Chapter 7: Transit

Transit provides essential mobility in the region – taking commuters to jobs and school, providing an alternative to driving on congested highways and enabling people without a car to meet their travel needs.

Existing System

The region's transit system, which consists of a variety of services, programs and related infrastructure, will play a greater role in meeting the region's mobility needs in the future. To do so, it will need continued investment to preserve the existing system and meet growing demand for transit services.

Types of Services

There are currently five types of public transit service in the Twin Cities area: regular-route bus service, light rail, commuter rail, dial-a-ride service and vanpools. The region also has ridesharing programs.

- Regular-route bus service is provided on a fixed, published schedule along specific routes, with riders boarding and alighting at designated bus stops. Regular-route buses operate local service, limited-stop service, and express service. A variety of vehicles are used to provide these services, ranging from small buses to coach buses.
  - Local services stop frequently on fixed routes to provide mobility to a variety of markets.
  - Limited stop routes provide a faster option than local service in high-demand corridors.
  - Express services are typically longer routes designed for commuter travel; these routes provide additional capacity on highway corridors.
- Light rail transit (LRT) service is provided by electrically powered trains operating primarily in an exclusive right-of-way, with stops approximately one mile apart.
- Commuter rail lines operate on traditional railroad track, powered by a diesel locomotive or diesel multiple unit (DMU), with stops approximately five miles apart. These trains typically operate only in morning and evening commute periods.

Figure 7-1: Buses carry the majority of transit riders in the region

Figure 7-2: Hiawatha LRT is a popular transitway

Figure 7-3: The Northstar Commuter Rail opened in late 2009

Figure 7-4: Metro Mobility provides transit service to people with disabilities

- There are two types of dial-a-ride service in the region: general public dial-a-ride and service mandated by the Americans with Disabilities Act (ADA). ADA service is for certified riders who want to travel where regular-route transit service is available but are unable to use the regular-route system due to a disability as defined in the Code of Federal Regulations, Title 49 Part 37, Section 37.123. This service must, at a minimum, match the span and service area of local bus service. Because of local policy, current service levels exceed this in some locations. Other dial-a-ride services provide mobility to the general public. General public dial-a-ride is available for trips that cannot be accommodated by regular-route transit service. General public dial-a-ride coordinates with and transfers customers to regular-route service whenever feasible to deliver rides in the most efficient manner possible. Trips are scheduled in advance and available on a first come, first served basis.
- Public vanpools are made up of five to fifteen people commuting to and from work at destinations throughout the region on a regular basis in a subsidized van. Each van has a volunteer driver. Vanpools typically serve origins and destinations not served by regular-route bus service.

Figure 7-5: Vanpools provide transit options for areas not served by regular-route bus service.

The Metropolitan Council partners with cities and Transportation Management Organizations to promote alternative modes of travel. These activities include organizing carpools, subsidizing vanpools, and offering discounted parking in the region to carpools and vanpools. These programs assist the formation of carpools to promote trips with two or more people in the same vehicle. These services are also discussed in Chapter 5: Regional Mobility.

Transitways

Transitways include bus and rail transit that enable fast, reliable travel times and an improved passenger experience on high-demand corridors in the region. Transitways help travelers avoid congestion by providing a dedicated right-of-way or other transit advantages such as ramp meter bypasses, signal priority or bus-only shoulders. Transitways link major employment centers and destinations in the region and promote transit-oriented development patterns. The existing transit system includes a number of transitways:

- The Hiawatha light rail line between Bloomington and Minneapolis opened in 2004 as the first modern rail transit line in the region.
- On I-394, a high-occupancy toll (HOT) lane provides congestion-free travel for buses between Wayzata and downtown Minneapolis.

- The Northstar commuter rail line between Big Lake and downtown Minneapolis opened in 2009 as the first modern commuter rail line in the region.
- On I-35W, HOT lanes and a northbound priced dynamic shoulder lane (PDSL) opened in October 2010 and provide congestionfree travel for buses between Burnsville and downtown Minneapolis.
- The University of Minnesota busway is a dedicated busway that provides an exclusive right-of-way to connect the Minneapolis and St. Paul campuses.
- Express buses with transit advantages, such as bus-only shoulders and managed lanes, allow buses to bypass congested conditions on highways and downtown streets throughout the region.

Transit Service Providers

Multiple providers operate transit service within the Twin Cities. The size, geographic service area and mission of these providers vary greatly, but the Council works with each provider to ensure delivery of an integrated, cohesive transit system to meet and enhance the region's mobility needs. Providers in the region include:

→ Metropolitan Council

- Metro Transit
  - Metro Transit Bus: Largest regular-route bus system in the region
  - Metro Transit Light Rail: The Hiawatha Light Rail line between Bloomington and Minneapolis and the Central Corridor Light Rail line currently under construction between Minneapolis and St. Paul
  - Metro Transit Commuter Rail: The Northstar Commuter Rail line between Big Lake and Minneapolis
- Metropolitan Transportation Services
  - Metro Mobility: Specialized demand response service for persons with disabilities, delivered using private contractors and provided in compliance with the ADA.
  - Contracted Regular Routes: Contracted regular-route service using private providers in the Metro Transit service area
  - Transit Link Dial-A-Ride: General public dial-a-ride covering the entire seven county area for trips that cannot be accommodated using regular-route bus service.
  - Public Vanpools: Approximately 70 vanpools provide transit in areas not served by regular routes.

→ Suburban Transit Providers: Provide regular-route and dial-a-ride service in twelve suburban communities. These providers are: Minnesota Valley Transit Authority, Southwest Transit Authority, and the Cities of Maple Grove, Plymouth, Shakopee, and Prior Lake. Minnetonka has also opted-out but has chosen to leave its service with the Metropolitan Council.

Figure 7-6: Logos of Providers

→ Ramsey Star Service: Regular-route coach bus service from the City of Ramsey to Minneapolis, operated by a private provider under contract to the City of Ramsey and managed by Anoka County.

→ Rush Line Service: Regular-route coach bus demonstration service between the City of Columbus and downtown St. Paul with stops in Forest Lake, White Bear Township, and at the Union Depot. The line will be operated by a private provider under contract to the Metropolitan Council. The Metropolitan Council is holding the contract on behalf of the Rush Line Task Force.

→ University of Minnesota: Regular-route bus service around and between the University of Minnesota campuses.

Transit Service Areas

Regular-route service provided by the Metropolitan Council and the Suburban Transit Providers operates within the Transit Capital Levy Communities, the communities within the seven-county region that levy a property tax to pay for capital improvements to the transit system. The Ramsey Star travels outside of this boundary. The Transit Capital Levy Communities grew in 2009 and 2010 when the cities of Columbus, Forest Lake, and Lakeville joined. Maple Plain will join effective in 2011. Figure 7-7 shows the extent of regular-route service in the region as of mid 2010.

Dial-a-ride service is provided throughout Anoka, Carver, Dakota, Scott, Washington, Ramsey and Hennepin counties for rides that cannot be served on regular-route services.

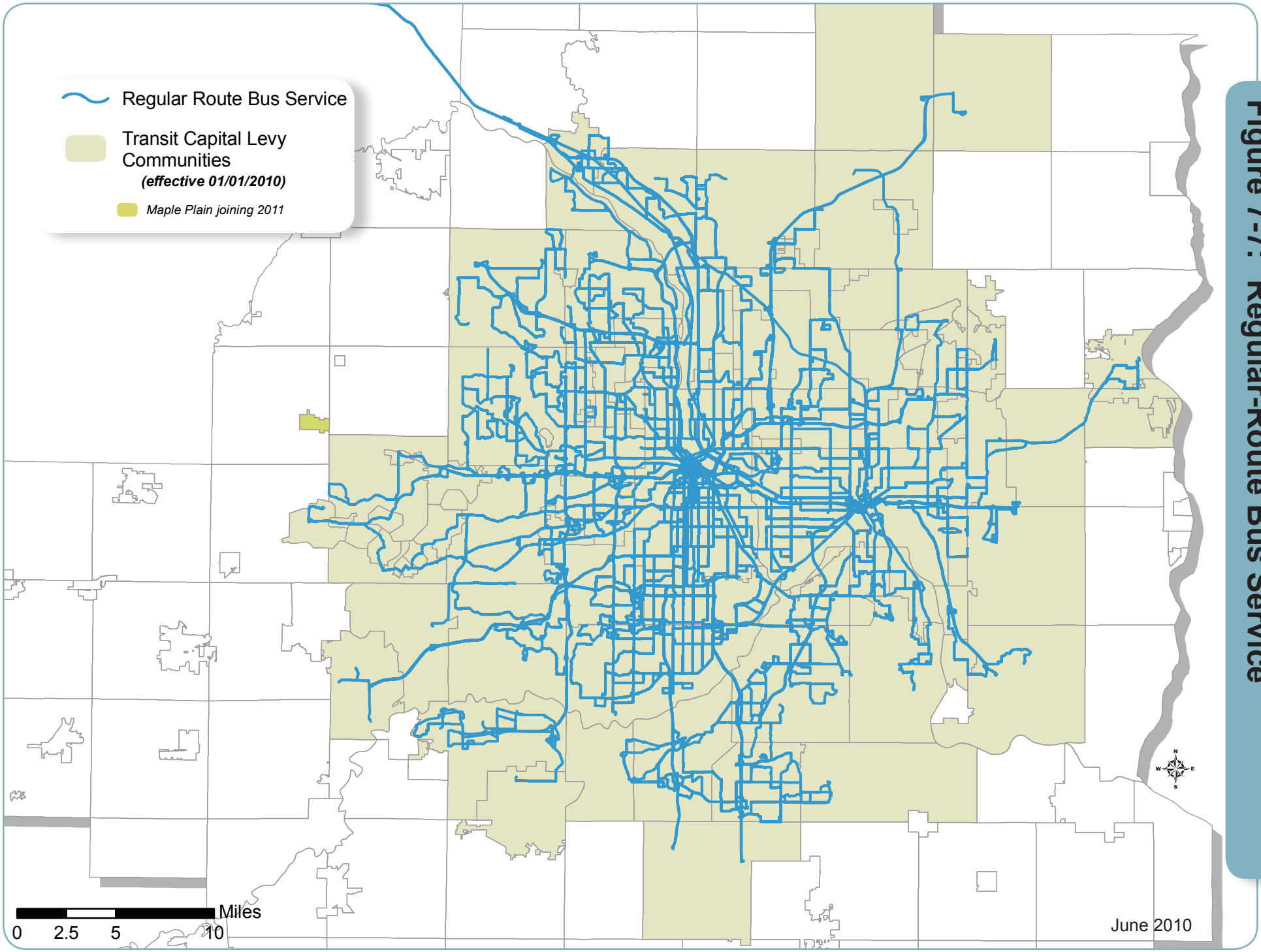


Figure 7-7: Regular-Route Bus Service

Transit Capital and Infrastructure

Providing transit service in the Twin Cities region requires a substantial amount of infrastructure.

The Twin Cities transit system has about 218 regular routes and a dial-a-ride system that covers the seven counties. This system requires 1,264 regular-route buses, 27 light rail vehicles, 18 commuter rail vehicles, six commuter rail locomotives and 425 dial-a-ride buses.

Figure 7-9: Bus-only shoulders are an important feature for transit

In 2009, the region had 108 park-and-rides (with almost 26,000 spaces) with bus or rail service. These park-and-rides concentrate trip origins in lower-density areas to create efficient express and LRT service. Thirty-nine transit centers and stations have been built to improve waiting conditions and some facilitate transfers among buses and trains. Riders access the light rail system at 18 stations and the commuter rail at five stations.

In some locations, transit advantages have been created to improve transit travel times, improve reliability of transit service, and allow transit to avoid congested streets and highways. These advantages include approximately 300 miles of bus-only shoulders, 33 miles of bus-only lanes on city streets, 89 ramp meter bypasses, 44 miles of managed lanes, and seven miles of exclusive busway. Bus-only lanes on city streets include the double bus lanes opened on Marquette and 2nd Avenues in downtown Minneapolis in 2009 as part of the Urban Partnership Agreement with the federal government. Managed lanes include the I-394 HOT lanes and the I35W HOT lanes east and south of downtown Minneapolis.

Figure 7-10 shows existing transit passenger infrastructure in the region.

Figure 7-8: Park-and-rides concentrate trip origins in lower-density areas to create efficient express and LRT service

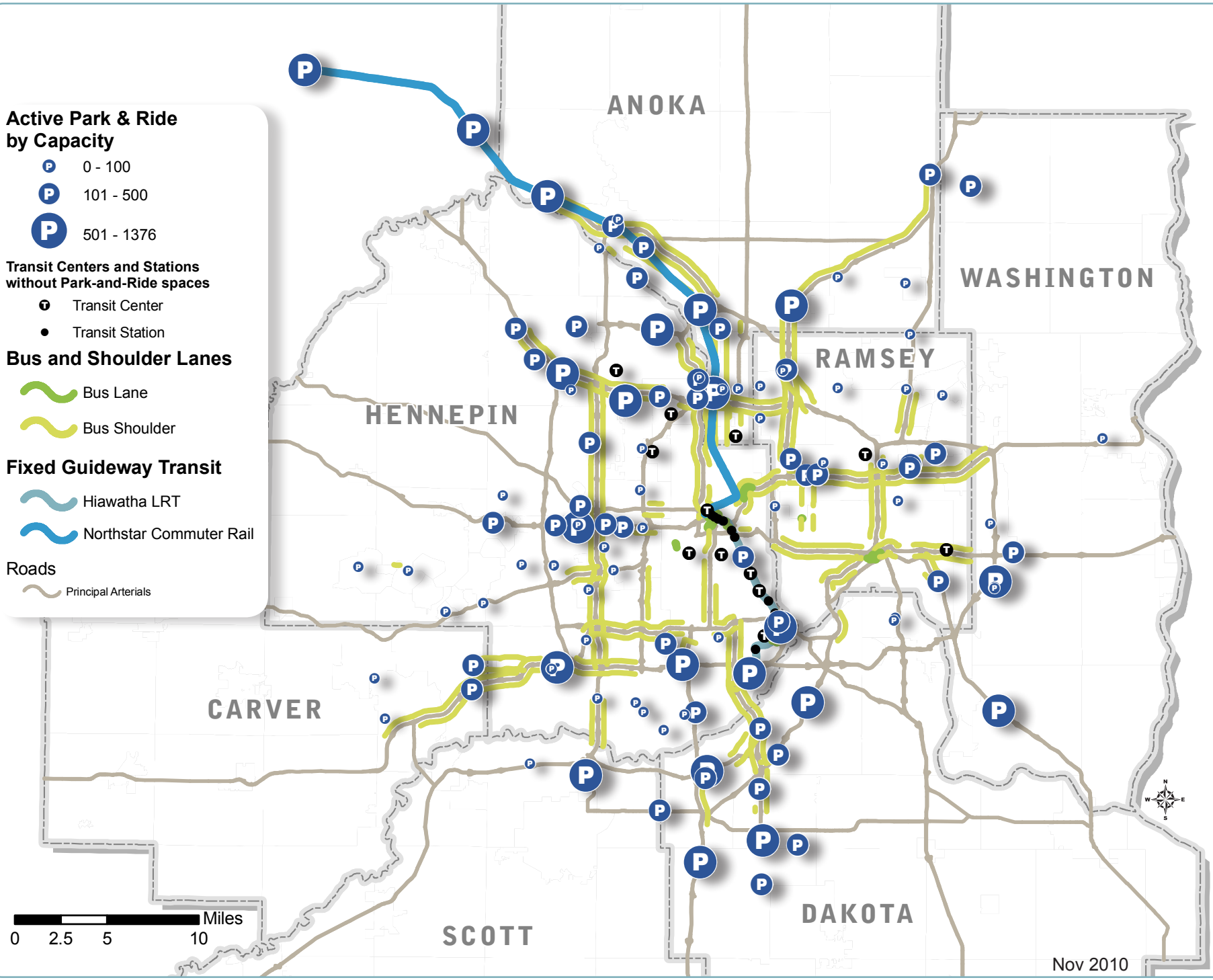


Figure 7-10: Current Transit Passenger Infrastructure

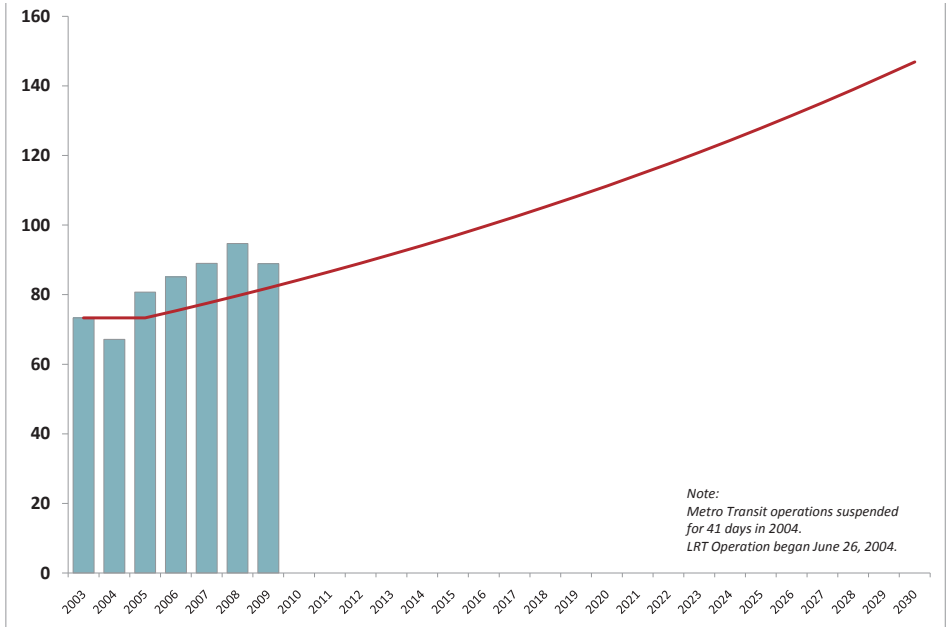
Progress Since 2004 Policy Plan

Growing Ridership

The Metropolitan Council set a goal of doubling transit ridership in the *Transportation Policy Plan* (which was adopted in 2004) to about 147 million rides by 2030. Since setting that goal, transit ridership has grown steadily. Through 2009, ridership remains on target for reaching this 2030 goal, as shown in Figure 7-11.

Figure 7-11: Regional Transit Rides and Goal

in millions of riders



Factors driving this growth include the opening of the region's first modern rail transit line in 2004, higher fuel and parking prices, changes in employment in the core cities, and increasing congestion. Unlimited ride college pass programs have helped college students on limited budgets afford transit passes, substantially increasing the number of students using transit. Metropass ridership, a program where employers provide discounted transit passes to employees, has increased 65 percent from 2004 to 2007. The region has implemented a new fare collection system based on a "Go-To" electronic fare card, which speeds boarding times. Also, the University of Minnesota began general public transit service.

Figure 7-12: Ridership is anticipated to double by 2030

Existing regular-route programs have also shown ridership increases. Metro Transit restructured service in two sectors: Central-South in 2004 and Northwest Metro in 2007, which included opening new transit centers in Brooklyn Center and at the Midtown Exchange (Chicago Avenue and Lake Street) in south Minneapolis. Since 2004 more than 7,000 park-and-ride spaces have been added to accommodate the growing demand on express routes and LRT. Almost all of the region's transit vehicles have bike racks, which has expanded the number of people able to use transit for at least part of a trip. These improvements and growing demand have increased Metro Transit bus ridership by 4.8 million rides in the past five years. Suburban transit providers added nearly 1 million rides over the last five years. Other programs also showed substantial ridership growth. Detailed growth in ridership is shown in Table 7-13.

Table 7-13: Twin Cities Transit Ridership

	2003	2004*	2005	2006	2007	2008	2009
Metro Transit Bus	66,000,000	53,200,000	60,900,000	63,500,000	67,300,000	70,900,000	65,700,000
Metro Transit Rail**	0	2,940,000	7,900,000	8,960,000	9,100,000	10,200,000	9,900,000
Suburban Providers	3,430,000	3,570,000	3,950,000	4,380,000	4,790,000	5,210,000	4,760,000
University of Minnesota***	0	3,580,000	3,800,000	3,690,000	3,280,000	3,550,000	3,860,000
Contracted Routes	1,910,000	1,720,000	2,050,000	2,440,000	2,370,000	2,550,000	2,420,000
Metro Mobility/ADA	1,290,000	1,330,000	1,280,000	1,290,000	1,370,000	1,430,000	1,440,000
Dial-a-Ride	502,000	493,000	499,000	496,000	490,000	420,000	391,000
Northstar/Ramsey Star**	144,000	174,000	180,000	182,000	188,000	225,000	196,000
VanGo Vanpools	103,000	131,000	131,000	158,000	176,000	210,000	192,000
Regional Total	**73,300,000**	**67,200,000**	**80,700,000**	**85,100,000**	**89,064,000**	**94,695,000**	**88,859,000**

** Metro Transit operations suspended for 41 days in 2004. LRT Operation began June 26, 2004.*

*** Ramsey Star operations began in 2007.* Northstar Commuter Rail operations started in November 2009 at which time Northstar bus service was discontinued.

**** The University of Minnesota began reporting its regional ridership in 2004 but had been providing service prior to this date.*

Transitway Development

The region made substantial progress in developing transitways in the past several years:

- Northstar Commuter Rail opened in November 2009. The Northstar corridor links Big Lake with downtown Minneapolis.
- Hiawatha LRT station platforms were extended to accommodate three-car trains between the Mall of America and downtown Minneapolis.
- Two Bus Rapid Transit (BRT) lines started construction. The region secured funding for parts of the I-35W BRT and Cedar Avenue BRT corridors through an Urban Partnership Agreement (UPA) with the federal government. The lines provide service south of downtown Minneapolis and, along with many other buses, use the double bus lanes on Marquette and 2nd Avenues in downtown Minneapolis. The Minneapolis double bus lanes were also funded through the UPA.
- Central Corridor LRT advanced to the Final Engineering design and construction phase. All funding has been committed including the federal full funding grant agreement and local funds from the CTIB and Hennepin and Ramsey County Regional Railroad Authorities. The line is scheduled to begin transit operations in 2014. The corridor connects St. Paul, the University of Minnesota, and downtown Minneapolis.

- The Southwest Transitway completed alternatives analysis and selected the Kenilworth-Opus-Golden Triangle alignment (Alternative 3A) as the Locally Preferred Alternative in May 2010, progressed in environmental documentation with the DEIS issued in fall 2010, advanced station area land use planning, and requested permission from the FTA to enter the Preliminary Engineering design phase. The corridor connects Eden Prairie, Minnetonka, Hopkins, St. Louis Park, and Minneapolis.
- The Bottineau Transitway completed alternatives analysis and selected LRT on the West Broadway in Brooklyn Park – Burlington Northern Santa Fe Corridor – Olson Memorial Highway alignment (Alternative B-C-D1) as the Locally Preferred Alternative in May 2013, progressed in environmental documentation with the DEIS scheduled for public review in 2013, advanced station area land use planning, and began preparations for a request for permission from the FTA to enter the Preliminary Engineering design phase. The corridor connects Brooklyn Park, Crystal, Robbinsdale, Golden Valley, and Minneapolis.
- The Red Rock Corridor, connecting Hastings to St. Paul and Minneapolis, prepared an alternatives analysis in 2007 and initiated station area planning in 2009.
- Rush Line, linking St. Paul, with Forest Lake, Columbus, and beyond, initiated commuter bus demonstration service in 2010 and an alternatives analysis is underway.

Figure 7-14: Hiawatha was the first LRT corridor built in the region

- The Gateway Corridor (I-94 East), linking Minneapolis, St. Paul and Western Wisconsin initiated an alternatives analysis in summer 2010.
- Metro Transit initiated an Arterial Transit Study in an effort to better understand the scope of potential improvements for bus rapid transit on the nine arterial street routes and identify the most feasible corridors for implementation.

Regional Transitway Guidelines

As the region has made progress in developing transitways, the need for uniform transitway guidelines has become apparent.

In early 2010, the Metropolitan Council invited its local partners to join in an effort to develop Regional Transitway Guidelines for the development of corridors where intensive transit investment is planned, as identified in the region's 2030 Transportation Policy Plan (TPP) adopted in January 2009, and subsequent policy plans. The guidelines will provide guidance for developing transitways in corridors that will be served by commuter rail, light rail and bus rapid transit. Guidelines will establish technical best practices in the region for ten transitway elements. Among the elements are vehicles, fare collection systems, and stations and public facilities for example. The guidelines are not intended to be design standards or specifications. Rather, they will establish consistent, general practices that ensure the transit corridors are developed in a consistent and equitable manner as the region's transit network continues to grow and expand, and provide a foundation on which project partners can build. The guidelines will be

flexible enough so that each transitway can boast its unique characteristics and opportunities, and planners can address its unique challenges. The guidelines will also be a living document, evolving over time as the region's experience with transitways continues to grow. In 2010, an Advisory Committee and 10 technical committees were established to develop the Regional Transitway Guidelines.

Issues and Trends

Demand for Service

Increasing fuel costs, growing congestion and the popularity of incentives such as unlimited ride programs and new fare tools are increasing demand for transit. In 2008, transit ridership was at its highest level in 25 years, but the economic recession and rising unemployment dropped 2009 transit ridership levels back to 2007 levels. While ridership may fluctuate from year-to-year, ridership growth is expected to continue over the long-term as gasoline prices and congestion are forecast to increase. There is growing pressure for expanded transit service beyond the Transit Capital Levy Communities (shown in Figure 7-7), which has been the traditional boundary of regular-route service. Also, the population of the region and the percentage of elderly persons will grow, increasing demand for dial-a-ride/ADA services.

Volatility and Lack of Growth in Major Revenue Source

The Motor Vehicle Sales Tax (MVST) is the region's largest source of operating funding for transit. Transit operating funding was shifted from the property tax to this revenue source in 2002, with metropolitan area transit receiving 20.5% of statewide MVST collections. In 2007, the constitutional dedication of MVST to transportation purposes increased the metropolitan transit share of MVST from 20.5% to 36%, phased-in over a five year period from 2007 to 2012. Despite receiving this increased share of MVST, in FY2009 the MVST revenues received for metropolitan area transit ($122M at 28% of MVST) were slightly lower than the amount received in FY2003 ($124M at 20.5% of MVST). If metropolitan area transit operations are to grow over time, this major revenue source will need to be relied upon to provide increased revenues. The full phase-in of the constitutional dedication with 36 percent of the MVST revenues dedicated to metropolitan transit by FY2012, along with a forecast recovery in the MVST revenues overall may result in some growth of this revenue source. However, the revenue volatility and risk of this revenue source make planning for the ability to preserve existing service and for service expansion difficult.

Rising Costs of Providing Transit

Several cost components critical to transit have been increasing in price. The price of fuel, health care insurance, land and construction materials have all been increasing faster than inflation and transit revenues. Transit providers are exploring technologies to help mitigate some of these costs, including hybrid electric buses and the use of bio-fuels, but these efforts cannot fully mitigate these increasing costs.

Land Use Not Supportive of Transit

Transit works best with destinations that have large numbers of jobs clustered together, a walkable environment and connected streets. In the urban core the cities have focused on directing growth and

density to corridors well served by transit. In suburban areas however, jobs, retail and services are often scattered in low-density developments without sidewalks or crossings for major streets or highways. As a result, it can be difficult for transit to efficiently serve many suburban destinations. Still, some changes have occurred over the last 10 years that may support expanded transit services. Higher percentages of residential units are built as multifamily developments, more single family units are built on smaller lots and more walkable commercial areas are being developed. Making auto-oriented locations more transit-friendly will require a continued collaborative effort at municipal and regional levels and between the public and private sectors.

Congestion Hindering Fast, Reliable Transit

Transit operating in mixed traffic is being increasingly affected by congestion both on highways and on city streets. Transit trips are taking longer and trip times are more variable as buses are caught in congestion. Maintaining and expanding transit advantages such as managed lanes and bus-only shoulders become even more important as congestion continues to increase.

Downtown Capacity Constraints

A number of locations in the region are key to transit, yet have capacity limitations. While the Marquette and 2nd double bus lanes project opened in 2009 has significantly increased transit capacity in downtown Minneapolis, ultimately there is a limit to how many buses can operate in the downtown. Fifth Street in downtown Minneapolis can accommodate Hiawatha and Central Corridor LRT without significant problems. A maximum of two additional LRT lines can be accommodated on 5th Street if they are through-routed as planned with Central and Hiawatha trains. Additional rail lines beyond these four will require a new alignment through downtown Minneapolis. The Target Field Station area near downtown Minneapolis (where station expansion is called The Interchange) now accommodates the intermodal connection between Northstar commuter rail and Hiawatha LRT. Additional commuter and passenger rail may require new or expanded stations and storage areas. In downtown St. Paul, there may be capacity constraints if additional light rail lines are constructed after Central Corridor LRT. Renovation of the Union Depot in downtown St. Paul is needed to accommodate commuter rail, intercity passenger rail (Amtrak), high speed rail, bus service, and other services envisioned for the site.

New Funding Source for Transit/Continuing Funding Needs

In the 2008 legislative session, the metropolitan counties were given the authority to levy a quarter-cent (¼ percent) sales tax. Five of the counties voted to implement the tax and form a joint powers board known as the Counties Transit Improvement Board (CTIB).

The new sales tax revenues will have a very positive impact on the region's ability to develop a strong transitway system by 2030. However, this revenue cannot be used to supplant existing funding, to operate or expand the base bus system or for operating projects that did not receive capital funds from this source. If the regional goal of doubling transit ridership is going to be met, additional funding above the new sales tax and MVST revenue from the constitutional dedication will need to be identified.

Changing Federal Policies

Over the last two years the federal government has begun to focus more funding resources on projects that support livability and sustainability, and to coordinate the investment policies of US DOT with that of HUD and EPA. This emphasis has led to money becoming available for projects like streetcars that were not typically funded by FTA in the past. The coordination of investments strategy also means that more HUD money for affordable housing will be spent on projects located in areas with good transit service, benefiting the residents with better travel options, the transit system with more potential ridership, and improving air quality through fewer vehicle miles traveled in private cars.

Increasing Complexity in Transit Governance

Over the last 30 years, the number of entities planning and providing transit service has been increasing. In the 1980s, state law allowed 12 communities to provide their own transit service, resulting in six suburban transit authorities. In the 1980s, county-based regional railroad authorities began the purchase of abandoned rail right-of-way and planning transit projects. In the 2008 legislative session, counties were given the authority to form a joint-powers board to allocate sales tax funds to transitway projects. Greater involvement of cities and counties has generated increasing support for transit, and can result in more inclusiveness and better results; however, it also requires strong ongoing communication and coordination amount all parties involved.

Transit System Security

Maintaining and improving the safety and security of the transit system, both actual and perceived, will continue to be vital to providing the mobility needed to meet riders' needs and increasing ridership.

Transit System Policies

The following regional policies and strategies, outlined in Chapter 2, will guide the development and operation of the transit system in the region.

Policy 12: Transit System Planning

Regional transit providers should plan, develop and operate their transit service so that it is cost-effective, reliable and attractive, providing mobility that reflects the region's diverse land use, socioeconomic conditions and travel patterns and mitigating roadway congestion with the goal of doubling regional transit ridership by 2030 and a 50% increase in ridership by 2020.

> **Strategy 12a. Transit Services Tailored to Diverse Markets:** Diverse transit markets need different transit service strategies, service hours, operating frequencies, and capital improvements. To tailor transit service to these diverse market needs, regional transit providers will follow the standards and service delivery strategies as outlined in Appendix G: Transit Market Areas and Service Standards.
>
> **Strategy 12b. Transit Service Options:** Transit providers will pursue a broad range of transit

service options and modes to match transit services to demand.

Strategy 12c. Transit Centers and Stations: Regional providers will plan and design a transit network that utilizes Transit Centers and Stations to connect various types of transit service options. Transit Centers and Stations will also link transit to local land use and enable the network to provide efficient service to a wider geographic area through timed transfers.

The opportunity to accommodate strategically located and appropriately sized transit centers and stations must be an active part of all regional and local planning and development processes.

Strategy 12d. Park-and-Rides: Transit providers will work with cities to expand regional park-and-ride facilities to support service expansion as expected growth occurs within express corridor areas and along dedicated transitways.

Strategy 12e. Underrepresented Populations: Regional transit providers will continue to ensure their transit planning fairly considers the transit needs of all populations and is compliant with the environmental justice directives outlined in various federal legislation, including Title VI of the Civil Rights Act of 1964 and the National Environmental Policy Act.

Policy 13: A Cost-Effective and Attractive Regional Transit Network

Regional transit providers will preserve, operate, maintain and expand the transit system in a cost-effective manner that optimizes existing and future investments. The Council will continue to improve transit service coordination, travel speed, passenger safety, financial incentives and customer amenities to make the system more attractive, visible, travel time competitive and user-friendly.

Figure 7-15: Transit police are part of providing a safe and secure transit system

Strategy 13a. Coordination Among Services: The Council will promote coordination among the different transit services provided by various authorities throughout the region to ensure that the overall regional transit system functions as a seamless and user-friendly regional network, and to avoid inefficiencies and duplication.

Strategy 13b. Transit Fare Structure: The Council will support a regional transit fare structure that balances ridership and fare revenue, relates the fare to the cost of providing service and to other transportation costs, is easy to understand and administrate, and convenient to use.

Strategy 13c. Marketing Transit: The Council will increase the value, benefits and usage of transit services through a variety of advertising and promotional programs. Annual transit marketing plans will be developed by the Council based on input from stakeholders.

Strategy 13d. Transit Technologies: The Council and regional providers will implement new technologies to improve customer information, service reliability and the delivery of transit service.

Strategy 13e. Transit Safety and Security: Working with transit operators and communities, the Council will continue striving to provide a secure and safe environment for passengers and employees on vehicles and at transit facilities through provision of transit police services,

employee awareness, public education, security partnerships and security investments.

Strategy 13f. Ridesharing: The Council will promote programs that encourage shared vehicle usage including carpooling, vanpooling and car sharing.

Policy 14: Transit System Operations and Management

The regional transit providers will promote innovation, efficiency, flexibility and greater diversity of options in operating and managing transit services.

Strategy 14a. Competitively Procured Services: Some transit services within the region will be competitively procured to increase flexibility, potentially reduce costs, maximize efficiencies and enhance service effectiveness.

Strategy 14b. Jointly Procured Services and Products: The Council will promote and facilitate the joint procurement of goods and services among providers to improve the coordination of transit service and increase cost-effectiveness.

Strategy 14c. Service Improvement Plan: Every two years, regional transit providers in consultation with customers and stakeholders, will prepare a short-term Service Improvement Plan that identifies their priorities for transit service expansion over the following two to four years. The plans will be submitted to the Council, which will prepare a Regional Service Improvement Plan.

Strategy 14d. Review Service Performance: All providers will review their transit service annually based on the performance standards outlined in Appendix G to ensure operational efficiency and consistency. Providers will annually submit their performance reviews to the Council for inclusion in a regional service performance review.

Strategy 14e. Fleet and Facilities Policy: The Council will develop and maintain policies, in consultation with regional providers, CTIB and other partners, to guide investments in regional fleet and facilities.

Policy 15: Transitway Development and Implementation

As one element of an overall transit network, the Metropolitan Council will strongly pursue, in coordination with CTIB, county regional railroad authorities and transit providers, the cost-effective implementation of a regional network of transitways to provide a travel-time advantage for transit vehicles, improve transit service reliability and increase the convenience and attractiveness of transit service.

Strategy 15a. Transitway Modes: Transitway modes will include commuter rail, light rail, bus rapid transit, and express buses with transit advantages. Other transitway technologies may be considered as they become proven, reliable and cost-effective. Intercity passenger rail services could develop rail improvements that could also be used by commuter rail transitways within the region.

Strategy 15b. Criteria for Transitway Selection: Transitway investment decisions will be based

on factors such as ridership, mobility improvements, operating efficiency and effectiveness, environmental impacts, regional balance, economic development impacts and cost-effectiveness. Readiness, priority and timing will be considered when making transitway investments, as will local commitment to transitway implementation and land use.

Strategy 15c. Process for Transitway Selection: Every transitway corridor will be studied in-depth before investments are made. Every potential commuter rail and light rail project will undergo an alternatives analysis and develop an environmental impact statement before seeking funding for implementation. All bus rapid transit corridors will be studied and a range of implementation alternatives developed.

Alternatives analyses will examine potential alignments and modes, including enhanced bus service. All alternative analyses must include both bus and rail options. Bus options must include improvements to highways and roads that would provide transit advantages, such as bus-only shoulders, signal priority or preemption, dynamic shoulder lanes, dynamic parking lanes, ramp meter bypass lanes, managed lanes, or other advantages. Land use and zoning needs must also be evaluated. The Council must adopt alternatives analyses results and a locally preferred alternative before funding can be sought for implementation for rail projects, for New Starts applications or for Small Starts applications. BRT corridors seeking federal New Starts or Small Starts funding may require alternatives analyses and environmental documentation which should be adopted by the Council before federal funding is sought. The project development process and corresponding technical assumptions must be consistent with the Regional Transitway Guidelines to be adopted by the Council in 2011.

Strategy 15d. Transitway Coordination: Transitway implementation will be coordinated with other transit, highway, bicycle and pedestrian projects, facilities, and investments.

Transitway implementation will be coordinated with:

- transit facilities (park-and-ride lots, transit centers, transit stations)
- transit advantages (signal priority or preemption, automatic vehicle location and other intelligent transportation system applications)
- pedestrian and bicycle facilities and regional trails
- highway improvements such as high-occupancy toll lanes, high-occupancy vehicle lanes, dynamic shoulder lanes, priced lanes, and other investments
- street improvements such as queue jump lanes, traffic signal priority, dynamic parking lanes, and other investments

Strategy 15e. Enhanced Transit Service Along Transitways: The Council will support enhanced transit service along transitways and the integration of existing routes along transitway corridors as appropriate to take full advantage of transitway improvements.

Strategy 15f. Transitway Coordination with Other Units of Government: The Council will coordinate transitway planning and implementation with other jurisdictions including Mn/DOT, CTIB, regional railroad authorities, local units of government and transit providers.

Strategy 15g. Transitways and Development: The Council will work with local units of government to ensure that transitways promote efficient development and redevelopment.

Local units of government are expected to develop local comprehensive plans, zoning, and community development strategies that ensure more intensified development along transitways. This development should be effectively linked to the transitway through compact, walkable environments.

Strategy 15h. Transitway Operations: Transitway infrastructure investments will not occur unless operating funds have been identified.

Figure 7-16: Metro Mobility provides paratransit service to the region

Policy 16: Transit for People with Disabilities

The Council will provide transit services for persons with disabilities in full compliance with the 1990 Americans with Disabilities Act including the accessible regular-route transit system, comparable ADA, and other dial-a-ride programs.

Strategy 16a. Accessible Vehicles: The Council will ensure that all new transit vehicles and facilities will be accessible to persons with disabilities.

Strategy 16b. Provide Comparable Service: Paratransit service comparable to the region's local regular-route transit system will be provided to individuals who are certified by the Council under the Americans with Disability Act (ADA).

Strategy 16c. Access to Transit Stops and Stations: Local communities and transit providers shall coordinate their efforts to assure that all fixed-route transit stops are accessible year-round, including snow removal.

Strategy 16d. Transfers Between Fixed-Route and ADA Services: The Council will encourage transfers between regular-route services, dial-a-ride and ADA paratransit services utilizing transit centers and rail stations as transfer points.

Associated Policies and Strategies

A number of policies and strategies are not narrowly focused on transit but address issues beyond transit. Yet these policies directly impact transit. Because of this, they have been identified below.

Policy 2: Prioritizing Regional Transportation Investments

Strategy 2c. Transit Capital and Operating Investments

Strategy 2e. Multimodal Investments

Policy 3: Investments in Regional Mobility

Strategy 3g. Alleviate Highway Construction Impacts

Policy 4: Coordination of Transportation Investments and Land Use

Strategy 4a. Accessibility

Strategy 4b. Alternative Modes

Strategy 4c. Increased Jobs and Housing Concentrations

Strategy 4d. Transit as Catalyst for Development

Strategy 4e. Local Comprehensive Plans

Strategy 4f. Local Transportation Planning

Strategy 4g. Metropolitan Urban Service Area (MUSA)

Policy 5: Investments in Regional, National and Global Connections

Strategy 5a. Interregional and National Highway Connections

Strategy 5b. Intercity Passenger Rail and Bus Connections

Strategy 5c. Freight Connections

Strategy 5d. Connections by Air

Policy 6: Public Participation in Transportation Planning and Investment Decisions

Strategy 6a. Public Participation

Strategy 6b. Interjurisdictional Coordination and Participation

Strategy 6c. Participation of Underrepresented Populations

Strategy 6d. Public Awareness of Transportation Issues

Strategy 6e. Transit Customer Involvement

Policy 7: Investments in Preserving of Right-of-Way

Strategy 7a. Preservation of Railroad Rights-of-Way

Policy 8: Energy and Environmental Considerations in Transportation Investments

Strategy 8a. Reduction of Transportation Emissions

Strategy 8b. Compliance with Federal Standards

Strategy 8e. Reduction of Greenhouse Gas Emissions

Strategy 8f. Transit Priority for Fuel

Policy 9: Highway Planning

Strategy 9b. Multimodal System

Policy 11: Highway System Management and Improvements

Strategy 11d. Optimize Highway System Performance

Policy 18: Providing Pedestrian and Bicycle Travel Systems

Strategy 18b. Connectivity to Transit

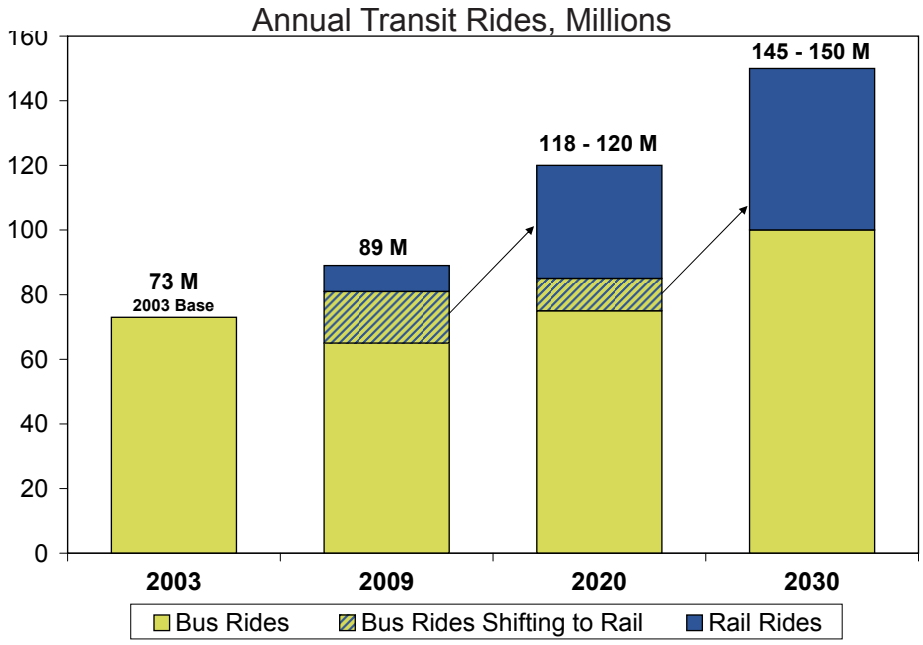
2030 Transit Plan

Transit ridership is an important measurement of the transit system's performance. Steadily increasing transit ridership reflects a transportation system that provides enhanced regional mobility, offers an alternative to congestion, and benefits the environment. The 2030 Transit Plan envisions two approaches to increasing transit ridership and helping meet the mobility needs of the Twin Cities:

- Maintain and grow bus ridership and
- Develop a network of bus and rail transitways.

In 2004, the Council set a goal of doubling ridership by 2030, from a 2003 base of 73 million rides to approximately 145-150 million rides in 2030.

Figure 7-17: Ridership by Mode 2003 - 2030 (Including rides changing modes)



It is projected that by 2030, the transit system will carry an additional 60 million rides over 2007 ridership levels.

Rail transitways will carry an additional 40 million rides per year, including about 20 million new rides and about 20 million rides that will shift from bus to rail as new lines open. Additional rail ridership will come from implementing new rail transit lines between 2009 and 2030 and increased ridership on Hiawatha LRT.

In 2030, bus transitways will carry 20 million additional rides per year on arterial street and highway BRT lines and express buses with transit advantages. To reach regional ridership goals, the base bus system will also need 20 million new rides to replace current bus rides shifting to future transitways. Because lower-subsidy riders will shift to rail service, bus ridership growth will require increased investments above current subsidy levels. These investments will support transitway services, meet demand for local service, and expand service to serve the region's growing population. This is addressed further in Chapter 3: Finance.

Maintain and Grow Bus Ridership

Transit Market Areas

The transit system will respond to five distinct transit market areas identified by the Council, defined by population and employment density and the number of people who depend on transit (see Appendix G for detailed definitions). Transit market areas are shown on Figure 7-19.

The downtowns of Minneapolis and St. Paul, the University of Minnesota, and the Minneapolis-St. Paul International Airport/Airport South/Mall of America areas are the primary destinations for transit trips in the region. They also have the largest concentrated employment and surrounding roadways have the highest levels of congestion in the region. Measures to strengthen the role of transit in serving these major activity centers are crucial to the health of the entire transportation network and the region's economy.

Figure 7-18: The Hi-Frequency Route Signage
High frequency routes are marked with the "hi-frequency" brand sign and listed in red

Regular-Route Bus System

The regular-route bus system will change and expand as population, congestion and the cost of travel increase, as the region implements rail transit and as customer needs change.

Local routes will benefit from expanded coverage and frequency improving transit connections between workplaces, residences, retail services and entertainment activities. Routes that may be added or improved by 2030 are included in Figure 7-20. In 2008 local bus routes carried 63 million rides – 66% of the total regional transit ridership.

Arterial routes are high-demand local bus routes with a high level of service. Arterial routes will receive the highest level of local bus service – 15 minutes or better frequency during peak periods, seven-day, up-to-24-hour service, with highly visible passenger facilities at major stops. A subset of arterial routes has a very high level of service branded as the "Hi-Frequency Network", offering 15-minute or better frequency from 6am to 7pm on weekdays and 9am to 6pm on Saturdays. (See http://metrotransit.org/hi-frequency-network.aspx for info). Arterial routes that may be added or improved by 2030 are included in Figure 7-21. The high frequency network will also expand and improve. Some of these arterial routes also have potential to be upgraded to arterial bus rapid transit service as described in the transitway section.

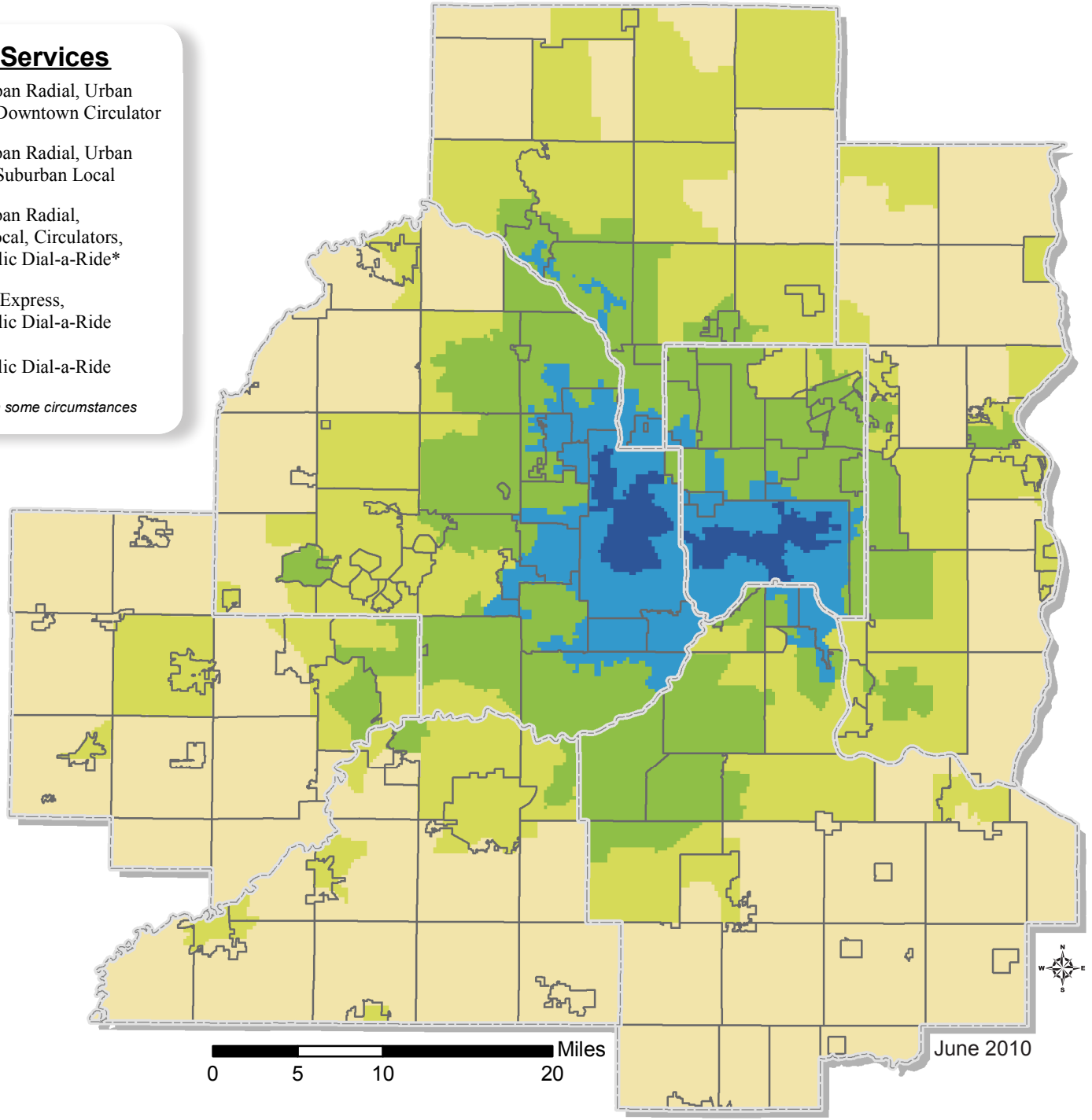
Express routes will be enhanced and expanded in congested highway corridors. Park-and-ride facilities will be developed to support these routes and other improvements will be made within these corridors. Potential routes are shown in Figure 7-22. A minimum level of express service (three trips per peak hour) from any one location within a corridor should be provided.

Long-distance express routes may be introduced outside of the seven-county area where appropriate to provide transit service between exurban areas and downtown Minneapolis or St. Paul. The Council has been working with some adjacent counties to identify feasible corridors. A connection between the Big Lake Northstar commuter rail station and St. Cloud is currently being operated by St. Cloud Metro Bus.

Figure 7-19: Transit Market Areas

Market Area	Typical Services
Area 1	Express, Urban Radial, Urban Crosstown, Downtown Circulator
Area 2	Express, Urban Radial, Urban Crosstown, Suburban Local
Area 3	Express, Urban Radial, Suburban Local, Circulators, General Public Dial-a-Ride*
Area 4	Peak Period Express, General Public Dial-a-Ride
Area 5	General Public Dial-a-Ride

** Market Area 3 Dial-a-Ride is appropriate in some circumstances*



- ADA paratransit service follows federal and state regulations in the regular route service area

- Additional details on market areas and service standards are available in **Appendix G**

- Market area geography was calculated at the census block group level.

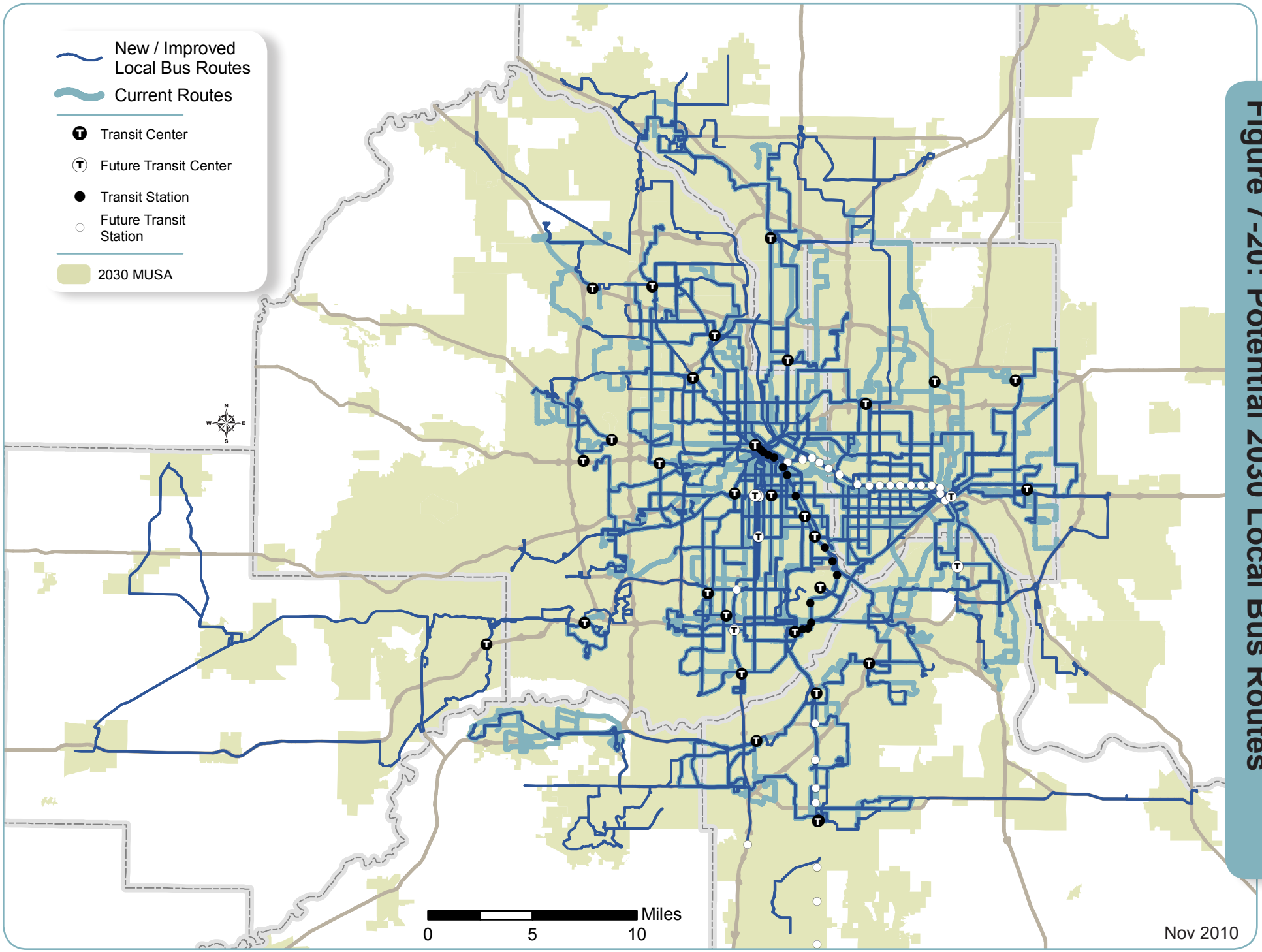


Figure 7-20: Potential 2030 Local Bus Routes

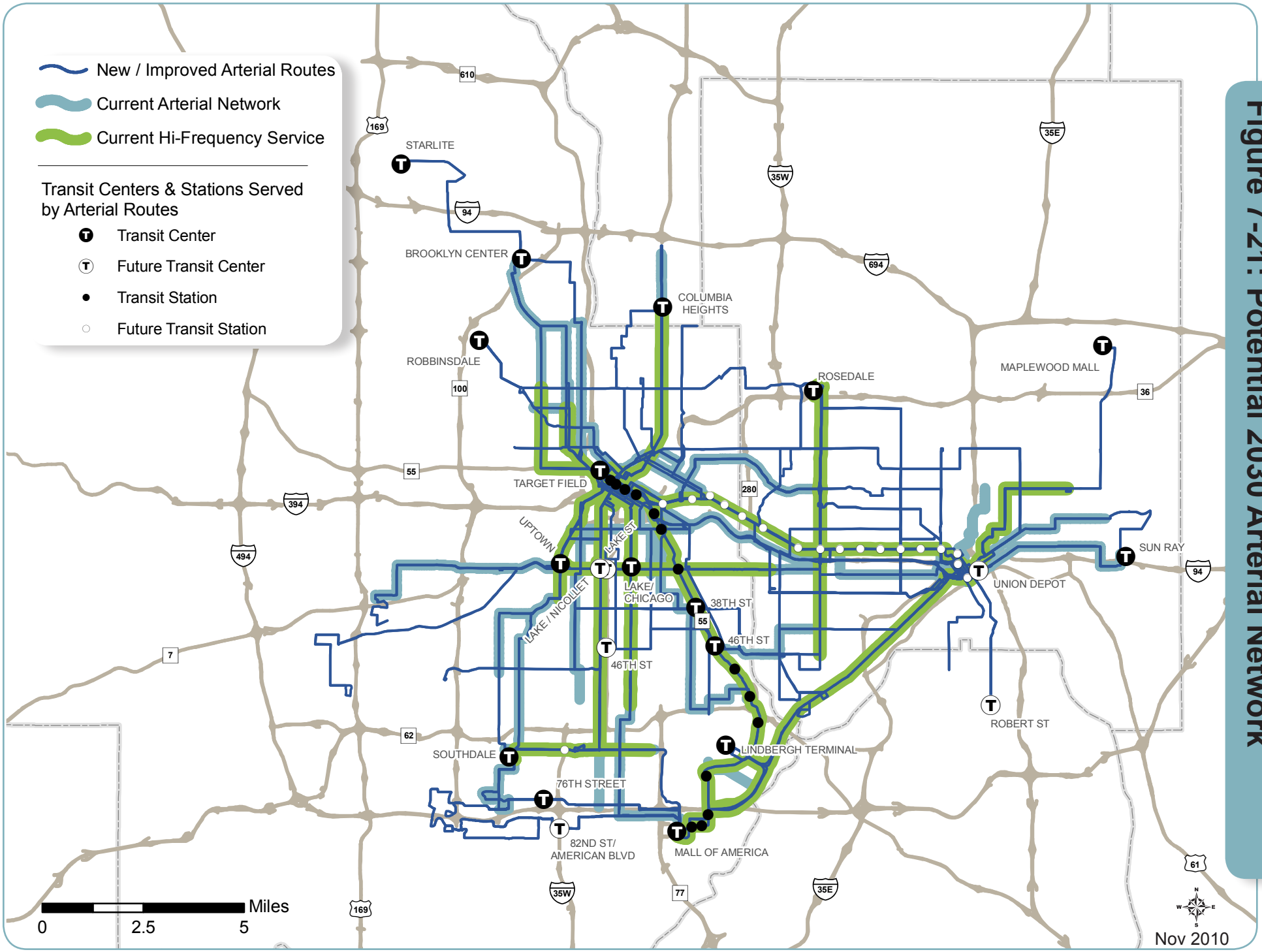


Figure 7-21: Potential 2030 Arterial Network

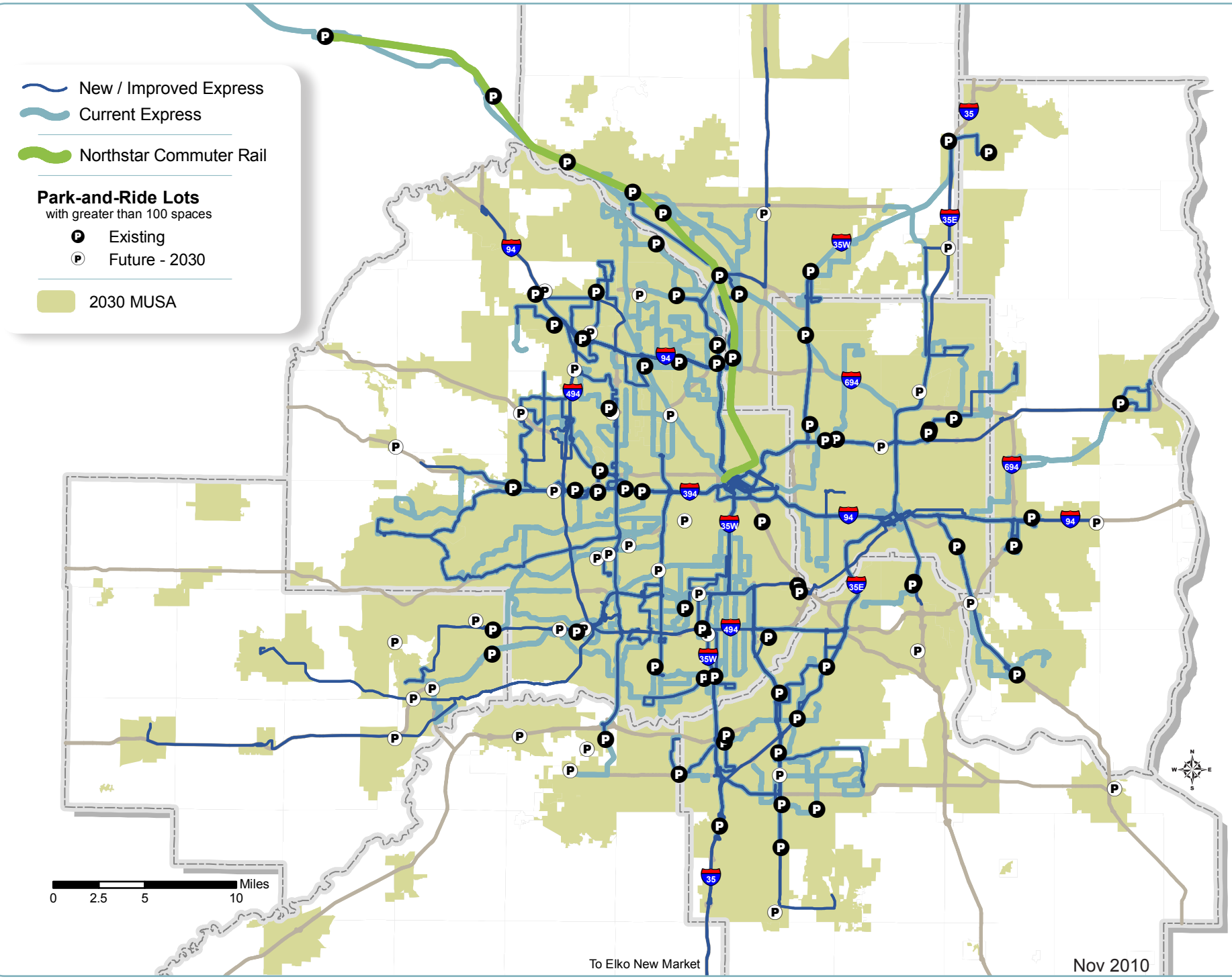


Figure 7-22: Potential 2030 Express Bus

Dial-a-Ride Services

Between 2005 and 2030, the demand for services for people who cannot use the regular-route transit system is projected to grow substantially. This demand will be fueled by the increase in the number of people above the age of 75, projected to grow by 150 percent by 2030, and the increased population in the region.

- Metro Mobility will meet the requirements of the Americans with Disabilities Act (ADA) by providing transit service to people with disabilities certified as not able to use the regular-route transit system. Under the ADA, the region is required to provide ADA services within 3/4 of a mile of local transit service during the same times that local regular-route transit service operates. It also may provide service beyond the requirements of the ADA to provide mobility to people with disabilities. Based on recent ridership trends and demographic projections, Metro Mobility ridership is estimated to grow by more than 40 percent between 2008 and 2030.
- Dial-a-ride programs provide a "safety net" of transportation to people who would not otherwise have transportation. Typical users are the elderly, persons with disabilities who do not qualify for service under the ADA, people too young to drive, and people who do not own a car. The Metropolitan Council will partner with local units of government to provide general public dial-a-ride services in suburban and rural areas. These programs are not projected to grow, as growth in demand is expected to be met through the expansion of the regular-route system.

Transit Facilities

Passenger Facilities

Transit passenger facilities are essential to provide convenient and attractive transit service. They range from basic bus stop signs to large and complex multimodal transit centers and park-and-rides. Such facilities will be provided to support the regular-route bus and rail system and provide transfer points for the dial-a-ride system.

Park-and-ride facilities (for example, surface lots and structured ramps) are primary tools for creating the critical mass necessary for cost-effective transit service from suburban and rural areas. Future facilities should be surface lots rather than structured ramps where feasible, given the higher cost of structured parking. However, structured ramps are appropriate where land is expensive, or where a joint-use venture or transit-oriented development is possible.

Additional park-and-ride capacity expansion will be needed to support anticipated ridership growth in express commuter bus with transit advantages corridors and for transitways. The *2030 Park-and-Ride Plan* in Appendix H and Figure 7-23 shows park-and-ride facilities that are currently projected to be constructed between now and 2030 although specific locations may be refined. Park-and-ride facilities along proposed transitway corridors will be defined as the individual corridors are planned.

An efficient, properly utilized park-and-ride system that meets riders' needs is enhanced by coordination among entities involved in planning and operating park-and-ride facilities. Park-and-ride planning and implementation will adhere to regional guidelines for planning, developing, designing and managing the park-and-ride system.

Transit stations (major stops along transitways) and transit centers (facilities where multiple routes meet to transfer passengers) are necessary tools to efficiently transfer passengers between travel modes and routes. The location of transit stations along transitway corridors will be defined as individual corridors are planned. A network of transit centers and stations will be maintained throughout the metropolitan area to anchor local transit and facilitate convenient passenger connections. Many suburban transit centers will have park-and-ride facilities, while urban transit centers serving primarily local routes will not usually have parking facilities.

Amenities at transit stations, transit centers and park-and-ride facilities should be consistent with growing transit ridership through travel-time savings, cost savings, and convenience for the customer. Passenger shelters and transit stops are essential tools for providing convenience and accessibility to customers throughout the transit system. At high-demand bus stops, particularly in the downtown areas, adequately-sized passenger shelters and sidewalk space need to be provided. By 2030, all bus stops should be ADA-accessible.

Customer information systems (CIS), which include both static and dynamic (real time) systems, are important tools for providing basic route information and directions to transfer points and real-time service information. Technology will affect all aspects of a passenger's trip, such as updated information about the availability of parking at park-and-rides, next-bus arrival information, estimated travel times, web-based trip planning tools, real-time transit information, and rechargeable fare cards. The web-based transit information system for the Twin Cities has already been particularly successful. A new web feature provides web-based real-time bus arrival information on most routes in the region. A network of passenger information systems will be deployed using proven and cost-efficient technology at key locations, such as transit stations and centers, and through electronic media, such as the Internet and telecommunications.

The provision of additional transit passenger facilities in the downtowns will be necessary to accommodate the expected ridership growth in those areas. Specialized facilities, such as the Union Depot in downtown St. Paul and the Target Field Station/Interchange near downtown Minneapolis will be needed to serve as terminal points and connect the various transitways converging downtown.

The downtowns will remain a focus of the transit system into the future. A number of improvements are necessary in the downtowns to accommodate the increasing level of transit service to these important centers. In Minneapolis, double-width bus lanes were added in 2009 on Marquette and Second Avenues. The bus contra-flow lane on 4th Street should be maintained. In St. Paul, these needs include retaining bus lanes on 5th and 6th Streets.

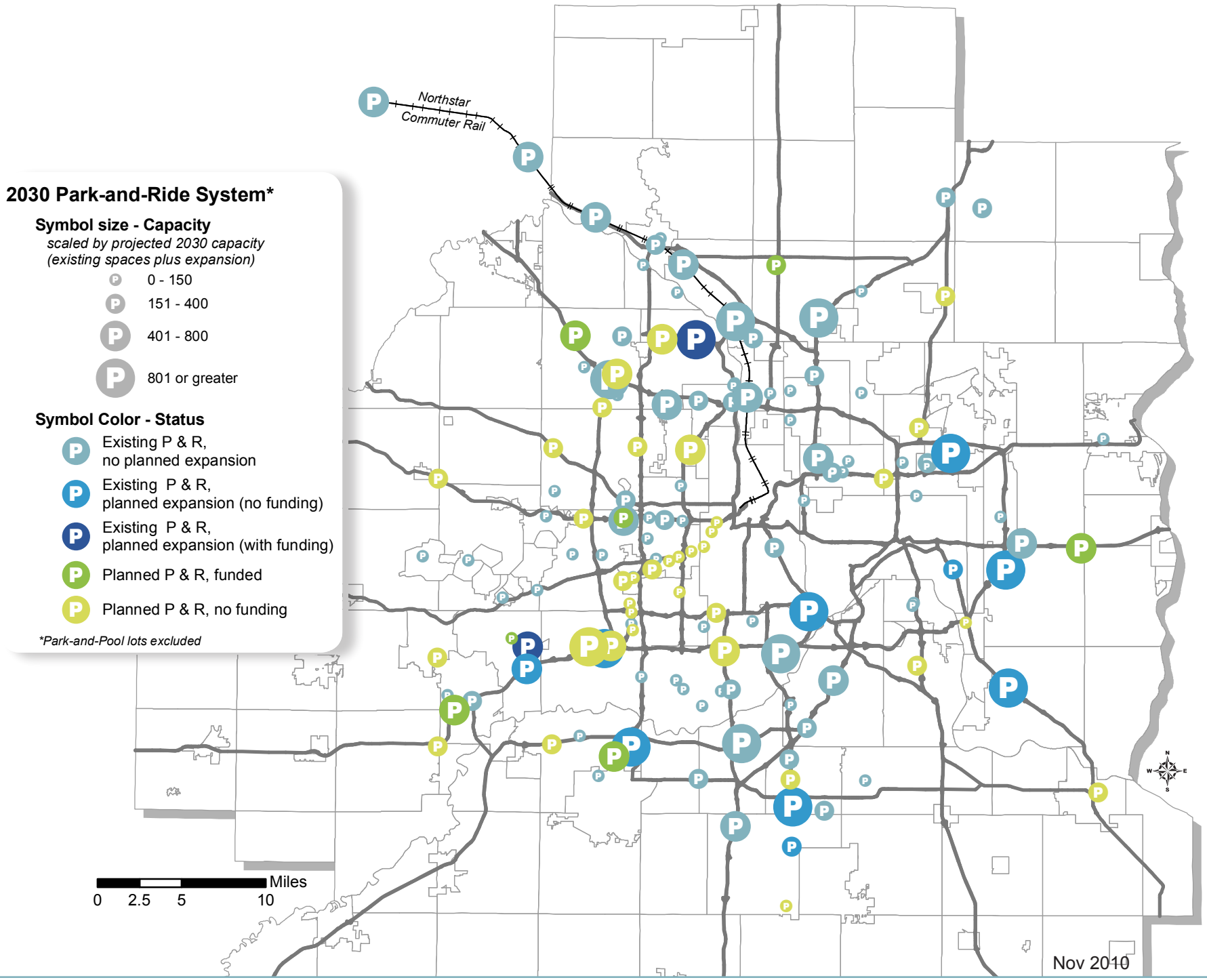


Figure 7-23: Planned 2030 Park-and-Rides

Support Facilities

The regional transit system must have sufficient facilities to support efficient and cost-effective transit services. For buses, these support facilities include garages and bus maintenance facilities, bus layover facilities at the route terminal point, and dispatching and control centers. For rail, these support facilities include maintenance facilities, train storage facilities, layover facilities, and logistics facilities such as control centers.

As the bus fleet expands to meet anticipated ridership growth, bus garages, bus layovers and vehicle storage will need to be increased. This will be accomplished by expanding existing facilities and construction of new facilities. Maximum use of existing garage facilities should be made but bus garage expansion should precede fleet expansion. Bus layover facilities provide a physical space for transit vehicles to stage, an opportunity for route recovery time and driver break rooms and restrooms. These facilities enable the system to operate cost-effectively and on time. Additional layover facilities will be needed in both downtowns and some suburban locations.

Figure 7-24: Garage and maintenance facilities are critical components of the transit system
Metro Transit East Metro Garage

Light rail maintenance and storage facilities will be expanded as rail lines are added and expanded. The Rail Operations and Maintenance Facility on Franklin Avenue will require expansion to accommodate the expansion of Hiawatha LRT to three-car trains. Central Corridor LRT will have a storage and maintenance facility constructed near the Union Depot in downtown St. Paul. Subsequent rail lines will need maintenance facilities, to be determined and constructed through the implementation of those lines.

For Northstar Commuter Rail, a maintenance facility was constructed in Big Lake and a layover track completed in the downtown Minneapolis area. For any future addition or expansion of commuter rail service in the metropolitan area, the need for additional track work and maintenance facility capacity must be evaluated and added where needed.

Transit control centers (TCC) are an essential communications, safety, security and service operational link for regional transit service. Metro Transit operates a TCC, which monitors schedule adherence and coordinates the daily activities of Metro Transit buses, service vehicles, training vehicles and other mobile units. The Metro Transit TCC also dispatches vehicles to respond to on-street incidents and service disruptions and to support Transit Police in their response to security and emergency response. Metro Transit also operates a TCC for rail operations. Other transit providers have similar functions. As the bus and rail system expand, the TCCs will also need to expand.

Figure 7-26 shows the locations of existing major transit support facilities. Additional facilities will be required as service expands to meet growing demand for transit.

Figure 7-25: Skilled workers improve reliability of the entire system

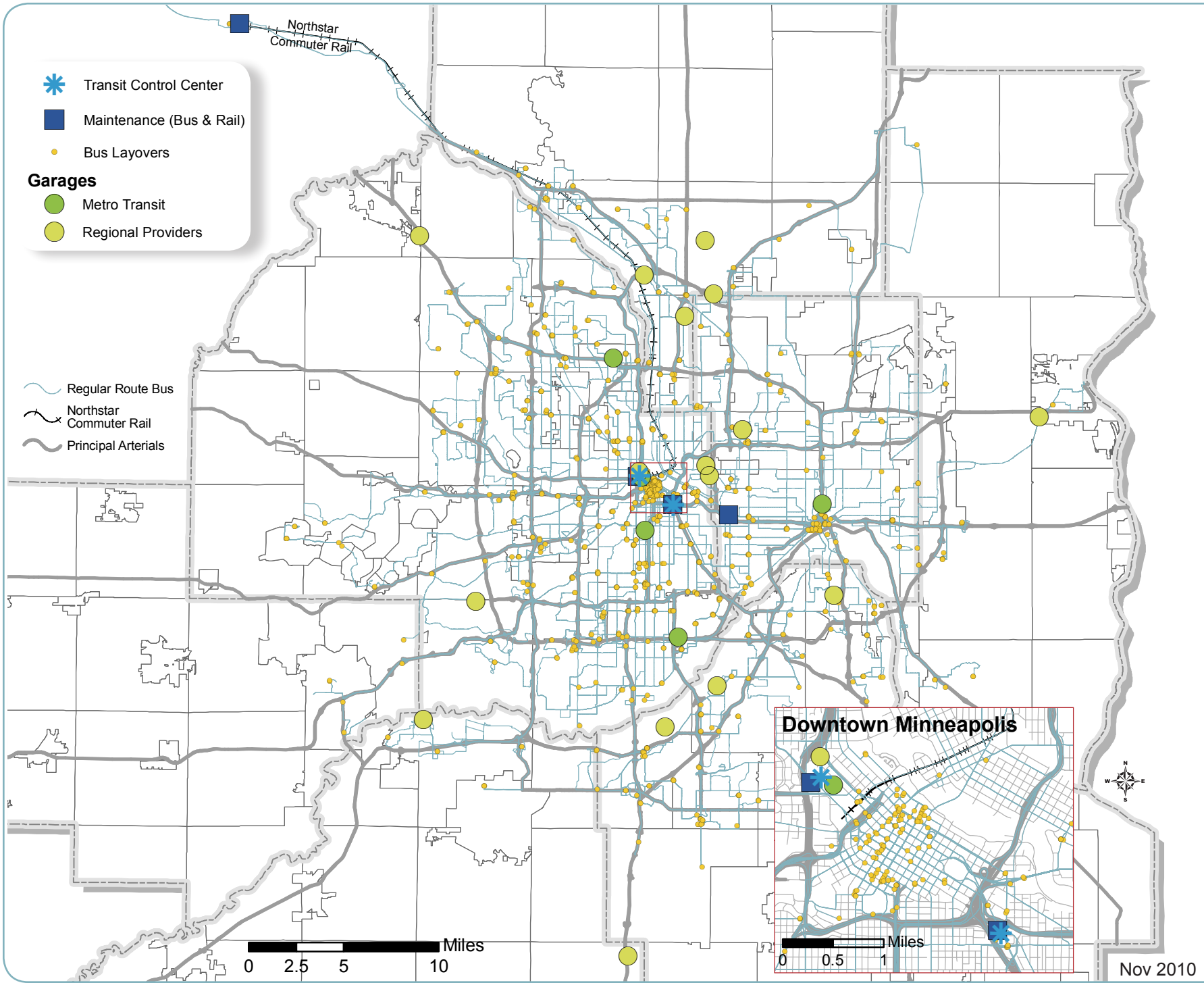


Figure 7-26: Existing Transit Support Facilities

Figure 7-27: Ramp meter bypasses are transit advantages that encourage ridership by improving transit time.

Roadway Improvements to Support the Transit System

Congestion will make it increasingly difficult for buses to move around the region. Right-of-way for rail transit and dedicated busways is limited. As a result, roadway improvements will be critical to maintain transit travel times and reliability. Highway improvements include bus-only shoulders, managed or priced lanes, and ramp meter bypasses as well as newer active traffic management strategies as described in Chapter 6: Highways. On city streets, dedicated bus lanes, dynamic parking lanes, transit priority traffic signals and queue jump lanes can provide transit with substantial advantages. Figure 7-29 shows existing transit advantages.

Some express and local transit corridors are currently well served with transit advantages while others need improvements to maintain or improve transit travel times. Additional bus-only shoulders are needed in strategic locations where they do not exist and more are necessary as the region expands beyond existing boundaries. Both additional ramp meter bypasses and additional ramp meters will be needed. Figure 7-30 shows existing and future bus-only shoulder needs in the region.

Priced lanes are highway lanes shared by transit, high-occupant vehicles and single-occupant vehicles paying a toll. Usage by the single-occupant vehicles is metered through varying the toll based on real time traffic conditions. During times with little or no congestion, a minimal fee is assessed, while during peak commute hours or congested periods pricing is set to maintain a consistent flow of traffic. Priced lanes, like those already operating along I-394 and I-35W, have provided a great advantage for transit by allowing buses to travel at freeway speeds during the most congested periods and hours of highest transit demand. This congestion pricing strategy provides a congestion-free alternative for those willing to pay or ride transit. A system of managed lanes is envisioned for the region and described in Chapter 6: Highways.

Figure 7-28: HOT lanes on 394 are another transit advantage

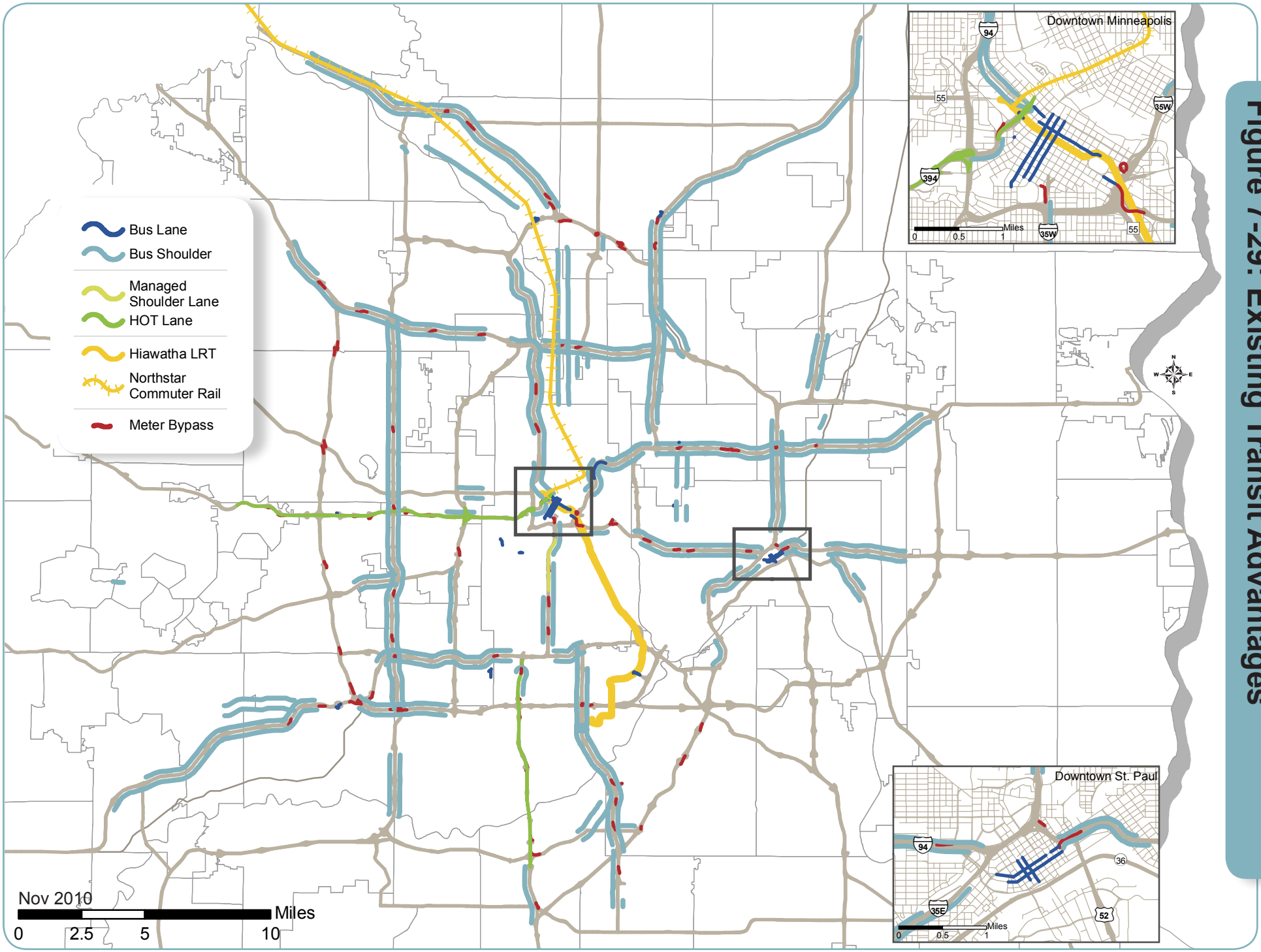


Figure 7-29: Existing Transit Advantages

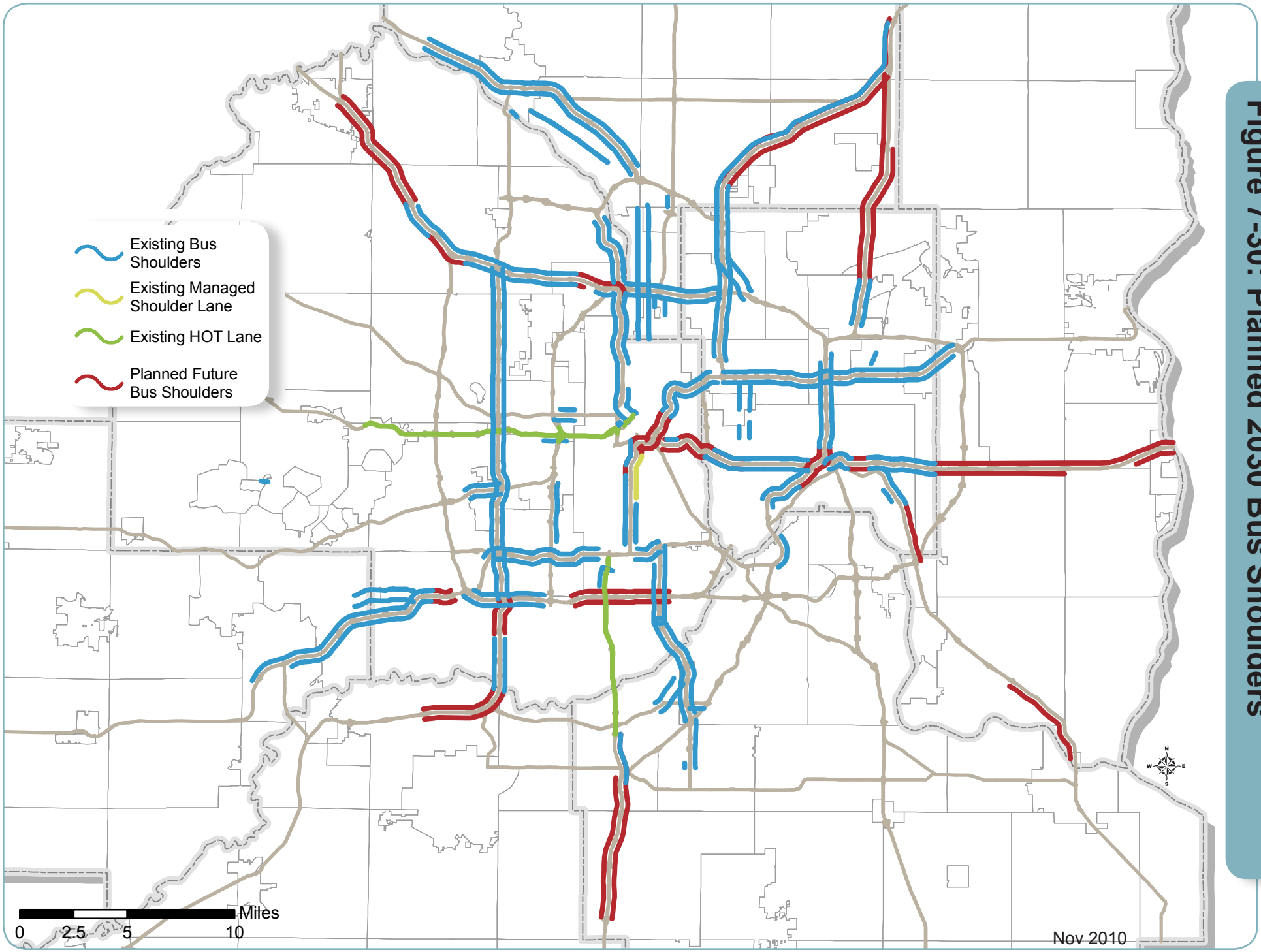


Figure 7-30: Planned 2030 Bus Shoulders

Improvements to the Management and Attractiveness of Transit Services

The Council will promote coordination among the different transit services. Regional transit providers will promote innovation, efficiency, flexibility and greater diversity of options while operating and managing cost effective transit services.

Contracting Services

Contracting the operation of a transit route can be appropriate to meet new service demand, demonstrate new routes or service types, provide efficiencies on certain routes, properly align service expertise with providers, provide more flexibility, or to maintain service in response to fiscal pressures. Service contracts will be structured in a manner that promotes healthy competition. Metro Transit will continue to be the primary provider of regular-route transit services in its service area. The Council will review the amount of contracted service every two years. Twenty percent of regular-route bus service, measured in NTD revenue hours, is the target for private contract operations.

Fleet and Facilities Policies

The Council's fleet policy guides fleet acquisition, use, maintenance, and disposal. All regional providers will adhere to the policies guiding the ownership, maintenance, replacement, and transfer and disposal of buses and trains funded by the region. The fleet policy outlines standards regarding vehicle types and configurations, standard features, farebox equipment, procurement and graphics. The policy also reflects alternative fuels such as low-sulfur diesel, bio-diesel and ethanol, and alternative vehicles such as hybrid electric. A facilities policy will assure regional standards and equity in the design and provision of transit facilities while also providing flexibility to meet local needs.

Service Improvement Plans

To improve short- and medium-range planning efforts and prioritize transit service growth, every two years regional transit providers will prepare a Service Improvement Plan that identifies operating priorities for service expansion for the next two to four years. Each item in the plan should include a project description, resources needed for implementation, projected year of implementation, project readiness, and ridership estimate. The plans will be submitted to the Council who will prepare a Regional Service Improvement Plan.

In addition to a Regional Service Improvement Plan, the Council will prepare an annual regional performance review of all transit services to ensure operational efficiency. Regional transit providers will evaluate their existing services annually against the performance measures outlined in Appendix G.

Figure 7-31: The Transit Control Center ensures efficient and safe operations

New Technologies

Technological innovations have improved transit services, making it a more attractive option. Technology has affected all aspects of a passenger's trip, such as updated information about the availability of parking at park- and-rides, next-bus arrival information, estimated travel times, Web-based trip planning tools, real-time transit information, and rechargeable fare cards. Technology has also helped improve transit operations, such as better fuel efficiencies produced by hybrid-electric buses, the real time GPS tracking data, and the collection of running time conditions for planning purposes and on-street monitoring. The Council will continue to pursue technologies to improve the management and attractiveness of transit services as they mature into proven solutions.

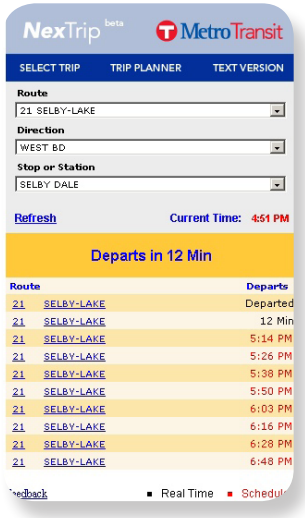


Figure 7-32: New technology, like NexTrip, allows customers to use the transit system effectively

Develop a Network of Bus and Rail Transitways

A network of transitways will allow movement that avoids congested highways, connects regional employment centers and boosts the potential for transit-oriented development. The region will have four types of transitway modes: commuter rail, light rail, bus rapid transit, and express buses with transit advantages.

Corridors Under Study or Development

Previous plans and studies inform the transitway recommendations described in this section. Corridors currently in some stage of study or development include:

- I-35W and Cedar Avenue BRTs – Many elements of these projects are completed and both are scheduled to open station-to-station service in 2012.
- Central Corridor Light Rail Transit – Engineering, design, and construction work continues toward a projected opening in 2014.
- Bottineau Transitway – LRT on the West Broadway in Brooklyn Park – Burlington Northern Santa Fe Corridor – Olson Memorial Highway alignment (Alternative B-C-D1) was selected in May 2013 as the Locally Preferred Alternative. The LPA selection completes the New Starts Alternatives Analysis transportation planning process. Consistent with federal guidance to integrate the NEPA process with the transportation planning process, the Draft Environmental Impact Statement (DEIS) study process will continue with the DEIS scheduled to be complete in 2013.
- Southwest Transitway – LRT on the Kenilworth-Opus-Golden Triangle alignment (Alternative 3A) was selected in May 2010 as the Locally Preferred Alternative. The LPA selection completes the New Starts Alternatives Analysis transportation planning process. Consistent with federal guidance to integrates the NEPA process with the transportation planning process, the Draft Environmental Impact Statement (DEIS) study process will continue with the DEIS anticipated to be complete in late 2010.

Figure 7-33: Cedar Grove Transit Station, part of Cedar Avenue BRT

- Rush Line Corridor – Work on an alternatives analysis continues and the Task Force initiated commuter bus demonstration service in 2010.
- Red Rock Corridor – An alternative analysis completed in 2007 identified express bus service with transit advantages as an interim strategy toward a possible long-term commuter rail investment. Station area planning was initiated in the corridor in 2009.
- Gateway Corridor (I-94 East) – Work on an alternatives analysis for the Gateway Corridor began in fall 2010.
- Arterial Transitways – Metro Transit initiated an Arterial Transitway Corridor Study (ATCS) in an effort to better understand the scope of potential improvements for bus rapid transit on the nine arterial routes and identify the most feasible corridors for implementation.

Determining Potential New Transitway Corridors

To determine which additional transitways may need to be constructed, a screening process for potential transitways was undertaken in 2007 as part of the *2030 Transit Master Study*. That study solicited ideas for corridors from the counties, regional railroad authorities, and transit providers and then evaluated 29 corridors based on ridership, cost estimates, and other factors such as right-of-way availability. The work completed through that study process informed the recommendations in this plan.

This plan acknowledges that detailed studies are required to determine the appropriate mode and alignment for a given corridor. Some corridors have had detailed study while others need to be studied in detail to identify a mode and alignment. The most appropriate and cost-effective technologies will need to be determined on a corridor-by-corridor basis. Criteria to determine the preferred alternative should include, among others: ridership, mobility improvements, operating efficiency and effectiveness, environmental impacts, regional balance, economic development impacts and cost-effectiveness. Readiness, priority and timing will be considered as will local commitment to transitway implementation and land use.

Figure 7-34: Northstar Commuter Rail train began operations in 2009

Transitway Recommendations

Commuter Rail

Commuter Rail operates on freight railroad tracks. Commuter rail vehicles may use diesel multiple unit (DMU) vehicles or conventional diesel locomotives pulling passenger coaches. In many cases, commuter rail operates on existing freight railroad tracks that may also carry intercity passenger rail traffic operated by Amtrak, potentially using common stations. Lines are typically 20 or more miles long, with stations spaced much farther apart than light rail, typically five miles apart. This spacing results in fewer stations

than LRT to keep travel times fast. Station areas are primarily oriented to park-and-ride uses. Commuter rail services operate at 20- to 30-minute frequencies during peak periods, with limited or no midday or reverse-direction service.

Commuter Rail Recommendations

The Northstar Commuter Rail Line is operating on the Burlington Northern Santa Fe railroad line from downtown Minneapolis to Big Lake. The line opened in November 2009 and is the first modern commuter rail line in the Twin Cities.

Ridership projections calculated for the *2030 Transit Master Study* indicated that under the current model and regional forecasts, no commuter rail corridor other than Northstar would have enough ridership to justify intensive investments. (It should be noted that the potential commuter rail line connecting Minneapolis and Northfield commonly known as the Dan Patch line was not included in the *2030 Transit Master Study* due to a statutory prohibition against studying this line.) However, commuter rail ridership forecasts have been hampered by a lack of data about travel patterns of commuter rail customers because the region did not have operating commuter rail. With the 2009 opening of the Northstar Commuter Rail Line, observed ridership data can now provide information on actual usage. The 2010 Travel Behavior Inventory Transit On-Board Survey will gather further data and use it to develop new input parameters for the region's travel demand forecast model, which, when updated, will be used to re-evaluate commuter rail corridors included in the *2030 Transit Master Study*, along with any other corridors identified. If there are corridors that appear to be viable with this updated modeling information, they should undergo an alternatives analysis and then move into development if they prove to be cost-effective. In anticipation of this possibility, an additional commuter rail line is planned for in this plan's cost estimates between 2020 and 2030.

It is also possible that improvements made to the rail system could change the viability of certain corridors for commuter rail. For example, if high-speed intercity passenger rail were to be constructed from the Twin Cities to Chicago, improvements would be made in the Red Rock Corridor that could substantially reduce the cost of developing commuter rail in that corridor. Likewise, if intercity passenger service were developed from Duluth, it could lower costs of the Bethel-Cambridge corridor for commuter rail. If either of these triggering events occurs, those corridors should be re-studied for potential commuter rail investments.

Figure 7-35: Hiawatha LRT began operating in 2004.

Light Rail Transit and Dedicated Busways

Light Rail Transit (LRT) operates on rails primarily in exclusive rights-of-way. Vehicles are powered by overhead electrical wires. Stations are typically spaced about one-half to one mile apart. Typical LRT lines are 10 to 15 miles long because they primarily serve densely developed areas and because trip times become too long if they are longer. LRT trains operate all day, with bidirectional service at frequencies of 10 minutes or better during peak periods. Hiawatha light rail is the one operating line currently in the Twin Cities.

Figure 7-36: The U of M transitway is dedicated right-of-way for campus transit vehicles

Dedicated Busways are special roadways and lanes of roadways dedicated to the exclusive use of buses. Busways can operate service similar to LRT, with station spacing and other characteristics that mimic light rail transit, except they use vehicles on rubber tires instead of electric trains on rails. Examples of this service in the United States include Los Angeles' Orange Line and Boston's Silver Line. A local example is the University of Minnesota busway which is the one operating dedicated busway in the region. Dedicated busways also offer an additional flexibility that allows many different bus routes to use busway facilities, including local all-day service, limited-stop routes, and express bus routes. This results in all-day service with very high frequencies during peak and off-peak periods on core sections.

Light rail transit and dedicated busways function in similar ways. One operates on rails and is powered by electricity while the other operates on rubber tires and is powered by diesel engines. But most of the characteristics of busways and LRT– dedicated right-of-way, specialized stations and vehicles, off-board fare collection, signal priority and preemption – are the same. Trip times and passenger experience can be similar. For this reason, recommendations on these transitways are combined below.

Light Rail Transit and Dedicated Busway Recommendations

Currently the Twin Cities has one operational light rail line, Hiawatha LRT, which runs from downtown Minneapolis to the Minneapolis-St. Paul International Airport to the Mall of America. Because ridership on Hiawatha LRT has significantly exceeded projections, it is necessary to expand Hiawatha's capacity from two-car trains to three-car trains. This will require capital investments between 2008 and 2020.

The Central Corridor is the primary east-west transportation route between downtown Minneapolis, the University of Minnesota and downtown St. Paul. The Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS) was finalized in April 2006 and LRT was selected as the locally preferred alternative. Preliminary engineering was completed in 2010 with final design and securing federal funding also to be complete in 2010. Construction is began in 2010 and the projected opening date is 2014.

The Council's *2030 Transit Master Study* showed two other corridors with high potential for light rail or a dedicated busway. The Southwest Transitway extends between Eden Prairie and Minneapolis, including the cities of Minnetonka, Hopkins, and Saint Louis Park. The Bottineau Transitway extends from Brooklyn Park to Minneapolis, and includes the cities of Crystal, Robbinsdale, and Golden Valley. An alternatives analysis has been completed for both corridors. A draft environmental impact statement (DEIS) was published for Southwest in Fall 2012. A DEIS is scheduled for publication for Bottineau in 2013. LRT on the Kenilworth-Opus-Golden Triangle alignment (Alternative 3A) was selected as the Locally Preferred Alternative for Southwest and LRT on the West Broadway in Brooklyn Park – Burlington Northern Santa Fe Corridor – Olson Memorial Highway alignment (Alternative B-C-D1) was selected as the LPA for Bottineau.

In addition six other corridors (Gateway, TH36 /NE, I-35W North, Central Avenue / TH 65 / BNSF, Midtown and Rush Line) are recommended for mode and alignment studies, and may be determined to have potential for LRT, BRT, or another mode. The Rush Line Task Force has initiated an alternatives

analysis and initial results have narrowed results to one BRT and one LRT corridor alternative. An alternatives analysis was begun for Gateway in 2010. Based on results from the *2030 Transit Master Study*, the Midtown corridor also shows promise as a transitway connecting Hiawatha LRT and Southwest Transitway. With LRT on the Kenilworth-Opus-Golden Triangle alignment (Alternative 3A) selected as the Locally Preferred Alternative for Southwest, the Midtown Corridor should be examined further to see if a connector between Hiawatha and Southwest is warranted. Although many factors determine the viability and timing of implementation, this plan assumes that in addition to Central Corridor, one other light rail or dedicated busway should be implemented by 2020 and work begun on a second. This plan anticipates the completion of the second LRT line shortly after 2020 and that a third will be completed by 2030.

Bus Rapid Transit

Bus rapid transit (BRT) is a transitway mode that uses bus vehicles while incorporating many of the premium characteristics of light rail or commuter rail.

The federal government has identified seven characteristics that separate BRT from regular bus service:

- **Service Operations:** High frequency, all day service, typically 15 minutes or better on the main portions of the route provides a high level of service to customers. In addition, routes typically have limited stops except in downtowns and have express service.
- **Running way:** These include dedicated busway, bus lanes, managed lanes, dynamic shoulder lanes, dynamic parking lanes, bus-only shoulders, or mixed traffic where other options do not exist. Dedicated running ways allow buses to avoid congestion and move more quickly and reliably than in mixed traffic.
- **Technology:** Signal priority and driver technology allow buses to move more quickly and reliably. Customer information displays and other technology can improve the customer experience.
- **Identity/Brand:** Unique branding of the BRT helps distinguish the line from regular-route services.

Figure 7-37: The newly constructed Apple Valley Transit station on the Cedar Avenue BRT corridor

- **Stations:** Uniquely branded stops with more amenities than a standard local bus stop also differentiates the service from other bus routes and makes it easier for customers to know where the route runs.
- **Vehicles:** Vehicles can range from typical 40-foot transit buses to specialized vehicles with a unique look, low floors and additional doors for quicker boarding, automated docking, on-board arrival information, and other specialized features.
- **Fare Collection:** Off-board fare collection or fast fare collection where possible to speed boarding times.

BRT facilities are scalable can be added or expanded as needed over time. For example, an express corridor could add a priced lane, and then improve stations and park-and-rides as demand increases. Queue jump

Figure 7-38: Dedicated running ways allow BRT vehicles to avoid congestion and move more quickly and reliably than in mixed traffic.

lanes or ramp meter bypasses (lanes that allow buses to bypass congestion) can be added as congestion increases. If demand warrants, on-board fare collection can be upgraded to off-board fare collection to speed travel. Because of this, BRT corridors may continuously add new features as population growth and congestion increase demand in a corridor.

Bus Rapid Transit Recommendations

In the Twin Cities, there are two variations of BRT proposed: Arterial BRT and Highway BRT.

1. Arterial Bus Rapid Transit

The *2030 Transit Master Study* and other studies screened high ridership arterial transit corridors for their potential for light rail or dedicated busways. These studies showed that substantial ridership growth could be achieved through faster and higher frequency service. These corridors are all in highly developed areas with very limited right-of-way available, meaning that light rail or dedicated busways are most likely not feasible. These areas also have existing high density and mixed-use development characteristics that foster strong existing and potential transit ridership. Furthermore, local communities have focused growth on these corridors through infill and redevelopment opportunities.

Bus Rapid Transit service on arterial streets will use technology and facility improvements to provide a faster, more reliable trip with fewer stops in these corridors and use branding to differentiate the service from regular bus routes.

Candidate corridors are shown in Figure 7-39. The Council completed a comprehensive study of eleven corridors for this service in early 2012. While the study found differing performance and readiness among these corridors, strong existing ridership, planned growth and the cost effective nature of arterial transitway improvements make investments in any of the study corridors by 2030 appropriate.

In addition, during the consideration and selection of the Bottineau Transitway Locally Preferred Alternative, potential arterial bus rapid transit improvements were identified along Penn Avenue and an extension of the Chicago Avenue corridor along Emerson-Fremont Avenues in north Minneapolis. These corridors share many characteristics with the top performing corridors in the Arterial Transitway Corridors Study, including high ridership, and slow average speeds and therefore have been added to the list of potential arterial BRT corridors.

This plan assumes six arterial bus rapid transitways will be implemented between 2008 and 2020 and three additional by 2030. The potential corridors include:

Central Avenue	Nicollet Avenue	Robert Street
Penn Avenue	West 7th Street	Chicago / Emerson-Fremont Ave
West Broadway	East 7th Street	American Boulevard
Lake Street	Hennepin Avenue	Snelling Avenue/Ford Pkwy

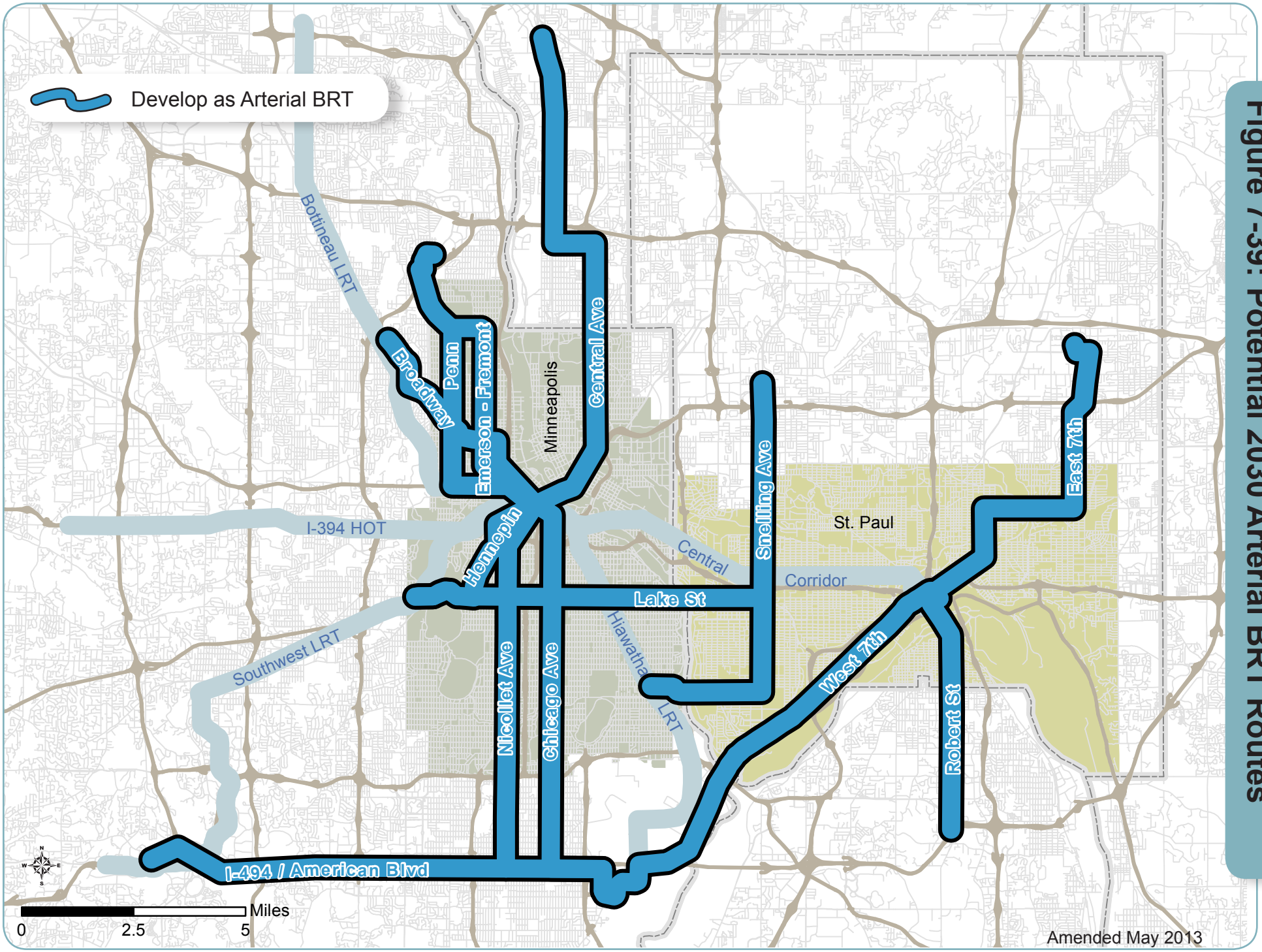


Figure 7-39: Potential 2030 Arterial BRT Routes

Some of the corridors are being studied and may be recommended for modes in addition to bus rapid transit, including potential streetcar. Alternatives Analyses are currently underway for the Nicollet Avenue and Central Avenue corridors, the Lake Street/Midtown corridor and the Robert Street corridor and proposed on the West Broadway corridor in Minneapolis and Robbinsdale. These detailed corridor analyses will determine if other bus or rail improvements, such as streetcar are viable in the near or long term. In some corridors, arterial BRT implementation could be complementary to, or a precursor to, future rail improvements including streetcar.

2. Highway Bus Rapid Transit

Bus Rapid Transit (BRT) also operates on limited access roadways. It can use bus-only shoulders, managed lanes, ramp meter bypasses, priced dynamic shoulder lanes and other running-way advantages. In addition to peak express service, highway BRT also incorporates high frequency, all-day service, branded vehicles, and improved stations, including park-and-ride facilities and online stations. Bus Rapid Transit improvements can also be used by other types of bus service like regular express buses, limited stop service or routes that are partially local service and partially express. Some of these facilities will have on-line stations, allowing boarding of buses in the highway right-of-way.

The I-35W BRT line will run from Lakeville to downtown Minneapolis. A number of park-and-rides and stations exist or are being constructed along the corridor. The Cedar Avenue BRT is a 16-mile corridor that runs between Lakeville and Bloomington, with express service continuing to downtown Minneapolis using TH 62 and transit advantages in the I-35W BRT corridor. Improved transit service will be provided to Eagan, Apple Valley and Lakeville along Cedar Avenue/TH 77. Park-and-rides and transit stations will be constructed and bus lanes added south of 138th Street. These elements are expected to be in place by 2012.

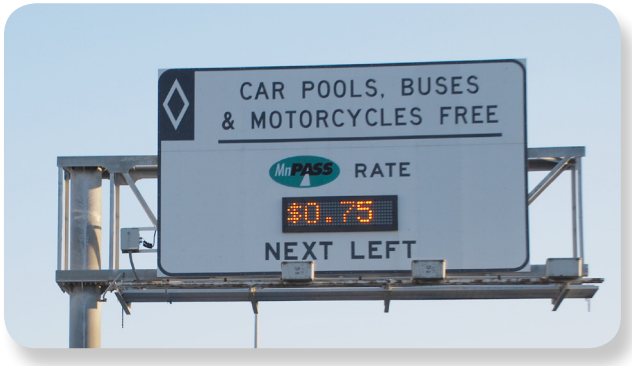


Figure 7-40: HOT lanes are an example of a regional transit advantage

The Twin Cities received an Urban Partnership Agreement grant from the federal government, which advanced both the I-35W and Cedar Avenue BRTs. The agreement called for the establishment of a priced dynamic shoulder lane (PDSL) on I-35W from northbound 42nd Street to downtown Minneapolis, construction of a new HOT lane between 42nd and 66th Streets, and conversion of the HOV lanes to HOT lanes between 66th Street and Burnsville Parkway. The result is a 15-mile, dynamically priced managed lane opened in October 2010 that allows buses to avoid congestion and operate at 50+ mph rather than the current bus-only shoulder speeds of 35 mph or less. In addition, the single contra-flow bus lanes in downtown Minneapolis on Marquette and Second Avenues were converted to dual lanes, reducing travel time through downtown by as much as 10 minutes. Additional transit vehicles were purchased, park-and-ride spaces were created, new BRT stations were built, a bus bypass lane at TH 62 and TH 77 was added, priority for transit vehicles at signalized intersections was implemented, and electronic signs at stations now project bus arrival times based upon real-time data will be installed. These improvements were completed in 2009.

Figure 7-41: The UPA is one example of a person throughput focused project

This plan calls for two additional highway bus rapid transitways beyond Cedar and I-35W to be implemented between 2008 and 2020 and two additional highway BRTs between 2020 and 2030. Currently five corridors are recommended for study for their appropriate mode and alignment. Some express bus corridors with transit advantages, described below, could also become highway BRT corridors in the future if demand is high enough.

Express Bus Corridors with Transit Advantages

Express corridors with transit advantages provide express bus service with an alternative to congestion. These advantages could be bus-only shoulders, managed lanes, ramp meter bypasses or other advantages for transit. These services primarily connect commuters from suburban markets to employment in the central business districts, University of Minnesota and other major employment centers. Services in these corridors typically operate non-stop between a park-and-ride and the destination. One example of this type of service is on I-394, where buses originating from park-and-rides use the managed lanes to avoid congestion. Many other routes use bus-only shoulders to avoid congestion. Highway improvements such as bus-only shoulders and managed lanes benefit all the express bus service operating within the corridor. Improvements at specific intersections, like queue jump lanes, timed signals, and signal priority also provide transit with important advantages that can benefit specific service. Express service also benefits from highway and street improvements at the terminus of corridors such as bus-only and contraflow transit lanes, which allow express service to avoid congested local streets.

Express Bus Corridors with Transit Advantages Recommendations

Express bus service will need to double for the region to remain on track to increase transit ridership by 100% by 2030. Each express bus corridor will have sufficiently sized and conveniently located park-and-ride facilities. In some corridors, community and circulator networks will support service to these park-and-rides. Additional garage bus capacity will need to be constructed to house this expanded bus fleet.

Between 2010 and 2030, the region's urbanized area will grow, necessitating the expansion of highway transit advantages. In addition, there are gaps within the existing network of transit advantages that should be closed for the system to function optimally. As a result, it will be necessary to expand the bus-only shoulder network by up to 135 miles, depending on the reconstruction schedule for the highway system.

The I-394 managed lane will continue to provide a substantial advantage to express buses on the western end of the region as will the new lanes added on I-35W south of downtown Minneapolis. As discussed in the Highway chapter, expanded highway pricing may be used as a tool to manage congestion as well as providing an advantage for transit. Decisions about any proposed priced lanes or high-occupancy lanes should consider and prioritize benefits to transit services.

Existing and proposed express bus corridors with transit advantages are shown in Figure 7-42.

Transitway Corridors to Study for Mode and Alignment

Modes and alignments have not been determined for a number of corridors. Promising corridors have been identified as needing more intensive study. All modes should be considered including LRT, Busway, BRT and Commuter Rail. The studies should include an initial screening to determine corridor potential, an alternatives analysis, a draft and then final environmental impact statement, and preliminary engineering. Four corridors were identified in the *2030 Transit Master Study* for initial screening and possibly alternatives analysis studies. These corridors are:

- I-35W north of downtown Minneapolis
- Trunk Highway 36 / NE Corridor
- Trunk Highway 65/Central Avenue/BNSF
- Gateway Corridor (I-94 East) linking Minneapolis, St. Paul, and Western Wisconsin

Based on results from the *2030 Transit Master Study*, the Midtown corridor also showed promise as a transitway connecting Hiawatha LRT and Southwest Transitway and is recommended for further study to determine the appropriate mode and alignment.

As was noted earlier, the Rush Line and Bottineau corridors are currently undergoing an alternatives analysis and should continue in study to determine the appropriate mode and alignment.

The Metropolitan Council will work with Mn/DOT and other jurisdictions to develop alternative analyses for these corridors in the next three years to determine the most appropriate transit investments. The most cost-effective alternatives should then move toward implementation. Implementation may mean a rail-based solution, an exclusive busway, or other bus-based solution, including a mixed-traffic solution such as managed or priced lanes, dynamic shoulder lanes or express buses with transit advantages.

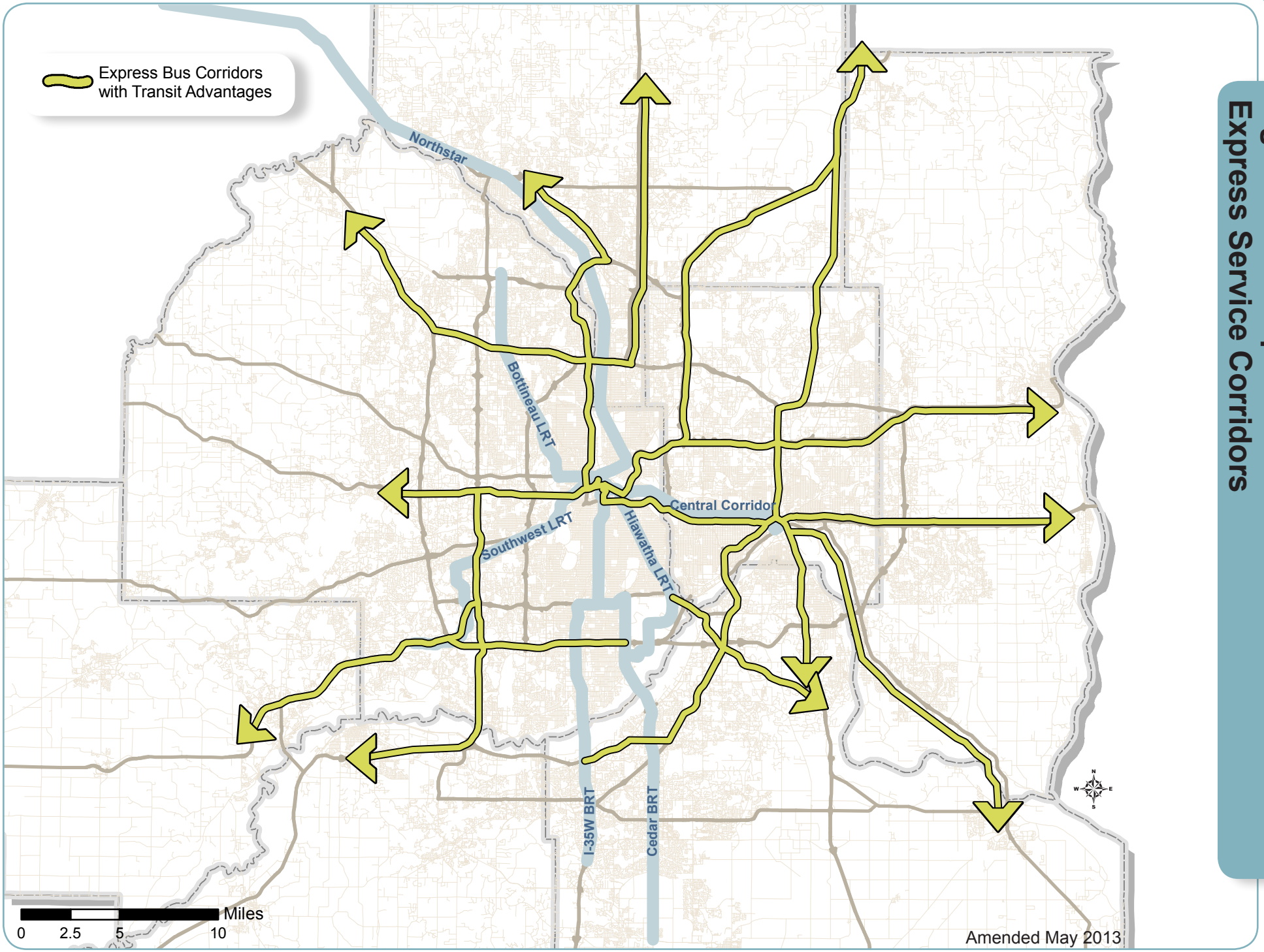


Figure 7-42: Proposed 2030 Express Service Corridors

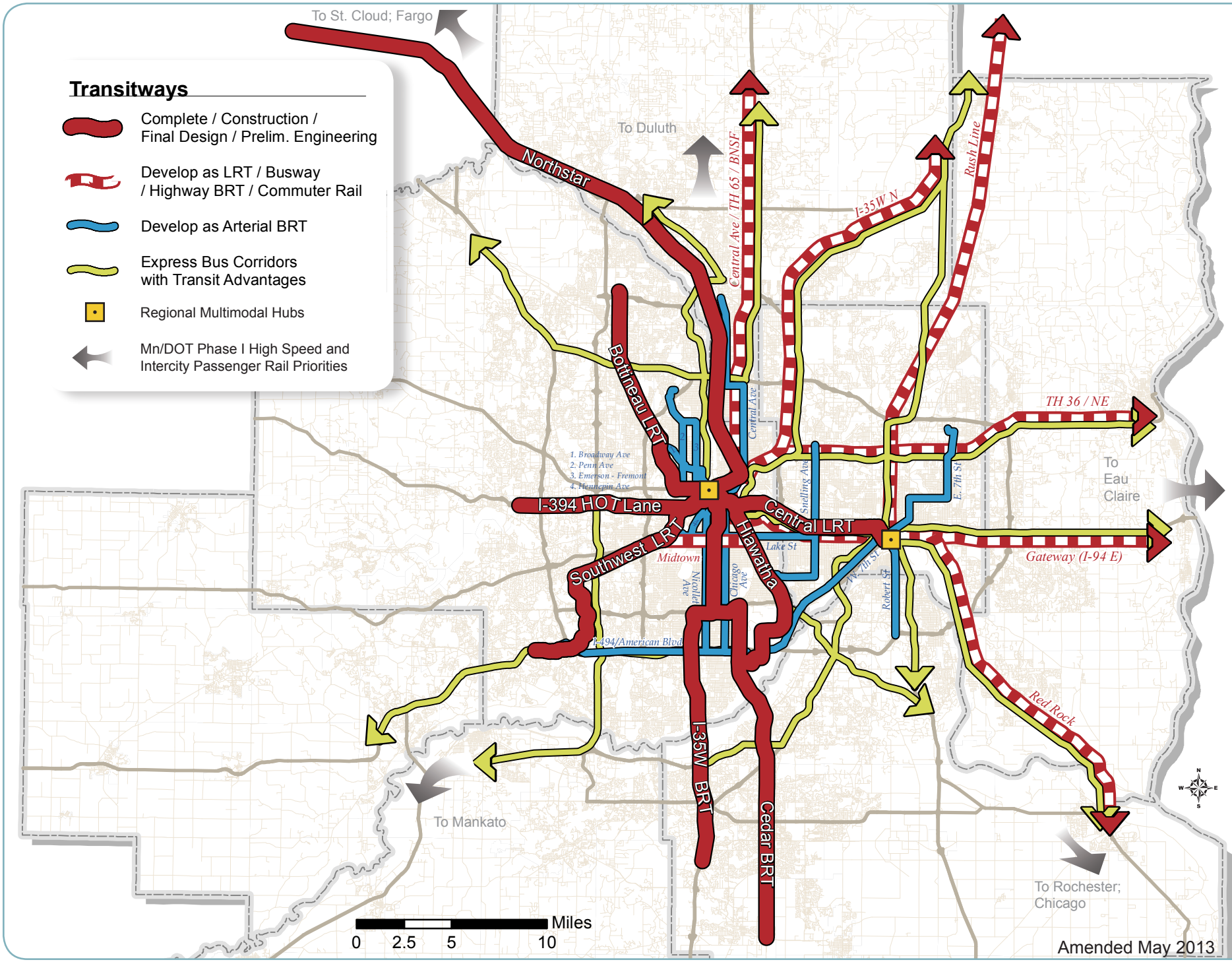


Figure 7-43: 2030 Transitway System

Summary of Transitway Recommendations

Complete, In Construction, Final Design or Preliminary Engineering

Eight transitway corridors, Hiawatha LRT, I-35W BRT, Cedar Avenue BRT, I-394 Managed Lane, Northstar Commuter Rail, and Central LRT are complete, in construction, final design or preliminary engineering with Southwest entering preliminary engineering in 2012 and Bottineau anticipated to apply for entry into preliminary engineering in 2013.

Develop as LRT/Busway/BRT/Commuter Rail

Seven corridors, I-35W North, Central Ave/TH65/BNSF, Rush Line, TH36/NE, Gateway, Mid¬town and Red Rock corridors should continue in development and are recommended as potential transit¬ways by 2030.

Planning and development studies, conducted and funded in cooperation with county regional railroad authorities and Mn/DOT, will determine the specific alignment, mode and schedule for each corridor. Corridor Status:

- Rush Line: Initiated commuter bus demonstration service in 2010 with alternatives analysis underway.
- Gateway: Alternatives analysis underway.
- I-35W N, Central Ave/TH65/BNSF, and TH36/NE: Preferred mode and alignment to be determined through alternatives analyses over the next three years.
- Midtown: Preferred mode and alignment to be determined through further study.
- Red Rock: Alternatives analysis prepared recommending a phased approach with commuter rail implemented if high speed rail is developed in the corridor.

As corridors move toward implementation, the revenue estimates in this plan would allow for the following transitways to be implemented:

- Three corridors could be built as LRT or dedicated busways, one to be completed by 2020, one possibly begun before 2020 and completed soon after, and a third possibly completed by 2030. Both the Southwest and Bottineau corridors have selected LRT as the preferred mode and potentially represent two of the three corridors;
- Four BRT corridors could be built on highway alignments, two by 2020 and two additional BRT corridors on highway alignment by 2030; and
- One additional commuter rail corridor could be built by 2030.

However it should be noted that based on current data, no commuter rail line other than the Northstar corridor appears to generate enough ridership to justify this kind of large capital investment. This assumption was validated in 2010 by comparing actual Northstar ridership data to commuter rail ridership projections previously prepared for that corridor to evaluate the accuracy of the ridership model.

However, progress in potential high speed or intercity passenger rail connections to Chicago and Duluth could significantly reduce the capital cost of the Red Rock and Bethel-Cambridge commuter rail lines and improve their cost/effectiveness. Because other commuter rail corridors may become viable in the future, this plan assumes implementation of a second commuter rail line in its cost estimates between 2020 and 2030.

Develop as Arterial BRT Corridors

Nine corridors are recommended as potential Arterial BRT facilities by 2030. In some of those corridors, arterial BRT implementation could be complementary to, or a precursor to future rail improvements including streetcar. This plan's cost estimates assume that six corridors are to be implemented by 2020 and three additional corridors by 2030. Three additional corridors may be implemented after 2030. Potential corridors include:

Central Avenue	Nicollet Avenue	Robert Street
Snelling Avenue/Ford Pkwy	West 7th Street	Chicago/Emerson Fremont Ave
West Broadway	East 7th Street	American Boulevard
Lake Street	Hennepin Avenue	Penn Avenue

Figure 7-44: Amtrak provides intercity passenger rail service to the Metro Area

Express Bus Corridors with Transit Advantages

Various corridors

Intermodal Hubs

The implementation of a network of transitways converging on the two downtowns will require the development of intermodal facilities where passengers can make connections between lines. This plan identifies the Union Depot in downtown St. Paul and the Target Field Station/Interchange near downtown Minneapolis as those two intermodal hubs.

Other Modes

Intercity passenger rail service is important to the economy of the Twin Cities. Passenger rail can enhance connectivity and provide transportation alternatives between the Twin Cities and other regions. Because of this, the Metropolitan Council supports the development of this alternative. However, planning for intercity passenger rail extends beyond the jurisdiction of an individual metropolitan planning organization and thus is usually planned at the state and federal levels. In Minnesota passenger rail is under the jurisdiction of Mn/DOT and is not directly included in this plan.

In February 2010 Mn/DOT completed the *Minnesota Comprehensive Statewide Freight and Passenger Rail Plan*. The priority program elements and Phase I investments identified in the plan for intercity passenger rail include:

- Continue to participate in the Midwest Regional Rail Initiative (MWRRI) and support the development

of sustained 110 mph service for connections from the Twin Cities to Wisconsin and the Chicago Hub Network.

- Develop an intrastate intercity passenger rail network connecting the Twin Cities with viable service to major outlying regional centers.
- Connect all services eventually to both the new Minneapolis downtown terminal and St. Paul Union Depot.
- Advance corridors incrementally and simultaneously with Mn/DOT's support; sequencing depending on financing, ROW acquisition and agreements with freight railroads.
- High-Speed Rail passenger service from the Twin Cities to Madison/Milwaukee/Chicago, to Duluth, and to Rochester (sustained speeds of 110 mph), with connections in Chicago to numerous other Midwestern cities also via high speed service;
- Enhanced conventional passenger rail service (sustained speeds of 79 to 90 mph) from the Twin Cities to St. Cloud; Mankato; Fargo, North Dakota; Eau Claire, Wisconsin; and between Minneapolis and St. Paul;

New intercity passenger rail services could develop rail improvements such as stations, signals, or improved track that could also be used by commuter rail transitways within the region. The Council supports and will continue to work closely with Mn/DOT in efforts to plan and develop intercity rail. The 2030 Transitway system shown in Figure 7-43 includes the Mn/DOT Phase I intercity passenger rail priorities.

Streetcars are a type of rail transit that can be operated with vintage, replica or modern cars. Modern streetcars are under consideration through a number of studies as a possible new transit mode in the region. Modern streetcars typically operate in mixed traffic similar to a local bus route. They typically stop every few blocks and operate shorter distances than LRT with an emphasis on high-frequency service with high accessibility. Typical modern streetcar lines are less than four miles long while light rail lines are typically around ten miles long. They travel more slowly than light rail transit because light rail operates primarily in its own dedicated right-of-way and stops approximately every mile while streetcars operate in mixed traffic and stop more frequently. Modern streetcars attract new transit riders and may offer some travel time advantages over local buses, such as faster boarding, faster fare collection, and intersection signal priority, similar to the transportation benefits BRT can offer. Modern streetcar service is particularly suitable for high-density, mixed-use areas with short average passenger trip lengths, areas where improved transit will benefit a high number of existing riders, and as an attraction for new or infrequent transit users like shoppers or visitors. Modern streetcars also have demonstrated promise for supporting high-density, mixed-use, walkable development in urban cores where people can live without a car and become regular and frequent transit users.

A number of recent and ongoing studies are considering modern streetcars for further planning or implementation.

- The City of Minneapolis completed a *Streetcar Feasibility Study* in 2008 that resulted in a recommendation for a streetcar network as a long-range 20-50 year vision for the city. The study recommended modern streetcar on seven corridors: West Broadway/Washington Ave, Hennepin Ave S, Midtown Corridor, Nicollet Ave S, University Ave SE/4th Street SE, Chicago Ave S, and Central Avenue NE.
- In October 2013, the City of Minneapolis completed an Alternatives Analysis for the Nicollet-Central Corridor, which concluded with the City of Minneapolis approving a 3.4-mile modern streetcar line, running between Lake Street and at least 5th Street NE on Nicollet Ave, Nicollet Mall, and Hennepin Ave/1st Ave, using the Hennepin Ave Bridge to cross the Mississippi River, as the recommended Locally Preferred Alternative for inclusion in the Transportation Policy Plan. This recommendation represents the first modern streetcar project requesting inclusion in the regional Transportation Policy Plan and the initial analysis illustrated modern streetcar as a mode that could be competitive for federal funding for major transit capital investments. The City of Minneapolis and the Metropolitan Council are collaborating to advance the environmental review process and pre-project development activities for the project for completion in 2014, with the intent of pursuing federal transportation funds in the future.

  The City of Minneapolis also began addressing possible local funding sources for the project. During the 2013 State Legislative session, a law was established that gave the city the ability to create a Value Capture District for the Nicollet-Central Modern Streetcar project that captures increased property tax revenues from five specified blocks with active development projects in the corridor and apply those revenues to the capital costs of a modern streetcar. The City of Minneapolis officially established that value capture district in June 2013 and forecasts that the district will allow the city to issue construction bonds for up to $60 million toward the project.
- The City of Saint Paul is conducting a *Streetcar Feasibility Study* that will identify a long-term vision for a streetcar network. Initial phases of the study have identified seven corridors for the long-term network: East 7th Street, Payne Ave, Rice Street, Selby Ave/Snelling Ave, Grand Ave/Cretin Ave, West 7th Street, and Robert Street. The final phase of the feasibility study will identify a starter network of prioritized lines, and will recommend a first line to be pursued for more detailed study. The feasibility study is expected to be completed by the end of 2013. Ramsey Council Regional Railroad Authority (RCRRA) is leading corridor studies that will include West 7th Street (Riverview corridor) and East 7th/Payne (Rush Line corridor) and modern streetcar will be considered. As studies continue, RCRRA, City of St. Paul, and Metro Transit are coordinating the implementation of Arterial BRT on West 7th Street in the near term and have secured partial funding for implementation through federal and state sources.
- Metro Transit is leading a study evaluating transit options in a 4.4 mile corridor on Lake Street or along the Midtown Greenway corridor from West Lake to Hiawatha Avenue. Modes still under consideration include bus improvements on Lake Street, rail improvements in the Greenway, or a combination of the two modes. The rail alternative includes a combination of single- and double-track

segments and could be operated with light rail vehicles or modern streetcar vehicles. Metro Transit expects to complete the Midtown Corridor Alternatives Analysis in early 2014.

- Dakota County Regional Railroad Authority and Ramsey County Regional Railroad Authority are partnering on the Robert Street Transitway Alternatives Study. The study has narrowed the list of build alternatives down to three, including an alternative for modern streetcar on Robert Street. The study is expected to be completed in early 2014 with a recommendation for a Locally Preferred Alternative from the Regional Railroad Authorities.
- Metro Transit, the City of Minneapolis, and Hennepin County are partnering on a detailed corridor study of West Broadway that is expected to begin in 2014. The project will analyze transit options along West Broadway and options to connect to downtown Minneapolis and to the planned Bottineau LRT corridor. The study will include modern streetcar and arterial BRT options.

The number of completed or active studies considering modern streetcar, and specifically the recommendation for a starter line in the Nicollet-Central corridor, illustrates the positive support for modern streetcar as a new transit mode in the region. The addition of this new mode into the transit system poses a number of questions that need to be addressed through a future update of the *Transportation Policy Plan* and prior to beginning construction on a first line. The questions include:

- What is the role of modern streetcars in local and regional transit systems as a transportation investment, an economic development investment, and an investment that supports regional growth forecasts?
- How do these roles affect the viability of potential funding sources for the capital and operating costs of modern streetcars?
- Should there be typical funding sources for modern streetcar and what would be appropriate sources and shares?
- Should modern streetcars be a transitway mode in the Transportation Policy Plan, which is a requirement for eligibility of certain funding sources?
- How might modern streetcar projects or a system be prioritized with the region? Within a community as part of a long-term network?
- What is the appropriate role for modern streetcar projects and arterial BRT projects already identified in the Transportation Policy Plan within the same broader corridor and how might this determination be made?
- How can modern streetcar and bus service be designed to complement each other, rather than compete with each other or rather than introduce negative impacts for existing bus riders?

The Council is continuing to collaborate with local units of government and regional transit planning partners to address these questions and determine where and when modern streetcars may be an appropriate transportation investment. Modern streetcars have the potential to support significant regional growth

in the highly developed areas of the region, where transportation systems are limited in physical space and transit is a means to add significant transportation capacity. However, the eligibility and use of transportation funding sources, including regional, state, and federal, for modern streetcars will need to be considered relative to the expected availability of funds and the role and expected benefits of the projects, and local participation in the funding of these projects will be an important part of the discussion. If it is determined that streetcars provide positive, significant, and cost-effective transportation benefits beyond alternative bus, BRT, or LRT investments, capital costs for streetcars might be funded by a combination of local and regional funds and may compete for federal transportation funding. If streetcars do not provide an optimal transportation solution and are pursued primarily for development outcomes they should be funded locally and should not compete with other regional priorities for federal and state transportation funding sources. Regardless of funding source, modern streetcar service would be expected to integrate seamlessly with the regional transit system.

Other modes of transit were not considered for this plan. Subways and monorails are typically used in areas with densities much higher than the Twin Cities. Personal Rapid Transit (PRT) has not had a full-scale implementation to provide its operating characteristics to allow for analysis. Other modes are typically for specialized applications like trolley buses for hilly areas or aerial trams for gorges.

Transit Plan Implementation Costs

The first goal of this plan is to maintain the existing transit system. This includes operating the existing transit programs at 2008 service levels and making capital investments that maintain current transit infrastructure. This plan also calls for doubling transit ridership by 2030. There are two components to reaching this doubling goal: expand the bus system and develop a network of transitways. Because the region has experienced many recent transit funding changes with the implementation of the MVST constitutional amendment and CTIB sales tax, it is an opportune time to invest in a more detailed long-term financial analysis of both the costs to maintain and grow the bus system and implement a system of transitways. As noted in Chapter 12: Work Plan, the Council will hire a financial consultant to undertake such an analysis during 2011. The high-level estimate of costs to maintain and grow the transit system and double ridership which will be further refined in the financial analysis are shown in the following sections.

Table 7-45: Estimated Capital Costs and Revenues to Maintain the Transit System

	Capital Cost 2011 to 2020	Capital Cost 2021 to 2030
Projected Costs	$700 M	$700 M
Projected Revenues		
Federal	$400 M	$400 M
Regional Transit Capital	$275 M	$275 M
Other	$25 M	$25 M

2010 Dollars

Capital Costs to Maintain the Transit System

The Council's 2011-2013 capital improvement program projects approximately $70 million a year is needed to maintain the existing transit system (in 2010 dollars). Based on this, approximately $700 million is needed to maintain the transit system between 2011 and 2020 and $700 million between 2021 and 2030, in 2010 dollars. It is projected that these revenues will primarily come from federal formula funds and regional transit capital bonds.

Capital Costs to Expand the Transit System

It is projected that the following projects may be completed between 2011 and 2020:

- Expansion of Hiawatha LRT fleet to three-car trains;
- Completion of Central Corridor Light Rail;
- Southwest LRT completed and a fourth LRT possibly begun by 2020;
- Additional investments in the Cedar BRT;
- Additional investments in the I-35W BRT;
- Possible investments in two additional Highway BRTs by 2020;
- Investments in The Interchange and the Union Depot Intermodal hubs;
- New facilities and increased express bus service in corridors with transit advantages;
- Possible investments in six Arterial BRT lines;
- Expanded local bus service.

It is projected that, from 2021 to 2030, the following projects could possibly be completed:

- A fourth and fifth LRT line could be possibly be completed by 2030 if viable projects are identified;
- One additional commuter rail line may be completed by 2030 if a viable project with reasonable operating subsidies can achieved;
- Three additional Arterial BRT lines;
- Two additional Highway BRT lines.

If improvements, such as passenger rail, high-speed rail, dynamic shoulder lanes, or managed lanes are added, these priorities could change. Also, local and express bus service will continue to be expanded. If two or more projects to receive federal funding concurrently, this timeline may be accelerated.

In addition, it is projected that federally mandated ADA service will grow by more than 40 percent 2008 to 2030. This increase is driven by the increasing population in the region and the growing percentage of persons above age 65.

Table 7-46: Estimated Capital Costs to Expand the Transit System

Expansion Costs	2011-2020		2021-2030	
	Low	High	Low	High
Rail Transitways	$2,000 M	$2,300 M	$1,750 M	$1,875 M
BRT and Express Bus	$365 M	$505 M	$435 M	$640 M
Local Bus System	$20 M	$30 M	$100 M	$120 M
ADA/Dial-a-ride System	$15 M	$15 M	$15 M	$15 M
Total Expenses	$2,400 M	$2,850 M	$2,300 M	$2,650 M

2010 Dollars

Table 7-46 shows estimated costs and sources of revenues for these capital expenses. Final costs will vary depending on the year of implementation, the final alignment, the mode selected, inflation costs, the final length of the transitway and exactly when projects are constructed. Because of this, ranges of costs are shown. Also, highway improvements such as managed lanes, which provide substantial advantages for transit, are not included here, but are assumed to be funded using highway revenues.

It is projected that these costs will be paid by a number of revenue sources. It is assumed that for rail projects, the region will secure federal New Starts funds for 50% of the cost. The remainder of rail transitway costs is projected to be funded 30% with CTIB sales tax revenues, 10% from the state and 10% from benefiting counties. It is also assumed that only one New Starts project is under construction at a time. If it is possible to receive New Starts funding for more than one transitway at a time the Council will pursue this funding. In addition, transitways which are not relying on New Starts funding may move forward concurrently.

Capital costs for bus-based program expansion is projected to be funded from existing federal programs (including federal formula funds, congestion mitigation/air quality grants, discretionary funds or small starts grants) state revenues and regional transit capital funds. Bus transitways are also eligible for CTIB funding. It is assumed that these revenue sources will be received at approximately the same rate as current funding levels as shown in Table 7-47 and inflation in revenues will match inflation in expenses.

It is possible that actual funding will differ from these projections. Many of these funds are distributed competitively, such as federal funds like New Starts and Congestion Mitigation/Air Quality (CMAQ) grants

Table 7-47: Estimated Revenues to Expand the Transit System

Expansion Revenues	2011-2020		2021-2030	
	Low	High	Low	High
Federal New Starts	$970 M	$1,120 M	$850 M	$950 M
Other Federal[1]	$210 M	$260 M	$270 M	$290 M
State[2]	$290 M	$320 M	$290 M	$295 M
CTIB Sales Tax	$660 M	$840 M	$570 M	$775 M
County Property Taxes	$200 M	$230 M	$170 M	$190 M
Regional Transit Capital	$70 M	$80 M	$150 M	$150 M
Total Revenues	$2,400 M	$2,850 M	$2,250 M	$2,650 M

2010 Dollars

1. Other federal revenues include federal formula, congestion mitigation / air quality and discretionary funds.

2. State revenues include general obligation bonds, trunk highway bonds and general funds.

and state funds like state general obligation bonds. Completion of projects depends on successfully competing for funding. Other funding sources are formula based or property tax based, such as the federal formula funds and regional transit capital. These funds are dependent on the performance of their underlying taxes. Changes in consumer purchasing patterns could change the availability of these funds.

Also, the Counties Transit Improvement Board (CTIB) controls the use of the ¼ cent sales tax. Coordination is needed between CTIB and the Council to continue to move capital-intensive transit projects forward. Last, the federal transportation bill needs to be reauthorized and the timing of it is uncertain. Future Federal programs and funding levels are uncertain at this time.

Operating Costs to Maintain and Expand the Transit System

Transit operating costs include labor, fuel, vehicle maintenance, facilities operating costs (including routine facilities maintenance, cleaning, snowplowing, and utility costs), overhead costs and other operating costs to deliver transit services. The 2010 regional transit operating expenditures are over $400 million, with $385 million included in the Metropolitan Council budget. The estimated net subsidy (when fares are deducted) is $280 million in 2010. The estimated net costs for operating all services outlined previously are shown in Table 7-48.

Table 7-48: Estimated Annual Operating Costs to Maintain and Expand the Transit System

	2020 Net Annual Subsidy		2030 Net Annual Subsidy	
	Low	High	Low	High
Maintain System	$280 M	$280 M	$280 M	$280 M
Expand System	$75 M	$105 M	$195 M	$235 M
Rail Transitways	$30 M	$35 M	$60 M	$75 M
BRT and Express Bus	$20 M	$35 M	$50 M	$60 M
Local Bus System	$15 M	$20 M	$60 M	$70 M
ADA/Dial-a-Ride	$10 M	$15 M	$25 M	$30 M
Total Maintain and Expand	$355 M	$385M	$475 M	$515 M

2010 Dollars

The primary sources of funds to subsidize the operation of the existing transit system are the motor vehicle sales tax (MVST), the state general fund and federal formula funds. Although there has been a short-term decline in the MVST, it is assumed the phase-in of the MVST constitutional dedication along

with a forecast recovery in revenue collections will provide adequate funding to maintain the existing system. If MVST revenues do not recover and provide adequate funding to maintain the existing system, it is assumed that state revenues will be obtained to maintain existing service levels.

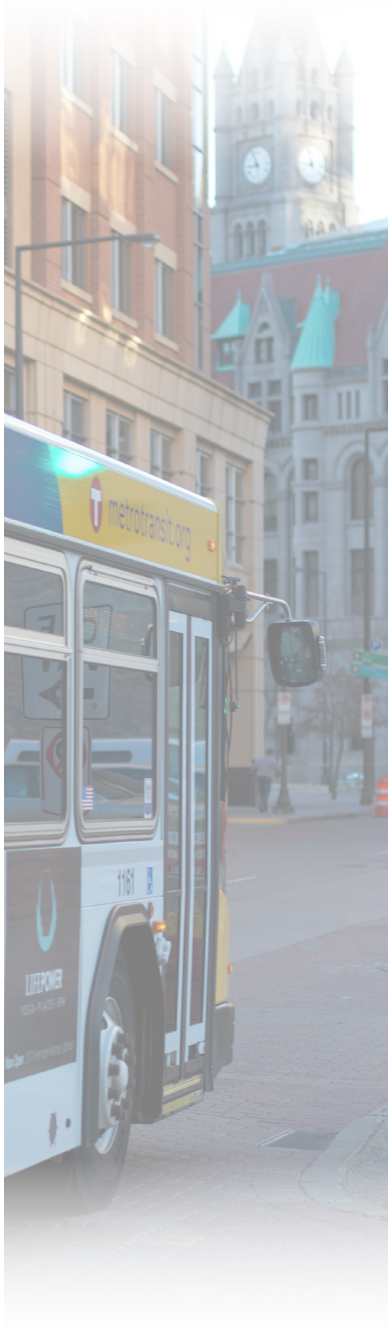
It is projected that the net costs (after fares) of rail system or dedicated busway operations and expanded service for highway bus rapid transit would be funded 50% from CTIB sales tax grants and 50% from state revenues. Availability of CTIB funds is dependent on the growth of sales tax receipts and allocation decisions of the CTIB. The Legislature and Governor did not provide 50% of the operating funds for the Northstar commuter rail when it opened in 2009. This plan continues to assume that the state will pay 50% of the net operating costs for other rail lines as they open, though it is clear that this assumption may not prove to be true .Operating funding sources for arterial BRT and expanded express bus, local bus and dial-a-ride services have not yet been determined, though bus transitway operating costs are eligible for CTIB funding. This plan projects that increased operating funding of $45 - $70 million annually will be needed by 2020 and $135 - $160 million annually by 2030 for the expanded bus system.

Potential funds include additional sales taxes, additional state revenues, new local sources and other revenues.

Table 7-49: Estimated Sources of Revenues to Maintain and Grow the Transit System

	2020 Net Annual Operating Subsidy		2030 Net Annual Operating Subsidy	
	Low	High	Low	High
Maintain System	$280 M	$280 M	$280 M	$280 M
Motor Vehicle Sales Tax	$150 M	$150 M	$150 M	$150 M
State General Fund	$68 M	$68 M	$68 M	$68 M
Federal	$32 M	$32 M	$32 M	$32 M
Other	$30 M	$30 M	$30 M	$30 M
Expand System	$75 M	$105 M	$195 M	$235 M
CTIB Sales Tax	$20 M	$25	$40 M	$45 M
State Revenues	$20 M	$25	$40 M	$45 M
Unfunded: To Be Determined	$35 M	$55 M	$115 M	$145 M

2010 dollars. 2020 and 2030 Numbers represent the total costs in 2020 or 2030, not the incremental costs.



Summary of Costs for the Transit Plan

Table 7-50 summarizes the range of costs to maintain and expand the transit system from 2011 - 2030.

Table 7-50: Summary of Estimated Capital and Operating Costs

Incremental Costs	Maintain Existing System	Expand System	Total
Capital Needs 2011 – 2020	$700 M	$2,400 - $2,850 M	$3,100 - $3,550 M
Capital Needs 2021 – 2030	$700 M	$2,300 - $2,650 M	$3,000 - $3,350 M
2020 Annual Operating Subsidy	$280 M	$75 - $105 M	$355 - $385 M
2030 Annual Operating Subsidy	$280 M	$195 M - $235 M	$475 - $515 M

2010 dollars in millions