



# TRANSPORTATION



The numbered strategies, policies, figures, and pages in the citywide plans of the *Saint Paul Comprehensive Plan* all employ the following abbreviations as a prefix to distinguish among these elements of the other citywide plans:

- IN - introduction;
- LU - Land Use Plan;
- H - Housing Plan;
- HP - Historic Preservation Plan;
- PR - Parks and Recreation Plan;
- T - Transportation Plan;
- W - Water Resources Management Plan; and
- IM - Implementation.

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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 citywide plan of the *Saint Paul 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 (LRT), 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 LRT. This tremendous opportunity for the City will attract economic development, housing choices, improve streetscape and the public realm, and increase accessibility along the Central Corridor. Due in part to success of the Hiawatha LRT, 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.<sup>1</sup> In 2005, it was reported that rush hour in the Twin Cities lasts for seven and a half hours each day, and the average

<sup>1</sup> "Metro Residents Surveys 2002 – 2007," Metropolitan Council.

person wastes \$790 and 43 hours per year stuck in traffic.<sup>2</sup> 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, 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.<sup>3</sup> 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.

### **Changing climate, 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 the 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.

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

<sup>3</sup> 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](http://minnesota.publicradio.org/display/web/2007/11/14/vmt)

### **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, which will challenge 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 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 *Saint Paul 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.”<sup>4</sup> Furthermore, funding to counties and cities for local projects is at risk.

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<sup>4</sup> State Highways and Bridges Evaluation Report,” Office of the Legislative Auditor, State of Minnesota, February, 2008.

## 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; and
- Enhance and Connect Neighborhoods.



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.

## 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

#### 1.1 Complete the streets.

The needs of all users of the transportation system – including pedestrians, cyclists, transit, freight, and motor vehicle drivers – should be accommodated and balanced 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 Transportation, exceptions to a complete streets policy should be allowed by high-level approval but only in cases where conditions create excessively disproportionate costs (i.e., 20% of the project) or on roads where pedestrians and bicyclists are prohibited by law.<sup>5</sup>

#### 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.

Best practices and integrate practices that foster pedestrian safety by increasing their visibility to the motorist should be studied.

<sup>5</sup> “Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach,” U.S. Department of Transportation Federal Highway Administration, March 2008.

#### 1.4 Implement reconstruction projects for improved safety. 🚶💰

Projects should be safe, dependable, efficient, accessible, and environmentally responsible. (see Appendix T-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 inspected annually for safety, in accordance with State and Federal laws.

#### 1.6 Design for improved accommodation of pedestrians and bicycles on bridges. 🌿

Design should accommodate both bicyclists and walkers along motor vehicle routes with adequate space between these users based on safety, mobility, and comfort. Pedestrian-scale lighting and treatments to reduce shared-use conflicts should be incorporated.

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. 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 should be increased.

The City should 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. Shared access to destinations should be encouraged.

#### 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. 🚶🌿

The opportunity for neighborhood enhancements, implementation of traffic calming measures, and improved stormwater management should be highlighted as the streets and sidewalks are reconstructed (see Policy W-2.8).

#### 1.9 Complete a bikeways safety audit to evaluate design, function, and connectivity of existing facilities. 🚶

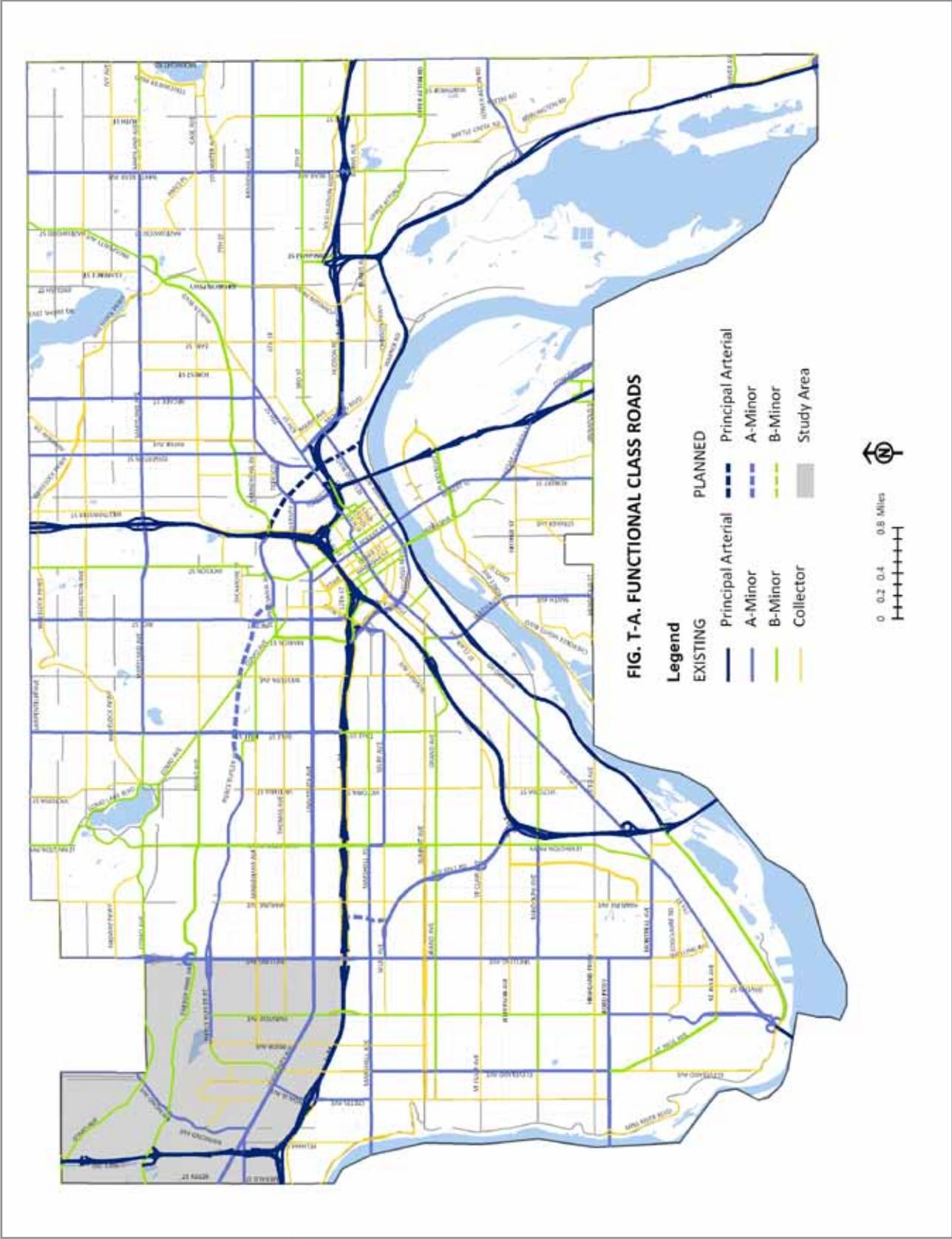
The availability and effectiveness of information presented to the bicyclist and to motorists on these routes should be considered.



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 T-B, and the *Parks and Recreation Plan* of the *Saint Paul Comprehensive Plan*.



FIGURE T-A. FUNCTIONAL CLASS ROADS



## SAFER STREETS THROUGH EDUCATION AND ENFORCEMENT

### 1.10 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.

- 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;
- 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;
- f. Implement a pilot project to study the feasibility and fiscal impacts of snow removal on minor arterials which are critical to winter bicycling; and
- g. 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.

### 1.11 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. Traffic laws and parking rules should be promoted 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.

### 1.12 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; and
- e. Fund a full-time position at the City of Saint Paul to coordinate bicycle and pedestrian issues.

**1.13 Establish freight corridors to enable the prompt delivery and transfer of cargo and to reduce noise and air pollution in adjoining neighborhoods.** 🌿💰

Existing commercial truck routes should be promoted and enforced to help relieve neighborhood streets (see Figure T-I).

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

**1.15 Work with the Saint Paul Police Department to substantially increase enforcement of speed limits and red light compliance.** 🚶

Those in the courts system should be educated 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. The City should 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. 🌿

Compact, street-oriented design should be emphasized to promote walkability and transit use, especially in commercial corridors. Standards for building placement and design based primarily on the needs of the pedestrian should be enforced and expanded.

#### 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. 💰

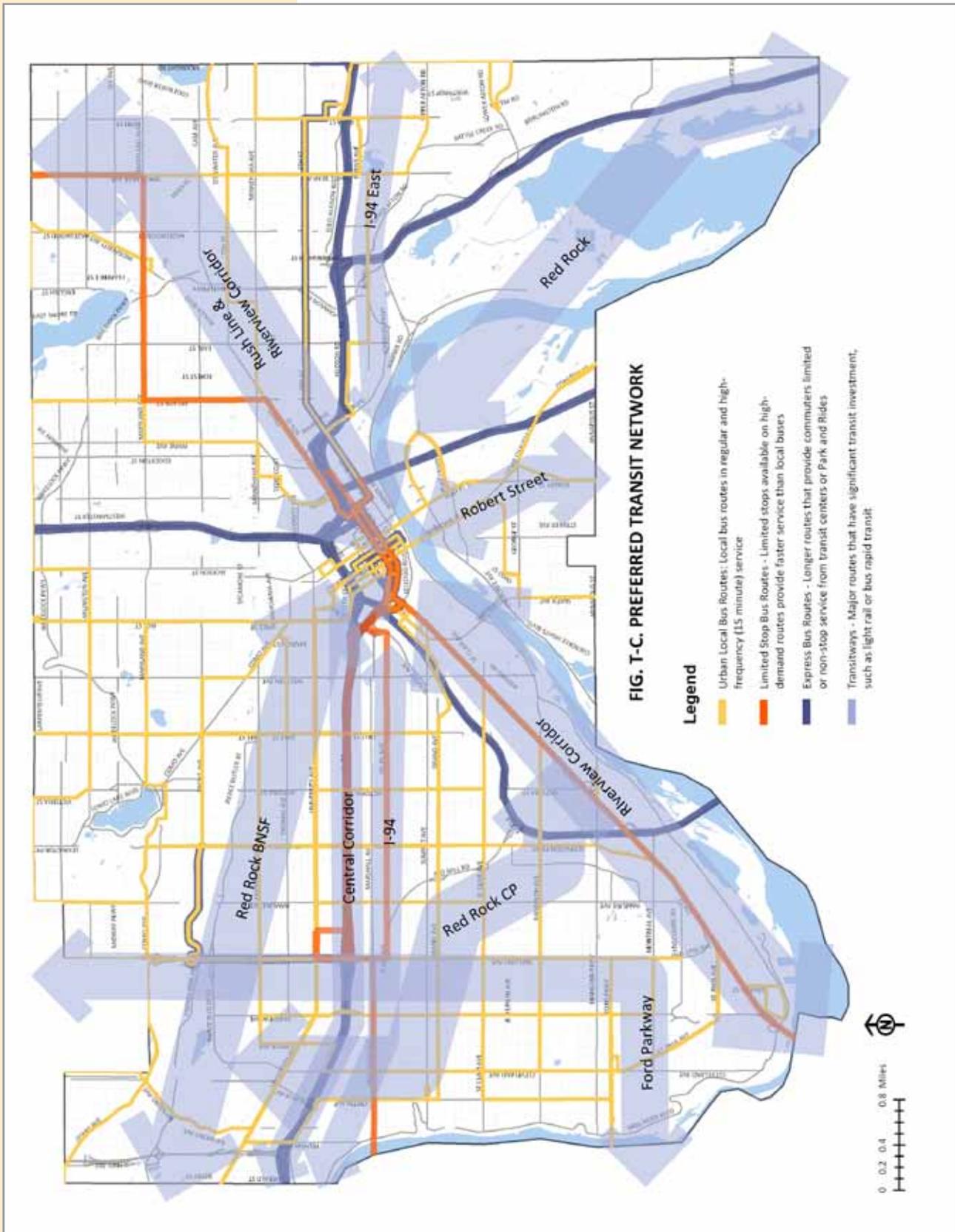
To support the development of mixed-use employment, study connections that would open access to under-developed land, and integrate land use and transportation decisions. The City should coordinate with partner agencies to address shared goals of mitigating congestion, increasing person throughput and cost-effectiveness, creating maintenance-friendly design, and improving pedestrian and bicycle access (see Appendix T-A).



Figure T-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.

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.

FIGURE T-C. PREFERRED TRANSIT NETWORK



## 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 LRT on University Avenue and in the Downtown on Cedar and 4th Streets (see Figure T-B).

### 2.6 Focus on the improvement and extension of bus service and facilities on existing transit routes, and on new routes to serve proposed LRT 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 T-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; and
- 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 (TDM).

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 TDM 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 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; and
- e. Support programs that encourage regular transit use, such as the Metropass program.

Saint Paul is within the Metropolitan Transit Taxing District and Market Areas I and II. Transit service options for Market Area I include regular-route locals, all-day expresses, special needs paratransit (for seniors and people with disabilities), and ridesharing. Service options for Market Area II include all of the above, as well as small vehicle circulators.

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.

## 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 *Saint Paul 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 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 units;<sup>6</sup> or
- j. Provides a parking cash-out.<sup>7</sup>

## 2.9 Work with Metro Transit to study and implement possible corridors for new bus rapid transit, LRT, streetcars, or commuter rail lines serving Saint Paul (see Figure T-C and Appendix T-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. The costs and benefits of a streetcar network should be assessed, and potential short term and longer term priorities for implementation should be identified.

## 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.

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<sup>6</sup> 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.

<sup>7</sup> 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.lgic.org/freepub/PDF/Land\\_Use/presentations/parking2007/parkingcash.pdf](http://www.lgic.org/freepub/PDF/Land_Use/presentations/parking2007/parkingcash.pdf))

- 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 should be 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; and
- 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, the use of a baseline exemption should be explored, where buildings with smaller footprints are not required to provide parking. New off-street parking should be further reduced and restricted 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 TDM 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; and
- e. As a part of redevelopment or reinvestment, discourage the demolition of housing units or historic resources 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. Fair, market prices should be charged 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; and
- b. Invest in consolidated parking meters that serve multiple spaces. Choose 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 W-2.9). 🌿**

- a. Provide safe and attractive pedestrian pathways through surface parking lots and structures; and
- 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. 🌿💰**

Parking policies that encourage the location and intensification of retail, office and housing uses in Saint Paul's transportation-rich, multi-modal downtown should be promoted. Changes to existing State public parking subsidies that currently deter efforts to encourage transit, walking, bicycling, and carpooling among downtown users should be explored. Structured parking in multi-modal and mixed-use facilities shall 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. Issues such as ramp and meter operation, hours, pricing, and motorcycle and bicycle parking facilities should be addressed. A plan to identify potential funding for downtown multi-modal transportation improvements and to manage limited resources effectively to achieve a balanced system should be developed.

## 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, wayfinding, 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, which reduces the risk of chronic disease and improves 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. Creative partnerships with volunteers, district councils, block groups, institutions, or business associations should fund and maintain investments along corridors and in Downtown. Public-private partnerships can provide opportunities to implement above-standard amenities and improve the public realm.

#### 3.2 Formalize citywide standards and above-standard options for pedestrian oriented streetscapes. 🚶

Update and coordinate the City's Street Lighting policy (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 should be 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 T-D).



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; and
- Promote providing bicycle support such as short and long term bicycle parking and way finding.



### 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 T-B and Policy PR-6.13).

### 3.6 Fill gaps in the bikeway system. 🚲

The bikeway system includes both on-street and off-street routes (see Appendix T-A and PR-Policy 1.2).

### 3.7 Create a comprehensive system of bicycle network and pedestrian path 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 PR-6.15).

### 3.8 Promote “bicycle boulevards” as a new type of bikeway. 🚶🚲

The implementation of bicycle boulevards should be explored, 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. 🚲

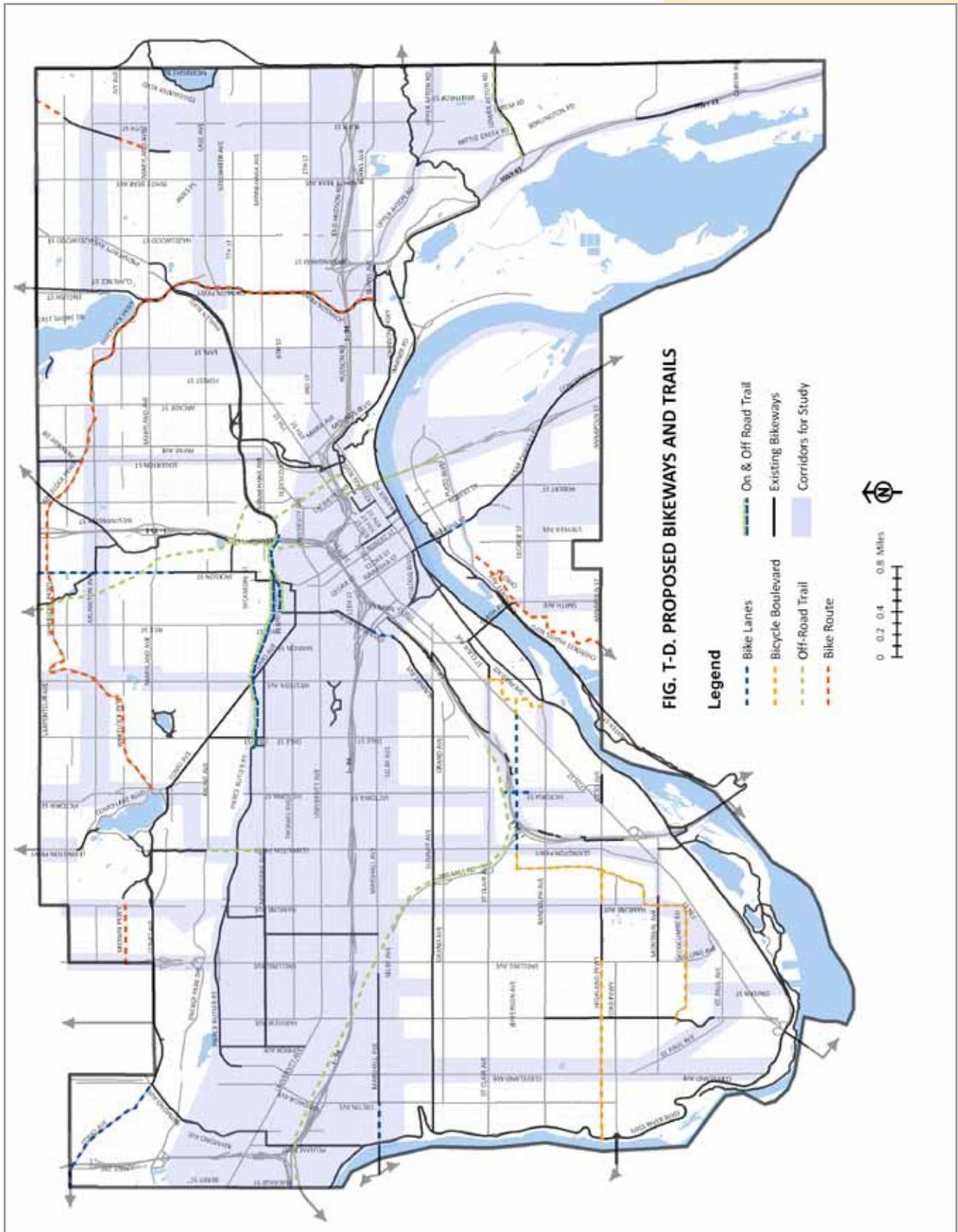
Develop an amendment to the *Saint Paul Zoning Code* to require bicycle parking at all new development and redevelopment projects. Require that building owners clear bicycle parking of snow and debris year round, and place bicycle parking in a place that is visible to the street and is in close proximity 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,”

FIGURE T-D. PROPOSED BIKEWAYS AND TRAILS



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.**  

Safety issues on routes to these destinations should be identified and criteria in ranking priority projects should be established (see Policy PR-6.12).

**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 LRT and Bus Rapid Transit, commuter rail, local and express bus routes, long-distance bus service, long-distance rail, and high-speed rail.

#### 4.2 Promote collaboration for future high-speed rail service between the Union Depot and Chicago. 🌱💰

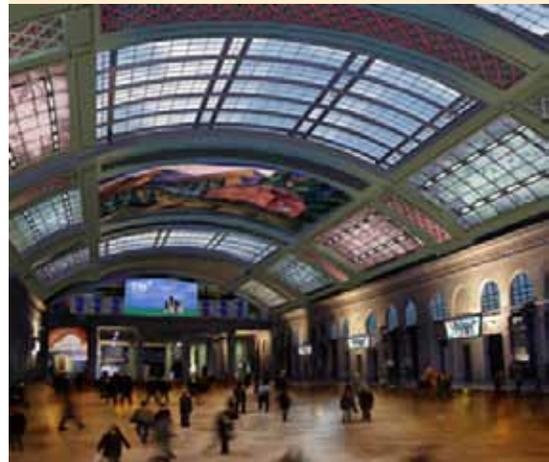
The City should participate in the Upper Midwest Planning for a regional high-speed rail network.

#### 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. 🌱

- c. Study possibilities for consolidation of similar operations and expansion to other existing rail yards in the city.
- d. Develop a truck route accessibility plan in cooperation with MnDOT.
- e. 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 Policy PR-6.11). 🚶🌱

- 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



Renderings of the Union Depot courtesy of Ramsey County.



FIGURE T-E. AREAS OF POTENTIAL LAND USE RESTRICTIONS



FIG. T-E. AREAS OF POTENTIAL LAND USE RESTRICTIONS

- 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; and
- f. Emphasize connections to regional destinations, including Como, Battle Creek, and Phalen Regional Parks.

**4.5 Work with the federal, state, and metropolitan agency partners and the Metropolitan Airports Commission to maintain a regional aviation system that balances commercial demand and capacity while being compatible with the community. 🚶🏃🏰**

- a. Adopt land use and height zoning regulations for the Minneapolis-Saint Paul International Airport (MSP) and Holman Field Airport that protect the citizenry from undue exposure to aircraft operations and protects aircraft from undue exposure to obstructions. Local zoning code amendments will be fashioned after the model ordinances developed and adopted by the Joint Airport Zoning Boards established for both MSP and Holman Field. The MSP safety zoning ordinance has been adopted by the MSP Joint Airport Zoning Board but has not yet been incorporated into *Saint Paul Zoning Code*. Holman Field land use and height zoning regulations (due for public release in summer 2009) will be incorporated into the *Saint Paul Zoning Code* by the end of 2009, along with those for MSP (see Figure T-E);
- b. Review *Noise Abatement Operations Plan* developed by the Metropolitan Airports Commission, and participate in the Downtown Airport Advisory Committee, the Noise Oversight Committee, and the discussions at MSP airport concerning noise impacts on Saint Paul neighborhoods. Land for development within the noise contours of both MSP and Holman Field falls outside Airport Exposure Zones 1-3, indicating that new construction will deal primarily with noise insulation improvements (see page L-6 of the *Metropolitan Council Transportation Policy Plan*);
- c. Coordinate airport and community infrastructure and service needs;
- d. Continue 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; and
- e. Notify 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. Applications for development within certain zoning categories should be reviewed for height and FAA regulations. If new development (including radio and cell phone towers) exceeds that of surrounding developments, the applicant should seek sign-off from the FAA. This is most likely in the RM3, B-4, and B-5 zoning districts.

**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.<sup>8</sup>

**COMMUNITY ACCESSIBILITY**

**4.7 Connect neighborhoods that have poor sidewalks or little access to trails and bike routes, especially east and north of Downtown.** 🚶👤🚲

Gaps in the sidewalk network in areas that create significant barriers to the largest numbers of pedestrians should be closed. 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 (see Policy T-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, comfortable pedestrian pathways and good connectivity to existing and new streets should be required. The creation of superblocks that increase walking distances to major destinations and transit and that isolate pedestrians and cyclists should be discouraged.

**4.9 Provide better alternatives for accessing community events (see Policy PR-1.16).** 🚶👤🚲

- a. Provide detours for bicycles if streets are closed to vehicles during special events, and indicate these detours on the City's website. 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; and
- 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 Mississippi River, while protecting natural vegetation and the integrity of the bluffline.** 🚶👤🚲



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

**4.11 To create livable neighborhoods and compact commercial areas, promote and fund traffic calming measures. 🚶🚶**

The appropriate combination of techniques should be determined by the area's physical characteristics, nature of the traffic issue, expected cost, anticipated 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 LU-1.45).

**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 T-A lists projects for enhancing the safety and balance of the transportation system in Saint Paul. Appendix T-A is intended to be a list of proposed improvements identified at the time this plan was written. The projects listed under Appendix T-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 T-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 be bleak in the foreseeable future. City actions need to be balanced so as to meet the needs of all modes 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, materials, 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 *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (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 VMT and 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, MnDOT budget, Metro Transit budget, 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 Metro Transit, 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; and
- Improve access to regularly updated information on the City's website about bikeways, newly opened facilities, construction, detours, events, etc.

# Credits

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# Appendix T-A

## PROJECTS

### Policy T-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; and
- 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
  - Saint Anthony Avenue
  - Selby Avenue
  - Concordia Avenue

### Policy T-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; and
- 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 T-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; and
- h. I-35 E Corridor south from Downtown Saint Paul to Dakota County.

**Policy T-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; and
- e. Design and construct improvements for the West Seventh streetscape and pedestrian areas, realignment of Edgcumbe Parkway, and upgrades to Davern Street.

**Policy T-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 LRT 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 LRT 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; and
  - 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; and
    - 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; and
- 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 T-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* 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 T-C

FIGURE T-F. TRANSPORTATION ANALYSIS ZONES

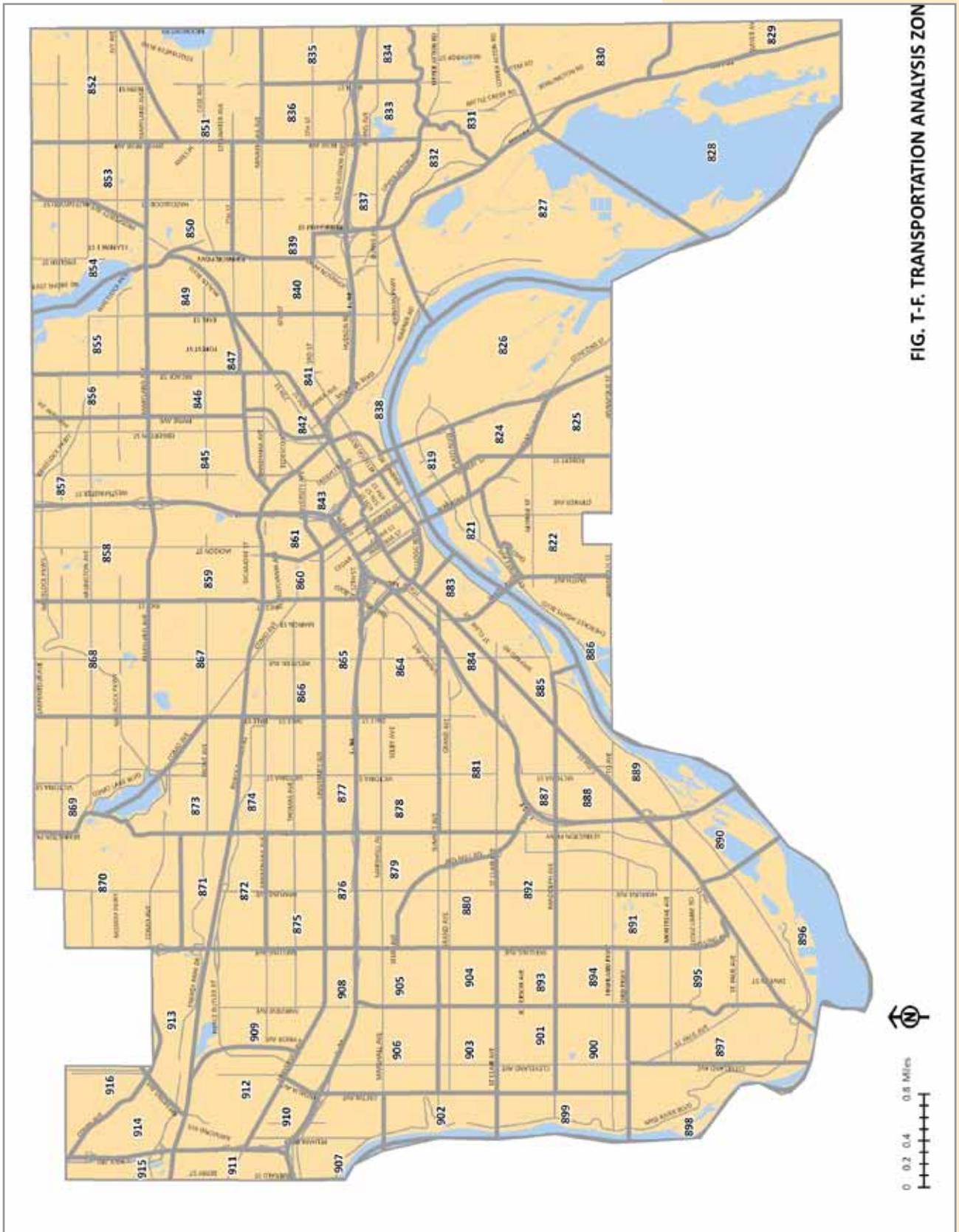


FIG. T-F. TRANSPORTATION ANALYSIS ZON

FIGURE T-G. FUTURE RIGHT OF WAY NEEDS



FIGURE T-H. PLANNED IMPROVEMENTS TO THE METROPOLITAN HIGHWAY SYSTEM



FIGURE T-I. FREIGHT CORRIDORS AND FACILITIES

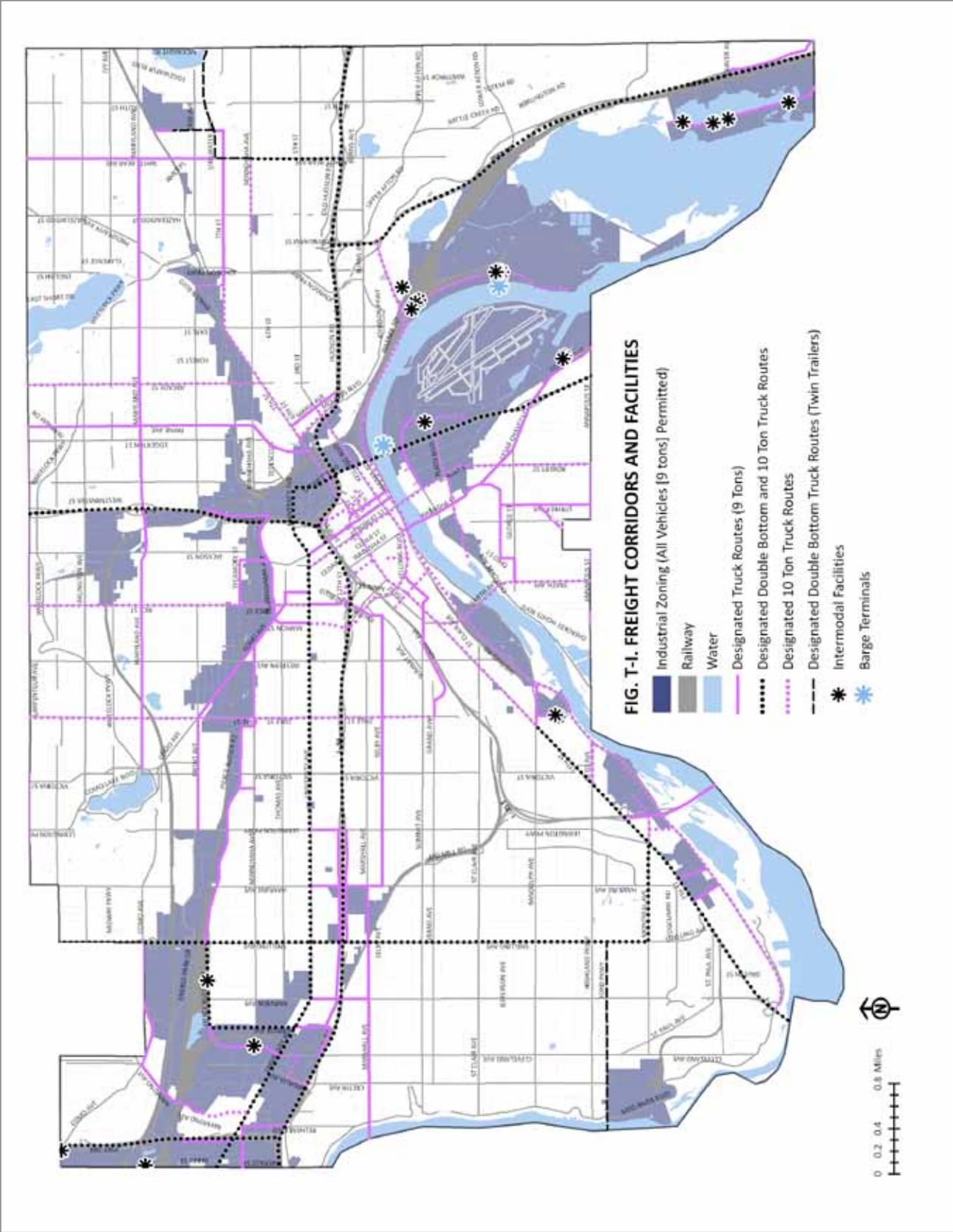


FIGURE T-J. EXISTING TRANSIT NETWORK

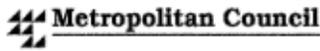


FIGURE T-K. SUPPORTING TRANSIT FACILITIES



# Appendix T-D

FIGURE T-L. SAINT PAUL TRAFFIC ANALYSIS ZONES TABLE



## SAINT PAUL TRAFFIC ANALYSIS ZONES (TAZ)

### Allocation of Forecasts to Traffic Analysis Zones (TAZ)

TAZ #*	2000			2010			2020			2030		
	Pop	HH	Emp									
809	0	0	218	0	0	218	0	0	218	0	0	218
810	1,551	929	3,665	1,567	932	3,812	1,713	954	5,139	1,876	979	6,612
811	913	558	2,211	995	658	2,394	1,737	1,558	4,040	2,560	2,558	5,868
812	11	6	499	61	56	729	509	506	2,794	1,007	1,006	5,089
813	205	124	434	216	139	641	315	274	2,501	425	424	4,568
814	0	0	5,782	300	20	5,901	3,000	200	6,976	6,000	400	8,169
815	1,723	1,283	11,653	1,775	1,338	11,754	2,244	1,833	12,662	2,764	2,383	13,670
816	945	650	14,494	970	690	14,616	1,198	1,051	15,712	1,452	1,451	16,929
817	226	0	1,967	231	15	2,166	276	150	3,958	326	300	5,949
818	29	17	6,722	29	18	6,814	33	22	7,645	38	27	8,569
819	0	0	2,478	75	0	2,576	750	0	3,456	1,500	0	4,434
820	0	0	635	190	50	741	1,898	500	1,699	3,796	1,000	2,763
821	32	24	327	32	24	330	36	26	354	41	27	381
822	8,451	3,086	1,557	8,464	3,091	1,503	8,581	3,140	1,021	8,711	3,194	484
823	638	167	1,074	641	167	1,043	666	168	766	694	168	458
824	1,587	472	2,117	1,587	472	2,053	1,592	477	1,479	1,597	481	840
825	3,393	1,085	444	3,405	1,089	446	3,517	1,126	465	3,641	1,166	486
826	780	253	1,623	784	254	1,556	824	260	957	869	267	290
827	0	0	71	0	0	71	0	0	72	0	0	74
828	0	0	586	0	0	568	0	0	408	0	0	230
829	2,294	741	148	2,300	746	143	2,350	795	99	2,405	848	50
830	2,816	989	204	2,821	995	196	2,871	1,044	127	2,926	1,099	50
831	1,998	755	320	1,998	755	304	1,998	755	163	1,998	755	6
832	495	182	2	497	182	2	511	183	2	527	184	2
833	1,262	496	1,004	1,274	507	976	1,381	607	727	1,500	717	450
834	2,691	1,289	229	2,699	1,291	221	2,768	1,311	147	2,845	1,333	65
835	2,573	1,096	445	2,579	1,097	434	2,634	1,102	338	2,695	1,107	231
836	2,878	1,245	362	2,884	1,247	353	2,939	1,265	270	3,000	1,285	178
837	1,693	663	464	1,699	663	453	1,753	664	357	1,814	665	250
838	2,685	870	271	2,686	871	270	2,697	882	261	2,709	894	250
839	5,677	1,965	676	5,691	1,970	660	5,821	2,019	519	5,965	2,073	362
840	5,452	1,883	1,076	5,467	1,896	1,088	5,599	2,018	1,195	5,746	2,152	1,314
841	7,441	2,231	319	7,458	2,243	348	7,613	2,350	608	7,786	2,469	896
842	1,114	345	1,283	1,117	345	1,313	1,146	345	1,586	1,179	345	1,888
843	357	27	5,869	357	27	5,842	361	27	5,598	366	27	5,328
844	2,223	691	416	2,234	699	431	2,333	769	567	2,444	846	717
845	6,638	2,039	1,160	6,643	2,043	1,175	6,688	2,082	1,305	6,738	2,124	1,451
846	3,109	878	1,217	3,117	879	1,213	3,187	884	1,173	3,264	889	1,129
847	4,266	1,336	555	4,272	1,336	571	4,327	1,340	717	4,388	1,343	879
848	27	11	46	27	11	104	27	11	622	27	11	1,197
849	2,715	958	54	2,715	958	98	2,716	959	494	2,717	960	934
850	7,063	2,347	786	7,088	2,367	830	7,309	2,551	1,224	7,554	2,754	1,663
851	5,705	2,236	427	5,720	2,247	431	5,859	2,342	463	6,012	2,447	499
852	4,794	1,837	594	4,813	1,849	586	4,980	1,955	519	5,167	2,072	443

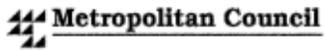
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FIGURE T-L. SAINT PAUL TRAFFIC ANALYSIS ZONES TABLE (CONTINUED)

853	4,263	1,818	264	4,281	1,818	256	4,441	1,823	187	4,619	1,827	111
854	3,765	1,337	111	3,767	1,338	111	3,789	1,342	111	3,812	1,347	111
855	2,049	846	263	2,053	849	257	2,086	874	206	2,123	902	150
856	2,713	957	399	2,715	957	389	2,736	957	300	2,759	957	201
857	6,895	2,415	265	6,904	2,420	254	6,988	2,467	158	7,081	2,519	51
858	4,360	1,426	1,649	4,370	1,436	1,602	4,464	1,531	1,177	4,569	1,635	704
859	3,999	1,333	973	4,005	1,339	971	4,064	1,389	949	4,129	1,445	924
860	541	194	2,462	544	194	2,525	574	197	3,094	607	199	3,726
861	1,594	554	424	1,594	554	426	1,594	554	448	1,594	554	472
862	29	2	5,818	29	2	5,875	29	2	6,392	30	2	6,967
863	322	56	5,780	323	56	5,794	331	56	5,917	341	56	6,053
864	6,236	3,155	3,434	6,251	3,168	3,420	6,390	3,283	3,293	6,543	3,410	3,152
865	2,594	1,001	1,151	2,684	1,049	1,236	3,494	1,479	1,997	4,393	1,956	2,843
866	6,746	1,777	1,238	6,774	1,784	1,312	7,031	1,844	1,976	7,315	1,910	2,714
867	5,795	2,077	2,451	5,808	2,088	2,460	5,922	2,182	2,544	6,049	2,287	2,637
868	6,481	2,930	1,239	6,501	2,940	1,218	6,676	3,029	1,030	6,871	3,128	822
869	5,617	2,395	508	5,618	2,395	497	5,624	2,400	403	5,630	2,404	297
870	7,259	3,011	2,822	7,265	3,013	2,788	7,314	3,027	2,480	7,369	3,043	2,139
871	1,283	745	7,107	1,284	747	6,990	1,292	761	5,938	1,300	776	4,768
872	2,682	934	1,059	2,683	934	1,066	2,687	935	1,126	2,692	935	1,193
873	3,062	1,364	199	3,063	1,365	191	3,077	1,374	116	3,091	1,384	32
874	7,897	2,404	1,537	7,947	2,418	1,591	8,398	2,545	2,073	8,898	2,685	2,610
875	4,599	1,858	1,185	4,640	1,873	1,206	5,004	2,009	1,397	5,409	2,159	1,608
876	1,240	498	3,583	1,296	561	3,668	1,801	1,125	4,433	2,362	1,752	5,283
877	2,510	752	764	2,522	756	811	2,629	787	1,236	2,748	822	1,709
878	7,141	2,740	902	7,149	2,748	893	7,216	2,817	813	7,291	2,893	723
879	3,810	1,512	1,647	3,811	1,512	1,634	3,817	1,516	1,514	3,825	1,520	1,381
880	4,382	2,059	1,345	4,389	2,059	1,348	4,450	2,063	1,373	4,518	2,066	1,401
881	5,958	2,975	2,472	5,962	2,979	2,422	6,002	3,019	1,969	6,045	3,062	1,466
882	494	258	6,238	498	258	6,217	537	258	6,026	580	258	5,815
883	687	334	536	693	334	539	743	337	568	800	340	600
884	1,513	706	445	1,525	706	451	1,631	709	502	1,749	712	558
885	832	376	1,879	848	386	1,852	992	480	1,612	1,151	583	1,344
886	1,234	477	139	1,235	477	139	1,242	477	136	1,250	477	134
887	2,213	894	641	2,228	895	642	2,363	900	654	2,514	906	667
888	2,591	1,065	340	2,591	1,065	342	2,596	1,067	361	2,600	1,069	382
889	932	370	931	956	395	945	1,175	617	1,067	1,418	863	1,202
890	913	579	906	923	579	910	1,009	579	943	1,105	579	980
891	4,401	2,013	673	4,408	2,017	660	4,473	2,051	547	4,544	2,088	420
892	4,085	1,986	556	4,091	1,988	558	4,148	2,011	575	4,211	2,035	595
893	2,180	922	235	2,182	923	225	2,195	932	136	2,210	942	37
894	2,241	972	476	2,244	973	465	2,271	987	367	2,300	1,001	258
895	3,508	1,556	1,037	3,514	1,557	1,023	3,570	1,569	901	3,633	1,581	765
896	2,942	1,650	1,078	2,965	1,676	1,088	3,176	1,907	1,182	3,410	2,163	1,286
897	4,339	1,945	1,315	4,342	1,948	1,278	4,372	1,974	947	4,404	2,003	578
898	1,081	621	3,104	1,108	671	3,118	1,350	1,120	3,240	1,618	1,618	3,375
899	1,997	947	385	1,997	947	368	1,997	947	218	1,997	947	50
900	3,325	1,149	1,883	3,329	1,151	1,823	3,369	1,167	1,285	3,412	1,185	687
901	3,424	1,437	431	3,428	1,437	414	3,462	1,439	266	3,500	1,440	100
902	1,694	649	51	1,694	650	51	1,694	659	51	1,694	669	51

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FIGURE T-L. SAINT PAUL TRAFFIC ANALYSIS ZONES TABLE (CONTINUED)



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903	3,272	1,473	269	3,273	1,473	262	3,286	1,473	197	3,300	1,473	125
904	2,315	540	1,451	2,315	540	1,435	2,315	541	1,294	2,316	541	1,137
905	3,060	1,330	830	3,061	1,331	848	3,069	1,339	1,010	3,078	1,348	1,191
906	6,384	1,978	2,974	6,384	1,978	2,947	6,384	1,981	2,705	6,384	1,984	2,435
907	937	403	153	937	404	153	937	414	153	937	425	153
908	1,870	834	5,415	1,977	836	5,452	2,941	850	5,780	4,012	865	6,146
909	4,528	2,074	6,858	4,558	2,099	6,876	4,830	2,325	7,041	5,133	2,575	7,224
910	44	30	2,817	46	33	2,842	62	55	3,070	80	80	3,322
911	77	39	4,684	125	89	4,711	558	539	4,959	1,040	1,039	5,234
912	1,186	643	5,795	1,273	664	5,844	2,055	853	6,288	2,924	1,063	6,782
913	1,089	493	1,705	1,095	495	1,708	1,146	508	1,730	1,203	523	1,755
914	1,608	690	1,191	1,620	690	1,184	1,724	694	1,122	1,840	698	1,052
915	5	1	1,312	5	1	1,311	5	1	1,302	4	1	1,291
916	3,444	1,387	691	3,448	1,390	659	3,483	1,415	370	3,523	1,442	50
917	2,047	619	2,380	2,047	619	2,282	2,048	619	1,402	2,048	619	425

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

Pop = Population forecasts  
 HH = Households forecasts  
 Emp. = Employment forecasts

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## FIGURE T-M. 2008 AVERAGE DAILY TRAFFIC VOLUME AND 2030 PROJECTED AVERAGE DAILY TRAFFIC VOLUME, WEST SECTOR

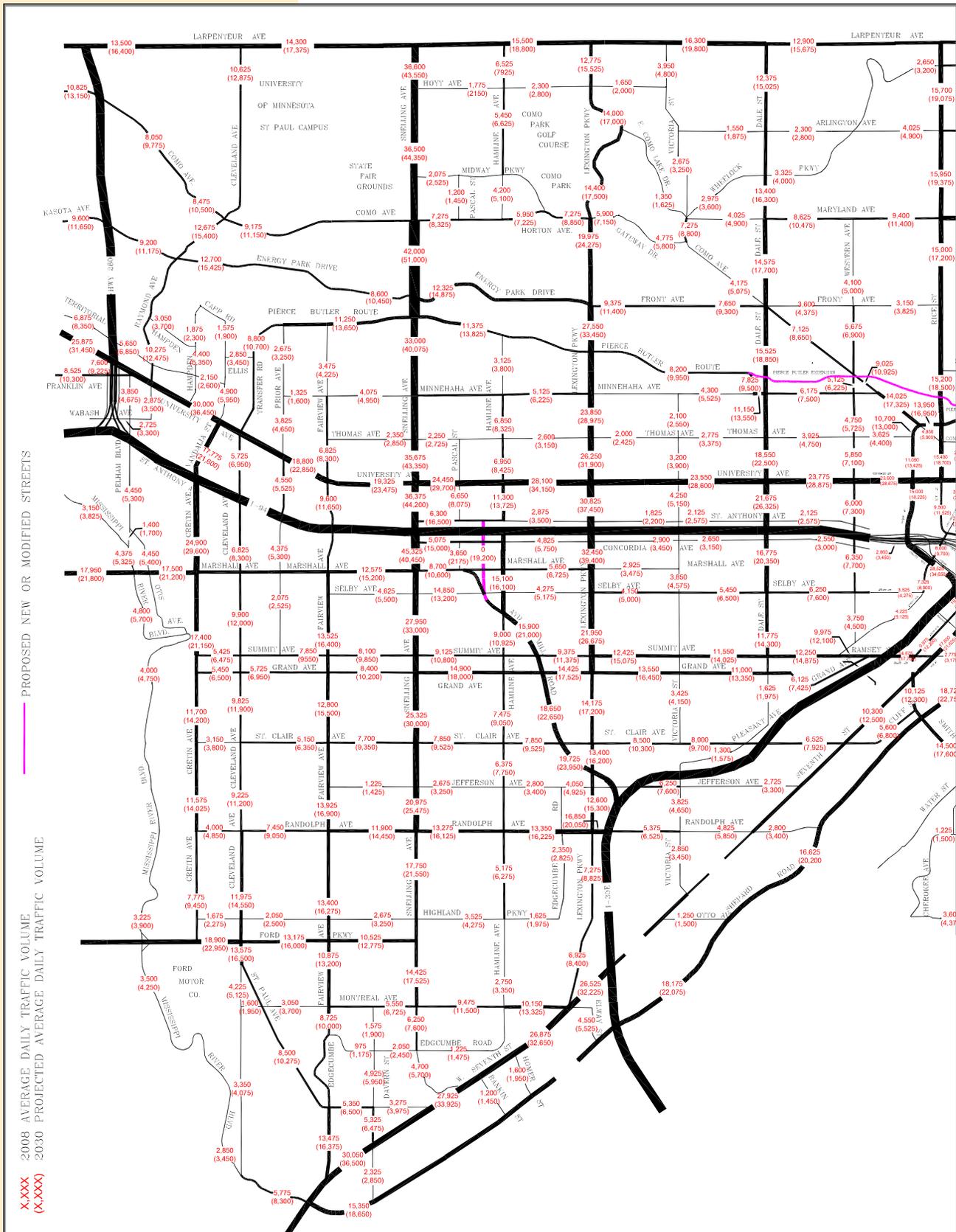




FIGURE T-O. 2008 AVERAGE DAILY TRAFFIC VOLUME AND 2030 PROJECTED AVERAGE DAILY TRAFFIC VOLUME , EAST SECTOR

