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# *Transit 2020*

## *Master Plan*

*Part 2*



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# Metropolitan Council

Mears Park Centre, 230 East Fifth Street, St. Paul, Minnesota 55101

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The mission of the metropolitan Council is to improve regional competitiveness in the global economy so that this is one of the best places to live, work, raise a family and grow a business.

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General phone	651 602-1000
Regional Data Center	651 602-1140
TTY	651 291-0904
Metro Info Line	651 602-1888
E-mail	<a href="mailto:data.center@metc.state.mn.us">data.center@metc.state.mn.us</a>
Web site	<a href="http://www.metrocouncil.org">www.metrocouncil.org</a>

## February 1, 2000

Publication no. 35-00-003B

Printed on recycled paper with at least 20% post-consumer waste

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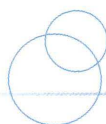
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# Introduction

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## Purpose

Transit 2020 is the Regional Transit Master Plan prepared by the Metropolitan Council at the direction of the 1999 Minnesota Legislature in Chapter 473, Section 45, as follows:

*A regional master plan for transit must be developed by the metropolitan council, in consultation with the commissioner of transportation and the regional railroad authorities in the metropolitan area. The plan must be completed for presentation to the legislature by February 1, 2000. The plan must include bus and rail development and must be balanced. It must include bus, busway, and light rail transit investments based on:*

- (1) population density;*
- (2) employment concentrations and job density;*
- (3) transit dependent segments of the population;*
- (4) redevelopment and reinvestment;*
- (5) opportunities in the core of the region; and*
- (6) adequacy of existing transportation corridors.*

This document describes the transit strategies, plans and implementation program for the region's future transit system. Part 1 (Executive Summary) and Part 2 constitute the Regional Transit Plan directed by the legislation. The first major section, "The Mobility Challenge," discusses background trends that affect travel demand and patterns. "The Existing System" describes the various transit operations in the region, with a particular focus on Metro Transit. The section "2020 Transit System" describes the core plan in detail.

## Support for Smart Growth

Transit will play a key role in helping local communities shape new development and redevelopment based on Smart Growth principles, providing options and choices in transportation and housing. In turn, Smart Growth encourages and provides incentives for transit- and pedestrian-friendly design. The goals of Smart Growth are to:

- Maximize economic opportunity for all while protecting and enhancing the region's assets - healthy communities, clean air and water, and unique natural, cultural and historical areas.
- Manage natural resources and agricultural land to ensure they are sustained for future generations.
- Be fiscally prudent by keeping down public costs.

In working toward these goals, Smart Growth efforts will draw on several basic guidelines:

- Stewardship – using land and natural resources wisely to sustain them for the future.
- Efficiency – making more efficient, integrated public investments in transportation, schools, utilities, information infrastructure and other public services.
- Choice – giving communities Smart Growth options and choices.
- Accountability – reinforcing responsibility and accountability for development decisions.

Pursuing Smart Growth in combination with transit initiatives will require coordination of public investments in transportation, land use, housing and public facilities. By maintaining and improving existing public investments, the region can avoid unnecessary public spending and support economic growth.

### **Regional Transit Goal**

The goal of this plan is to develop a 2020 regional transit system for the Twin Cities metropolitan area that:

- Doubles the capacity of the bus system, the backbone of the transit system;
- Includes a network of dedicated transit corridors; and
- Produces a measurable impact on fostering more efficient use of land and public infrastructure – otherwise known as "Smart Growth."

The 2020 transit system will be capable of carrying twice the current number of rides, providing high-quality, easy-to-use service. This is the equivalent of capturing 10% of the travel-demand growth in the region over the next 20 years.

*The bus system will remain the foundation of future transit services.*

- Service will be greatly expanded and reorganized to better meet customer needs and promote more efficient use of land and public facilities along Smart Growth principles. The Metro Transit vehicle fleet and related public and support facilities – including garages, transit stations and park-and-rides – will be doubled.
- Local routes will benefit from increased frequency, greater coverage and restructuring using a grid-style network, rather than the current radial pattern oriented to the downtowns.
- "Arterial corridors" – selected high-traffic urban and suburban streets – would receive the highest level of local bus service – very frequent, 7-day, up-to-24-hour service, with highly visible facilities at major stops.

*A network of dedicated transit corridors will be developed.*

- These transitways – consisting of bus-only shoulders, high-occupancy vehicle (HOV) lanes, exclusive busways, LRT and commuter rail – will provide a transit-time advantage over single-occupant autos, improve transit service reliability and boost the potential for transit-oriented development.
- By 2010, these transitways would include 2 exclusive busways to Minneapolis and St. Paul, 2 LRT lines (Hiawatha and a second line to downtown Saint Paul) and at least 1 commuter rail line coming from outside the region.
- In addition, the current network of bus-only shoulders would be significantly expanded in congested highway corridors and upgraded to improved standards, including wider lanes. Supporting these corridors would be extensive park-and-ride facilities, ramp meter bypasses and transfer points.

*Smart Growth development will be fostered along dedicated transit corridors.*

- Linked to high-quality transit service, Smart Growth development will include a mix of housing, retail, offices and open space in a pedestrian-friendly environment.
- Transit's support of Smart Growth will strengthen the region's economic competitiveness by maintaining mobility within the area, crucial for commuter travel and goods movement. It will also give people more choices in the way they travel around the region and in their communities.

*Other bus services will also be expanded.* These include the suburban opt-out systems, Metro Mobility and the small urban-rural systems, along with related support facilities.

## **Regional Benefits**

The future transit system will save public facility costs and reduce auto trips, congestion and land consumption by changing land use patterns.

The Twin Cities area is facing rapid growth, mounting congestion and limited new freeway facilities.

- A strong transit system – as proposed in this plan – will ensure the area's continued economic vitality, support Smart Growth development and provide significant savings to the region in local infrastructure, congestion, travel reduction and land consumption.
- These savings will be achieved with a combination of expanded, improved transit service and higher development densities along exclusive transit corridors.

*Savings in local roads and utilities are estimated at \$2 billion.*

- \$1.48 billion would be saved because of the reduced need for water lines, sewer lines and storm water facilities for concentrated development along transit corridors.
- \$538 million in savings would result from the reduced need for local roads because of more compact development patterns.

*The savings in congestion costs would total \$2 billion.*

- More compact development patterns along transit corridors with enhanced transit services would slow the growth in vehicle-miles traveled and congestion on roadways by at least 10%, resulting in an annual average saving of \$50 million and a 20-year total saving of \$1 billion. Congestion costs an estimated \$1 billion now and is estimated to double by 2020.
- It would cost an estimated \$1 billion to build highway improvements to relieve unacceptable congestion in the 6 proposed major transit corridors. The transit improvements proposed by this plan will lessen the need for these highway investments.

*Travel, fuel consumption and pollution would be reduced.*

- 245,000 daily auto trips would be eliminated through expanded transit service and changes in development densities along transit corridors. Transit improvements would be responsible for more than 80 percent of this reduction – the equivalent of one or two lanes of traffic in each congested corridor.
- 550 million miles in travel per year would be cut.

## Introduction

- 27 million gallons of fuel would be saved annually.
- 6,600 tons of carbon monoxide would be eliminated per year.
- The region's dependency on sometimes volatile energy supplies would be reduced, and greenhouse effects would diminish.

Higher development densities would reduce auto trips per person by an estimated 30% and produce 100% more transit trips. If just 10% (27,000 units) of the households the region gains between 2000 and 2020 develop at higher densities, it would result in an estimated 45,000 fewer daily auto trips and 17,000 more transit trips.

*Affordable housing would increase and land consumption would slow.*

- 7,500 additional affordable housing units would be built in transit corridors by 2020.
- 110,500 acres (173 square miles) of rural land would be saved through more compact development patterns along transit corridors.

### **What Needs to Be Done?**

To meet this goal, the region will need to:

- Restructure and double the Metro Transit bus system, including the vehicle fleet as well as related public and support facilities;
- Expand the other bus services (that is, the opt-out systems, Metro Mobility and small urban/rural systems) and support facilities;
- Develop arterial transit corridors on high-volume urban and suburban streets;
- Expand the network of bus-only shoulders in congested highway corridors;
- Expand and upgrade the region's high-occupancy vehicle lanes; and
- Develop dedicated transitways, to include exclusive busways, light rail transit and commuter rail.

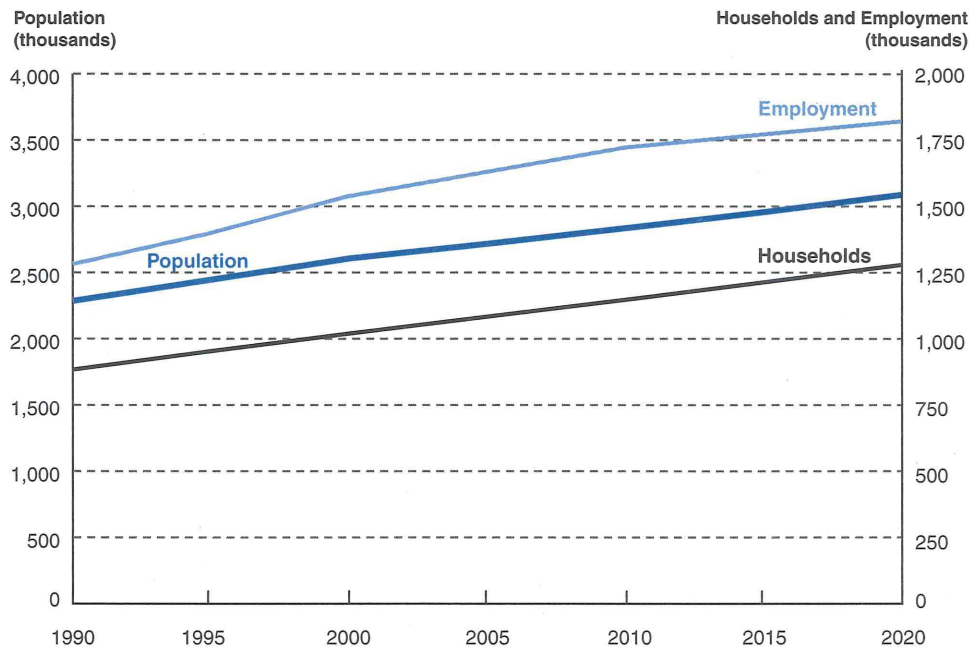
# The Mobility Challenge

The region is expected to add 650,000 people, 330,000 households and 410,000 jobs between 1995 and 2020 – growth that will fuel future travel demand and increase current levels of congestion.

Increasing travel demand can be traced to a number of factors. The average number of vehicles per household has increased as the number of multiple-worker households has grown. Job concentrations are increasingly dispersed throughout the region. The region's land use pattern is more spread out. And the trend in past years has been an increase in people driving alone.

All these factors contribute to an increasing amount of travel, measured as total vehicle-miles traveled (VMT). VMT is expected to grow from more than 57 million annually in the year 2000 to 74 million by 2020, a 30 percent increase.

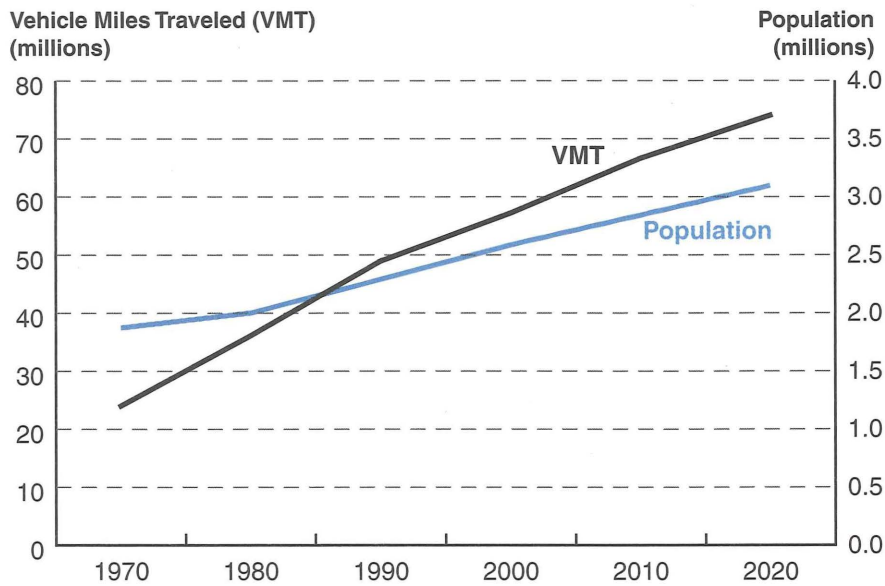
## Forecasted Growth in Population, Households and Employment 2000-2020



	Population	Households	Employment
1990	2,288,721	875,504	1,273,000
1995	2,448,967	945,027	1,389,766
2000	2,608,980	1,011,050	1,527,070
2010	2,838,890	1,138,120	1,709,920
2020	3,091,390	1,269,320	1,808,670



### Daily Vehicle Miles Traveled, 1970 – 2020



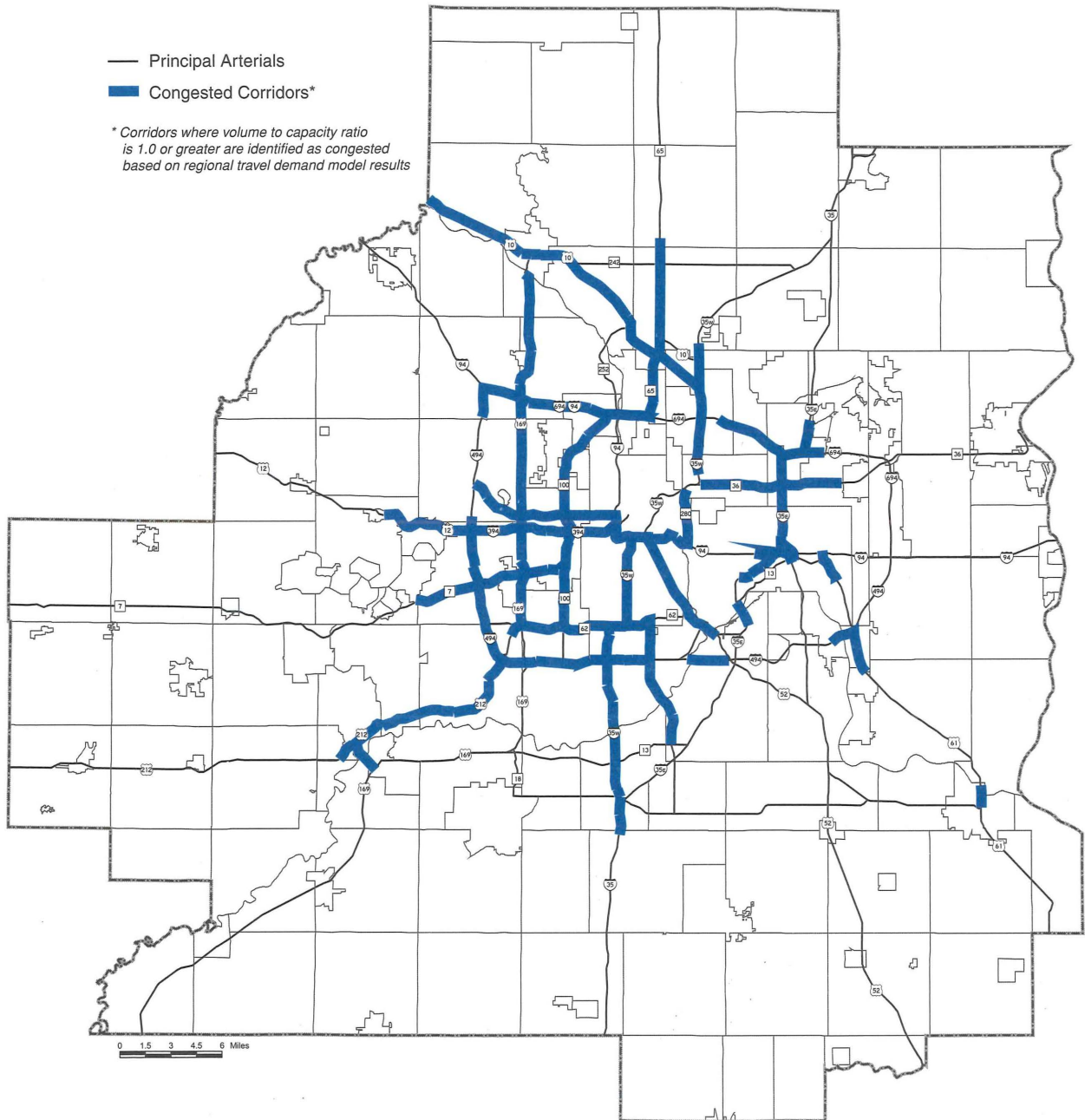
Year	VMT	Population
1970	24,000,000	1,874,670
1980	36,100,000	2,002,000
1990	48,922,671	2,288,721
2000	57,195,148	2,586,340
2010	66,630,512	2,842,770
2020	74,014,160	3,097,130

With expected increases in travel demand, congestion will increase and accessibility will decline. Fewer new metro highways are being built so road capacity will not increase to meet travel demand. Even if funds were unlimited, the social and environmental constraints are too great to continue with large highway expansion programs to escape congestion.

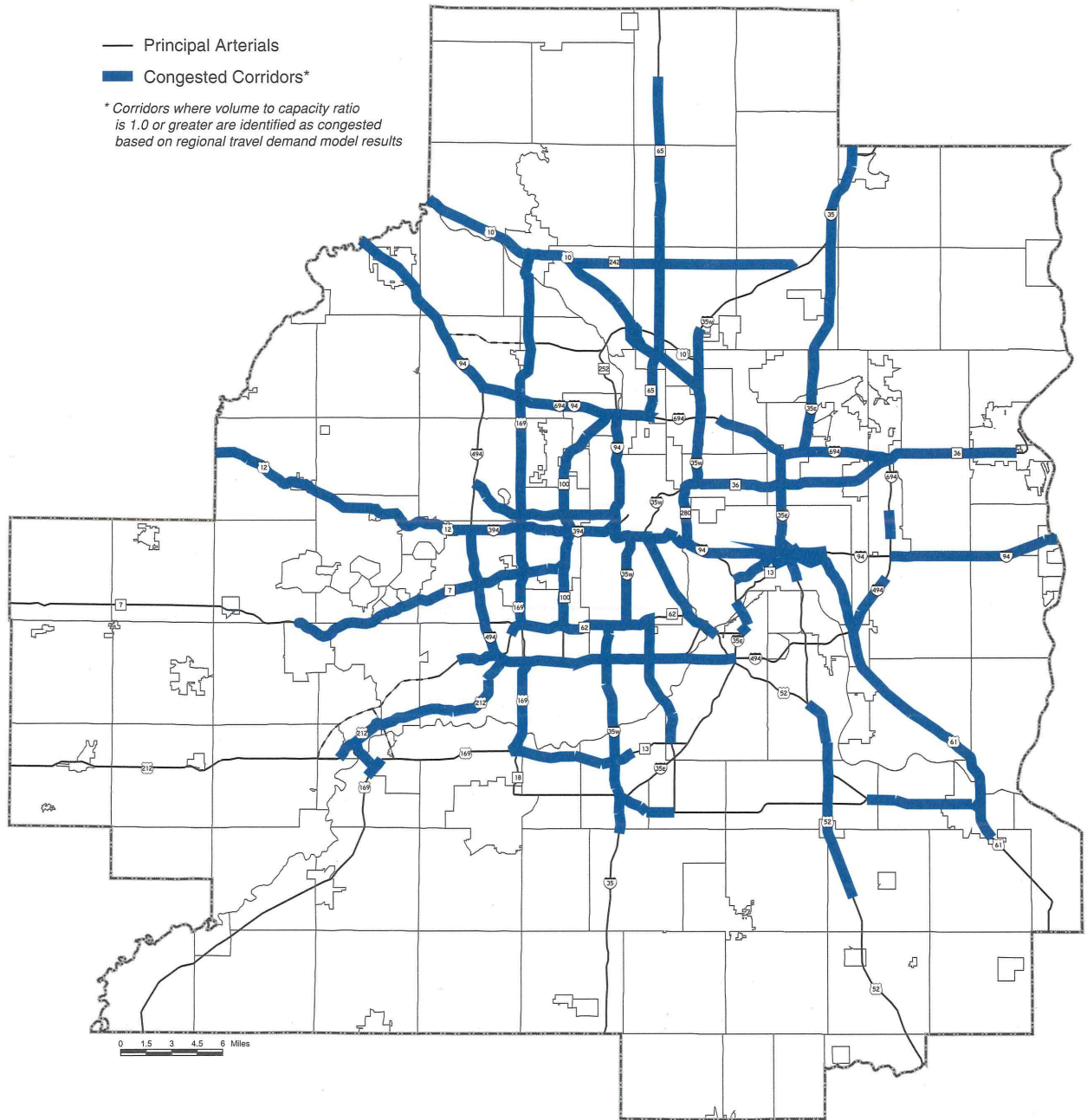
According to the *1999 Annual Mobility Report*, produced by Texas Transportation Institute, congestion on metro area freeways and arterial streets has worsened measurably. In 1990, 25% of the area's freeway lanes were congested; by 1997, the figure doubled, to 50%. The percent of congested lanes of arterial streets also edged upward, from 50% to 55%.

The extent of future congestion expected in the region is shown on the following two maps. The first shows congestion on the freeway system during the afternoon peak period as of 1995. The second map shows anticipated freeway congestion in the year 2020.

### 1995 PM Peak Congested Corridors



## 2020 PM Peak Congested Corridors



# The Existing System

## Transit Systems in the Metropolitan Area

In a broad sense, the term transit applies to all forms of sharing rides, regardless of whether the service is provided by public or private operators, organizations or individual vehicle owners, or whether the ridesharing arrangements are formal or informal. Most transit rides, however, are provided by formal transit systems, at least during the morning and afternoon peak travel periods.

**Metro Transit**, the transit operating division of the Metropolitan Council, is the dominant transit system in the area. It provides almost two-thirds of the revenue hours of service (61.5%) and carries 92% of the area's transit users. In addition, it operates service under contract for selected opt-out systems.

**Metro Mobility**, also a Metropolitan Council operating unit, provides special demand-response service for people with disabilities through contracts with two private contractors and several county systems. It operates 16 percent of the revenue hours of service in the area and carries 1.4 percent of the area's riders. The service provided by Metro Mobility is required under the Americans with Disabilities Act (ADA). ADA requires comparable demand-response service to be provided for people who are not able to use regular-route service.

Five **opt-out systems** operate principally express commuter routes. These systems provide transit service for their respective communities. The opt-out systems are:

- Maple Grove Transit
- Minnesota Valley Transit
- Plymouth Transit
- Shakopee
- Southwest Metro

Twelve **private operators** operate subregional systems under contract to the Metropolitan Council. They comprise the following:

- Anoka Transit Redesign
- BE Line
- Route 477
- East Metro Transit Redesign
- Lake Area Bus Route 15
- North Suburban Lines
- Roseville Area Circulator
- South Washington County (HSI)
- St. Croix Valley Transit
- U or M Transit Service – Route 52
- Western Suburban – Route 55
- Westonka (SCS)

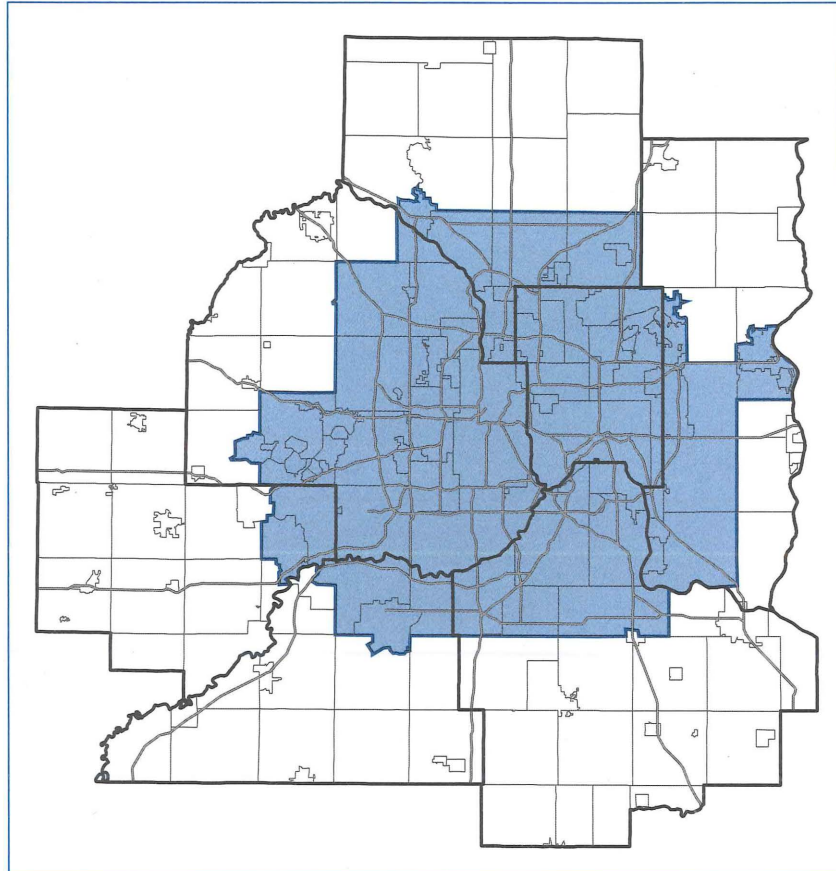
In addition, providers operate a number of individual routes under contract with the Council. Five **small urban systems** operate local transit service in their communities. They consist of:

- Hastings
- Hopkins
- Northeast Suburban Transportation
- St. Louis Park
- Lake Area Bus

## The Existing System

These systems operate within the region's Transit Service Area (Transit Taxing District), where a property tax levy is dedicated to support transit service. The Transit Service Area covers a large share of the seven-county area, as shown on the map below.

### Transit Service Area



Outside of the Transit Service Area, eight **rural systems** operate primarily demand-responsive service to meet the travel needs of these low-density areas and the outer portions of the Transit Service Area. Except for Anoka County Transit, the rural systems primarily serve elderly customers and people with disabilities. They include:

- Anoka County Transit
- Carver County
- DARTS (Dakota Area Resources and Transportation for Seniors)
- Mound-Westonka
- Scott County
- Senior Community Services – Delano
- Senior Transportation Program
- Washington County – Human Services, Inc

Under state legislation, the Metropolitan Council administers financial assistance to the private operators and community providers. The Council distributes state appropriations and/or regional property tax funds to these programs. The opt-out systems may elect to have the Metropolitan Council administer financial assistance to their respective systems.

## Types of Service

Various types of transit service are provided in the area – generally falling into five categories:

- **Urban local service** is fixed-route radial and crosstown bus routes that operate primarily in the central cities. Almost half of the revenue service hours in the area are operated on urban local routes. Over three-quarters of the area's transit users ride urban local routes.
- **Suburban local service** is fixed-route radial and crosstown bus routes that operate primarily in the suburban areas, carrying about 7% of all rides.
- **Express service** is peak-only and all-day bus routes that travel nonstop on highways for four or more miles. Express bus routes carry one in six transit riders.
- **General-purpose demand-response service** is paratransit service that is provided for the general public, typically in suburban areas, and carries less than 1% of all rides.
- **Americans with Disabilities Act (ADA) paratransit service** includes Metro Mobility and other services that fulfill the regional role of meeting federal law by providing accessible service for residents who are unable to use conventional bus services. It amounts to about 2% of all rides.

## Funding for Transit Region-wide

The level of funding support from local and state governments is a critical factor in the performance of public transportation. Local and state assistance per capita is a common measure of public commitment to adequate transit service.

In 1998, the Twin Cities area received about \$65.00 per capita in local and state assistance – \$55.00 per capita in operating assistance and \$10.00 per capita in capital assistance. These funding levels are well below the average of 13 comparable transit systems around the country, as the table below shows.

**Metro Transit Per Capita Funding  
Compared with Peer Transit Systems, 1998**

	Operating	Capital
Portland	\$105.22	\$82.88
Seattle	\$126.91	\$19.08
Pittsburgh	\$108.63	\$29.10
Houston	\$102.40	\$31.57
Cleveland	\$108.27	\$16.63
Peer Average	\$76.39	\$22.22
Baltimore	\$78.84	\$17.82
Dallas	\$50.81	\$34.48
Denver	\$52.92	\$24.82
Milwaukee	\$64.79	\$1.51
Twin Cities Metro Area	\$55.00	\$10.00
St. Louis	\$42.14	\$3.63
Cincinnati	\$41.29	\$4.36
Buffalo	\$34.42	\$0.76

## The Existing System

Fares paid by the region's transit riders cover 31.7 percent of transit operating costs. This compares with 26.1 percent at the average transit system in the region's peer group. The region ranks third highest in the peer group in terms of farebox recovery – the percentage of operating costs covered by passenger fares.

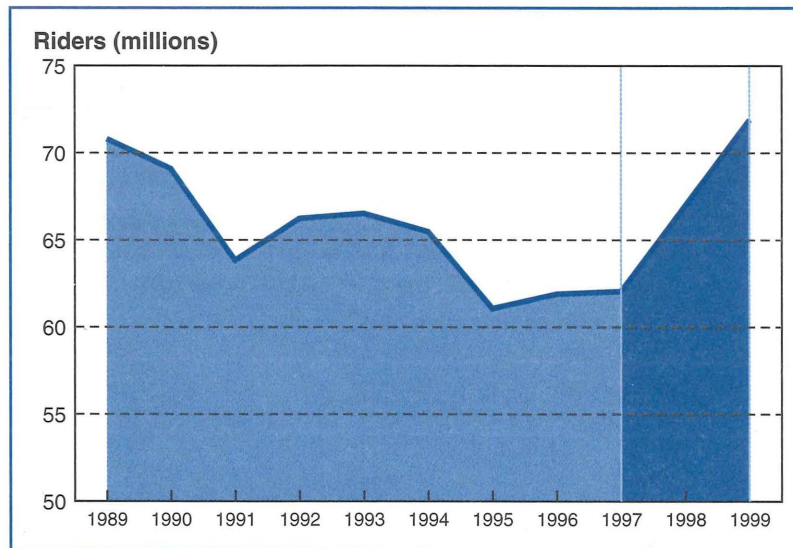
A significant portion of state and local funding for the Twin Cities region is derived from property taxes. Of the 13-member peer group, only the Seattle system is supported by a greater level of property tax funds per capita than Metro Transit. Property taxes are not a common mechanism for funding the capital and operating costs of public transportation. Dedicated sales taxes and general fund revenues are the sources of two-thirds of the local and state funding for transit at the average transit system in the region's peer group.

### Metro Transit

#### Ridership

Reversing a long-standing trend, Metro Transit ridership experienced sharp increases in 1998 and 1999 (see chart below). Metro Transit's ridership jumped 6.4% in 1998, the agency's greatest annual ridership increase in 20 years and another 8.9% in 1999. Metro Transit provided nearly 72 million rides in 1999, almost 6 million more than in the previous year.

Annual Metro Transit Ridership, 1989-1999

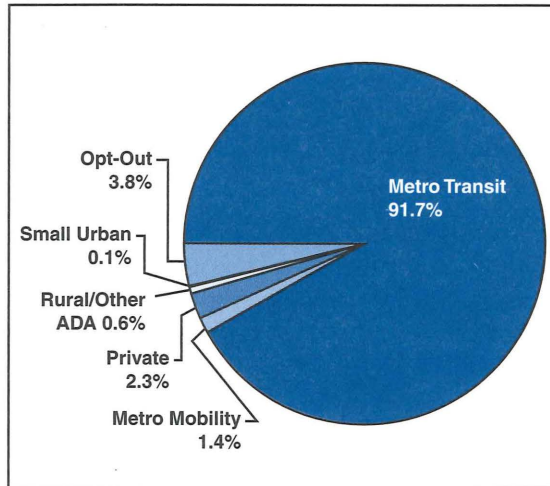


Since mid-1997, Metro Transit restored 24-hour service on key routes for the first time since the '60s, inaugurated express service from Woodbury to downtown Minneapolis and introduced limited-stop service along University Avenue. The agency also improved the quality and reliability of service as well as the cleanliness of its vehicles. It amended its transfer policy to include round-trip travel. Reduced revenue was offset by increased use by people running errands or attending medical appointments. Many of these improvements are aimed at enhancing transit service opportunities during the midday, evenings and weekends.

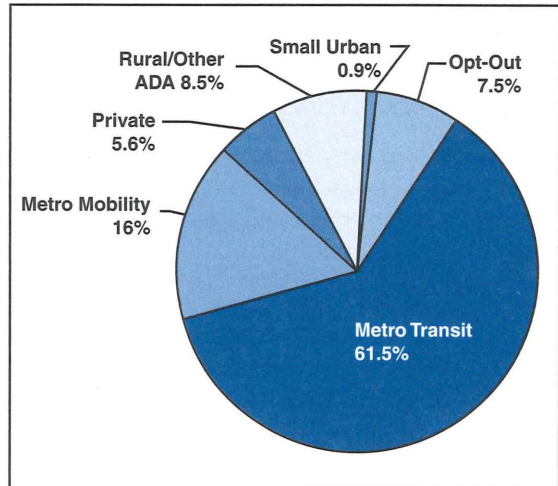
More than 80 percent of Metro Transit rides are to and from work, and the agency was successful in forging transit-promotion partnerships with the business community. Metro Transit also used a \$1.6 million federal grant to offer half-price bus passes to employers who enrolled in its TransitWorks program, increasing participation by more than 200 companies. Also, for the first time in nearly four years, Metro Transit launched a media campaign to promote transit.

Metro Transit is the dominant carrier of passengers – 92 percent of the regional total – and provides most of the revenue service hours – 62 percent (see charts below).

Percent of Passengers Carried, 1998



Percent of Transit Revenue Service Hours, 1998



### Metro Transit Routes and Service Miles

As of the end of 1998, the Metro Transit route system included the following:

- 118 total service routes
- 56 local bus routes
- 47 express bus routes
- 15 contract service routes

Miles of service totaled:

- 104,600 total scheduled vehicle-miles traveled on service routes per weekday
- 30,020,200 total bus miles per year

Hours of service totaled 2,172,000.

Metro Transit's vehicle fleet consisted of 915 active fleet vehicles (average age 6.0 years), including:

- 810 standard 40-foot transit buses in operation (of which 403 are lift equipped)
- 105 articulated, 60-foot transit buses in operation (all lift equipped)
- 777 peak bus requirement

### Metro Transit Productivity

Metro Transit service effectiveness improved 7.0% between 1996 and 1998, as measured by the number of passengers per revenue mile. This improvement was well above the average increase among seven comparable systems around the country.

#### Metro Transit Passengers Per Revenue Hour

	1996	1998
Metro Transit	36.5	39.1
Average of Comparable Systems	34.2	34.6



## Metro Mobility

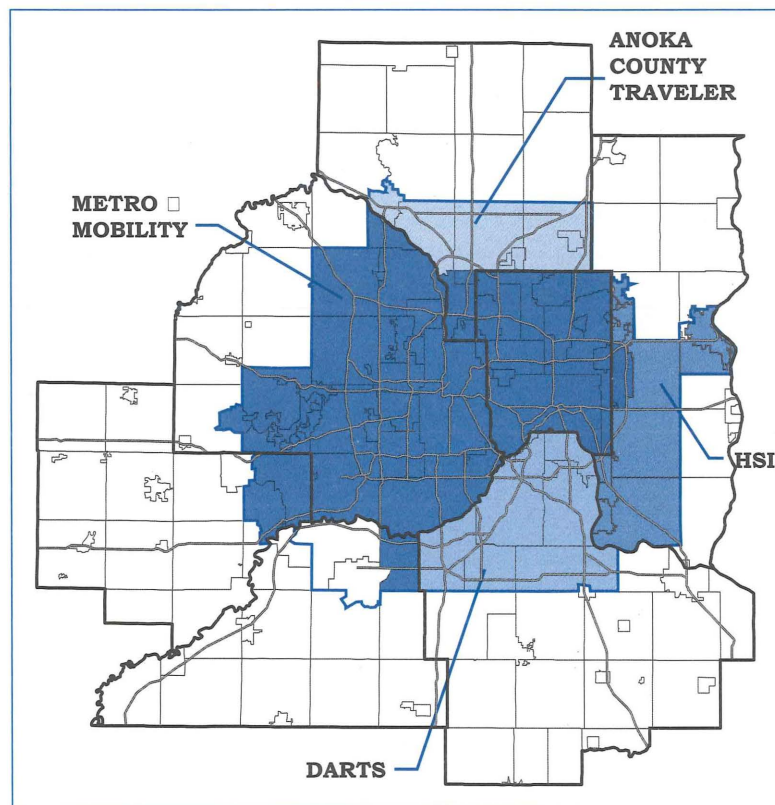
The federal Americans with Disabilities Act (ADA) requires that comparable, door-to-door paratransit service be provided for persons who cannot use the fixed-route system. Four programs provide ADA service in the seven-county metro area. They are Metro Mobility, Anoka County Traveler, DARTS (Dakota Area Resources and Transportation for Seniors) and HSI (Human Services Incorporated).

The total ADA service area includes 89 cities and townships covering approximately 1,056 square miles. Funding comes from state appropriations that are designated for Metro Mobility/ADA.

Metro Mobility is a service of the Metropolitan Council that provides public transportation for people with disabilities primarily in communities within Ramsey and Hennepin Counties. The Traveler provides ADA transportation service in Anoka County, DARTS in Dakota County and HSI in Washington County.

These three providers are often referred to as the county providers and are under contract with the Metropolitan Council. All three county providers coordinate transfers with Metro Mobility, allowing passengers to travel outside their home county service areas. ADA transit services are fully accessible, providing door-through-door assistance to passengers. Riders are certified to use the service and may schedule trips for any purpose.

## Transit Services for People with Disabilities



## Metropolitan Council's ADA Policy

The region's ADA program is designed to comply with six service criteria established by the U.S. Department of Transportation. The following table describes those criteria and the corresponding Metropolitan Council policy.

Service Criteria	Federal Requirement	Metropolitan Council Policy
1. Service Area	“...the basic service area is a corridor centered on the fixed-route and extending 3/4 of a mile to either side of the route.”	Service is available on a by-community basis. If fixed-route service is provided in a community, then that community received ADA service also.
2. Response Time	The regulations require that “next day service” be provided and that riders be permitted to place a trip up to 4 days in advance. If service is provided 7 days a week, reservations must be taken 7 days a week during hours comparable to normal office hours.	Reservations can be placed from 4 days in advance through same day. Reservations are taken each day from 6:00 a.m. to 5 p.m.
3. Fares	“Fares charged for complementary paratransit service can be no more than twice the far paid by a person without a disability on the fixed-route system.”	Currently the maximum fixed-route fare is \$2.00 during the peak and \$1.50 nonpeak. Metro Mobility fares are \$2.50 during peak and \$2.00 during nonpeak.
4. Trip Purpose	“Requests for all types of trip purposes must be accepted and handled on a equal basis.” Prioritizing trips is not permitted.	Reservationists do not ask for the trip purpose when scheduling a ride. There is no prioritizing by trip purpose.
5. Hours and Days of Service	“Complementary paratransit service must be offered during the same days and hours that the fixed-route system is in operation.”	Each ADA community is assigned one of the following service spans based on the level of fixed-route available: <i>24 hours; 4 a.m. – 2 a.m.; 5 a.m. – 11 p.m.; 5 a.m. – 7 p.m.</i> These hours are the same each day of the year.
6. Capacity Constraints	“This provision of the regulations prohibits public entities from limiting the amount of complementary paratransit service provided to ADA paratransit eligible persons.” A pattern or practice of denials indicates capacity constraints.	The ADA programs make every effort to provide all trips requested. The average trip denial rate is about 3% to 6%.

**ADA Ridership**

The Metro Mobility Service Center certifies all ADA riders for the region. Applicants self-certify by providing evidence that their disability prohibits them from being able to ride a fixed-route bus. Riders may schedule trips for any purpose on a first-come, first-served basis up to four days in advance. Currently there are approximately 24,000 certified riders in the metropolitan area. Of those, about 12,000 are active riders. The ADA programs currently provide nearly 1.2 million rides annually at a total operating cost of \$17.6 million (1998).

**ADA Infrastructure**

All programs use automated reservation, scheduling and dispatch software to provide service. Each program has a stand-alone system. Approximately 280 vehicles are deployed during the peak period to cover ADA ride requests. Metro Mobility operates 246 vehicles – 135 small buses and 16 sedans purchased by the Metropolitan Council through Regional Transit Capital bonds, and 95 contractor-owned vehicles. The county providers deploy the equivalent of 34 vehicles.

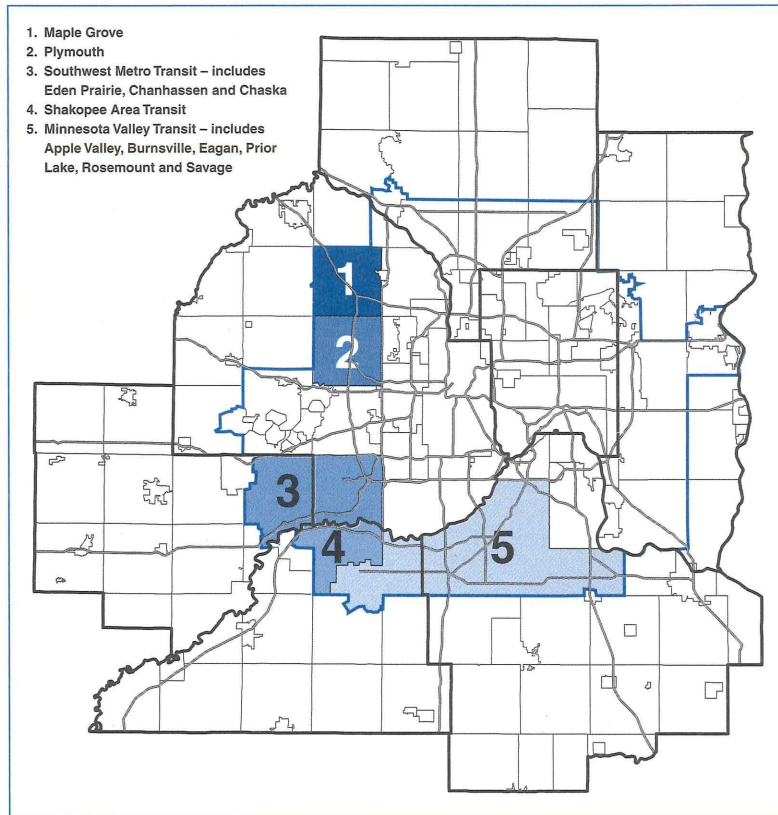
### Opt-Out Systems

The five opt-out systems operate in the Transit Service Area (see map below), providing valuable transit service to suburban residents in the metro area. From modest route structures at the beginning, they have evolved into major transit providers. They now provide 7.5% of the area's revenue service hours and carry 3.8% of the area's transit riders. As the following table shows, their ridership has increased dramatically in recent years, despite a decrease in operating costs over the same 1996-98 period.

#### Opt-Out Ridership

1996	2,349,217
1998	2,676,636
<i>Change</i>	<i>13.9%</i>

#### Opt-Out Transit Systems



#### Maple Grove Transit System

Beginning with three routes and a feeder shuttle in 1990, Maple Grove Transit System (MGTS) has expanded its offerings to include reverse-commute service, a new express route, restructuring of some existing routes, and dial-a-ride service. MGTS provides primarily express service to downtown Minneapolis but also neighborhood service throughout the city. Its operating costs in 1997 were \$1.68 million, with ridership of about 305,000.

**Plymouth Metrolink**

Since 1983, Plymouth Metrolink has provided commuter/reverse-commuter services between Plymouth and downtown Minneapolis. It also operates the Plymouth Flyer for seniors and people with disabilities, coordinated with nonprofit transportation services in Plymouth, and a dial-a-ride service. Operating costs in 1997 were \$1.96 million, with ridership of about 288,000.

**Southwest Metro Transit**

Southwest Metro Transit, established in 1986, serves the cities of Eden Prairie, Chanhassen and Chaska. Its provides peak-hour express service to downtown Minneapolis, as well as reverse-commute service, and fixed-route service to Southdale and Mall of America. Door-to-door telebus and local fixed-route service is also provided. 1997 operating costs totaled \$2.87 million, with ridership of about 453,000 passengers.

**Shakopee Area Transit**

Shakopee's transit program consists of a local dial-a-ride program serving primarily residents traveling within the city. The city also operates a commuter vanpool program, which offers trips to workers and shoppers traveling outside the city. In 1997, operating costs were about \$462,000 and ridership was approximately 57,000.

**Minnesota Valley Transit Authority**

Beginning service in 1991, Minnesota Valley Transit Authority (MVTA) provides fixed-route, van pool, car pool, summer dial-a-ride and flex-route services in Apple Valley, Burnsville, Eagan, Prior Lake, Rosemount and Savage. MVTA provides commuter service to downtown Minneapolis, downtown St. Paul, Mall of America, Bloomington, Edina, Northwest Airlines, the GSA building and the Veterans Administration complex. Total operating costs and ridership in 1997 were \$7.45 million and 1.34 million, respectively.

**Private Operators**

The 12 private operators provide 5.6% of the area's revenue service hours and carry 2.3% of the area's transit riders.

**Private System Ridership**

1996	1,225,828
1998	1,594,527
<i>Change</i>	<i>30.1%</i>

**Small Urban and Rural Systems**

The five small urban systems account for 0.9% of the area's revenue service hours and 0.1% of the area's passengers.

Reflecting the large, low-density areas they serve, the eight rural systems operate 8.5% of the region's revenue service hours, but carry only 0.6% of the area's passengers.

	<b>1996</b>	<b>1998</b>	<b>Change</b>
<b>Small Urban Systems</b>	104,779	92,280	-11.9%
<b>Rural Systems</b>	436,746	445,522	2.0%

### Transit Advantages (Team Transit)

Transit operations benefit from advantages provided on the region's roadways. Over the past eight years, Metro Transit and the Metropolitan Council, Mn/DOT and several cities and counties have worked together to develop transit advantages on the roadway system, such as bus-only shoulders, ramp meter bypasses, signal priority for buses and direct highway access for buses from park-and-ride lots. Other advantages include the bus lanes on the downtown streets and the University of Minnesota Transitway.

### Location of Bus-Only Shoulders

#### Location – On

Cedar Avenue  
 Cliff Road  
 Coon Rapids Boulevard  
 West River Road (N.B.)  
 3rd & 4th Street Ramps  
 Highway 5  
 County Road 15  
 Interstate-35E  
  
 Interstate-35W  
  
 Highway 36  
 Highway 47  
 Highway 61  
 Highway 65 (S.B.)  
 Highway 77  
  
 Interstate-94  
  
 Highway 100  
  
 Highway 169  
 Highway 252  
 Interstate-394  
 Interstate-494

#### Location – At

138th to 140th Street (both ways)  
 Interstate-35E to Nichols Road  
 Avocet to Mercy Hospital (both ways)  
 Millpond to Highway 169  
 Both ways  
 Prairie Center Drive to Market Boulevard (both ways)  
 Dunwoody to County Road 51  
 Highway 110 to Highway 13 (northbound)  
 Highway 36 to Cayuga Bridge (both ways)  
 26th to 60th Street  
 66th to 76th Street  
 Interstate-694 to 8th Street SE (both ways)  
 Interstate-35W to Interstate-35E (both ways)  
 37th Avenue to 85th Avenue (both ways)  
 Lower Afton to St. Paul Park (both ways)  
 89th Avenue to 85th Avenue  
 76th Street to Highway 62  
 Old Shakopee Road to TH 13 (both ways)  
 Interstate-35E to TH 13 (northbound)  
 Snelling Avenue  
 Brooklyn Boulevard (both ways)  
 Highway 61 to McKnight Street (both ways)  
 Mounds Boulevard to 6th Street (westbound)  
 Duluth Street to 36th Avenue  
 Excelsior Boulevard to 36th Street  
 Highway 55 to 36th Avenue N. (both ways)  
 Mississippi River to Interstate-694 (both ways)  
 West of Xenia to east of Highway 100  
 Highway 5 to East Bush Lake (both ways)

A total of 72 HOV ramp meter bypasses on Twin Cities area freeway entrances provide car poolers and buses direct access to area highways during peak travel periods. The bypasses are located on the most heavily traveled segments of the regional highway system, including I-94, I-394, I-35W, I-35E, I-694, I-494, and Highways 12, 169, 100, 62, 36, 212 and 77.

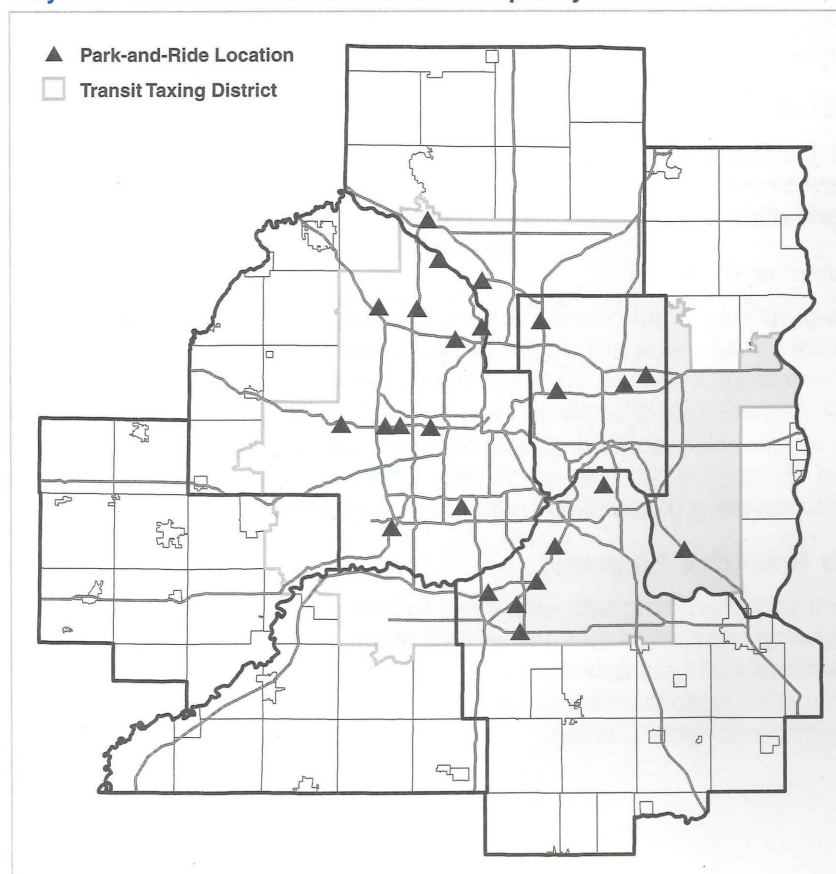
In addition, the region has two high-occupancy vehicle (HOV) lanes – on I-394 from Hwy. 101 to Washington Avenue in downtown Minneapolis and on I-35W from 76th Street in Bloomington to Hwy. 13 in Dakota County. Signal lights that reduce delay for scheduled transit service (called SynchroLight) have been installed at 16 intersections or interchanges in the area.

### Park-and-Ride Lots

There were a total of 135 active park-and-ride lots in the Twin Cities metro area, providing 9,465 spaces, as of the spring of 1998. However, not all lots are used to the same extent. Some park-and-rides are completely full or overflowing, while others are used much less and may need to be phased out. The more successful lots have locations near the beginning point of congestion or near a major roadway, have express bus service and have transit advantages available with the bus service. Transit advantages include access to high-occupancy vehicle lanes, bus-only shoulders along the route and ramp meter bypasses on freeway entrance ramps.

Of the 135 total, 18 lots were more than 100% full, with vehicles parked in areas not designated for park-and-ride purposes. Thirty-five park-and-ride lots were recorded as filled to at least 80% capacity, as shown in the map below. Another 26 lots were 70% or more full.

**Key Park-and-Ride locations at 80% Capacity or More**



### **Transit Incentive Programs**

A number of incentive programs, offered through metro area employers, are designed to make taking the bus or joining a car or van pool more attractive to both the companies and their employees.

#### **Metropass**

The Metropass program, which began in the fall of 1998, provides a deeply discounted annual bus pass purchased by employers for employees. Metropass has made a significant impact in ridership at participating companies, even though it has not resulted in an increase in system revenue. Because of the program's great success, the Metropolitan Council officially made Metropass a permanent program.

The program allows companies to subsidize annual bus passes for the employees by paying the equivalent fare currently paid by their employees who ride the bus. Metropass offers employees a free or low-cost alternative to driving to work, gives employers a tax deduction and helps reduce traffic congestion in the area. The pass, marketed as "the ultimate pass," is valid for 12 months, good for unlimited rides, seven days a week, 365 days a year. Employees receive a non-transferable photo ID that is accepted on any regional bus route.

Metropass provides a number of benefits to employers. They can use it as a tool to help recruit and retain employees in a competitive marketplace, especially for downtown businesses. Participation also decreases demand for parking space as more employees ride the bus to work. The program's annual distribution of passes and once a year payment makes administration easy.

For employees, Metropass provides a free or low-cost public transit pass, reduces commuting costs, saves money and hassles of parking, is a tax-free benefit from the employer, is easy to obtain and can be used anytime, not just for work trips. The Metropass program also includes a Guaranteed Ride Home program, which has been identified as a key element in increasing transit ridership. Approximately 20 area employers offer Metropass as part of their employee benefits program.

#### **TransitWorks**

Under the TransitWorks program, existing transit passes are sold to an employer at a discount. Employees can then purchase them on-site at the discounted rate, often on a pre-tax basis. Approximately 500 metro-area companies participate in the TransitWorks program.

#### **Commuter Check**

A new program, called Commuter Check, provides vouchers that employers can give their employees to purchase transit passes or pay for vanpool costs. A recent federal tax law change allows an employee to use Commuter Checks to purchase transit passes with a pre-tax salary deduction. Many employers also purchase Commuter Checks as an employee benefit provided in addition to existing compensation. Sales outlets will accept the vouchers, which will be coded for easy processing through the banking system. Employers can offer employees Commuter Checks as a tax-free employee benefit, allowing them to provide a competitive benefit at no significant cost.

#### **Other Incentive Programs**

Another way of working with employers to promote transit use is by providing new-hire packets that participating companies can use as part of their orientation process for new employees. Currently, approximately 331 companies distribute the new-hire packets, which include information on alternative transportation options and include a card that new employees can send in for a free 31-day bus pass or reduced-rate car pool parking.

## Rideshare Services

Metro Commuter Services, formerly known as Minnesota Rideshare, is the regional provider of travel-demand management services. Working closely with transportation management organizations (TMOs), transit agencies and cities in the region, Metro Commuter Services develops and delivers marketing and educational programs for commuters and employers in the metropolitan area. The region commits about \$850,000 annually to Metro Commuter Services programs.

Metro Commuter Services:

- Provides computerized ride-matching services for car and van pooling, transit and biking.
- Offers training to employers on commuter transportation products and services.
- Develops and administers commuter surveys for use in identifying transportation issues at employment sites.
- Assists employers in developing transportation plans to solve commuter problems at their work sites.
- Administers bike locker rental at area park-and-ride lots, and at various locations in both downtown areas and in some suburban locations.
- Provides several regional incentive programs such as Guaranteed Ride Home, Commuter Check, Super Pool, and "New Hire...New Ride."

Metro Commuter Services currently has more than 33,000 individuals and more than 3,500 companies in its database. It has nearly 6,000 registered car and van pools. The Regional Guaranteed Ride Home program has more than 17,000 registered participants.

Rideshare programs of Metro Commuter Services have resulted in a reduction of 41 million vehicle-miles traveled since 1996, a reduction in commuting costs of \$8.2 million and a decrease of 290 tons in carbon monoxide emissions.

**Number of Registered Car Pools, 1996-1999  
(1999 estimated)**

	1996	1997	1998	1999 (est.)
Number of Registered Pools (avg.)	4,724	5,164	5,600	5,950
Number of Pools Registered with Mpls. 3rd Ave. Distributor Garages (avg.)	2,278	2,472	2,680	2,850
Individuals in Guaranteed Ride Home Program	5,500	9,000	10,220	19,500



# Transit System for 2020

The 2020 transit system must be multi-modal, geographically balanced, cost-effective and supportive of Smart Growth. Facing rapid growth, growing congestion and limited prospects for new major freeways, the Twin Cities area will need a strong transit system to ensure its continued economic vitality. A transit system designed and scaled to various regional needs will promote mobility and access to opportunities around the region and support a strategy of Smart Growth, with its benefits of more efficient use of land and public infrastructure.

To achieve these objectives, this plan relies on five key transit strategies:

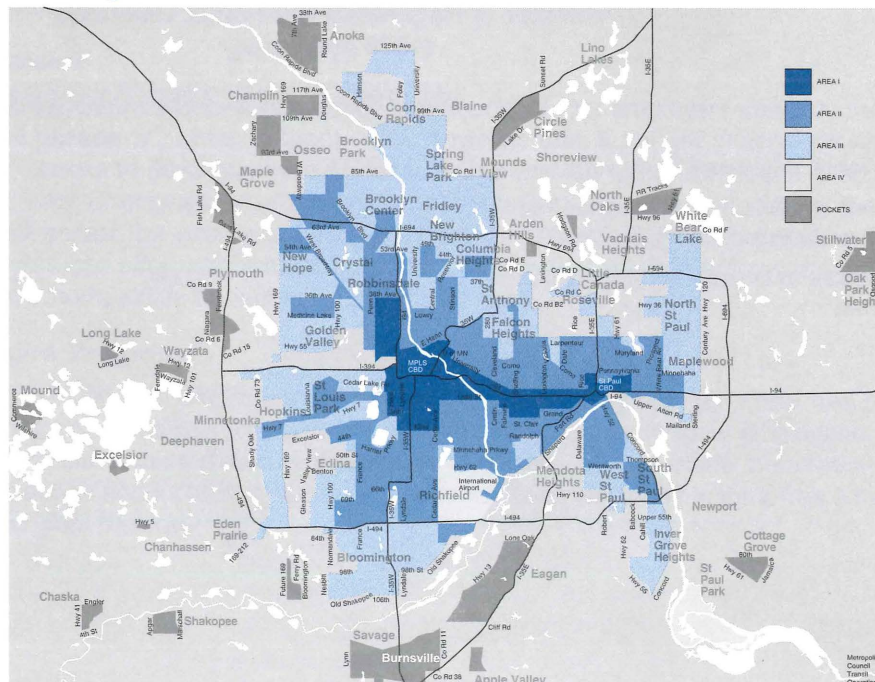
- Responding to various future transit needs in the region's different transit markets.
- Strengthening the current bus system, doubling its capacity by 2020.
- Doubling transit passenger and support facilities.
- Developing a network of dedicated transit corridors (consisting of bus-only shoulders, HOV lanes, busways, LRT and commuter rail).
- Promoting Smart Growth initiatives along dedicated transit corridors.

## Responding to Future Transit Needs

### Service Levels for a Variety of Transit Markets

The region has four distinct transit market areas shown on the map below – the core, inner urban/suburban, outer suburban and rural transit areas. Service will be reconfigured to better meet a range of needs based on these identified transit markets. Each market area has somewhat different needs as well as potential for transit usage, based primarily on population density and employment density but other factors as well. Two other factors help differentiate transit markets – trip volume and transit dependency. The following map shows existing transit market areas.

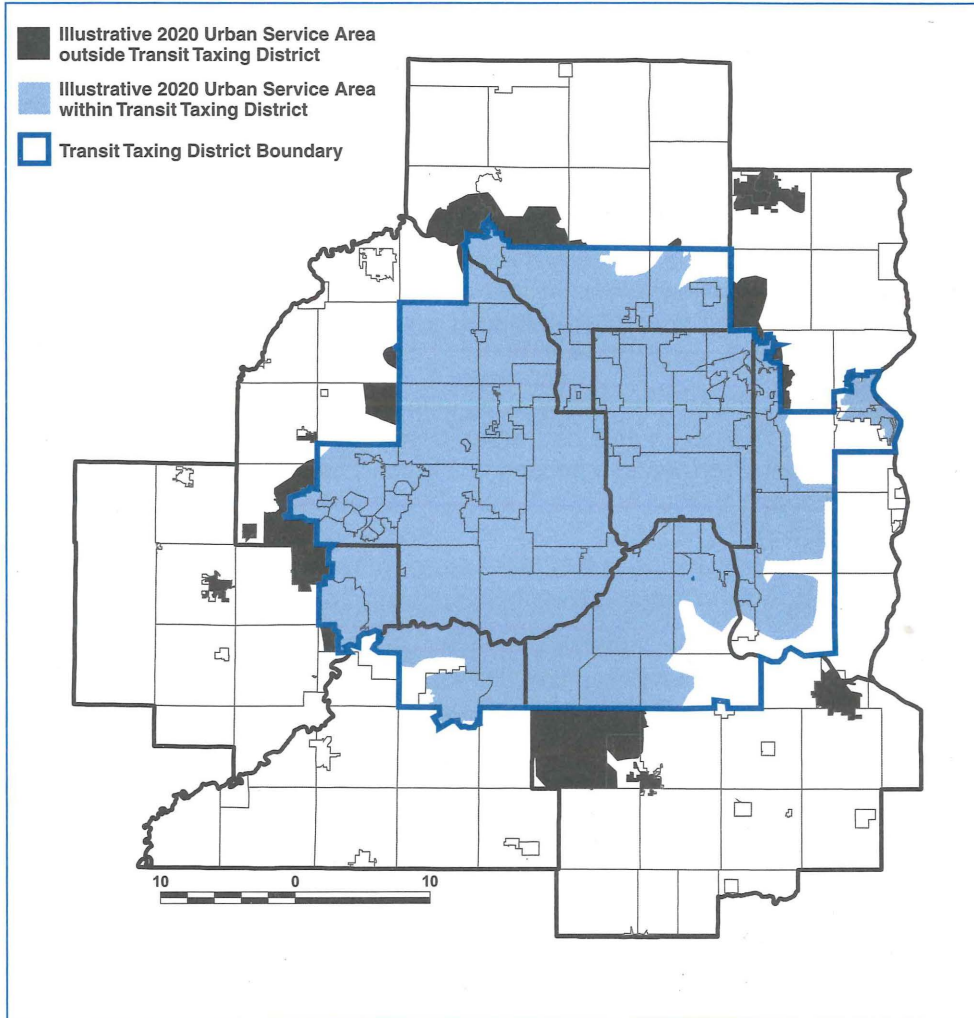
Existing Transit Service Areas



In addition, transit services by 2020 will need to be expanded to include areas of future planned urbanization. The map below shows the area of potential transit service expansion, consisting of the area lying outside the current Transit Taxing District but within the illustrative 2020 Metropolitan Urban Service Area boundary.

This area of potential transit service expansion would receive service consistent with the types of market areas identified in the previous map and described below.

### Area of Potential Transit Service Expansion



### *Core Transit Area*

The Core Transit Area (Area I on the “Existing Transit Service Areas” map) has the highest concentrations of housing and jobs, where the most frequent, highest levels of transit will be available 18 to 24 hours a day. Transit service will make this area very attractive to residents, workers and businesses. A strong transit presence will make it clear that transit access is readily available to multiple destinations within the area. More people will be persuaded to use the service for all trips (work, shopping, school, business trips), given the ease of system access, low cost, visible destinations, preferential treatment for transit and its users, and a safe, secure, high-quality pedestrian environment. People will be able to live in the Core Transit Area without a car and use transit for all trips.

The Core Transit Area would expand only into areas where development is intensified to a significant degree and destinations become highly concentrated. Key improvements in the Core Transit Area include faster service (with dedicated transitways, signal preemption for buses and skip-stop operation), expanded service frequencies (15-minute frequencies for 18 hours a day) and enhanced security and pedestrian amenities within one-quarter mile of stations and stops.

### *Inner Urban/Suburban Transit Area*

With higher concentrations of jobs and housing, the Inner Urban/Suburban Transit Area (Areas II and III on map) will have the second-highest service levels after the Core Transit Area. The Inner Urban/Suburban Transit Area surrounds the Core Transit Area and benefits from high levels of service that overlap these two areas.

Transit choices will make living and working in this area convenient and attractive, with frequent and available service 12 to 18 hours a day, seven days a week. Transit will be a preferred mode of travel and a realistic alternative to owning a second family car. The Inner Urban/Suburban Transit Area would expand outward only if cities choose to intensify land uses and destinations to urban-level densities. Key improvements in the Inner Urban/Suburban Transit Area will entail expanding service to meet 30- to 60- minute frequencies and 12 hour-a-day minimums, adding service where gaps exist, making service faster, and enhancing passenger security on board vehicles and at major stations and stops.

### *Outer Suburban Transit Area*

The Outer Suburban Transit Area (Area IV within the metropolitan urban service area), with its lower densities, is best served by peak-period express bus service, ridesharing and local circulation provided by small vehicles or dial-a-ride type service. Buses, park-and-ride vehicles, community circulators and dial-a-ride would connect with express operation and service to the Inner Urban/Suburban and Core Transit Areas. Improvements necessary for the Outer Suburban Transit Area include providing new community circulators, transit stations and park-and-ride lots, and additional innovative reverse-commute options from the Inner Urban/Suburban and Core Transit Areas.

### *Rural Transit Area*

Communities in the Rural Transit Area (Area IV outside the metropolitan urban service area) are best served by paratransit, such as dial-a-ride, volunteer-driver programs and ridesharing. Access to other services in other transit service areas will be made at transit hubs. Rural residents can form pools at park-and-pool lots. Improvements in the Rural Transit Area will supplement county- and community-based programs, new park-and-pool lots and enhancing rural and county feeder service to Suburban and Core Transit Areas through linkages at transit stations.

## Transit Service Area Features and Improvements

Areas	Land Use Pattern	Service Options	Service Characteristics
Core	Highest concentrations of activity and highest-density of housing and jobs	Regular-route locals, all-day expresses, small-vehicle circulators, specialized paratransit, ridesharing	<p><b>Frequencies:</b> 5-15 minute local and circulator</p> <p><b>Span of Service:</b> 18-24 hours, 7 days per week</p> <p><b>Spacing:</b> Locals spaced 0.25-0.5 mile apart</p>
Inner Urban/ Suburban	Moderate concentrations of jobs, housing and activities	Regular-route locals, all-day expresses, small-vehicle circulators, specialized paratransit, ridesharing	<p><b>Frequencies:</b> 5-15 minute or 30-60 minute depending on land use pattern</p> <p><b>Span of Service:</b> 12-20 hours per day, 7 days per week</p> <p><b>Spacing:</b> Locals spaced 0.5-1.0 mile apart</p>
Outer Suburban	Generally lower-density areas with intermittent pockets of moderate-density housing and employment (pockets would receive highest service levels)	Peak-only express, small vehicle dial-a-ride, midday circulators, paratransit, ridesharing	<p><b>Frequencies:</b> Peak-period-only expresses, 1-2 hour midday frequencies, dial-a-ride advance registration</p> <p><b>Span of Service:</b> 10-14 hours per day, weekdays and limited weekends</p> <p><b>Spacing:</b> Services tied to park-and-ride lots and hubs</p>
Rural	Lowest concentrations of housing and jobs	Dial-a-ride, volunteer driver programs, ridesharing	<p><b>Frequencies:</b> As needed</p> <p><b>Span of Service:</b> 8-10 hours per days, weekdays</p> <p><b>Spacing:</b> Services tied to park-and-ride and park-and-pool lots</p>

### Growing Suburban Communities

Most of the growth in the next 20 years will occur in the region's rapidly developing suburbs, offering an expanding market for express bus and park-and-ride service, exclusive busways, bus-only shoulders on freeways and commuter rail. Transit service investments in suburban areas will need to focus on fast-growing communities that actively foster transit-oriented development in line with Smart Growth principles and work with transit providers in developing solutions to mobility needs in their localities.

Currently, some of Metro Transit's suburban park-and-ride facilities serve a considerable number of passengers who live outside the Transit Taxing District, and the demand is expected to grow substantially in the future. Expanded service to these suburban locations may need to be supported by changes in the taxing district boundary to follow the urbanization of new portions of the region and to better reflect the growing geographic base for transit services.

### **Commuter Rail Serving Outlying Areas**

The development of commuter rail recognizes that the Twin Cities economy is a strong magnet for people in the workforce living in outlying areas. Once built and in operation, commuter rail will carry passengers into the seven-county area from some adjacent counties as well as some Twin Cities area residents.

Making such service available to people inside and outside the metro area is not likely to accelerate growth outside the region's area of planned 2020 urbanization. People make their choices about where to live for a variety of reasons, including lifestyle (urban, suburban, small town, rural), access to jobs, income, quality of schools and the perceived level of crime. Those who live in outlying areas and drive to jobs in the metro area already accept long commutes as a price of living where they do. In most cases, commuter rail service will not be the factor that tips the balance to alter people's preferences about where to live.

### **Access to Jobs**

The transit system plays a critical role in providing access to jobs for low-income people and individuals transitioning from welfare to work. The overall improvements to the current transit system, as proposed in this plan, will go a long way in meeting these transportation needs. In some cases, however, more flexible options (such as volunteer drivers and donated vehicles) may also be necessary.

The Council has been working cooperatively with the metropolitan counties, the Department of Human Services, the Department of Economic Security and other transit and social service providers to develop plans to meet the needs of these individuals. Specific transportation options considered include improving the existing transit system in terms of service frequency and service coverage, providing assistance and employer incentives to help in meeting the needs of new employees, and focusing on new service delivery options. State and federal assistance has been secured for some of these programs, but additional funding will be necessary in the future to better address some of these needs.

### **A Strengthened Bus System**

In any future system, the region's bus system will continue to be the foundation of transit services. The bus system, the most flexible portion of the transit system, will account for most of transit's ridership in the future but will be reconfigured to better meet customer needs and promote transit's connection with land use.

Customers will benefit from increased service frequency, lengthened service hours and extended geographic coverage. Based on transit sector studies now under way, the route structure will be reshaped and simplified; route connections will be improved; and routes will be anchored to major destinations, not just the downtowns. In addition, the future system will enhance reverse-commute service, providing rides to and from jobs in the suburbs for workers who live in the older parts of the region. Customer needs will be monitored on an ongoing basis to ensure that services are tailored accordingly, and new services will be aggressively marketed.

The bus fleet will be expanded and diversified to meet various customer needs and improve cost-efficiencies, including use of additional smaller buses for feeder and circulator routes, diesel-electric hybrid vehicles and low-floor buses that eliminate the need for wheelchair lifts.

The region will need to maintain and continue to develop a system of transit hubs that will provide a focal point for suburban circulator service and suburb-to-suburb bus service. Suburb-to-suburb service with hub-and-spoke operations will provide quick, direct trips without going downtown.

The region will also need to continue the aggressive implementation of travel-demand management programs and other commuter services to supplement the conventional transit system and reduce the number of single-occupant vehicles on the road. Access to jobs and services for transit-dependent populations will be met in ways geared to their needs and the needs of those who employ them. New park-and-ride lots will be established in conjunction with express bus service, LRT lines and commuter rail service. Current transit incentives will need to be expanded and new products and programs developed to promote transit use. Financial incentives to reduce vehicle-miles traveled should be explored.

### Passenger and Support Facilities

Expanding these facilities includes:

- Providing sufficient park-and-ride capacity to meet demand based on the results of a recent study.
- Building all required transit hubs and transit stations.
- Making all bus stops ADA-accessible.
- Providing appropriate passenger shelters at high-demand bus stops.
- Implementing downtown facility improvements (such as new bus lanes) to accommodate a major increase in bus volume.

In addition, the number of bus garages will need to double. A study is currently under way to identify the types of garages and their general locations.

### Development of Transit Corridors

A number of heavily traveled metro area highways and streets offer promising opportunities for focusing investments to provide improved and expanded transit service. This plan envisions three types of transit corridors:

- Arterial corridors (Map 1)
- Freeway corridors (Map 2)
- Dedicated right-of-way corridors (Maps 3 and 4)

**Arterial transit corridors** along selected high-volume streets would receive the highest level of local bus service. Many of these routes serve not only the two central cities but also suburban communities, particularly those in the first and second development ring. Possible examples include University Ave. and Selby Ave./Lake Street. Additional examples in St. Paul are Grand Ave., Snelling Ave., West Seventh, Rice Street, and Como Ave. In Minneapolis, arterials could include Chicago, Central, Nicollet, Hennepin, Lyndale, Broadway and Cedar Avenues. As the region grows, the arterial corridors may extend beyond those shown on Map 1.

These arterials would receive very frequent, 7-day, up-to-24-hour service if not already provided. There would be highly visible facilities at major stops, and routes would generally form a grid-style network, rather than a strongly radial pattern oriented to the downtowns. In selected cases, limited-stop bus routes may be added to complement frequent local routes -- for example, Route 50 in coordination with Route 16 on University Avenue.

**Freeway transit corridors** would rely on bus-only shoulders and high-occupancy vehicle (HOV) lanes. The system of bus-only shoulders would be greatly expanded and upgraded to improved standards, including wider lanes. These corridors would be supported by extensive park-and-ride facilities, ramp meter bypasses and transfer points. The goal is to free all express routes from congestion with transit advantages.

HOV-lane facilities would be expanded and enhanced. Operation of the I-394 HOV lane would continue, with additional park-and-ride facilities and improved bus service. The I-35W HOV lane would be extended from I-494 to 46th Street in Minneapolis. This plan proposes construction of four to five transit stations and development of a feeder bus system along these HOV lanes.

**Dedicated transitways** would provide a travel-time advantage over the single-occupant vehicle, improve transit service reliability and maximize the potential for transit-oriented development and redevelopment. Transit corridors will include a range of various types of infrastructure – exclusive busways, light rail transit and commuter rail. Also included are downtown bus lanes to accommodate increased volume of service through the downtowns. The region is fortunate that much of the right-of-way for these transitways is already reserved or acquired.

### **Transit Support of Smart Growth**

#### **Transit-Oriented Development**

Transit corridors, with enhanced and expanded service, offer excellent opportunities to promote Smart Growth development. Transit-oriented development creates choices that are not now widely available for living, working, shopping and conducting business in a compact, walkable setting with unparalleled transit access and mobility. Single- and multifamily homes would be located within an easy walk of neighborhood-scale shopping, such as retail and restaurants, child care, libraries, post offices, parks, gathering places and open spaces.

At various locations along the corridors, homes and businesses would be located within a quarter to half-mile walk of transit stations. There would be about 7 to 10 units of single-family homes, condominiums and townhouses per acre, and along dedicated transitways, 15 units – possibly 30 to 70 units – per acre. Fifty or more jobs per acre would be clustered nearby.

Buildings and public infrastructure would be designed to favor landscaped public spaces and pedestrians, transit and bicycling. Buildings would be oriented to the street and transit stops. Parking would be located behind buildings, in structures or underground in shared facilities. A street grid would offer narrow, short blocks that are accessible and well lighted, with lower speeds designated for vehicular traffic.

The prospects are promising for shaping development around planned transit stations in the Hiawatha LRT Corridor in a way that promotes Smart Growth – using development strategies that are more efficient in using land and resources, and that provide a more walkable, transit-friendly environment.

A market study conducted in late 1999 showed that the corridor-wide development potential to the year 2020 includes nearly 7,000 new housing units, more than 19 million square feet of new commercial development and up to 68,000 new jobs. The development potential is equivalent to 10 IDS Centers, four Southdales and all the housing units in Shakopee or Anoka. The study focused on significant development at the downtown East Metrodome station, Lake Street, 46th Street and in Bloomington.

#### **Implementation Strategy**

The Metropolitan Council uses a multifaceted strategy with a variety of tools to foster Smart Growth.

- The Council awards grants from its Livable Communities program to development projects that incorporate a mix of land uses arranged in attractive, compact settings.
- Smart Growth projects now receive special consideration by the Transportation Advisory Board in recommendations for federal funding of transportation facilities.

- The Council initiated and funded the St. Croix Valley Design Development Project, which has provided opportunities for communities on both sides of the St. Croix River to define for themselves how growth should occur in their areas. The public process and development designs associated with this project are prototypes that can be applied to other parts of the region.
- Construction of the Hiawatha LRT line and related commercial and residential development around its transit stations will help revitalize an older urban area and provide valuable lessons about coordinating transit facilities with land uses.
- The Council also plans to expand its information resources to assist communities in developing Smart Growth projects as they implement their local comprehensive plans and the Council's Regional Growth Strategy by expanding lifecycle housing opportunities and creating more compact, pedestrian-friendly and transit-oriented development.

### **New Technologies**

A number of new technologies are being implemented and can be expanded to support the bus system. These include automatic vehicle location (AVL), computerized trip-planning for Metro Transit customers, an automated scheduling system, signal-timing at intersections and links to the public safety radio system now under development.

The region should continue to monitor progress in implementing automated vehicle systems such as personal rapid transit (PRT), particularly as local circulators in such settings as downtown areas, university campuses and other large activity centers.

### **Corridor Evaluation**

Different travel corridors warrant different service levels and types of infrastructure, and these, in turn, require varying levels of investment. The investment required for arterial and freeway transit corridors, though considerable, is fairly modest as transportation projects go, and the timeline necessary to complete these corridors is relatively short. It must be emphasized that new highway construction requires very significant financial commitments. For instance, new freeway construction costs \$30 million to \$70 million per mile.

Various factors determine which travel corridors are most suitable for transitways – ridership, capital and operating cost, land availability and local land use plans. Affecting the feasibility of implementation are the availability of right-of-way, project development timeline and local support. Financial feasibility is affected by the availability of federal, state and local funds. (See tables below.)



### Corridor Comparison: Technical Considerations

Corridor	Terminal Points	Infrastructure	Ridership	Capital Costs in 2000 \$ (millions)	Operating Costs in 2000 \$ (millions)
Central	Minneapolis CBD to St. Paul CBD	LRT	Very High	500	15
		Busway	--	NA	NA
Riverview	Earl St. to Mall of America	LRT	Medium High	230 (does not include ROW or vehicles)	NA
		Busway	Medium High	65	NA
Minneapolis Southwest	Minneapolis CBD to Eden Prairie (CSAH 4)	LRT	--	NA	NA
		Busway	High	120 to 150 depending on alignment	NA
Minneapolis 29th St.	West Lake St. to Hiawatha Avenue	LRT	--	NA	NA
		Busway	Medium	58	NA
Minneapolis Northwest	Minneapolis CBD to Maple Grove (County Rd. 30)	LRT	--	NA	NA
		Busway	High	90	NA
Minneapolis East to White Bear	Minneapolis CBD to White Bear	LRT	--	NA	NA
		Busway	Medium High	150	NA
St. Paul Northeast	St. Paul CBD to White Bear	LRT	Medium High	300	5.6
		Busway	Medium High	100	NA
Cedar Avenue Transitway	Mall of America to Apple Valley Transit Station	LRT	Medium	400	7.1
		Bus shoulder	Medium	5.5	8
TH 36	I-35E to Stillwater	Bus shoulder	Medium	5.5	NA
I-94 East of St. Paul	St. Paul CBD to County Rd. 15	Bus shoulder	Medium	5.5	NA
I-94 North of Minneapolis	Minneapolis CBD to I-694	Bus shoulder	Medium	3.0	NA
Lafayette	St. Paul CBD to Upper 55th St.	Bus shoulder	Medium	3.5	NA
I-494	TH 77 (Cedar Ave.) west & north to I-94	Bus shoulder-frontage roads	Medium	14.1	NA
I-494	TH 77 (Cedar Ave.) east to TH 61	Bus shoulder	Medium	7.2	NA
I-494/I-694	TH 61 north & west to I-35E	Bus shoulder	Medium	12.4	NA
I-694/I-94	I-35E west to TH 610	Bus shoulder	Medium	9.5	NA
I-35E St. Paul South	St. Paul CBD to I-494	Bus shoulder	Medium	4.0	NA
I-94 Mpls. to St. Paul	Mpls. CBD to St. Paul CBD	Bus shoulder	Medium	4.0	NA
TH 61	I-94 to Jamaica Ave. (Cottage Grove)	Bus shoulder	Medium	3.0	NA
TH 77	I-35E to County Rd. 42 (Apple Valley)	Bus shoulder	Medium	1.5	NA
TH 169	TH 610 to TH 101	Bus shoulder	Medium	13.5	NA
I-35W	County Rd. 1 to 95th Ave.	Bus shoulder	Medium	3.0	NA
I-35E St. Paul to White Bear	TH 36 to TH 96	Bus shoulder	Medium	5.5	NA
TH 610	TH 252 to TH 169	Bus shoulder	Medium	3	NA
TH 212	TH 5 to Lyman Blvd.	Bus shoulder	Medium	2	NA
TH 100	I-94 to I-494	Bus shoulder	Medium	5	NA
Northstar	St. Cloud to Minneapolis CBD	Commuter Rail	High	223	9.4
Red Rock	Minneapolis CBD to Hastings	Commuter Rail	Medium*	216	5.0
Dan Patch	Minneapolis CBD to Lakeville	Commuter Rail	Medium*	261	7.7

\* Preliminary estimates

In the table above, ridership potential for transitways (except commuter rail) is gauged based on the following breakdown: Very High = >25,000; High = 15,000–25,000; Medium/High = 7,500–15,000; Medium = <7,500. For commuter rail, the ridership categories are: High = >5,000; Medium = 2,500-5,000; Low = <2,500.

### Corridor Comparison: Transit-Oriented Development Potential and Implementation Feasibility

Corridor	Terminal Points	Infrastructure	Potential for Transit-Oriented Development	Right of Way	Implementation Feasibility	
					Development Readiness	Local Support or Issues
Central	Mpls. CBD to St. Paul CBD	LRT	Very High	I-94 or University Ave.	Draft state EIS/AA done	Parking, stop spacing
		Busway	Very High			
Riverview	Earl St. to Mall of America	LRT	High	Negotiate w/ RR for ROW; replace/expand TH 5 bridge	MIS in progress	Outstanding issues
		Busway	High			
Minneapolis Southwest	Mpls. CBD to Eden Prairie (CSAH 4)	LRT	High	Trail ROW acquired; difficult connection to CBD	Feasibility study under way	OK in suburbs; CBD connection a problem
		Busway	High			
Minneapolis 29th St.	West Lake St. to Hiawatha Avenue	LRT	High	Trail ROW acquired	Feasibility study under way	CBD supports; neighborhood coalition opposes current bus technology
		Busway	High			
Minneapolis Grove (County Rd. 30)	Mpls. CBD to Maple	LRT	Medium	Active rail use	Stage I state EIS-PE supportive	Robbinsdale Northwest
		Busway	Medium			
Minneapolis East to White Bear	Mpls. CBD to White Bear	LRT	Medium	Portions acquired; active rail east of I-35	Nothing done	
St. Paul Northeast	St. Paul CBD to White Bear	Busway	Medium			
Cedar Avenue Transitway	Mall of America to Apple Valley Transit Station	LRT	Medium	Problems in Apple Valley south of CSAH 42	Feasibility study under way	
		Busway				
TH 36	I-35E to Stillwater	Bus shoulder				
I-94 East of St. Paul	St. Paul CBD to County Rd. 15	Bus shoulder				
I-94 North of Minneapolis	Mpls. CBD to I-694	Bus shoulder				
Lafayette	St. Paul CBD to Upper 55th St.	Bus shoulder				
I-494	TH 77 (Cedar Ave.) west & north to I-94	Bus shoulder-frontage roads				Strong local support
I-494	TH 77 (Cedar Ave.) east to TH 61	Bus shoulder				
I-494/I-694	TH 61 north & west to I-35E	Bus shoulder				
I-694/I-94	I-35E west to TH 610	Bus shoulder				
I-35E St. Paul South	St. Paul CBD to I-494	Bus shoulder				
I-94 Mpls. to St. Paul	Mpls. CBD to St. Paul CBD	Bus shoulder				
TH 61	I-94 to Jamaica Ave. (Cottage Grove)	Bus shoulder				
TH 77	I-35E to County Rd. 42 (Apple Valley)	Bus shoulder				
TH 169	TH 610 to TH 101	Bus shoulder				
I-35W	County Rd. 1 to 95th Ave.	Bus shoulder				
I-35E St. Paul to White Bear Lake	TH 36 to TH 96	Bus shoulder				
TH 610	TH 252 to TH 169	Bus shoulder				
TH 212	TH 5 to Lyman Blvd	Bus shoulder				
TH 100	I-94 to I-494	Bus shoulder				
Northstar	St. Cloud to Mpls. CBD	Commuter Rail	High*	Available**	MIS near completion	High
Red Rock	Mpls. CBD to Hastings	Commuter Rail	Medium*	Available**	Advanced corridor planning	High
Dan Patch	Mpls. CBD to Lakeville	Commuter Rail	Medium*	Available**	Advanced corridor planning	Medium

\* Dependent on local community willingness to support transit-oriented development.

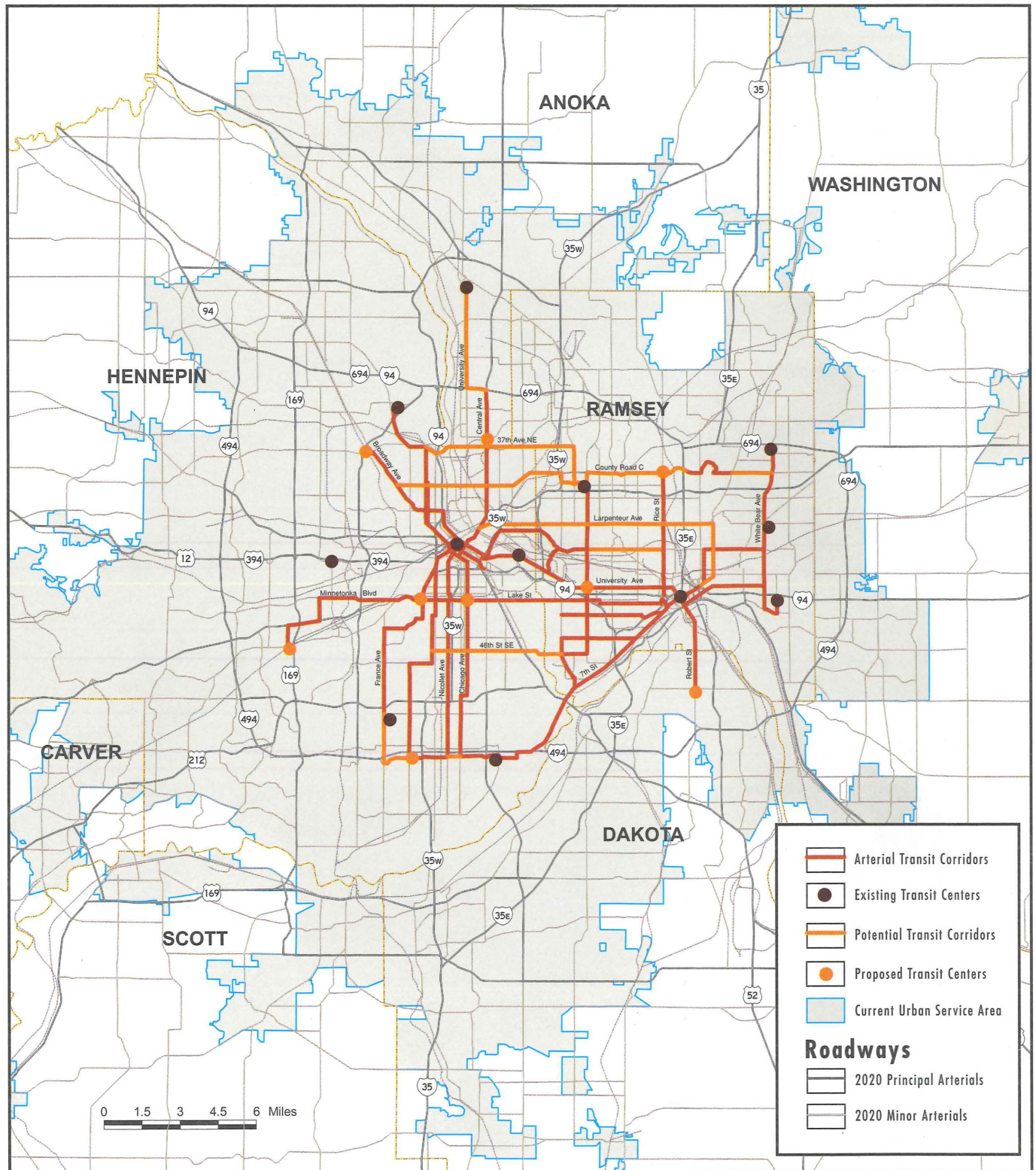
\*\* Dependent on negotiations with operating railroads.

**Corridor Comparison: Funding Feasibility**

Corridor	Terminal Points	Infrastructure	Funding Feasibility		
			Federal	State	Local
Central	Minneapolis CBD to St. Paul CBD	LRT			
		Busway			
Riverview	Earl St. to Mall of America	LRT	TEA 21 funding for MIS		
		Busway			
Minneapolis Southwest	Minneapolis CBD to Eden Prairie (CSAH 4)	LRT			
		Busway			
Minneapolis 29th St.	West Lake St. to Hiawatha Avenue	LRT			
		Busway			
Minneapolis Northwest	Minneapolis CBD to Maple Grove (County Rd. 30)	LRT			
		Busway			
Minneapolis East to White Bear	Minneapolis CBD to White Bear	LRT			
		Busway			
St. Paul Northeast	St. Paul CBD to White Bear	LRT			
		Busway			
Cedar Avenue Transitway	Mall of America to Apple Valley Transit Station	LRT			
		Bus shoulder			
TH 36	I-35E to Stillwater	Bus shoulder			
I-94 East of St. Paul	St. Paul CBD to County Rd. 15	Bus shoulder			
I-94 North of Minneapolis	Minneapolis CBD to I-694	Bus shoulder			
Lafayette	St. Paul CBD to Upper 55th St.	Bus shoulder			
I-494	TH 77 (Cedar Ave.) west & north to I-94 – frontage roads	Bus shoulder			
I-494	TH 77 (Cedar Ave.) east to TH 61	Bus shoulder			
I-494/I-694	TH 61 north & west to I-35E	Bus shoulder			
I-694/I-94	I-35E west to TH 610	Bus shoulder			
I-35E St. Paul South	St. Paul CBD to I-494	Bus shoulder			
I-94 Mpls. to St. Paul	Mpls. CBD to St. Paul CBD	Bus shoulder			
TH 61	I-94 to Jamaica Ave. (Cottage Grove)	Bus shoulder			
TH 77	I-35E to County Rd. 42 (Apple Valley)	Bus shoulder			
TH 169	TH 610 to TH 101	Bus shoulder			
I-35W	County Rd. 1 to 95th Ave.	Bus shoulder			
I-35E St. Paul to White Bear	TH 36 to TH 96	Bus shoulder			
TH 610	TH 252 to TH 169	Bus shoulder			
TH 212	TH 5 to Lyman Blvd	Bus shoulder			
TH 100	I-94 to I-494	Bus shoulder			
Northstar	St. Cloud to Minneapolis CBD	Commuter Rail			
Red Rock	Minneapolis CBD to Hastings	Commuter Rail			
Dan Patch	Minneapolis CBD to Lakeville	Commuter Rail			

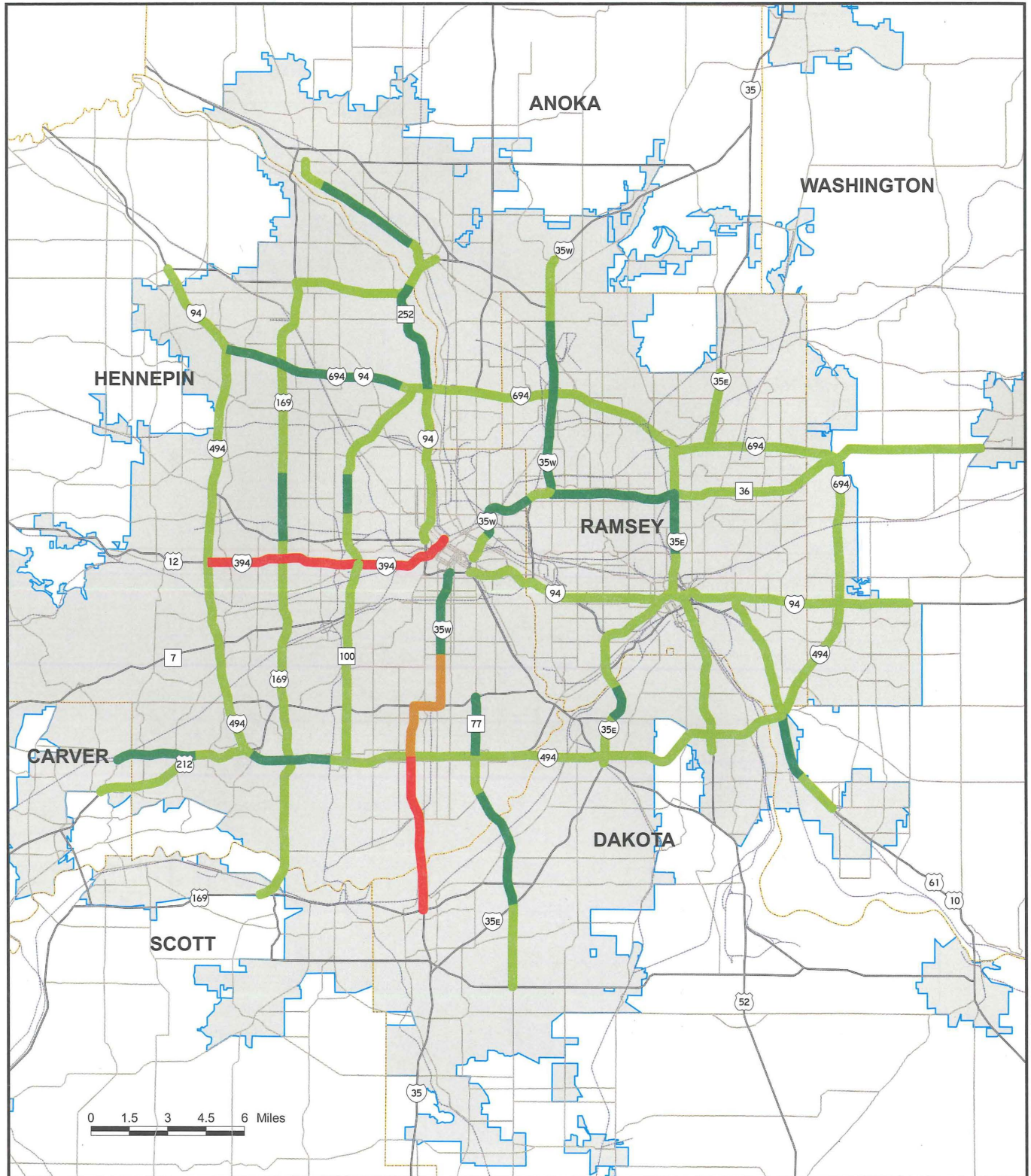
# Map 1. Arterial Transit Corridors

Twin Cities Metropolitan Area



# Map 2. Existing and Proposed Freeway Transit Corridors

Twin Cities Metropolitan Area



<b>Existing</b>		<b>Proposed</b>		<b>Roadways</b>	
	Bus-Only Shoulders		Bus-Only Shoulders		2020 Principal Arterials
	HOV Lanes		HOV Lanes		2020 Minor Arterials
					Current Urban Service Area

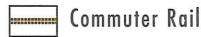
# Map 3. Transitways on Dedicated Rights-of-Way

## 2010 Plan

Twin Cities Metropolitan Area

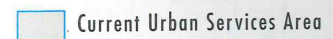


### 2010 Plan



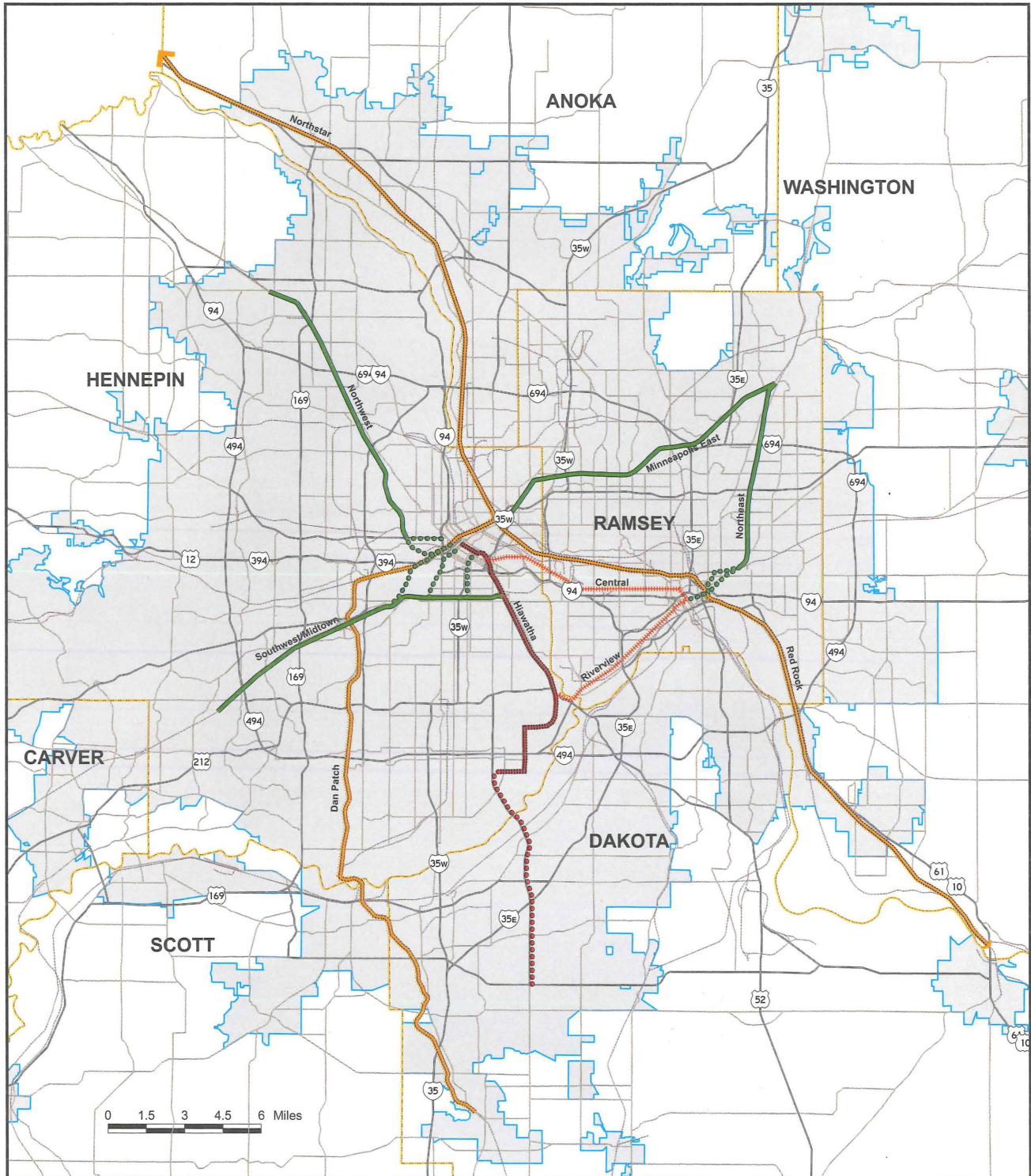
\*One of these two alternatives will be built by 2010.  
 \*\*Two of these three alternatives will be built by 2010.

### Roadways



# Map 4. Transitways on Dedicated Rights-of-Way 2020 Plan

Twin Cities Metropolitan Area



## 2020 Plan

- |        |  |                         |
|--------|--|-------------------------|
| LRT    | LRT Alternatives*                      | Commuter Rail           |
| Busway | Downtown Busway Connector Alternatives | Potential LRT Extension |

\* One of these two LRT Alternatives will be built by 2010. Bus transit improvements will be implemented in corridor not selected for LRT.

## Roadways

- |                            |
|----------------------------|
| 2020 Principal Arterials   |
| 2020 Minor Arterials       |
| Current Urban Service Area |

## Phasing of Implementation

The strategies for phasing new major transit improvements are to:

- Develop the lower-investment corridors early in the time horizon (2000–2005) to generate the greatest possible benefits as quickly as possible. This strategy entails enhancing service along major urban/suburban arterial streets, providing bus-only shoulders along major highways, expanding park-and-ride capacity, developing transfer points, and expanding and enhancing high-occupancy vehicle lanes.
- Vigorously expand the bus fleet, garages and support facilities, and improve bus service year by year so that, by 2020, the system will be capable of carrying twice the ridership it does today.
- Concentrate investments for transitways in the next 10 years (LRT, busways and commuter rail) to create a critical mass of transit facilities necessary to relieve and bypass highly congested highway segments. This strategy calls for constructing at least two dedicated busways, an LRT connection to downtown St. Paul, and at least one commuter rail line.
- Upgrade non-transitway corridors to busways or busways to LRT after 2010, as appropriate, based on updated ridership forecasts and current travel demand.

### Exclusive Busways

Exclusive busways would emphasize speed and frequency, with a minimal number of stations at timed transfer points. Two of these would be constructed by 2010 and could be converted to LRT, if appropriate, at a later date. Based on current information, the first three corridors listed below appear to be the most likely candidates to be one of the two recommended for construction by 2010. Busways need to be designed and operated in ways that minimize noise and pollution through appropriate vehicle technology, and reduce visual impacts through landscaping and roadway configuration. Implementation of busways should occur in close coordination with cities and neighborhoods and follow the appropriate environmental reviews to address their concerns and resolve issues.

The candidate busway corridors are:

- Minneapolis Southwest/29th Street Greenway
- Minneapolis Northwest
- St. Paul Northeast
- Minneapolis East

### Light Rail Transit

LRT would be constructed on corridors with the highest ridership potential. By 2010, the Hiawatha corridor will be completed, and a second line – to downtown St. Paul – would be built. At the present time, two possible LRT opportunities to St. Paul are under consideration.

- Central Corridor
- Riverview Corridor

Ramsey County and the City of St. Paul are conducting studies on both the Central Corridor and the Riverview Corridor. Both corridors offer significant development/redevelopment opportunities, and the Central Corridor has the greatest ridership potential. Whichever priority is selected between these two corridors should be implemented by 2010. The corridor not selected for an LRT line should receive increased bus service and capital investments (that is, bus lanes or a busway). An additional opportunity for augmenting the LRT system after 2010 would be the extension of the Hiawatha Line, currently under construction to the Mall of America, to Apple Valley along Cedar Avenue. This would enhance the usefulness of the line to residents south of the Minnesota River, who could avoid the traffic congestion on the river crossing.



**Commuter Rail Corridors**

Mn/DOT has completed a commuter rail study that identifies a Phase I commuter rail network based on the following order of priority, with the first two to be built by 2010. Implementation of these dedicated transitways will also require the necessary passenger and support facilities.

- Northstar
- Red Rock
- Dan Patch

The following table shows how the improvements will be phased between now and 2020.

**Implementation Staging**

**2000 – 2010**

**2010 – 2020**

**Bus System**

- Expansion of bus system by 40%

- Continued expansion of bus system to 100%

**Arterial Corridors**

- Arterial transit corridor improvements

**Freeway Corridors**

- Bus-only shoulders with improved standards:
  - TH 169/County Road 18 from TH 610 to TH 101
  - I-494 from from TH 77 west and north to I-94 – frontage roads
  - I-494 from TH 77 east to TH 61
  - I-94 from Mpls. CBD to I-694 and from I-494 to TH 610
  - I-35W north from County Rd. 1 to 95th Ave.
  - Hwy. 77 from I-35E to County Rd. 42
  - TH 36 from I-35E to Stillwater
  - I-94 between the two downtowns
  - I-94 east from St. Paul CBD to County Rd. 15
  - Lafayette Freeway from St. Paul CBD to Upper 55th Street
  - TH 610 from TH 252 to TH 169
  - TH 212 from TH 5 to Lyman Blvd.
  - TH 100 from I-94 to I-494
  - I-35E north from TH 36 to White Bear Lake
  - I-35E south from St. Paul CBD to I-494
  - TH 61 south from St. Paul to Cottage Grove
  - I-494/I-694 from TH 61 to I-35E
  - I-694/I-94 from I-35E west to TH 610
- Extension of HOV lane on I-35W from I-494 to 46th Street

## Implementation Staging

2000 – 2010

2010 – 2020

### *Dedicated Transitways*

#### **Busways**

- Two exclusive busways, with candidates including:
  - Mpls. Southwest Corridor
  - Mpls. Northwest Corridor
  - St. Paul Northeast Corridor
- Development of third busway
- Conversion of busways to LRT as appropriate

#### **Light Rail Transit**

- Second LRT line – either in the Central or the Riverview Corridors
- Extension of Hiawatha to Dakota County
- Implementation of bus transit improvements in corridor not selected for LRT connection to downtown St. Paul

#### **Commuter Rail**

- At least one commuter rail line, with candidates in order of priority:
  - North Star Corridor
  - Red Rock Corridor
- Third commuter rail line, Dan Patch, after completion of Red Rock

#### **Future ADA Needs and Service**

The Metropolitan Council conducted a study in 1999 to assess transportation services provided under the Americans with Disabilities Act in the seven-county metro area. The focus of the study was to estimate ridership and the resources needed to provide ADA transportation service in the years 2010 and 2020.

The Council developed two estimates of the disabled population. One estimate assumed that the disabled population would remain a constant percentage of the total population over time (low-end projection). The second estimate considered the effects of aging on the disabled population (high-end projections). Ridership was estimated based on a number of factors – the percentage of active users (percent of individuals who uses the service at least once in the last 13 months), demand per capita and the percentage of trips denied.

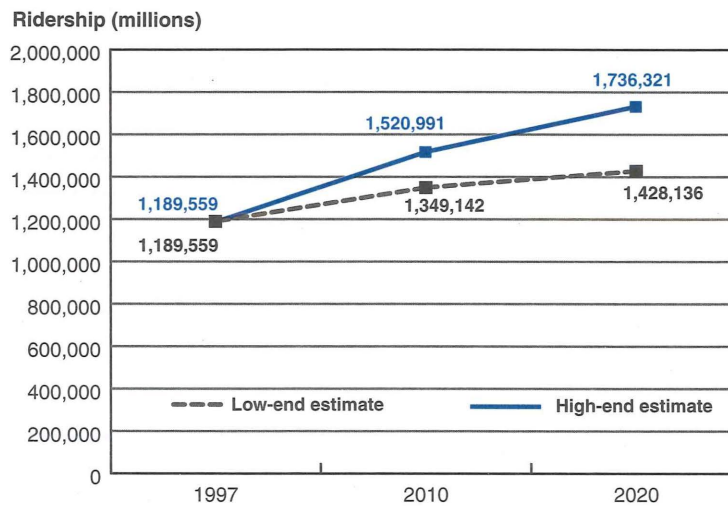
The study examined such factors as current and future housing, urban design and telecommuting. However, because too much uncertainty surrounds the impact of these issues on ADA service demand, the study did not alter the forecast.

The study also considered the effect of increasing accessibility of the fixed-route fleet. It is estimated that disabled ridership on the fixed-route system would increase from 2.5% of total ridership in 1998 to 8.9% of total ridership by 2004. However, because of the extent of current latent demand, that does not necessarily mean that increasing accessibility of the fixed-route system slows the growth of demand for ADA service. Latent demand is the need for transportation services that exceeds the capacity of existing transportation options. The study concludes that the increasing accessibility of the fixed-route service is reducing latent demand for ADA transportation services, while not yet materially affecting the demand for ADA transportation services.

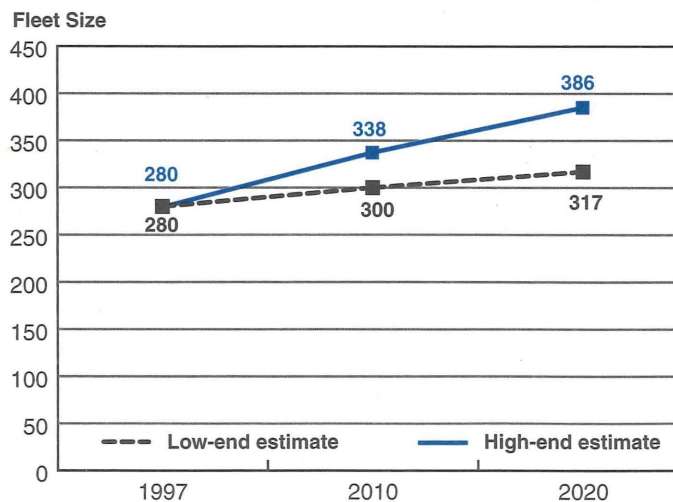
One additional factor not considered in the study was the continued growth of Metro Transit. Metro Transit's ridership growth is the direct result of additional service. Although growth achieved by increased frequency of existing service does not impact ADA service requirements, service expansion does. If Metro Transit extends 24-hour service to first-ring suburbs, then Metro Mobility will be required to make a comparable adjustment, thus resulting in the purchase of additional service hours.

The study forecasts an increase in the 1990 disabled population of 48% by 2010 and 70% by 2020. As the population in the ADA service area grows and ages, a higher percentage of the total population becomes eligible for ADA transportation services. Without considering the effects of Metro Transit growth, the impending impact on ridership and fleet requirements for 2010 and 2020 is shown below. To meet future ADA-related demand, the region will need to expand service to accommodate about a 30% increase in ridership by 2010 and about 50% by 2020. The fleet size will need to be expanded accordingly, by about 20% by 2010 and 40% by 2020.

### Estimated Annual ADA Ridership



### Estimated Annual ADA Fleet Size



## Costs of the Plan

Costs have been calculated only for the 2000-2010 portion of the plan because of the uncertainty of longer-range investment/cost estimates.

**Bus System.** A total of \$440 million by 2010 is estimated to be the capital cost of expanding the bus system capacity sufficiently to double its size by 2020, with additional operating costs by 2010 of \$70 million per year. The total includes the cost of new buses, new garages and new public facilities (such as park-and-rides and transit stations), services provided by opt-out transit authorities and private contractors, and operations provided under the Americans with Disabilities Act.

**Busways.** Two dedicated busways would cost a total of \$220 million for capital facilities; 2010 operating costs for two busways would be \$12 million.

**Light Rail Transit.** Two LRT lines would be operating by 2010, with the Hiawatha Line assumed to be fully funded. The cost of a second line would be about \$500 million. By 2010, operating costs for two lines would be about \$24 million per year.

**Commuter Rail.** Two commuter rail lines are expected to cost a total of \$439 million, with annual operating costs of \$14.4 million by 2010.

**Bus-Only Shoulders.** These will cost \$104 million to construct but do not require any operating costs beyond those already identified for the expansion of the bus system.

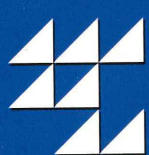
These cost projections are based on the following assumptions:

- It is assumed that the bus fleet and supporting systems, including garages, will double by 2020. These capital figures are the amount of the annual increase in capital investment needed to achieve a doubling of the bus system capacity.
- Operating costs for the expanded fleet escalate every year to support the previous year's additional vehicles.
- Two dedicated busways will be built during this time period. These figures are based on estimates of several different busways, with the difference in costs due to the varying lengths and need for relocation of existing rail and roadways.
- Operating costs for busways increase when each new busway becomes operational.
- Hiawatha LRT is assumed to be completed during this time. Its first full year of operating costs is 2004, with a half-year of operating costs assumed in 2003.
- A second LRT line is assumed to be constructed beginning in 2006.
- Two commuter rail lines are assumed to be constructed during this period. Costs for the first line are slightly higher due to the need to construct some one-time infrastructure for the commuter rail system. Operating costs are expected to escalate as usage increases.
- A total of 125 miles of bus-only shoulders would be built in 12 different locations. Much of this construction would be integrated into highway reconstruction.

**Costs of the 2010 Transit Plan  
(in millions of dollars)**

	Double Metro Bus System		Two Dedicated Busways		Two LRT*		Two Commuter Rail Lines		Bus-only Shoulders
	Capital	Operating	Capital	Operating	Capital	Operating	Capital	Operating	Capital
2001	44	7							10.4
2002	44	14					111		10.4
2003	44	21	60			6	112		10.4
2004	44	28	60			12		9.4	10.4
2005	44	35		6		12		9.4	10.4
2006	44	42		6	250	12		9.4	10.4
2007	44	49	50	6	250	12		9.4	10.4
2008	44	56	50	6		24	108	9.4	10.4
2009	44	63		12		24	108	9.4	10.4
2010	44	70		12		24		14.4	10.4
<b>Total Capital</b>	<b>440</b>		<b>220</b>		<b>500</b>		<b>439</b>		<b>104</b>
<b>Average Capital</b>	<b>44</b>		<b>22</b>		<b>50</b>		<b>43.9</b>		<b>10.4</b>
<b>2010 Operating</b>		<b>70</b>		<b>12</b>		<b>24</b>		<b>14.4</b>	<b>NA</b>

\* Hiawatha LRT capital costs are fully funded and not included.



# **Metropolitan Council**

*Improve regional competitiveness in a global economy*