlying and free-standing centers, short-haul service may be provided for internal circulation. In other lower density areas, every other day service to activity centers may be applicable to provide basic mobility.

**Paratransit Service:** These consist of demand responsive service and pre-arranged or subscription service. Demand responsive service includes jitney, dial-a-ride and subsidized taxis which requires hail or phone arrangements by the user. Jitneys, rarely used in the United States because of potential conflict with regular route service, tend to operate with short headways along heavily traveled routes. Dial-a-ride services usually require users to make a telephone reservation or gain access at a timed checkpoint. Point-to-point service and route deviation service are dial-a-ride options. Subsidized taxi service is applicable to many of the dispersed trips in low density areas and for hours when there is little demand for conventional transit service. Subscription or pre-arranged paratransit services include all forms of ridesharing and tend to follow the same individualized route and schedule of subscribers.

Generally, regular route service can be categorized as local or express service based on the frequency of stops. Local service provides user access at all regular bus stops. Express bus service generally specifies limited stop service.

Premium express service is sometimes available to serve specific market groups. This type of service provides a significantly higher quality of service in terms of travel speed and user amenities including such items as individual seating, but also charges a higher user fee. Over-the-road coaches are sometimes used for this service.

The route structure options for line-haul service include radial, grid, trunk line feeder and timed-transfer. The radial bus route network radiates from the central city outward to suburban areas providing direct service to and from the outlying areas. Travel to non-CBD and crosstown destination is often quite

difficult and may require long travel times and route transfers in the downtown hub. Radial service generally provides route branches in outlying areas to enhance service area coverage.

Grid bus route networks effectively serve cities with existing grid street networks and few topographic barriers. This system affords the user the opportunity to travel to non-CBD and crosstown destinations without having to travel through the central city hub. Travel to the CBD may require a route transfer under this service.

The line-haul and feeder system is best suited for major travel corridors. The feeder routes generally operate within outlying areas and users are required to transfer to a trunk line for travel through the main corridor. Large capacity vehicles can be used along the trunk line.

Timed-transfer service allows buses to operate on radial networks that are focused on the central city and regional activity centers as opposed to only the central city. Under this service, buses meet at transfer centers on a regular basis to allow passenger transfers. Radial service to the central city is available from the regional hubs and travel to non-CBD and crosstown destinations is greatly improved.

Figure 9 illustrates the physical pattern of these service options.

#### Collection and Distribution Service

Closely aligned with the physical pattern of service is the type of collection and distribution system at either end of the line-haul service. Express line-haul services may utilize several types of collection/distribution systems in the outlying areas including radial branch feeder service, timed-transfer and pulse feeders, and park-and-ride and kiss-and-ride operations. Local line-haul service may use short-haul or paratransit feeder service. In downtown areas, short-haul circulators may be available to link with the line-haul services to facilitate the completion of the transit trip.

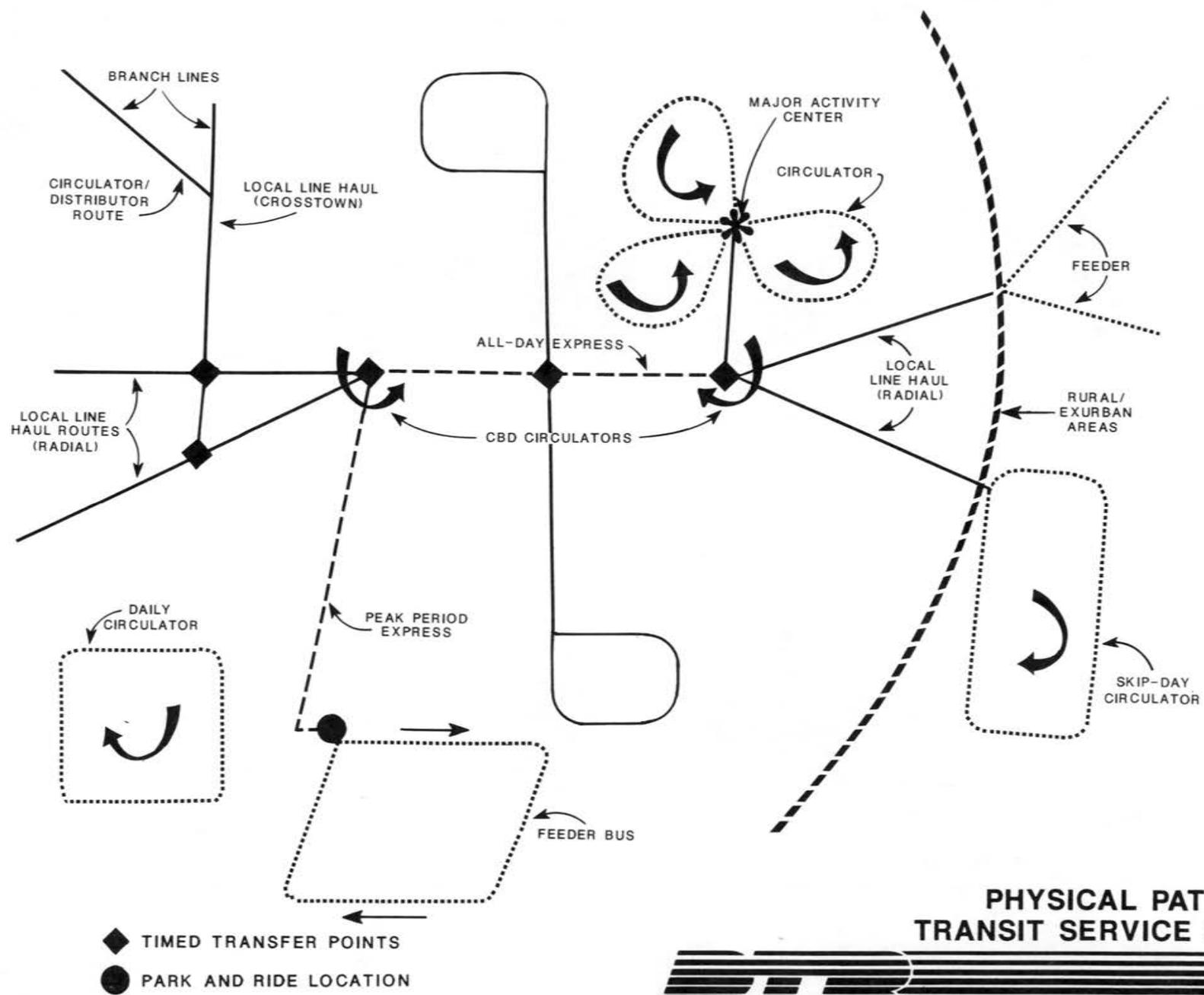
#### Service Levels

The level of transit services can generally be described by the hours of service operation and the frequency of service. Express line-haul service tends to operate during the morning and evening peak travel periods and is aimed primarily at the home-to-work travel market.

Local line-haul service is the most common transit service and generally operates from the early morning hours into the late evening. Frequencies tend to be quite high during peak periods but drop during the midday and drop even more during the late evening periods. Service levels are usually lower on Saturdays and Sundays also.

#### Summary of Transit Service Options

Using the structure of service options outlined in the previous paragraphs in this chapter, a number of service concepts were identified in Phase I for more detailed consideration in Phase II. These are provided in the following outline. This listing presents a good starting point for developing and evaluating transit service options as well as examining other innovative concepts.



**FIGURE 9**  
**PHYSICAL PATTERN OF**  
**TRANSIT SERVICE OPTIONS**

## STRUCTURE OF TRANSIT SERVICE

### Geographic Service Description

- o CBD
- o Central City
- o Corridor
- o Suburban Based
  - Inter-Subarea
  - Intra-Subarea
  - County
  - Community

### Physical Pattern of Service

- o Line-Haul Express
  - Non-Stop
  - Limited Stop
  - Premium
- o Line-Haul Local
  - Grid Pattern
  - Radial Service
  - To CBD
  - To regional activity center(s)
- o Short-Haul
  - Daily Circulator
  - Skip-Day Circulator
  - Community/Merchant Based
- o Paratransit
  - Point-to-Point
  - Route Deviation

### Collection/Distribution Service

- o Feeder Service
- o Park-and-Ride
- o Integrated Line-Haul/Feeder
- o Circulation/Distribution Systems
- o Timed-Transfer/Pulse System Pattern

### Service Level

- o Frequency
  - Headway Reduction
  - Service Saturation
- o Hours of Service
  - Off-Peak
  - Night Peak
  - Weekends
- o Service Area Definition

## VEHICLE TYPE/APPLICATION

### Automobiles

- Private
- Carpools
  - Family and Friend Based
  - Employee Based
  - Residential Based
  - Community/Region Service
- Taxis
  - Private
  - Shared Ride
  - Dial-a-Ride
  - Late Night/Off Peak
  - Feeder to Line-Haul

### Vans (Pools)

- Private/Independent
- Employer Provided
- Third Party Provider

### Buses

- Small (15-30 passengers)
- Standard (40-50 passengers)
- Articulated (67 passengers)
- Intercity: over-the-road coaches

### Trolley Buses

- Electric
- Dual

### Light and Heavy Rail

### Automated Guideway Transit

- Personalized Rapid Transit
- Group Rapid Transit

## OTHER CONSIDERATIONS

### Market Based Service

- Premium (Choice) Markets
- Work Trips/Peak Periods
- Non-Work Trips/Off-Peak Periods
- Late Night/Evening
- Transit Dependent
  - Elderly
  - Handicapped
  - Youth
  - Disabled
- University Oriented

Service Provision Options

- o Provider
  - Volunteer
  - Public
  - Private
- o Method of Provision
  - Scheduled Service
  - Demand Responsive
    - Dial-a-Ride
    - Subscription

Funding Options

- o Subsidized
  - Public
  - Private
  - Volunteer
- o Non-Subsidized

Transit Priority Treatment

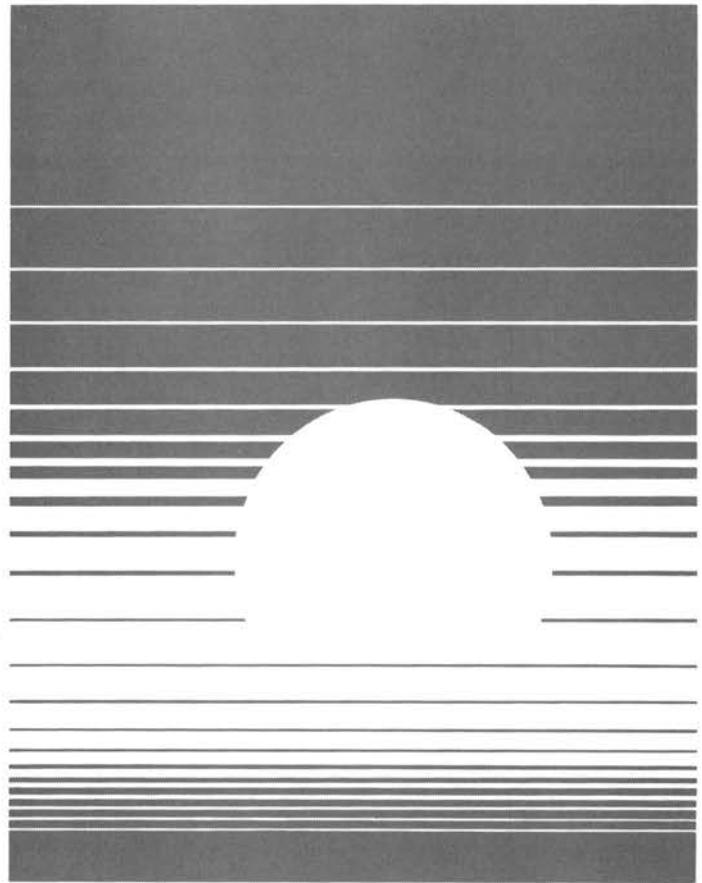
- o HOV Lanes and Busways
- o Exclusive Bus/Carpool Ramps
- o Signal Preemption/Priority Timing
- o Parking Rate Reduction/Parking Provisions for Rideshare Vehicles
- o Park-and-Ride Facilities

Service Quality

- o Vehicle Cleanliness and Physical Condition
- o Driver Training/Screening
- o Signing/Schedule Display and Dissemination
  - On Vehicles
  - At Stops
  - At Shelters
  - Through Media
- o Schedule Readability, Regularization and Personalization
- o Facilities
  - Shelters
  - Transit Centers
  - Benches
  - Heated Area
- o Safety/Security
- o Plowing of Bus Stops and Shelter Areas
- o On-Board Amenities

Marketing Options

- o Education
- o Advertisement
- o Use of the Media and Other Means for Route and Schedule Dissemination
- o General Public Opinion Surveys
- o Information Services (Telephone)
- o Image-Improvement Campaigns



## **CHAPTER FIVE**

FRAMEWORK FOR TRANSIT  
NEEDS ANALYSIS

## A. Introduction

As noted in the introduction to this report, the approach taken in Phase I of the Transit Service Needs Assessment focused on four major components. These were public involvement, technical analyses, market research components, and national expertise. These elements combined to form the transit needs analysis. A description of the technical analysis effort and the development of the transit need indicators is the thrust of this chapter. The discussion follows the outline of steps in the development of the technical analysis, which was described earlier in Figure 2.

The first element in the development of need indicators was the development of the primary definition of transit need and market segments. The second element involved obtaining input about transit issues and needs from the general public, planning and administrative staff and providers. The third task involved the market research activities, which in Phase I centered on the use of Focus Groups. The fourth element concerned the development of the Transit Service Needs Assessment database. This included the gathering of a wide variety of information and the creation of an in-house microcomputerized database management system.

The fifth activity was an analysis of the socio-economic and demographic data for the region. This was coupled with an evaluation of the forecasts and the anticipated short-term changes in the metropolitan area. Based on this information, a series of transit planning subareas and analysis rings were identified. These were used as the base for analysis of the metropolitan travel data and identification of travel corridors and sectors.

The key elements defining transit needs were identified through this process. These indicators, which are noted below, were used throughout the transit needs analysis, discussed in the next section. The indicators used were:

- Population and Employment Concentrations
- Transit Dependent Market Segments
- Travel Desire
- Highway Congestion
- Existing Transit Supply

## B. Phase I Procedural Definitions

One of the first activities in Phase I was the development of a set of definitions and planning assumptions to guide the planning process. These definitions and assumptions were developed with the assistance of the Strategic Planning Group and the Project Management Team. They represent the working definitions and assumptions used to guide the Phase I process.

### Transit Service Needs Definition

The following definition of transit service needs was developed and used throughout Phase I. Transit service needs are:

1. The essential requirements of elderly, handicapped or low-income people that are not acceptably met by the private transportation system;
2. Those trips of perceived value by all people that can cost effectively be provided by the public transportation system; and
3. Those trips of perceived value by all people that by policy require an alternative to the private transportation system assuming they can be provided at a reasonable cost.

It was realized that many of the terms used in this definition need to be further clarified. The definition of these terms, however, require a more detailed knowledge of transit demand and costs than was possible during Phase I. These terms will be further refined during the Phase II process.

### Market Groups and Segments

Recognition that different user groups and trip orientations have different needs and based on the above definitions the decision was made to use a combined market segment and geographical area approach in Phase I. Four market groups, and specific market segments within each, were identified. The market segments used throughout the study are shown in Table 7 and briefly explained below.

#### - TRIPS ORIENTED TO THE CENTRAL CITIES AND CENTRAL BUSINESS DISTRICTS

This group consists of predominantly radial trips from the suburbs to the central cities and central business districts of Minneapolis and St. Paul. Trips made within and between central cities and the central business districts also fall into this market group.

#### - TRIPS ORIENTED TO SUBURBAN AREAS

This group focuses on trips made between suburbs and within suburbs, including crosstown trips. This group also includes trips from the central cities and the downtowns of Minneapolis and St. Paul to the suburban areas. These trips are predominantly radial and are generally described as reverse-commute trips.

- UNIVERSITY OF MINNESOTA

This market group focuses on the University of Minnesota which, because of its size and specific geographic location, is treated separately. This market group is made up of university students, faculty and staff at the Minneapolis and St. Paul campuses.

- TRANSIT DEPENDENT MARKET GROUP

This market group includes many of the elderly, young and disabled population, low income or unemployed persons, and persons in zero-car households. This group is characterized by their inability to drive because of age, disability or lack of an automobile. These characteristics classify many individuals in these market segments as transit dependents.

Geographical Analysis Level

A number of geographical units by which data could be gathered and analyzed were considered early in Phase I. This included existing district, census tracts, Transportation Analysis Zones (TAZ), Minor Civil Divisions (MCD), and counties. It was determined that the Minor Civil Division (MCD) provided the best level of analysis for Phase I. The metropolitan area is comprised of 190 cities and townships which are Minor Civil Divisions.

MCDs were selected for a number of reasons. First the political boundaries of MCDs are easily identifiable and well established. Secondly, almost all demographic and socio-economic data utilized in the Transit Service Needs Assessment is available at the MCD level or can be converted relatively easily. Lastly, MCDs can be aggregated into larger units of analysis, such as counties, subareas and sectors.

Two patterns emerged during the process of analyzing the transit need indicators by MCD. These patterns were used to aggregate MCDs into larger units of measure. The first pattern was that adjacent MCDs tend to have similar socio-economic and demographic characteristics. This trend was used to form clusters of MCDs with similar characteristics. A total of 26 of these clusters were identified and were called transit planning subareas. These are identified in Figure 10. These transit planning subareas were used extensively to analyze the travel data.

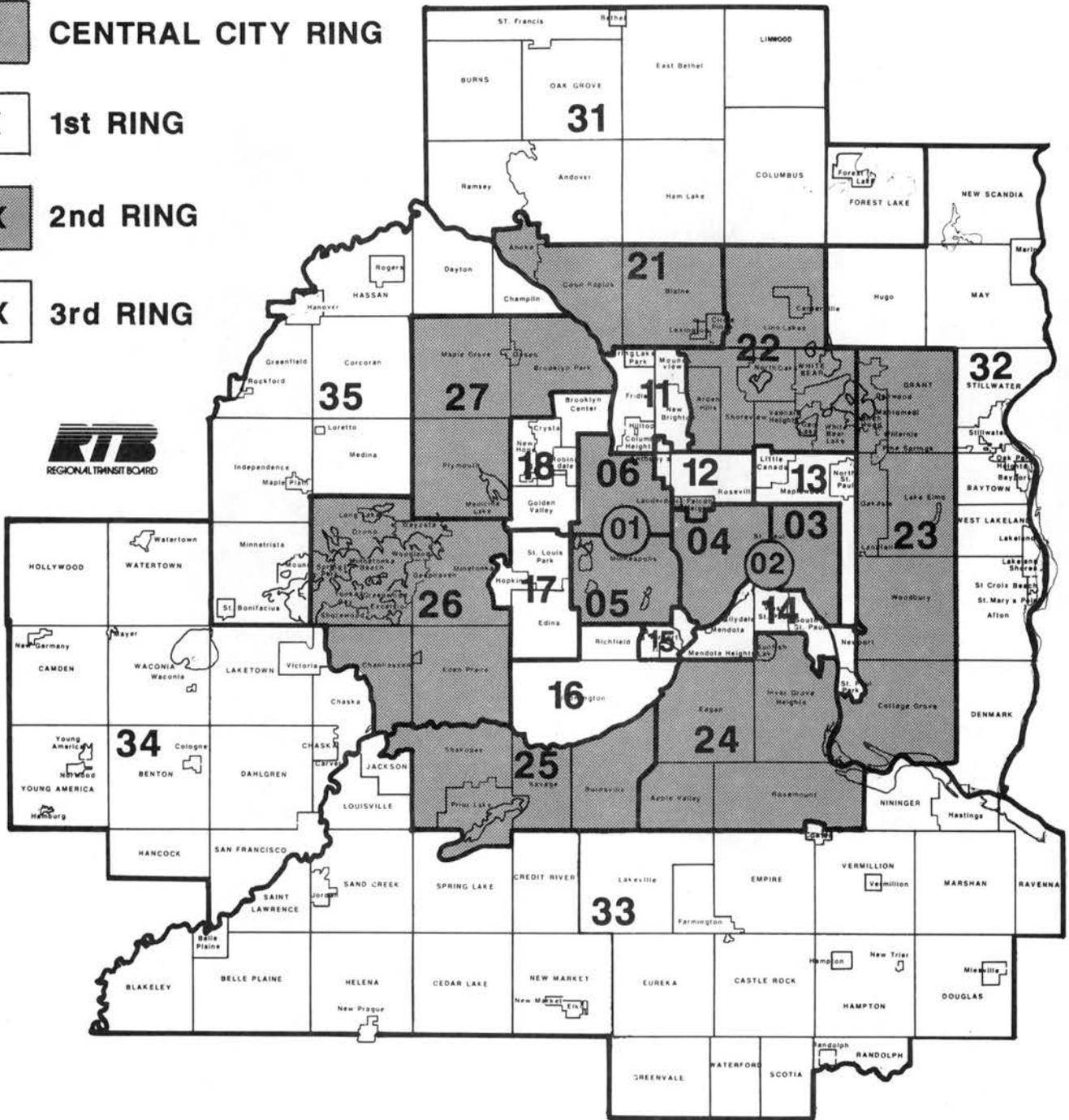
The second trend which emerged was that the highest level of transit need indicators occurred in the central cities becoming lower as the distance from the central city increased. This pattern evolved into four distinct transit planning rings, which closely resemble the forecast rings used by the Metropolitan Council. The one exception to the Council's forecast rings was that the City of Bloomington was placed in the first ring rather than the second ring. This was done based on the data which indicated Bloomington displayed characteristics more similar to other first ring suburbs rather than second ring suburbs. These transit planning rings, which are shown in Figure 10 are composed of the central cities, the first ring suburbs, the second ring suburbs, and the third ring exurban and semi-rural areas.

Table 7  
Market Groups and Market Segments

<u>Major Market Groups</u>	<u>Market Segments</u>
Central City Oriented	Central City of Central Business District Suburbs to Central Business District Suburbs to Central City
Suburban Based	Central City to Suburb (Reverse Commute) Inter-Suburb Intra-Suburb
University of Minnesota	Central City to University of Minnesota Suburb to University of Minnesota
Transit Dependent	Handicapped Elderly Low Income Unemployed Youth (Teens)

**LEGEND**

- 0X** CENTRAL CITY RING
- 1X** 1st RING
- 2X** 2nd RING
- 3X** 3rd RING



**FIGURE 10  
TRANSIT PLANNING  
SUBAREAS AND RINGS**

Two other geographical units, corridors and sectors were also used during the Phase I analysis. Travel between subareas usually occurs along corridors, generally associated with highway or major roadway facilities. During Phase I the effort was made to keep the analysis from being limited to existing highways by defining corridors not limited in terms of highway facilities. Instead, the focus was on examination of the transit need indicators, allowing the data to define the overall travel movements to the downtown areas and between subareas. This process lead to the development of "sectors" based on the downtowns. These sectors may have one or more traditionally defined corridors within them.

A total of eleven sectors were identified for the metropolitan area in Phase I. Nine of these sectors extend radially through consecutive subareas toward the Minneapolis and St. Paul Central Business Districts. Six of these focus on Minneapolis and three on St. Paul. These are shown in Figures 11 and 12. In addition, a central sector and a west crosstown sector were identified. The central sector extends east-west between and includes the Minneapolis and St. Paul CBDs. The west crosstown sector extends through the western first and second ring suburbs of Minneapolis. These sectors are shown in Figure 13.



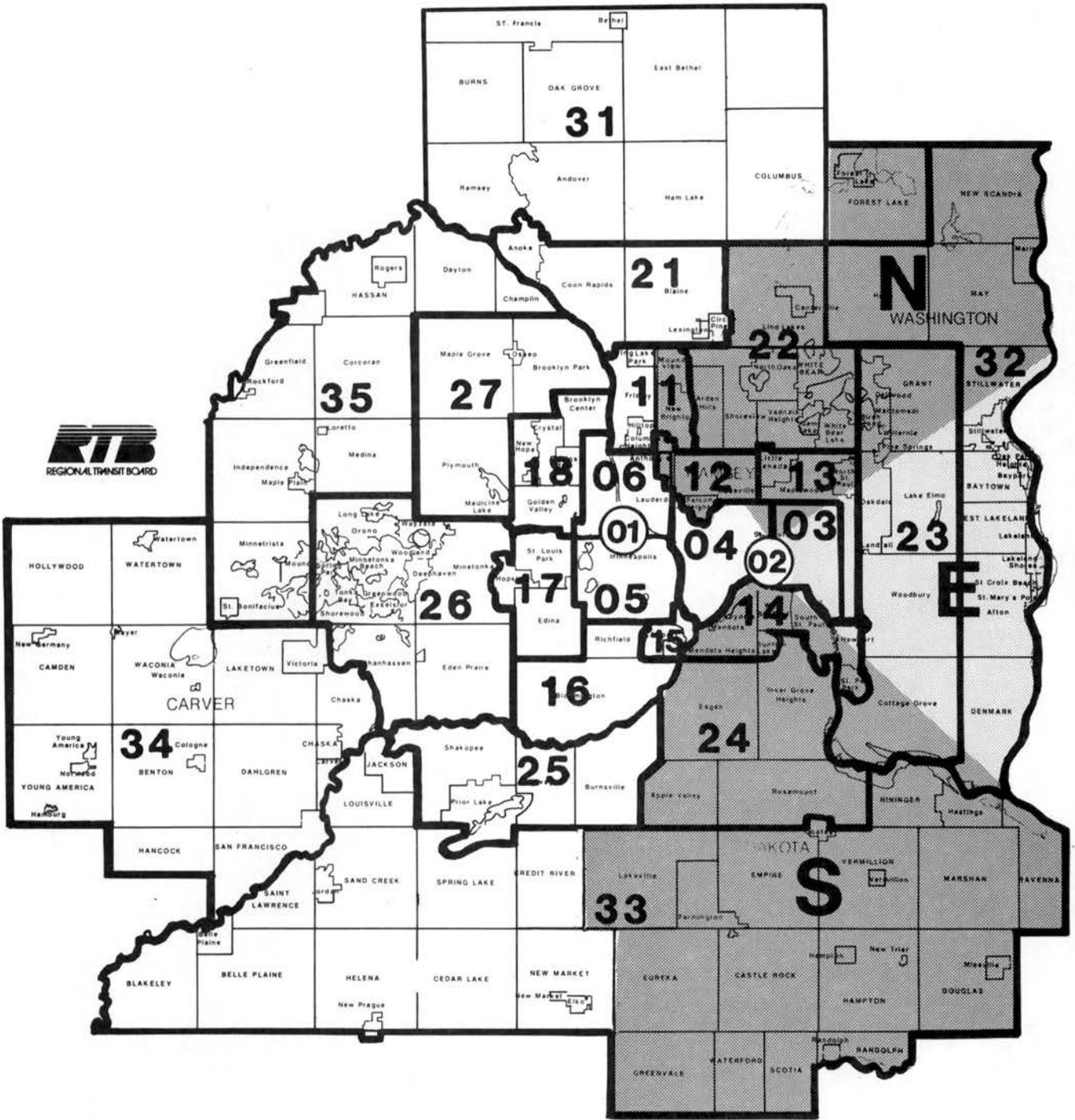


FIGURE 12  
ST. PAUL BASED SECTORS

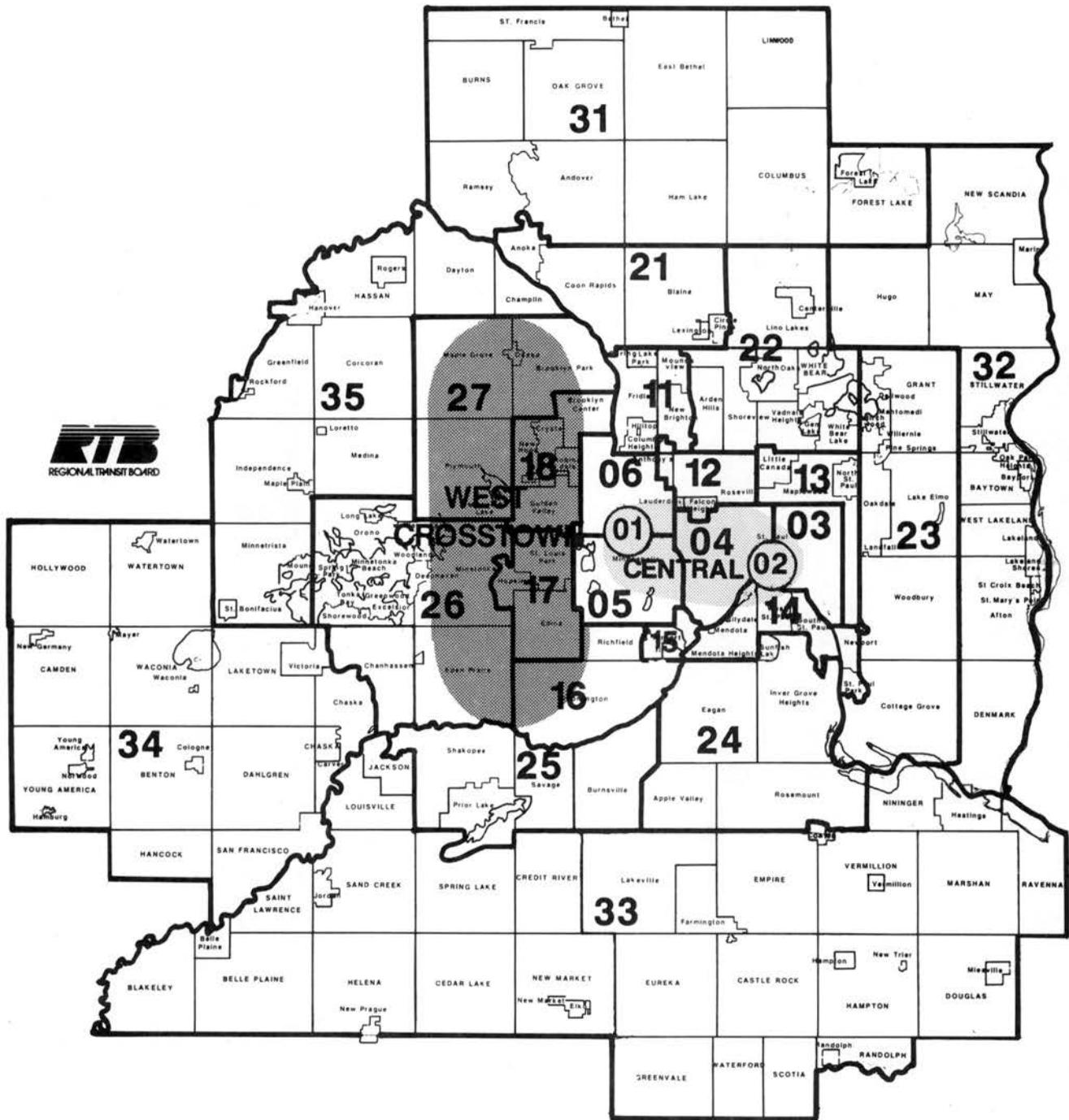


FIGURE 13  
CENTRAL AND  
WEST CROSSTOWN SECTORS

### C. Transit Service Needs Assessment Data Base

Due to the volume and complexity of the data needs associated with the Transit Service Needs Assessment, the RTB decided to establish a microcomputerized data base management system. This data base serves not only the information needs of the study, but also provides a valuable ongoing resource. The data base system was set up to store in a logical manner the following information: socio-economic data, demographic data, service provider data, travel data, rideshare information and data from the University of Minnesota. A detailed explanation of the Transit Service Needs Assessment data base, including the data sources, file structure and user manual is provided in "Technical Memorandum Number 6: RTB Transit Service Needs Assessment Data Base."

Data base management is a systematic approach to organizing and managing large quantities of information. A microcomputerized data base system, such as the one developed for the Transit Service Needs Assessment, allows for an efficient, effective and systematic approach to data management. The data base allows the RTB to collect, analyze and manage large quantities of data. In addition, through the use of a telephone modum and direct linkage to the Metropolitan Council's mainframe computers, the RTB has access to a wide range of information.

Information included in the Transit Service Needs Assessment is shown in Table 8. As can be noted, a wide variety of sources were used to gather this information. Information collected included route and ridership data from the various service providers, socio-economic and demographic data and forecasts, data from the University of Minnesota, rideshare information, travel data and social service and private non-profit agency survey results. This information was collected with the assistance and cooperation of all sources.

All data was collected by Minor Civil Division (MCD) where possible. There were some cases where the information was not available by MCD. In these cases, the data was factored to MCD level.

Table 8  
Transit Service Needs Assessment Database

Source	Year	Data Description
Metropolitan Council	1970	Socio-economic data from original census
	1980	Socio-economic data from original census
	2000	Socio-economic data forecasted 1980 census data
	1980 2000	Travel data modified from 1970 Travel data calibrated from 1970
Metropolitan Transit Commission	1984	Route and ridership data
Minnesota Rideshare	1985	Carpool and vanpool data
Metro Mobility	1984	Metro Mobility registrants
University of Minnesota	1984	Student and staff transit ridership and carpool data
Minnesota Department of Transportation	1984	State funded county and community systems data
Private Providers	1984	Route and ridership data from: North Suburban Lines, Valley Transit and Medicine Lake Lines
	1985	Route information from: Greyhound Lines, Jefferson Lines, Zeypher Lines, Four Star Lines and Scenic Minnesota Lines
Social Service and Private, Non-Profit Agencies	1984	Route and ridership data based on survey
County and Community Systems	1984	Route and ridership data based on survey

#### D. Public Perceptions

In order to obtain input about transit issues, concerns and needs from the general public, community planning and administrative staff and providers, a series of forums were conducted. Public Forums and six Planner and Administrative Forums were held in September and October in each of the eight Regional Transit Board districts. At the same time the RTB chairman held a series of six meetings oriented toward local elected officials and area legislative members. Approximately 200 people attended these twenty meetings.

A brief summary of the highlights from these forums are provided in Table 9. The detailed notes from each forum is contained in "Technical Memorandum Number 2: Public and Planner Forums." The meetings represent a major effort on the part of the RTB to obtain public reaction to existing transit services, concerns, issues and needs.

Table 9  
Results from RTB Public and Planner Forums

Area	Concerns	Service Improvements
Ramsey County and Northern Washington County (District A and District B)	<ul style="list-style-type: none"> <li>- Need to market transit better to attract riders.</li> <li>- Problems with Metro Mobility in the Roseville area.</li> </ul>	<ul style="list-style-type: none"> <li>- More service in the northern St. Paul suburbs, especially focusing on Roseville.</li> <li>- Improve service to Stillwater.</li> <li>- Improve express service to the two downtown areas.</li> <li>- Tie transit services into new developments, especially elderly housing.</li> <li>- More east-west service; most oriented to north-south.</li> </ul>
Minneapolis (District C)	<ul style="list-style-type: none"> <li>- Need to change the way transit is viewed, includes all types of services, not just regular route.</li> </ul>	
Northern Hennepin County (District D)	<ul style="list-style-type: none"> <li>- Concerns raised about buses operating on local streets.</li> <li>- Buses dirty, drivers sometimes rude.</li> <li>- Bus travel time to downtown is too long to make it competitive with auto.</li> <li>- Better location at Brookdale for bus stop.</li> </ul>	<ul style="list-style-type: none"> <li>- More park-and-ride lots.</li> <li>- Service between Northtown Center and Brookdale.</li> <li>- Bus service to Vo-Tech and Community College.</li> <li>- Improve service from Northtown to downtown Minneapolis.</li> <li>- Improve transit for elderly.</li> <li>- Expand Metro Mobility system.</li> </ul>
Anoka County (District E)	<ul style="list-style-type: none"> <li>- Improve information on new services, use community to promote.</li> <li>- Long travel times make it difficult to attract people to transit.</li> </ul>	<ul style="list-style-type: none"> <li>- Expand Metro Mobility system.</li> <li>- More park-and-ride lots.</li> <li>- Better service from northern suburbs to University of Minnesota, Abbott Northwestern.</li> <li>- Service to more of Anoka County.</li> <li>- Different types of service in more rural areas.</li> <li>- No east-west service, all oriented north-south.</li> <li>- Extend Route 24.</li> </ul>
South and Western Hennepin County (District F)	<ul style="list-style-type: none"> <li>- Need more emphasis on transit.</li> <li>- Need to promote and market service better.</li> <li>- Bus drivers need more training, especially with epilepsy.</li> <li>- Transit service shapes the lives of many individuals with epilepsy.</li> </ul>	<ul style="list-style-type: none"> <li>- More service to Southdale, Pentagon Park.</li> <li>- Use Southdale as a hub for service in the area.</li> <li>- Need service to tie north-west and southwest areas of Edina.</li> <li>- Need to consider transit needs of individuals with epilepsy.</li> <li>- Elderly population in Edina is increasing, need to serve new elderly housing.</li> </ul>
Carver County and Scott County (District G)	<ul style="list-style-type: none"> <li>- Need to upgrade bus fleet.</li> <li>- Need more education and promotion.</li> </ul>	<ul style="list-style-type: none"> <li>- Improve service to community shopping centers, OPUS II, 7-Hi Shopping area.</li> <li>- More park-and-ride lots.</li> <li>- Tie transit in with new developments.</li> <li>- Support for LRT in Southwest Corridor.</li> <li>- Expand Metro Mobility.</li> </ul>
Dakota County (District H)	<ul style="list-style-type: none"> <li>- Growing elderly population will need transit services.</li> <li>- Concern over mill rate and services they receive.</li> </ul>	<ul style="list-style-type: none"> <li>- Expand Metro Mobility.</li> <li>- Need services in Crystal Lake Road area.</li> <li>- Need service from Hastings to St. Paul.</li> </ul>

## E. Market Research--Focus Groups

### Market Research--Objectives of Focus Groups

The use of Focus Groups was selected as the market research activity for use in Phase I. Focus Groups are a marketing research technique which provides qualitative information on individual's attitudes and perceptions about certain things. Focus Groups provide a subjective understanding of consumer behavior.

Focus Groups were employed in the Transit Service Needs Assessment as a starting point for understanding the consumers' perspectives on existing transit services and needs, gaining insight into current travel behavior and the decision-making process used by the different market groups, identifying important service attributes and evaluating transit with respect to these attributes, and exploring different market groups reaction to possible changes in transit services. The qualitative or subjective results from this effort will be used to identify the travel characteristics of the different market groups and the attributes which influence their decision-making process, assist in the identification of effective service changes and guide in the development of marketing research activities utilized in Phase II.

Focus Groups are used to provide qualitative information on individual's attitudes and perceptions. The results are subjective in that they represent only a sampling of the individuals of any given population. Thus, the results should not be misinterpreted. They are not quantitative or statistically valid, and should not be used to draw inferences about the entire population. Rather they should be used as indicators of general attributes which are held by some members of a given population. In this way they provide valuable information on consumer behavior, likes and dislikes, and influences on individual's decision-making process.

### Characteristics of Focus Groups

Focus Groups bring together groups of individuals with similar characteristics to express their feelings and reactions to particular issues or topics. The optimum size for Focus Groups is between eight and twelve individuals. This number provides for good interaction between the participants and allows everyone the opportunity to express their feelings. A trained interviewer, in this case Gregg Ebersohl of Colle & McVoy Advertising Agency, moderates the sessions and guides the discussion along the desired course.

The group setting allows the individuals to hear and react to comments of others, stimulating a richer and more insightful discussion than would occur in a normal individual interview. The success of the Focus Group process depends on a number of key elements. First, the selection of members must be done correctly to insure that the market groups information is desired from are actually those included in the group. This is accomplished through the careful identification of appropriate population groupings and the effective recruitment of participants. Second, the group must be comfortable with the facilitator, so that open, candid and free discussion takes place. The facilitator must also structure the sessions so that the desired topics are covered and individual's responses are probed thoroughly.

### Selection of Transit Service Needs Assessment Focus Groups

The eight Focus Groups conducted during Phase I were selected based on the Market Groups and Market Segments identified through the technical analysis. The four major market groups and the more detailed market segments were identified previously in Table 7.

Based on these market groups and segments, a number of potential focus groups were identified by the marketing consultants, Project Management Team, Strategic Planning Group, Strgar-Roscoe-Fausch, Inc., and RTB staff. Of these, eight were selected to be conducted in Phase I. The eight selected represented a range of market segments, both in terms of current transit use and future potential. They also represented groups, such as the Central City based, which have been examined in past studies and surveys, and groups such as the suburban based, of which less is known about their current travel habits and transit usage. The eight focus groups conducted in Phase I are listed below.

<u>Focus Group</u>	<u>Description</u>
o Central Business District (CBD) Oriented Work Trips	Individuals who work in either downtown St. Paul or Minneapolis.
o Central Business District (CBD) Oriented Non-Work Trips	Individuals who make regular non-work trips to either downtown St. Paul or Minneapolis.
o Suburban Based Work Trips	Individuals who both live and work in suburban communities.
o Suburban Based Non-Work Trips	Individuals who live in suburban communities and make regular non-work trips to suburban locations.
o Elderly	Individual over the age of 65. No specific geographic requirements.
o Low Income	Individuals with household incomes below \$15,000 a year. No specific geographical requirement.
o Handicapped	Handicapped individuals not able to use regular route transit services. The group was structured to include a mix of Metro Mobility users and handicapped individuals residing outside the Metro Mobility service area.
o Unemployed	Individuals currently not employed full time. This group was structured to include participants in the Minnesota Department of Economic Security's job programs. Participants included a mix of individuals who used the JET pass, WIN pass and those who did not have either pass available.

### Focus Group Discussion Outline and Process

As noted previously, one of the key elements of successful focus groups is the discussion outline used to guide and facilitate discussion by the participants. The discussion outline for the eight Transit Service Needs Assessment Focus Groups was developed by the market research consultants, with input and review from the RTB and Strgar-Roscoe-Fausch, Inc.

The discussion outline focused on four general areas. This outline formed the basic approach used with all groups. However, it was modified slightly with different groups depending on the specific characteristics of the group and the type of potential transit service alternatives.

The following general approach was used with all the Focus Groups. First, Gregg Ebersohl introduced himself and explained the purpose of the sessions and the general procedure to be used. Next participants introduced themselves, providing information on the community they live in, work location if employed and their current travel modes. After each participant had provided this information, Gregg followed-up with additional questions probing more into the reasons for using the mode they did, influences on their travel behavior and their attitudes toward other modes.

Major discussion then focused on unmet transit needs. This included destinations unreachable by transit and the inability of existing services to adequately meet their travel needs. A number of topics were covered next including knowledge and use of Minnesota Rideshare, further discussion of the use of transit, the MTC and other providers, reaction and attitudes toward a number of service options and specific needs of individuals within the particular Focus Group. Lastly, participants were asked to identify specific areas, either service changes or new service they would like to see in the Twin Cities area. In this effort, they were asked not to think only in terms of existing service, but to "blue sky" any ideas they may have.

Each Focus Group lasted between 1 1/2 and 2 hours. RTB staff and others had the opportunity to observe each session through use of the viewing room. This provides individuals with the opportunity to observe and listen to the Focus Group through the use of a one-way mirror. Thus, the proceedings can be viewed without the participants knowing they are being observed. All sessions were also taped with the participants knowledge. The tapes provide a complete record of each session.

### Focus Group Recruitment and Screening

The market research consultants, Colle & McVoy and Market Structure Research, were responsible for the recruitment and screening of the Focus Group participants. Individuals were selected randomly based upon these characteristics. The two exceptions to this were the handicapped and unemployed groups. For these, participants were selected from specific groups.

The market research consultants recruited participants using randomly selected telephone numbers from the metropolitan area. Individuals were screened based on the desired characteristics. In addition, the attempt was made, where possible, to obtain a mix of individuals using the different travel modes--bus, auto, and rideshare.

As noted, participants in two Focus Groups were not selected in this manner. Individuals participating in the handicapped Focus Group were randomly selected from the Metro Mobility certification file. In addition, contact was made with organizations serving handicapped clients outside the Metro Mobility service area. These lists were used to randomly select individuals who did not have Metro Mobility service available to them.

The unemployed Focus Group was structured to include individuals involved in the different State jobs programs. The Minnesota Department of Economic Security recruited participants for this group, making direct contact with the individuals. The Focus Group was comprised of individuals who used the JET pass, the WIN pass (passes available to unemployed and underemployed individuals) and those who did not have either pass available.

All individuals were paid \$20 for participating in the Focus Groups. In addition, sandwiches, rolls, cookies and beverages were provided to the different sessions, depending on the time they were held.

#### Summary of Major Findings

This section summarizes the major findings from all the Focus Groups. The results have been summarized by major topical areas. Each section contains a brief discussion and a series of key points. A more detailed description and analysis of these is provided in the appendices.

#### Overall

The overall reaction to transit services available in the area was generally positive by participants in all groups. Many individuals indicated that they felt the service of the MTC and others was good for a metropolitan area of this size, especially compared to other cities. In general, transit seems to have a positive image. The general level of satisfaction, with the concerns and complaints noted later, was also relatively high although the variation in service quality by location, time and day of the week was noted.

#### Central Business District (CBD) Oriented Service

Two Focus Groups--CBD oriented work and non-work--were centered on travel to and from the downtown areas of Minneapolis and St. Paul. In addition, travel to these two areas was discussed in the other groups, as most individuals reported making some trips to the downtowns. In general, most of the participants expressed general satisfaction with bus service to these two areas. Concerns were raised primarily with the decline in service after 5:00 p.m. Comments concerning CBD oriented travel are summarized as follows:

- General satisfaction among bus users with routes and schedule frequency to and from the downtown areas.

- Lack of service or very limited (1-2 peak-hour trips a day) service from some suburban areas was raised as a concern by many groups.
- Most use the bus for both work and non-work trips because of high parking costs, unavailability of parking close to downtown destination, and to avoid traffic and congestion of driving to work. Individuals in the CBD work and non-work, the suburban, the elderly, low income and unemployment groups all indicated these as major reasons for use of the bus to downtown destinations.
- The decline in bus service after 5:00 p.m. and the absence of late night service was noted by a number of groups, especially CBD workers, low income and unemployed individuals. Concern was raised over the possibility of missing the last bus. Later service was suggested in many groups.
- Complaints were voiced concerning bus cleanliness, shelters, driver courtesy, information access and schedule adherence.

#### Suburban Based Service

Two groups focused on individuals who lived and either worked or made non-work trips in suburban areas. Other Focus Groups also discussed suburban transit services in unprompted comments and in reaction to specific questions. The general reaction to suburban service was not as positive as that for downtown destinations. Concerns were raised about limited service, poor coverage and low frequency of service.

- Participants noted that most suburban service is focused on the downtown areas. There is little service available between suburban locations. To use the bus for suburban travel usually requires going downtown and transferring to another bus.
- Few individuals, other than those who reported no alternative to the bus, reported using the bus for suburban based trips. The highest bus use to suburban areas was reported by participants in the elderly and low income groups.
- Individuals making both work and non-work trips indicated that they use their cars for most suburban based trips due to the long travel times by bus vs. short travel times by auto, free parking at their destinations, lack of transit service and the desire for flexibility.
- The suburban based work group indicated a general disinterest in transit and a general lack of knowledge about the existing system.
- Participants also noted the lower frequency on many suburban routes and the variation in service between different communities as concerns. Participants in the elderly, low income, unemployed and CBD work and non-work groups raised this lack of service as a concern.

- Individuals in all groups identified suburban locations and suburban services they would like to see improved. However, the results were mixed when individuals were asked if they would actually use this service. More people in the elderly, low income and unemployed groups indicated they would use the service than did those in other groups.
- Unemployed individuals indicated they were not able to look for jobs at many suburban employment locations because bus service was unavailable. Some even indicated they had to turn down jobs in suburban locations because of lack of transportation.
- Handicapped individuals expressed a strong desire to have the Metro Mobility service expanded into more suburban areas. This was especially true with those individuals currently residing outside the Metro Mobility service area.

#### Familiarity with Transit Services

All groups expressed a general knowledge of the different types of services available in the Twin Cities area.

- Generally good knowledge of the bus system expressed by all groups. Most could identify the bus route closest to their home. The one exception to this was the suburban based work group which indicated very limited knowledge of the system and general disinterest.
- Frequent and part-time bus riders indicated good knowledge and understanding of bus routes and schedules.
- Most indicated a knowledge of what Minnesota Rideshare was and the services it provides. However, only a limited number had ever used the service and most didn't feel they would use it.
- Handicapped individuals, including those outside the Metro Mobility service area, expressed a good knowledge of the Metro Mobility system and how to use it.

#### Travel Choice Decision Making Process

All groups thoroughly discussed the decision-making process used to determine their method of travel. The following attributes were identified as important:

- Availability of alternatives to the bus
- Travel time
- Parking costs, parking locations
- Traffic congestion
- Bus service availability--directness of service, frequency, hours of operation (especially last bus home in the evening), and transfer connections
- Bus service amenities--driver courtesy, cleanliness and maintenance of vehicles, safety at bus stops and shelters.
- Off-peak fare reductions for the elderly.

The following constraints on transit use were noted:

- Service not available, either to desired location or from origin
- Individuals within some groups, primarily the suburban based work group, expressed a limited knowledge of available bus service.
- Metro Mobility service not available.

Views about transit use and transit users:

- Individuals within many groups indicated that they felt there was a bias on the part of many people about the type of people who ride the bus.
- Many participants expressed a bias toward the automobile except for specific trips. The most common trips the bus would be used for, even by those using their autos for other trips, were those oriented toward the downtown areas.

#### Transportation Service Issues

All groups raised a number of concerns with regard to the following general service issues:

- Schedules, including hours of service, days of service and frequency were noted as a problem in many areas. The variation in these from one area to another was noted. Of concern were those areas, primarily suburban, with limited and infrequent service.
- System coverage was noted as good for trips to and from the downtown areas, but not to suburban locations or between suburban locations.
- Reduced service on Saturday and Sunday was noted as a concern, especially for those in the transit dependent groups (unemployed, elderly, low income and students)
- The reduction of service after 5:00 p.m. was voiced as a concern by many including downtown workers concerned about missing their last bus home and unemployed and low income individuals who rely on the bus for all their trips.
- Reliability of bus service was generally perceived of as good, with some complaints noted.
- Transferring was raised as an important issue concerning bus use. The convenience, schedule delay and coordination were all raised as concerns. Participants noted that these are important issues as transfers are needed to many destinations.
- Most participants indicated that in most cases the overall bus travel times were acceptable. Some groups expressed the need for more express service and some non-users indicated they would not use the bus until it becomes a faster service. Exceptions were also noted when transfers were required, especially in the case of transferring downtown to get to another suburban location.

### On-Board Service Issues

A number of concerns and complaints, as well as compliments, were raised by all groups concerning on-board bus service. Discussion of these issues tended to be longer and more strongly felt by individuals who regularly used the bus.

- Many complaints were raised about the cleanliness of the inside of the buses. This included comments concerning ripped and torn seats to dirty and uncleaned insides. Comments were also made concerning the poor condition of the outside of the vehicles and the general lack of maintenance. Most indicated that the temperature levels were acceptable in both winter and summer. The new MAN buses received praise for their appearance and comfort.
- Comments concerning bus driver courtesy and their knowledge of the bus system were raised by participants in all groups. Many indicated they usually had good drivers, but many also provided examples of rude and unfriendly drivers. Most indicated that these bad drivers tended to have a negative impact on the image of bus service. Many groups also noted that drivers are not always knowledgeable about the bus system or able to answer passenger questions. This is especially true with drivers based primarily in St. Paul or Minneapolis. They do not know about routes and schedules serving the other community.
- Many participants indicated that during the peak hours the buses they ride are full, with people standing for part of the trip. During the off-peak, seat availability is not a problem. Those who rode during the peak did not voice major concern about having to stand, except in the case of long slow trips in the afternoon.

### Information Accessibility

The following summarizes the Focus Groups reaction to questions concerning transit information.

- Generally a good understanding was displayed by all concerning how to obtain information on transit services. Most knew where the two MTC information booths were located, where they could get schedules and that the MTC had an information number.
- Many participants felt drivers should be more informed about routes and schedules.
- The major complaint with information was focused on the MTC information number. Participants noted the long time they had to wait on hold before getting through. (Everyone seemed to have their own "horror" story about how long they had to wait.)
- Metro Mobility users also noted the long time it took them to reach the dispatcher.
- Mixed reaction to maps and schedules. Frequent bus users indicated they could read them, but others noted they had difficulty understanding the schedules.

### Cost and Pricing Issues

Different Focus Groups displayed different levels of knowledge about current fare levels and the fare structure. Different groups also had different reactions to the equity of the fare structure and fare levels.

- General understanding of the existing fare structure (i.e., zones) but limited knowledge by all groups about the specifics. Most knew bus fares for their area, but very unclear about other zones and services (freeway, express, etc.). Some downtown workers were not aware of the \$.10 zones.
- Most seemed to feel the existing fare levels were good. This included Metro Mobility users.
- Some groups raised concerns about increasing the fare levels, including the elderly and Metro Mobility users. Individuals in both these groups and some in the unemployed, low income and non-work groups, indicated they would use the bus less if fares were increased.
- As noted previously, the high cost of parking in the downtown areas was cited as the major reason by many for their use of the bus to these areas.

### Stop and Shelter Issues

The following summarizes the comments made about stops and shelters:

- Most participants felt the existing transit signing was adequate. However, the need to post which routes serve each stop was identified as important.
- The need for more shelters was raised by many groups. Shelters were noted as being very beneficial in the winter or in rainy weather. The need to maintain up-to-date route and schedule information at the stops was also stressed.

## F. Socio-Economic, Demographic, Travel and Land Use Characteristics

This section presents the existing and forecasted socio-economic, demographic, travel and land use characteristics of the Twin Cities metropolitan area. The information presented here, which is a summary of the more detailed analysis found in "Technical Memorandum Number 5: Socio-Economic, Demographic and Travel Characteristics" and "Technical Memorandum Number 7: Short Term Changes," will be utilized again in the Analysis of Transit Need contained in the next chapter.

### General Description of the Twin Cities Metropolitan Area

The Twin Cities Metropolitan area covers the seven counties of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington. Located in the eastern central portion of the state, the metropolitan area covers a total of 3,000 square miles, of which, approximately 560 square miles is urbanized. There are some 951 lakes within the area and an additional 90,000 acres set aside for public use as parks, recreational areas and open space.

In the urbanized area, current land use is divided between the following categories: residential, 36 percent; public and recreational, 29 percent; highways, streets and alleys, 23 percent; industrial, 9 percent; and commercial, 3 percent.

Over two million people currently live in the metropolitan area. The current estimate of the number of households within the region is approximately 750,000. The average household size of around 2.6 in 1980 represents a decline from over 3.0 in 1970. Married-couple households form the largest segment with 58 percent, but the number of single-family households, which accounted for 25 percent, continue to increase.

The Twin Cities area has a relatively young and educated population. Over half, 52 percent, were below the age of 30 in 1980, while 9 percent were 65 or older. A majority of housing units, around two-thirds, are owner-occupied. In general, the region's housing stock is in relatively good shape. Vacancy rates are low and there are few over-crowded or abandoned units.

Income levels in the metropolitan area are above those of other similar sized areas of the country. In 1980, the median family income was \$20,654, ranking fifth among the twenty-five largest metropolitan areas. The number of persons below the poverty level is relatively low.

Unemployment levels are also relatively low, with a total of approximately one million jobs in the area. The area is the home of many regional, national and international companies. Local employment is based on a strong mix of different types of businesses and industries.

### Socio-Economic and Demographic Characteristics

#### Population

The 1980 population of the metropolitan area was 1,985,873. This represents an increase of 6 percent since 1970. This growth is expected to continue with the

population forecasts for the years 1990 and 2000 at 2,160,000 and 2,260,000 respectively. The population for the metro area from 1970 to 2000 is shown in Table 10.

Table 10  
1970-2000 Population

<u>Year</u>	<u>Population</u>
1970	1,874,612
1980	1,985,873
1990	2,160,000
2000	2,260,000

Source: U.S. Census and Metropolitan Council Forecasts

The 1980 and 2000 population and population density are shown for each Minor Civil Division (MCD) in Figures 14 through 17. Figure 18 identifies the change between the 1980 population and the year 2000 forecast. Minneapolis and St. Paul have the largest populations, with over 100,000 people each. Minneapolis had a 1980 population of 370,950 and St. Paul, a population of 270,230. A number of communities fall into a second category with populations between 20,000 and 100,000. This includes many of the Minneapolis suburban communities. In terms of population density, which is an important factor in transit planning, Minneapolis has the highest density at 10.5 people per acre. St. Paul and a few suburban communities have population densities over 7.0, while the remainder of the first ring suburbs are in the 4.1 to 7.0 grouping.

Figure 18 identifies the areas where population growth and decline are anticipated to occur. Population decline is forecasted for Minneapolis and St. Paul, and some of the first ring suburbs. Major increases are projected for Eagan, Eden Prairie, Plymouth, Maple Grove, Brooklyn Park, Coon Rapids and Blaine. Strong, although slightly lower increases, are also projected for other suburban communities, particularly in the southern suburbs.

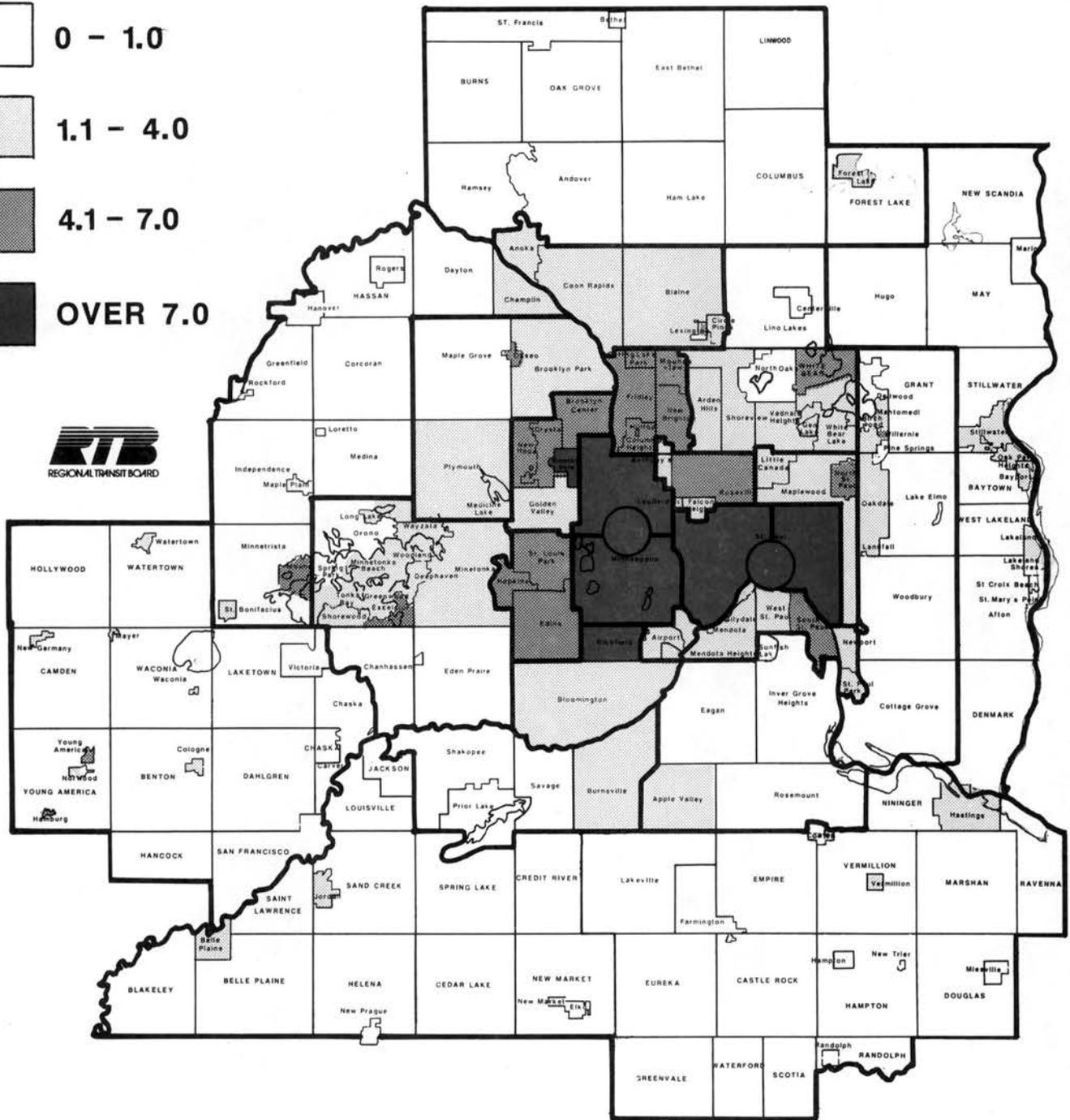
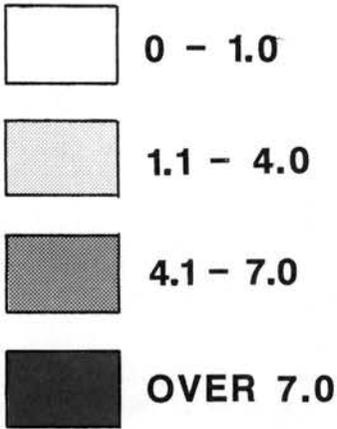
Two of the key indices for transit use, the number of individuals over the age of 65 and those under 18 years of age have been mapped out by Minor Civil Division. These are shown in Figures 19 and 20. The largest number of elderly individuals reside within the cities of Minneapolis and St. Paul. The 1980 elderly population of Minneapolis was 57,052 and 40,633 in St. Paul.

The majority of first ring suburbs have elderly population of between 1,000 and 10,000. Other cities, including Anoka, Stillwater, Hastings, New Prague and New Germany, also fall within this grouping. The remaining second and third ring suburbs have elderly populations of 1,000 or less.

Communities with large numbers of youth in the under 18 age group presents a slightly different pattern. Minneapolis and St. Paul still account for the largest number within this group, but the city of Bloomington also joins the top group. Each of these three communities have over 18,000 individuals in this age group. Most of the remaining first ring communities and many second ring have youth populations of between 5,000 and 18,000.

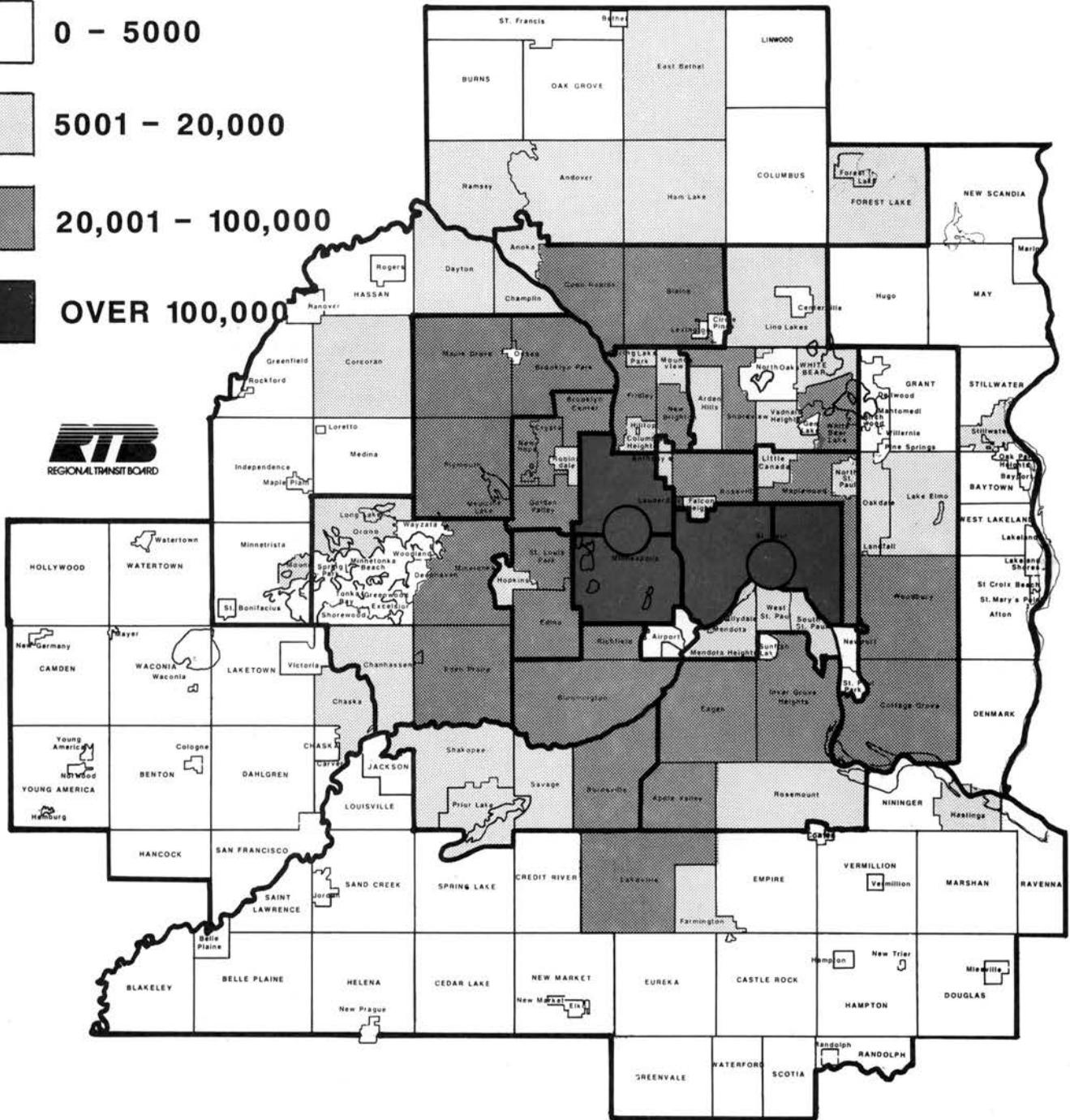
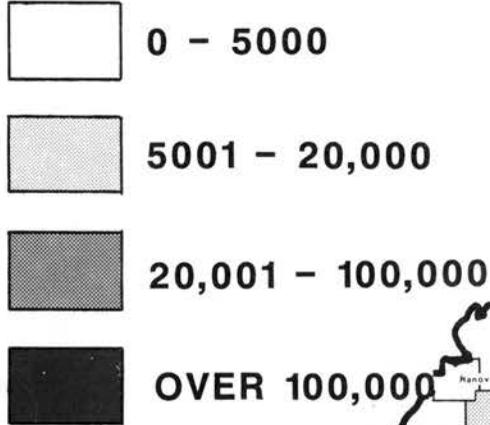


**LEGEND**



**FIGURE 15**  
**1980 POPULATION DENSITY**

**LEGEND**



**FIGURE 16**  
**2000 POPULATION**

**LEGEND**

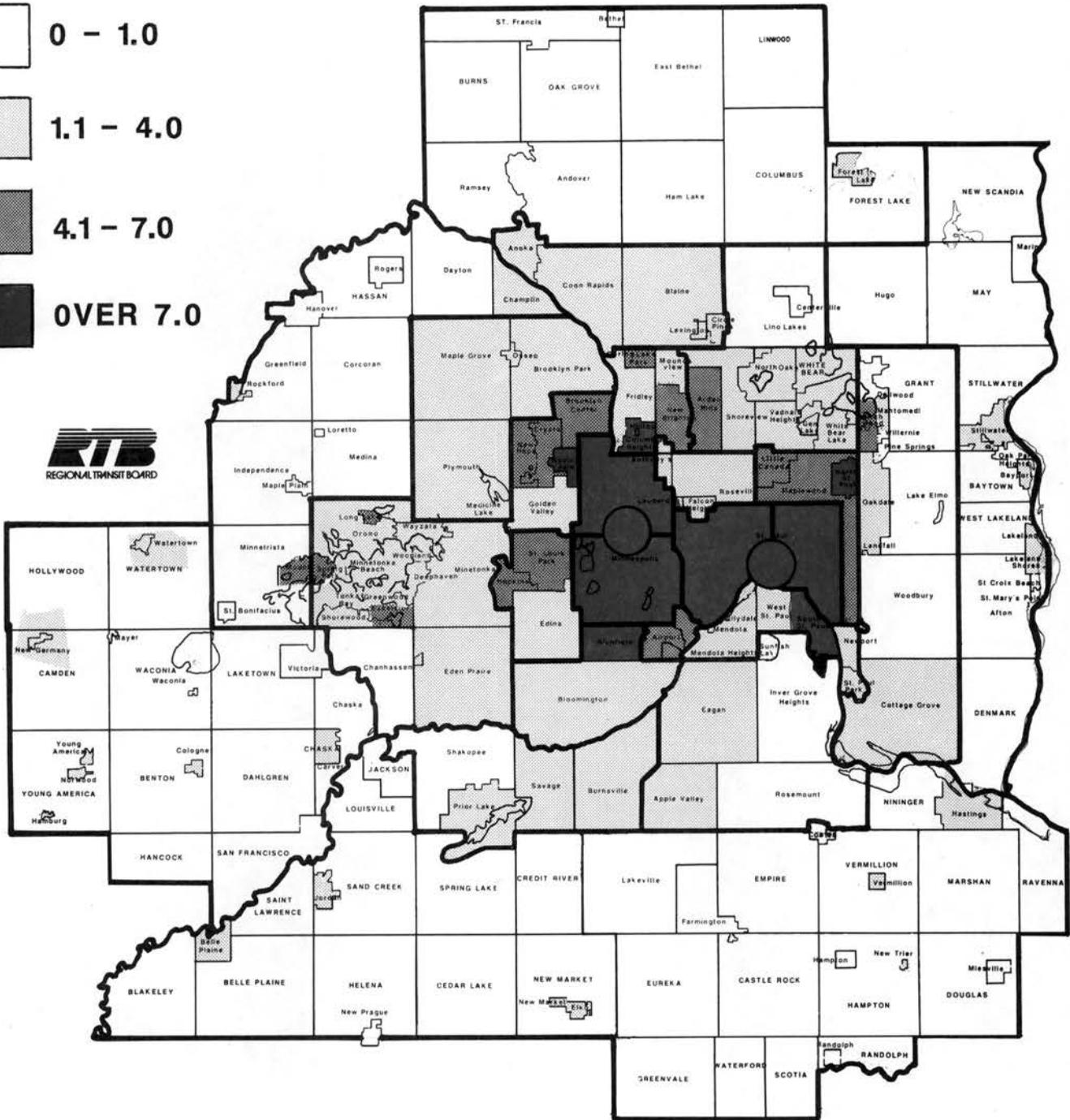
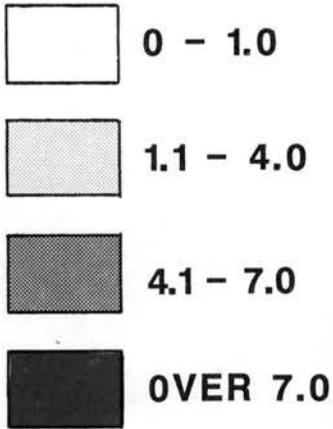
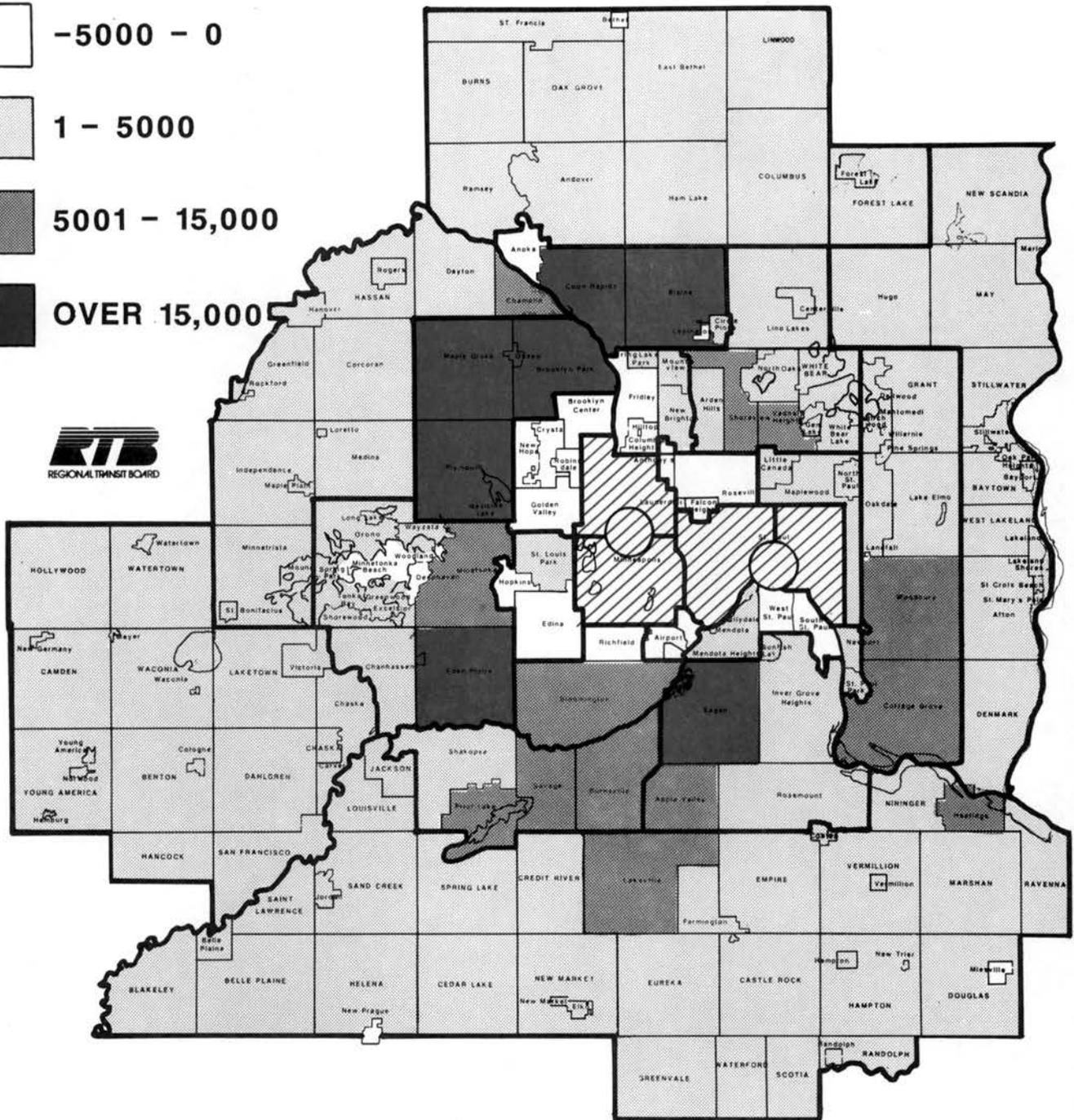
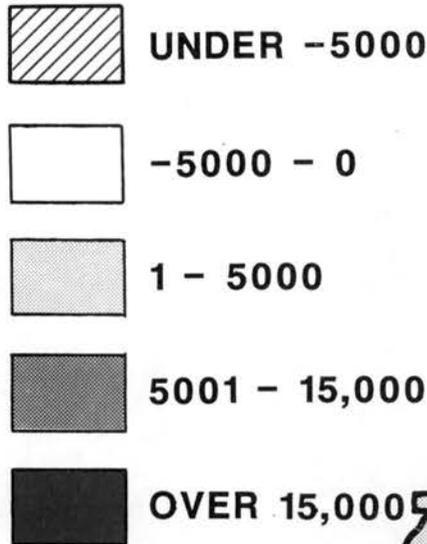


FIGURE 17

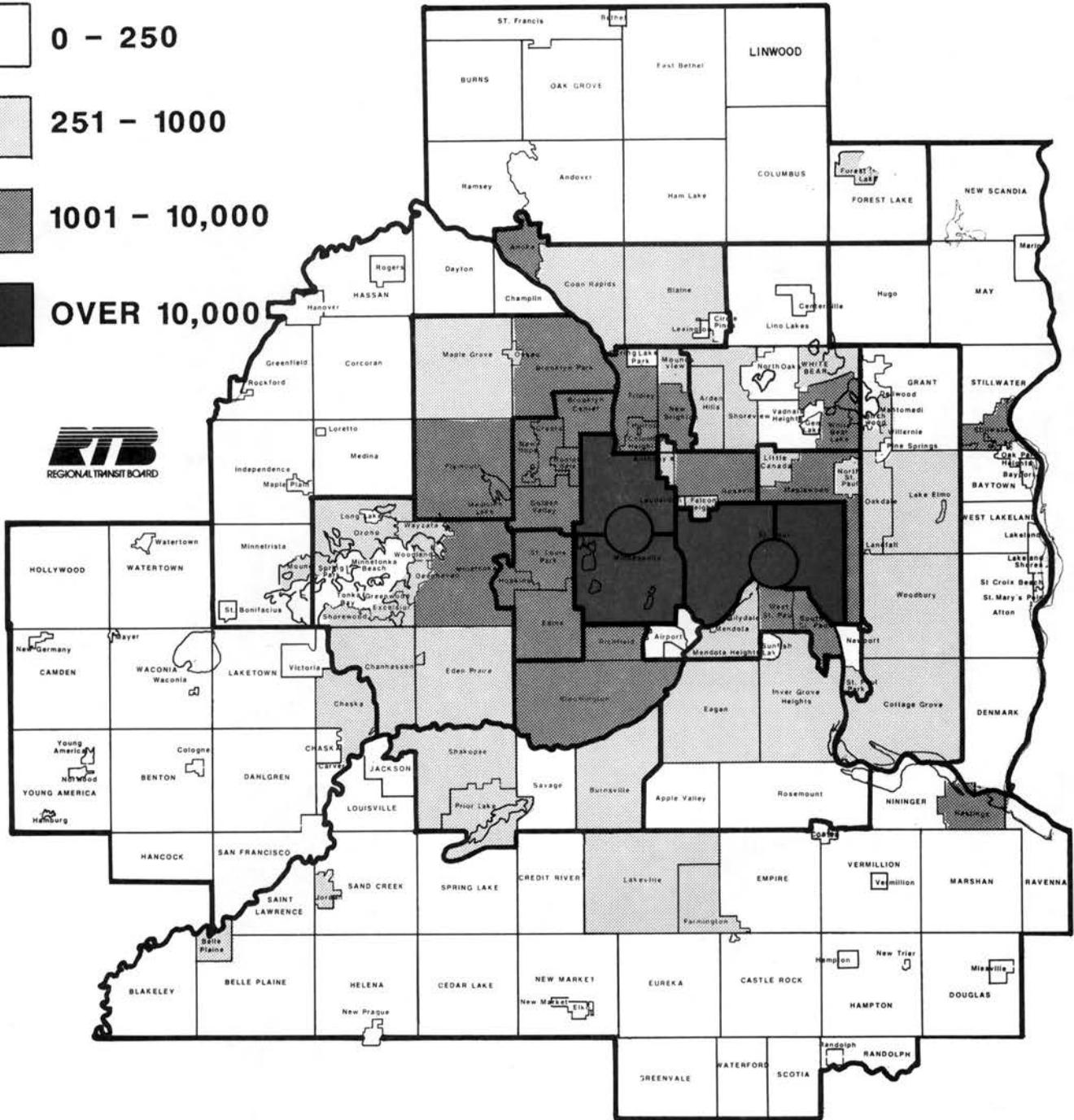
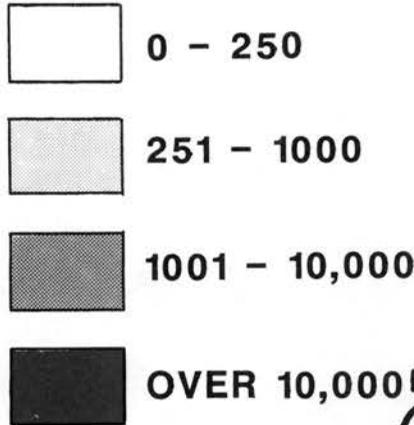
**2000 POPULATION DENSITY**

**LEGEND**



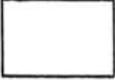
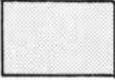
**FIGURE 18**  
**POPULATION CHANGE 1980 - 2000**

# LEGEND



**FIGURE 19**  
**POPULATION**  
**65 YEARS AND OLDER**

# LEGEND

-  0 - 1000
-  1001 - 5000
-  5001 - 18,000
-  OVER 18,000

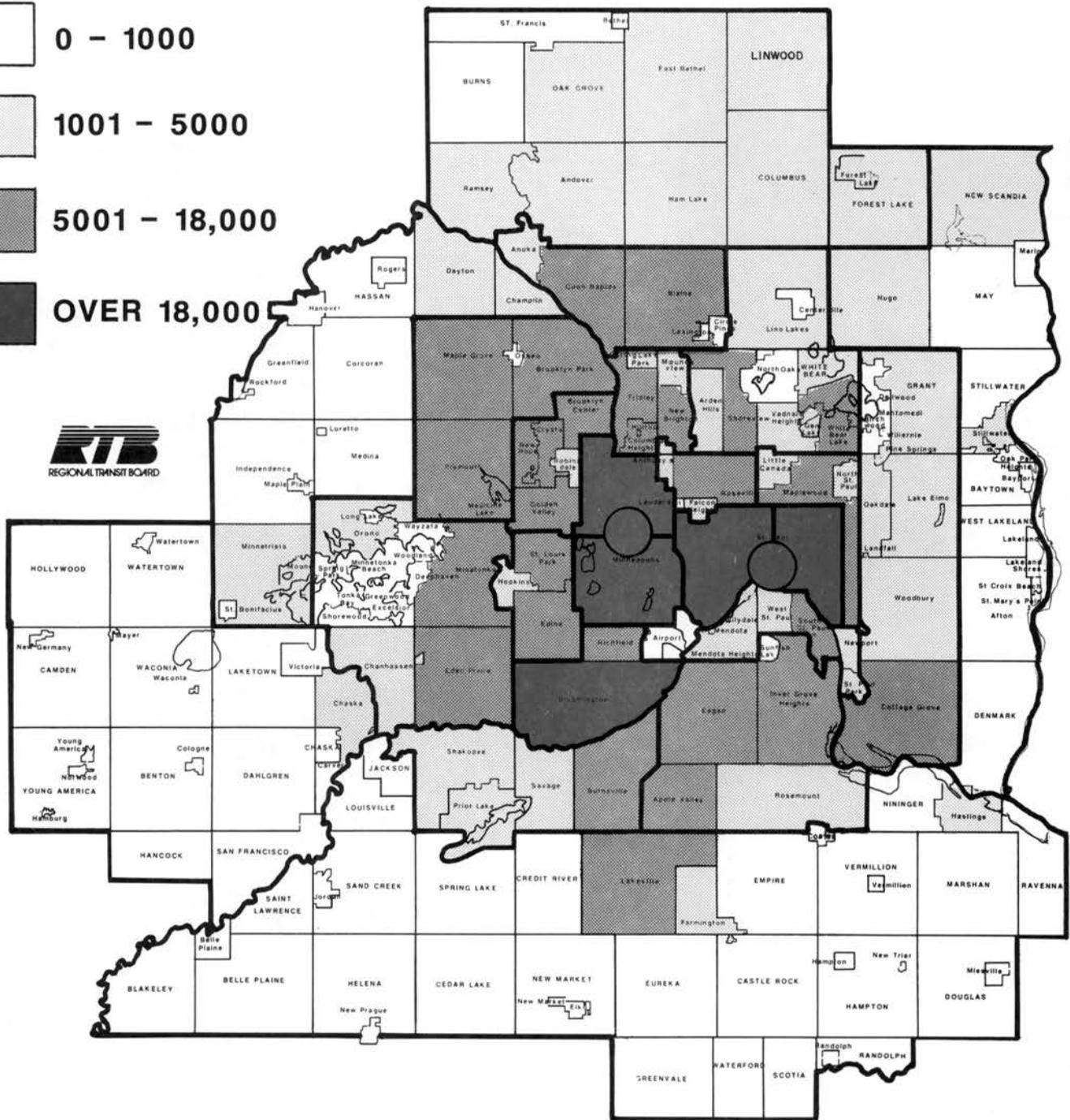


FIGURE 20

## POPULATION UNDER 18 YEARS



**TRANSIT SERVICE NEEDS ASSESSMENT**

REGIONAL TRANSIT BOARD

CONSULTANT: STRGAR-ROSCOE-FAUSCH, INC.

Another important measure for transit usage is the number of households with no automobile available. This information is shown by MCD in Figure 21. The highest number of households without an auto available are located within Minneapolis and St. Paul. The second highest number are the second ring suburbs of West St. Paul, South St. Paul, Bloomington, Edina, Hopkins, St. Louis Park, Robbinsdale, Columbia Heights and Hilltop. The third ring suburb of Brooklyn Park is also included in this group.

The distribution of low income households by Minor Civil Division is shown in Figure 22. The highest concentrations of low income households are in Minneapolis and St. Paul. Many communities from throughout the region fall into the second and third groupings. A majority of the first ring suburbs fall into the second highest grouping. Cities in the third category are scattered throughout the rest of the region.

Table 11  
1980 Minority Population

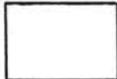
	<u>Number</u>	<u>Percent</u>
White	2,008,020	95.0
Black	50,048	2.4
American Indian, Eskimo, and Aleut	15,950	0.8
Asian and Pacific Islander	19,689	0.9
Other	19,826	0.9
Total Persons	<u>2,113,533</u>	<u>100.0</u>

Source: 1980 U.S. Census

The racial composition of residents in the metropolitan area based on 1980 census information is provided in Table 11. The minority composition is shown by Minor Civil Division in Figure 23. Minneapolis and St. Paul have the highest number of minority persons. The first and second ring communities of Brooklyn Center, Brooklyn Park, Bloomington, Burnsville, Maplewood, New Brighton, Plymouth, Richfield, Roseville and St. Louis Park also have high minority concentrations.

Figure 24 identifies the number of transportation handicapped individuals per square mile. This provides an indication of the concentration of individuals in need of specialized transportation services. The highest concentrations are located in the central cities, first ring suburbs of Richfield, St. Louis Park, Robbinsdale, Columbia Heights and Hilltop, and Osseo and Excelsior. A number of other second ring and some third ring communities also exhibit moderate concentrations of handicapped populations. This figure indicates the need to examine the transit needs of handicapped individuals, especially outside the Metro Mobility service area.

# LEGEND

-  0 - 100
-  101 - 500
-  501 - 2000
-  OVER 2000

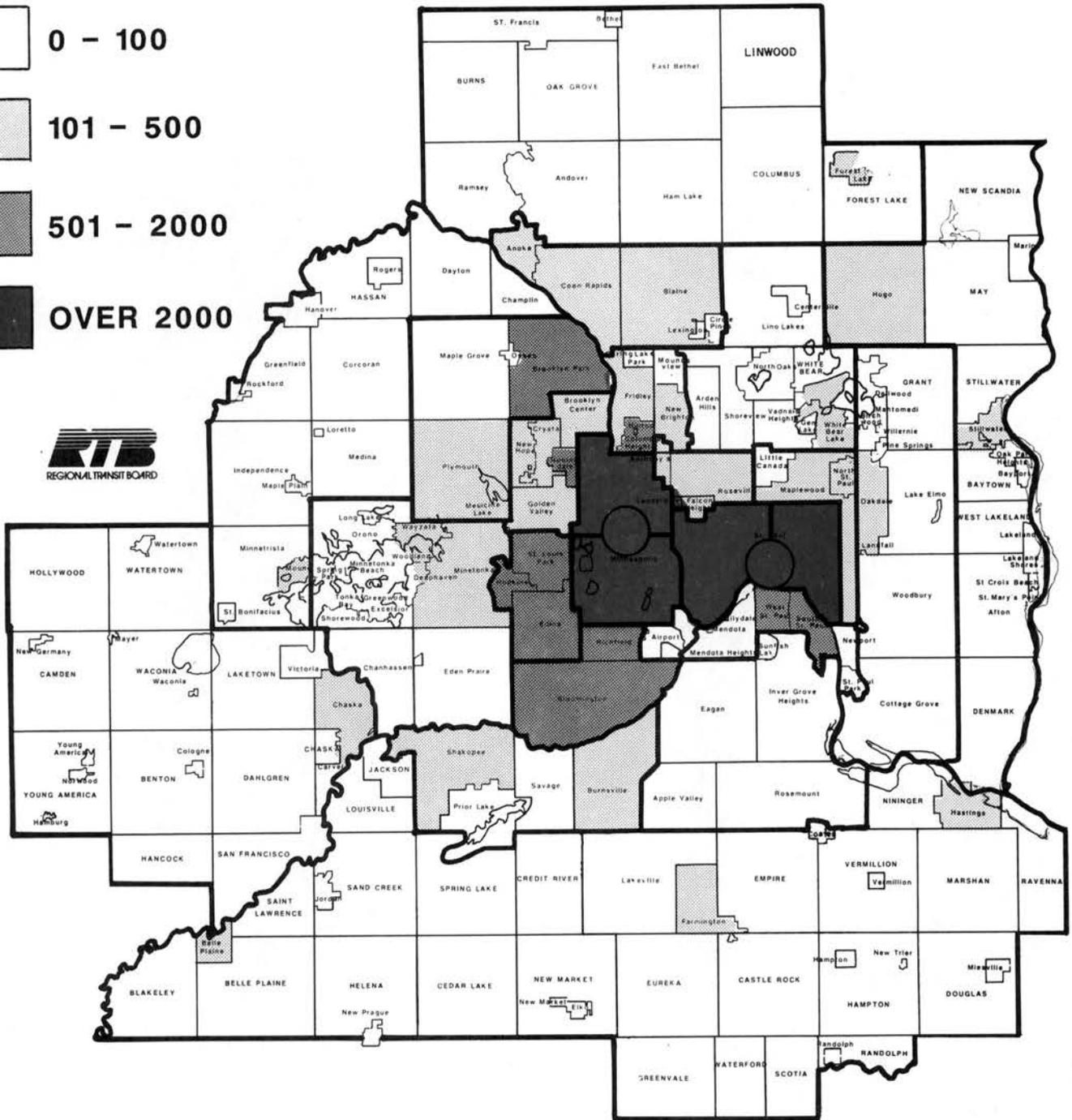
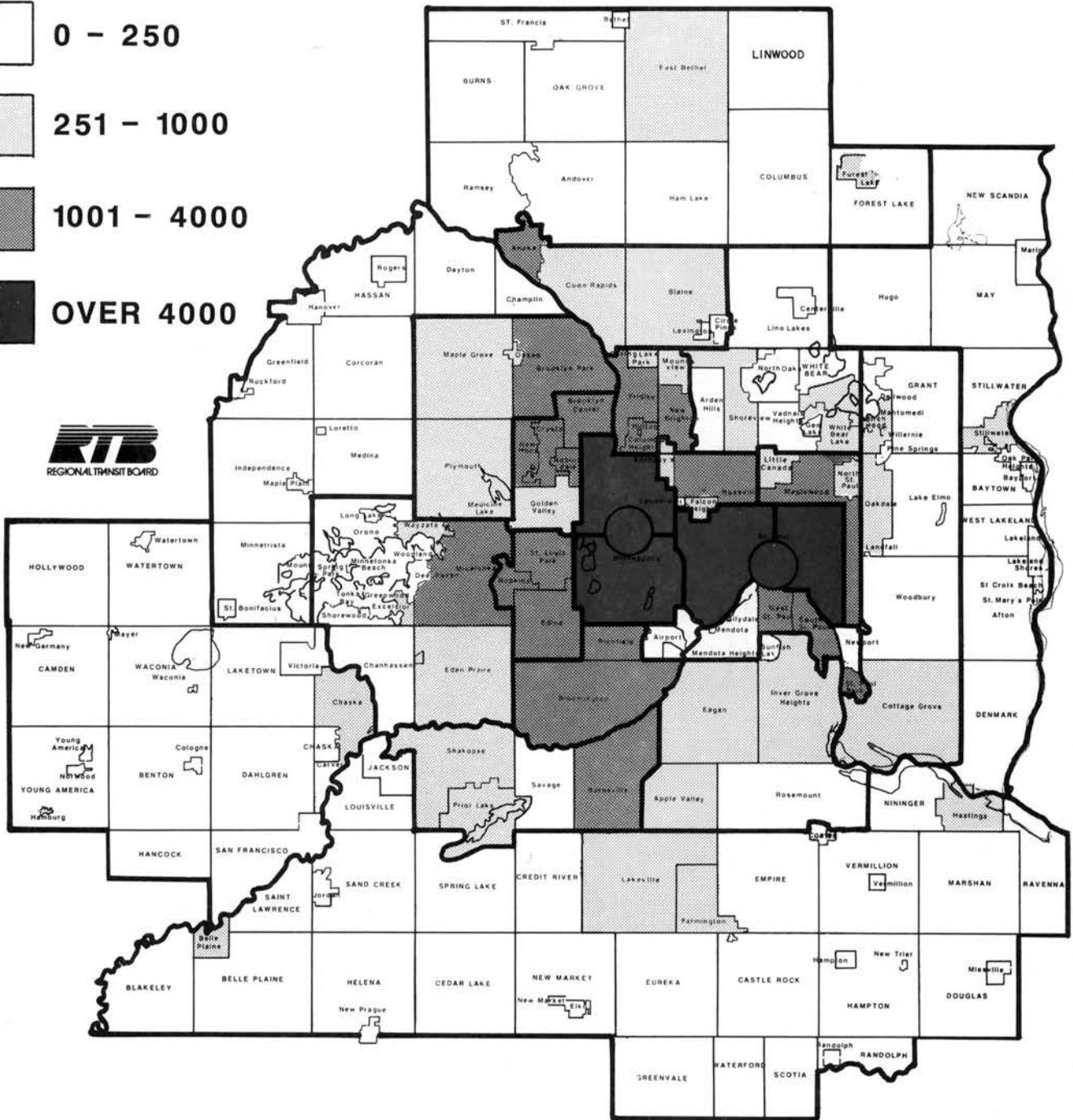
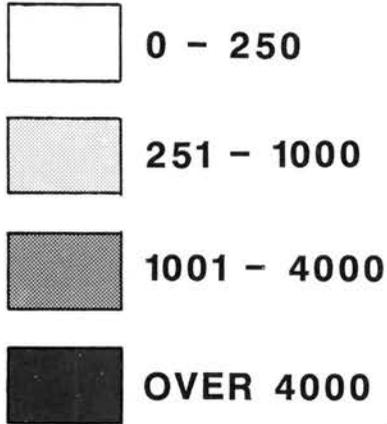


FIGURE 21

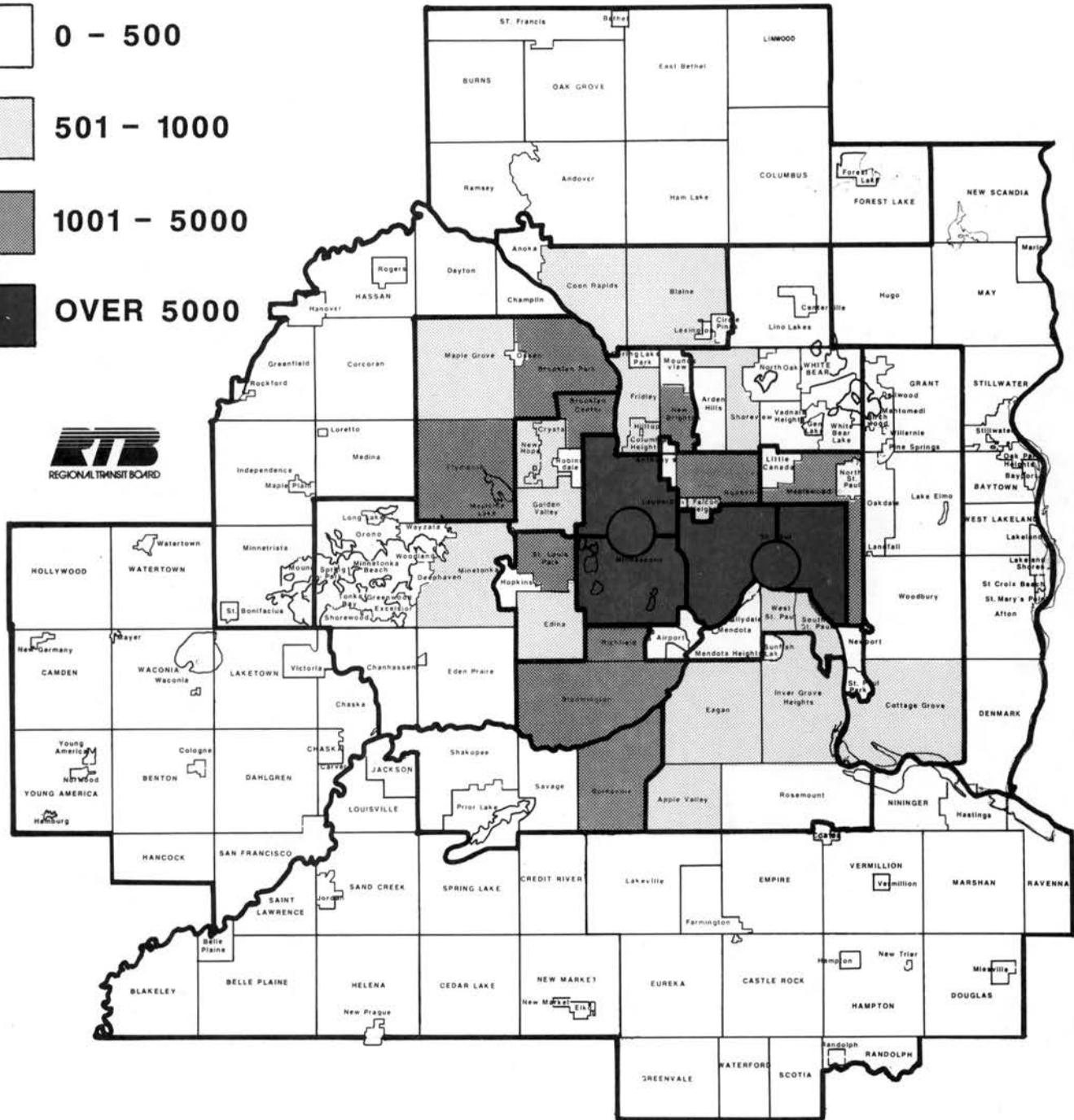
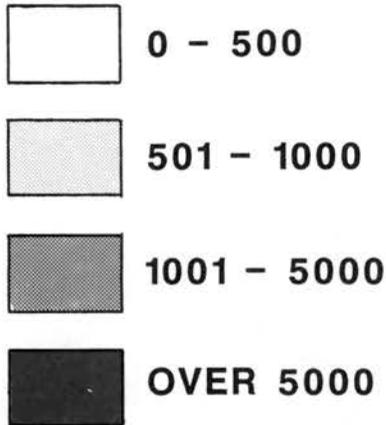
## HOUSEHOLDS WITH ZERO CARS

**LEGEND**



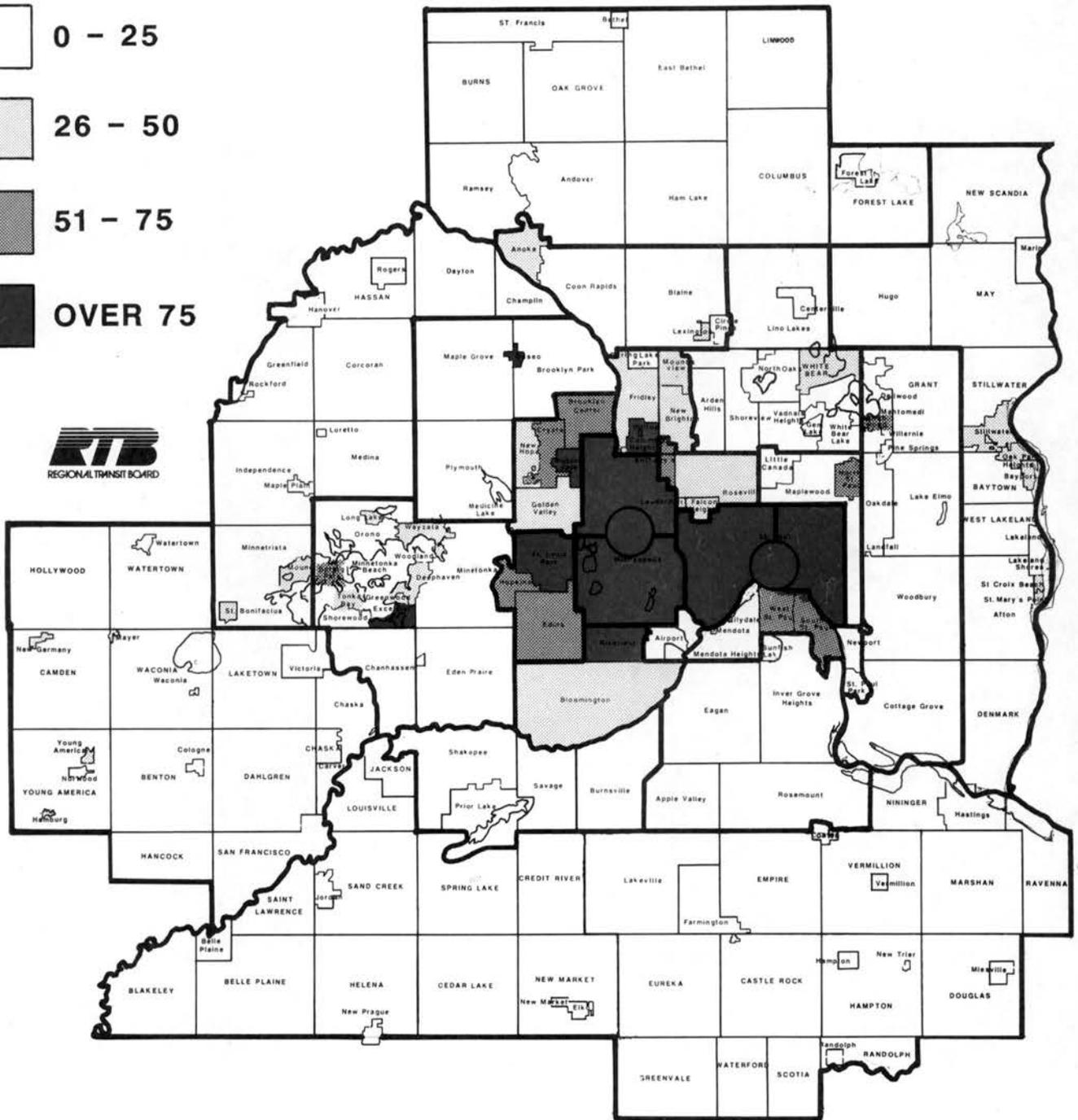
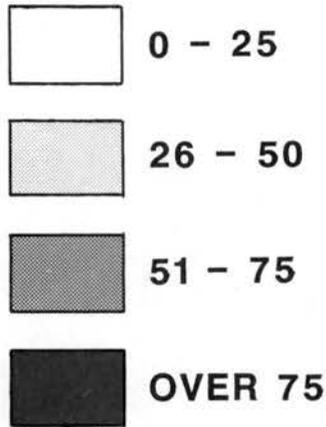
**FIGURE 22**  
**LOW INCOME**  
**HOUSEHOLDS (<\$10,000)**

# LEGEND



**FIGURE 23**  
**MINORITY POPULATION**

# LEGEND



**FIGURE 24**  
**TRANSPORTATION HANDICAPPED**  
**PER SQUARE MILE**

## Employment

As noted in the introduction, the Twin Cities has a diverse employment base. In 1980, non-agricultural employment levels were slightly over one million. This is an increase of approximately 26 percent since 1970. Table 12 shows the past, current and forecasted employment levels for 1970-2000.

Table 12  
1970-2000 Employment

	<u>Number</u>
1970	853,000
1980	1,075,000
1990	1,300,000
2000	1,400,000

Source: U.S. Census and Metropolitan Council Forecasts

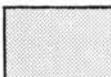
The 1980 and 2000 employment levels and employment density for each MCD are shown in Figures 25 through 28. The 1980 and 2000 employment figures provide an indication of current employment levels and projected employment for each community. These are based on the 1980 census and the Metropolitan Council's forecasts. The population density maps provide an indication of the employment rates per acre. Figure 29 provides the forecasted change in employment between 1980 and 2000.

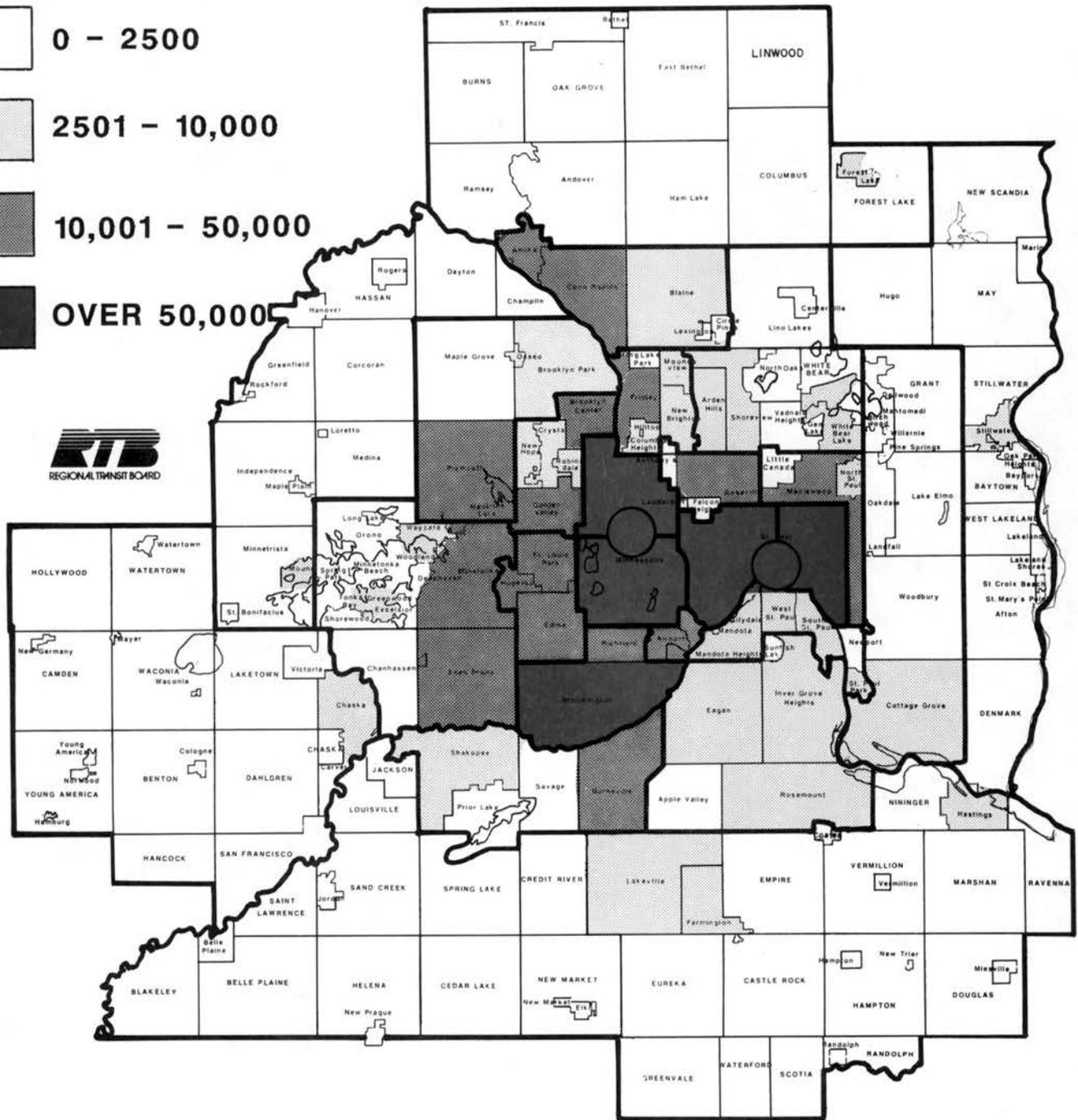
As can be seen from the four figures, the highest concentrations of employment in 1980 are in Minneapolis, St. Paul and Bloomington. Minneapolis had the highest employment levels with approximately 284,000, followed by St. Paul with 187,000 and Bloomington with 59,000. Most of the first ring suburbs fall into the second employment category, with levels between 10,000 and 50,000. Some second ring suburbs also fall into this category. In terms of employment density, a number of changes occur. The airport area has the highest employment density with 111.1 jobs per acre. This is followed by Osseo, 9.1; Minneapolis, 8.1; Hopkins, 7.4; Excelsior, 7.2; St. Paul, 5.5; and St. Louis Park, 5.2. Most of the remaining first and second ring suburbs fall into the second and third employment density categories.

The figures for the year 2000 show the forecasted change in employment levels. Employment levels in all areas are projected to increase following the anticipated growth in the metropolitan areas employment. Four communities have forecasted 2000 employment levels over 50,000. These are Minneapolis, 298,000; St. Paul, 193,000; Bloomington, 90,000; and Edina, 54,000. A number of first and second ring communities also have large employment increases forecasted.

Three communities, Edina, Spring Park and Fridley, move into the first employment density category. The employment density map for 2000 reflects these increases.

# LEGEND

-  0 - 2500
-  2501 - 10,000
-  10,001 - 50,000
-  OVER 50,000



**FIGURE 25**  
**1980 EMPLOYMENT**

# LEGEND

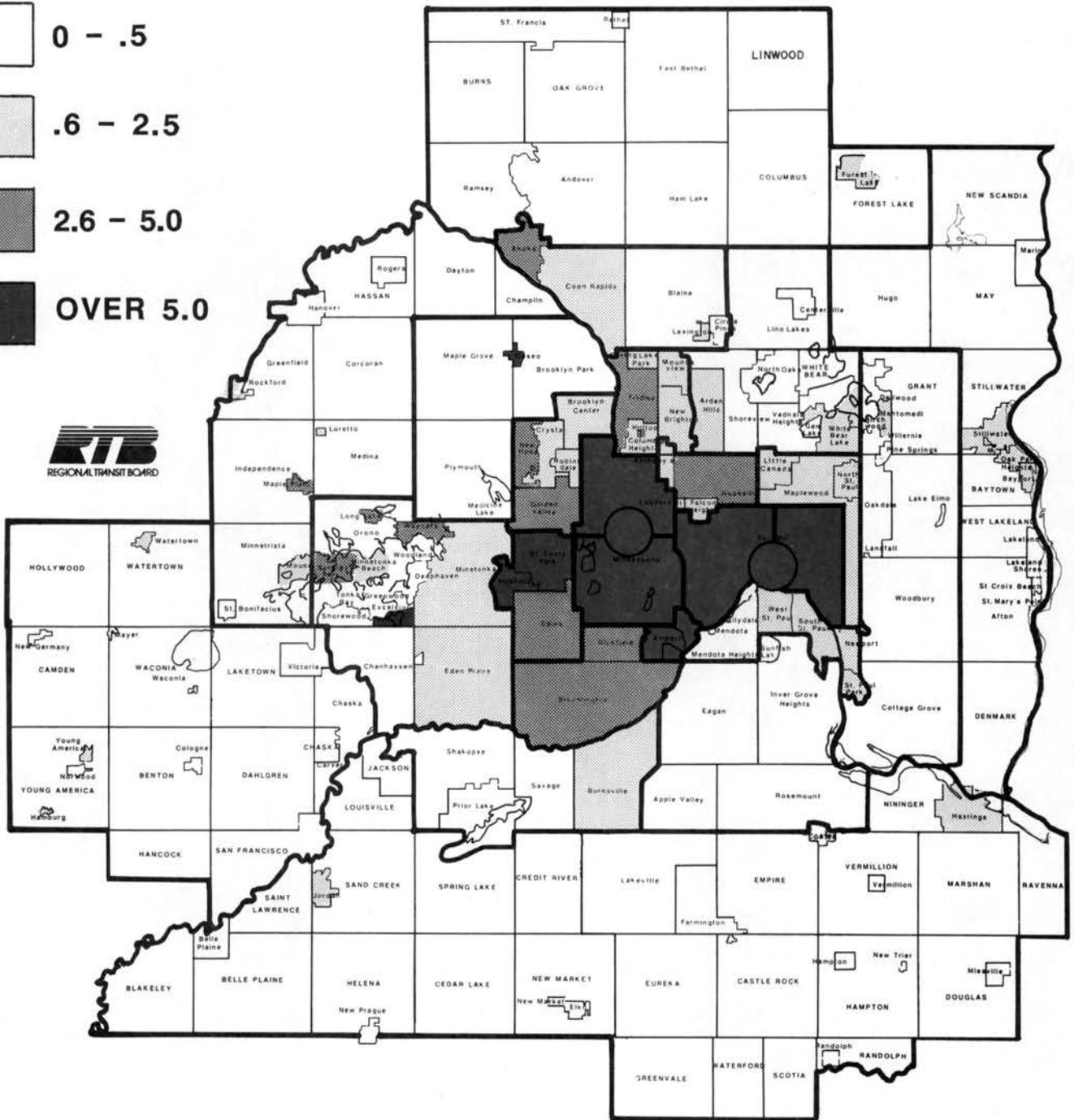
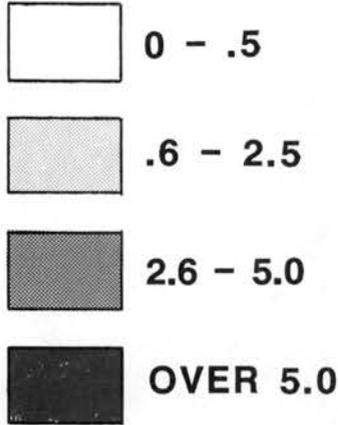


FIGURE 26

## 1980 EMPLOYMENT DENSITY



CONSULTANT: STRGAR-ROSCOE-FAUSCH, INC.

# LEGEND

-  0 - 2500
-  2501 - 10,000
-  10,001 - 50,000
-  OVER 50,000

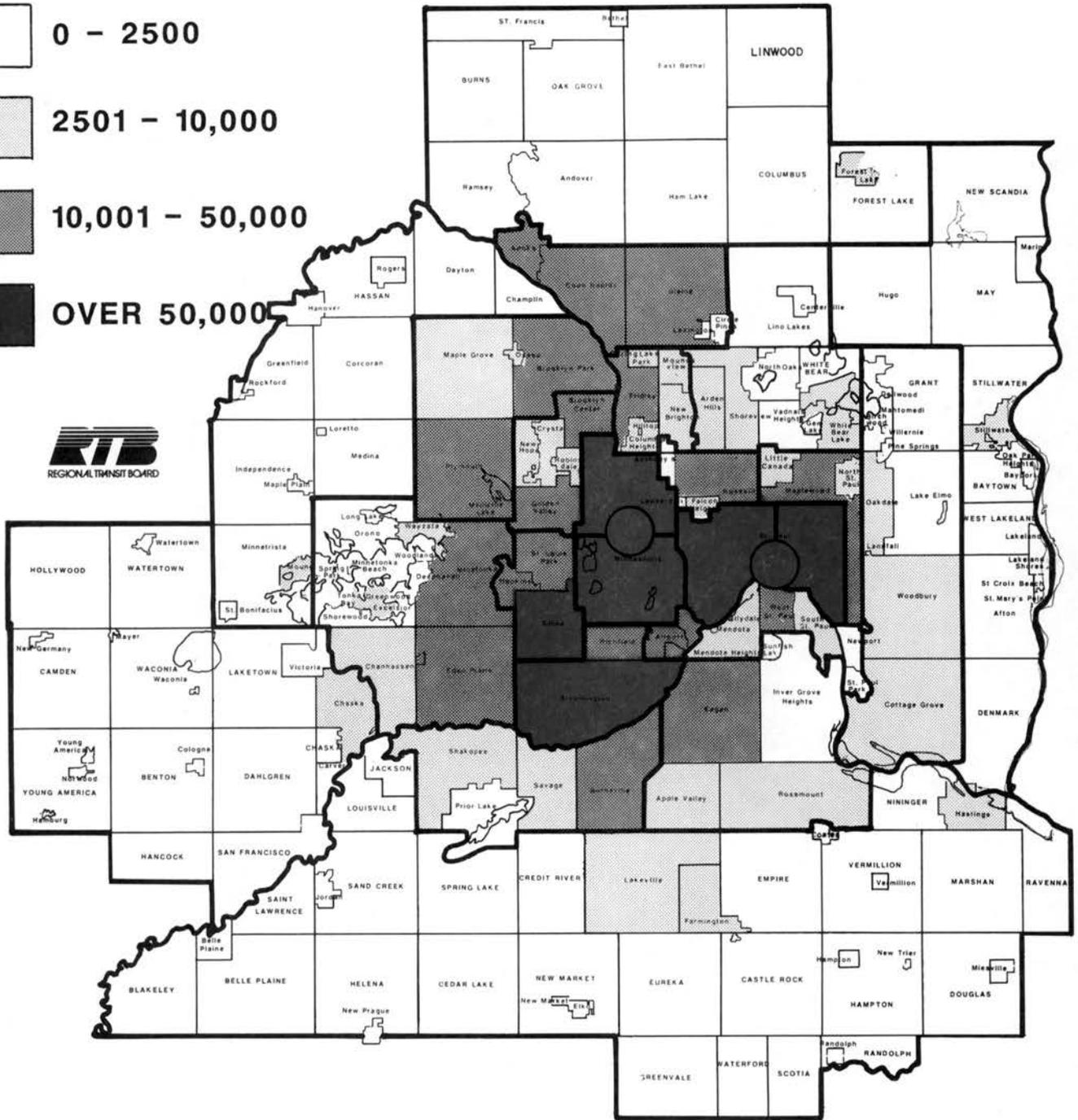


FIGURE 27

## 2000 EMPLOYMENT

# LEGEND

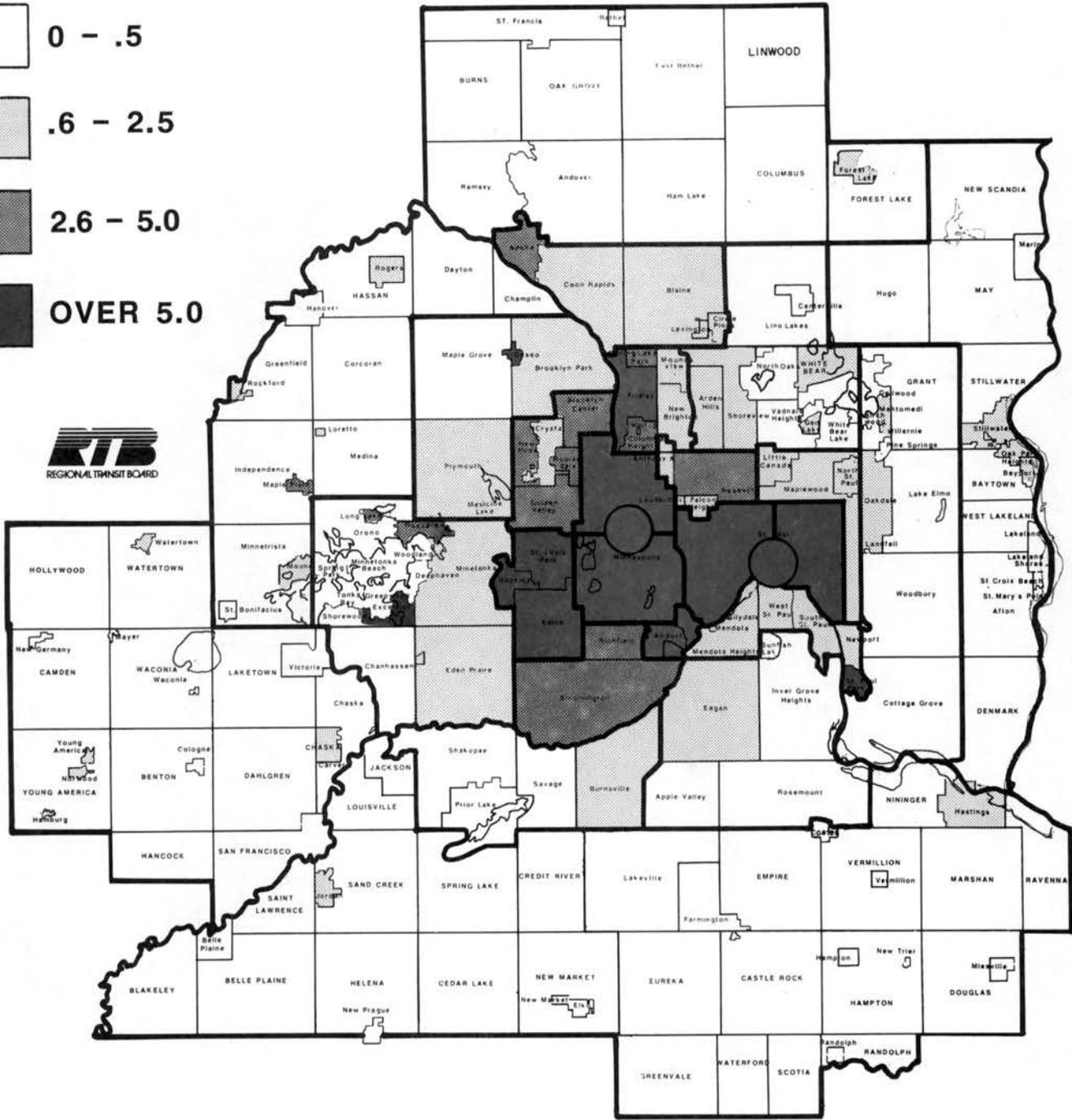
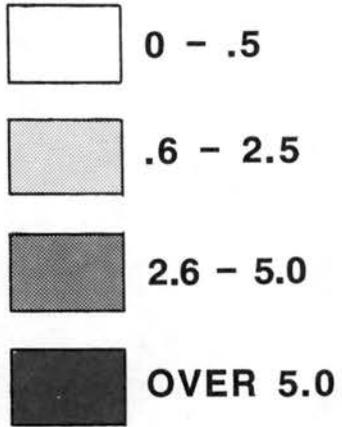
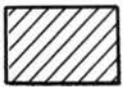


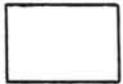
FIGURE 28

## 2000 EMPLOYMENT DENSITY

**LEGEND**



0 - 200 LOSS



0 - 1000



1001 - 10,000



10,001 - 20,000



OVER 20,000

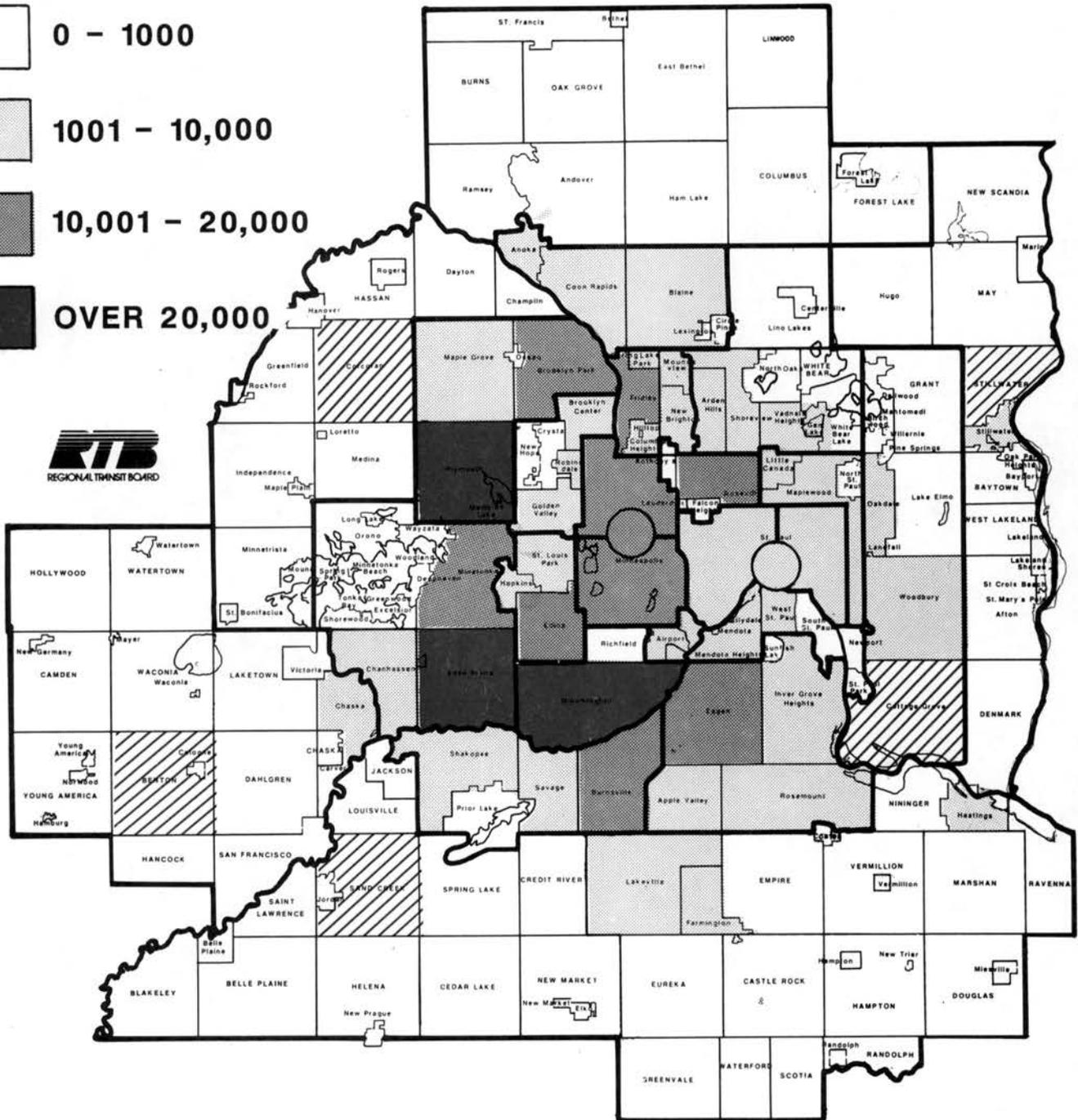


FIGURE 29

**1980 - 2000 EMPLOYMENT CHANGE**

These maps show a number of interesting trends which have significant implications for transit. First, the largest number of jobs are currently located in Minneapolis and St. Paul and will continue to be. Outside of these two cities, however, the major employment locations tend to be located in communities surrounding Minneapolis. These include both first and second ring communities to the south, west and north of Minneapolis. The largest employment concentrations around St. Paul are Roseville, Maplewood and, to a lesser extent, West St. Paul.

The implication of this on transit is that while the central cities of St. Paul and Minneapolis will continue to be major employment locations, the recent trend of more jobs locating in suburban areas will accelerate. This employment dispersal means less concentrations of jobs and less ability to serve these employment locations with the existing regular route transit structure.

#### University of Minnesota

The University of Minnesota represents one of the four market groups identified for the technical analysis and market research activities of the Transit Service Needs Assessment. Information was obtained from the University of Minnesota on student home locations to provide an indication of where students are coming from. These are shown in Figure 30. The heaviest concentrations of students live in St. Paul and Minneapolis. The next highest levels are in the first and second ring suburban communities. As can be seen, the communities to the west and south of Minneapolis and to the north and eastern section of St. Paul have the largest number of students outside of Minneapolis and St. Paul.

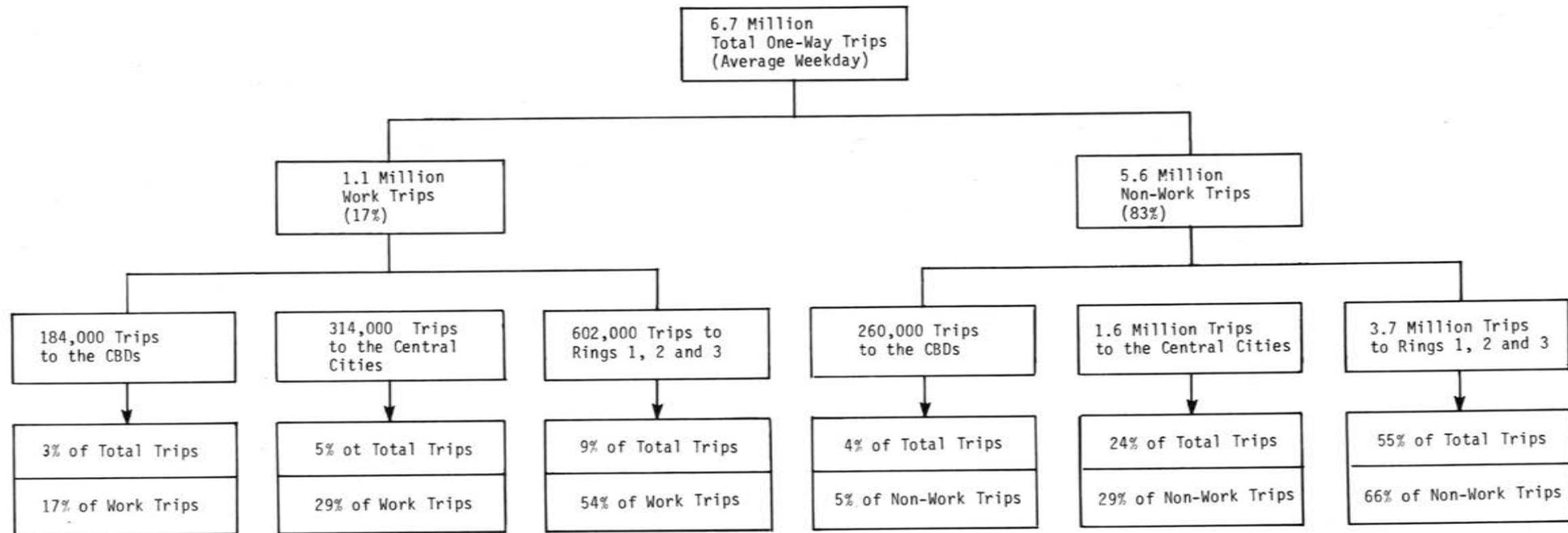
#### Travel Characteristics

In order to put transit in perspective, it is first necessary to start by examining the total travel characteristics for the metropolitan area. Figures 31 and 32 provide information on travel in the area for 1980 and the forecasts for 2000. These are based on information from the Metropolitan Council transportation planning process.

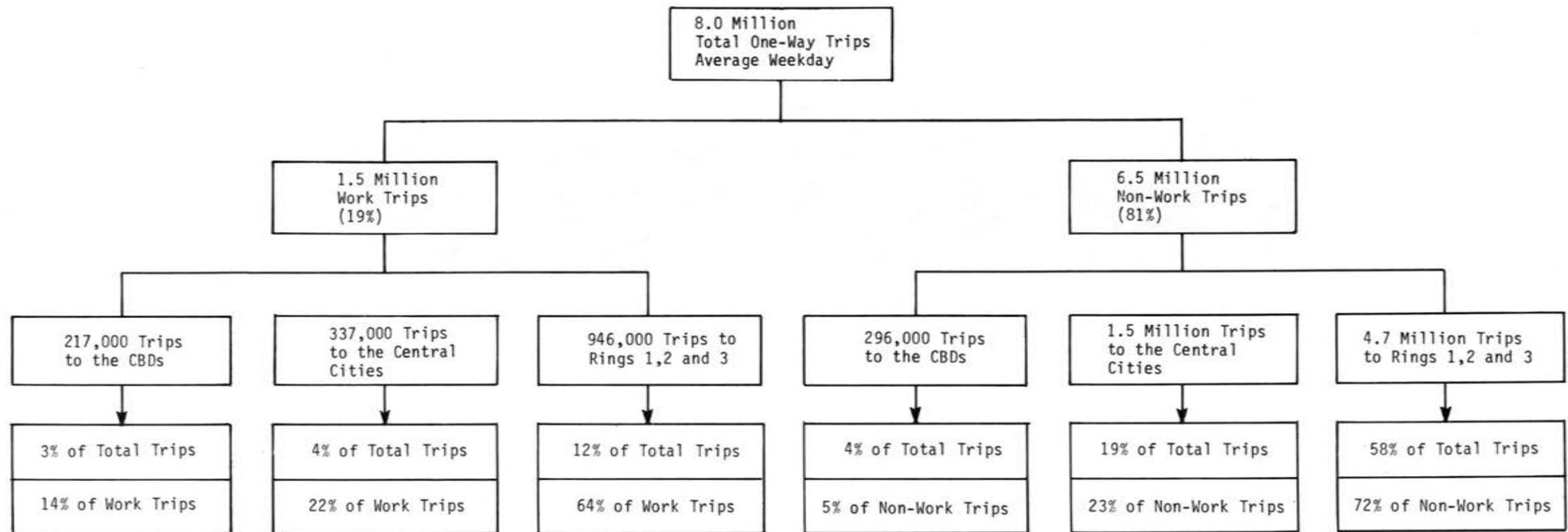
In 1980, there were approximately 6.7 million total one-way trips being made in the metropolitan area on the average weekday. By 2000, this is forecast to increase to 8 million. This represents an increase of 1.3 million trips, or approximately 20 percent. In 1980, work trips accounted for 16 percent of the total, and non-work trips, 84 percent. By 2000, work trips are estimated to account for 19 percent, and non-work trips, 81 percent. The number of work trips will increase by some 400,000, while non-work trips will increase by 900,000.

The figures also provide the general direction of trips. Of the 1980 work trips, 17 percent were oriented to the Central Business Districts of Minneapolis and St. Paul, 28 percent were focused on the Central City areas and 55 percent were focused on communities within Rings 1, 2 and 3. For non-work trips, 6 percent were oriented to the Central Business Districts, 28 percent to the Central Cities and 66 percent to Rings 1, 2 and 3. By the year 2000, a larger percentage of both work and non-work trips will be oriented toward the suburban areas in Rings 1, 2 and 3.





**FIGURE 31**  
**TRAVEL IN THE**  
**METROPOLITAN AREA-1980**



**FIGURE 32**  
**TRAVEL IN THE**  
**METROPOLITAN AREA-2000**

The identification of travel characteristics was based on the Metropolitan Council's transportation trip generation and trip assignment process. This process begins by dividing the metropolitan area into traffic assignment zones (TAZs). TAZs are small geographical units, usually within a single MCD. There are 1,058 TAZs in the metropolitan area. These are used to develop a 1,058 by 1,058 trip table representing person trips between TAZs. Trip tables have been produced for 1980 and 2000 based on the Council forecasts. The trip table includes work, non-work and total person trips. It does not include walk trips, such as those made in a downtown or neighborhood shopping area.

For analysis in the Transit Service Needs Assessment, the TAZs were combined into MCDs and then further aggregated to the transit planning subarea level. This produced a 26 x 26 trip table representing travel desires at the transit planning subarea level. Trip tables were produced for work and non-work travel for six of the identified market segments. These included: suburb to CBD, suburb to central city, central city to suburb, suburb to suburb, intra-subareas, and intra-central city. Identifying the travel characteristics, size, location and needs of these market segments can help in determining the most appropriate types of transit services.

Figures 33 through 44 identify the most significant work and non-work origin and destination patterns for each of the six market segments. The arrows indicate the subarea the trips originated in and the destination subarea. The width of the arrows indicate the number of trips. The travel desires for each market segment is briefly described in the following section. In each case, both work and non-work travel characteristics are provided. As indicated by the scales in the figures, non-work trips are two to three times greater than work trips.

Suburb to Central Business District (CBD) (Figures 33 and 34). Figure 33 shows work trips from the suburban rings into the two Central Business Districts. In Minneapolis the highest concentrations of trips are from the north and northwest subareas into downtown Minneapolis and the St. Louis Park, Hopkins and Edina subarea into downtown Minneapolis. In St. Paul the trips into the downtown are relatively even from the north, east and south communities.

Figure 34 identifies the non-work travel between the suburbs and the CBD's of Minneapolis and St. Paul. The non-work travel demand to these areas is much lower than the work-oriented trips. The largest number are oriented on downtown Minneapolis from the first and second ring subareas to the north, west and south of the city. The only travel desire focused on downtown St. Paul large enough to be identified is from the first ring subarea to the south.

Suburb to Central City (Figures 35 and 36). Figure 35 shows the work trips from the suburban rings to the central city areas of Minneapolis and St. Paul. A significant number of work trips are focused on the central city areas. The strongest concentrations of work trips are from the first ring suburbs into the adjacent central city area. In addition, there are fairly strong concentrations from some of the second ring suburbs. The largest concentrations are from subarea 11 into north Minneapolis and subareas 16 and 17 into southern Minneapolis.

0 - 3,000 NOT SHOWN

3,001 - 6,000

6,001 - 9,000

9,001 - 12,000

12,000 AND OVER

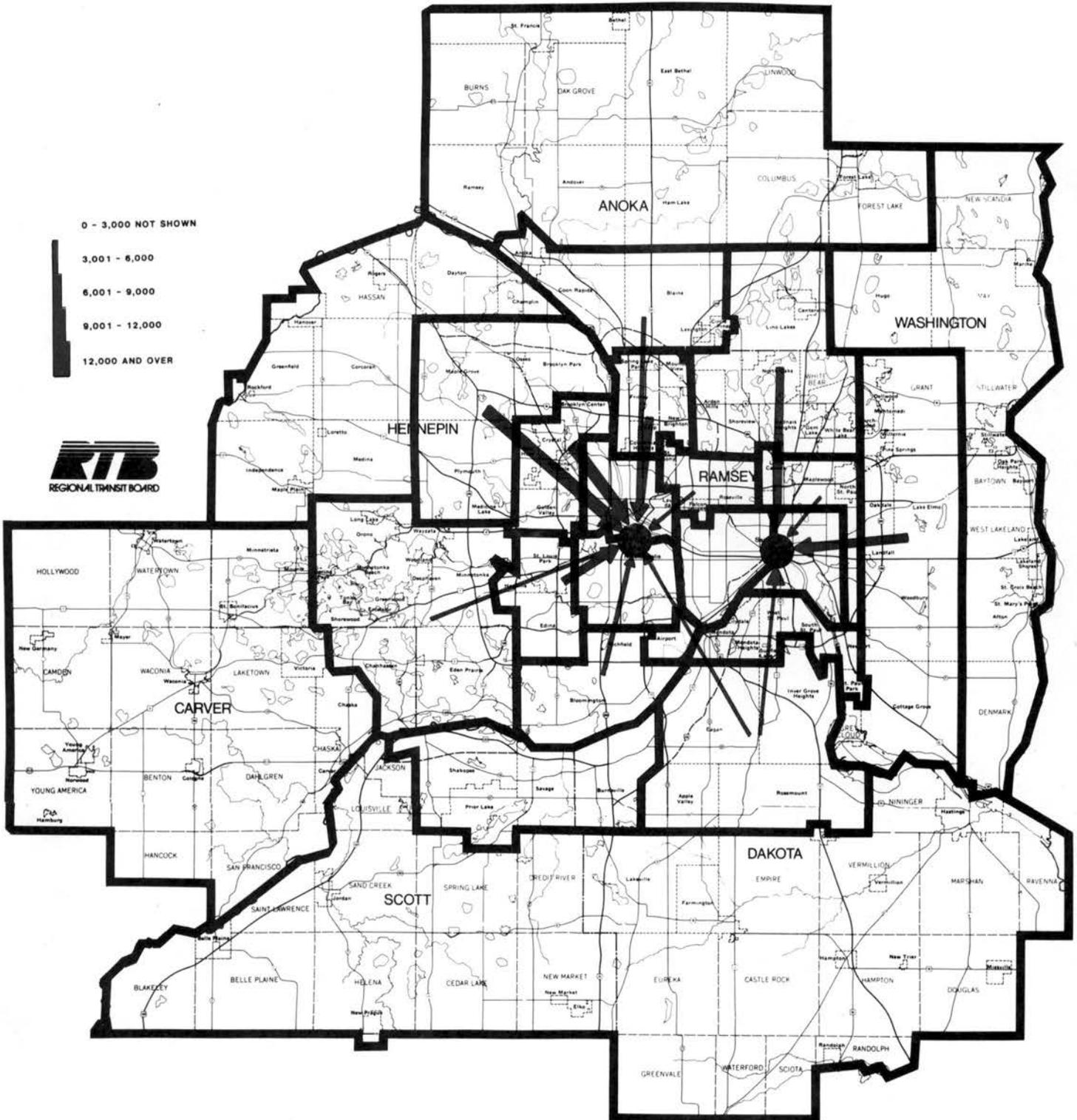


FIGURE 33

YEAR 2000 WORK TRIPS  
SUBURB - TO - CBD

0 - 6,000 NOT SHOWN

6,001 - 12,000

12,001 - 18,000

18,001 - 24,000

24,001 AND OVER

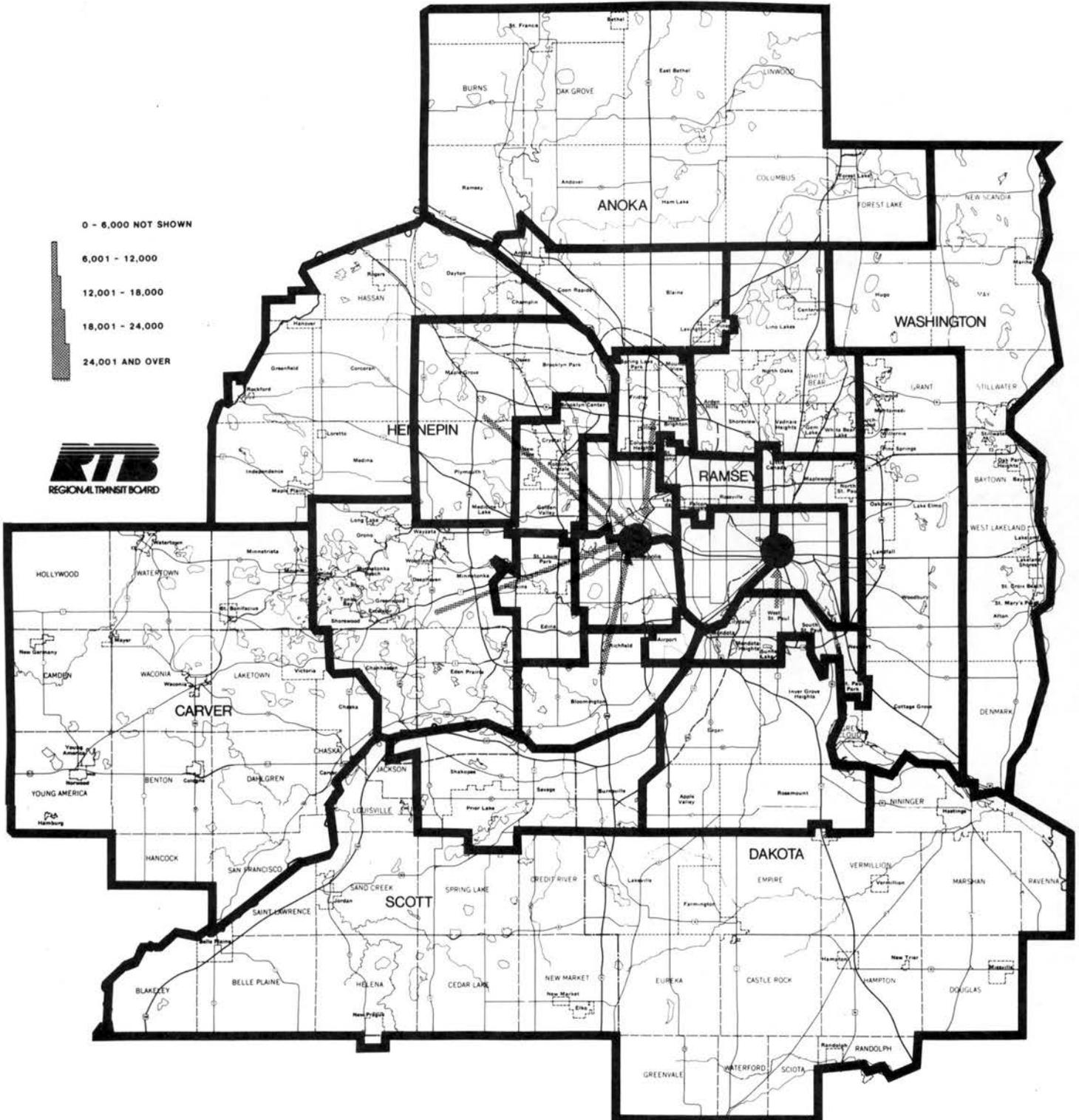


FIGURE 34  
YEAR 2000 NON-WORK TRIPS  
SUBURB - TO CBD

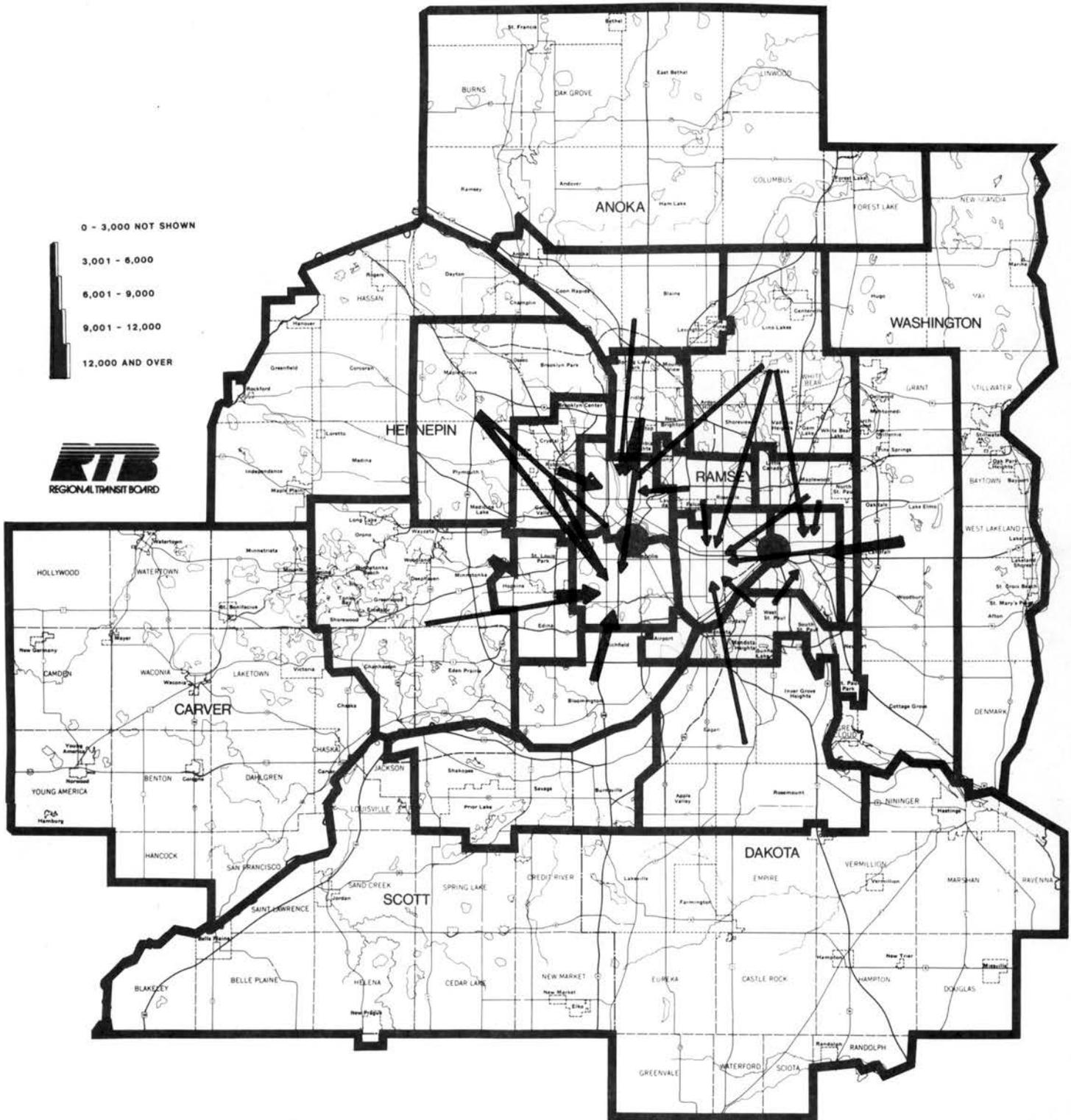
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3,001 - 6,000

6,001 - 9,000

9,001 - 12,000

12,000 AND OVER



**FIGURE 35**  
**YEAR 2000 WORK TRIPS**  
**SUBURB - TO - CENTRAL CITY**

0 - 6,000 NOT SHOWN

6,001 - 12,000

12,001 - 18,000

18,001 - 24,000

24,001 AND OVER

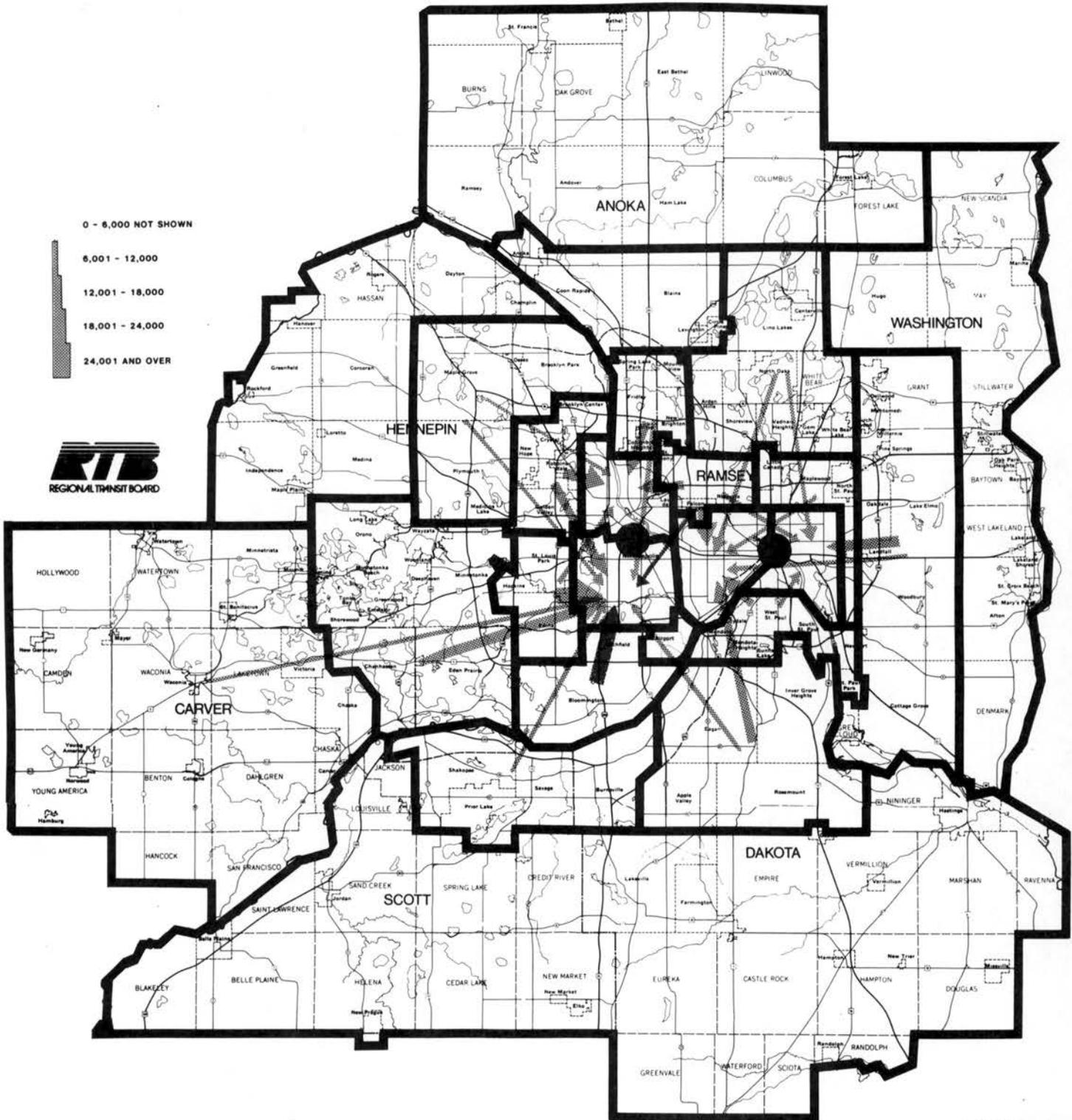


FIGURE 36

**YEAR 2000 NON-WORK TRIPS  
SUBURB - TO - CENTRAL CITY**

Figure 36 provides the non-work travel between the suburbs and the central cities. Travel demand is highest from the first ring suburbs into the adjacent central city. However, there are some strong travel desires from suburban areas to central cities on the opposite side of the city. The strongest travel desires are from subareas 16 and 17 into southern Minneapolis. Other large concentrations are from subareas 12, 11 and 18 into northern Minneapolis; subarea 18 to southern Minneapolis; subarea 23 into Eastern St. Paul and subareas 12, 14 and 24 into western St. Paul.

Central City to Suburbs (Figures 37 and 38). These trips, which are usually referred to as reverse commute trips, are from the central city out to suburban locations. The largest work trips, with over 12,000 trips each, are from southern Minneapolis to subareas 16 and 17, the first ring subareas to the south and west. Other significant travel desires occur from the central city to the adjacent first ring subarea.

Figure 38 shows non-work trips made from the central city areas to suburban locations. The figures indicate that there are strong non-work travel desires from the central cities to suburban locations. These are largest to the first ring suburbs, but also occur to some second ring suburban areas. The largest volumes are from southern Minneapolis to subarea 16 to the south, northern Minneapolis to subareas 11 and 18 to the north and northwest; and western St. Paul to subarea 12, the adjacent subarea to the north.

Suburb to Suburb (Figures 39 and 40). Figure 39 shows the trips made between suburban rings. It is interesting to note the diversity of travel between origins and destinations in the suburban areas. The majority of trips occur between adjacent subareas. The major heaviest flow of trips are the first and second ring subareas in a semi-circle around the western side of Minneapolis.

Figure 40 identifies travel desires between suburban communities for non-work purposes. Like the suburban work map, this shows the strong desire for travel between suburban communities. The semi-circle on the western side of Minneapolis again shows up strongly, as does travel between adjacent subareas.

Intra-Subarea (Figures 41 and 42). Figure 41 shows the number of work trips made within each of the subareas. The largest number of trips are within subareas 27 (Maple Grove, Osseo, Brooklyn Park, and Plymouth), 05 (southern Minneapolis), 16 (Bloomington and Richfield), 04 (western portion of St. Paul) and 17 (Hopkins, Edina, St. Louis Park). Other subareas also record high levels of trips.

Figure 42 identifies non-work travel within each of the subareas. The strength of trips within the subareas is evident. The largest grouping represents between 240,00 and 300,000 daily trips. The subareas surrounding Minneapolis, southern Minneapolis and the western portion of St. Paul have the largest number of intra-subarea non-work trips.

Central City and CBD (Figures 43 and 44). Figure 43 shows the travel between the central city and CBD areas of Minneapolis and St. Paul. As can be seen, travel volumes between these areas are relatively similar.

Figure 43 identifies the non-work trips made between different parts of Minneapolis and St. Paul. Like the work map, the number of trips appear fairly even in all directions.

0 - 3,000 NOT SHOWN

3,001 - 6,000

6,001 - 9,000

9,001 - 12,000

12,000 AND OVER

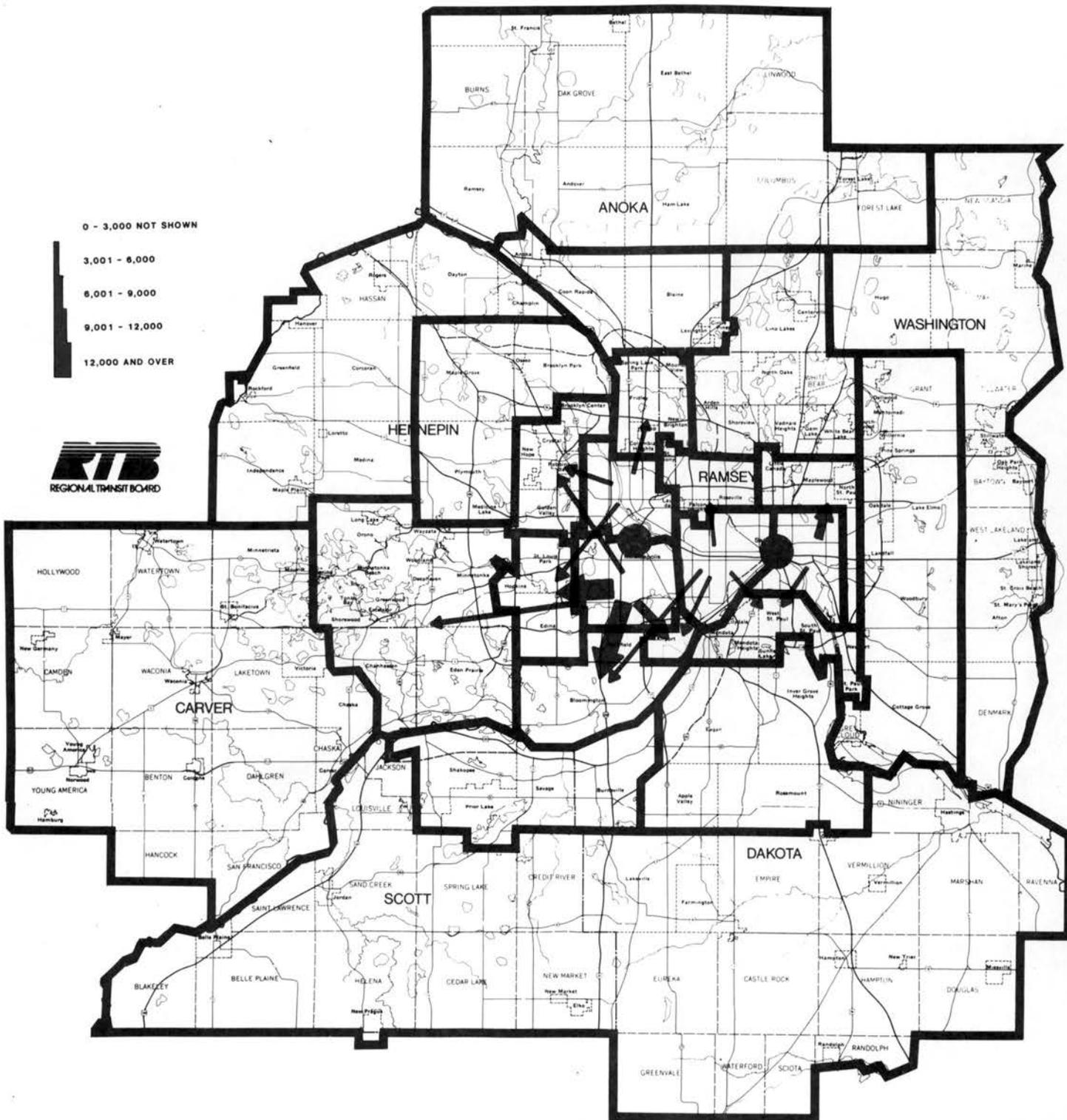


FIGURE 37  
YEAR 2000 WORK TRIPS  
CENTRAL CITY - TO - SUBURB

0 - 6,000 NOT SHOWN

6,001 - 12,000

12,001 - 18,000

18,001 - 24,000

24,001 AND OVER

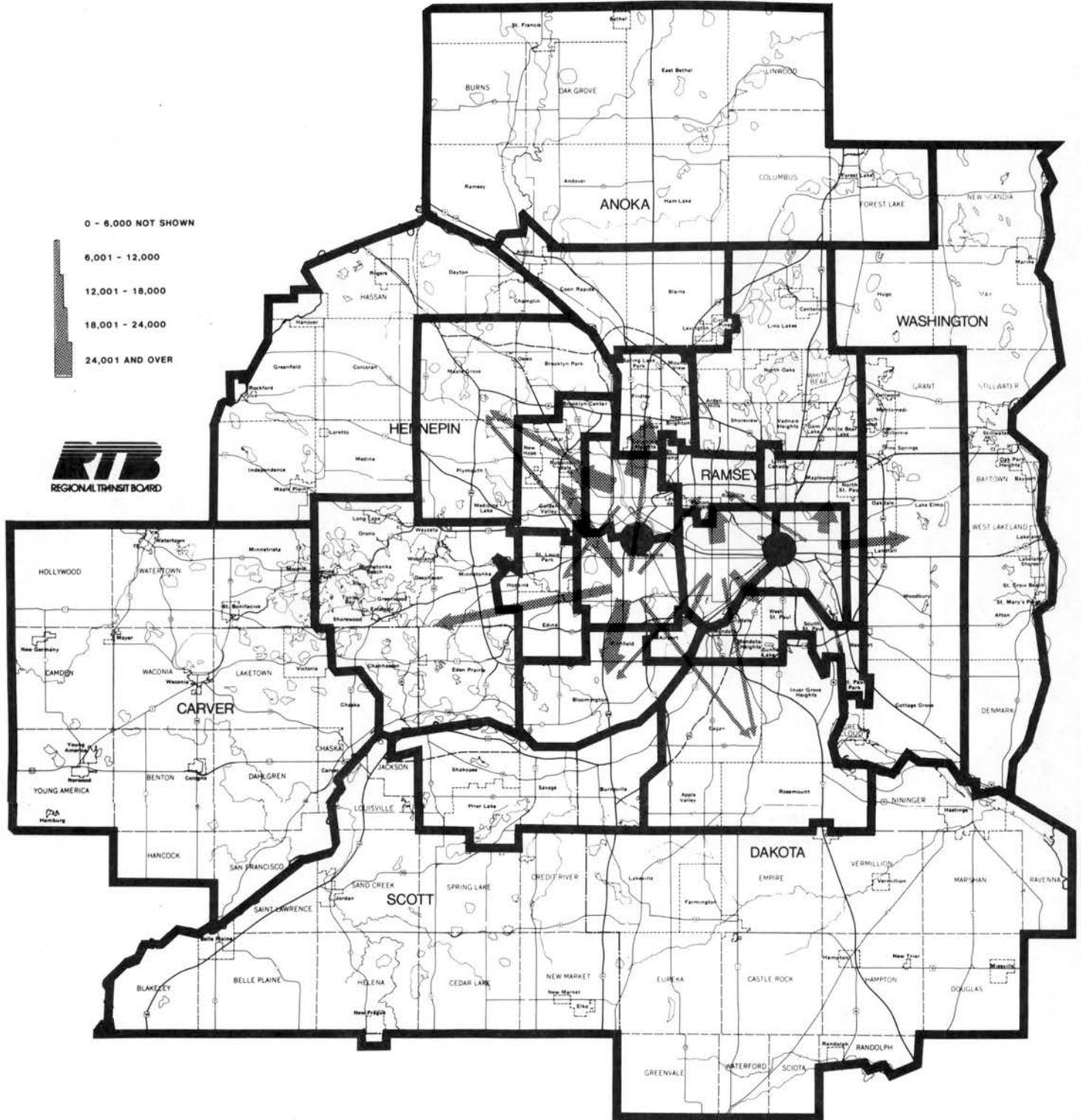


FIGURE 38

**YEAR 2000 NON-WORK TRIPS  
CENTRAL CITY - TO - SUBURB**

0 - 3,000 NOT SHOWN

3,001 - 6,000

6,001 - 9,000

9,001 - 12,000

12,000 AND OVER

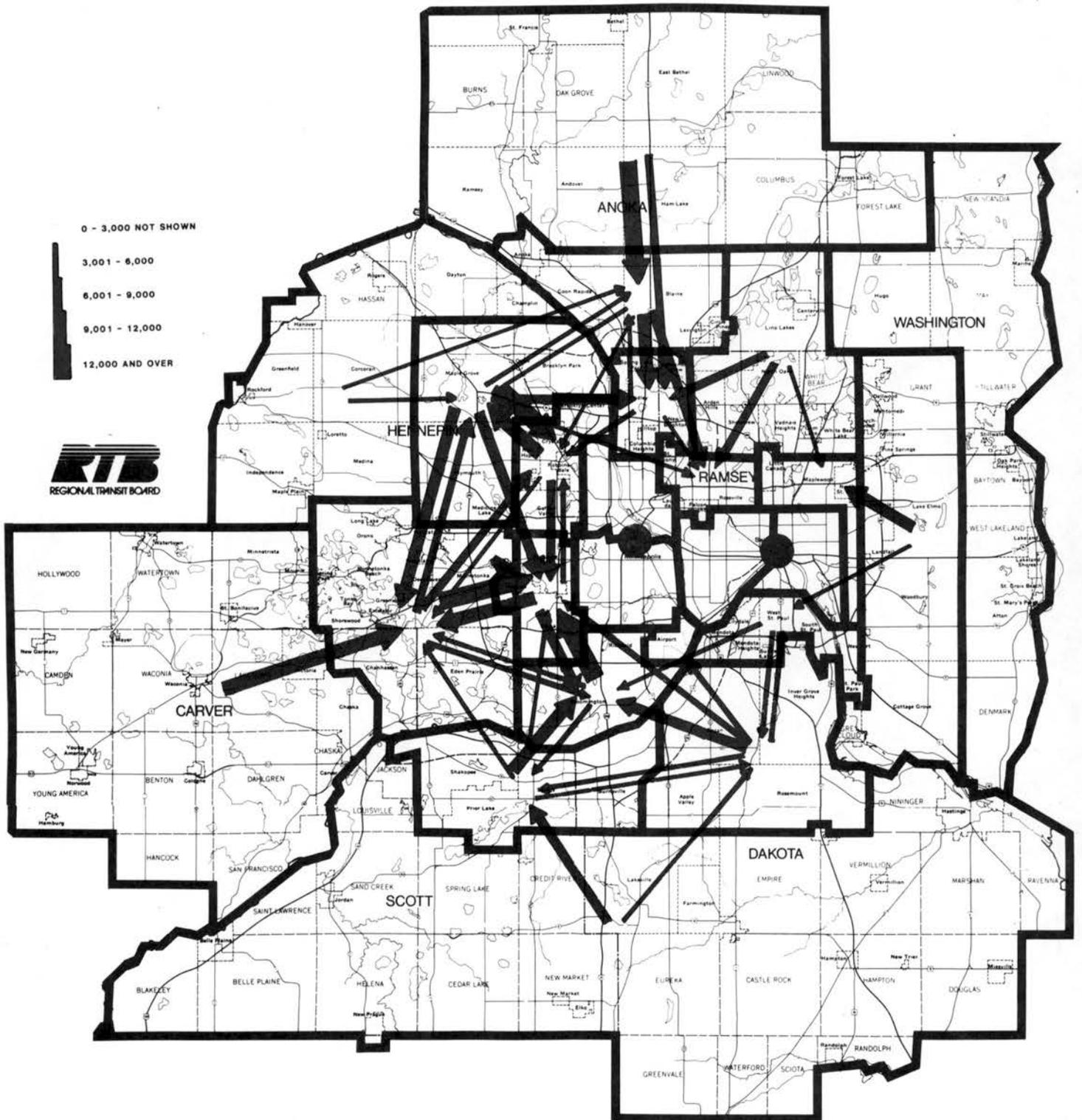


FIGURE 39

**YEAR 2000 WORK TRIPS  
SUBURB - TO - SUBURB**



**TRANSIT SERVICE NEEDS ASSESSMENT**

CONSULTANT: STRGAR-ROSCOE-FAUSCH, INC.

0 - 12,000 NOT SHOWN

12,001 - 24,000

24,001 - 36,000

36,001 - 48,000

48,000 AND OVER

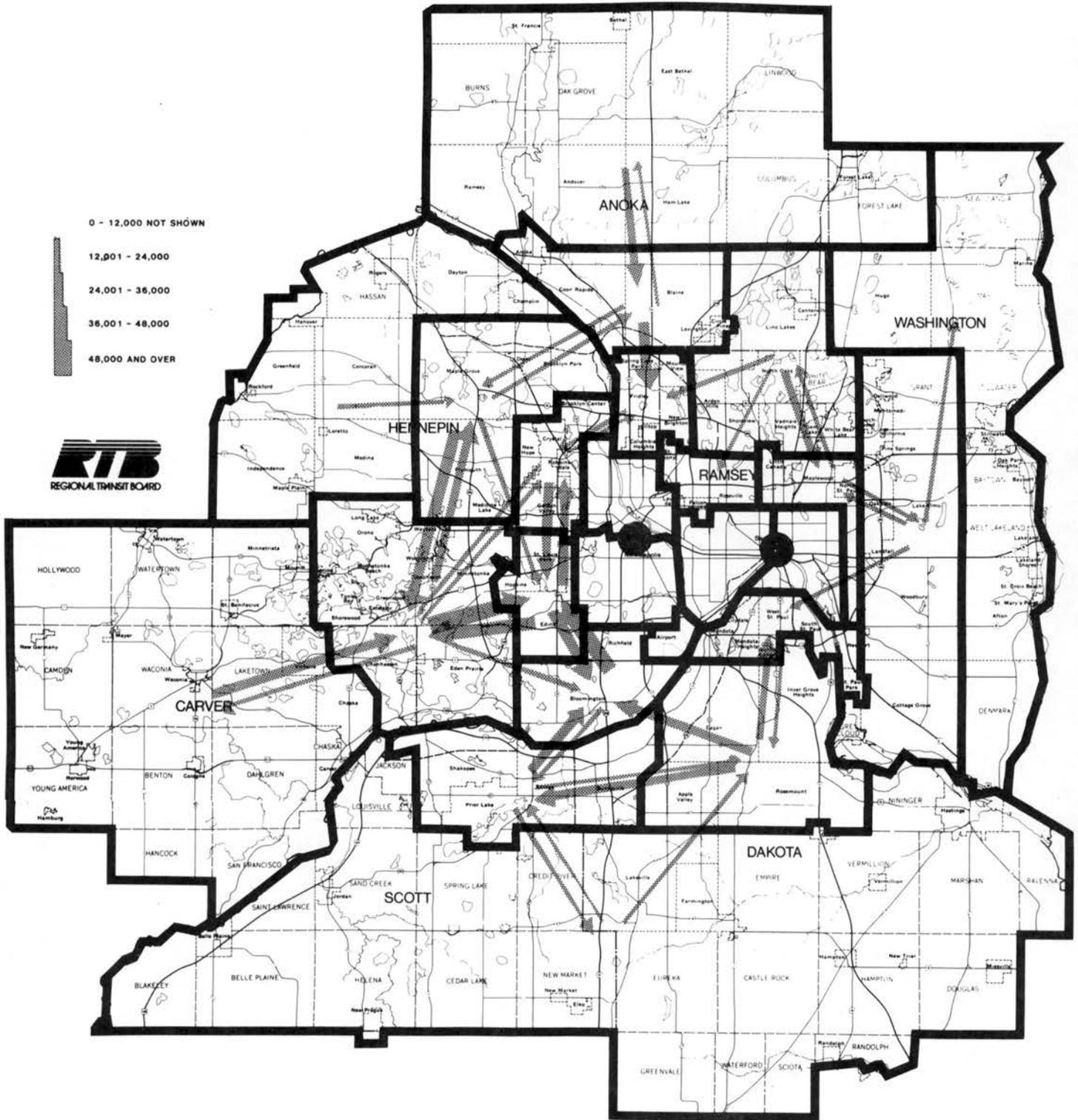
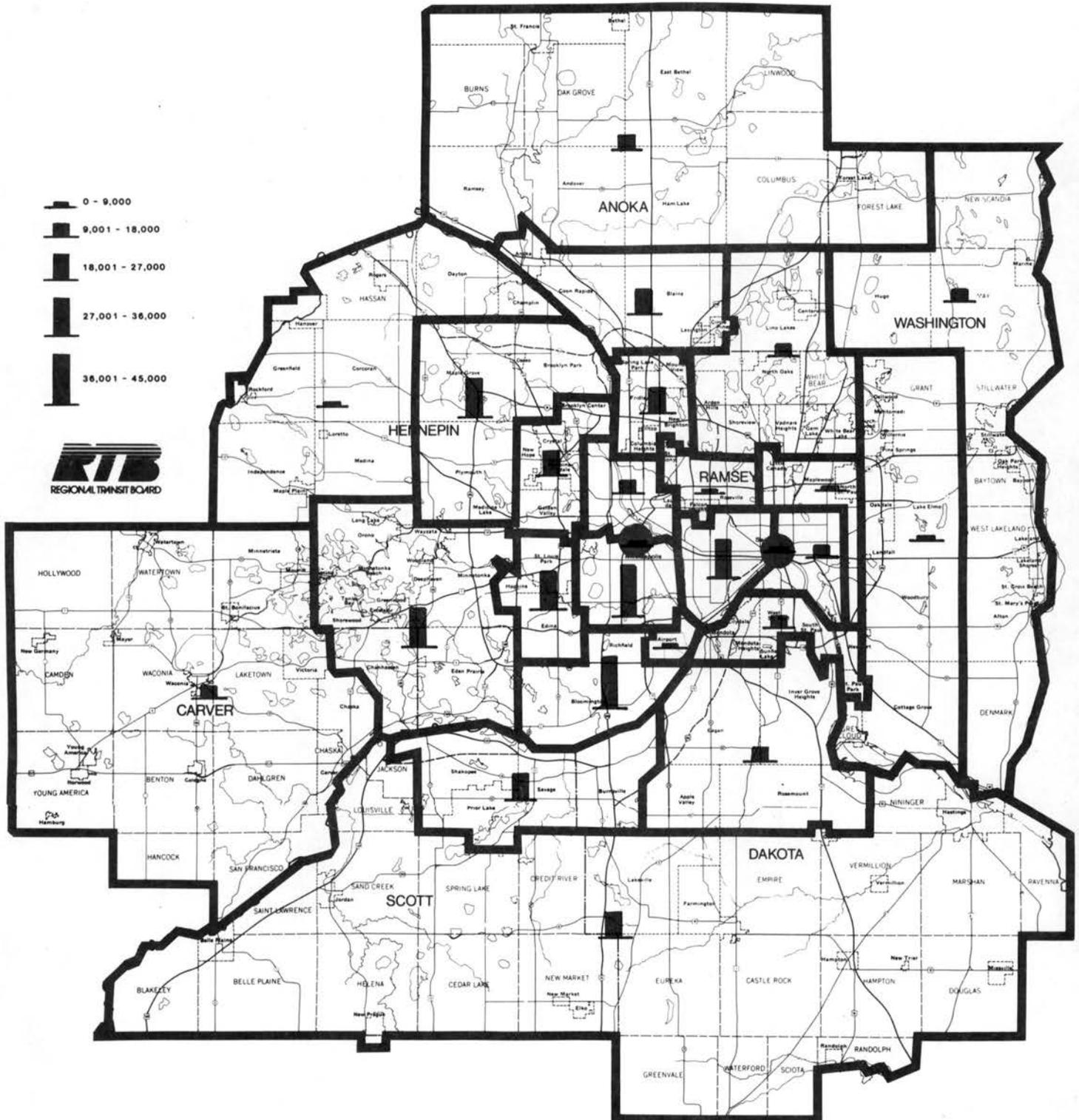
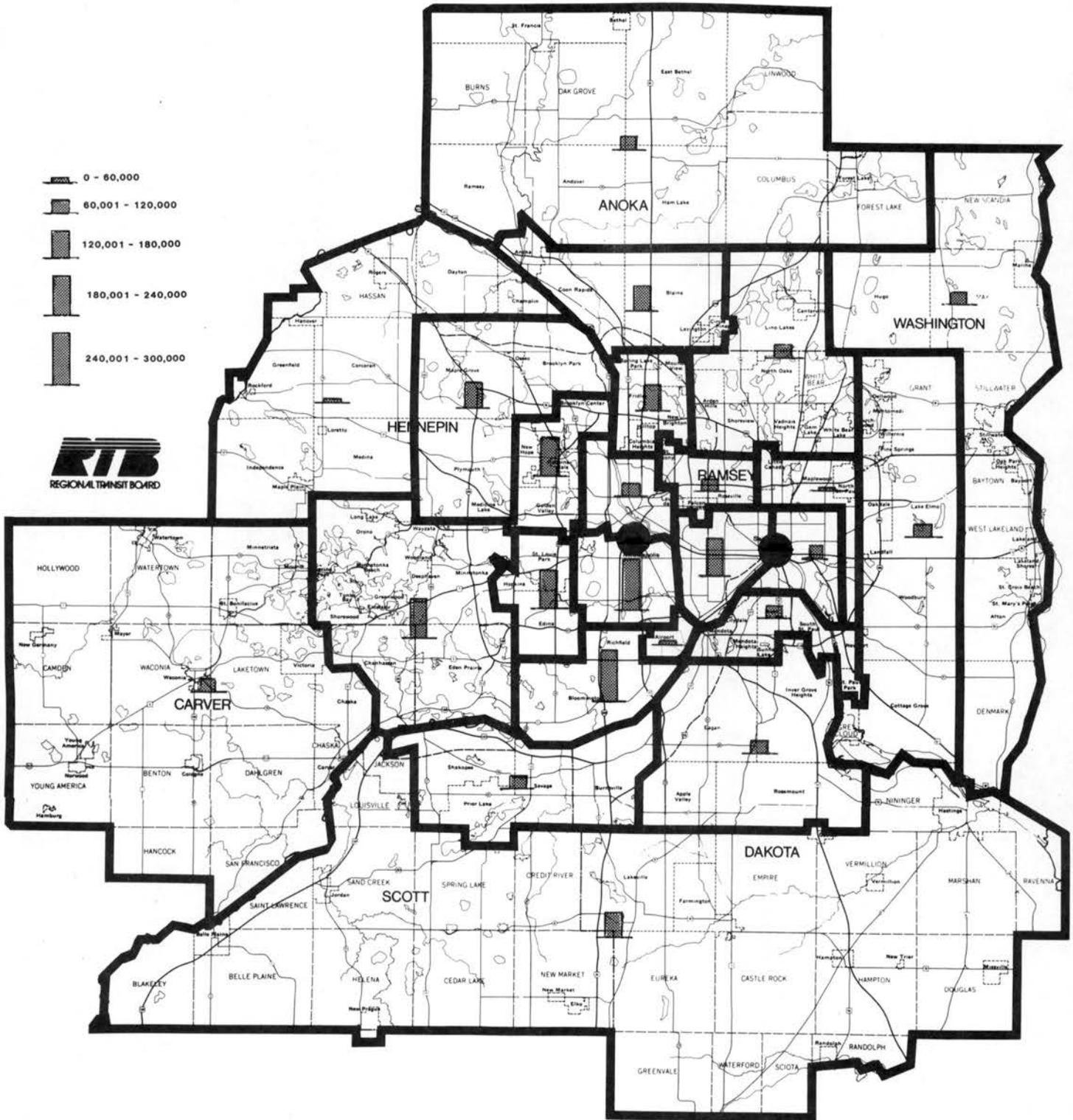
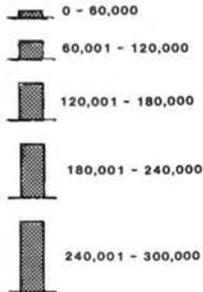


FIGURE 40  
YEAR 2000 NON-WORK TRIPS  
SUBURB - TO - SUBURB



**FIGURE 41**  
**YEAR 2000 WORK TRIPS**  
**INTRA - SUBAREA**



**FIGURE 42**  
**YEAR 2000 NON-WORK TRIPS**  
**INTRA-SUBAREA**

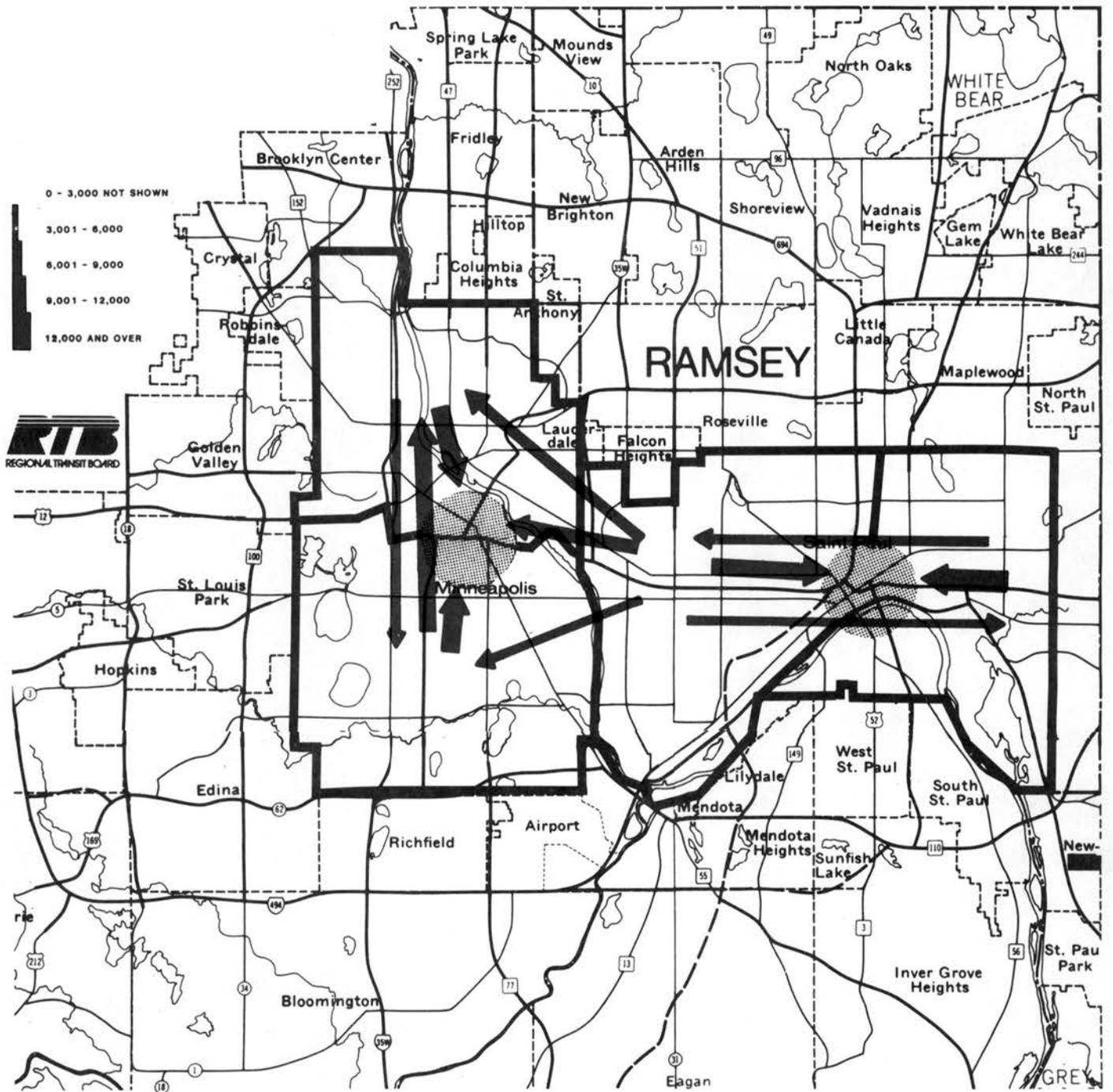


FIGURE 43  
 YEAR 2000 WORK TRIPS  
 CENTRAL CITY AND CBD

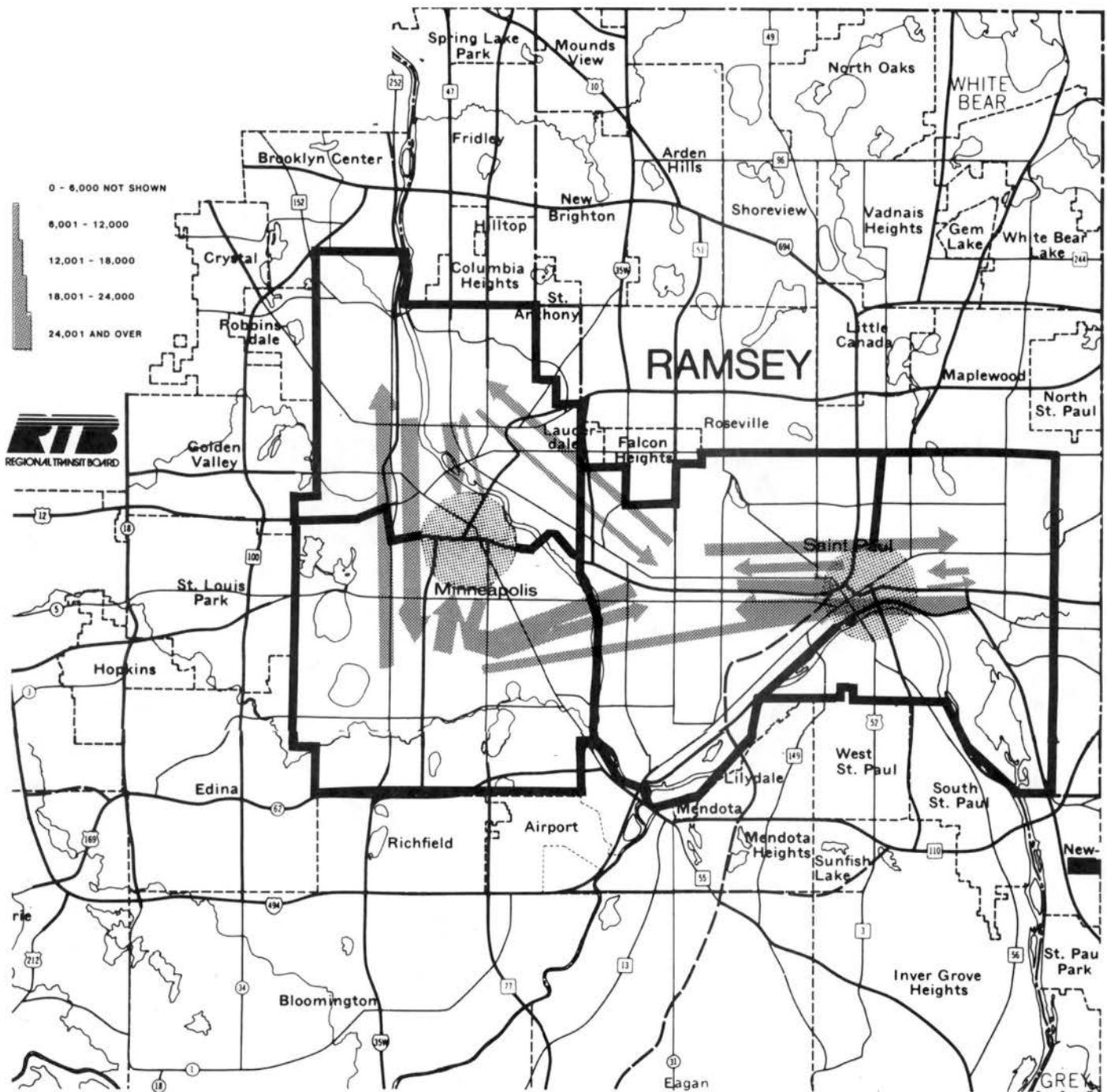


FIGURE 44  
 YEAR 2000 NON-WORK TRIPS  
 CENTRAL CITY AND CBD

Travel characteristics were also examined based on the sectors and corridors identified in Chapter V. These included six sectors based on the Minneapolis CBD, three based on the St. Paul CBD, the central corridor and the western crosstown corridors. For the purpose of this analysis, travel data was aggregated for each sector in eight different ways:

- o Inbound work and total trips between subareas
- o Inbound work and total trips to CBDs
- o Bi-directional work and total trips between subareas
- o Bi-directional work and total trips to and from CBDs

Figures 45 through 48 provide examples of the inbound work trips and inter-subarea work trips to the CBD for the Minneapolis and St. Paul based sectors. Similar analysis was conducted for all sectors for all of the trips identified above. Three of these are discussed below.

**Inbound Work Trips:** Analysis of inbound subarea work trips, shown in Figures 45 through 48, reveals that, in almost all cases, the maximum accumulation of trips occurs, not between the central cities and CBDs, but between the second and first ring suburban subareas and between the first ring subareas and the central cities. This indicates that while the CBDs continue to have the greatest concentration of trips, the greatest volumes are occurring in the first and second ring suburbs.

Minneapolis Northwest, North and West sectors exhibit the maximum accumulation of inbound work trips, both to the CBD and to first and second ring subareas.

**Total Trips:** Examination of total trips shows that the phenomenon described above for work trips is accentuated and the maximum travel accumulation clearly occurs between the second and first ring suburban subareas. There are approximately as many non-work trips as work trips destined to the CBDs. For bi-directional trips, this factor is closer to one-and-a-half times as many non-work trips as work trips, although in some sectors it is as high as two times.

The Northwest sector of Minneapolis contains the largest number of inbound as well as bi-directional trips. It is followed by the Minneapolis West and North corridors for inbound total trips. For bi-directional trips, these two sectors reverse their order.

The sectors containing the greatest number of trips are in Minneapolis. St. Paul sectors exhibit a medium to low trip level in comparison.

#### Journey-to-Work Information

The 1980 census provides information on individuals travel modes for work trips. These are provided for two specific sub-categories--transit and rideshare. The census information for these two characteristics have been mapped by MCD and are shown in Figures 49 and 50.

Figure 49 identifies the number of residents from each community using the bus to get to and from work. The heaviest transit usage, over 10,000, are within Minneapolis and St. Paul. High transit use was also reported from some of the first ring suburbs. These include West St. Paul, Richfield, Bloomington, Edina, St. Louis Park, Brooklyn Center, Fridley, Hilltop, Columbia Heights and the second ring community of Brooklyn Park.

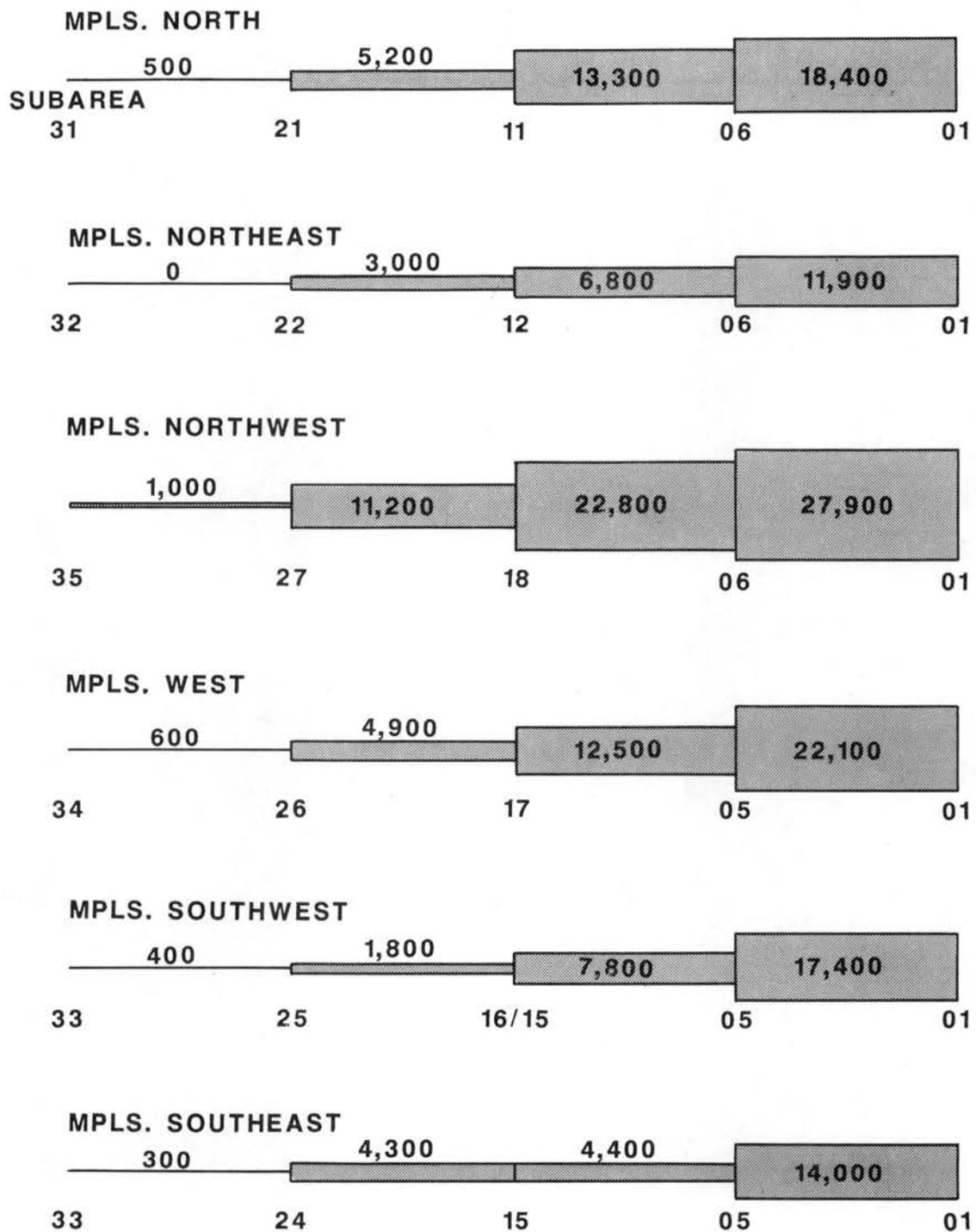


FIGURE 45  
 MINNEAPOLIS BASED SECTORS  
 INBOUND WORK TRIPS TO THE CBD

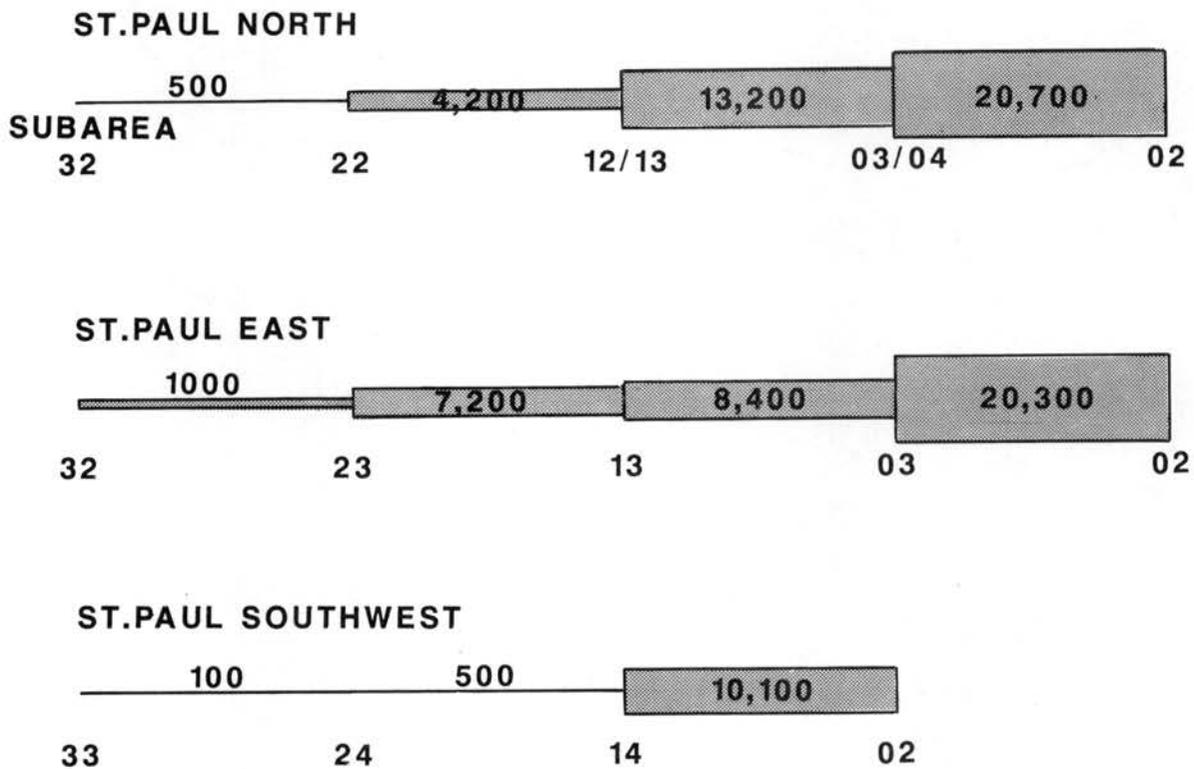


FIGURE 46  
ST. PAUL BASED SECTORS  
INBOUND WORK TRIPS TO THE CBD

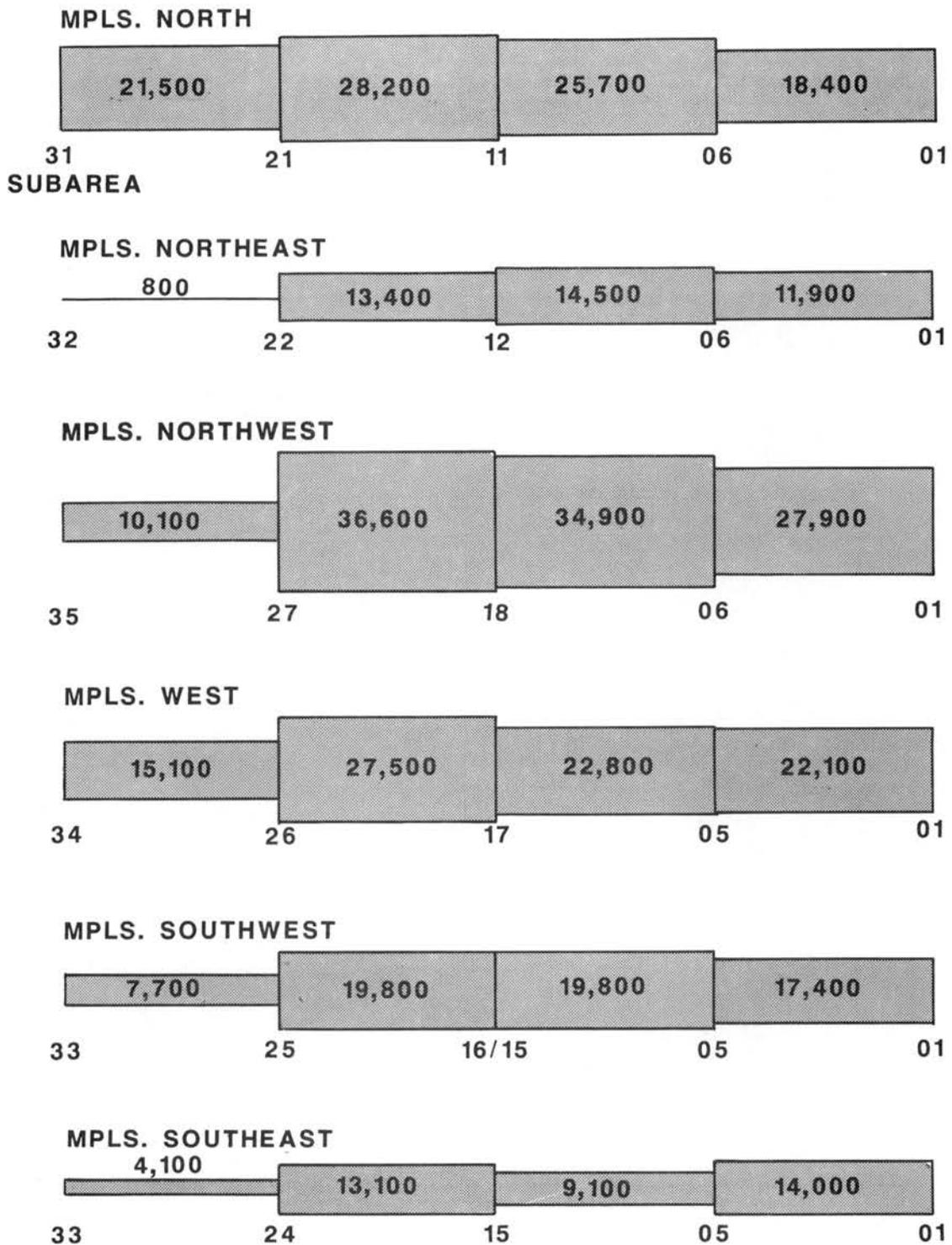


FIGURE 47

**MINNEAPOLIS BASED SECTORS  
INBOUND INTER-SUBAREA WORK TRIPS**

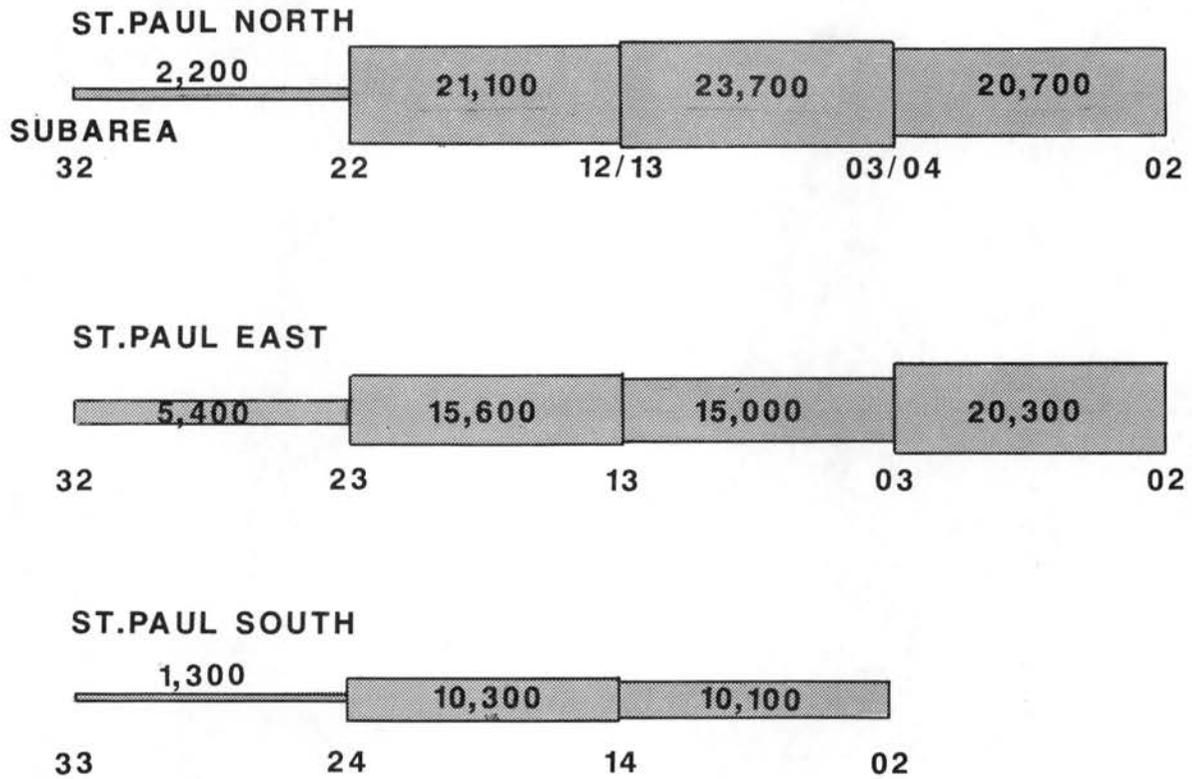


FIGURE 48  
**ST. PAUL BASED SECTORS  
 INBOUND INTER-SUBAREA WORK TRIPS**



Figure 50 shows the number of individuals from each community who indicated they carpoled to and from work. The largest number of carpoolers were reported from Minneapolis, St. Paul and Bloomington. A number of the first and second ring communities also had relatively high levels of carpooling reported.

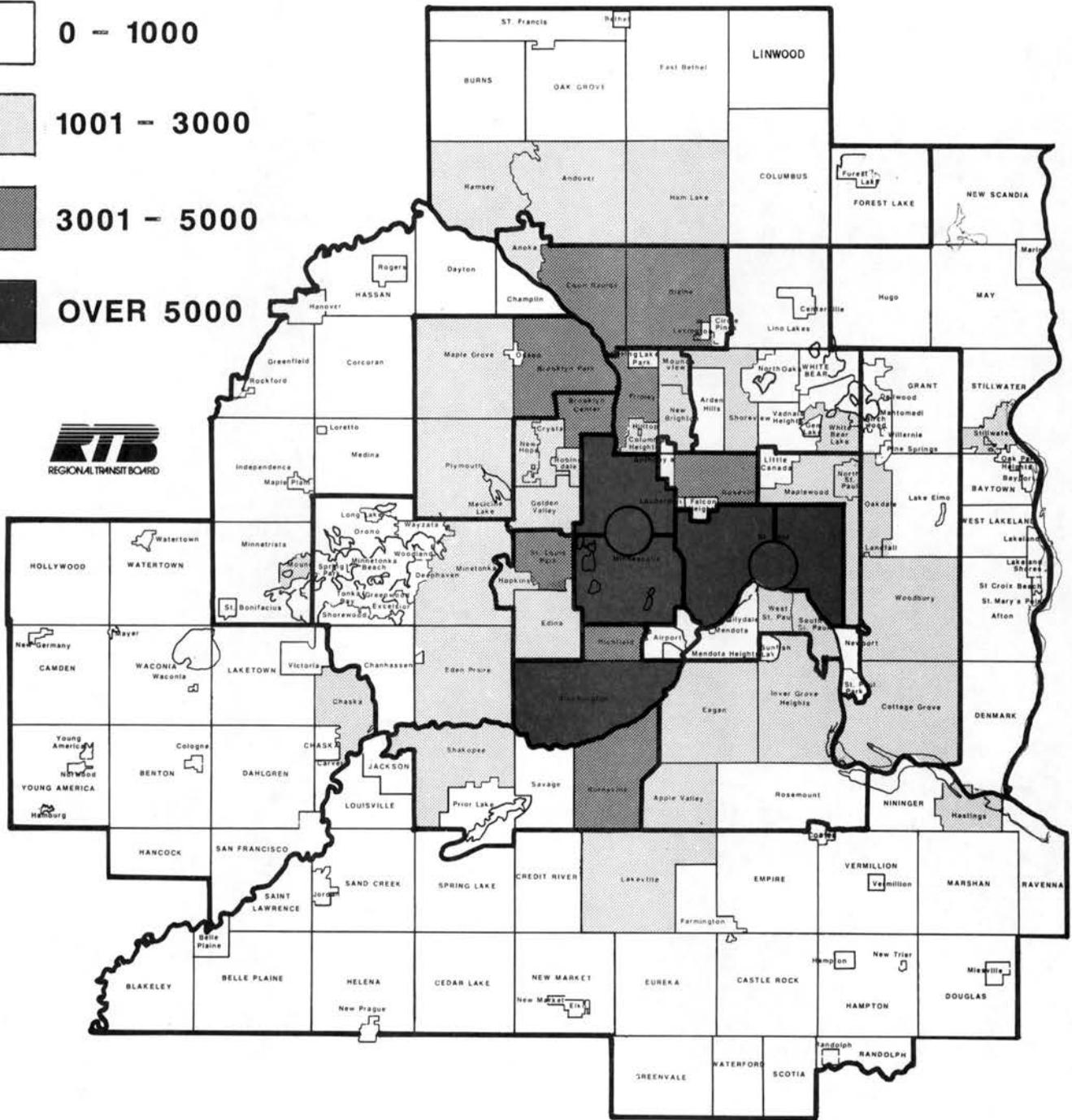
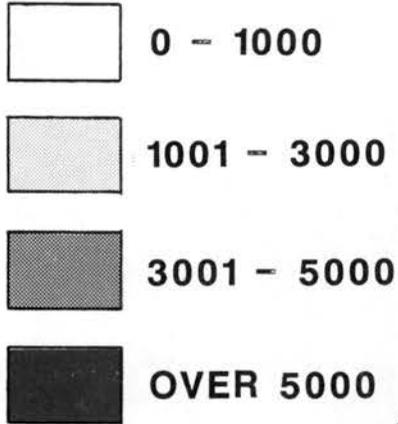
#### Automobile Travel

Current and future automobile drivers represent a significant potential source of future transit users. Due to this, any actions or conditions that affect the use of automobiles need to be examined. It is also important to analyze the capacity and conditions of the current highway and roadway segments as transit must operate on these systems. There are a number of conditions which have an impact on both auto transit usage. These include increased traffic congestion, increased fuel and parking costs, and limited parking availability.

#### Traffic Congestion

An examination of available historical data on design hour volumes on segments of the highway system indicates that the growth in traffic during the last decade has brought many of these facilities to near capacity and, in some cases, has exceeded their capacity. Table 13 shows the historical trends for these segments.

**LEGEND**



**FIGURE 50**  
**1980 WORK TRIP CARPOOL USERS**

Table 13  
Historical Design Hour Volumes on Metropolitan Highway Segments

Location	Year	Volume	Capacity LOS D	Capacity LOS E	Reserve Capacity LOS D	Reserve Capacity LOS E
35W at 46th Street	1976	6039 (N)	5,550	6,000	*	*
	1984	6643 (N)	5,550	6,000	*	*
35W at 494	1976	3271 (N)	3,700	4,000	429	729
	1984	3439 (S)	3,700	4,000	261	561
CSAH 62 at France	1974	2730 (E)	3,700	4,000	970	1,270
	1984	3790 (W)	3,700	4,000	*	210
I-94 at Tunnel	1976	3303 (E)	5,550	6,000	2,247	2,697
	1984	5464 (E)	5,550	6,000	86	536
I-94 at Victoria	1978	5530 (W)	7,400	8,000	1,870	2,470
	1984	N/A	7,400	8,000	N/A	N/A
I-94 at Mound Blvd.	1982	4720 (E)	5,550	6,000	830	1,280
	1984	4330 (E)	5,550	6,000	1,220	1,670
I-494 at 24th Ave.	1970	3320 (E)	5,550	6,000	2,230	2,680
	1983	4040 (E)	5,550	6,000	1,510	1,960
35E at Arlington	1970	4910 (S)	5,550	6,000	640	1,090
	1983	5590 (S)	5,550	6,000	*	410

( ) Directional Volume

\* Over capacity at this level of service

Source: Developed from Minnesota Department of Transportation  
Automatic Traffic Recorder Data

The data shows that, of the available eight highway segments presented, half of them are at or exceed their level of service D capacity--beyond which serious congestion can occur. Even facilities such as I-494 at 24th Avenue, which in 1983 had a reserve capacity of about 1,500 vehicles per hour (at LOS D), are susceptible to significant traffic increases that not only absorb the reserve capacity but exceed it as a result of planned development.

Given the employment growth expected in the region, the level of traffic congestion currently experienced on many of the metropolitan area's highways, the high level of capital investment that is required to increase the capacity of the system, and the physical and environmental constraints that exist in some of the critical areas, it becomes clear that the role that transit can play in meeting the transportation needs of the region is potentially very significant as well as timely. Many of the area's major roadways are reaching a point where widening or reconstruction is necessary. It is possible that, in some of these facilities, transit can play an important role in alleviating the traffic problems both during construction and after. The recent experience with the interim High Occupancy Vehicle Lanes on Highway 12 presents one good example of this.

Other highway segments that are currently under study or that have been analyzed recently are outlined below. These represent the opportunity for consideration of transit improvements.

- o I-35W Environmental Impact
- o I-494 Study
- o I-35E North Environmental Impact Statement
- o I-694 Reconstruction
- o I-94 Reconstruction
- o I-394 Construction
- o University Avenue Environmental Impact Statement
- o Southwest Corridor Environmental Impact Statement
- o Hiawatha Corridor Environmental Impact Statement
- o Shepard Road/East CBD Bypass Study

#### Fuel and Parking Availability and Cost

Fuel and parking costs and parking availability are subject to political as well as economic forces often placing them beyond the control of the planning process. The Department of Energy has indicated that the price and availability of fuel is expected to remain relatively stable throughout the 1980s, after which it is expected to increase sharply. If this is the case, transit should experience gains similar to those it enjoyed during the 1973-1974 oil crisis. In the short term, however, the continued price and supply, which has resulted in increased automobile travel in the past, is likely to continue to the detriment of transit ridership.

Parking cost and availability can be set, within certain limits, by policy. The cost of parking varies dramatically from the core of the central business districts to outlying areas. In the Minneapolis core, monthly charge for contract parking ranges from \$90 to \$100 for above-ground ramp and surface lots, to \$125 to \$150, for heated underground space. In the area immediately

surrounding the core, charges range from \$65 to \$90 per month. In outlying areas, parking charges run about \$35 to \$50 per month, or about \$2.00 to \$2.50 per day. In St. Paul core, monthly charges range from \$40 to \$110 with the average between \$60 and \$75 per month.

Outside of the central cities, particularly in most suburban areas, parking is free and readily available. This often works against the use of transit and ridesharing, because the true cost of driving is not borne by the drive-alone automobile user.

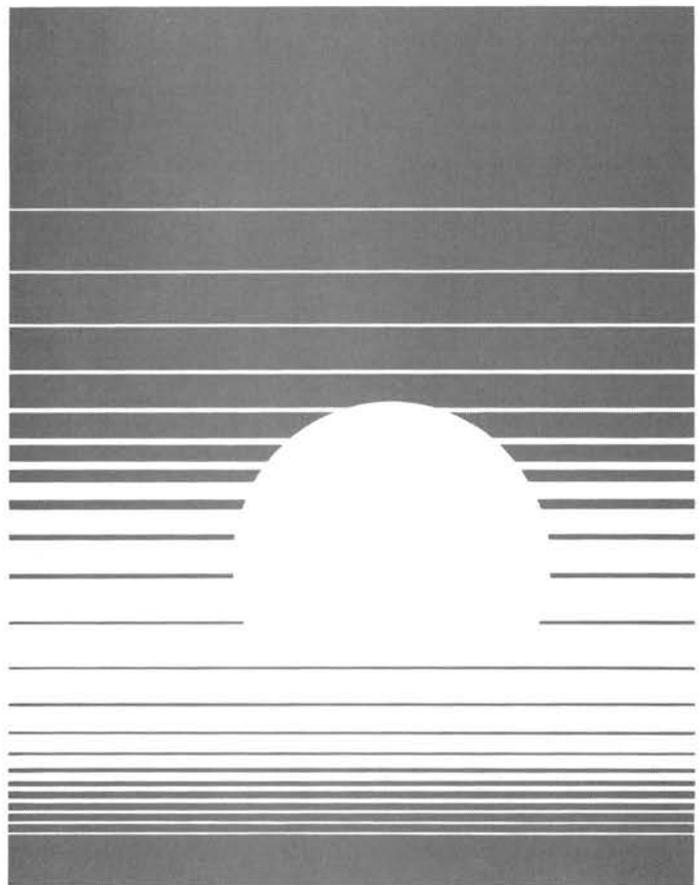
#### Land Use

As indicated earlier in the population and employment analysis, a significantly large proportion of the region's growth is occurring in the suburban areas. The draft of the Metropolitan Council's "Metropolitan Development and Investment Framework" (October 1985), shows the locations of three categories of regional commercial-industrial concentrations. Of the eight employment concentrations with 10,000 or more employees, six are in suburban locations, mostly in the first and second rings. All six of the concentrations of retail sales of \$100 million or more are in the first and second rings, and four of the five concentrations with employment of 10,000 or more and retail sales of \$100 million or more are in the first ring suburbs.

The potential and proposed major developments for the short-term in the metropolitan area include the following:

- o Third Avenue Distributor Parking Garages
- o University of Minnesota Transitway
- o Minneapolis CBD Office, Convention Center and LSGI Development
- o Minneapolis Technology Corridor
- o St. Paul CBD Office and Riverfront Development
- o Bloomington MegaMall and Homart Developments
- o Edina Hedberg Development
- o Eastern St. Paul Suburban Area Regional Shopping Center
- o Minnetonka Carlson Center Development

These and future significant land use changes should be monitored for transit service opportunities, particularly if available roadway capacity is limited, parking availability is restricted or parking costs are high.



## **CHAPTER SIX**

ANALYSIS OF TRANSIT SERVICE NEED

## A. Introduction

The analysis process utilized in Phase I focused on the use of a specific set of transit need indicators. Transit need indicators were defined as travel demand and supply parameters which affected the propensity for transit use. They provide a process to identify market segments and geographical areas lacking transit services. Three demand-based transit need indicators and two supply-based indicators were used. These are listed below and briefly described. The transit need identification process is illustrated in Figure 51.

- o Population and Employment Concentrations
- o Transit Dependent Market Segments
- o Travel Desire
- o Highway Congestion, and
- o Existing Transit Supply

### Population and Employment

Population and employment concentration provides a good indication of transit service need. It is generally accepted that the greater the population and employment density, the greater the demand for transit. This is borne out by the existing deployment of transit services in the metropolitan area which shows a much heavier concentration of service in the central cities than in the suburbs.

An additional value of using population and employment as need indicators is their ability to be forecasted. The knowledge of anticipated shifts in population and employment is important in planning for necessary adjustments to the existing transit service pattern, especially for short- to medium-range changes.

### Transit Dependent Population

Transit use is correlated with the size of the transit dependent population. Because transit is the essential form of travel to many in these population groups, their geographic concentration at a given location is an indication of potential need for transit services.

### Travel Desire

The identification of travel desire irrespective of mode of travel, is also a good transit need indicator because it demonstrates not only the origin and destination travel patterns of market segments, but where the greatest number of individuals within these market segments can be served. In particular, identification of specific point-to-point travel patterns are helpful because travel patterns with specific origin and destination locations are the easiest to serve with regular transit service.

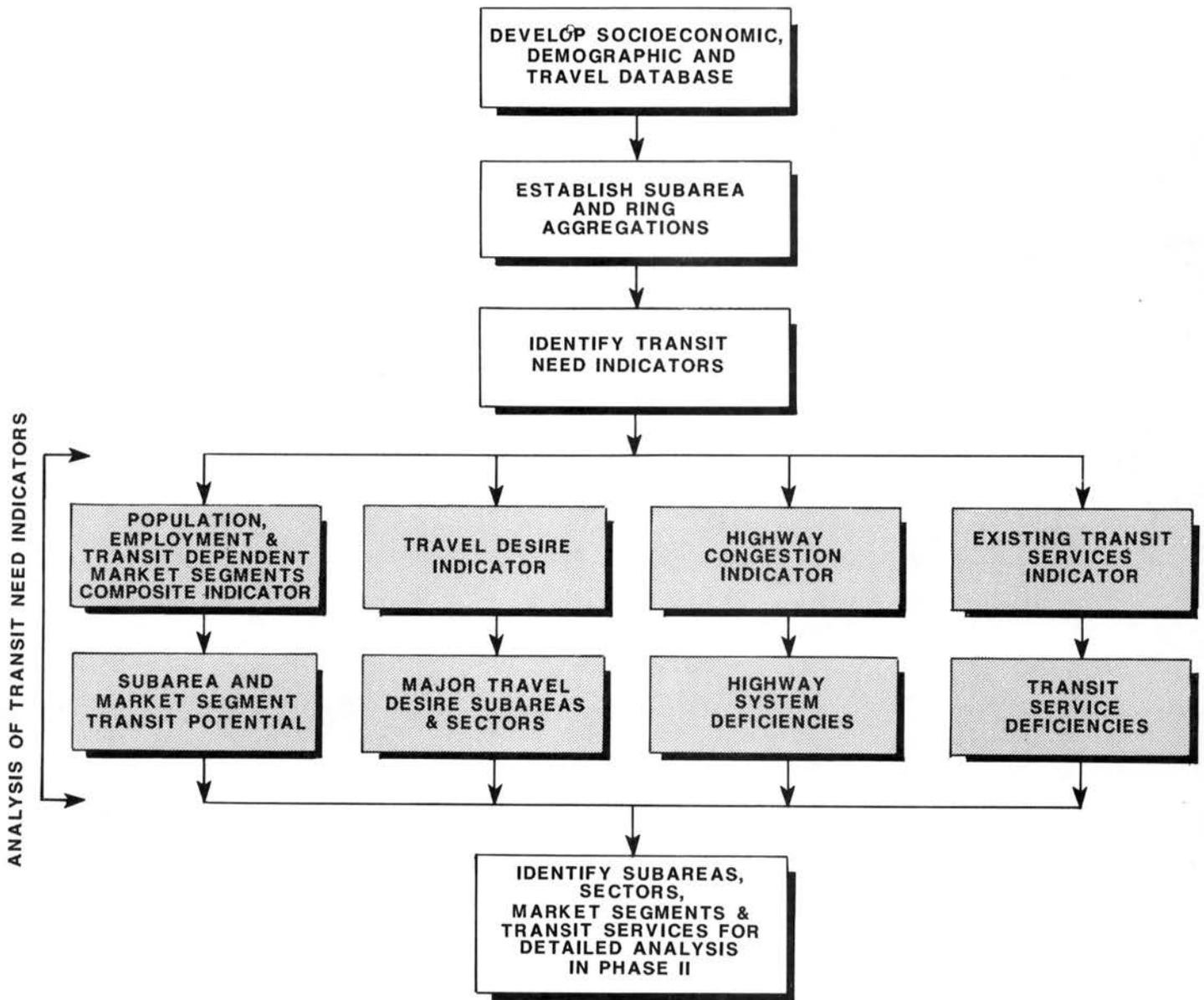


FIGURE 51  
**TRANSIT NEED  
 IDENTIFICATION PROCESS**

### Transit Availability and Service Level

A clear indicator of transit need is lack of transit service or insufficient service in areas or markets where the demand exists. The analysis of availability and level of transit service can also reveal where existing service might exceed the demand, in which case availability and service become indicators of transit service surplus rather than need.

### Highway Congestion

Highway congestion is a transit need indicator because it indicates the existence of near capacity roadway conditions causing stop-and-go traffic patterns, significant travel delays and potential high levels of driver frustration. Individuals are more likely to utilize transit if the travel time differentials between the use of a private automobile and the transit service are small. In addition, the presence of high levels of highway congestion offers a good opportunity to implement transit priority treatments such as HOV lanes, exclusive bus and carpool ramps, and signal timing preemption. Implementation of transit priority treatments can actually make the use of transit service more attractive than the private automobile by creating travel time savings, and operating and parking cost savings.

The subareas and rings developed in the analysis process, and identified in Figure 10, were used in the evaluation of transit needs. Each step completed as part of the needs analysis in Phase I is detailed in this section. This includes the development of composite need indicators and a transit need matrix, the analysis of travel desires and the travel desire matrix, the examination of highway congestion, the evaluation of existing transit supply and the analysis of market segment and transit service options. These basic elements were used to complete the overall Phase I Transit Service Needs Assessment.

## B. Composite of Socio-Economic and Demographic Needs

A total composite transit indicator was developed based on the distribution of total population, employment and transit dependent population. Using the socio-economic, demographic and employment information presented in the previous chapter, which was graphically depicted in Figures 14 through 30, a composite matrix was prepared.

This composite, which was developed based on the 26 subareas, is presented in Figure 52 and based on the information in Figure 53. The first four columns on the horizontal axis represent the four transit dependent categories of low income households, households with no automobile, population 65 years and older and population under 18 years of age. These are compiled into a transit dependent composite. Two additional elements, 1980 population and employment, are added to give a total composite. The high, medium, low and very low need indicators are carried through from the previous analysis.

Independent of the above evaluation, a computerized cluster analysis program was utilized to form geographic clusters of MCDs exhibiting similar characteristics in terms of their transit dependent populations. The results of this cluster analysis is presented in Figure 54. Many similarities and some differences emerge from these two analyses. Many of the differences occur in the third ring subareas due to the sensitivity of these areas to some of the characteristics. The cluster analysis does point out important areas to be considered in further detail. A composite matrix was also prepared for each of the eleven sectors. This is presented in Figure 55. This indicates the sectors rating high in terms of the transit indicators.

Two other population groups, minorities and the University of Minnesota students and staff, were also considered in the transit needs analysis. While these populations are not necessarily transit dependent, their concentrations help identify areas where market segments may reside.

The following summarizes the key findings from these figures:

- o The four central city subareas (03, 04, 05 and 06) exhibit the highest level of the total composite transit need indicator.
- o The total composite for the first ring subareas (11, 12, 13, 14, 16, 17 and 18) show a medium level except for the airport (15) which shows a low composite.
- o All but two subareas in the second ring (22, 23, 24, 25 and 26) registered low total composite indicators. The two exceptions, the Anoka, Coon Rapids, and Blaine subarea (21) and the Brooklyn Park, Maple Grove, Plymouth subarea (27) have medium need indicators.
- o The third ring subareas exhibit very low total composite indicators.
- o The central corridor ranks high in terms of transit need indicators.

- o Four sectors, Minneapolis West, West Crosstown, Southwest and St. Paul North, show medium levels of transit need indicators.
- o Five sectors, Minneapolis North, Minneapolis Northeast, Minneapolis Southwest, St. Paul East and St. Paul South, indicate lower levels of transit need indicators.

		LOW INCOME HOUSEHOLDS	HOUSEHOLDS WITH ZERO CARS	POPULATION 65 YEARS AND OLDER	POPULATION UNDER 18	COMPOSITE OF TRANSIT DEPENDENT	1980 POPULATION	1980 EMPLOYMENT	TOTAL COMPOSITE
<b>CENTRAL CITY</b>	03	High	High	High	High	High	High	High	High
	04	High	High	High	High	High	High	High	High
	05	High	High	High	High	High	High	High	High
	06	High	High	High	High	High	High	High	High
<b>RING 1</b>	11	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium
	12	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium
	13	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium
	14	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium
	15	Low	Low	Low	Low	Low	Low	Low	Low
	16	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
	17	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
	18	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium
<b>RING 2</b>	21	Low	Low	Low	Medium	Medium	Medium	Medium	Medium
	22	Low	Low	Low	Low	Low	Low	Low	Low
	23	Low	Low	Low	Low	Low	Low	Low	Low
	24	Low	Low	Low	Medium	Medium	Medium	Medium	Medium
	25	Low	Low	Low	Low	Low	Low	Low	Low
	26	Low	Low	Low	Medium	Medium	Medium	Medium	Medium
	27	Low	Low	Medium	Medium	Medium	Medium	Medium	Medium
<b>RING 3</b>	31	Low	Low	Low	Low	Low	Low	Low	Low
	32	Low	Low	Low	Low	Low	Low	Low	Low
	33	Low	Low	Low	Low	Low	Low	Low	Low
	34	Low	Low	Low	Low	Low	Low	Low	Low
	35	Low	Low	Low	Low	Low	Low	Low	Low



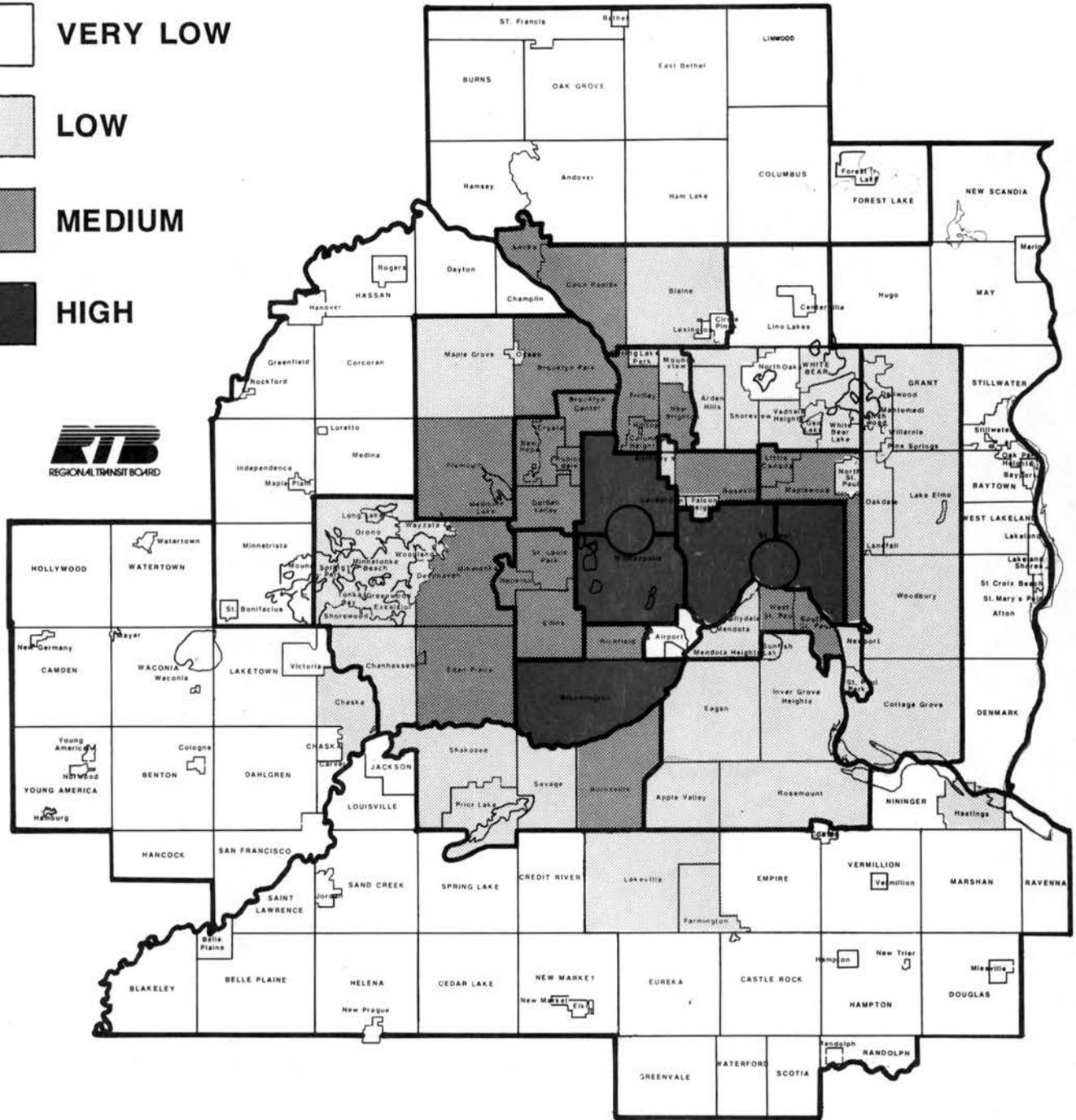
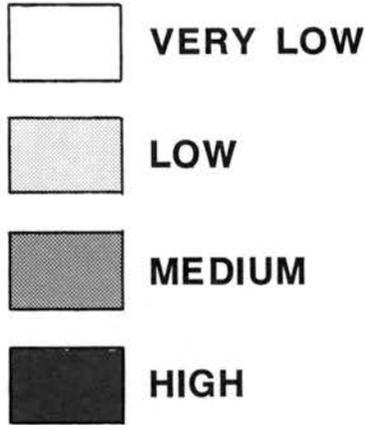
**FIGURE 52**

**SUBAREA TRANSIT NEED INDICATORS**



CONSULTANT: STRGAR-ROSCOE-FAUSCH, INC.

**LEGEND**



**FIGURE 53  
COMPOSITE OF 1980 POPULATION,  
EMPLOYMENT AND TRANSIT  
DEPENDENT POPULATION**



CORRIDOR/INDICATOR	LOW INCOME HOUSEHOLDS	HOUSEHOLDS WITH ZERO CARS	POPULATION 65 YEARS AND OLDER	POPULATION UNDER 18	COMPOSITE OF TRANSIT DEPENDENT	1980 POPULATION	1980 EMPLOYMENT	TOTAL COMPOSITE
MINNEAPOLIS NORTH	Low	Low	Low	Medium	Low	Medium	Low	Low
MINNEAPOLIS NORTHEAST	Low	Low	Low	Low	Low	Low	Low	Low
MINNEAPOLIS NORTHWEST	Low	Low	Low	Medium	Low	Medium	Low	Medium
MINNEAPOLIS WEST	Medium	Medium	Medium	Medium	Low	Medium	High	Medium
MINNEAPOLIS SOUTHWEST	Low	Low	Medium	Medium	Low	Medium	Low	Medium
MINNEAPOLIS SOUTHEAST	Low	Low	Low	Low	Low	Low	Low	Low
ST. PAUL NORTH	Low	Low	Medium	Medium	Low	Medium	Low	Medium
ST. PAUL EAST	Low	Low	Low	Low	Low	Low	Low	Low
ST. PAUL SOUTH	Low	Low	Low	Low	Low	Low	Low	Low
CENTRAL	High	High	High	Low	Low	Medium	High	High
WEST CROSSTOWN	Low	Low	Medium	Medium	Low	Medium	High	Medium



**FIGURE 55**  
**CORRIDOR**  
**SECTOR TRANSIT NEED INDICATORS**

### C. Travel Desire

Travel desire, as used in the Transit Service Needs Assessment, refers to person trips, regardless of the mode of travel with the exclusion of walk trips. The identification of travel desires was based on the Metropolitan Council's trip generation and trip assignment process. The travel desires for work and non-work trips were described in detail in the previous chapter.

For the purpose of the needs analysis, the travel desires between subareas were developed into two matrices. Figure 56 contains the work travel and Figure 57 is the non-work travel matrix. The matrices identify areas of "very low," "low," "medium" and "high" travel desires between and within subareas. The use of this relative scale allows for the identification of travel desire patterns, which could be served by transit.

Composite totals are provided on both the vertical and horizontal access. The vertical composite column represents the relative number of person trips originating within each subarea, while the horizontal composite row represents the person trips going to a subarea. The intra-subarea trips have been excluded from this analysis as they are generally much larger than the inter-subarea trips and cannot distort the travel desire patterns. Also, as noted previously, it is important to note that in absolute numbers, non-work trips are two to three times greater than work trips.

The following summarizes the key findings from these matrices:

- o Several subareas generate high levels of work trip origins. These include St. Paul West (04), Minneapolis South (05), and the second ring subarea (27) northwest of Minneapolis.
- o Subareas with medium levels of work trip origins include East St. Paul (03), north Minneapolis (06), and many of the first and second ring subareas.
- o Major work destinations are the two CBDs (01, 02), Minneapolis central city (05, 06), and the first ring of subareas to the south and west Minneapolis (15, 16, 17).
- o The highest level of non-work trip origins come from the four central city areas (03, 04, 05, 06), the first ring Minneapolis subareas of 16, 17 and 18, and the western and northwestern second ring Minneapolis subareas 26 and 27.
- o For non-work trips, the major destinations are located in the same subareas with the addition of the Minneapolis CBD.
- o Intra-subarea work trips are significantly large in the central cities and the first and second ring subareas to the south, west and north of Minneapolis (16, 17, 18, 11, 25, 26, 27).
- o Intra-subarea non-work trips are significantly large in the first ring Minneapolis subareas, the second ring western Minneapolis subareas and first ring St. Paul north subareas.

### C. Travel Desire

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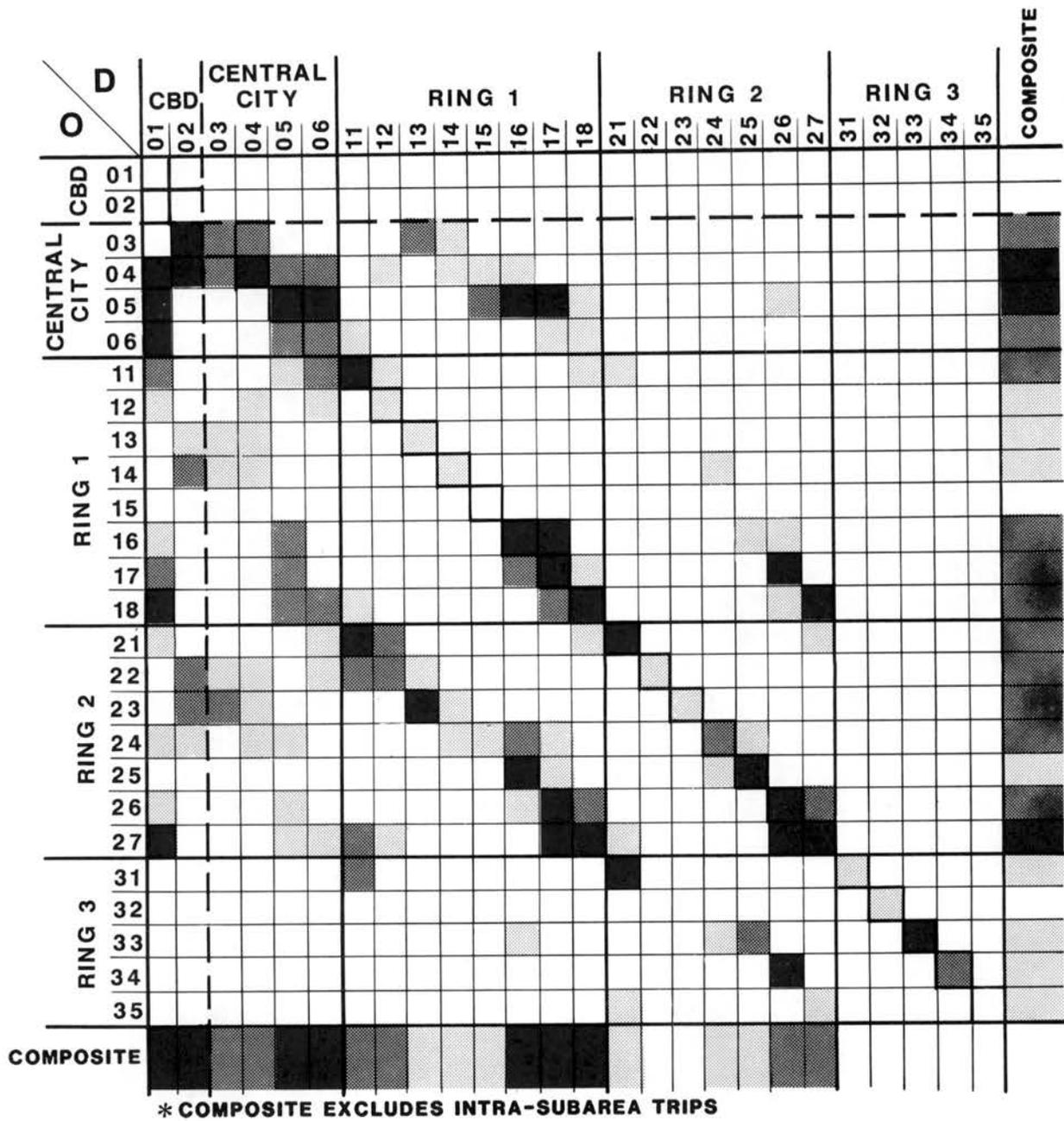
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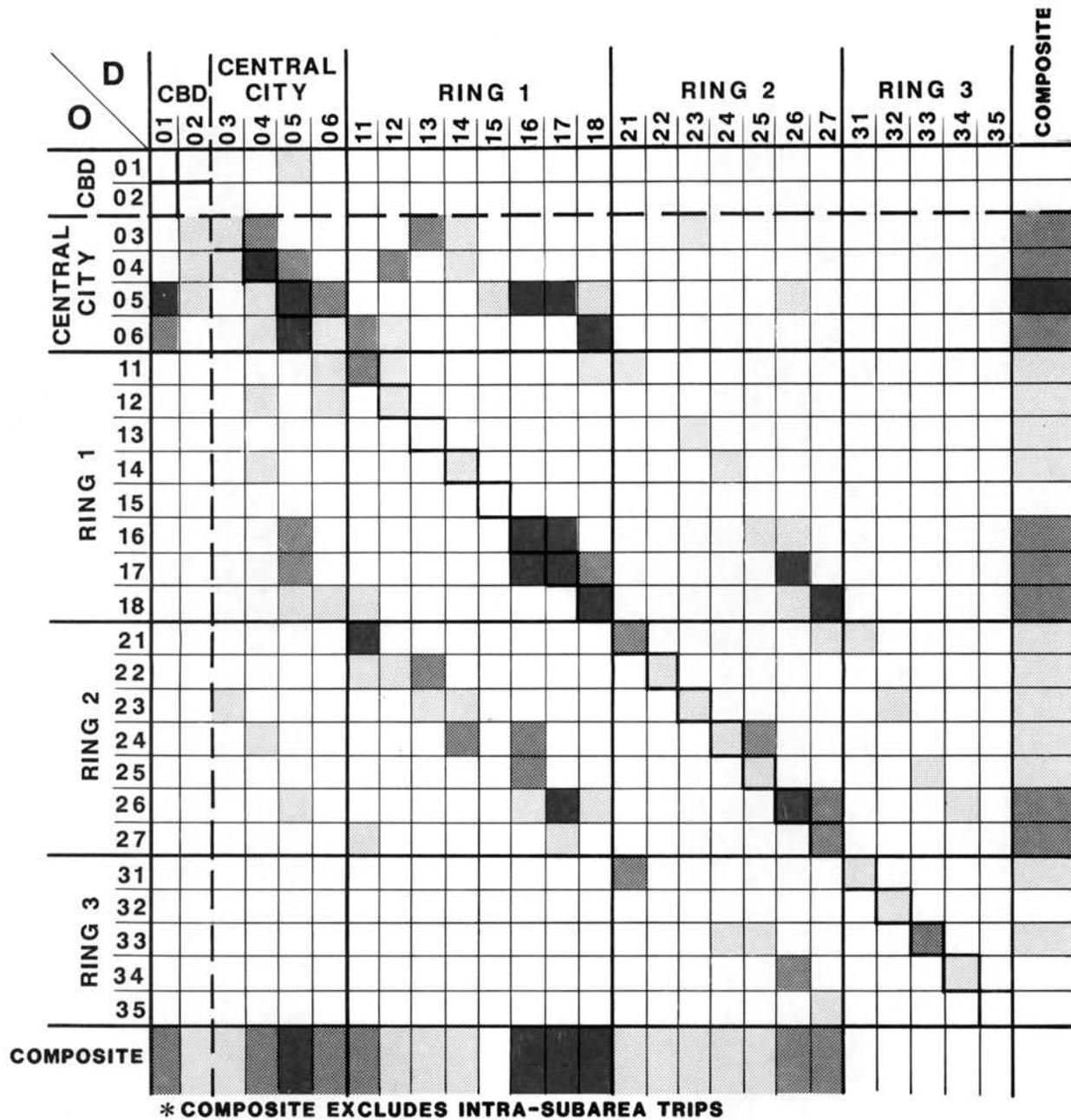
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- o For non-work trips, the major destinations are located in the same subareas with the addition of the Minneapolis CBD.
- o Intra-subarea work trips are significantly large in the central cities and the first and second ring subareas to the south, west and north of Minneapolis (16, 17, 18, 11, 25, 26, 27).
- o Intra-subarea non-work trips are significantly large in the first ring Minneapolis subareas, the second ring western Minneapolis subareas and first ring St. Paul north subareas.

- o It appears that the largest proportion of inter-subarea trips are radial. For example, a large number of work trips are made between ring two northwest Minneapolis subareas, ring one subareas, northern Minneapolis and downtown Minneapolis.
- o Trips tend to be made to adjacent subareas with little "leap frogging." Trips are heaviest to subareas on either side and to the subarea in the adjacent ring as one moves toward the central city.



**FIGURE 56**  
**TRAVEL DESIRE**  
**YEAR 2000 PERSON WORK TRIPS**

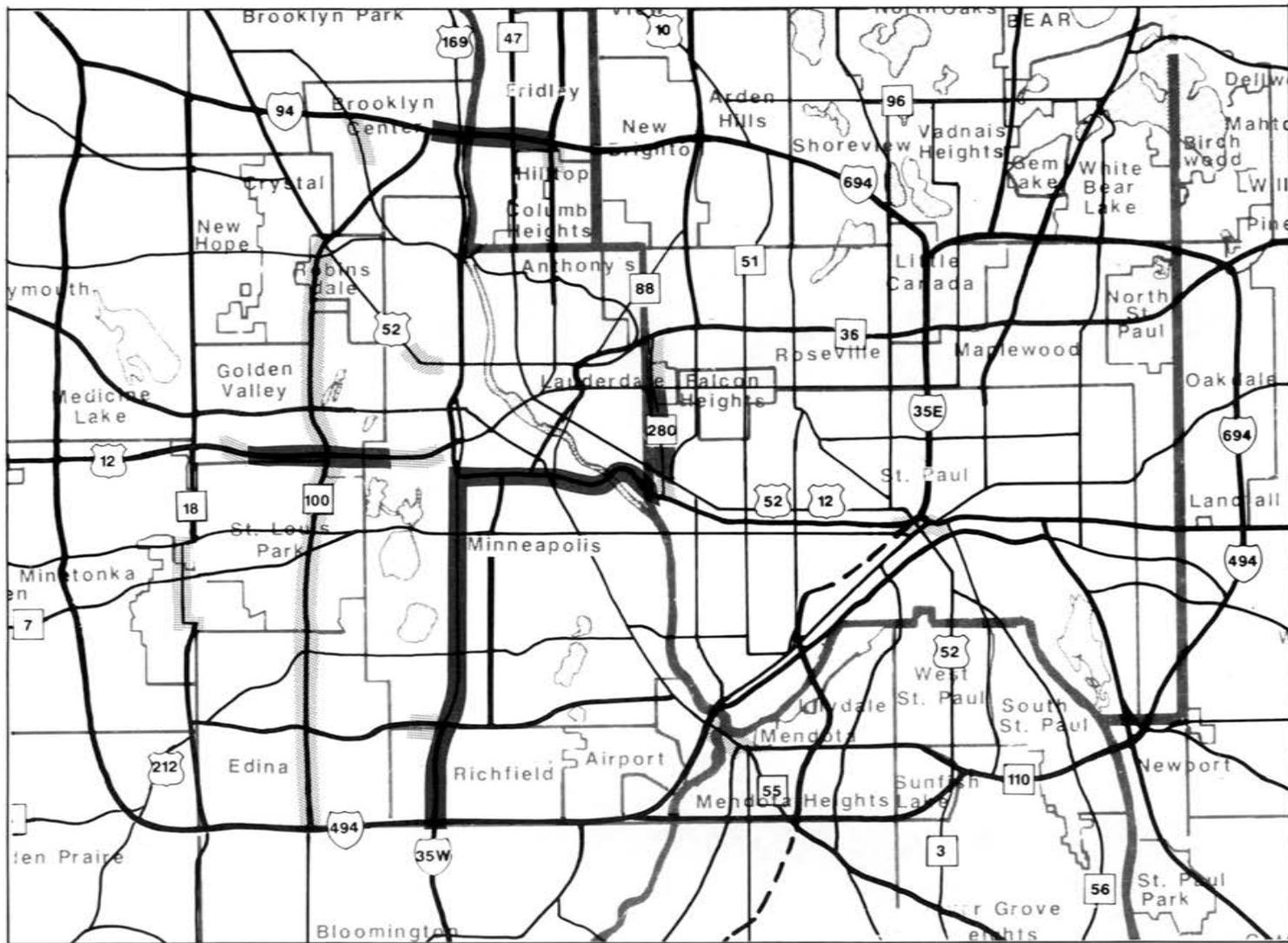


**FIGURE 57**  
**TRAVEL DESIRE**  
**YEAR 2000 PERSON NON-WORK TRIPS**

#### D. Highway Congestion

Information on traffic volumes and capacity of the region's major highway facilities presented in the previous chapter indicated that the level of congestion has been growing, outpacing the rate of new construction and capacity-enhancing improvements. Figures 58, 59 and 60 show the facilities experiencing greatest levels of congestion in 1974, 1980 and 2000. The key elements of the analysis of the metropolitan areas highway congestion are summarized below:

- o In 1972, 7 percent of the highway system facility-miles inside the I-494/I-694 ring experienced high congestion levels and 10 percent medium congestion levels.
- o By 1984, the congested facility miles had increased to 16 percent and 21 percent respectively.
- o By the year 2000, it is expected that 43 percent of the facility-miles within the freeway ring will have high levels of congestion, while another 17 percent will have moderate levels.
- o If additional freeway metering were provided, the proportion of highly congested facility-miles would decrease to 36 percent. However, because of the diversion of traffic from freeways to other highways that metering would cause, the proportion of facility-miles with moderate congestion would increase from 17 percent to 20 percent.
- o At a regional level, the levels of congestion are greatest in facilities within the central cities, and in the first ring subareas and western crescent area. These are areas where transit need indications show that there is a high potential for transit service.
- o In addition to the increases in congestion levels caused by increased development and travel, highway congestion is also caused by major construction and reconstruction of highway facilities. Reconstruction projects often reduce in half the vehicle-carrying capacity of the facility or they limit the traffic flow to one direction only. Some of the planned reconstruction projects are on portions of I-94, I-394, I-694 and, if development densities occur as planned in the Airport South District area, portions of I-494 are also expected to require reconstruction and widening.

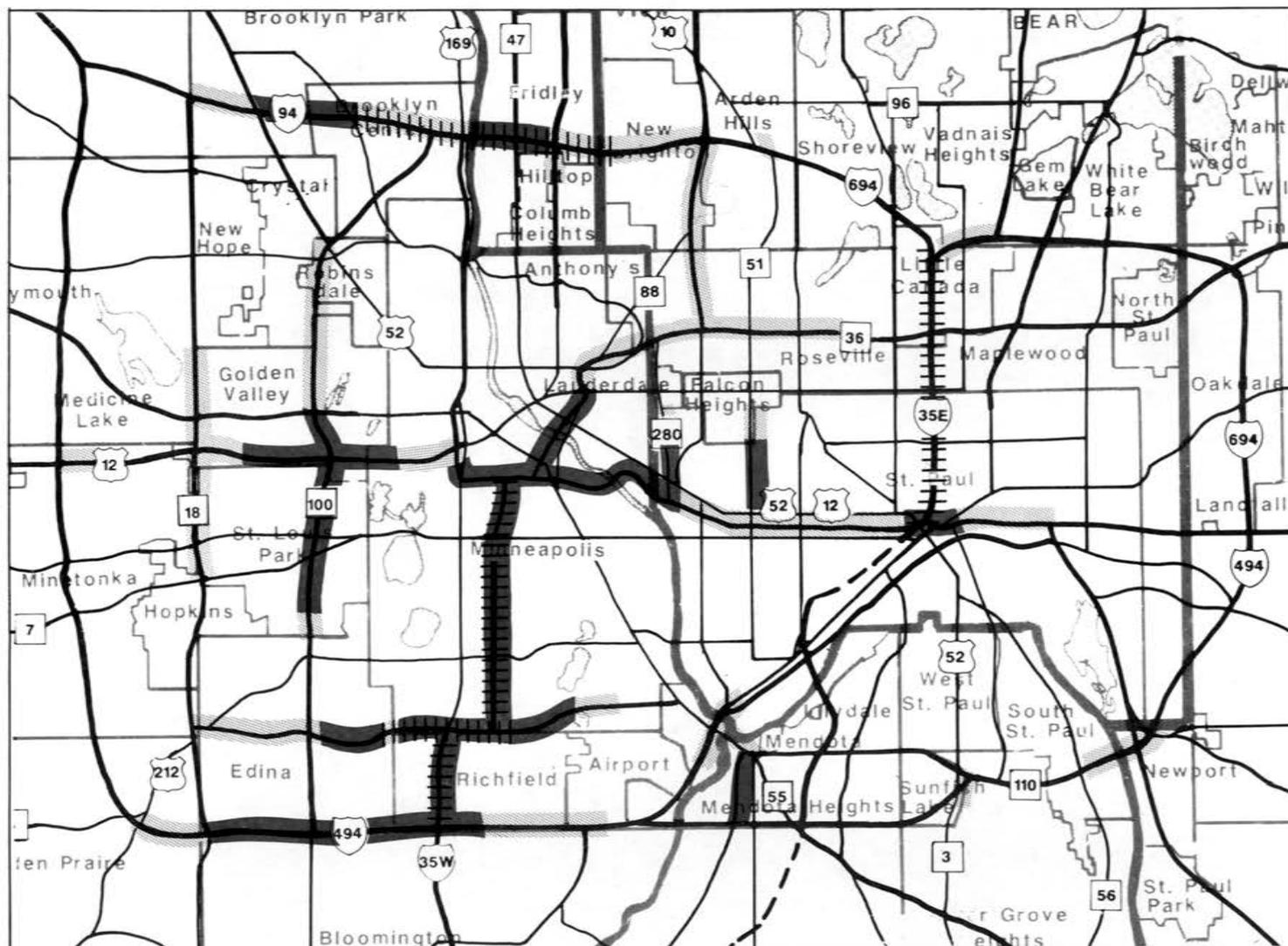


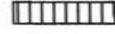
MODERATE CONGESTION  
 HIGH CONGESTION

SOURCE: MN/DOT

FIGURE 58

**1972 LEVEL OF TRAFFIC CONGESTION**



-  MODERATE CONGESTION
-  HIGH CONGESTION
-  METERING

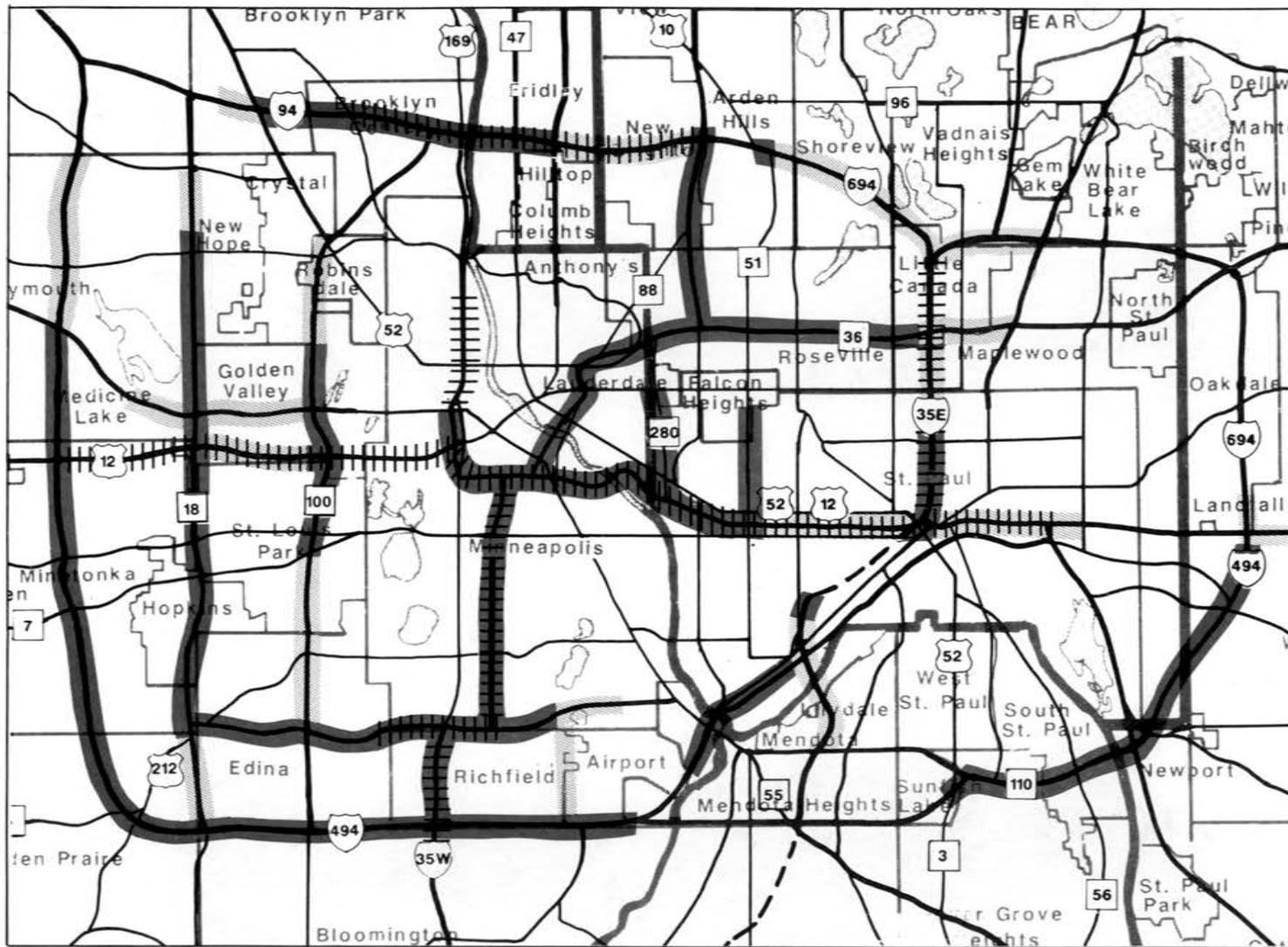
SOURCE: MN/DOT

FIGURE 59

**1984 LEVEL OF TRAFFIC CONGESTION**

**RTB** TRANSIT SERVICE NEEDS ASSESSMENT  
 REGIONAL TRANSIT BOARD

CONSULTANT: STRGAR-ROSCOE-FAUSCH, INC.



- MODERATE CONGESTION
- HIGH CONGESTION
- METERING

SOURCE: MN/DOT

**FIGURE 60**  
**YEAR 2000 ANTICIPATED**  
**LEVEL OF TRAFFIC CONGESTION**

## E. Transit Service Availability

A number of measures of transit service supply were used in the Transit Service Needs Assessment. Realizing that it would be difficult to quantify all types of transit services at the regional scale in Phase I, it was determined to focus on regular route, fixed schedule transit services at this time. It is important to remember that these measures are being used primarily as indicators of areas where transit services may be deficient.

The four indicators used during Phase I were vehicle miles, vehicle miles per 1,000 population, vehicle miles per 100 acres and vehicle miles per route mile. These are shown in Figures 61, 62, 63 and 64. The four regular route providers are included in these figures.

Figure 61 identifies the average number of weekday vehicle miles provided to each MCD. Five categories of service are provided. The white areas indicate where no regular route service is provided. The hatched areas represent very low levels of service. The different shaded levels identify areas receiving low, medium or high service levels.

The total number of weekday miles is not always the best indicator of the amount of transit service being supplied to an MCD, because geographically large cities may appear to contain large amounts of service due to their size. Therefore, two other measures were analyzed. These were the average weekday vehicle miles per 1,000 population and the average weekday miles per 100 acres. The average weekday miles per 1,000 population provides the best indicator of transit need as it establishes a relationship between the level of transit service provided and the number of potential users of the service. To consider the frequency of service, the average weekday miles were divided by the available route miles for each MCD.

The major findings from these figures are:

- o Service availability in terms of vehicle miles is highest in the central cities, medium to low in most first and second ring subareas and almost non-existent in the third ring subareas.
- o In terms of average weekday miles per 100 acres, Minneapolis and St. Paul both register the highest levels. The first ring suburbs fall into the medium to low categories, while the second and third ring are in the low to very low.
- o Minneapolis and St. Paul record the highest average vehicle miles per 1,000 population. By this measure, a number of first and second ring suburbs register in the medium to low categories.

**LEGEND**

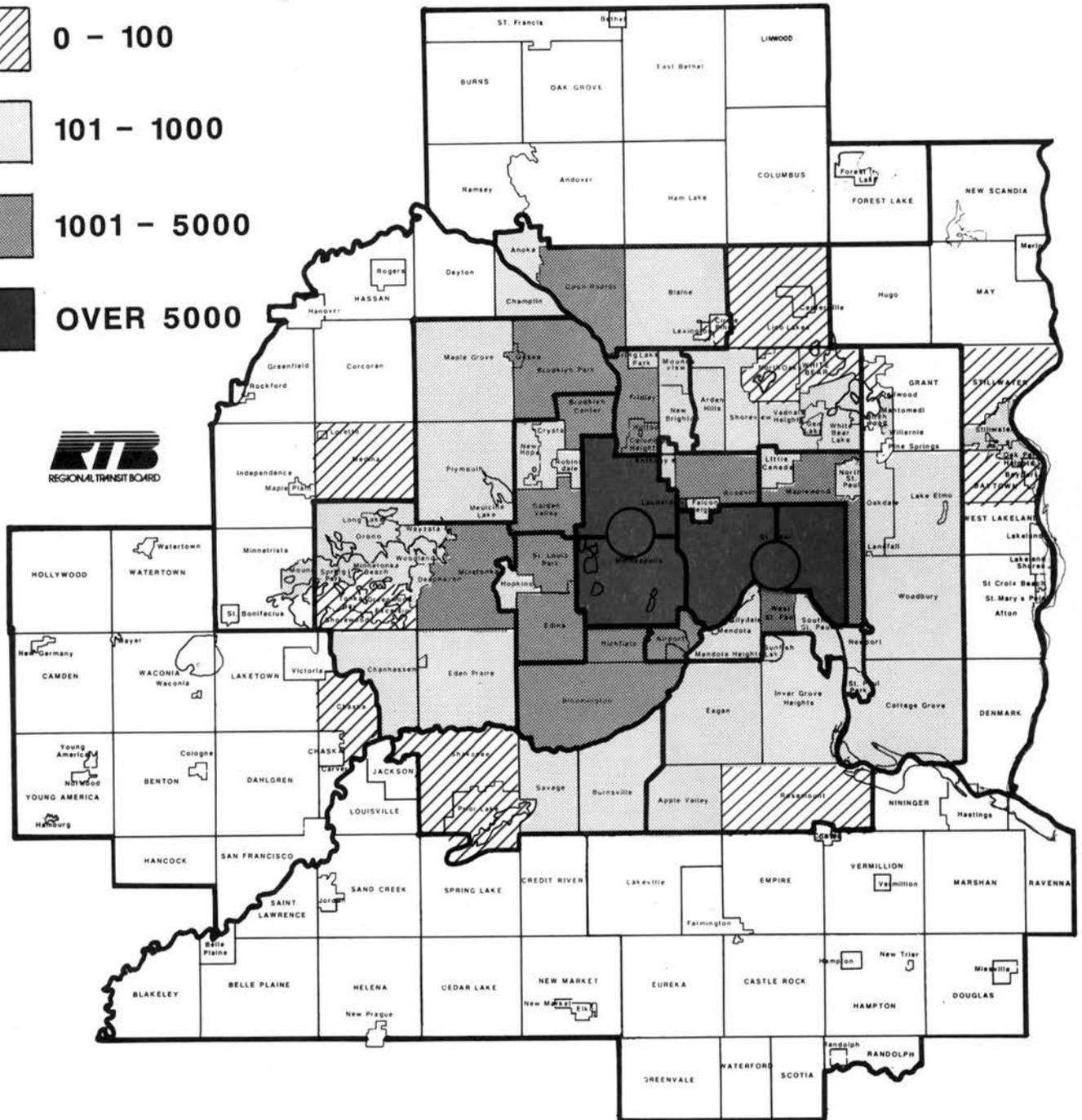
NOT IN REGULAR A  
ROUTE SERVICE AREA

0 - 100

101 - 1000

1001 - 5000

OVER 5000



**FIGURE 61**  
**AVERAGE WEEKDAY BUS MILES**  
**REGULAR ROUTE - ALL PROVIDERS**

**LEGEND**

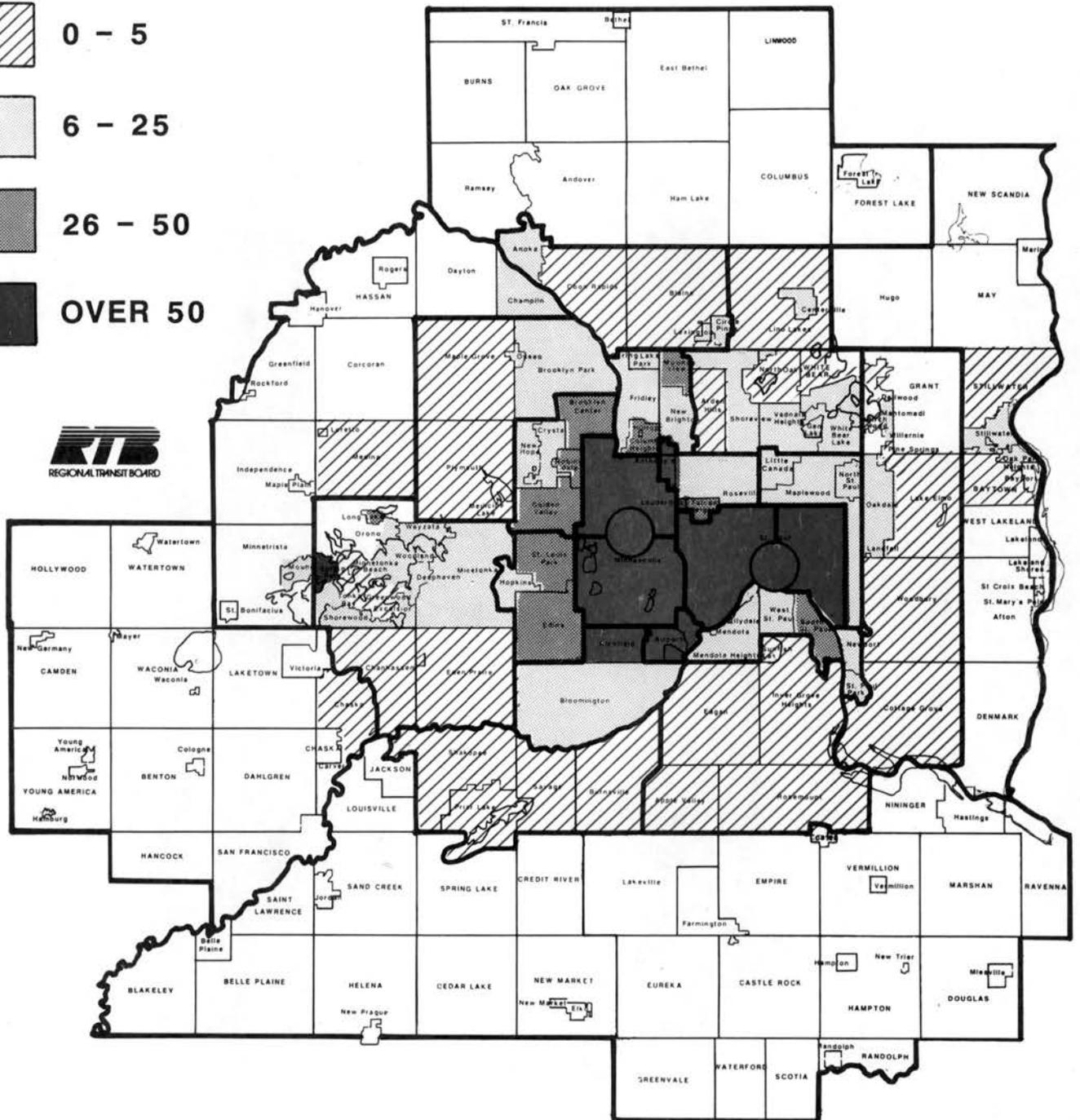
NOT IN A REGULAR ROUTE SERVICE AREA

0 - 5

6 - 25

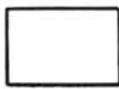
26 - 50

OVER 50

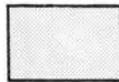


**FIGURE 62**  
**AVERAGE WEEKDAY**  
**BUS MILES PER 100 ACRES**

**LEGEND**

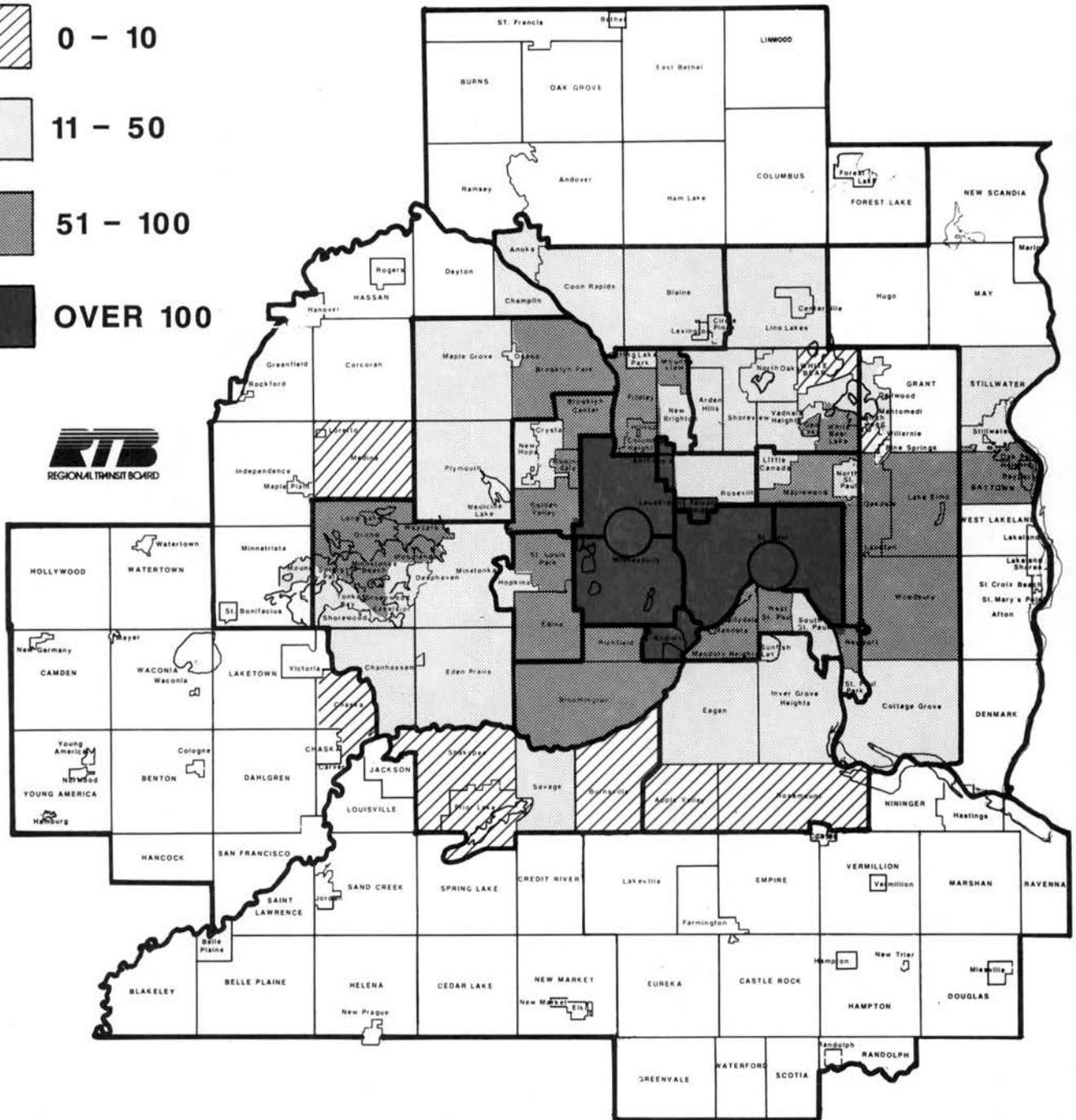
 NOT IN A REGULAR ROUTE SERVICE AREA

 0 - 10

 11 - 50

 51 - 100

 OVER 100



**FIGURE 63**  
**AVERAGE WEEKDAY BUS MILES**  
**PER 1000 POPULATION**

**LEGEND**

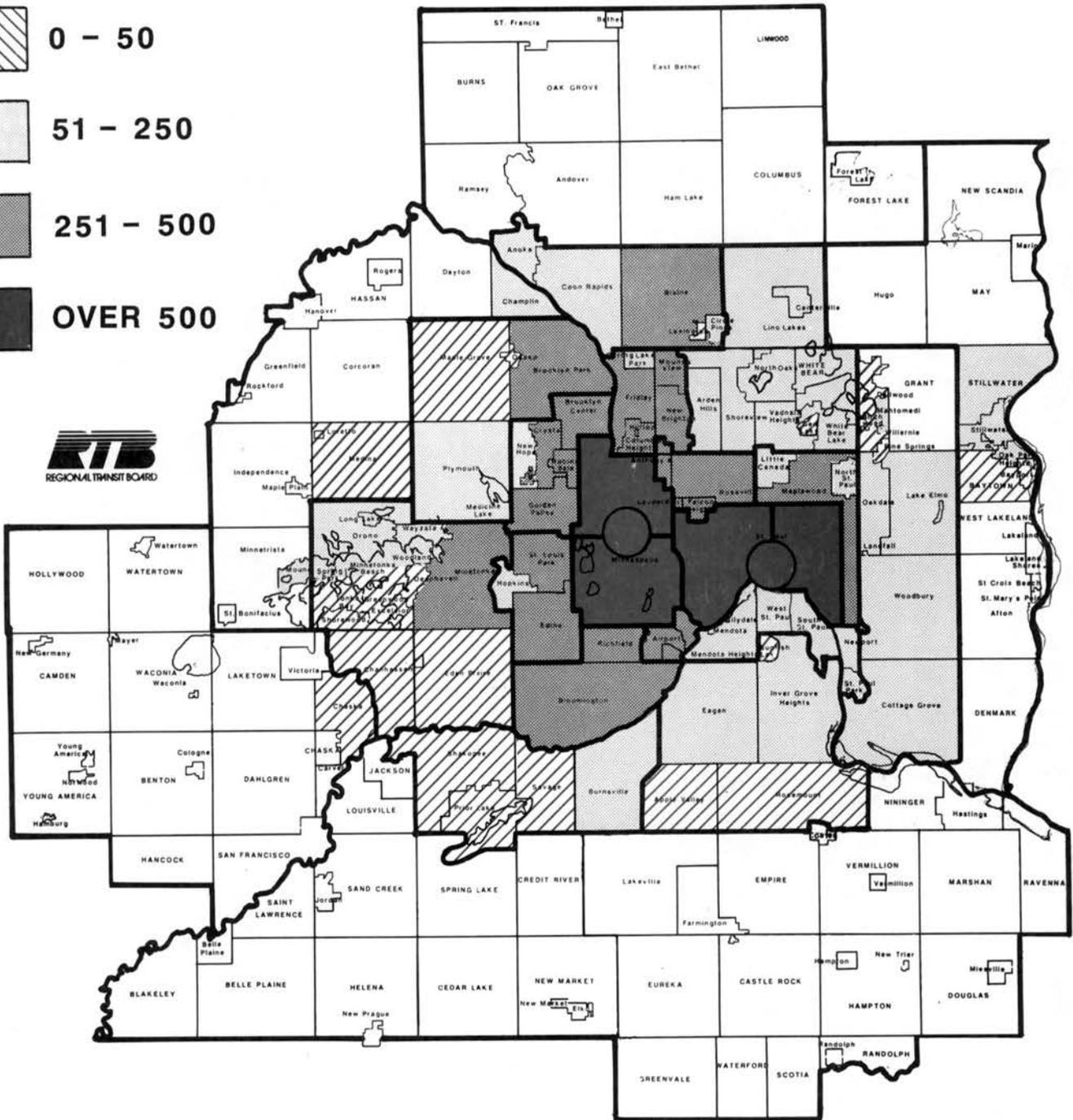
□ NOT IN A REGULAR ROUTE SERVICE AREA

▨ 0 - 50

■ 51 - 250

■ 251 - 500

■ OVER 500



**FIGURE 64**  
**AVERAGE WEEKDAY**  
**BUS MILES PER ROUTE MILE**

## F. Market Segments and Transit Service Options

Based on the transit service concepts presented in Chapter V, a format was developed to identify potential transit service options that are applicable to the various geographic market segments. Tables 14 and 15 are identified to facilitate the evaluation and review of potential transit service options for each of the geographic market segments. Table 14 identifies high, medium and low potentials of particular transit service options to serve specific geographic market segments. The matrix does not explicitly consider potential transit patronage for the service/market segment combinations. Instead, it identifies the services that are applicable and should be evaluated for the market segments.

Table 15 identifies potential transit planning subarea demand for short haul transit and paratransit services. The table identifies the high, medium and low potentials for each of these services in the different transit planning subareas. It also shows if a major shopping center or employment center is located in the subarea.

The transit service options have been developed to represent only generic services. The basic categories of service have been defined as line-haul, short-haul, paratransit and special services. Subcategories of each basic service type have also been developed where significant differences exist between the services.

**TABLE 14**

**MARKET SEGMENT / TRANSIT SERVICE OPTIONS MATRIX**

GEOGRAPHIC MARKET SEGMENT		TRANSIT SERVICE OPTIONS								
		LINE-HAUL SERVICES			SHORT-HAUL SERVICES		PARATRANSIT SERVICES		SPECIAL SERVICES	
		LOCAL (1)	EXPRESS (2)	FEEDER (3)	DAILY CIRCULATOR (4)	SKIP-DAY CIRCULATOR (5)	DEMAND <sup>(a)</sup> RESPONSIVE (6)	SUBSCRIPTION <sup>(b)</sup> (7)	METRO MOBILITY (8)	SOCIAL AGENCIES (8)
<b>CENTRAL CITY AND CBD BASED TRAVEL</b>	WITHIN CBD				H					
	WITHIN CENTRAL CITY	H			H		H	M	H	
	RING 1 AND RING 2 SUBURBS TO CENTRAL CITY AND CBD	M/H	M/H	M/H				M/H	M	
	RING 3 SUBURBS TO CENTRAL CITY AND CBD		L	L				H	L	
	CENTRAL CITY TO CBD AND CBD TO CENTRAL CITY	H	L/M				M	M	H	
<b>SUBURB BASED TRAVEL</b>	CENTRAL CITY TO RING 1 AND RING 2 SUBURBS	L/M		L			M	L	M	
	CENTRAL CITY TO RING 3 SUBURBS			L					L	
	RING 1 AND RING 2 SUBURBS TO RING 1 AND RING 2 SUBURBS	L/M		L/M			M	L	L	
	RING 3 SUBURBS TO RING 1 AND RING 2 SUBURBS			L		M	L	M	L	
	WITHIN RING 1 AND RING 2 SUBURBS	L/M			H	L	M		M	
	WITHIN RING 3 SUBURBS				H	H	L		L	

LEGEND: H-High Potential M-Medium Potential L-Low Potential

(a) Includes Subsidized Taxi Service

(b) Includes Rideshare

## NOTES FOR MARKET SEGMENT/TRANSIT SERVICE OPTIONS MATRIX

(1) LOCAL LINE-HAUL SERVICES

Fixed Route  
Fixed Schedule  
Grid or Radial Pattern  
Frequent Stops  
All-Day Service  
Low to Moderate Speed  
Peak and Off-Peak Service  
On Local Streets and Arterials  
Major Activity Center Orientation (Including U of M)  
Urbanized Areas  
Random and Coordinated (Timed) Transfers

(2) EXPRESS LINE-HAUL SERVICES

Fixed Route  
Fixed Schedule  
Radial Pattern  
Limited Stop  
Predominantly Peak Service  
Moderate to High Speed  
On Arterials, Highways or 2ways  
Standard Buses, Artics, LRVs, HRVs  
Major Activity Center Orientation (Including U of M)  
Urbanized Areas  
Coordinated (Timed) Transfers  
Park-and-Ride Facilities

(3) FEEDER TO LINE-HAUL SERVICES

Fixed Route  
Fixed Schedule  
Frequent Stops  
Peak and Off-Peak Service  
Low Speed  
Local Streets  
Coordinated Transfer to Line-Haul Service  
Within Communities and Neighborhoods

(4) DAILY CIRCULATOR SHORT-HAUL SERVICE

Fixed Route  
Fixed Schedule (Usually)  
Short Route  
Jitney, Bus  
Predominantly Off-Peak Service  
Community or Neighborhood Based  
Within Major Activity Centers (CBDs, University Campuses,  
Airports)  
Urbanized and Semi-Urbanized Areas

(5) SKIP-DAY CIRCULATOR SHORT-HAUL SERVICE

Fixed Route With Potentially Short Route Deviation  
Fixed Schedule  
Serves Communities  
Semi-Urbanized or Rural Areas  
Small Buses or Vans  
All Day Services

(6) DEMAND RESPONSIVE PARATRANSIT SERVICES

User Initiated Access (Phone, Hail)  
Point-to-Point  
Route Deviation  
Exclusive or Shared  
Subsidized Taxi, Jitney, Bus  
Dial-a-Ride  
All Day Services

(7) SUBSCRIPTION PARATRANSIT SERVICES

Prearranged  
Point-to-Point  
Shared Ride  
Subsidized Taxi, Bus, Private Auto, Vanpool  
Ridesharing  
Predominantly Peak Service

(8) METRO MOBILITY SPECIAL SERVICES AND  
SOCIAL AGENCIES SPECIAL SERVICES

Limited Eligibility

	SUBAREA	MAJOR ACTIVITY CENTERS		SHORT HAUL SERVICES				PARATRANSIT SERVICES					
		REGIONAL SHOPPING CENTER	MAJOR EMPLOYMENT	DAILY CIRCULATOR			SKIP DAY CIRCULATOR		DEMAND RESPONSIVE		SUBSCRIPTION		
				TRANSIT DEPENDANT COMPOSITE	INTERNAL WORK TRIPS	INTERNAL NONWORK TRIPS	TRANSIT DEPENDANT COMPOSITE	INTERNAL NON-WORK TRIPS	TRANSIT DEPENDANT COMPOSITE	TO CENTRAL CITY	TO ADJACENT SUBAREAS	TRANSIT DEPENDANT COMPOSITE	TO CBD
MPLS. CBD	01	△	★	○	●	●	N/A	N/A	○	○	○	○	○
ST. PAUL CBD	02	△	★	○	●	●	N/A	N/A	○	○	○	○	○
ST. PAUL EAST	03	△	★	●	●	●	N/A	N/A	●	●		●	●
ST. PAUL WEST	04	△	★	●	●	●	N/A	N/A	●	●		●	●
MPLS. SOUTH	05	△	★	●	●	●	N/A	N/A	●	●		●	●
MPLS. NORTH	06	△	★	●	●	●	N/A	N/A	●	●		●	●
RING 1 MPLS. N.	11	△	★	◐	●	◐	◐	◐	○	○		◐	◐
RING 1 ST. PAUL N.	12	△	★	◐	○	◐	◐	○	○	○		◐	○
RING 1 ST. PAUL N.E.	13	△	★	◐	○	◐	◐		○	○		◐	○
RING 1 ST. PAUL S.	14		★	◐		◐	◐		○	○		◐	◐
AIRPORT	15	△	★			●						◐	○
RING 1 MPLS. S.	16	△	★	◐	●	●	◐	●	◐	◐		◐	○
RING 1 MPLS. S.W.	17	△		◐	●	●	◐	●	◐	●		◐	◐
RING 1 MPLS. N.W.	18			◐	●	●	◐	●	◐	◐		◐	●
RING 2 MPLS. N.	21			○	●		◐					○	○
RING 2 ST. PAUL N.	22			○	○	○				●		○	◐
RING 2 ST. PAUL E.	23			○	○	○						○	◐
RING 2 ST. PAUL S.	24			○	◐	○				◐		○	○
RING 2 MPLS. S.	25			○	●	○				◐		○	○
RING 2 MPLS. W.	26	△	★	○	●	●	○	●	○	◐		◐	◐
RING 2 MPLS. N.W.	27	△	★	◐	●	◐	◐	◐		○		◐	●
RING 3 ANOKA CO.	31				○	○							
RING 3 WASHINGTON CO.	32				○	○							
RING 3 DAKOTA AND SCOTT CO.	33				◐	○							
RING 3 CARVER CO.	34				◐	○							
RING 3 HENNEPIN CO.	35				○	○							

TABLE 15

POTENTIAL SUBAREA DEMAND FOR SHORT HAUL AND PARATRANSIT SERVICES

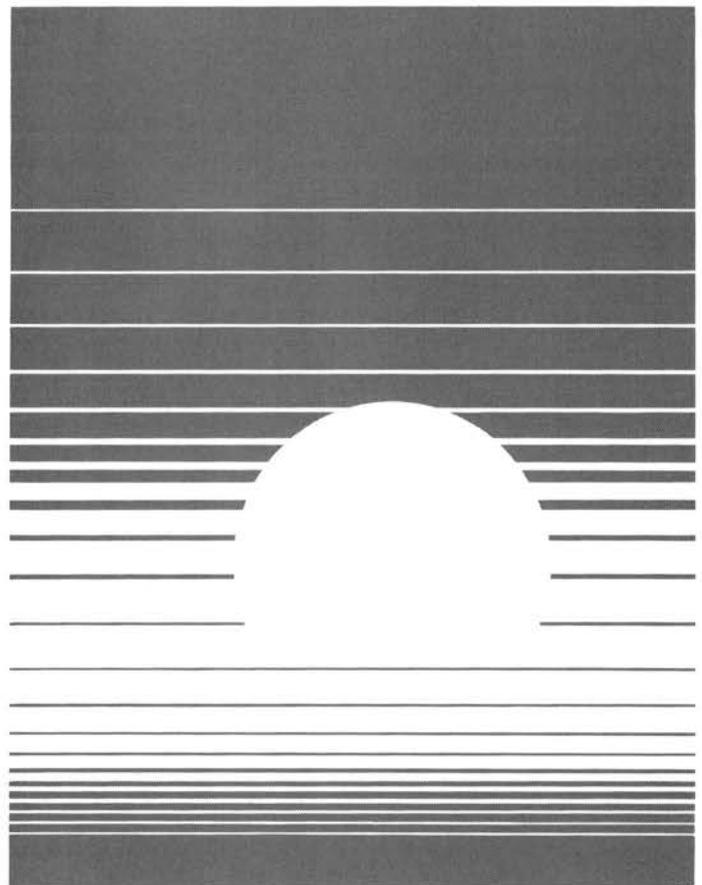
- HIGH LEVEL
- ◐ MEDIUM LEVEL
- LOW LEVEL
- △ MAJOR SHOPPING CENTER
- ★ MAJOR EMPLOYMENT CENTER
- N/A NOT APPLICABLE

## G. Analysis of Need Indicators

The transit need indicators described above have been combined to provide an overall analysis of transit service needs in Phase I. Figure 65 represents a summary of some of these key indicators by transit planning subarea. For each subarea the total transit dependent need indicator is shown in the first column. The next six columns identify the major work and nonwork origins, destinations and intra-subarea travel. The next columns show the travel desire to the dominant CBD, the Minneapolis Central City, the St. Paul Central City, and the top three destinations for both work and non-work trips. The last column identifies the current level of regular route transit service.

This table represents only a summary of some of the key elements that have been described in this chapter. The next section provides a comprehensive summary of the key results from Phase I of the Transit Service Needs Assessment.





# **CHAPTER SEVEN**

RESULTS OF PHASE I

This chapter presents the results of Phase I of the Transit Service Needs Assessment. The results represent the major findings and conclusions for Phase I. They identify the key findings from the analysis conducted in Phase I and lead into the recommendations presented in the final chapter. The results are categorized by topical area. The main focus of each result is also identified.

### Procedural Definitions

1. Transit Need Indicators: The Transit Service Needs Assessment investigated a wide range of transit need indicators. Transit need indicators are travel demand and supply parameters that affect the propensity for transit use. The indicators of transit need that have been adapted for analysis purposes are (a) population and employment concentration, (b) transit dependent population, (c) roadway congestion, especially within sectors and corridors, and (d) transit level of service and availability.
2. Market Groups: The analysis of transit users and the orientation of transit trips identified four major transit market groups in the metropolitan area. The first market consists of trips that are oriented toward the central cities and Central Business Districts. The second market is made up of trips that are oriented toward suburban areas. The third group contains the transit dependent which includes many of the elderly, young, and disabled population, low income or unemployed persons, and persons in zero-car households. The fourth market group, analyzed separately because of its size and ease of identification, consists of trips oriented toward the University of Minnesota.
3. Level of Data Analysis: In organizing the available information, it was determined that, at the Phase I level of analysis, the unit of data collection should be the Minor Civil Division (MCD). The reasons for this decision are that MCDs are easily identifiable; data are almost always available or can be easily converted to the MCD level; MCD boundaries are generally consistent with other political division boundaries such as counties, districts, census tracts; and, except for the central cities, MCDs are both relatively small and subject to aggregation into larger geographic units of analysis without loss of accuracy.
4. Subarea and Ring Definition: In the process of analyzing the transit need indicators by MCD, two patterns emerged. The first evident pattern was that adjacent MCDs tended to have similar levels of transit need indicators and formed clusters of MCDs. These clusters, twenty six of which were identified, were called transit planning subareas. The second pattern was that the highest level of transit need indicators occurred in the central cities and became progressively lower as distance from the central cities increased. This pattern resolved itself into four rings. The central cities were designated as Ring 0 and the exurban, semi-rural areas became Ring 3.

## Population

5. Population Changes: Population in the region is increasing at a moderate rate. Between 1970 and 1980 the region's population increased by approximately 110,000. An additional 174,000 people, or 8.8 percent, more are forecasted for 1990. Between 1990 and 2000 the region is expected to increase by 100,000, or 4.6 percent. If transit is able to maintain its present capture rate of total trips, given this population increase, modest ridership gains can be expected in the future.
6. Population Distribution: Between 1970 and the present, the population in the Central Cities of Minneapolis and St. Paul have declined. The first ring suburbs have also experienced population losses, but to a lesser extent. In the same period, subareas in rings two and three have gained in population. In 1970 the central cities and first ring suburbs accounted for 68 percent of the region's population. In 1980, they accounted for 57 percent. The 1984 estimates indicate that their population now corresponds to 55 percent of the region's, which shows a dramatic slow-down in their rate of population loss.

This shift in population will have an impact on the transit services currently provided in the central city and first ring subareas. It also raises concern about what role transit can play in the growing suburban areas. The transit needs of both these areas need closer examination.

7. Population Densities: Because of their population density, the central cities of Minneapolis and St. Paul continue to be the most important markets for regular route transit service in the metropolitan area, and their central business district continues to be the major concentration of trip destinations. These geographic areas and markets are relatively well served by the existing transit coverage.

The greatest population increases occur in the north, west and south second ring suburbs of Minneapolis and, to a lesser extent, in the south second ring suburbs of St. Paul. The increasing density of population makes these areas prime candidates for more detailed assessment of their transit service potential.

The very low density of population, employment and of other indicators of transit use exhibited by third ring suburbs suggests the examination of a wide range of flexible transit options such as flexible scheduled bus and subscription services.

## Employment

8. Employment Changes: Employment in the region is growing at a faster rate than population. In 1970 there were 45 employees per 100 population. By 1980 this number was 54 and by 1990 it is anticipated to be 60. This means that, whereas population is expected to grow by 5.9 percent between 1980 and 1990, employment is expected to grow by 28.2 percent. More than 60 percent of the employment growth between 1980 and 2000 is expected to occur in 12 cities. The region's significant anticipated employment increase and, more importantly, the fact that most of the increase appear to be located in a few cities, will tend to concentrate trip destinations, a condition which is beneficial to transit planning and service deployment.

9. Employment Concentration: The proportion of employment concentrated in the central cities of Minneapolis and St. Paul has declined significantly in the last decade and is expected to continue to decline further, though at a lesser rate, in the future. However, as a geographic unit, the central cities still contain the largest concentration of employment in the region and will continue to do so in the foreseeable future. In 1970, the central cities contained 57 percent of the region's employment. This ratio declined significantly to 44 percent in 1980, and is expected to be 37 and 35 percent in 1990 and 2000 respectively.

Because of the continued importance of the central cities as attractors of work trips, regular transit, which serves this area relatively well at present, should keep pace with the expected growth. In addition, specific pockets or subareas within the central cities need to be explored for new or expanded service deployment.

10. Employment in the Suburbs: Most of the region's growth in employment is projected to occur in the second and first ring suburbs. Of the twelve cities experiencing the largest employment growth between 1980 and 2000, six are in the second ring suburbs and capture about one-third of the growth, and five are in the first ring and capture about one-fourth of the total growth.

The growth in suburban employment will require a reevaluation of the current transit service deployment in this areas, given that the additional employment is not likely to be as physically concentrated as in the downtowns and central cities. In particular, the role of ridesharing and traditional line-haul services to the suburbs will have to be examined.

#### Transit Dependent Population

11. Geographic Distribution: Transit dependent population levels are highest in the central cities, followed by the north, west and south first and second ring suburbs of Minneapolis and the north and northeast first ring suburbs of St. Paul. Low income households, population 65 years and older, zero car households and population under 18 are distributed, to a greater or lesser extent, according to this pattern.
12. Elderly Population: The concentration of elderly is highest in the central cities and a few first ring suburbs but their number is growing fastest in the first ring suburbs. In 1970, 15 percent of the population of Minneapolis and 13 percent of St. Paul's was 65 years or older; in 1980 the composition was almost identical. In contrast, the 1970 elderly population in the suburbs was approximately 8.5 percent. However, by 1980, many suburban cities, particularly in the first ring, had experienced a substantial increase in their elderly population. In Edina, St. Louis Park, South St. Paul and Richfield, the elderly represented 10 to 14 percent of the population. Furthermore, because the 55 to 64 age group has also grown in size, the aging of the suburban population is expected to continue.

The aging of the population and the increasing number of the elderly in suburban areas will place additional pressure on special transit service serving the elderly, such as Metro Mobility and social service agencies. In addition, other types of transit should be examined for their ability to meet the growing need.

### Existing Transit Services

13. Service Diversity: Currently a wide variety of transit services are provided in the metropolitan area. Because of the diversity of travel needs in the region, no one or two service options fit all needs. Instead, a variety of transit service options must be explored for addressing specific needs. The selection of transit options includes regular route service, express transit, ridesharing and a whole range of other paratransit services.
14. Regular Route Service: Regular route, especially public transit-- represented by the MTC--performs a significant role in meeting the travel needs of the metropolitan area. In recent times (since 1970), public transit carried about 45 million trips at its low point in 1971 and almost 68 million trips in 1979. Since that year, ridership has been slowly declining so that in 1984 ridership was about 56 million passengers. The causes for this decline in ridership are many and not well understood. It is clear, however, that the increased population, employment and transit dependent population concentration in suburban areas, combined with lower increases, or decreases, in the central cities, have reduced the traditional market for regular route bus service. The challenge for the next five to ten years will be to adjust this service to fit the changing demand, supplementing it, perhaps, with additional transit service options that are more suitable to specific applications.
15. Ridesharing: According to the Census' Journey to Work data, about 170,000 carpool daily trips were made in 1980. Both organized and informal ridesharing plays an important role in the overall transit service picture. This is especially true in the suburban and outlying areas where the potential exists for expanding its role. Additional analysis would be of help to identify the potential to expand Rideshare's role in the overall transit picture.
16. Social Services: Social Service Agencies, volunteer and private non-profit organizations play an important role in meeting the needs of the elderly, disabled and poor. As the size of these groups continues to grow, so will the need for these services.
17. Metro Mobility: Currently Metro Mobility provides about 40,000 rides per month to its clients. Metro Mobility represents the backbone of service for the disabled. However, the present service covers only a portion of the metropolitan area whereas the needs are areawide.
18. University of Minnesota: The University represents a strong need and demand for transit services. Existing service is generally focused to meet this demand except for the first and second ring suburbs to the north and northwest of Minneapolis.

## Subarea Travel

19. Subarea Needs: Indicators of transit need grouped the transit planning subareas into the four metropolitan development rings. A consistent pattern emerges which shows that the greatest potential for transit service continues to exist in the central cities of Minneapolis and St. Paul. However, population and employment changes taking place in many of the first and second ring suburbs point to these subareas as having high potential need for transit services. The characteristics of the third ring suburban subareas indicate that while the need for transit services exist, the potential level of travel is lower.
20. Third Ring Subareas: The transit need indicators identified the third ring subareas as potentials for innovative non-regular route types of services. A number of areas were identified as having strong transit need indicators. The third ring subareas in Anoka County indicated moderate levels of transit need, which could be examined in more detail as a prototype for other rural areas with similar travel characteristics and service needs. The transit needs of the third ring subareas have to be examined in greater detail and several transit service options should be considered for meeting their specific needs.
21. Second Ring Subareas: The indicators of transit need have identified the western section of the second ring as an area of high potential transit need. This area includes Brooklyn Park, Maple Grove, Plymouth, Minnetonka and Eden Prairie and, along with adjacent first ring subareas bounded by the Mississippi and Minnesota Rivers, have been labeled as the "western crescent." These subareas are characterized by the large numbers of trips that originate and are destined to them, both radially to and from Minneapolis and non-radially among themselves.

The western crescent affords the opportunity for examining in detail the potential for suburban crosstown service coordinated with radial service to Minneapolis. Other services could also be explored including coordinated feeder and circulator services and rideshare and other paratransit services. This analysis could serve as a prototype for other second ring subareas.
22. First Ring Subareas: The indicators of transit need have consistently identified the first ring subareas within the western crescent as having also high potential transit service needs. These subareas include Brooklyn Center, New Hope, Crystal, Robbinsdale, Golden Valley, St. Louis Park, Hopkins, Edina, Bloomington and Richfield. These areas could be examined along with the third ring suburban subareas of the western crescent.

23. Central Cities: Both Minneapolis and St. Paul emerge as having the strongest potential for transit, despite population losses and a diminishing dominance in terms of employment and retail concentration. The central cities continue to be dominant population and employment centers, with the highest level of transit dependent population and a transit network that is relatively dense and serves the area relatively well. The shifting of population, the changing characteristics of the transit marketplace, and the revitalization of neighborhoods, requires that a comprehensive analysis of the transit service in the central cities be undertaken. The purpose of this detailed reexamination of the system would be to insure that major gaps do not persist, that route and schedule coordination are improved and service duplication is eliminated, if it exists.
24. Downtowns: Employment in downtown Minneapolis is expected to reach upwards of 130,000 employees by the year 2000 compared to about 100,000 in 1980. St. Paul's employment is forecasted to reach about 90,000 by the year 2000 compared to 65,000 in 1980.

The concentration of office, retail and service activities in downtown Minneapolis and St. Paul will result in increasing congestion of many streets, particularly during peak periods. As growth continues, it will be necessary to protect and maintain the integrity of downtown accessibility and circulation by improving priority to all transit service and by diverting automobile trips to transit.

#### Travel Corridors and Sectors

25. Sectors and Corridors: While the quantity and diversity of travel is significant throughout the area, there are well-defined sectors and corridors where travel is highly concentrated and represent a great potential of transit. The transit need indicators identifies the Minneapolis northwest, west and southwest sectors and St. Paul north sector as areas where the potential for transit corridor travel is significant. Also identified in the analysis as an area of high transit potential was the central corridor between Minneapolis and St. Paul. The western crescent of Minneapolis was identified as the area with the highest potential for crosstown travel.
26. Radial Travel: The point at which the maximum volume of inbound trips along radial corridors occurs is between the second and first ring suburbs. Within each corridor, the number of trips at these locations is higher than the maximum number of trips that are destined to the central cities and CBDs.

For example, an analysis of travel in the north sector of Minneapolis indicates that while 18,000 work trips are destined to downtown Minneapolis from Minneapolis and its first, second and third ring suburbs, there are 28,000 work trips that have combined destinations in the second and first ring suburbs as well as in Minneapolis and its downtown. This phenomenon indicates that the definition of corridor travel should not be limited to CBD and central city-oriented trips. Instead, a complementary market exists that is significant in size and can affect the manner in which the transit service along the corridor is deployed.

27. Non-Radial Travel: In addition to the traditional radial travel movement from the suburbs to the central cities and CBDs, significant amounts of non-radial travel also exist between adjacent suburbs. This travel desire is not well served by the configuration of the existing transit service and needs to be examined in detail. These trips desires could be served by feeders and circulators or by branches of line-haul routes.
28. Northwest Sector in Minneapolis: The northwest sector of Minneapolis and Hennepin County exhibits high levels of transit need indicators. This sector is characterized by the large number of outbound trips it generates toward the Minneapolis central city and CBD as well as to its adjacent subareas. No previous corridor studies have been made in this sector. Given this fact, and the high potential transit need associated with it, it is advisable to analyze this sector in greater detail to determine its true potential and to identify specific corridor(s) within it.
29. Central Corridor: The central corridor between Minneapolis and St. Paul exhibits high levels of transit need indicators, attributable to high population and employment concentrations, high density and variety of land uses, high levels of travel and potential increases in roadway congestion.
30. Park and Ride Facilities: In connection with radial corridors, existing park and ride facilities play an important role in complementing both regular and rideshare transit. However, their full potential has not been realized. The deployment of park and ride facilities needs to be examined in terms of their location, visibility, access, coordination with transit services, and public awareness.

#### Highway Congestion/Facilities

31. Historical Perspective: Many segments of the highway system already exceed or are approaching their capacity. As the region continues to grow, the reserve capacity of other roadway segments will be depleted. In 1972, 7 percent of the highway facility-miles inside the I-494/I-694 ring experienced high level of congestion (level of service E or worse). By 1984, the congested facility-miles had increased to 16 percent. By the year 1000, it is estimated that 36 percent will be congested, even assuming metering of freeways. An additional 19 percent of facility-miles are anticipated to experience moderate congestion (level of Service D).

At a regional level, the congestion levels are greatest on facilities located within the central cities, in the first ring and in western crescent area. These are also areas where the transit need indicators show that there is a high potential for transit service.

This impacts transit in two ways. First, since transit usually must operate in mixed traffic, buses will be slowed by this congestion. This increase in travel time lowers transit's ability to be competitive with the automobile. However, if measures are taken to provide preferential treatment to transit, thus decreasing its travel time, transit can be more competitive with the automobile. Increases in transit ridership and in the carrying capacity of roadways would result.

32. Major Highway Reconstruction: The metropolitan area will continue to face major highway reconstruction projects in the future. Major reconstruction of highway facilities can benefit by incorporating transit service options to help reduce delays and congestion and to maintain accessibility. These options include providing interim high-occupancy vehicle lanes, bus bypass ramps and other temporary priority treatments for transit. The provision of transit facilities also applies to new highway construction (such as the new segments of I-35E and I-94), where permanent transit priority treatments could be implemented.

#### Mode Selection Factors

33. Choice of Transit: Market research activities through Focus Groups revealed that while trip-makers base their decision to use transit on a wide variety of factors, a few factors are key. These are trip destination (CBD and central city versus suburban), parking availability and cost, transit availability and level of service, total travel time and trip cost.
34. Quality of Service: A number of service quality issues were identified in the market research and Public Forums. These transcend transit users because they determine the image that is conveyed to non-users. Service quality includes many factors, but the ones most often mentioned by Focus Group participants are driver courtesy, vehicle cleanliness, route and schedule information, schedule accuracy and clarity, vehicle and ride comfort, safety and security. The improvement and maintenance of service quality requires ongoing driver training and administrative concern.

#### Data Availability and Quality

35. Existing Data Base: During the data collection and analysis effort, the assistance provided by agencies, institutions, and public and private providers was excellent. The comprehensive transit planning database developed in Phase I not only supported the planning effort in Phase I but will also enhance transit planning in the region. However, the availability of accurate data remains a problem. In particular, the lack of uniformity in the data gathering, processing and reporting practices is a problem because it affects the ability to establish areawide comparisons of providers, market segments and geographic areas.
36. Future Data Base: Data collection, processing and analysis will become more important in Phase II when route and site-specific analyses will be undertaken and recommendations for ongoing needs assessment and service implementation will be developed. Data collection analysis and reporting procedures need to be developed early in Phase II to insure data quality and availability throughout the project and beyond.

## A. Recommendations

Based on the results described previously, this chapter presents the detailed recommendations from Phase I of the RTB's Transit Service Needs Assessment. These recommendations establish the work program and scope of activities for Phase II of the Transit Service Needs Assessment. The recommendations present the overall structure for Phase II and describe each activity. Phase II will be conducted from February to August 1986. In addition, due to the limited time and resources available during Phase II, some activities have been identified for consideration after August. These will become part of Phase III or the ongoing Transit Service Needs Assessment.

### Structure of Phase I Recommendations

The Phase I results lead to a logical set of recommendations for a systematic multifaceted approach to Phase II. The recommendations cover seven general categories which combine to form a unified Phase II work program. Figure 66 illustrates the overall process for Phase II. The seven categories are listed below and described in greater detail in the following sections. Phase II work categories include:

- A. Development of Metropolitan Transit Planning Procedures.
- B. Comprehensive Evaluation of Metropolitan Bus Operations at the route level.
- C. Detailed Transit Planning Subarea Service Needs Assessment.
- D. Travel Sector and Corridor Transit Service Needs Analysis and Coordination.
- E. Transit Research and Development Studies.
- F. Coordination with Other Ongoing Transit Projects.
- G. Comprehensive Regional Service Needs Assessment and Preliminary Service Plan.

As shown in Figure 66, the first two activities will be initiated first. These will be followed by the four categories dealing with detailed need analyses and coordination. The results of all these activities combine in the last step to form the Comprehensive Regional Service Needs Assessment and Preliminary Service Plan.

### Description of Phase I Recommendations

The recommendations presented here are based on the extensive activities and results of Phase I. They cover a wide spectrum of additional analysis of need, evaluation of existing services, policy development, technical studies and coordination activities. The specific activities in each of the seven categories are described in the following paragraphs and illustrated in Figure 67.

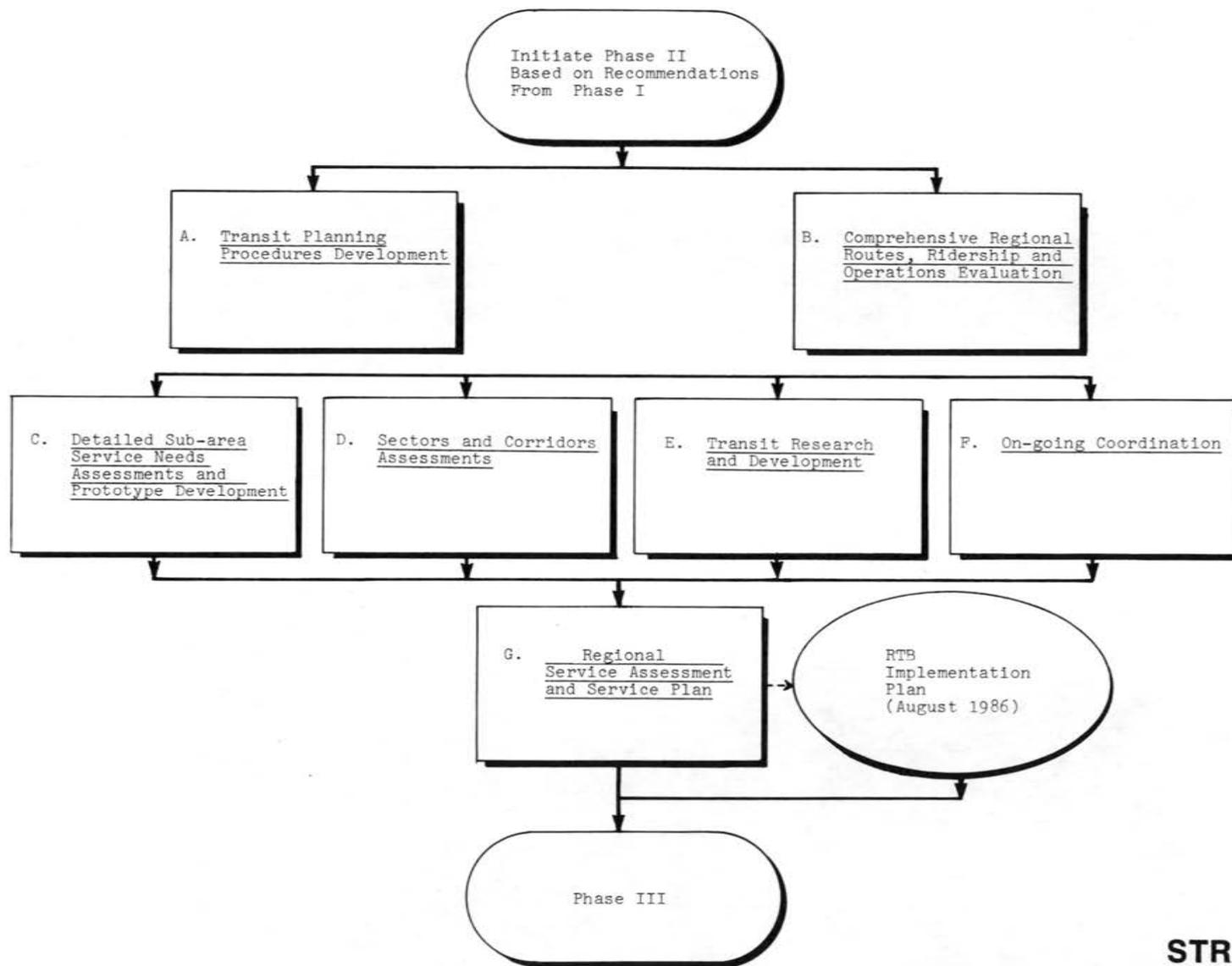
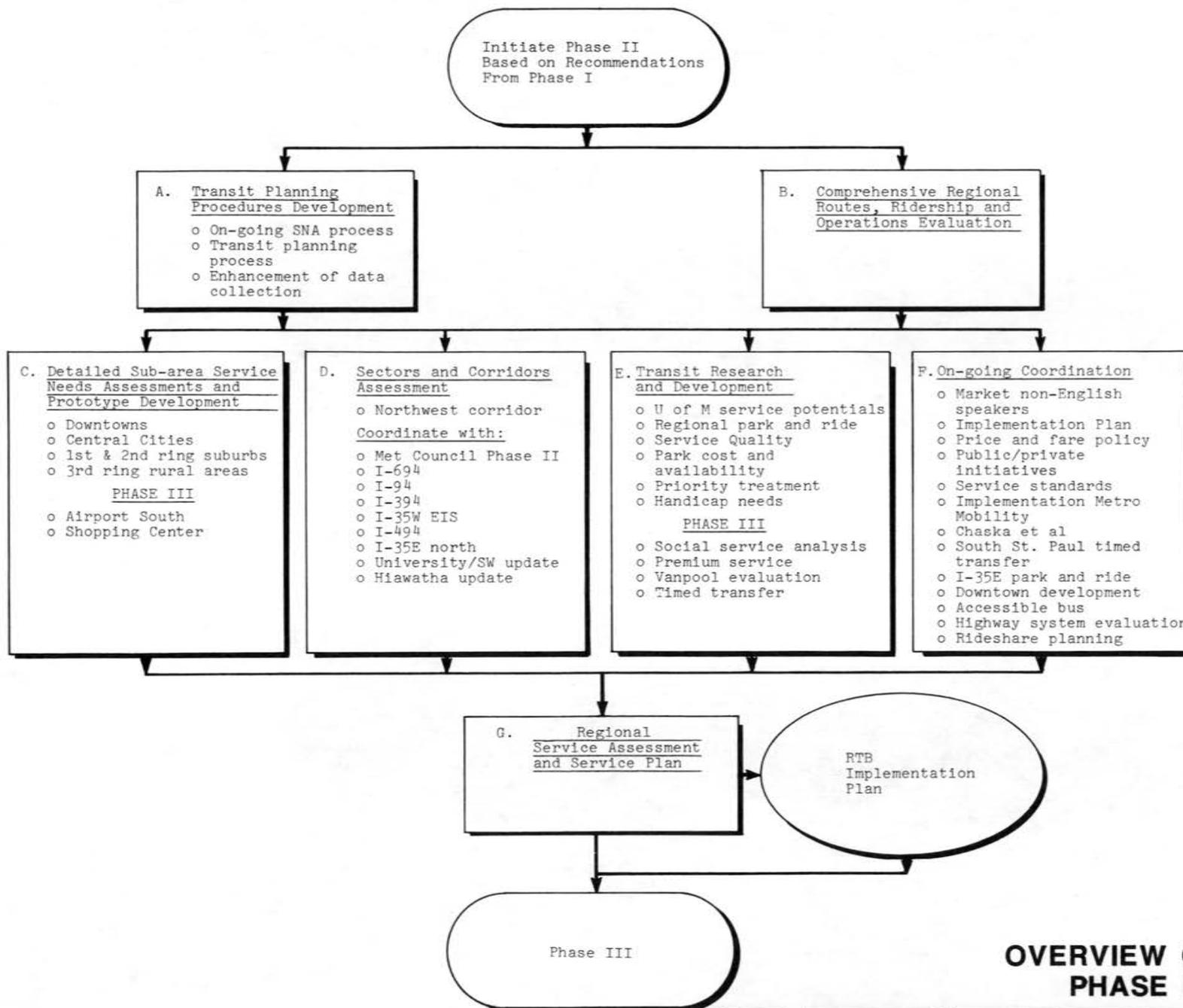


FIGURE 66  
STRUCTURE OF  
PHASE II RECOMMENDATIONS



**FIGURE 67  
OVERVIEW OF DETAILED  
PHASE II ACTIVITIES**

A. DEVELOPMENT OF METROPOLITAN TRANSIT PLANNING PROCEDURE

Activities in this category address the development of uniform mid-range Regional Transit Board (RTB) transit planning procedures for the Metropolitan area. These will address the major areas of concern identified in Phase I.

1. Development of the Ongoing Transit Service Needs Assessment Program

The original work program for the Transit Service Needs Assessment identified one of the key products as the development of an Ongoing Transit Service Needs Assessment program. The results of Phase I substantiate this need. This program will provide for the ongoing analysis of transit service needs in different geographical subareas and market segments. It will also allow for the reevaluation of transit needs based on changing conditions. The development of Ongoing Transit Service Needs Assessment, which will build on the process utilized in Phase I, will be initiated early in Phase II.

2. Development of RTB Transit Planning, Programming, Implementation and Evaluation Process

The results of Phase I of the Service Needs Assessment indicate that the regional level assessment process does not provide the level of detail necessary for specific service adjustments to individual transit services throughout the Twin Cities area. There is a finer level of detail needed to address these issues. To address these, a transit planning, programming, implementation and evaluation process will be developed. This comprehensive process will be responsive to changing levels of need, service availability and funding. The result of this planning process will be the determination of the appropriate role of the RTB and providers in the subsequent service implementation.

3. Improvement of Transit Planning Data Collection, Management and Analysis Procedures

The importance of accurate data cannot be overstated. Phase I of the Service Needs Assessment identified several differences with the data collection procedures and databases maintained by the individual transit and paratransit service providers. A review of existing data collection, management, and analysis procedures will be undertaken to identify potential areas for streamlining and improving procedures and incorporating new requirements such as regular surveys of users, and data-sharing among the providers.

B. COMPREHENSIVE ANALYSIS OF ROUTES, RIDERSHIP AND OPERATIONS

A comprehensive analysis of the existing regular route transit service in the Twin Cities will be conducted as a major element of Phase II. This will include a review of existing ridership, operating costs and the existing deployment of routes. This analysis will examine weekday peak and non-peak routes and schedules, as well as Saturday and Sunday service. This element forms the basis for many of the other Phase II activities. It will be initiated early in Phase II.

### C. DETAILED TRANSIT PLANNING SUBAREA SERVICE NEEDS ASSESSMENT

Activities in this category will focus on further refinement of the transit service needs in each of the rings identified in Phase I and on evaluating possible transit concepts to serve the travel needs in each. The subareas to be considered are the two Central Business Districts, the Central City, the first ring of suburbs, the second suburban ring and the third ring subareas. Transit needs and service alternatives in these rings will be examined through the use of prototypical subareas. The results from these will be transferable to other subareas within the same ring.

#### 1. Downtown Accessibility and Bus Operations Assessment

As the Phase I results outline, the two downtowns are forecasted to experience significant growth in office and retail activity during the next 5-10 years. Transit services must be improved to keep up with this growth and maintain the accessibility of the downtowns. In the short range, circulation problems and priorities must be examined in detail as well as anticipating the potential for more significant investments in the future.

#### 2. Central City Transit Service Assessment

As identified in Phase I, the central city neighborhoods in Minneapolis and St. Paul reflect the highest transit need indicators, especially employment, population and transit dependent populations. These areas also show the highest level of existing transit service. The stabilization of the population in these central city neighborhoods, their sheer size and the extent of their transit service, suggest the need for further analysis. Route rationalization and simplification, schedule coordination, implementation of timed-transfer service, evaluation of expansion of off-peak, night and weekend service will be considered in this assessment. This effort will focus on neighborhoods where the most significant changes are occurring. These studies will then become prototypes for service implementation in other subareas and for subsequent studies.

#### 3. First and Second Ring Suburban Transit Service Needs Assessment-- Western Crescent Prototype

Phase I identified many strong transit need indicators in the first and second ring subareas. These were strongest in the western segment of first and second ring suburbs of Minneapolis. This element will focus on evaluating the transit needs and service alternatives in these western suburban subareas. Existing transit service is predominantly radial to downtown Minneapolis. However, the north-south travel patterns and the congestion on T.H. 100 and County Road 18 may provide opportunities for transit. The development of crosstown transit service feeding into the radial routes, implementing timed-transfer service between the two and improving the accessibility of this area will be examined. The role and further potential of ridesharing in the area will also be analyzed.

4. Rural Service Needs Assessment--Anoka County Prototype

Phase I identified that rural areas are experiencing growth in population, exhibiting medium to low levels of transit need indicators and currently enjoying limited transit service. Since regular transit is not a cost-effective way to serve these extensive areas, more flexible, adaptable service better suited to the needs of the rural population need to be examined.

Subareas within Anoka County, which exhibited a number of transit need indicators, will be examined as a prototype among third ring subareas. Potential transit service alternatives to be examined are all day and skip-day circulators within the County, crosstown line-haul service to the western crescent with timed-transfer, service for the disabled, and premium radial transit service.

5. Airport District Transit Potential Study (Phase III)

The forecasted population and employment growth in Bloomington, the potential development density anticipated for the Airport South District and the presence of the airport identifies this subarea for additional study. The analysis would include determining the role transit can play in serving large employment concentrations while helping to relieve significant congestion problems anticipated for the highways in the area. This analysis, which is scheduled for Phase III, would be coordinated with the I-494 study and other activities in the area.

6. Transit Service Potential of Regional Shopping Centers--Rosedale and Wooddale Prototypes (Phase III)

Phase I results identified the regional shopping centers are major generators of trips. Because of the large number of trips attracted to them, and because each is a single-destination magnet within its area of influence, regional shopping centers represent an important opportunity for serving non-work transit trips. Rosedale Shopping Center and the surrounding area are experiencing significant growth. It is also located in an area where existing transit service is sparse and has received only moderate examination for transit potential assessment. The Wooddale Shopping Center, which is currently in the planning stage, offers an opportunity for new service planning. These prototype service areas will be studied in Phase III.

D. SECTOR AND CORRIDOR ASSESSMENTS

A portion of the Phase I analysis focused on sectors and corridors. Out of this analysis one sector, the Northwest Minneapolis subareas, emerged as both a strong travel sector and an area with high transit need indicators. Additional analysis of the transit service needs of this sector will be conducted in Phase II. In addition, this section identifies the other corridor studies currently going on or anticipated to start in the near future with which the RTB will coordinate.

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1. Northwest Sector Potential and Opportunities--Corridor Study Prototype.

The Northwest Sector ranked high in Phase I in both transit need indicators and in travel desire. No recent studies have addressed this sector to identify potential radial corridors within it to Minneapolis. This element will further analyze the transit needs and evaluate transit service options in this sector.

2. Coordinate with Metropolitan Council Long-Range Transit Phase II Study.

The Metropolitan Council is currently beginning the second phase of its long range transit study of corridors in the Twin Cities. The second phase focuses on determining the range of appropriate technology in twelve corridors. The thrust of the study will be year 2010-2020. The RTB will work closely with this effort in Phase II and coordinate with the Transit Service Needs Assessment activities.

3. Coordinate With I-694 Reconstruction Planning (1988-1989)

Interstate 694 will undergo major reconstruction efforts before 1990. This reconstruction will create significant diversions, congestion and delay. Mn/DOT is currently developing construction plans for this project. This project presents an opportunity to incorporate transit service during the construction and post construction phases in order to minimize delays and maintain accessibility. Building on the experience of the I-394 interim services, Phase II will address these projects and provide input to Mn/DOT.

4. Coordinate with I-94 Reconstruction (1987-1988)

Interstate 94, between the two downtowns, will undergo major reconstruction efforts before 1990. This reconstruction will create significant diversions, congestion and delay. Mn/DOT is currently developing construction plans for this project. This project presents an opportunity to incorporate transit service during the construction and post construction phases in order to minimize delays and maintain accessibility. Building on the experience of the I-394 interim services, Phase II will address these projects and provide input to Mn/DOT.

5. Coordinate with Implementation of the I-394 Transit Improvements

The RTB and the Transit Service Needs Assessment will continue to coordinate with the various activities associated with the construction of I-394. This includes the implementation of the timed-transfer system, the development of the major transit stations and park-and-ride lots, the expansion of the Interim HOV lanes, expansion of the Rideshare program, and the I-394 marketing program. These efforts will be carefully monitored to determine their applicability elsewhere in the region.

6. Coordinating with the I-35W EIS Scoping Process

Mn/DOT, Metropolitan Council and the RTB will begin studying the potential for improving access and transit, beginning in first quarter 1986. As part of the scoping process, further analysis of potential transit technologies in this corridor will be addressed.

7. Coordinate with I-494 Study

The Metropolitan Council, Mn/DOT and RTB will be studying I-494 from I-394 to Egan. This study will include an analysis of the transit potential within or adjacent to this facility.

8. Coordinate with I-35E North Environmental Impact Statement

The I-35E North corridor is approaching the need for considering the impact of a facility at capacity. When this analysis is undertaken, a full range of transit alternatives should be included.

9. Coordinate with University Avenue, Southwest Corridor and Hiawatha EIS

Completion and final decision on the University, Hiawatha and Southwest Corridor Alternatives Analysis and Environmental Impact Statements is pending. The RTB has taken action on these corridors previously, identifying the University Avenue Corridor as a priority. The RTB will continue to monitor the status in light of the eventual results of the Transit Service Needs Assessment and the Metropolitan Council's Long Range Transit Study.

E. TRANSIT RESEARCH AND DEVELOPMENT

Phase I identified a number of areas where additional analysis was necessary before specific recommendations on service changes and improvements could be made. These are identified in this section for additional study in Phase II.

1. University of Minnesota Service Potential Study

With the recent reexamination of the University's mission, the student population size and profile are anticipated to undergo extensive changes in the short- to mid-range timeframe. These changes, coupled with recent shifts of student trip origins to the north and west, strongly indicate the need to examine their impact on the existing and future transit service.

2. Regional Park and Ride Screening Study

Park and ride sites need to be developed according to the significance of the demand in the area and coordinated with responsive changes, if necessary, in regular route service. A

screening process will be developed to identify areas of need, the level of the transit requirements and the timing of development.

3. Service Quality Improvements Study

Phase I identified a number of areas where improvements could be made in the overall quality of transit services. These included the physical appearance and condition of the vehicles, cleanliness, a review of driver screening and training programs, and the methods used to disseminate transit service information including signing, telephone information response time, and schedule displays on vehicles and at stops. The standardization of headways and revision of schedules to enhance readability will also be considered. In addition, the maintenance of shelters and potential safety and security improvements will be reviewed.

4. Impact of Parking Cost and Availability on Transit Use in Central Business Districts and University of Minnesota

One of the key factors identified in Phase I in determining the level of transit use is the availability and cost of parking. This is especially true in the downtown areas and at the University of Minnesota. A rigorous parking demand analysis, availability study and cost analysis will need to be performed to better define the existing parking situation and the need for transit policies and transit service provisions.

5. Evaluation of Priority Treatment for Transit Service

Peak period regular route transit services operate in the same traffic conditions as regular traffic. In spite of the existing priority treatment on I-35W, I-94 and I-394 still exist opportunities all over the region to provide priority to transit operations in order to avoid congested areas and increase operating speed. Such improvements generally improve transit services and increase the people-carrying capacity of the transportation system. The potential costs and benefits of completing priority treatments on all metropolitan Interstate highways (e.g. HOV lanes and facilities, exclusive bus and carpool ramps, ramp bypass lanes for buses and carpools, traffic signal priority systems and park and ride facilities) will be examined, specifically in conjunction with highway construction and reconstruction projects. Also, consideration will be given to improvements on the local roadway system.

6. Identification of Needs of the Handicapped Population Outside of the Current Metro Mobility Service Area

Phase I indicated that the level and location of the handicapped population outside of the existing Metro Mobility service area is not well documented and non Metro Mobility users within the service boundary. With the expansion of Metro Mobility being

considered as one of the recommendations under implementation by the RTB, the need exists to closely examine both the location and travel needs of the handicapped population in this area.

7. Analysis of Potential Coordination of Social Service and Private-Non-Profit Agencies Transportation Services (Phase III)

The Service Needs Assessment Phase I identified many agencies that provide transportation services to their client groups. The potential for coordinating some of these services to better utilize existing equipment and resources should be analyzed.

8. Market Research of Premium Transit Service (Phase III)

With the growing market potential for transit in the suburbs, high quality, fast, "premium" transit service should be evaluated. This service, which is targeted at non-traditional transit users, especially present auto drivers, uses specialized vehicles and provides limited stop express service. This service would also charge "premium" fares, reflecting the increased service level offered.

9. Vanpool Program Evaluation Study (Phase III)

An evaluation of vanpool programs in the Twin Cities area is needed to determine why some have been very successful while others have failed. Areas to be examined include employer participation and responsibility, employee coordinator responsibility and job flexibility, marketing and education programs and costs borne by employer and employees. Also examined will be the potential for reverse commute activities to bring workers from Central City areas to suburban job locations.

10. Timed-Transfer Follow-up Study (Phase III)

Once the Metropolitan Transit Commission completes the South St. Paul, White Bear and I-394 timed-transfer planning and evaluation studies, a follow-up study should be undertaken to determine the applicability of timed-transfer throughout the metropolitan area.

## F. COORDINATION WITH OTHER ONGOING STUDIES

Activities in this section represent ongoing studies being conducted by the RTB, Metropolitan Transit Commission or Metropolitan Council. The RTB and the Transit Service Needs Assessment will coordinate with these activities.

### 1. RTB Implementation Plan

The RTB's Implementation Plan will be completed in August of 1986. As shown in Figures 66 and 67, the Transit Service Needs Assessment will coordinate with the various activities of Phase II of the Transit Service Needs Assessment.

### 2. Market Potential of Non-English Speaking Users

The Metropolitan Transit Commission has recently completed a study on the transit information needs of the non-English speaking populations. The RTB will coordinate with the implementation of the recommendations from this study.

### 3. Fare Policy Development

The RTB will be developing fare policies for the metropolitan area over the next year. Input from the MTC's Pricing and Fare Policy study will be considered in this effort.

### 4. Public/Private Provider Mix

The RTB will be developing policies regarding the public/private provider mix in the metropolitan area. Part of this will be the development of procedures to provide for the competitive bidding of routes among all providers.

### 5. Development of Service Standards

The Regional Transit Board and Metropolitan Transit Commission are developing transit service standards for application to the Metropolitan Transit Commission service. As part of this, service policies and financial performance standards are being analyzed and service objectives and service quality standards are being identified and analyzed. Service standards for other regular route providers and paratransit services will be examined subsequently.

### 6. Implementation of Metro Mobility Recommendations

The Regional Transit Board is proposing to implement Metro Mobility service changes to respond to the need to provide increased service opportunities, improve the cost effectiveness of the service, and expand the service area. The primary changes will be to shift from a centralized dispatching operation to a "users choice" system.

7. Chaska Area Transit Study

The City of Chaska, along with Chanhassen, Eden Prairie and Shakopee, have completed an evaluation of transit service options for their respective communities. These address community-based service needs, as well as travel to adjacent subareas and to the central cities. The RTB will continue to work with these communities to implement their plan. This will include developing the final plan and monitoring the project to identify potential service options applicable to other suburban communities.

8. South St. Paul and White Bear Timed-Transfer Planning and Evaluation Studies

The Metropolitan Transit Commission has implemented a timed-transfer system in South St. Paul. They will be evaluating this system this year. In addition, they will be initiating a planning study in the White Bear Area. The Regional Transit Board will continue to coordinate and monitor these efforts with the view to determining if the concept has area-wide applicability.

9. I-35E Park/Ride Implementation

Concurrent with the construction of I-35E south of St. Paul, the Minnesota Department of Transportation is developing a park-and-ride implementation program. The implementation study and the design will be followed as will implementation and monitoring activities for future application elsewhere.

10. Downtown Development Projects

A number of development projects are under consideration in both downtown areas. The RTB will continue to monitor these projects and coordinate the associated transit activities.

11. MTC Accessible Bus Demonstration

The MTC will be implementing its accessible bus demonstration in 1986. This project involves introducing lift equipped buses into regular route operations. The service will operate on two routes, 16 and 19.

12. Metropolitan Council Metropolitan Highway System Evaluation

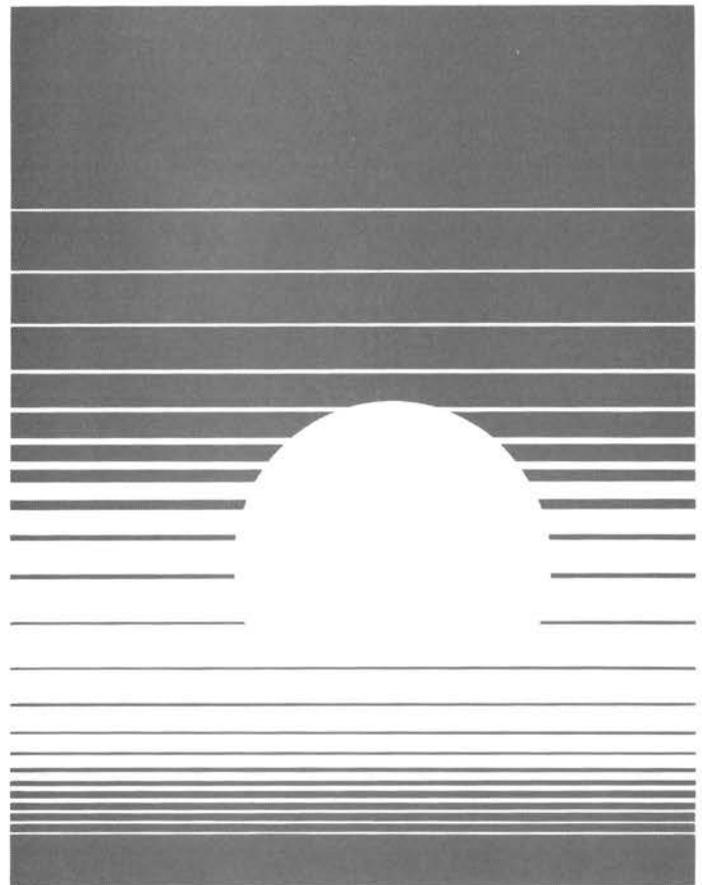
The Metropolitan Council is currently conducting an evaluation of the Metropolitan Highway System. The RTB will participate in and coordinate with these activities.

13. RTB Rideshare Planning

The RTB will be evaluating rideshare management alternatives and other aspects of the rideshare program during 1986.

G. DEVELOPMENT OF REGIONAL TRANSIT SERVICE ASSESSMENT BY SUBAREA AND SERVICE PLAN FOR MARKET GROUPS

The comprehensive evaluation of routes, ridership and operation (Elements) together with detailed subarea and corridor service needs assessment (C and D), will be combined with the results of transit research projects (E) and the ongoing studies (F), to provide the level of detail necessary to bring together the three main elements of Phase II of the Transit Service Needs Assessment. These elements are: transit user markets, subarea and corridor service areas and transit service options. In essence, Phase II will identify and rank the transit service options that are applicable within a subarea or corridor to satisfy the needs of user market segments within the subarea or corridor. This process will be done for the entire region. Ultimately, the outcome of this step will provide the necessary information to prepare the transit service specification package for subsequent (Phase III) implementation by providers.



## **APPENDICES**

APPENDIX A  
SOCIO-ECONOMIC DATA

MCD	1980 pop	1980 pop Density	2000 pop	2000 pop Density	1980-2000- pop Change	1780 EMP	1980 EMP Density	2000 EMP	2000 EMP Density	1985-2000 EMP change
ANDOVER	9387	0.4159	12900	0.5715	37.424	310	0.01373	500	0.02215	61.290
APIKA	15634	3.7411	15500	3.7090	-0.857	11200	2.68007	13000	3.11079	16.071
BETHEL	272	0.4587	240	0.4047	-11.765	50	0.08432	200	0.33727	300.000
BLAINE	28558	1.3115	45000	2.0666	57.574	5500	0.25258	13000	0.59701	136.364
BURNST	1976	0.0887	2600	0.1167	31.579	100	0.00449	100	0.00449	0.000
CENTERV	734	0.4819	1200	0.7879	63.488	160	0.10506	400	0.26264	150.000
CIRCLEPI	3321	2.8002	5000	4.2159	50.557	520	0.43845	800	0.67454	53.846
COLUMBIA	20029	9.1457	20000	9.1324	-0.145	5100	2.32877	7000	3.19635	37.255
COLUMBUS	3232	0.1088	4000	0.1347	23.762	100	0.00337	200	0.00673	100.000
COONRAP	35826	2.4643	57000	3.9208	59.102	10200	0.70161	19000	1.30692	86.275
EASTRETH	6626	0.2318	7800	0.2729	17.718	260	0.00910	400	0.01399	53.846
FRIDLEY	30228	4.5449	30000	4.5106	-0.754	22000	3.30777	36000	5.41272	63.676
HAMLAKE	7832	0.3559	9300	0.4226	18.744	310	0.01409	600	0.02726	93.548
HILLTOP	817	10.2125	810	10.1250	-0.857	310	3.87500	400	5.00000	29.032
LEXINGTON	2150	5.1190	2000	4.7619	-6.977	520	1.23810	800	1.90476	53.846
LINCOLN	4966	0.2842	7700	0.4407	55.054	520	0.02976	1000	0.05723	92.308
LINWOOD	2839	0.1297	3400	0.1553	19.760	50	0.00228	100	0.00457	100.000
DAKROVE	3926	0.1749	4800	0.2139	22.262	100	0.00446	200	0.00891	100.000
RAMSEY	10093	0.5459	12600	0.6815	24.839	310	0.01677	600	0.03245	93.548
SIFRANCI	1184	0.0783	2900	0.1917	144.932	520	0.03437	1000	0.06610	92.308
SPICKPARK	6477	5.1651	7300	5.8214	12.706	1900	1.51515	3500	2.79107	84.211
BENTON	939	0.0424	990	0.0447	5.431	210	0.00949	200	0.00903	-4.762
CAMDEN	898	0.0401	930	0.0415	3.563	50	0.00223	50	0.00223	0.000
CARVER	642	0.2688	780	0.3266	21.495	210	0.08794	400	0.16750	90.476
CLATHIAS	6359	0.4793	9500	0.7160	49.395	1200	0.09044	4000	0.30148	233.333
CLASKA	8346	0.8994	10000	1.0776	19.818	3600	0.38793	6500	0.70043	80.556
CLASKA, T	205	0.1114	320	0.1739	56.098	160	0.08696	200	0.10870	25.000
COLOGNE	545	1.2704	690	1.6084	26.606	100	0.23310	100	0.23310	0.000
DAHLGREN	1225	0.0553	1300	0.0587	6.122	50	0.00226	100	0.00452	100.000
HAMBURG	475	5.7229	540	6.5060	13.684	50	0.60241	50	0.60241	0.000
HANCOCKT	391	0.0345	480	0.0424	22.762	50	0.00442	50	0.00442	0.000
HOLLYWOOD	1100	0.0479	1200	0.0522	9.091	50	0.00218	50	0.00218	0.000
LAKE TOWN	2424	0.1370	2700	0.1526	11.386	100	0.00565	200	0.01130	100.000
MAYER	388	1.9596	400	2.0202	3.093	50	0.25253	100	0.50505	100.000
NEWGERM	347	1.2757	420	1.5441	21.037	50	0.18382	50	0.18382	0.000
NORWOOD	1219	3.2946	1200	3.2432	-1.559	520	1.40541	600	1.62162	15.385
SATFRAH	650	0.0425	830	0.0543	27.692	50	0.00327	50	0.00327	0.000
VICTORIA	1425	0.3815	2400	0.6426	68.421	310	0.08300	600	0.16064	93.548
MACONIA	2638	3.5126	3200	4.2610	21.304	1800	2.39680	2500	3.32889	38.889
MACONIA T	1402	0.0752	1500	0.0804	6.990	50	0.00268	100	0.00536	100.000
WATERIN	1818	2.8995	2300	3.6683	26.513	360	0.57416	700	1.11643	94.444
WATERINT	1429	0.0672	1600	0.0752	11.966	100	0.00470	200	0.00940	100.000
YONGAMER	1237	6.1850	1500	7.5000	21.261	210	1.05000	200	1.00000	-4.762
YONGAMERT	952	0.0439	960	0.0443	0.840	50	0.00230	100	0.00461	100.000
APPLVALL	21818	1.9940	36000	3.2901	65.001	2000	0.18278	4000	0.36556	100.000
BURNSVIL	35674	2.1613	49000	2.9686	37.355	13200	0.79971	28000	1.69635	112.121
CASILROK	1340	0.0593	1500	0.0664	11.940	50	0.00221	100	0.00442	100.000
COATES	207	0.2287	280	0.3094	35.266	50	0.05525	50	0.05525	0.000
DOUGLAS	614	0.0282	660	0.0303	7.492	50	0.00230	50	0.00230	0.000
EAGAN	20700	0.9979	50000	2.4103	141.546	8400	0.40494	27000	1.30158	221.429
EMPIRET	1224	0.0563	1600	0.0735	30.719	100	0.00460	300	0.01379	200.000
EUREKA	1268	0.0559	1800	0.0793	41.956	50	0.00220	200	0.00881	300.000
FARMINGT	4370	0.5885	5800	0.7810	32.723	2500	0.33665	4000	0.53865	60.000
GREENVLE	654	0.0346	780	0.0413	19.266	50	0.00265	50	0.00265	0.000
HAMPTON	299	0.3737	350	0.4375	17.057	100	0.12500	200	0.25000	100.000
HAMPTONT	848	0.0385	1200	0.0544	41.509	50	0.00227	100	0.00454	100.000

MCD	1980 pop	1980 pop Density	2000 pop	2000 pop Density	1980-2000 pop change	1780 - EMP	1980 EMP Density	2000 EMP	2000 EMP Density	1985-2000 EMP change
HASTINGS	12827	2.1468	14000	2.34310	9.145	6400	1.071	10000	1.674	56.250
INVERGR	17171	0.9259	22000	1.18624	28.123	2600	0.140	7000	0.377	169.231
LAKEVILL	14790	0.6328	23000	0.98404	55.510	2700	0.116	7000	0.299	159.259
LILYDALE	417	1.1120	510	1.36000	22.302	100	0.267	200	0.533	100.000
MARSHAN	1655	0.0721	2000	0.08711	20.846	100	0.004	100	0.004	0.000
MENDOTA	219	1.6466	240	1.80451	9.589	130	0.977	200	1.504	53.846
MEMPHIT	7288	1.2750	10700	1.78446	39.956	2800	0.490	7000	1.225	150.000
MESVILL	179	0.1598	170	0.15179	-5.078	50	0.045	100	0.089	100.000
NEWTRIER	115	0.9746	170	1.44068	47.826	50	0.424	50	0.424	0.000
NILINGER	774	0.0747	990	0.09559	27.907	100	0.010	300	0.029	200.000
RAHDOLF	351	0.5616	360	0.57600	2.564	100	0.160	100	0.160	0.000
RAHDOLF T	385	0.0899	540	0.12605	40.260	50	0.012	50	0.012	0.000
RAVENNA	1683	0.1211	1900	0.13673	12.894	50	0.004	50	0.004	0.000
ROSEMONT	5083	0.2357	8100	0.37552	59.355	4300	0.199	6000	0.278	39.535
SCIOIA	242	0.0255	300	0.03163	23.967	50	0.005	50	0.005	0.000
SSIPAUL	21235	6.1267	20000	5.77034	-5.816	7400	2.135	8000	2.308	8.108
SUNSHINE	344	0.0992	410	0.11829	19.186	50	0.014	100	0.029	100.000
VERMILL	438	0.4465	620	0.63201	41.553	50	0.051	100	0.102	100.000
VERMILL T	1070	1.6719	1300	2.03125	21.495	50	0.078	50	0.078	0.000
WATERFD	486	0.0221	520	0.02365	6.996	100	0.005	200	0.009	100.000
WESTPAUL	18527	1.9527	17300	1.82336	-6.623	7700	0.812	12000	1.265	55.844
BLOOMING	81831	3.5440	92000	3.98441	12.427	59000	2.555	90000	3.898	52.542
BRKLYCT	31230	5.9328	30000	5.69909	-3.939	10600	2.014	14000	2.660	32.075
BRKLYPK	43332	2.5512	63000	3.70916	45.389	7200	0.424	21000	1.236	191.667
CHAMPLIN	9006	1.6360	15000	2.72480	66.556	440	0.080	1000	0.182	127.273
CONCORAN	4252	0.1865	5600	0.24556	31.703	230	0.010	200	0.009	-13.043
CRYSTAL	25543	6.8886	23000	6.20280	-9.956	6000	1.618	6500	1.753	8.333
DAYTON	4000	0.2543	5600	0.35596	40.000	100	0.006	300	0.019	200.000
DEERVIEW	3716	2.4675	3400	2.25764	-8.504	160	0.106	300	0.199	87.500
DEERVIEW	16263	0.7585	43000	2.00541	164.404	12200	0.569	38000	1.772	211.475
EDINA	46073	4.5531	46000	4.54590	-0.158	41000	4.052	54000	5.336	31.707
EXELSTOR	2523	6.0215	2700	6.44391	7.015	3000	7.160	3000	7.160	0.000
FORTSHEL	223	1.2389	200	1.11111	-10.314	20000	111.111	24000	133.333	20.000
GOLDENVL	22775	3.4320	22000	3.31525	-3.403	30000	4.521	33000	4.973	10.000
GREENHLD	1391	0.1039	1600	0.11953	15.025	50	0.004	100	0.007	100.000
GRINWOOD	653	2.8391	600	2.60870	-8.116	100	0.435	100	0.435	0.000
HANDOVER	248	0.1818	350	0.25660	41.129	50	0.037	50	0.037	0.000
HASSANT	1766	0.1202	2100	0.14291	18.913	100	0.007	500	0.034	400.000
HOPKINS	15316	5.9696	14800	5.76100	-3.495	19100	7.435	21000	8.174	9.948
INDIANO	2640	0.1242	2700	0.12698	2.273	100	0.005	100	0.005	0.000
LONGLE	1747	3.7170	2500	5.31915	43.102	1900	4.043	2000	4.255	5.263
LORETTA	297	1.8110	350	2.13415	17.845	160	0.976	250	1.524	56.250
MAPLEGRV	20525	0.9633	42000	1.97109	104.629	1700	0.080	6000	0.282	252.941
MAPLEPL	1421	2.0897	1900	2.79412	33.709	1800	2.647	2000	2.941	11.111
MEDCLK	419	3.7411	420	3.75000	0.239	50	0.446	50	0.446	0.000
MEDIA	2623	0.1641	3400	0.21277	29.623	1100	0.069	1200	0.075	9.091
MIDPLS	370951	10.5249	340000	9.64676	-8.344	284000	8.058	298000	8.455	4.930
MINNETKA	38683	2.2100	49000	2.79936	26.671	18000	1.028	32000	1.828	77.778
MINNETKBC	575	1.8371	590	1.88498	2.609	210	0.671	300	0.958	42.857
MINNETRIS	3736	0.1717	3500	0.18567	8.158	50	0.003	150	0.008	200.000
MOUND	9280	4.8083	10000	5.18135	7.759	2600	1.347	2700	1.399	3.846
NEWHOPE	23087	7.0195	23000	6.99301	-0.377	9400	2.858	10000	3.040	6.383
ORONO	6845	0.5797	7000	0.59287	2.264	470	0.040	600	0.051	27.660
OSSEO	2974	6.2611	2900	6.10526	-2.488	4300	9.053	4500	9.474	4.651
PLYMTH	31615	1.4839	58000	2.72224	83.457	20000	0.939	45000	2.112	125.000
RICHLD	37851	8.3171	37000	8.13008	-2.248	14100	3.098	14500	3.186	2.837

A3

MCD	1980 pop	1980 pop Density	2000 pop	2000 pop Density	1980-2000 pop Change	1980 EMP	1980 EMP Density	2000 EMP	2000 EMP Density	1985-2000 EMP Change
GREYCLD	351	0.1393	350	0.1389	-0.285	50	0.01985	100	0.03970	100.000
IRIGO	3771	0.1761	4500	0.2101	19.332	420	0.01961	800	0.03736	90.476
LAKELHO	5296	0.3399	6400	0.4107	20.816	830	0.05326	1200	0.07701	44.578
LAKELHD	1812	1.0197	2300	1.2943	26.932	130	0.07316	200	0.11255	53.846
LAKESIDE	171	0.9243	220	1.1892	28.655	50	0.27027	50	0.27027	0.000
LAKESCRO	1176	3.1698	1200	3.2345	2.041	10	0.02695	50	0.13477	400.000
LAKESFL	679	15.4318	680	15.4545	0.147	50	1.13636	50	1.13636	0.000
MATHMO	3851	1.7738	4700	2.1649	22.046	1140	0.52510	1300	0.59880	14.035
MARSCRO	543	0.2121	540	0.2109	-0.552	50	0.01953	50	0.01953	0.000
MAYT	2076	0.0957	2500	0.1152	20.474	50	0.00230	50	0.00230	0.000
NEWPORT	3323	1.4021	3800	1.6034	14.354	1560	0.65823	2000	0.84388	28.205
NEWSCHO	2858	0.1231	3400	0.1465	18.964	50	0.00215	50	0.00215	0.000
OAKDALE	12123	1.8784	16400	2.5411	35.280	1700	0.18593	5000	0.77471	316.667
OAKPKHS	2591	2.3134	3900	3.4821	50.521	2180	1.94643	3000	2.67857	37.615
PINESPR	267	0.5657	470	0.9958	76.030	50	0.10593	50	0.10593	0.000
STARAPT	348	1.3541	410	1.5953	17.816	50	0.19455	50	0.19455	0.000
STPAULPK	4864	3.2427	4900	3.2667	0.740	750	0.50000	800	0.53333	6.667
SILWATER	12290	3.9773	13300	4.3042	8.218	5700	1.84466	7500	2.42718	31.579
SILWATER	1599	0.1322	2300	0.1902	43.840	310	0.02563	300	0.02480	-3.226
WKLIND	1318	0.1664	1400	0.1767	6.222	50	0.00631	50	0.00631	0.000
WILLERN	654	7.8795	690	8.3133	5.505	100	1.20482	100	1.20482	0.000
WOODBURY	10297	0.4606	23000	1.0287	123.366	2500	0.11182	9500	0.42490	280.000

APPENDIX B

BIBLIOGRAPHY

BIBLIOGRAPHY

TITLE	AGENCY	DATE	SUBJECT
A RIDESHARING PROGRAM FOR THE TWIN CITIES AREA	METROPOLITAN COUNCIL	1982	RIDESHARE
A STUDY OF ALTERNATIVES TO REVERSE FLOW BUS LANES TO DOWNTOWN MINNEAPOLIS	CITY OF MINNEAPOLIS	1976	AREA STUDIES
A SUMMARY REPORT OF TRAVEL IN THE TWIN CITIES METROPOLITAN AREA	METROPOLITAN COUNCIL	1974	TRANSIT/TRANSPORTATION
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APPENDIX C

GLOSSARY

## GLOSSARY

This glossary was developed using census and transportation terms to aid the reader in understanding technical terms used in the Transit Service Needs Assessment. The terms are listed in alphabetical order with a number of terms grouped into specific categories for ease of use.

Attractions, trip - the number of daily trips to a zone generated by present or future land uses in that zone; it normally refers to the non-home end of a trip.

Availability, transit system - a measure of the capability of a transit system to be used by potential patrons, such as the hours the system is in operation and the route spacing.

Bus lane - a street or highway lane intended primarily for buses, either all day or during specified periods, but used by other traffic under certain circumstances; e.g., making a right turn.

Bus lane, exclusive - a lane reserved for buses on a street, highway, bridge or tunnel that other traffic is restricted from using.

Bus lane, reversible - a lane that is reserved for the exclusive use of buses and other high-occupancy vehicles and that can be operated in either direction during peak hours; it may be the center lane in an arterial street that is used for left-turning traffic in off-peak hours.

Bus priority system - a means by which buses are given an advantage over other traffic; e.g., preemption of traffic signals, bus priority lanes or metered freeway ramps.

Bus stop - a waiting, boarding and alighting area, usually designated by distinctive signs and by curbs or pavement markings.

Busway - a special roadway designated for exclusive or predominant use by buses in order to improve bus movement and bus passenger travel times; it may be constructed at, above or below grade and may be located in separate rights-of-way or within highway corridors.

Busway, exclusive - a busway designed for the exclusive use of buses.

Capacity - 1. The maximum number of vehicles that can pass over a given section of a lane or roadway in one or both directions during a given time period under prevailing roadway and traffic conditions. 2. The number of passengers that can be transported over a given section of a transit line in one direction during a given time period (usually one hour) under prevailing traffic conditions.

Captive transit rider - a person who does not have immediate access to private transportation or who otherwise must use public transportation in order to travel.

Census Tract - a small statistical subdivision of a county. They are designed to be relatively homogeneous areas with respect to population characteristics, economic status and living conditions. Tracts generally have between 2,500 and 8,000 residents.

Central Business District (CBD) - An area of high land valuation characterized by a high concentration of retail businesses, offices, theaters, hotels and by a high traffic flow. CBD's are identified only in central cities of SMSA's and other cities with a population of 50,000 or more and are designated by local Census Statistical Areas Committees in consultation with the Census Bureau.

Central City - The largest city, or one of the largest cities, in an SMA or urbanized area.

Commuter - a person who travels regularly between home and a fixed work or school location.

Contraflow lane - a highway or street lane on which, during certain hours of the day, public transit or other specially designated vehicles, operate in a direction opposite to that of the normal flow of traffic on that lane during the remainder of the day.

Corridor - a broad geographical band that follows a general directional flow connecting major sources of trips and that may contain a number of streets and highways and transit route alignments.

County - The primary political and administrative subdivision of a state.

Database - information organized for analysis or used as the basis for a decision.

Demographic Data - Statistics related to the size, density, distribution, social structure and related characteristics of human populations.

Density - A statistic expressing the number of persons per unit of area.

Desire line - a straight line on a map that connects the origin and destination of a trip and that shows by its width or density the volume of trips between that origin and destination pair.

Destination - the point at which a trip terminates or the zone in which a trip ends.

Disability, Public Transportation - Persons who have a health condition which makes it difficult or impossible to use buses, trains, subways or other forms of public transportation.

Disadvantaged, transportation - people whose range of transportation alternatives is limited, especially in the availability of relatively easy-to-use and inexpensive alternatives for trip making; e.g.,

Distribution, trip - the process of estimating movement of trips between zones using surveys or models.

Expressway - a divided highway for through traffic that has full or partial access control and generally has grade separation at major intersections.

Fare, flat - a charge for a trip that is the same regardless of the trip's characteristics.

Fare, reduced - a special fare for children, students, senior citizens or others that is less than the regular fare.

Fare, graduated - a fare that is proportional to the distance traveled.

Fare, zoned - a fare that is determined by the length of the trip measured in terms of defined zones.

Freeway - a divided highway for through traffic that has full access control and grade separations at all intersections.

Freeway, metered - a freeway to which access is controlled by entrance ramp signals that use fixed-time signal settings or regulated by a computerized surveillance system to prevent congestion.

Frequency, service - the number of vehicles moving in the same direction that pass a given point on a route within a specified interval of time.

Fringe area - that portion of a municipality immediately outside the CBD that is characterized by a variety of business, industrial, service and some residential activity.

Geocoding - The assignment of alphanumeric codes to geographic areas or addresses.

Grade separation - a separation of intersecting streams of traffic by the provision of crossing structures or underpasses.

Highway - a publicly maintained road that is open to the use of the public for vehicular travel.

Highway, beltway - an arterial highway for carrying traffic partially or

entirely around an urban area or portion thereof.  
Highway, radial - an arterial highway that leads to and from an urban center.

Household - Person or persons occupying a housing unit.

Housing Unit - A house, apartment, mobile home or trailer, group of rooms or single room occupied as a separate living quarter or, if vacant, intended for occupancy as a separate living quarter.

Level of Service - 1. Multidimensional characteristics that indicate the quality and quantity of transportation service provided, including characteristics that are quantifiable (travel time, travel cost, number of transfers) and those that are difficult to quantify (comfort, modal image). 2. A measure of the effectiveness of a highway in serving traffic in terms of operating conditions. The six different operating conditions include:

Level of Service A - describes a condition of free flow, with low volumes and high speeds. No physical restrictions on operating speeds.

Level of Service B - a condition of stable flow with operating speeds beginning to be restricted somewhat by traffic conditions; drivers still have reasonable freedom to select their speed and lane of operation.

Level of Service C - a condition of stable flow, but speeds and maneuverability are more closely controlled by higher volumes. More restrictions on speed and lane changing.

Level of Service D - unstable flow, with tolerable operating speeds being maintained, though considerably affected by changes in operating conditions. Little freedom to maneuver.

Level of Service E - cannot be described by speed alone, but represents operations at even lower operating speeds than in level D with volumes at or near capacity of the highway. Some momentary stoppages.

Level of Service F - forced flow operation at low speeds, where volumes are beyond capacity.

Market - the potential consumers of a transportation product or service or a geographical area that includes a significant number of potential consumers.

Market profile - an analysis of the characteristics of people that constitute the market for a transportation product or service.

Market research - the application of behavioral analysis to identify the service attributed that most strongly influence the decisions of different groups.

Market segment - a portion of the population that has similar socio-economic and other demographic characteristics.

Market share - the percentage of a transportation market controlled by a particular supplier.

Minor Civil Division - A primary political and administrative subdivision of a county. MCD's are typically known as townships, cities or communities.

Modal split - the proportion of total person-trips that uses each of the various specified modes of transportation.

Mode - a means of travel; e.g., automobile, transit or walking.

Off-peak - a period of day or night during which travel is generally low and a minimum of transit service is operated.

Origin - the location of the beginning of a trip or the zone in which a trip belongs.

Peak - the hours, usually in the morning or afternoon, when demand for transportation service is heaviest.

People mover - a transportation system (e.g., continuous belt system, "free" vehicle, or automated guideway transit) that provides short-haul collection and distribution services.

Planning, sketch - a transportation analysis procedure that is simpler, faster and cheaper than using a full conventional system and that typically requires less detailed input and provides less specific output.

Population - The number of inhabitants of an area.

Priority lane - a lane reserved for high occupancy vehicles; i.e., buses, car or vanpools.

Reverse commute - movement from a residence to a place of employment in a direction opposite to the main flow of traffic, such as from the central city to a suburb.

Rider, captive - a person limited by circumstances to use one mode of transportation.

Rider, captive transit - a person who does not have a private vehicle available or cannot drive for any reason and who must use public transportation in order to travel.

Rider, choice - a rider who has a variety of modes of travel available and selects one to use.

Right-of-Way, exclusive transit - a right-of-way that is fully grade separated or access controlled and is used exclusively by transit.

Route - the geographical path followed by a vehicle or traveler from start to finish of a given trip.

Scheduling - analyzing demand to determine service frequency; combining work pieces to form operator sign-ups and runs along predefined routes.

#### Service:

Carpool - a prearranged ride-sharing service in which a number of people travel together on a regular basis in a car usually owned by the driver, in which individuals usually alternate driving and riding.

Charter bus - public transportation service on an exclusive basis, rendered in a vehicle that is licensed to render that service and engaged at a single price for the trip or period of time agreed on by the operating licensee, its agent or the chauffeur and the charterer.

Circulator (Short Haul) - transit service operated on a short route, usually in a downtown or other densely populated areas.

Conventional (Regular Route) - all services which operate on a fixed route and a fixed schedule.

Demand-Responsive - a transportation service characterized by flexible routing and scheduling of relatively small vehicles to provide door-to-door or point-to-point transportation at the user's demand.

Dial-a-Ride - a demand-responsive service whereby passengers must "call ahead" (usually 24 hours) to prearrange their trip which is shared by others to different origins and destinations. Examples include dial-a-bus, dial-a-van and dial-a-car.

Express - service that provides higher speeds and fewer stops than are generally found on other portions of the system or on the same route in local service.

Feeder - local transit service that picks up and delivers passengers to a rail rapid transit station or express bus stop or terminal.

Jitney - public transportation on a nonexclusive basis, rendered in a vehicle that is licensed to render that service at a fixed rate or fare for each passenger on a fixed route along a public way, from which it may deviate from time to time in response to a demand for its service or to take a passenger to his or her destination, thereafter returning to its route.

Kiss and Ride - the procedure whereby a transit or commuter passenger is driven to their first transit terminal point in a private vehicle by another person who then drives the vehicle away from the terminal to another destination.

Limited - a transit service that operates only during a certain portion of the day or in a specified area or that services only certain segments of the population.

Line haul - transit operations (generally express) along a single corridor or variety of corridors.

Local - a type of operation that involves frequent stops and consequent low speeds, the purpose of which is to deliver and pick up transit passengers as close to their destinations or origins as possible.

Many-to-few - a service that picks up passengers at many different origins and delivers them to a few destinations.

Many-to-many - a service that picks up passengers at many different origins and delivers them to many different destinations within the service area.

Many-to-one - a service that collects passengers from many origins and delivers them to a specific point; e.g., an office building, train station, or bus stop.

One-to-many - a service that distributes passengers from one point of origin to many destinations.

Paratransit - forms of public transportation services that are more flexible and personalized than conventional fixed-route, fixed schedule service but not including such exclusory services as charter bus and exclusive-ride taxi; vehicles are usually available to the public on demand, by subscription, or on a shared-ride basis.

Park and Ride - a procedure that permits a patron to drive a private automobile to a transit station, park in the area provided for that purpose, and ride the transit system to his or her destination.

Point deviation - public transportation service in which the transit vehicle is required to arrive at designated transit stops in accordance with a prearranged schedule but is not given a specific route to follow between these stops; it allows the vehicle to provide doorstep service for those who request it.

Route deviation - public transportation on a nonexclusive basis that operates along a public way on a fixed route from which it may deviate from time to time in response to a demand for its service or to take a passenger to a destination, after which it returns to its route.

School bus - public transportation on a nonexclusive basis that, for direct or indirect compensation, transports children to any regularly conducted public or private school or school-related activities.

Shuttle - a transit service operated on a short route.

Skip-Day - transit service which is provided on alternate days in alternate communities bases on the same route and the same loading points.

Skip-stop - service in which alternate vehicles stop at alternate loading and discharging points on the same route.

Subscription bus - a service in which routes and schedules are prearranged to meet the travel needs of riders who sign up for the service in advance; the level of service is generally higher than that of regular passenger service (fewer stops, shorter travel time, and greater comfort), and the buses are usually obtained through charter or contract arrangements.

Subscription van - service like that provided by a subscription bus, except that the van may be privately owned, leased from a public or private company, or provided by the employers of the van riders; the driver is usually a member of the vanpool.

Shared ride - a trip, other than by public transit, on which the passengers enter at once or more points of origin and disembark at one or more destinations and for which each pays an individual fare.

Vanpool - a prearranged ride-sharing service in which a number of people travel together on a regular basis in a van, which may be a company-sponsored van that has a regular driver.

Standard Metropolitan Statistical Area (SMSA) - A large population nucleus and nearby communities which have a high degree of economic and social integration with that nucleus. To be designated as an SMSA, an area must meet one or both of the following criteria:

- (1) Include a city with a population of at least 50,000 within its corporate limits, or
- (2) Include a Census Bureau - defined urbanized area (which must have a population of at least 50,000) and a total SMSA population of at least 100,000.

An SMSA includes a city and, generally, its entire UA and the remainder of the county or counties in which the UA is located. An SMSA also includes those additional outlying counties which meet specified criteria relating to metropolitan character and level of commuting of workers into the central city or counties.

Street:

Arterial - a major thoroughfare, used primarily for through traffic rather than for access to abutting land, that is characterized by high vehicular capacity and continuity of movement.

Collector-distributor - a street that gathers and disperses traffic between the larger arterial highways and less important streets, that has intersections at grade, and that is equally important in providing traffic movement and access to abutting properties.

Local access - a public street that provides access for pedestrians and vehicles to properties that front on it, but is not intended for through traffic.

Major - an arterial highway that has intersections at grade and gives direct access to abutting property and whose geometric design and traffic control measures are used to expedite the safe movement of through traffic.

Mixed mode - carrying mixed traffic; e.g., having to exclusive bus lanes or priority lanes for buses.

Transit - a street reserved only for transit vehicles.

Traffic, average daily (ADT) - the average number of vehicles that passes a specified point during a 24-hour period.

Transit, public (mass transit) - passenger transportation service, usually local, that is available to any person who pays a prescribed fare; it operates on established schedules along designated routes with specific stops.

Transit dependent - having to rely on public transportation to meet one's travel needs.

Transit system - the facilities, equipment, personnel, and procedures needed to provide and maintain mass transportation service to the public.

Automated guideway (AGT) - an advanced transportation system in which automated, driverless vehicles operate on fixed guideways with exclusive right-of-way.

Bus rapid - a bus operation that is generally characterized by operation on an exclusive or reserved right-of-way that permits high speeds and may include reverse-lane operations on freeways.

Commuter rail - the portion of passenger railroad operations that carries passengers within urban areas but that differs from rail rapid transit in that the passenger cars are heavier, the average trip lengths are longer, and the operations are generally run by railroad companies as part of their overall service.

Continuous - a system that provides continuous movement, as on a moving belt; the whole system or portions of it may operate at variable speeds.

Fixed-guideway - a transit system that consists of an exclusive guideway and vehicles that cannot operate off the guideway.

Group rapid (GRT) - an automated guideway system that has either on-line or off-line stations and vehicles that carry 6 to 100 passengers and may combine to operate as a single unit (train).

Light-rail (LRT) - an urban transportation system that uses electrically powered rail cars operating singly or in short trains on fixed duo-rail guideways, may be grade separated, and load passengers from low or medium-height platforms.

Light-rail rapid (LRRT) - a light rail transit system that operates on grade-separated right-of-way.

Personal rapid (PRT) - an automated guideway transit system that uses small vehicles (two to six passengers) operating under computer control between off-line stations to provide demand-responsive service (except, perhaps, during peak periods) with headways of 3 s or less.

Rail - a rail system operated within urban areas on exclusive (or nearly exclusive) rights-of-way, whether at surface level or above or below ground, including light-rail and rail rapid transit systems but not commuter rail transit or automated guideway systems.

Rail rapid - a transit system that uses high-speed passenger rail cars operating singly or in trains on fixed rails in exclusive rights-of-way in underground tunnels, on elevated structures, in open cuts, or at surface level with very few, if any, grade crossings (at which rail traffic has the right-of-way) and that generally serves one contiguous urban area; also called metro.

Rapid - a high-speed rail or bus service that operates on exclusive rights-of-way over long distances with few stops.

Shuttle - a transit system that is characterized by a back-and-forth operation, usually over a short distance, and that may reverse its direction of travel rather than turn around.

Shuttle-loop (SLT) - an automated guideway transit system in which vehicles (which may operate separately or in trains) operate along fixed shuttle or loop guideways with few or no switches and that usually has on-line stations.

Transportation, urban public - includes both public transit and paratransit.

Transportation system - a system that provides for the movement of people and goods.

Transportation system management (TSM) element - the portion of the transportation improvement program that outlines non-capital-intensive steps that will be taken to improve the transportation system.

Transportation to Work, Means of - The principal means of travel or type of conveyance usually used in traveling from home to work. Major categories include:

Private Vehicles: cars (including station wagons and company cars), trucks (including pickup trucks and small panel trucks); and vans with passenger seats and side and/or rear windows. Two types of travel are included:

1. Drive alone: includes persons who usually drove alone as well as persons who were driven to work by someone who then drove back home or to a non-work destination.
2. Carpool: Persons who share driving, drive others only, or ride as a passenger only.

Public Transportation: Buses or streetcars, railroads (including commuter trains), subway or elevated (rapid transit operating on its own right-of-way underground, on the surface or elevated), and taxicab.

Other Means: Motorcycles, bicycles, ferryboat, airplane, and persons who walked to work and used no other means of transportation.

Travel Time to Work - The usual number of minutes spent in traveling from home to work (one way).

Trip - 1. A one-way movement of a person or vehicle between two points for a specific purpose. 2. A mechanical lever or block signal that, when in the upright position, activates a train's emergency braking system.

External-external - a trip that has both its origin and destination outside the study area but that involves travel through the study area.

External-internal - a trip that has either its origin or destination inside the study area.

Home-based - a trip that has either its origin or destination at the residence.

Inbound - a trip into the central business district.

Internal-internal - a trip that has both its origin and its destination inside the study area.

Interzonal - a trip that involves travel between two zones.

Intrazonal - a trip that has both its origin and its destination in the same zone.

Linked (linked journey) - a trip from the point of origin to the final destination, regardless of the number of vehicles used.

Non-home-based - a trip that has neither its origin nor its destination at the home.

Outbound - a trip out of the central business district.

Person - a trip made by a person by any mode or combination of modes for any purpose.

Round - the movement of a person or a vehicle from a point of origin to a destination and then back to the same point of origin.

Unlinked - a trip made in a single vehicle.

Vehicle - the one-way movement of a vehicle between two points.

Trip assignment - a process by which trips described by mode, purpose, origin, destination, and time of day are allocated among the paths or routes in a network according to one of a number of flow-distribution models.

Trip end - a trip origin or a trip destination.

Trip generation - the determination of the number of trips that have their origin or destination in a specified location or area.

Trip generator - a point from which trips are produced.

Trip production - the number of trips that have their origin or destination at a specified location or area.

Trip purpose - the primary reason for making a trip.

Urban and Rural - As defined by the Census Bureau, the urban population comprises all persons living in an urbanized area and in places of 2,500 or more inhabitants outside UA's. The rural population consists of everyone else.

Urbanized Area (UA) - A population concentration of at least 50,000 inhabitants, generally consisting of a central city and the surrounding, closely settled, contiguous territory (suburbs). The UA criteria define a boundary based primarily on a population density of at least 1,000 persons per square mile, but also include some less densely settled areas if they are within areas of dense urban development.

Vehicle, high-occupancy (HOV) - a passenger vehicle that carries two or more persons.

Vehicle Occupancy - The number of people, including the respondent, who usually rode together to work in a car, truck or van. Riders who rode to school or some other non-work destination were not included.

Zip Code Area - An area established by the U.S. Postal Service for delivering mail. Zip code boundaries do not generally respect political or statistical boundaries unless the boundaries are convenient for mail delivery.

Zone, traffic assignment - a division of a study area that is represented by a centroid and used for traffic assignment purposes.

Sources: Glossary of Urban Public Transportation Terms, Transportation  
Research Board Special Report 179.

1980 Census of Population and Housing User's Guide, Part B.  
Glossary.