

Vang, Nhia (CI-StPaul)

From: Moermond, Marcia (CI-StPaul)
Sent: Tuesday, October 25, 2016 8:54 AM
To: Vang, Nhia (CI-StPaul)
Subject: RE: classification of streets
Attachments: City Council Adopted Trans Plan.pdf; TPP2010AppendixDFunClass.pdf; large_reference_fun_class.pdf

From: St Martin, Paul (CI-StPaul)
Sent: Tuesday, October 25, 2016 7:01 AM
To: Spah, Joe (CI-StPaul)
Subject: RE: classification of streets

Joe

See attached for Adopted Transportation Plan. Page 11 is the functional classification map. The document does not include the definitions of street classifications.

Our functional classification uses Met Council definitions and aligns for the most part with Met Council Functional Classifications

See <https://metro council.org/Transportation/Planning-2/Transit-Plans,-Studies-Reports/Highways-Roads/Functional-Roadway-Classification/Functional-Roadway-Classification-Resources.aspx?source=child>

And attached

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Transportation Plan

The Saint Paul Comprehensive Plan

Adopted by the Saint Paul City Council

The Transportation Plan is one of six chapters of the draft Saint Paul Comprehensive Plan. The draft policies of the Transportation Plan were directed by a task force of Saint Paul citizens, professionals, and planning commissioners that convened monthly between February 2007 and April 2008. The Planning Commission held a public hearing on October 3, 2008 and later recommended the plan for approval. The City Council held a public hearing on February 4, 2009, and approved the plan on March 25, 2009, contingent on further review by adjacent communities and the Metropolitan Council. See <http://stpaul.gov/index.asp?nid=355> to view the other chapters of the plan. Questions on this chapter can be directed to christina.morrison@ci.stpaul.mn.us.

March 31, 2009

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Introduction

As the city faces redevelopment and maintenance pressures, a historic investment in transit infrastructure, and a renewed interest in active living, this chapter of the Comprehensive Plan provides policy direction to maintain, expand, and enhance a balanced regional transportation system. By having a coordinated and flexible transportation system, Saint Paul has the opportunity to attract and accommodate growth and investment in the central city, and effectively distinguish our region as a vital place for people and economic development.

From its beginning as a natural confluence for rail and river traffic, Saint Paul's form and growth have been tied to transportation. Over the years, urban development patterns in Saint Paul have evolved to reflect new transportation modes and transportation infrastructure. From streetcars to cars to trails and light rail transit, Saint Paul's past and present are shaped by transportation choices.

As this plan is being written, the region is embarking on a new era in transportation. Within the next two years, construction will begin on the Central Corridor light rail line. This tremendous opportunity for the City will attract economic development, housing choices, improve streetscape and the public realm, and increase accessibility along the corridor. Due in part to success of the Hiawatha light rail line, Metro Transit finished 2007 with 77 million rides, the highest annual ridership total since 1982. In 2007, the region also secured full funding to complete the Northstar commuter rail line, and was granted \$133 million in federal funding to improve transit infrastructure and relieve congestion.

In 2005, the Twin Cities were selected to receive \$21 million to invest in non-motorized pilot projects to increase bicycling and walking, while Ramsey County was given \$50 million to restore Saint Paul's historic Union Depot to a bustling multi-modal hub for the renaissance in transit. In February 2008, the state legislature passed a quarter-cent sales tax and gas tax for transit, which will help fund capital improvements for transitways like Central Corridor, but will not provide assistance for critical bus service operations.

These improvements will be significant; however, the maintenance needs of existing infrastructure still outpace available resources. On August 1, 2007, the sudden collapse of the 35W Bridge in Minneapolis brought attention to inspections and maintenance. The loss prompted an urgent national discussion and evaluations of bridges statewide, but brought little long-term commitment and resources to facilitate repair and replacement. Deferred maintenance continues to be a problem for Saint Paul in particular: the Lafayette Bridge is slated for reconstruction in 2010, but is not yet fully funded despite its structurally deficient rating.

Each year since 2002, residents in the metro area have ranked transportation at the top of the list of regional problems.¹ In 2005, it was reported that rush hour in the Twin Cities lasts for seven and a half hours each day, and that the average person wastes \$790 and 43 hours per year stuck in traffic.² The backlog of road projects in the City includes bridge reconstructions, interstate repaving, and connecting missing road links. Parts of the city, especially east and north of Downtown, are also underserved by transit, creating few alternatives for commuters. Meanwhile,

¹ "Metro Residents Surveys 2002 – 2007," Metropolitan Council.

² "Performance Measure Summary" for the Minneapolis-Saint Paul region, Texas Transportation Institute, 2005.

total Vehicle Miles Traveled (VMT) has remained flat, both in Minnesota and nationally, between 2003 and 2006, and declined 4.7% in 2007. This indicates that when considering the growth in population, VMT is actually declining.³ Additionally, in December 2007, MnDOT reduced its estimate for future VMT growth in the metropolitan area to 0.9% per year, down from an original projection of 2%.

Saint Paul, like other northern cities, faces the additional challenge of operating and maintaining a safe transportation system in a full range of weather conditions. Motorists can encounter quickly changing road conditions in both summer and winter storms, while ice can make streets unsafe even on clear days. The winter climate can be a deterrent to many who would walk, bike, and take transit. Snow pushed from the roadway and icy sidewalks can completely prevent mobility for people who depend on these modes of transportation.

Key Trends

The strategies, objectives, and policies of this plan are informed by a set of current environmental, demographic, and economic trends facing local and regional planning.

Climate change, rising energy costs, and an unstable supply of oil worldwide.

While much research shows that the world may have already passed its peak in oil production, it is clear that satisfaction of future oil demand will be increasingly damaging and intrusive, especially in environmentally sensitive areas. Additionally, increasing amounts of energy are being expended to extract oil, while the rising demand for bio-fuels to replace gasoline has already come at a price of higher food costs and food shortages across the world.

Uncertainty and growing concern over environmental sustainability has already begun changing travel behavior and land development. Driven by higher gas prices and the increasing value of land in the central city, market dynamics will continue to push this region and others towards more compact and mixed-use design, and away from the suburban low-intensity and segregated land uses of the automobile era. Growing demand for existing rail infrastructure to provide cost-effective cargo transfers will put new pressure on urban boundaries between industrial and residential land, and challenge plans for passenger rail and recreational trails on land owned by the railways. Nearly every type of movement, from how children get to school, to how goods are transported across the world, will experience change due to these wide-ranging energy issues. These converging environmental and energy trends will have major implications in short and long term transportation planning and patterns.

Changing demographics in Saint Paul and the region. In the coming decades, there will be significant increasing demand for transportation choices from an aging population, challenging the capacity of our system.

As Saint Paul matures and development intensifies, issues that traditionally face larger cities will become more prominent in our region. Congestion will likely grow worse on neighborhood streets and at intersections, and overall vehicular mobility may continue to decline. As property values rise in the central cities, land must be better utilized, with parking and other automobile-oriented uses becoming

³ Olsen, Dan. "Minnesotans drive billions of vehicle miles, but the growth has leveled off." November 18, 2007, Minnesota Public Radio. minnesota.publicradio.org/display/web/2007/11/14/vmt

increasingly difficult to accommodate. Aging infrastructure of roads and bridges will also add pressure to maintenance budgets. Quickly changing demographics and the unknown geographic distribution of regional growth will demand an extensive and flexible transportation system. Saint Paul will benefit from its central location and having the foundation of a traditional street network that allows good connectivity and access to neighborhoods, corridors, and the region.

Unknown or inadequate financial resources.

The instability of reliable funding from the State and Federal government makes it difficult to plan and implement transportation projects, operations, and maintenance. Since the last update of the Comprehensive Plan, transit service in particular has been deeply cut in the central cities due to state budget shortfalls.

Although Minnesotans passed the first dedicated source of money for transit in 2006, the operation of effective transit service will continue to struggle with shrinking budgets. In 2008, the State Legislature followed by raising the gas tax for the first time in twenty years, and increased the sales tax in the seven-county metro area to pay for transitways and their capital costs. Although some money has now been dedicated, fluctuating resources from the City to the Federal level have raised questions about how new projects will be funded and how existing infrastructure will be maintained.

In addition, funding for road projects has also declined, as aging roadway networks require ever-increasing funding for basic maintenance. The Minnesota Department of Transportation (MnDOT) now estimates that basic maintenance needs in the state are greater than all funding allocated for roads, leaving no money to expand the system. The agency expects that “to meet expected needs in the coming years, MnDOT will need to direct virtually all available funds to preservation projects...about \$350 million more per year in preservation spending than is currently planned.”⁴ Furthermore, funding to counties and cities for local projects is at risk.

Strategies

The Transportation Plan proposes four strategies to guide investment in the transportation system:

- **Provide a Safe and Well-Maintained System.**
- **Enhance Balance and Choice.**
- **Support Active Lifestyles and a Healthy Environment.**
- **Enhance and Connect Neighborhoods.**

⁴ “State Highways and Bridges Evaluation Report,” Office of the Legislative Auditor, State of Minnesota, February, 2008.

STRATEGY 1:

Provide a Safe and Well-Maintained System

A successful system provides dependable and ongoing maintenance and convenient service to ensure year-round reliability. Transportation projects or improvements must consider, respect, and respond to their context. To create a more safe and well-maintained system, projects should also focus on improving accessibility, while accounting for the full range of weather conditions, situations, and surrounding land use.

Additionally, a functioning transportation system depends on the ability of all users to operate in a safe manner. Sometimes the best solutions for safety conflicts come not from physically redesigning the street, but rather through proper enforcement of existing laws and furthering education about how to safely coexist in the public realm.

Best Practices for Design and Maintenance

Complete Streets is a national movement supported by a broad coalition of advocates, government agencies, and transportation professionals. The Complete Streets approach is founded on a comprehensive, integrated, and connected network, using the latest and best practices for design standards. Accommodations should respect the need for flexibility, recognizing that all streets are different, but that user needs should be balanced while respecting needs and travel priorities for each individual street.

1.1 Complete the streets. Accommodate and balance the needs of all users of the transportation system, including pedestrians, cyclists, transit, freight, and motor vehicle drivers, to the extent appropriate to the function and context of the street. The public right of way must account for the safety and convenience of the most vulnerable populations, including children, seniors, persons with disabilities, and those who cannot or do not drive a motor vehicle.

Design should be sensitive to the context and community in which it is located. The policy applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right-of-way. Performance standards should be established with measurable outcomes. According to the U.S. Department of Transportation⁵, exceptions to a complete streets policy should be allowed by high-level approval, but only in cases where conditions create excessively disproportionate costs (e.g. 20% of the project) or on roads where pedestrians and bicyclists are prohibited by law.

[insert photos of existing St. Paul "complete street" and streets that could be improved. Should be a mix of streets - commercial, industrial, and/or residential]

1.2 Examine alternatives to enhance safety through right-of-way design, including narrowing or removing lanes on roads. Used in the proper applications, "road diets" can be a tool to decrease automobile speed and accidents, maintain or increase automobile capacity, decrease pedestrian crossing times at intersections, or provide additional space for turn lanes, bicycle lanes, on-street parking, or improved streetscape.

1.3 Evaluate existing crosswalk striping, design, and pedestrian-scale lighting standards. Study best practices and integrate practices that foster pedestrian safety by increasing their visibility to the motorist.

1.4 Implement reconstruction projects for improved safety. Projects should be safe, dependable, efficient, accessible, and environmentally responsible. (See Appendix A.)

1.5 Aggressively inspect and maintain bridges. Of the 331 bridges in Saint Paul, 61 structures are over 50 years old. Bridges must continue to be thoroughly

⁵ "Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach," U.S. Department of Transportation Federal Highway Administration, March 2008.

inspected annually for safety, in accordance with State and Federal laws.

1.6 Design for improved accommodation of pedestrians and bicycles on bridges. Design to accommodate both bicyclists and walkers along motor vehicle routes with adequate space between these users based on safety, mobility, and comfort. Incorporate pedestrian-scale lighting and treatments to reduce shared-use conflicts.

Special attention should be given to bicycling and walking whenever bridges, underpasses, and expressways are constructed or improved so these facilities do not become significant barriers to pedestrian activity. Work to increase crossing opportunities over the Mississippi River, railroads and railyards, highways and interstates, and other major obstacles that currently limit the practicality of walking and bicycling.

Collaborate with regional partners and agencies to ensure that these components are implemented in capital improvement or reconstruction projects, not as dictated by available funding for the accommodations, but as regional assets that connect our communities.

1.7 Minimize and consolidate driveway curb cuts on commercial streets as opportunities arise. For pedestrian safety and comfort, and to maximize on-street parking, discourage curb cuts where alleys or side streets are accessible. Encourage shared access to destinations.

1.8 Support the completion of Residential Street Vitality Program (RSVP), an ongoing program to reconstruct and improve the appearance, function, and safety of Saint Paul streets. Highlight the opportunity for neighborhood enhancements, implementation of traffic calming measures, and improved stormwater management as the streets and sidewalks are reconstructed. (See policy 2.9 in Water Plan.)

1.9 Complete a bikeways safety audit to evaluate design, function, and connectivity of existing facilities. Consider the availability and effectiveness of information presented to the bicyclist and to motorists on these routes.

Safer Streets through Education and Enforcement

1.9 Maintain sidewalks, street crossings, and bikeways year round. Ensuring that people can walk, bike, and access transit stops promotes health and mobility in the city. The public realm must support the Americans with Disabilities Act (ADA) accessibility guidelines in every season.

Saint Paul's bikeways are the collection of on-road bike lanes, share-the-road facilities, off-road trails and paths, and bicycle boulevards. In general, the Saint Paul Parks and Recreation Department is responsible for off-road facilities, while the Department of Public Works maintains bicycle facilities within the public right-of-way. For more information, see Appendix B, and the Parks chapter of the Comprehensive Plan.

- a. Develop measures and procedures for snow removal of pedestrian facilities.
- b. Work with Metro Transit to develop and implement policies for maintenance of bus stops, shelters, major transit centers, and sidewalks/pedestrian approaches to such facilities. Work with Metro Transit, adjacent property owners and business associations to address snow shoveling, debris and graffiti removal, repairs, and replacements.
- c. Respond, as quickly as possible, to road hazards such as potholes and broken glass that adversely impact safe travel.
- d. Actively educate property owners about their responsibility to completely clear sidewalks and intersection areas within twenty-four hours of snowfall. Areas of higher use may require more regular maintenance. Provide ongoing messages through public service announcements and news releases and aggressively enforce properties that are not in compliance with policies.

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- e. Establish a priority network for bikeway snow removal so winter bicycling is safe and viable. Bridges and river crossings should be high priorities as there are often few alternatives to these connections. Implement a pilot project to study the feasibility and fiscal impacts of snow removal on minor arterials which are critical to winter bicycling.
 - f. If current practices, policies, and enforcement regarding snow and ice removal are not sufficient, seek innovative maintenance and funding solutions to support an urban transportation system that is truly safe for year round use.

1.10 Raise motorist awareness of pedestrians and bicycles, and raise bicyclist awareness of traffic laws and pedestrian rights. Users must respect the presence and safety of all modes of travel sharing the space in the public right-of-way. Promote traffic laws and parking rules to increase the consciousness of each individual's impact on safety and convenience in the transportation system. Signage, public service announcements, and other educational efforts are vital to the success of projects and safety of all people using streets, sidewalks, and trails, but especially for children, seniors, and persons with disabilities.

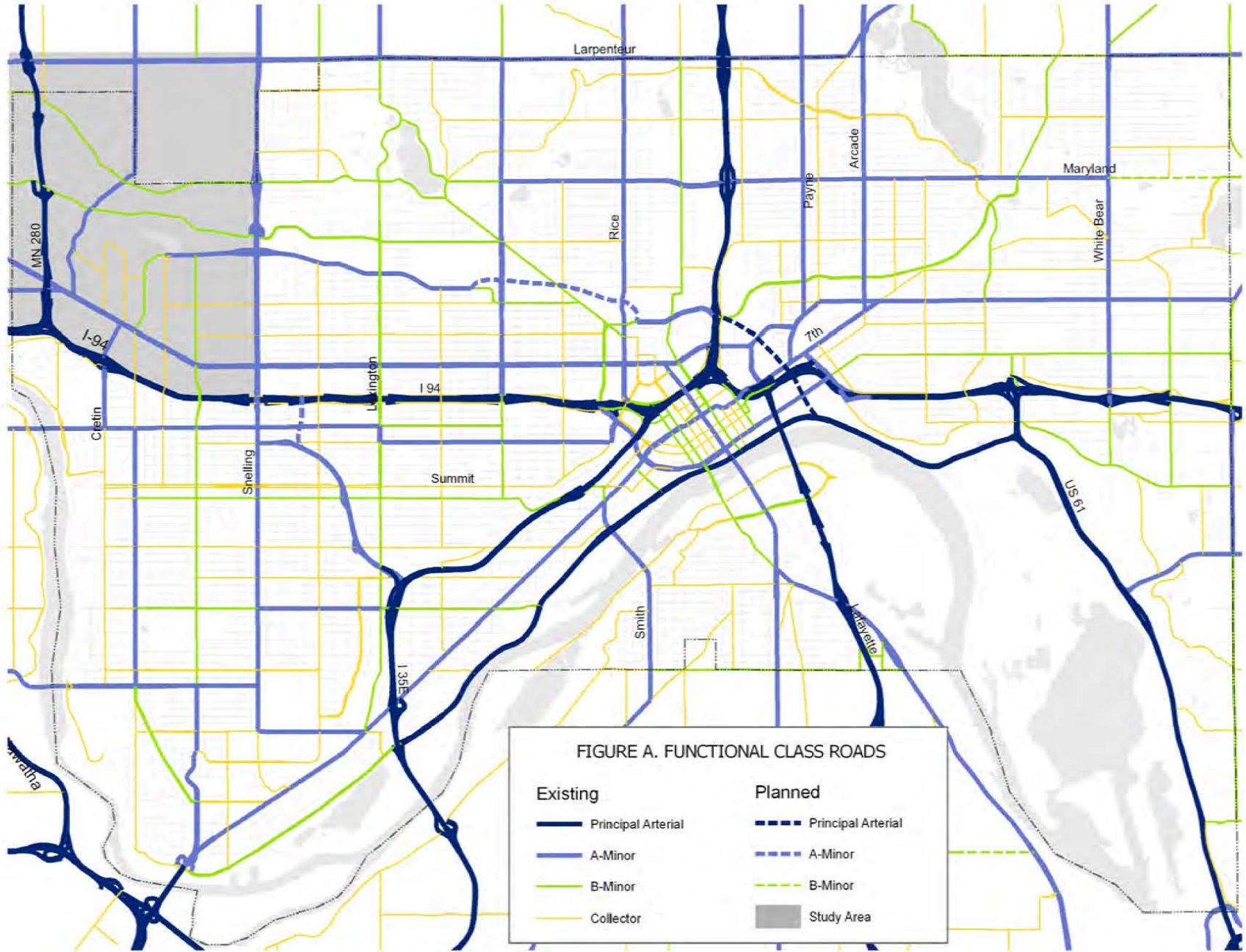
1.11 Partner with schools, nonprofits, other government agencies, and businesses to educate people about bicycling and walking.

- a. Provide bicycle maps to the public, at little or no cost, both in hard copy and online. Pursue opportunities to collaborate with MnDOT, Ramsey County, the City of Minneapolis, Metro Transit and others.
- b. Regularly update information on the City's website about bikeways, trails, newly opened transit facilities, construction projects, detours, and events that may alter regular routes.
- c. Work to increase bicycle and walking throughout the City via a targeted marketing campaign with a strong emphasis on health and environmental benefits. Identify barriers that may discourage bicycling and walking because of factors such as location, income, workplace, or lifestyle.
- d. Support and fund a public education campaign to make bicycling and walking safer. Create and track measurable goals in the area of bicycle education and awareness, such as the number of people (youth and adults) attending bicycle education classes or exposed to pedestrian safety curriculum. Provide information on pedestrian laws to counter misinformation and confusion about rights and responsibilities.
- e. Fund a full-time position at the City of Saint Paul to coordinate bicycle and pedestrian issues.

1.12 Establish freight corridors to enable the prompt delivery and transfer of cargo and to reduce noise and air pollution in adjoining neighborhoods. Promote and enforce existing commercial truck routes to help relieve neighborhood streets. (See Appendix C, Figure 4.)

1.13 Increase pedestrian, bicycle, and motorist safety through effective law enforcement, detailed crash analysis, and engineering improvements to reduce the risk of crashes.

1.14 Work with the Saint Paul Police Department to substantially increase enforcement of speed limits and red light compliance. Educate those in the courts system regarding public health and safety issues, as well as community impacts, associated with these violations.



STRATEGY 2:

Provide Balance and Choice

In order to provide an excellent transportation system, there must be balance and choice. Transit-oriented development is growing in popularity and considers a range for travel modes, compact land use oriented towards the street, and a focus on walkability. A more balanced system spurs new opportunities for infill housing and economic development that can be served predominantly by modes other than the single-occupancy automobile. Mixed use development also helps to reduce overall travel trips by bringing more destinations to a compact, walkable area. Transportation choice can maximize the efficiency of the existing system by providing options that better utilize the existing road infrastructure and transit investments. In addition, working to build seamless transitions between various types of transportation strengthens the flexibility of the system to best serve future demands.

Coordinated Transportation and Land Use

2.1 Create true transportation choices for residents, workers, and visitors in every part of the city. A more balanced transportation system should improve access to a range of travel modes and facilities, as well as increase the capacity of the regional transportation system. Create places to live, work, play, and conduct business that do not depend principally on the automobile for access, but rather accommodate all modes of transportation.

2.2 Support transit-oriented design through zoning and design guidelines. Emphasize compact, street-oriented design to promote walkability and transit use, especially in commercial corridors. Enforce and expand standards for building placement and design based primarily on the needs of the pedestrian.

2.3 Promote creative in-fill housing near transit corridors to increase transit-supportive density and housing choices. This may include the addition of accessory units and live-work opportunities in lower-density neighborhoods near transit corridors.

2.4 Develop a strategy for investing in a broad range of infrastructure projects, including, but not limited to, street and traffic improvements to support the growth of existing employment, services, parks, and schools. To support the development of mixed-use employment, study connections that would open access to under-developed land, and integrate land use and transportation decisions. Coordinate with partner agencies to address shared goals of mitigating congestion, increasing person throughput and cost-effectiveness, creating maintenance-friendly design, and improving pedestrian and bicycle access. (See Appendix A.)

Person Throughput is a measurement of street capacity and effectiveness that takes into account the total number of people using the road, rather than just the number of vehicles. This measure more accurately reflects the potential of transit improvements and ridesharing to expand system capacity.

Increased Transit Ridership and Management of Single-Occupancy Vehicle Use

2.5 Build Central Corridor LRT. Actively support and partner in the construction of Central Corridor Light Rail transit on University Avenue and in the Downtown on Cedar and 4th Streets. (See Figure B.)



Figure B. The Central Corridor Development Strategy envisions a corridor of walkability, transit-oriented development, and enhanced streetscape. This image shows one possible scenario for an improved pedestrian realm along Fourth Street in Downtown Saint Paul.

2.6 Focus on the improvement and extension of bus service and facilities on existing transit routes, and on new routes to serve proposed light rail stations in collaboration with Metro Transit. Limited stop, express service, bus rapid transit, or rail service should be implemented where ridership or future land use potential warrants transit improvements, but should not replace local bus service. (See Figure C.)

- a. Support limited stop and express bus service to better connect the East Metro to Downtown Saint Paul, Downtown Minneapolis, and Bloomington.
- b. Increase service on existing local urban routes, including adding midday and weekend service on lines that currently have weekday peak-hour service only.
- c. Create better north-south connections to the Central Corridor and realign or extend existing routes where appropriate.

2.7 Expand commuter options with Travel Demand Management. Effective TDM strategies can help employers provide a competitive benefit to their employees, mitigate congestion, and reduce the need for parking infrastructure or subsidies. Colleges and other institutions should likewise expand travel options and incentives for students, staff, and visitors.

- a. Require a Travel Demand Management Plan as a part of the site plan review process for larger developments or for large employers using city assistance or other city approvals. Research best practices within the region to determine at what size (measured in area, employees, and/or dwelling units) a

Travel Demand Management is a set of tools to reduce single-occupancy-vehicle travel and facilitate transportation choices for work and non-work trips. By promoting modes of travel such as ridesharing, vanpooling, transit, bicycling, and walking, TDM improves the efficiency and capacity of the existing transportation system. TDM also includes strategies like staggered work schedules and telecommuting, which can shift and reduce overall demand on a system.

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- development would be required to complete a plan.
 - b. Explore individual incentives, employer programs, and parking policies that encourage alternatives to the single-occupancy automobile.
 - c. Support the work of public agencies and the private sector to market transit, carpooling, biking and walking, flexible work hours, and telecommuting.
 - d. Support transportation management organizations, such as *St. Paul Smart Trips*, in their work to identify, develop, and support a variety of transportation options.
 - e. Support programs that encourage regular transit use, such as the *Metropass* program.

2.8 Create incentives for development in which off-street parking is voluntarily reduced, structured, pervious, or heavily landscaped. Provisions should be created and adopted in the Zoning Code. For example, reductions in required parking may be granted if the development:

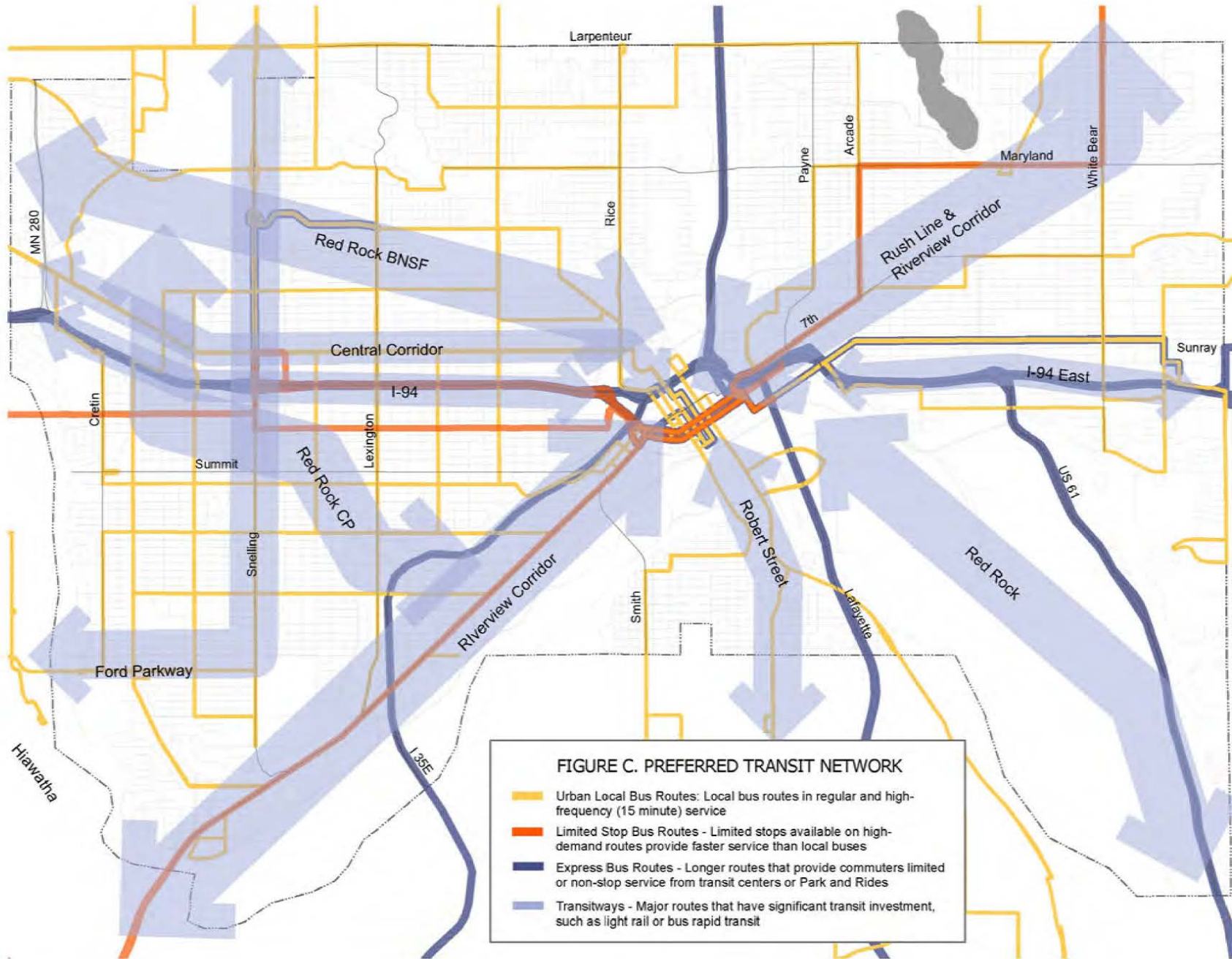
- a. is in close proximity to transit
- b. provides bicycle facilities, including secure parking and locker rooms for commuters
- c. participates in a shared parking agreement
- d. provides a space or subsidy for a car-sharing program
- e. completes a Travel Demand Management (TDM) plan
- f. participates in or subsidizes a transit pass program
- g. provides access to remote parking and shuttle services
- h. prioritizes parking spaces for ridesharing
- i. "unbundles" the price of parking for housing units⁶
- j. provides a parking cash-out⁷

2.9 Work with Metro Transit to study and implement possible corridors for new bus rapid transit, light rail, streetcars, or commuter rail lines serving Saint Paul. (See Figure C and Appendix A.)

2.10 Study the feasibility and possible location of new streetcar lines. To assist the City and community in understanding key issues associated with a new streetcar system, a feasibility study should be conducted. Assess the costs and benefits of a streetcar network, as well as identify potential short term and longer term priorities for implementation.

⁶ When the cost of parking is automatically "bundled" with housing (directly passed onto the resident through the purchase price or rent for a unit), the resident must pay for the parking space(s) whether or not they utilize parking. In transit-oriented neighborhoods, one way to support housing affordability is to encourage the "unbundling" of this cost, allowing residents to buy or rent parking spaces as desired, separately from their housing unit. This technique creates a more fair market for parking pricing and demand, and is most effective when combined with other parking management tools.

⁷ According to the Environmental Protection Agency, "employers offering free or subsidized parking to employees can implement parking cash out. Under a parking cash out program, an employer gives employees a choice to keep a parking space at work, or to accept a cash payment and give up the parking space...Cash out programs are an effective means of allocating scarce parking or managing a growing demand for more parking...programs benefit employees because they allow employees choose whether or not to continue driving alone. Employees perceive these programs as fair since nobody is forced to stop driving or give up free parking, but those who do are rewarded financially." (United States EPA, Office of Air and Radiation. "Parking Cash Out: Implementing Commuter Benefits as One of the Nation's Best Workplaces for Commuters." www.lgc.org/freepub/PDF/Land_Use/presentations/parking2007/parkingcash.pdf)



2.11 Create more seamless connections between pedestrians, bicycles, transit, and automobiles. Regional efforts must be made to enable more convenient and safe connections for all modes of transportation.

- a. Work with Metro Transit and other stakeholders to ensure that sufficient bicycle facilities and pedestrian amenities are provided to and at transit stations.
- b. All major transit stations should be equipped with secure bicycle storage and with racks, and all regional buses and trains equipped with bicycle racks. Educate the public about these opportunities and how to properly utilize them as an element of programs to raise awareness about bicycling in the City.
- c. Support bicycle-sharing programs near transit stations and major destinations to encourage daily bicycle use and minimize the need for parking at these locations.
- d. In the context of surrounding land uses, design wider sidewalks to accommodate people, landscaping, street furniture, and transit shelters.
- e. Discourage construction of new Park & Ride facilities within the city limits in favor of increased feeder bus service, better bicycle and pedestrian accommodations, and carpooling facilities at major transit centers.

A Well-Managed Parking System

2.12 Simplify and reduce off-street parking requirements and use definitions.

To promote investment in existing and historic commercial buildings, explore the use of a baseline exemption, where buildings with smaller footprints are not required to provide parking. Further reduce and restrict new off-street parking in close proximity to transit lines and in Downtown to support transit ridership.

2.13 Expand the parking management toolbox.

- a. Create neighborhood Parking Improvement Districts in which a portion of the funds collected from priced parking and enforcement is given back to the neighborhood for streetscape improvements or to fund a shared parking facility.
- b. Utilize Travel Demand Management plans, parking maximums, shared parking agreements, limited time on-street parking, parking meters, and signage to better assess existing demand and parking supply.
- c. Consolidate existing parking lots, using more efficient design and shared access to maximize usage.
- d. Evaluate the residential permit parking system and process to ensure that it accomplishes the goals of both the neighborhoods and the City.
- e. As a part of redevelopment or reinvestment, prohibit the demolition of viable housing units or historic buildings for new surface parking lots.

2.14 Disclose the true cost of parking. As land prices rise, parking is a resource that should not continue to be subsidized by the city. Charge fair, market prices for on-street parking and off-street public parking.

2.15 Encourage investment in new enforcement technologies that can help to expand parking enforcement and reduce the City's costs. Enforcing parking is labor intensive for the City, and individual meters consume valuable public realm space.

- a. Use automated license plate recognition technology to aide in accurate and efficient enforcement.
- b. Invest in consolidated parking meters that serve multiple spaces. Chose a

meter system that uses “smart” technologies, including those that are wireless and accept credit cards.

2.16 Create and enforce design and landscaping guidelines for parking lots. (See policy 2.20 in the Water Chapter.)

- a. Provide safe and attractive pedestrian pathways through surface parking lots and structures.
- b. Evaluate the proposed landscaping requirements for parking lots in the Mississippi River Critical Area and study the feasibility of applying them citywide.

2.17 Reestablish a balanced and efficient downtown parking market. Promote parking policies that encourage the location and intensification of retail, office and housing uses in our transportation-rich, multi-modal downtown. Explore changes to existing State public parking subsidies that currently deter efforts to encourage transit, walking, bicycling, and carpooling among downtown users. Structured parking in multi-modal and mixed-use facilities will be prioritized over single-use ramps or surface parking lots.

2.18 In cooperation with St. Paul Smart Trips and CapitolRiver Council, assemble stakeholders from all major downtown sectors to revisit downtown parking policies and project trends, and create a long-term Parking Management Plan. The Parking Management Plan should make recommendations on individual parking priorities and pricing for each of several user groups, including private-sector workers, government workers, retail customers, residents, event attendees, and Farmer’s Market customers. Address issues such as ramp and meter operation, hours, and pricing; as well as motorcycle and bicycle parking facilities. Develop a plan to identify potential funding for downtown multi-modal transportation improvements, and to manage limited resources effectively to achieve a balanced system.

STRATEGY 3:

Support Active Lifestyles and a Healthy Environment

Streetscape design and the context of the public realm can encourage or discourage opportunities for integrating physical activity into daily routines. By improving pedestrian and bicycle connections, way-finding, and facilities, the built environment can better support active lifestyles and broader public health goals. Increased physical activity has enormous health benefits in combating obesity, reducing the risk of chronic disease, and improving mental health. Additionally, these enhancements bring environmental benefits such as reducing greenhouse gas emissions and improving air quality.

Opportunities for integrating physical activity into daily routines as an alternative to driving

3.1 Support cooperative efforts in streetscape design, landscaping, pedestrian-scale lighting, and other amenities for people. Vibrant and landscaped streetscapes promote walkable neighborhoods, benefiting businesses, residents, and visitors. Use creative partnerships with volunteers, district councils, block groups, institutions, or business associations to fund and maintain investments along corridors and in the downtown. Public-private partnerships can provide opportunities to implement above-standard amenities and improve the public realm.

[Photo of a street with desirable landscaping, furniture, lighting, etc.]

3.2 Formalize citywide standards and above-standard options for pedestrian oriented streetscapes. Update and coordinate the City's street lighting policy (adopted 1996), Municipal State Aid street standards, site plan requirements, and the City Forester's boulevard planting guidelines.

3.3 Strengthen pedestrian pathways between housing, transit, and neighborhood services. Residential pedestrian routes must be safe, accessible, appropriately lit, and designed and maintained to draw pedestrians to the space. Sidewalks, paths, and trails are also used for recreational purposes, and should provide benches or other comfortable places to rest.

3.4 Develop and maintain a complete and connected bikeway system. Generally, bikeways should be no more than a half-mile apart, and arterial striped bike lanes and/or off-street trails no more than one mile apart.

It is the desired goal of the City to increase the bicycle mode share from 2% in 2000 to 5% in fifteen years, and increase the mode share of bicycling commuters from 0.6% to 2.5% during the same period. Saint Paul will become a world-class bicycling city that accommodates cyclists of varying skill levels riding bicycles for both transportation and recreation, and encourages bicycle use as a part of everyday life. (See Figure D.)

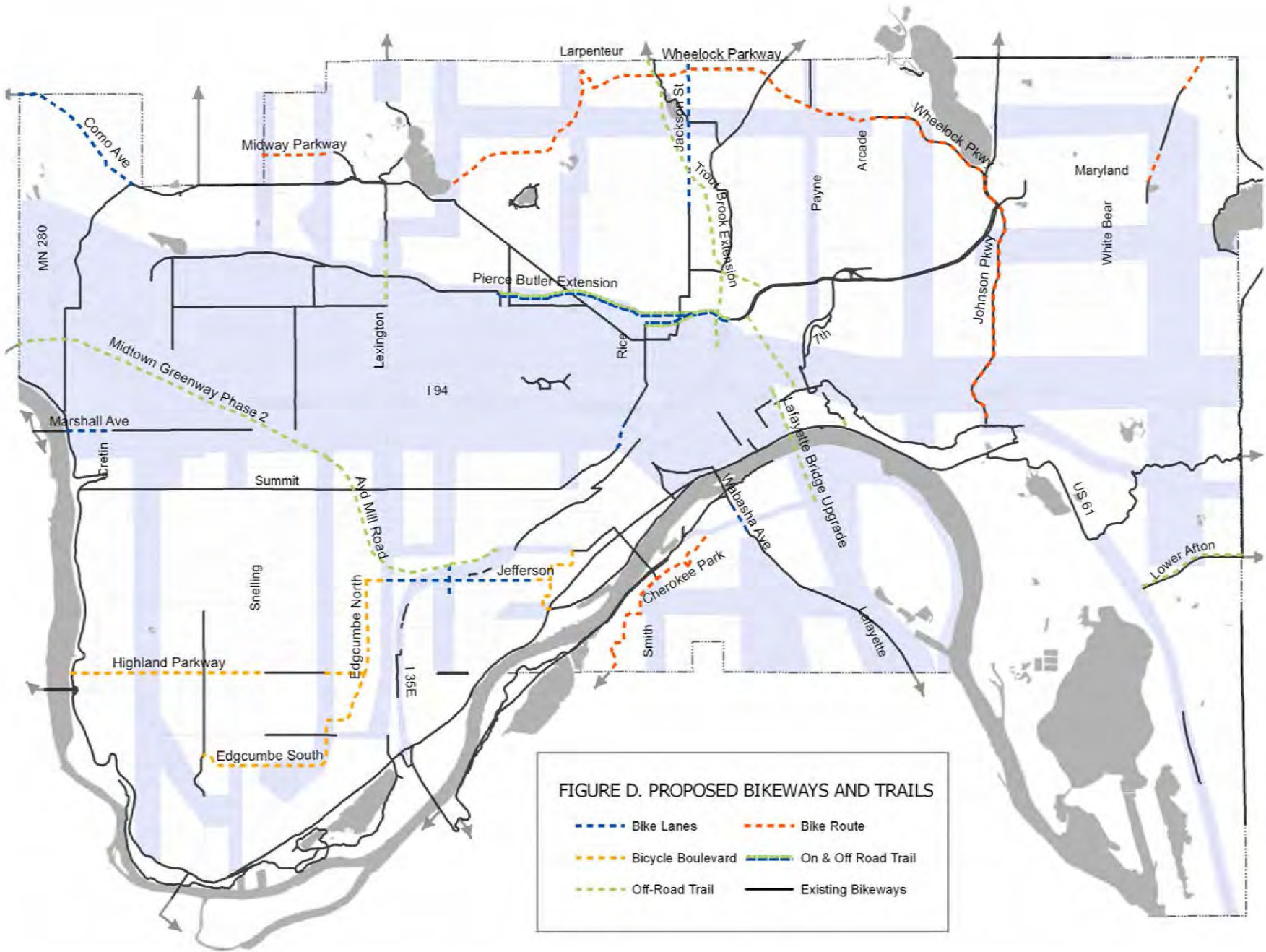
3.5 Support existing off-street shared-use paths and add facilities and amenities supportive of active living principles. Good coordination between the Department of Public Works and the Department of Parks and Recreation will be required to integrate Saint Paul's system of off-road trails and facilities with on-street bicycle facilities and the sidewalk system. (See Appendix B: Types of Bikeways and policy 6.13 in the Parks and Recreation Chapter.)

3.6 Fill gaps in the bikeway system. The bikeway system includes both on-street and off-street routes. (See Appendix A, and policy 1.2 in the Parks and Recreation Chapter.)

3.7 Create a comprehensive system of bicycle network and pedestrian path

The Mayor's **Bicycle Advisory Board (BAB)** is a citizen committee that meets monthly to:

- advise the Mayor and City Council on safe bicycling
- promote a safe and connected bicycle network in Saint Paul
- provide technical advice on safe bicycling
- encourage and support bicycling as transportation
- assist in promotion of Saint Paul biking events such as Saint Paul Classic Bike Tour
- promote providing bicycle support such as short and long term bicycle parking and way finding



signage and way-finding. Include way-finding for both the on and off-street network consistent with the regional system and systems of adjacent communities. In downtown Saint Paul, update and implement the 1994 *Signage and Wayfinding Master Plan*. (See policy 6.15 in the Parks and Recreation Chapter.)

3.8 Promote “Bicycle Boulevards” as a new type of bikeway. Explore implementing such routes, particularly to connect neighborhoods and major destinations, and to provide convenient nearby alternatives to bicycling on major streets.

Used in cities across North America and Europe, these routes typically utilize low-traffic, largely residential streets to create safe corridors for bicycling. Routes should be well-signed and facilitate safe and convenient crossings across major streets. Local traffic is allowed to access and park on the streets to reach homes and local destinations, while through-traffic is discouraged with various calming methods. (See Appendix B.)

3.9 Adopt a citywide bicycle parking requirement. Develop an amendment to the Zoning Code to require bicycle parking at all new development and redevelopment projects. Require that building owners clear bicycle parking of snow and debris year round, and place bicycle parking in a place that is visible to the street and is in close proximity to the main building entrance.

3.10 Create public bicycle parking facilities to increase bicycling trips citywide. Develop bicycle parking facilities as a part of new or improved public facilities, particularly at hubs of retail and commercial activity, in public parking facilities, and at community gathering spaces. Downtown ramps should consider adding parking for bicycles in existing secure facilities, while publicly owned and controlled facilities must provide bicycle parking accommodations.

Providing facilities for bicyclists’ to not only park their bikes but also to shower, store gear, and get needed bike maintenance can help to make bicycling more convenient and attract new cyclists. Many cities have created “bike stations,” particularly at high-destination locations, to serve these purposes. Explore the creation of one or more of these facilities, possibly in the Union Depot multi-modal transit center.

3.11 Provide safe citywide connections to schools, libraries, parks, and recreation centers, with improved crossings and comfortable pedestrian environments at high demand destinations. Identify safety issues on routes to these destinations and establish as criteria in ranking priority projects. (See policy 6.12 in Parks and Recreation Plan.)

3.12 Support the work of planning initiatives that promote public health and physical activity, such as *Active Living Ramsey County* and *Design for Health*.

3.13 Support partnerships to establish a bicycle-sharing program in Saint Paul. Ensuring access to safe, affordable bicycles for residents and visitors is an effective way to increase bicycling mode share.

3.14 Collaborate with non-profit, volunteer, and business organizations to coordinate bicycle counts at sample intersections and on selected routes. Regular counts will help the City better understand trends in bicycling citywide and prioritize improvements and maintenance.

STRATEGY 4:

Enhance and Connect the City

In order to be competitive in the region, Saint Paul must be well connected both locally and regionally. The central location and economic vitality of the city are a good foundation to accommodate continued growth, but further strategic investments are needed in order to compete with global economic forces. At the local level, increasing neighborhood accessibility can both improve quality of life and create economic opportunities.

Connectivity to regional systems

4.1 Develop Union Depot as a multi-modal center of a regional transportation system. The restored Depot will support the connections of many future transportation investments, including Light Rail and Bus Rapid Transit, commuter rail, local and express bus routes, long-distance bus service, long-distance rail, and high-speed rail.

[insert images of the restored Union Depot from Ramsey County]

4.2 Promote collaboration for future high-speed rail service between the Union Depot and Chicago along the Highway 61 Corridor. Participate in the Upper Midwest Planning for a regional high-speed rail network.

4.3 Work with the Port Authority, adjoining cities and counties, commercial railroads, and logistics companies to address the limited ability and growing demand for processing freight at the Burlington Northern Santa Fe Intermodal Yards in the Midway Area.

- a. Study possibilities for consolidation of similar operations and expansion to other existing rail yards in the city.
- b. Develop a truck route accessibility plan in cooperation with MnDOT.
- c. Participate on MnDOT's statewide freight management study, including an updating of its Freight Connector Study. Pursue funding by seeking to amend the Federal Intermodal Freight Connector System, which links major freight facilities (including Barge Channel and Childs Road ports, and the BNSF facility) with the National Highway System (interstate and U.S. highways).

4.4 Coordinate with surrounding communities and jurisdictions to enhance regional bicycle and pedestrian networks, recognizing the importance of Saint Paul in regional and statewide connectivity. (See policies 1.6 and 3.7, and policy 6.11 in Parks and Recreation Plan.)

- a. Support Hennepin County and City of Minneapolis efforts to build a new bicycle and pedestrian bridge across the river to extend the Midtown Greenway.
- b. Complete the Saint Paul extension of the Midtown Greenway.
- c. Provide a connection from the Lafayette Bridge to the Bruce Vento Regional Trail.
- d. Participate in regional discussions about the implementation of a standardized system of route identification, signage, and directional and destination information.
- e. Support the completion of the Trout Brook/Lower Phalen Creek Greenway trail connections and the extension of the Trout Brook Regional Trail through the Trillium Preserve.
- f. Emphasize connections to regional destinations, including Como, Battle Creek, and Phalen Regional Parks.

FIGURE E. AREAS OF POTENTIAL LAND USE RESTRICTIONS



4.5 Work with the Metropolitan Airports Commission to maintain a regional aviation system that balances commercial demand and capacity while being compatible with the residential community. Incorporate the airport Long-Term Comprehensive Plan (LTCP) by:

- a. Adopting land use & height zoning regulations for the Minneapolis-Saint Paul International Airport and Holman Field Airport that protects the citizenry from undue exposure to aircraft operations, and to protect aircraft from undue exposure to obstructions. Zoning code amendments will be fashioned after the model ordinances developed by the Joint Airport Zoning Boards established for both MSP and Holman Field. (See Figure E.)
- b. Reviewing Noise Abatement Operations Plan developed by the Metropolitan Airports Commission, and participating in the Downtown Airport Advisory Committee, the Noise Oversight Committee, and the discussions at MSP airport concerning noise impacts on Saint Paul neighborhoods.
- c. Coordinating airport and community infrastructure and service needs.
- d. Continuing to participate in the planning for Holman Field, recognizing the Metropolitan Council's and Metropolitan Airport Commission's desires to promote general aviation at Holman Field. That work includes reviewing and commenting on MAC's capital improvements program for Holman Field and participating in long-range planning for Holman Field.
- e. Notifying the Federal Aviation Administration and the Metropolitan Airports Commission Airport Development Department of potential interference and obstructions, by directing any parties interested in building structures within the Zone C of either MSP or Holman Field to the FAA website and directing them to fill out FAA Form 7460-1 and submit it for FAA review.

4.6 Explore the role of transportation infrastructure in the city's telecommunications system. In 2007 the Saint Paul Broadband Advisory Committee recognized the importance of digital connectivity and the potential for high-capacity data transmission through a fiber optic cable system.⁸

Community Accessibility

4.7 Connect neighborhoods that have poor sidewalks or little access to trails and bike routes, especially east and north of Downtown. Close gaps in the sidewalk network in areas that create significant barriers to the largest numbers of pedestrians. Sidewalks should be required on both sides of the street where possible. Property owners should not be able to completely opt out of this requirement where the new sidewalk would improve the pedestrian connection to nearby services and amenities, or complete the urban neighborhood fabric. (Also see policy 3.3.)

4.8 When redevelopment opportunities become available, reinstate the traditional street grid pattern to increase neighborhood connectivity. Where larger sites need to be maintained for commercial, industrial, and institutional campuses, require comfortable pedestrian pathways and good connectivity to existing and new streets. Discourage the creation of superblocks that increase walking distances to major destinations and transit, and that isolate pedestrians and cyclists.

4.9 Provide better alternatives for accessing community events. (See policy 1.16 in the Parks and Recreation Chapter)

⁸ "Saint Paul: America's Most Connected City," The Broadband Advisory Committee on the Future of Broadband in Saint Paul. September 26, 2007.

-
- a. If streets are closed to vehicles during special events, detours for bicycles should be provided and indicated on the City's web site. Bicyclists may also follow the signed vehicular detours unless signed otherwise. Bicycles and pedestrians should be allowed on streets closed to vehicles during events if they do not interfere with safety.
 - b. Develop a new policy for the provision of bicycle and motorcycle/scooter parking at events over a certain size (measured in attendance) that require a City permit.
 - c. Continue to work with Metro Transit to provide additional transit service to these events.
 - d. Continue vehicle detours to nearest arterial or collector streets.

4.10 Create new connections and improve existing stairways and paths between neighborhoods, parkland, and the River, while protecting natural vegetation and the integrity of the bluffline.

[photos of staircases or pathways up the bluffs or in the downtown]

4.11 To create livable neighborhoods and compact commercial areas, promote and fund traffic calming measures. Determine the appropriate combination of techniques by the area's physical characteristics, the nature of the traffic issue, and the expected cost, effectiveness, and acceptance by the community. The City and the community should explore traffic problems and options together, resulting in a recommendation that will be most likely to achieve the neighborhood's objectives. (See policy 1.45 in the Land Use Plan.)

[insert photos of St. Paul examples]

4.12 Explore the use of neighborhood circulators to serve gaps in community connectivity. An innovative and successful model for transporting children to after-school and summer activities has been implemented on the West Side, and recreated in the Dayton's Bluff and Payne-Phalen neighborhoods.

Implementation

To help achieve the policy goals set forth in this plan, there are several key actions for the City and its partners to take as next steps:

Complete projects that enhance the local and regional transportation system.

Appendix A lists projects for enhancing the safety and balance of the transportation system in Saint Paul. Appendix A is intended to be a list of proposed improvements identified at the time this plan was written. The projects listed under Appendix A should therefore be studied to maximize their potential to help complete the streets, support future land uses, and contribute to a multi-modal transportation system. Accordingly, Appendix A may be periodically modified to reflect changing circumstances and new opportunities, especially in light of the present circumstances of changing legislative schemes at all levels of government for financing capital improvements for transportation purposes and uncertainty in projecting revenues needed to fund existing multi-modal transportation operations.

Adequately fund a balance of transportation improvements. The funding picture for transportation infrastructure is likely to bleak in the foreseeable future. City actions need to be balanced so as to meet the needs of all modes, and within a responsible funding structure.

In order to properly maintain and operate our transportation infrastructure, adequate funding needs to be provided. In recent years, labor, material and energy related costs for infrastructure maintenance have increased substantially. Funding has not kept pace. Level of service for routine maintenance such as street sweeping, pavement striping, and street lighting maintenance has been reduced in order to keep costs in line with funding. In addition, the City is falling behind on life cycle replacement of our aging infrastructure. With diminishing funding for ongoing maintenance and safety, financing these new initiatives will be challenging, requiring new sources of revenue, and new partnerships. Although the City should and will seek maximum use of existing funding, it is unlikely that major new initiatives can be funded without additional revenues.

Implications for the capital budget include specific project implementation, new multi-modal improvements, and enhanced streetscapes. The Motor Vehicle Sales Tax (MVST), increased Gas Tax, and ¼ cent County sales tax hold longer-term promise, as short-term the funding is already committed. In addition, Congress is due to reauthorize the federal funding program in 2009 (to replace the SAFETEA-LU legislation in place between 2005 and 2009).

The purchasing power of the tax dollars collected is also dwindling quickly. With a reduction in mileage traveled and in the number of automobiles purchased, neither MVST nor the Gas Tax will likely keep pace with inflation in the short-term. Additionally, the cost of labor and raw materials is rising more rapidly than inflation, which compounds the funding shortfalls.

Allocation of capital funding for projects will be manifest in the City's biennial capital budget, budgets of MnDOT and Metro Transit, Metropolitan Council's Transportation Advisory Board allocations, and the Federal transportation bill reauthorization. Since most of the capital projects are funded with non-local resources, the City will have to rely heavily on regional, state and federal levels of government.

For the operational and capital improvements of this plan, the City will continue to seek new partnerships with the private and non-profit sectors. For maintenance of streetscape improvements such as landscaping, the City will continue to call on

expanded volunteerism through adjacent property owners, business organizations, and neighborhood groups.

Focus funding for bus service on the East Metro. Frequent and reliable bus service is critical to the strength of the overall transit system. The East Metro area is under-served and must be better connected by efficient transit to downtown Saint Paul, its neighborhoods, and regional high-employment destinations like downtown Minneapolis and the I-494 Corridor in Bloomington. Work with Metro Transit to focus improved bus service, not just in areas of the region with the highest levels of traffic congestion, but in places with a deficiency in transportation choices and a high dependency on transit.

Pursue funding to enhance safe routes to school. In cooperation with Saint Paul schools, actively pursue and implement Safe Routes to School (SRTS) projects, which emphasize walking and bicycling as a safe and viable way to get children to neighborhood schools. By building safer street infrastructure, designing better crossings, and calming traffic, SRTS projects promote increased physical activity and may reduce automobile traffic to and around schools.

Continue to collect and share travel data. Informing planners, decision makers, and users of the system is a powerful way to increase safety, focus improvements, and shift travel mode share.

- Identify the impact of regional and local trips on traffic congestion
- Work with MnDOT and Ramsey County to collect and map pedestrian, bicycle, and vehicular crash data to aid in planning design and maintenance
- Work with the Metropolitan Council to improve and refine the Regional Transportation model to better account for all modes of travel
- Work with MetroTransit, Metropolitan Council, and St. Paul Smart Trips to add bicycling route information to the regional transit website
- Share data on health impacts of various transportation choices, especially in neighborhoods with high populations with asthma, obesity, and heart conditions
- Encourage the Transportation Advisory Board of the Metropolitan Council to fund education and outreach projects through Transportation Enhancement funds, as allowed in the federal criteria.
- Improve access to regularly updated information on the City's website about bike-ways, newly opened facilities, construction and detours, events, etc.

Credits

Transportation Comprehensive Plan Task Force

Jon Commers* (Chair)	Mary Jackson
Rob Barbosa	Betsy Leach
Sherman Eagles	Paul Savage
David Greene	Bob Spaulding*
Dave Van Hattum	Alice Tibbetts

* Planning Commission member

Bicycle Advisory Board

Rob Barbosa (Chair)	Ed Lehr
Richard Arey	Don Muske
Chris Budel	Kera Peterson
Matthew Cole	Kurt Schroeder
Eric Haugee	Jessica Treat
	Rob Vanasek

Saint Paul Planning Commission

Brian Alton (Chair)	Yung-Kang Lu
Eduardo Barrera	Michael MarguliesJames Bellus
Jon Commers	Susan McCall
Kathi Donnelly-Cohen	Gladys Morton
Carole Faricy	Gaius Nelson
Erick Goodlow	Marilyn Porter
Stephen Gordon	Kristina Smitten
George Johnson	Bob Spaulding
Richard Kramer	Daniel Ward II
	Barbara A. Wencil

Christopher B. Coleman, **Mayor**

City Council

Dan Bostrom	Kathy Lantry
Melvin Carter III	Russ Stark
Pat Harris	Dave Thune
Lee Helgen	

Department of Planning and Economic Development

Cecile Bedor, Director
Larry Soderholm, Planning Administrator

Research and Planning

Greta Alquist	John Maczko
Monica Beeman	Christina Morrison
Mike Klassen	Paul St. Martin
Allen Lovejoy	

Staff to the Bicycle Advisory Board

Paul Iovino, Police
David Kuebler, Public Works
Christina Morrison, Planning and Economic Development
Eric Thompson, Parks and Recreation

Report Production

Joan Chinn

APPENDIX A:

Projects

Policy 1.4 Recommended Projects:

- a. Lafayette Bridge Reconstruction
- b. Dale Street Bridge over I-94
- c. Reconstruction of I-35E from Downtown to South of Maryland Avenue
- d. Green Staircase (Channel Street Stairs) Reconstruction
- e. Intersection Improvements with Maryland Avenue at Arkwright, Payne/Edgerton and Clarence/Prosperity
- f. Intersection Improvements with Maryland Avenue at Dale and Rice Streets
- g. Intersection Improvements with White Bear Avenue at Seventh Street and Old Hudson Road
- h. Warner Road Bridge Reconstruction
- i. Traffic calming elements along Snelling Avenue to improve aesthetics, reduce speeding, and increase safety.
 - Focus on intersections with high accident rates, including:
 - Spruce Tree Street
 - University Avenue
 - St. Anthony Avenue
 - Selby Avenue
 - Concordia Avenue

Policy 2.4 Recommended Projects:

- a. Kittson Extension
- b. Pierce Butler Route Extension. Extend Pierce Butler Route eastward to intersect with I-35E and connect with Phalen Boulevard
- c. Northwest Quadrant Study
- d. Reconstruction of I-35E from Downtown to South of Maryland Avenue, with ramps at Cayuga
- e. Ayd Mill Redevelopment Project, subject to a Supplemental Environmental Impact Statement (EIS) process involving a community task force
- f. Shepard & I-35E Connection Environmental Impact Statement
- g. Improvements to McKnight Road and Ruth Street at I-94

For Metropolitan and regional highway investment priorities, also see Tables 4-9 through 4-12 of the Metropolitan Council's 2030 Transportation Policy Plan.

Policy 2.9 Recommended Corridors:

- a. Riverview Corridor serving the East Side and Downtown Saint Paul, and connecting to the Minneapolis-Saint Paul International Airport and Bloomington
- b. Snelling Avenue & Ford Parkway
- c. Rush Line Corridor to Hinckley serving Union Depot, Downtown Saint Paul, the East Side, and Maplewood
- d. I-94 East Corridor serving Union Depot, the East Side, and western Wisconsin
- e. Red Rock Corridor serving the Hastings corridor, Union Depot and Downtown Saint Paul, to Minneapolis
- f. Robert Street Corridor Study Area serving South Robert and Dakota County
- g. I-94 Corridor between downtown Saint Paul and downtown Minneapolis
- h. I-35 E Corridor south from Downtown Saint Paul to Dakota County

Policy 3.1 Recommended Projects:

- a. Create a pedestrian plan for the Sun Ray-Suburban Planning Area
- b. Develop a center median or boulevard in key areas along Concord and Robert Street, develop "gateway" towers to the District, and reinforce neighborhood pedestrian nodes with decorative paving, street furnishings, and redevelopment opportunities
- c. On Arcade, study and develop concept plans for curb, sidewalk, bump out, and street lighting improvements

-
- where appropriate
- d. Improve sidewalk and lighting along Rice Street between Atwater and Maryland and at the Maryland intersection
 - e. Design and construct improvements for the West Seventh streetscape and pedestrian areas, realignment of Edgcombe Parkway, and upgrades to Davern Street

Policy 3.6 Recommended Projects:

- a. Complete the Saint Paul extension of the Midtown Greenway
- b. Designate all parkways as bike routes, where eligible, and complete the Saint Paul Grand Rounds that traverses many of the City's parkways and connects to the established Minneapolis Grand Rounds
- c. Make improvements to problem areas, including the railroad trestle underpass on Raymond Avenue and the University of Minnesota Transitway
- d. Create north-south routes in the western half of the City that connect across Interstate 94 and railways to Central Corridor light rail stations. These should include but not be limited to:
 - A facility on Hamline Avenue that traverses Pierce Butler Route, the Burlington Northern Santa Fe railroad and Energy Park Drive.
 - A facility on Davern Street from Shepard Road to St. Paul Avenue.
 - Routes on roadways defined in the Transportation Plan as minor arterials/collectors.
 - "Quiet routes" such as Aldine, Griggs, Chatsworth, Grotto and Mackubin.
 - Completion of the route on Prior Avenue south to Summit Avenue
 - Completion of the route on Jackson street north to Larpenteur and south to downtown.
- e. Integrate east-west bicycle routes on or parallel to University Avenue that will accommodate connections to destinations along the light rail route. Strive to accommodate bicycles on University Avenue, but in places where other modes take priority in the right of way, provide accessible alternatives on parallel routes. This accommodation should extend east to Lafayette Road.
- f. Create an east-west route on or near Arlington Avenue to connect the western and eastern halves of the City
- g. Create new or improved north-south and east-west bicycle routes on the City's east side, including but not limited to:
 - A north-south route on or near Johnson Parkway, Furness Parkway, Hazel Street, Ruth Street, McKnight Road, Prosperity Avenue, and Point Douglas Road and trail.
 - East-west routes on or near East 3rd Street, East 7th Street, Minnehaha Avenue, Old Hudson Road, Upper and Lower Afton Roads, Burns Avenue, Carver Avenue, Wheelock Parkway; Arlington Avenue; Wilson Avenue, Margaret Street and Pacific Street to Plum Street.
 - Fill the three block gap in the shoulder of Larpenteur in the area near White Bear Avenue.
- h. Create new or improved connected bicycle routes on the West Side of Saint Paul, including but not limited to:
 - Filling the north-south gap on Wabasha Street between Water and Cesar Chavez, and on Smith Avenue, Stryker Avenue, or nearby streets
 - East-west routes on George Street and Annapolis or nearby streets

Recommended Projects for Downtown Saint Paul:

- a. Create a downtown bicycling network that connects the many bikeways leading into downtown, as initiated by the Downtown Bicycle Plan
- b. Enhance the St. Peter, Wabasha and Cedar bridges over I-94 for improved pedestrian access, safety and convenience. This can be accomplished with landscaping, ornamental lighting and railings, comfortable sidewalks and public art
- c. Improve the Fifth Street connection between Mears Park and Rice Park with trees, better pedestrian lighting, and marked crosswalks
- d. Improve the Wacouta Street connection between Wacouta Commons and Mears Park with trees, better pedestrian lighting, and marked crosswalks

-
- e. Connect pedestrians to the river by opening new points of river access
 - f. Consider making sidewalk improvements on Jackson Street between Fifth Street and Shepard Road similar to those on Sibley Street between Mears Park and Shepard Road
 - g. Improve the pedestrian environment on streets where skyways exist. Improve Fifth, Sixth, and Seventh streets between Wabasha and Robert Street to re-establish the pedestrian environment
 - h. Realign Ninth Street between Robert and Minnesota Streets to provide an edge to the proposed full-block park and provide a larger redevelopment site north of the former Northern Furniture building

APPENDIX B:

Types of Bikeways

On-Street Striped Bike Lanes: The presence of striped bike lanes on streets benefits all users, by calling attention to the likely presence of bicyclists, slowing traffic down, and improving safety and the perception of safety for bicyclists. Striped bike lanes are used on higher traffic roadways to give a clear indication to motorists and cyclists that there is an exclusive area of the roadway designated for bicycles.

Share-The-Road Facilities: If bike lanes are deemed infeasible or unnecessary, other treatments such as on-road stencils, bike chevrons, and bike route signage may be utilized to indicate to both cyclists and motorists that bicycles may be present on the roadway. Signs that are being incorporated by other communities into their bicycle infrastructure, such as “Bikes Have Full Use of Lane” and “Change Lanes To Pass”, should be reviewed for inclusion in Saint Paul’s bicycle infrastructure.

Bike Trails and Paths: Off-road bike paths and trails can provide good bicycle facilities where there are few intersecting roadways, such as along the Mississippi river and in railroad corridors. Bike paths with too many intersecting roadways are problematic in that too many conflicts are introduced between vehicles and bicycles.

“Bike Boulevards,” “Bicycle Streets,” or Quiet Routes: These facilities, which have been created in other cities in North America and in Europe, typically utilize streets that have low-traffic volumes such as residential streets. Facilities are marked with some combination of signs and/or stencils. In some cases, bicycles are given priority on these types of facilities with through traffic not being allowed. Streets where bicycle traffic is given priority remain available to vehicles for the purpose of accessing residences or local businesses. Saint Paul should consider experimenting with such routes, particularly on quiet streets near arterial roadways that make important connections.

Definitions in State Statute:

Bicycle: State Statute Chapter 169 Subd. 51. defines bicycle as every device propelled solely by human power upon which any person may ride, having two tandem wheels except scooters and similar devices and including any device generally recognized as a bicycle though equipped with two front or rear wheels.

Bicycle Route: State Statute Chapter 169 Subd. 62 defines a bicycle route as a roadway or shoulder signed to encourage bicycle use.

Bicycle Path: State Statute Chapter 169 Subd. 69 defines a bicycle path as a facility designed for exclusive or preferential use by persons using bicycles and constructed or developed separately from the roadway or shoulder.

Bicycle lane: State Statute Chapter 169 Subd. 70 defines a bicycle lane as a portion of a roadway or shoulder designed for exclusive or preferential use by persons using bicycles. Bicycle lanes are to be distinguished from the portion of the roadway or shoulder used for motor vehicle traffic by physical barrier, striping, marking, or other similar device.

Bicycle trail: State Statute Chapter 169 Subd. 71 defines bicycle trails as a bicycle route or bicycle path developed by the commissioner of natural resources under section 85.016.

Bikeway: State Statute Chapter 169, Subd. 72 defines a bikeway as a bicycle lane, bicycle path, or bicycle route, regardless of whether it is designed for the exclusive use of bicycles or is to be shared with other transportation modes.

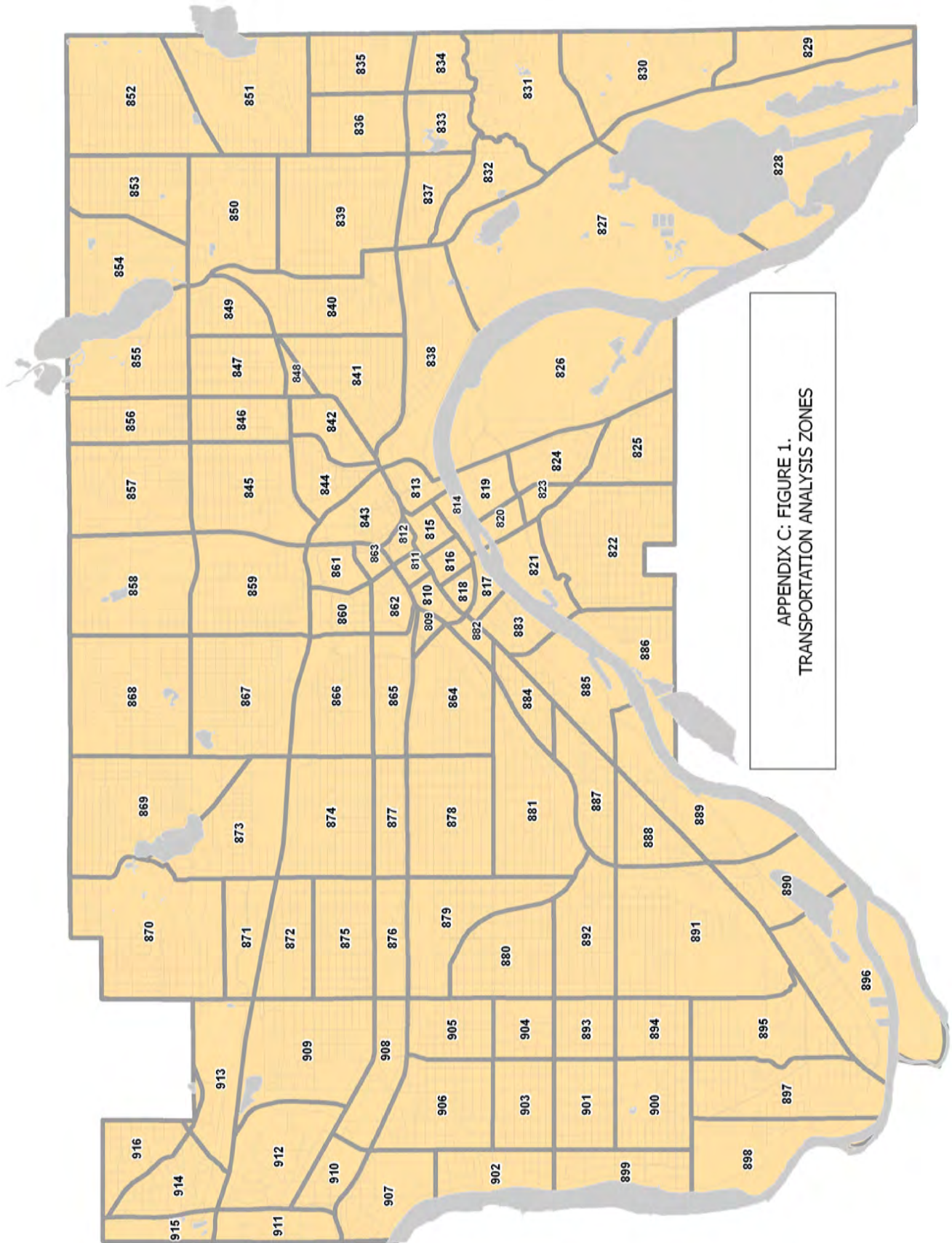
Bicycle Facilities: See *Bikeway*

Shoulder: State Statute Subd. Chapter 169, Subd. 73 defines a shoulder as that part of a highway which is contiguous to the regularly traveled portion of the highway and is on the same level as the highway. The shoulder may be pavement, gravel, or earth.

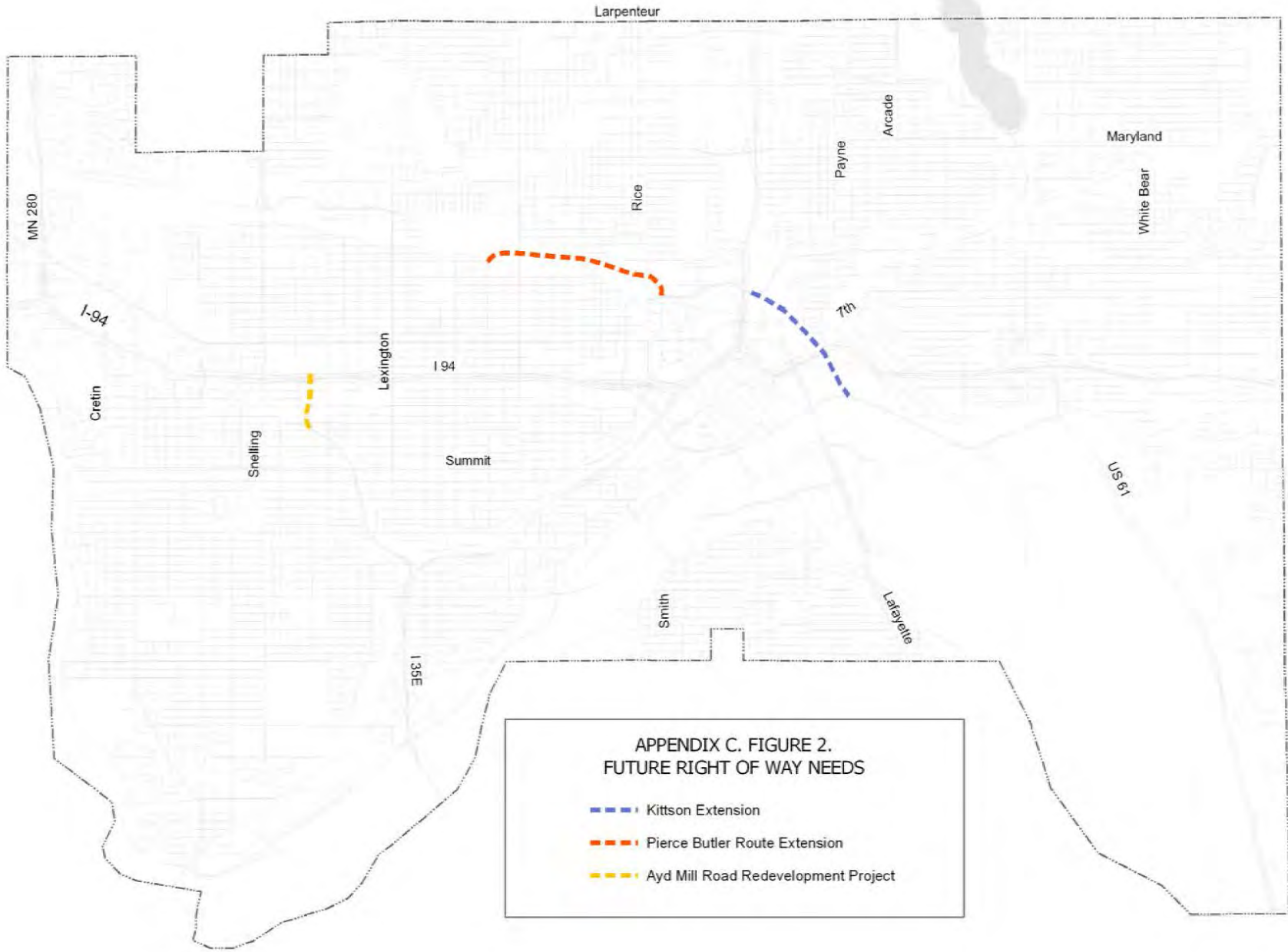
Share The Road: As used in this Plan, Share The Road bicycle facilities are defined as facilities where bicyclists and vehicles use the road equally and with bicycle operation meeting the requirements of State Statute Chapter 169.

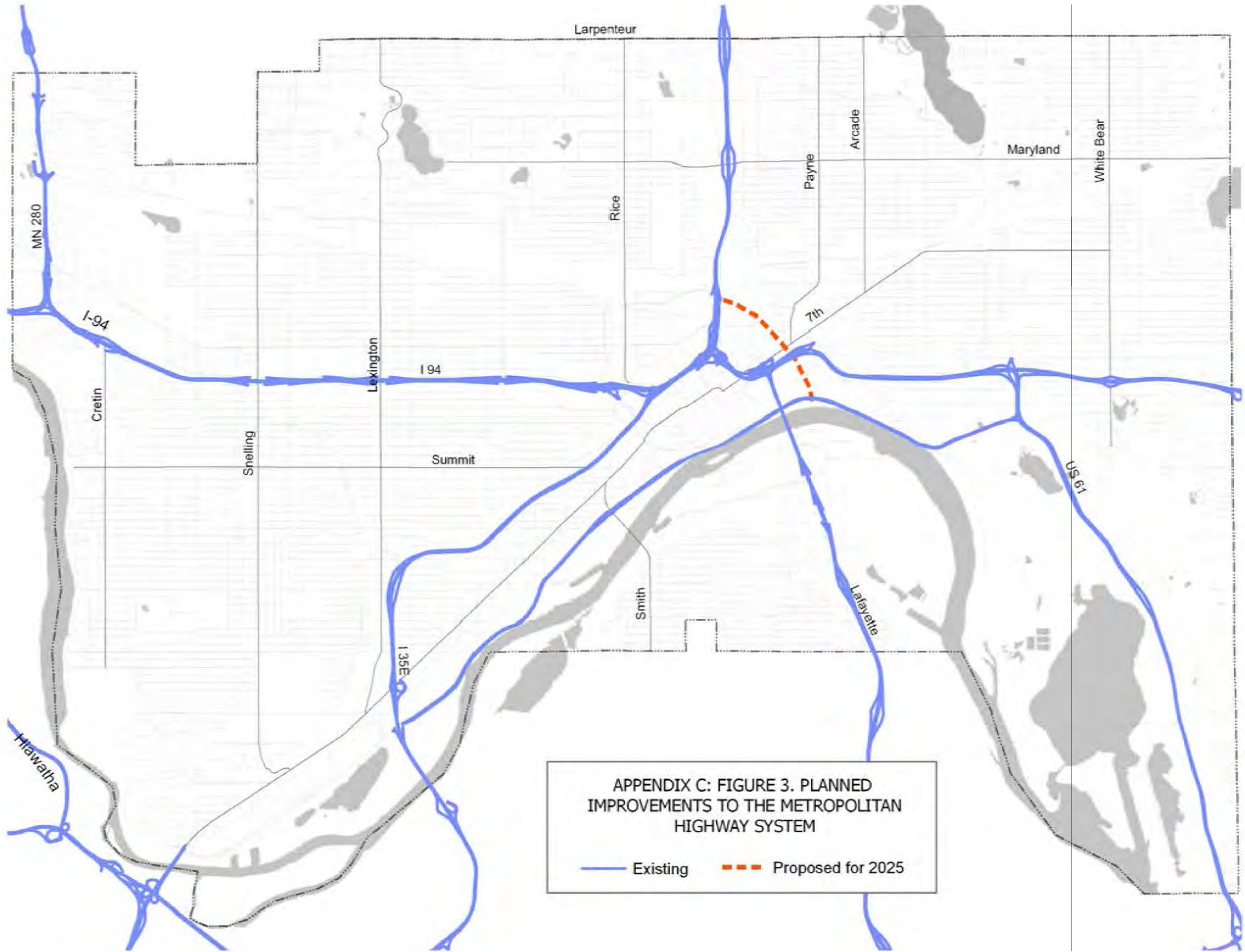
APPENDIX C:

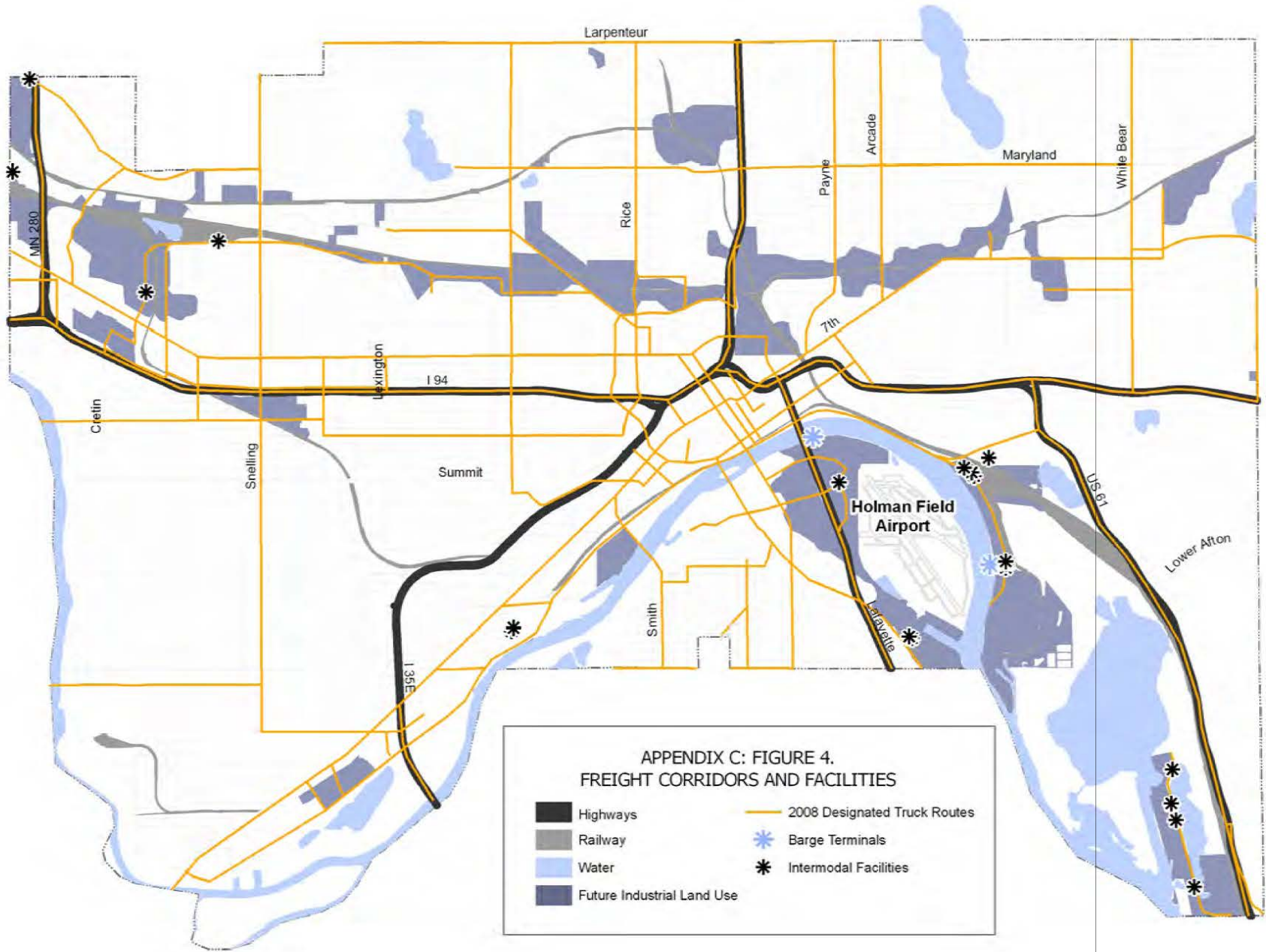
Reference Maps



APPENDIX C: FIGURE 1.
TRANSPORTATION ANALYSIS ZONES

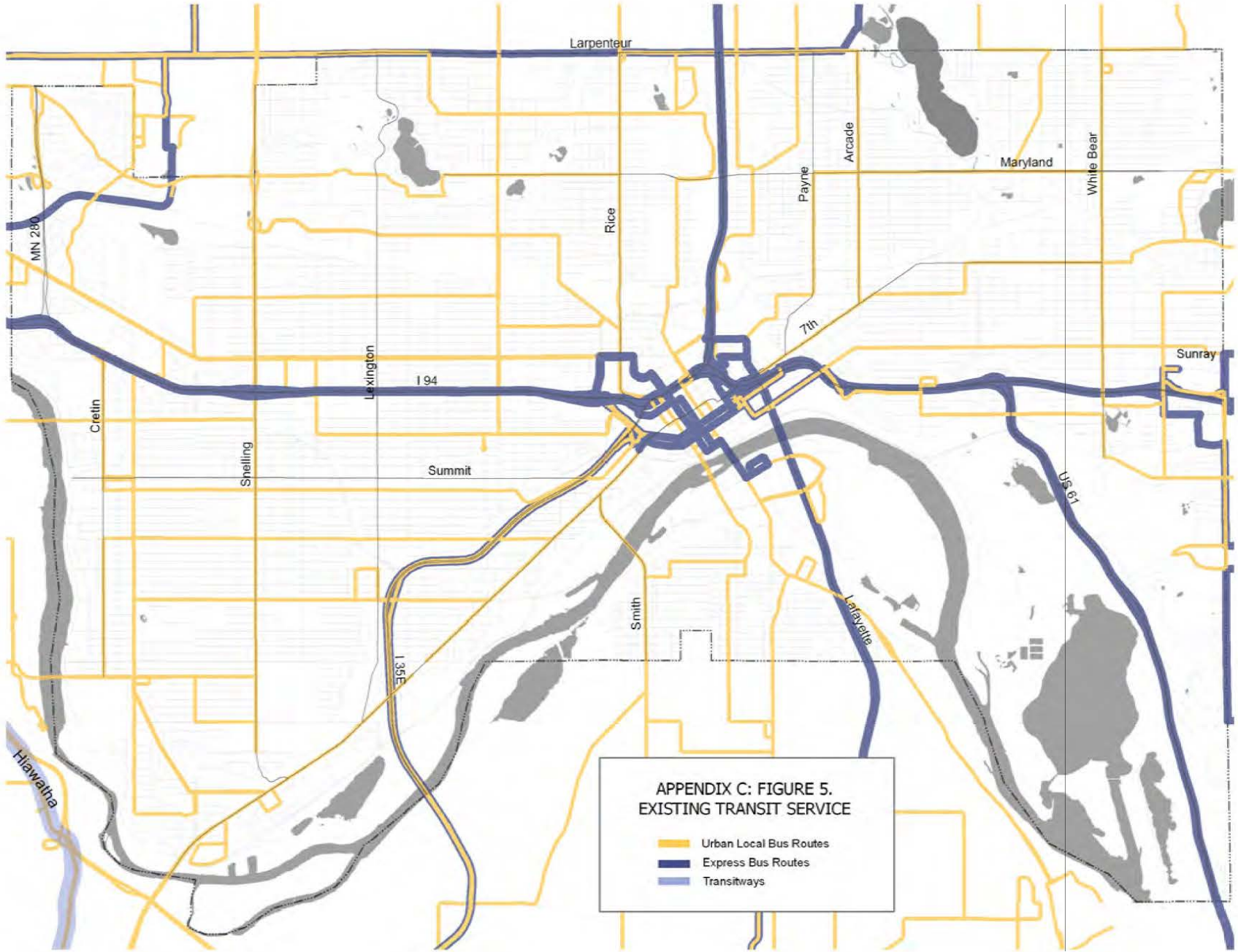


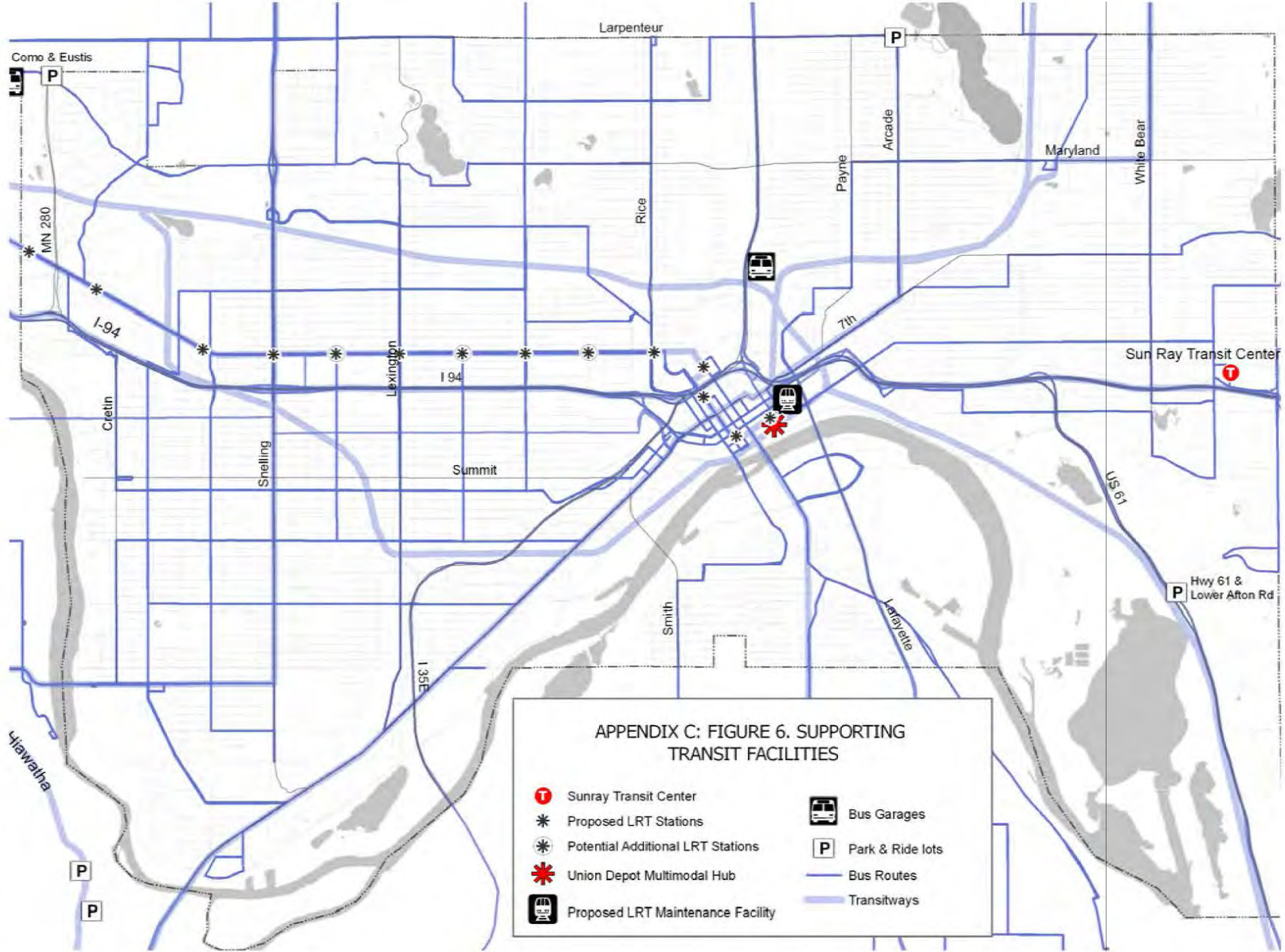





APPENDIX C: FIGURE 4.
FREIGHT CORRIDORS AND FACILITIES

- Highways
- Railway
- Water
- Future Industrial Land Use
- 2008 Designated Truck Routes
- Barge Terminals
- Intermodal Facilities





APPENDIX C: FIGURE 6. SUPPORTING TRANSIT FACILITIES

- | | | | |
|---|-----------------------------------|---|------------------|
|  | Sunray Transit Center |  | Bus Garages |
|  | Proposed LRT Stations |  | Park & Ride lots |
|  | Potential Additional LRT Stations |  | Bus Routes |
|  | Union Depot Multimodal Hub |  | Transitways |
|  | Proposed LRT Maintenance Facility | | |

APPENDIX D: SAINT PAUL TRAFFIC ANALYSIS ZONES (TAZ)
Allocation of Forecasts to Traffic Analysis Zones (TAZ)

TAZ #*	2000			2010			2020			2030		
	Pop	HH	Emp	Pop	HH	Emp	Pop	HH	Emp	Pop	HH	Emp
809	0	0	218	0	0	246	0	0	498	0	0	777
810	1,551	929	3,665	1,566	929	3,717	1,703	929	4,183	1,854	929	4,700
811	913	558	2,211	962	679	2,276	1,401	1,772	2,857	1,888	2,985	3,503
812	11	6	499	30	65	601	205	596	1,517	398	1,185	2,535
813	205	124	434	213	143	531	288	316	1,405	371	507	2,376
814	0	0	5,782	7	22	5,794	73	224	5,902	146	448	6,022
815	1,723	1,283	11,653	1,766	1,350	11,726	2,150	1,948	12,384	2,576	2,613	13,114
816	945	650	14,494	970	695	14,547	1,199	1,101	15,026	1,452	1,551	15,558
817	226	0	1,967	232	17	2,056	283	174	2,856	339	347	3,744
818	29	17	6,722	29	18	6,781	34	22	7,310	38	27	7,898
819	0	0	2,478	0	0	2,553	0	0	3,230	0	0	3,982
820	0	0	635	22	67	703	219	671	1,312	438	1,341	1,988
821	32	24	327	32	24	415	37	26	1,205	41	27	2,084
822	8,451	3,086	1,557	8,503	3,091	1,613	8,973	3,140	2,121	9,494	3,194	2,685
823	638	167	1,074	641	167	1,099	666	168	1,322	693	168	1,569
824	1,587	472	2,117	1,595	472	2,140	1,666	477	2,347	1,744	481	2,577
825	3,393	1,085	444	3,413	1,091	468	3,589	1,142	681	3,785	1,199	919
826	780	253	1,623	784	254	1,683	824	260	2,219	867	267	2,814
827	0	0	71	0	0	71	0	0	71	0	0	71
828	0	0	586	0	0	588	0	0	603	0	0	620
829	2,294	741	148	2,308	746	148	2,433	795	148	2,571	848	148
830	2,816	989	204	2,834	995	204	2,996	1,044	204	3,175	1,099	204
831	1,998	755	320	2,010	755	320	2,122	755	320	2,245	755	320
832	495	182	2	498	182	2	525	183	2	555	184	2
833	1,262	496	1,004	1,274	507	1,028	1,379	607	1,248	1,496	717	1,492
834	2,691	1,289	229	2,713	1,291	291	2,909	1,311	854	3,126	1,333	1,479
835	2,573	1,096	445	2,591	1,097	501	2,754	1,102	1,004	2,935	1,107	1,563
836	2,878	1,245	362	2,899	1,247	404	3,088	1,265	778	3,298	1,285	1,195
837	1,693	663	464	1,704	663	480	1,802	664	622	1,910	665	781
838	2,685	870	271	2,700	871	271	2,831	882	271	2,977	894	271
839	5,677	1,965	676	5,711	1,970	744	6,016	2,019	1,360	6,354	2,073	2,044
840	5,452	1,883	1,076	5,487	1,896	1,128	5,804	2,018	1,600	6,155	2,152	2,123
841	7,441	2,231	319	7,481	2,243	375	7,844	2,350	876	8,247	2,469	1,432
842	1,114	345	1,283	1,120	345	1,367	1,171	345	2,122	1,227	345	2,962
843	357	27	5,869	357	27	5,896	362	27	6,134	366	27	6,399
844	2,223	691	416	2,237	699	449	2,361	769	746	2,499	846	1,077
845	6,638	2,039	1,160	6,673	2,043	1,232	6,985	2,082	1,884	7,332	2,124	2,607
846	3,109	878	1,217	3,124	879	1,251	3,254	884	1,553	3,399	889	1,890
847	4,266	1,336	555	4,288	1,336	625	4,486	1,340	1,258	4,705	1,343	1,962
848	27	11	46	27	11	108	29	11	665	31	11	1,284
849	2,715	958	54	2,731	958	120	2,872	959	710	3,029	960	1,367
850	7,063	2,347	786	7,108	2,367	886	7,513	2,551	1,781	7,962	2,754	2,776
851	5,705	2,236	427	5,745	2,247	507	6,105	2,342	1,224	6,504	2,447	2,021
852	4,794	1,837	594	4,828	1,849	608	5,133	1,955	737	5,471	2,072	880

853	4,263	1,818	264	4,293	1,818	340	4,562	1,823	1,019	4,860	1,827	1,774
854	3,765	1,337	111	3,787	1,338	123	3,985	1,342	234	4,205	1,347	357
855	2,049	846	263	2,064	849	310	2,197	874	738	2,344	902	1,213
856	2,713	957	399	2,729	957	407	2,870	957	477	3,026	957	555
857	6,895	2,415	265	6,936	2,420	282	7,307	2,467	439	7,718	2,519	614
858	4,360	1,426	1,649	4,387	1,436	1,687	4,627	1,531	2,024	4,894	1,635	2,400
859	3,999	1,333	973	4,023	1,339	1,027	4,235	1,389	1,516	4,471	1,445	2,060
860	541	194	2,462	544	194	2,489	574	197	2,730	606	199	2,998
861	1,594	554	424	1,603	554	434	1,685	554	525	1,775	554	626
862	29	2	5,818	29	2	5,823	30	2	5,869	30	2	5,920
863	322	56	5,780	323	56	5,810	331	56	6,080	340	56	6,381
864	6,236	3,155	3,434	6,292	3,168	3,503	6,793	3,283	4,121	7,350	3,410	4,808
865	2,594	1,001	1,151	2,626	1,049	1,284	2,914	1,479	2,477	3,233	1,956	3,803
866	6,746	1,777	1,238	6,777	1,784	1,366	7,058	1,844	2,518	7,370	1,910	3,797
867	5,795	2,077	2,451	5,832	2,088	2,533	6,169	2,182	3,273	6,542	2,287	4,095
868	6,481	2,930	1,239	6,537	2,956	1,246	7,044	3,189	1,313	7,607	3,448	1,387
869	5,617	2,395	508	5,656	2,395	508	6,010	2,400	508	6,402	2,404	508
870	7,259	3,011	2,822	7,309	3,013	2,822	7,756	3,027	2,822	8,253	3,043	2,822
871	1,283	745	7,107	1,296	747	7,135	1,410	761	7,389	1,536	776	7,670
872	2,682	934	1,059	2,697	934	1,189	2,835	935	2,357	2,987	935	3,655
873	3,062	1,364	199	3,085	1,365	216	3,288	1,374	365	3,514	1,384	531
874	7,897	2,404	1,537	7,939	2,412	1,649	8,316	2,485	2,656	8,735	2,565	3,776
875	4,599	1,858	1,185	4,631	1,863	1,248	4,919	1,909	1,812	5,239	1,959	2,440
876	1,240	498	3,583	1,269	561	3,741	1,526	1,125	5,159	1,812	1,752	6,734
877	2,510	752	764	2,523	756	855	2,644	787	1,669	2,778	822	2,574
878	7,141	2,740	902	7,188	2,748	957	7,614	2,817	1,448	8,086	2,893	1,994
879	3,810	1,512	1,647	3,835	1,512	1,704	4,058	1,516	2,218	4,306	1,520	2,789
880	4,382	2,059	1,345	4,416	2,059	1,389	4,720	2,063	1,788	5,057	2,066	2,230
881	5,958	2,975	2,472	6,008	2,979	2,535	6,458	3,019	3,101	6,958	3,062	3,731
882	494	258	6,238	498	258	6,251	536	258	6,368	578	258	6,498
883	687	334	536	693	334	625	743	337	1,424	798	340	2,312
884	1,513	706	445	1,525	706	474	1,630	709	739	1,746	712	1,033
885	832	376	1,879	842	386	1,965	927	480	2,739	1,022	583	3,599
886	1,234	477	139	1,242	477	169	1,312	477	436	1,390	477	733
887	2,213	894	641	2,228	895	680	2,361	900	1,029	2,509	906	1,416
888	2,591	1,065	340	2,608	1,065	380	2,766	1,067	739	2,940	1,069	1,138
889	932	370	931	946	395	1,037	1,073	617	1,989	1,214	863	3,047
890	913	579	906	922	579	951	1,008	579	1,352	1,102	579	1,798
891	4,401	2,013	673	4,435	2,017	728	4,742	2,051	1,220	5,083	2,088	1,768
892	4,085	1,986	556	4,118	1,988	619	4,418	2,011	1,183	4,750	2,035	1,809
893	2,180	922	235	2,195	923	274	2,334	932	620	2,488	942	1,005
894	2,241	972	476	2,257	973	503	2,405	987	748	2,568	1,001	1,019
895	3,508	1,556	1,037	3,534	1,557	1,042	3,766	1,569	1,089	4,024	1,581	1,141
896	2,942	1,650	1,078	2,977	1,676	1,202	3,295	1,907	2,318	3,648	2,163	3,559
897	4,339	1,945	1,315	4,372	1,948	1,315	4,666	1,974	1,315	4,993	2,003	1,315
898	1,081	621	3,104	1,114	692	3,184	1,415	1,332	3,900	1,748	2,042	4,696
899	1,997	947	385	2,012	947	400	2,152	947	535	2,306	947	685
900	3,325	1,149	1,883	3,344	1,151	1,982	3,519	1,167	2,871	3,712	1,185	3,860
901	3,424	1,437	431	3,448	1,437	444	3,659	1,439	556	3,894	1,440	682
902	1,694	649	51	1,705	650	108	1,803	659	624	1,912	669	1,198

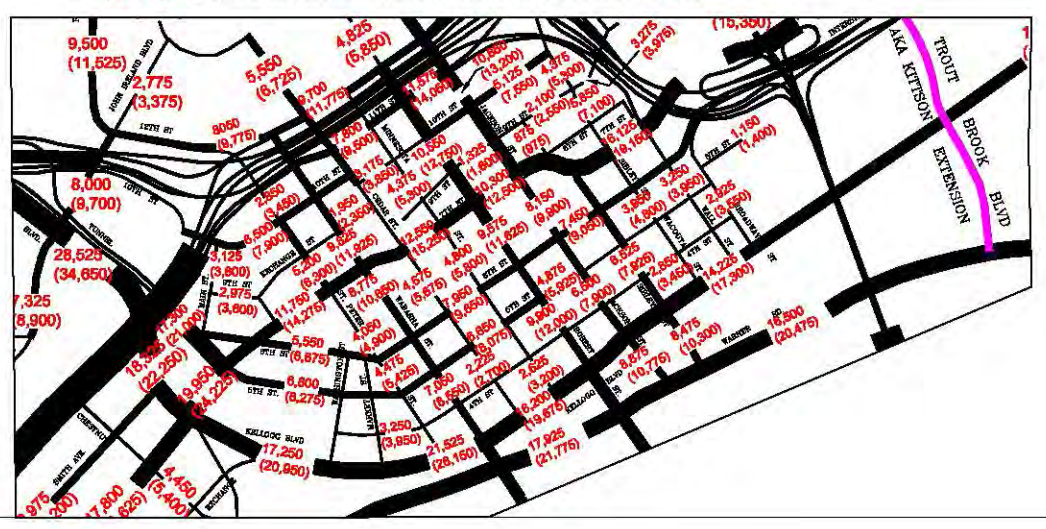
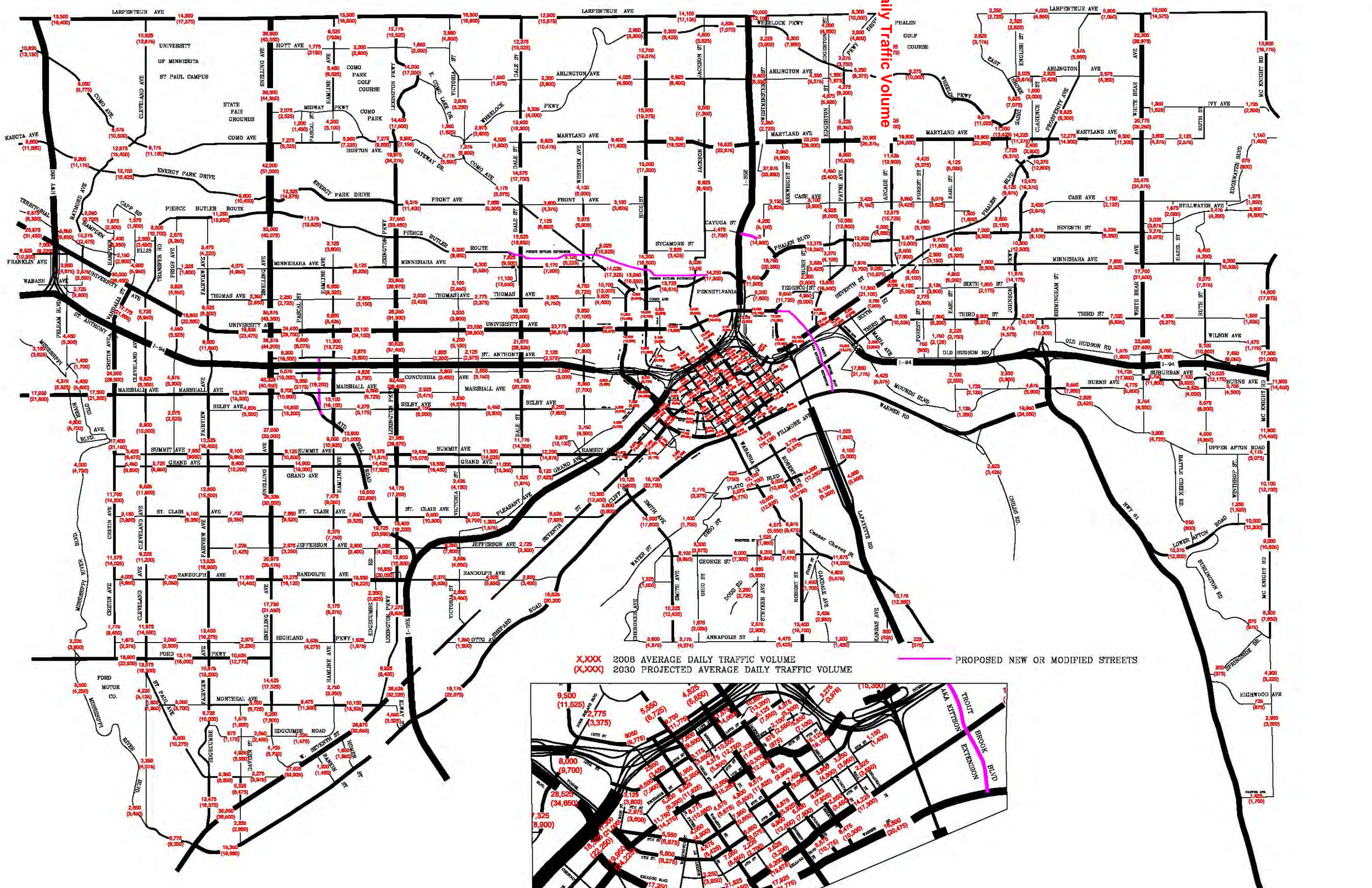
903	3,272	1,473	269	3,296	1,473	278	3,513	1,473	358	3,753	1,473	446
904	2,315	540	1,451	2,324	540	1,515	2,404	541	2,091	2,492	541	2,731
905	3,060	1,330	830	3,082	1,331	882	3,280	1,339	1,345	3,500	1,348	1,861
906	6,384	1,978	2,974	6,416	1,978	2,985	6,708	1,981	3,083	7,032	1,984	3,193
907	937	403	153	944	404	153	1,007	414	153	1,076	425	153
908	1,870	834	5,415	1,884	836	5,489	2,011	850	6,152	2,152	865	6,888
909	4,528	2,074	6,858	4,570	2,099	6,931	4,949	2,325	7,589	5,369	2,575	8,319
910	44	30	2,817	46	35	2,872	65	80	3,370	86	130	3,922
911	77	39	4,684	99	104	4,730	297	693	5,149	517	1,347	5,613
912	1,186	643	5,795	1,203	664	5,855	1,360	853	6,400	1,533	1,063	7,004
913	1,089	493	1,705	1,098	495	1,772	1,175	508	2,370	1,260	523	3,036
914	1,608	690	1,191	1,619	690	1,216	1,722	694	1,443	1,836	698	1,696
915	5	1	1,312	5	1	1,357	5	1	1,762	5	1	2,212
916	3,444	1,387	691	3,468	1,390	691	3,680	1,415	691	3,915	1,442	691
917	2,047	619	2,380	2,057	619	2,380	2,148	619	2,380	2,249	619	2,380

*The attached map identifies all the Traffic Analysis Zones within Saint Paul.

Pop = Population forecasts

HH = Households forecasts

Emp. = Employment forecasts



D

Appendix D: Functional Classification Criteria and Characteristics and Mn/DOT Access Guidance

Functional classification involves determining what function each roadway should perform before determining street widths, speed limits, intersection control or other design features. Functional classification ensures that non-transportation factors, such as land use and development, are taken into account when planning and designing streets and highways.

A major use of functional classification is to determine which routes should be on the Metropolitan Highway System. Functional classification is also used to decide which roads to use for transit service. Once function is established, appropriate or desirable design and operational characteristics can be used as further guidelines for implementation.

Typical functional classification system criteria are presented in Tables D-1, D-3, D-4 and D-6. Typical functional classification system characteristics are shown in Tables D-2, D-5, and D-7. The criteria are intended to be the primary tool for determining the function of a roadway. The characteristics are intended to be guidelines when plans are developed for a given classified route. However, if the characteristics are significantly different for a given highway, they may be used to supplement the criteria in making final decision on the function of that given highway. Generalized Summary of Mn/DOT Access Guidance for the Metropolitan Area is shown in Table D-8.

Within the seven-county metropolitan area the functional classification system consists of four classes of roads: principal arterials (which include all freeways), minor arterials, collector streets and local streets. The Metropolitan Highway System includes all principal arterials and is supplemented by a subgroup of “A” minor arterials. These “A” minor arterials are divided into four subcategories: Augmentors, Relievers, Expanders and Connectors. Principal Arterials and “A” minor arterials are eligible to compete for federal funds.

Principal Arterials

The Metropolitan Highway System is composed of all the principal arterials in the region. Principal arterials consist primarily of Interstate highways and other freeways or expressways, most of them owned and operated by Mn/DOT, with three under the jurisdiction of counties or cities. The emphasis of principal arterials is on mobility rather than land access. Among other functions, they connect the region with other areas in the state and other states. Principal arterials also connect the metro centers to major commercial concentrations. At present, principal arterials connect with other principal arterials, select minor arterials and collectors and some local streets. In the future, new connections to the principal arterials should be limited to other principal arterials and select “A” minor arterials. Principal Arterials provide for the longest trips in the region and express bus service.

Principal arterial spacing varies from 2 to 3 miles in the developed area, from 2 to 6 miles in the developing area--depending on the density of planned development-- and from 6 to 12 miles in the rural area. Where urban level development is planned, spacing of principal arterials or future principal arterials may be 2 to 3 miles. Principal arterials other than interstate freeways provide land access somewhat more frequently than Interstate freeways.

Minor Arterials

The minor arterial system supplements the Metropolitan Highway System in several ways: Minor arterials connect the urban service area to cities and towns inside and outside the region. They interconnect the rural centers in the region to one another and to those just outside the region. Minor arterials provide supplementary connections between the two metro centers and the regional business concentrations. They connect major traffic generators within the central business districts (CBDs) and the regional business concentrations.

In the urban area the emphasis of minor arterials is on mobility as opposed to access, and only concentrations of commercial or industrial land uses should have direct access to them. Minor arterials should connect to principal arterials, other minor arterials and collectors. Connections to some local streets are acceptable. Minor arterials should serve medium-to-short trips. Both local and limited-stop transit use minor arterials.

The spacing of minor arterials in the metro centers and regional business concentrations will vary from one-fourth to three-fourths mile. Typically, in the developed area, minor arterials should be spaced every one-half to one mile. In the developing area, one-to-two-mile spacing is adequate, but to accommodate urban development in the future, one-half to two mile spacing is needed. The criteria and characteristics of minor arterials apply to all minor arterials. The "A" minor arterials are described below and the Criteria of the four types of "A" minor Arterials are described in Table D-3.1.

Collector Streets

The collector system provides connection between neighborhoods and from neighborhoods to minor business concentrations. It also provides supplementary interconnections of major traffic generators within the metro centers and regional business concentrations. Mobility and land access are equally important. Direct land access should primarily be to development concentrations. Collectors connect primarily to minor arterials.

Typically, collectors serve short trips of one to four miles. Local transit uses these streets. Spacing in the metro centers and regional business concentrations may vary from one-eighth to one-half mile. In the developed area, collectors are needed one-fourth to three-fourths mile apart. In the developing area, spacing may range from one-half to one mile and may service existing development, but one-fourth to three-fourth mile spacing may be required in the future.

Local Streets

Local streets connect blocks and land parcels. The primary emphasis is on land access. In most cases, local streets connect to other local streets and collectors. In some cases, they connect to minor arterials. Local streets serve short trips at low speeds. In the urban area, local streets could be spaced as close as 300 feet, while in the rural area, one-mile spacing may be adequate.

Figure D-1: Functional Classification System Criteria for Principal Arterials

Criterion	Freeway Principal Arterial		Other Principal Arterial	
	Urban	Rural	Urban	Rural
Place Connections	Interconnect the metro centers and regional business concentrations, important transportation terminals and large institutional facilities within the MUSA.	Connect the MUSA with urban areas and major cities in Minnesota and other states.	Interconnect the metro centers and regional business concentrations, important transportation terminals and large institutional facilities within the MUSA.	Connect the MUSA with major cities in Minnesota and other states.
Spacing	Developed Planning Area: 2-3 miles Developing Planning Area: Spacing should vary in relation to density of travelshed development, 2-6 miles.	Rural Planning Area: 6-12 miles. Closer spacing may be required to connect portions of Urban Planning Areas to each other or to Rural Centers.	Developed Planning Area: 2-3 miles. Developing Planning Area: Spacing should vary in relation to density of development, 2-6 miles.	Rural Planning Areas: 6-12 miles. Closer spacing may be required to connect portions of Rural Planning Areas to each other or to Rural Centers.
Management	Maintain at least 40-mph average speed during peak-traffic periods.	Retain ability to meet urban speed objective if and when area urbanizes.	Maintain at least 40-mph average speed during peak- traffic periods.	Retain ability to meet urban speed objective if and when area urbanizes.
System Connections and Access Spacing*	To other Interstate freeways, other principal arterials and selected “A” minor arterials. Connections between principal arterials should be of a design type that does not require vehicles to stop. Access at distances of 1-2 miles.	To other Interstate freeways, principal arterials, and selected “A” minor arterials. Access at distances of 2-6 miles.	To Interstate freeways, other principal arterials, and selected “A” minor arterials. Connections between principal arterials should be of a design type that does not require vehicles to stop. Intersections should be limited to 1-2 miles.	To Interstate freeways, other principal arterials, and selected “A” minor arterials. Intersections should be limited to 2 miles or more.
Trip-Making Service	Trips greater than 8 miles with at least 5 continuous miles on principal arterials. Express transit trips.		Trips greater than 8 miles with at least 5 continuous miles on principal arterials. Express transit trips.	
Mobility vs. Land Access*	Emphasis is placed on mobility rather than land access. No direct land access should be allowed.	Emphasis is placed on mobility rather than land access. No direct land access should be allowed.	Greater emphasis is placed on mobility than on land access. Little or no direct land access within the urban area.	Greater emphasis is placed on mobility than on land access. Little or no direct land access.

*The key objective is stated under “Management” heading in this table.

Table D-2: Functional Classification System Characteristics for Principal Arterials

Characteristics	Freeway Principal Arterial		Other Principal Arterial	
	Urban	Rural	Urban	Rural
System Mileage	Suggested limits for Interstate and other principal arterials at 5-10% of system.	Suggested limits for Interstate and other principal arterials at 2-4% of system.	See "Freeway."	See "Freeway."
Percent of Vehicle Miles Traveled	Suggested limits for Interstate and other principal arterials at 40-65% of system.	Suggested limits for Interstate and other principal arterials at 30-55% of system.	See "Freeway."	See "Freeway."
Intersections	Grade separated.	Grade separated.	Grade separated desirable. At a minimum, high-capacity controlled at-grade intersections.	High-capacity controlled at-grade intersections.
Parking	None.	None.	None.	None.
Large Trucks	No restrictions.	No restrictions.	No restrictions.	No restrictions.
Management Tools	Ramp metering, preferential treatment for transit, interchange spacing.	Interchange spacing.	Ramp metering, preferential treatment for transit, access control, median barriers, traffic signal progression, staging of reconstruction, intersection spacing.	Access control, intersection spacing.
Vehicles Carried	25,000-200,000	5,000-50,000	15,000-100,000	2,500 - 25,000
Posted Speed Limit	45-55 mph	55-65 mph	40-50 mph	Legal limit
Right-of-Way	300 feet	300 feet	100 - 300 feet	100 - 300 Feet
Transit Accommodations	Priority access and movement for transit in peak periods where needed.	None.	Priority access and movement for transit in peak periods where possible and needed.	None.

Table D-3: Functional Classification System Criteria for Minor Arterials

Criterion	Minor Arterial (“A” or “B”)	
	Urban	Rural
Place Connections	Provide supplementary connections to metro centers and regional business concentrations within the MUSA. Provide interconnection of major traffic generators within the metro centers and regional business concentrations.	Connect the MUSA with cities and towns in Minnesota outside the Twin Cities region. Interconnect rural growth centers inside the Twin Cities region and comparable places near the Twin Cities region.
Spacing	Metro centers and regional business concentrations: 1/4-3/4 mile. Developed area: 1/2-1 mile. Developing area: 1-2 miles.	Rural Areas: As needed, in conjunction with the major collectors, provide adequate interconnection of places identified in “Place Connections” criterion.
System Connections	To most Interstate freeways and other principal arterials, other minor arterials and collectors and some local streets.	To most Interstate freeways and other principal arterials, other minor arterials and collectors, and some local streets.
Trip-Making Service	Medium-to-short trips (2-6 miles depending on development density) at moderate speeds. Longer trips accessing the principal arterial network. Local and limited-stop transit trips.	
Management	Maintain the following minimum average speed during peak-traffic periods: Metro centers and regional business concentrations - 15 mph. Fully developed area - 20 mph. Developing area - 30 mph.	Retain ability to meet urban speed objective if and when area urbanizes.
Mobility vs. Land Access*	Emphasis on mobility rather than on land access. Direct land access within the MUSA restricted to concentrations of commercial/ industrial land uses.	Emphasis on mobility rather than on land access.

*The key objective is stated under “Management” heading in this table.

Table D-4: Additional Criteria for “A” Minor Arterials

Criteria	“A” Minor Arterial Categories			
	Relievers	Augmentors	Expanders	Connectors
Use	Provide direct relief for traffic on Metropolitan Highway Principal Arterials	Augment the Principal Arterial System within the I-494/I-694 Beltway	Provide connection between developing areas outside the beltway, connect principal arterials	Provide connection between rural town centers in the rural area
Location	Developed and developing areas within the MUSA and post-2030 long-term service area (LTSA)	Within the I-494 / I-694 Beltway	Outside the I-494 / I-694 Beltway within the MUSA or post-2030 long-term service area (LTSA)	In or near the seven county area, one end may be in the urban area
Trip Length	Medium length Trips less than 8 miles	Medium to long trips	Medium to long trips	Medium to long trips
Problem Addressed	Relief of parallel congested Principal Arterials	Serve Principal Arterial function where PAs don't exist	Accommodate added urban development	Improve the safety and directness of routes without continuous lane adds
Existing System	400 miles	200 miles	650 miles	680 miles

Table D-5: Functional Classification System Characteristics for Minor Arterials

Characteristics	Minor Arterial (“A” or “B”)	
	Urban	Rural
System Mileage	Suggested limits for principal arterials and minor arterials at 15-25% of system.	Suggested limits for principal arterials and minor arterials at 6-12% of system
Percent of Vehicle Miles Traveled	Suggested limits for principal arterials and minor arterials at 65-80% of system.	Suggested limits for principal arterials and minor arterials at 45-75% of system.
Intersections	Traffic signals and cross-street stops.	Cross-street stops.
Parking	Restricted as necessary.	Restricted as necessary.
Large Trucks	Restricted as necessary.	Restricted as necessary.
Management Tools	Traffic signal progression and spacing, land access management/control, preferential treatment for transit.	Land access management/control.
Vehicles Carried Daily	5,000-30,000	1,000-10,000
Posted Speed Limit	35-45 mph	Legal limit
Right-of-Way	60-150 feet	60-150 feet
Transit Accommodations	Preferential treatment where needed.	None.

Table D-6: Functional Classification System Criteria for Collectors and Local Streets

Criterion	Collector		Local	
	Urban	Rural	Urban	Rural
Place Connections	Interconnect neighborhoods and minor business concentrations within the MUSA. Provide supplementary interconnection of major generators within the metro centers and regional business concentrations.	Provide supplementary interconnection among rural growth centers inside the Twin Cities region and comparable places near the Twin Cities region.	Interconnect blocks within residential neighborhoods and land parcels within commercial/industrial developments.	
Spacing	Metro centers and regional business concentrations: 1/8 - 1/2 mile. Fully developed are: 1/4 - 3/4 mile. Developing area: 1/2 - 1 mile	Rural Areas: As needed in conjunction with minor arterials, to provide adequate interconnection of places identified in "Place Connections" criterion. In addition, minor collectors should be designated at an average spacing of not less than 4 miles.	As needed to access land uses.	As needed to access land uses.
System Connections	Sometimes to Interstate freeways and other principal arterials. To minor arterials, other collectors and local streets.	To minor arterials, other collectors and local streets.	To a few minor arterials. To collectors and other local streets.	To a few minor arterials. To collectors and local roads.
Trip-Making Service	Short trips (1-4 miles depending on development density) at low-to-moderate speeds. Longer trips accessing the arterial network. Local transit trips.		Short trips (under 2 miles) at low speeds. Longer trips accessing the collector or collector and arterial network.	
Mobility vs. Land Access	Equal emphasis on mobility and land access. Direct land access predominantly to development concentrations.		Emphasis on land access, not on mobility. Direct land access predominantly to residential land uses.	Emphasis on land access, not on mobility. Direct land access predominantly to agricultural land uses.

Table D-7: Functional Classification System Characteristics for Collectors and Local Streets

Characteristics	Collector		Local	
	Urban	Rural	Urban	Rural
System Mileage	Suggested federal limitations: 5-10%.	Suggested federal limitations: 20-25%.	Suggested federal limitations: 65-80%.	Suggested federal limitations: 63-75%
Percent of Vehicle Miles Traveled	Suggested federal limitations: 5-10%.	Suggested federal limitations: 20-35%.	Suggested federal limitations: 10-30%.	Suggested federal limitations: 5-20%.
Intersections	Four-way stops and some traffic signals.	Local street traffic should be required to stop.	As required.	As required.
Parking	Restricted as necessary.	Unrestricted.	Permitted as necessary.	Permitted as necessary.
Large Trucks	Restricted as necessary.	Restricted as necessary.	Permitted as necessary.	Permitted as necessary.
Management Tools	Number of lanes, traffic signal timing, land access management.	Land access management.	Intersection control, cul-de-sacs, diverters.	
Vehicles Carried Daily	1,000-15,000	250-2,500	Less than 1,000	Less than 1,000
Posted Speed Limit	30-40 mph	35-45 mph	Maximum 30 mph	Maximum 30 mph
Right-of-Way	60-100 feet	60-100 feet	50-80 feet	50-80 feet
Transit Accommodations	Cross-sections and geometrics designed for use by regular-route buses.	None.	Normally used as bus routes only in nonresidential areas.	None.

Table D-8: Generalized Summary of Mn/DOT Recommended Public Street Spacing Access in the Twin Cities Metropolitan Area *

	Area or Facility Type	Public Street Spacing		Signal Spacing
		Primary Full-Movement Intersection	Secondary Intersection	
Principal Arterials				
in the Twin Cities Metropolitan Area and Primary Regional Trade Centers (Non-IRCs)	Interstate Freeways	Interchange Access Only		None
	Non-Interstate Freeway	Interchange Access Only		None
	Rural	1 mile	1/2 mile	Only at Primary Intersections
	Urban/Urbanizing	1/2 mile	1/4 mile	Only at Primary Intersections
	Urban Core	300-600 feet, dependent upon block length		1/4 mile
Minor Arterials				
	Rural	1/2 mile	1/4 mile	Only at Primary Intersections
	Urban/Urbanizing	1/4 mile	1/8 mile	Only at Primary Intersections
	Urban Core	300-600 feet, dependent upon block length		
Collectors				
	Rural	1/2 mile	1/4 mile	Only at Primary Intersections
	Urban/Urbanizing	1/8 mile	Not Applicable	1/4 mile
	Urban Core	300-600 feet, dependent upon block length		1/8 mile

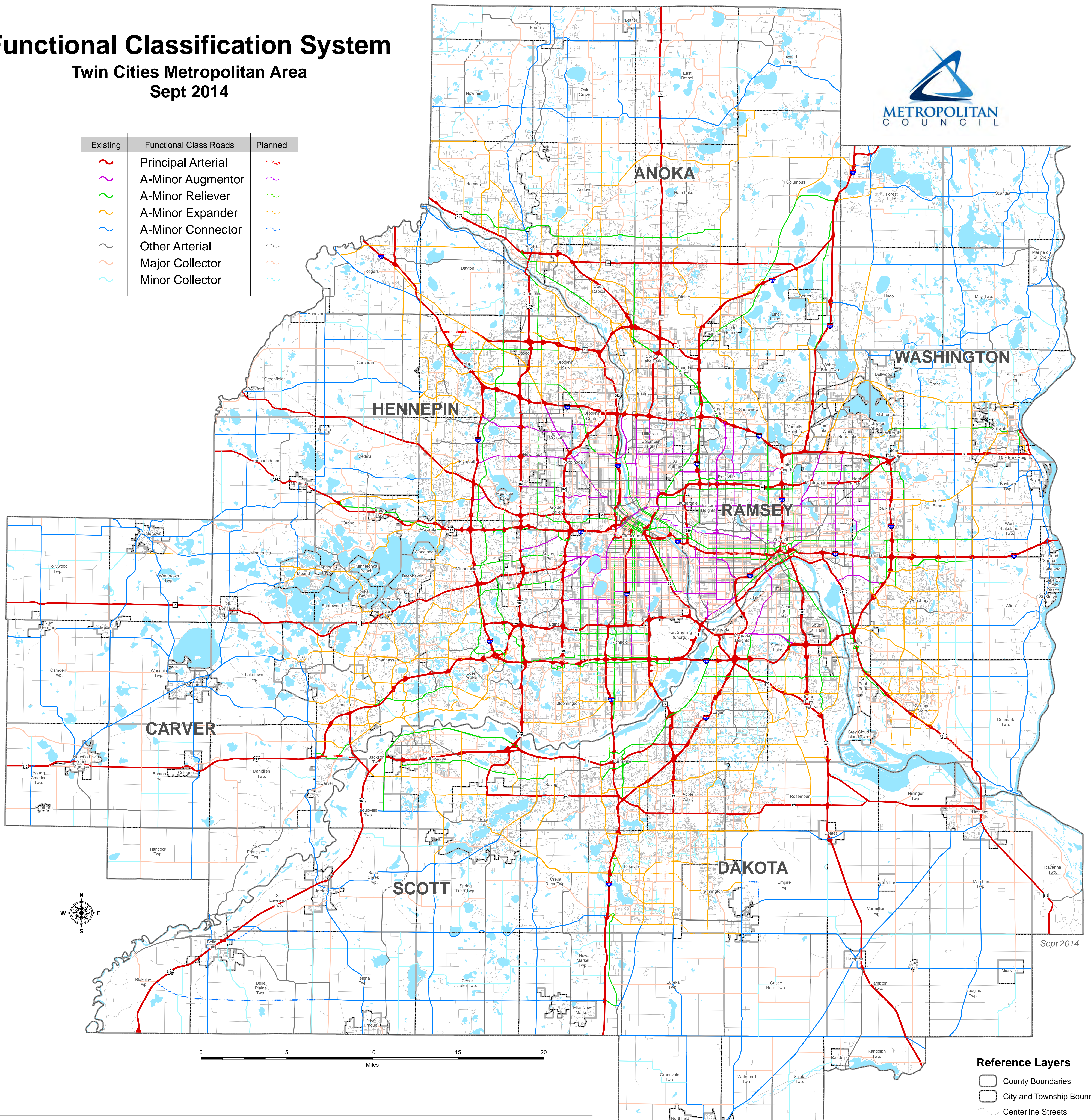
* This table is intended to provide a summary of Mn/DOT Access Guidance for the Metropolitan Area. This chart does not reflect all the facets of Mn/DOT guidance. Agencies should work with Mn/DOT, the appropriate county highway authority and the local land use authority when planning new or modified access.

Functional Classification System

Twin Cities Metropolitan Area
Sept 2014



Existing	Functional Class Roads	Planned
	Principal Arterial	
	A-Minor Augmentor	
	A-Minor Reliever	
	A-Minor Expander	
	A-Minor Connector	
	Other Arterial	
	Major Collector	
	Minor Collector	



Sept 2014

Reference Layers

	County Boundaries
	City and Township Boundaries
	Centerline Streets
	Lakes and Rivers