



Transportation 5

Introduction

Transportation networks are composed of a combination of infrastructure and public policies that facilitate the movement of people and products. This section provides information regarding the current transportation network within Roseville. In addition, this section provides guidance for decision makers regarding investment opportunities related to the maintenance and enhancement of the transportation network.

Roseville is located in Ramsey County and shares common borders with Minneapolis, St. Anthony, New Brighton, Arden Hills, Shoreview, Little Canada, Maplewood, St. Paul, Falcon Heights, and Lauderdale. Roseville is connected with these surrounding communities through a number of freeways and other arterials, primarily I-35W, TH 280, TH 36, and TH 51 (Snelling Avenue N). The expansion of the metropolitan region north and east of Roseville has added to the traffic congestion along these and other transportation corridors. In addition, Roseville

is served by a somewhat modified grid of streets extending across most of the city. These streets include W Larpenteur Avenue, County Road B, County Road B2, County Road C, Cleveland Avenue N, Fairview Avenue N, Hamline Avenue N, Lexington Avenue N, Victoria Avenue N, Dale Street N, and Rice Street N.

Roseville is a fully developed suburb with an established roadway system. In the coming decades, Roseville will have limited opportunities for the construction of new roads. In addition, Roseville will have limited opportunities to expand existing roadways within fully developed areas. Yet the demand for transportation is likely to continue to increase. Creative deployment of additional transit options and infrastructure, the implementation of innovative technologies to increase roadway capacity, and policies supporting and encouraging the use of non-motorized transportation are likely to play an increasing role in Roseville's transportation system.

Residents and businesses are impacted by traffic congestion, particularly during peak periods. Many commuters from the north traveling to Minneapolis or St. Paul for employment must pass through Roseville. As the freeways and major arterials become congested, it becomes increasingly likely that drivers will divert onto local residential streets that are not intended to accommodate large volumes of through traffic.

This transportation plan is needed to meet Metropolitan Council and State planning requirements while addressing local transportation needs for sustainable and cost-effective street, transit, freight, bicycle, and pedestrian improvements. The goals, policies, and strategies identified in this chapter provide transportation choices for residents, employees, visitors, and companies doing business in Roseville. The ideas provide opportunities that can make walking, cycling, and using transit more convenient and economical alternatives to traditional automobile travel. This chapter supports a balanced transportation system that fosters neighborhood connectivity and promotes economic development, while not detracting from community values.

The Transportation chapter of the Comprehensive Plan consists of the following elements:

- ◆ Goals and Policies
- ◆ Sustainable Transportation
- ◆ Existing Transportation Conditions
- ◆ Existing Transit Service
- ◆ Planning Context - Studies, Projects, Issues
- ◆ Future Transportation System
- ◆ Implementation Plans and Recommendations

Goals and Policies

Residents and businesses must be provided with transportation facilities and services that meet their needs in a safe and efficient manner. Transportation facilities, at the same time, need to be planned and constructed so as to minimize negative social, environmental, and aesthetic impacts. In addition, residents who cannot or choose not to drive need to have safe and efficient transportation options. The following section lists specific transportation goals and corresponding transportation policies.

Goal 1: Coordinate transportation decisions with other government entities and coordinate planning efforts to ensure connectivity of regional routes.

Policy 1.1: Continue to cooperate with County and State transportation departments, Metropolitan Council, and neighboring communities to achieve orderly and timely development of existing and proposed roadway, pathway, and transit routes serving the city.

Policy 1.2: Coordinate all street planning with county, state, and federal road plans; work cooperatively with MnDOT and Ramsey County to improve landscaping, screening, lighting, and maintenance of through-city roadway systems, especially TH 36.

Policy 1.3: Cooperate with State and Federal agencies and railroad companies to enhance safety at all highway, railroad, and pedestrian crossings.

Policy 1.4: Provide notification to the Federal Aviation Agency (FAA) using FAA Form 7460, as may be amended, and the Minnesota Department of Transportation, Aeronautics Division, when any construction or alteration of an object would affect

general airspace, as defined in Minnesota Statutes 360.”

Goal 2: Create a sustainable transportation network by encouraging more efficient use of existing roadways and limiting the need for future roadway expansion.

Policy 2.1: Promote non-motorized transportation and transit as reasonable alternatives to driving.

Policy 2.2: Promote travel demand management (TDM) strategies to achieve greater efficiency of the existing roadway network.

Policy 2.3: Ensure that the transportation network responds to changing transportation technologies and modes.

Goal 3: Create a safe and efficient roadway network, able to accommodate the existing and projected demand for automobile capacity and to reduce roadway congestion.

Policy 3.1: System-wide transportation capacity should be achieved by using a high level of network connectivity, appropriately spaced and properly sized thoroughfares, and multiple travel modes, rather than by increasing the capacity of individual thoroughfares.

Policy 3.2: Channel major traffic volumes onto community collector streets, arterials, and highways and discourage motorized traffic from passing through residential areas on local streets.

Policy 3.3: Identify, evaluate, and correct problems of congestion in high-traffic areas and recurrent accident sites.

Policy 3.4: Encourage the use of intelligent transportation systems (ITS) to mitigate capacity issues and increase efficiency and safety of the existing roadway network.

Policy 3.5: Create and/or upgrade the major thoroughfare systems to multiple traffic lanes when warranted by traffic conditions.

Policy 3.6: Develop streets according to their designated functional class; pavement width, load capacity, and continuity of the street must recognize the function for which the street is intended.

Policy 3.7: Maintain high-quality neighborhoods through the ongoing City Pavement Management Program to rehabilitate or reconstruct city streets.

Goal 4: Promote the use of transit as a reasonable alternative to driving automobiles during both congested and non-congested time periods through land-use and transportation decisions.

Policy 4.1: Cooperate with and assist the Regional Transit Board (RTB) to provide effective transit service to all areas of the city.

Policy 4.2: Support Metro Transit as a primary transit provider for the city.

Policy 4.3: Advocate planning and development of the Northeast Diagonal Transit Corridor.

Policy 4.4: Support the Rosedale Transit Hub and Snelling Avenue Transit Corridor and examine the feasibility of adding transit mini-hubs in other areas of the city.

Policy 4.5: Encourage the development of park-and-rides to reduce congestion on arterials throughout Roseville.

Policy 4.6: Clearly mark bus stops and provide adequate space for buses to pull out of the moving traffic lane for loading and unloading.

Policy 4.7: Provide adequate and attractive pedestrian access to bus stops by expanding the existing network of sidewalks as recommended in the Pathway Master Plan.

Policy 4.8: Encourage transit-supportive development along existing and future transit corridors.

Policy 4.9: Provide input into the rail corridor planning and abandonment processes; if rails are removed, the corridors should be preserved for public uses, such as transit or pathways, and in the event of rail line abandonment, an appropriate public agency should acquire the land for public purposes.

Policy 4.10: Play an active role in planning for potential transitways and preserving potential rights-of-way and station locations.

Goal 5: Encourage the use of non-motorized transportation by providing a high-quality network of both off-road and on-road pathways, and ensure that bicycle and pedestrian routes are safe, efficient, and attractive.

Policy 5.1: Recognize the needs and preferences of pedestrians and cyclists with various skill, experience levels, and purpose by providing a wide range of facilities to accommodate commuter, functional, and recreational trips.

Policy 5.2: Create and/or upgrade on-road bicycle facilities, where feasible, to ensure the safety of cyclists and improve the efficiency of the bicycle network.

Policy 5.3: Aggressively expand Roseville's off-road pathway system.

Policy 5.4: Update the Pathways Master Plan as needed.

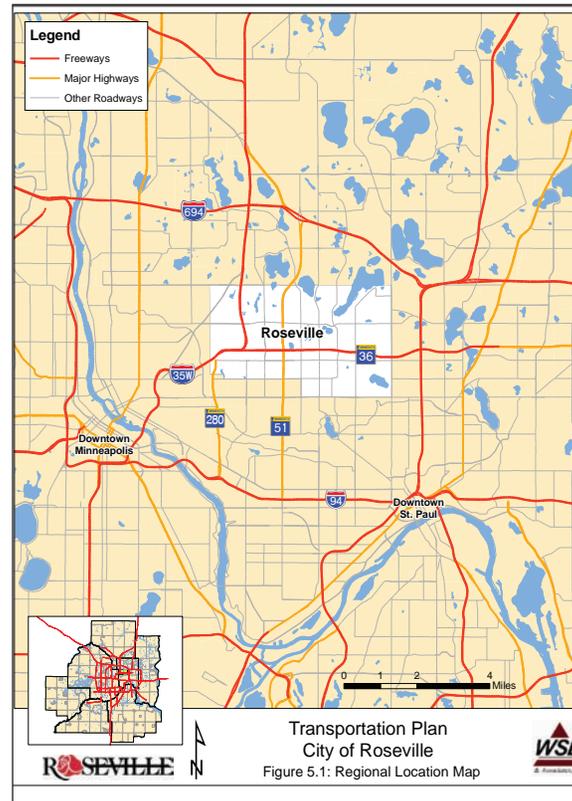
Sustainable Transportation

“Sustainability” is increasingly being embraced by communities throughout the metro area; however, there are differing definitions of what sustainability entails. For the purposes of this transportation plan, sustainability means conducting an activity or providing a service in a manner that minimizes the consumption of natural resources. Sustainability also includes understanding—and planning for—the full social, environmental, and economic costs associated with transportation and land-use decisions. From a transportation perspective, sustainable goals that Roseville strives for are as follows:

1. **General Planning:** Coordinate land-use and transportation planning so that the transportation system efficiently and effectively supports existing and anticipated development. Mixed-use developments, when compared with equally sized developments where land uses are strictly separated, can slow the growth of vehicular trips. Encouraging higher residential densities, where appropriate, can provide the “critical mass” of activity necessary to support increased transit use. However, increasing residential densities and commercial land-use

intensity to encourage transit use and reduce automobile congestion are often competing objectives. For this reason, coordination of land-use and transportation planning is critical.

2. **Transportation Choices and Roadway Needs:** Reduce traditional, single-occupancy motorized travel through Transportation Demand Management (TDM), increased non-motorized travel, and transit. This approach has two benefits. First, it limits the consumption of fuel by single-occupant vehicles and associated air emissions. Second, it can reduce the demand for added roadway capacity, allowing roadway “footprints” and impacts to be minimized. TDM, non-motorized transportation, and transit considerations will be discussed in greater detail in this chapter. Encourage telecommuting through the development of technology infrastructure.
3. **Appropriate Roadway Design:** Plan and design roadways using best professional practices, including functional classification, sound transportation and engineering practices, access management guidelines, and other proven tools to provide transportation facilities that have good operational and safety characteristics.
4. **Sustainable Practices:** Employ reuse/recycling, procurement measures, and facility maintenance practices pertaining to transportation that limit the use of resources. This includes reuse/recycling of roadway materials as part of reconstruction projects, evaluation of alternative fuel vehicles for City fleets, and other measures.



Existing Transportation Conditions

Roadway Overview

Roseville is depicted in Figure 5.1 (Regional Location Map). It is located within the I-694 beltway. Important regional roadways that pass through or adjacent to the city include I-35W, TH 280, TH 36, and Snelling Avenue N. Figure 5.2 (Existing (2006) Daily Traffic Volumes) displays the current roadway system and the 2006 daily traffic volumes. Figure 5.3 (Existing (2008) Number of Lanes) displays the number of lanes on each roadway segment.

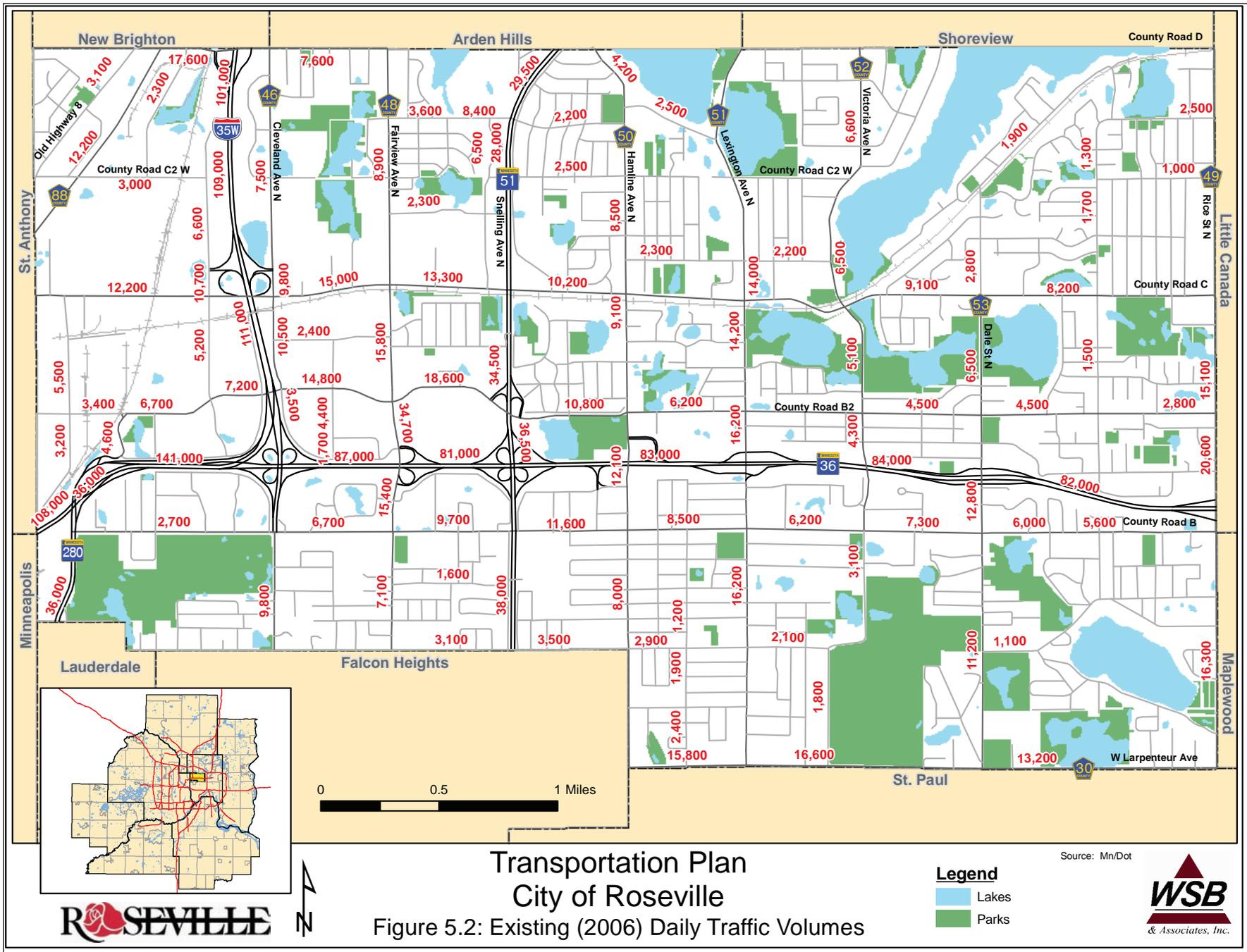
Jurisdictional Classification

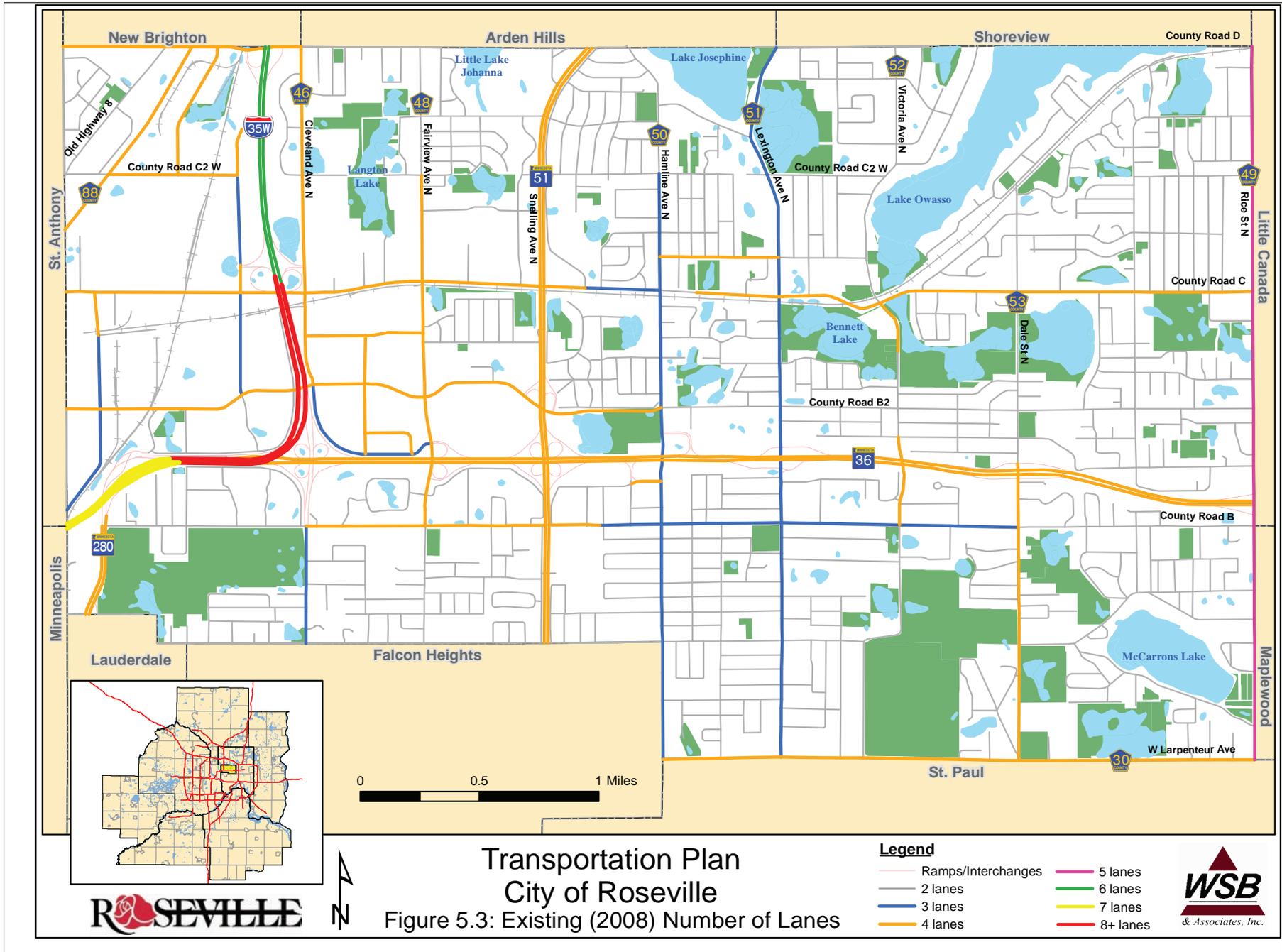
Jurisdiction over the roadway system in Roseville is shared among three levels of government: the State of Minnesota, Ramsey County, and Roseville. The Minnesota Department of Transportation (MnDOT) maintains the interstate and trunk highway systems. Ramsey County maintains the County State Aid Highway (CSAH) and County Road Systems, aside from a few, short private streets. The remaining streets and roadways are the responsibility of Roseville, including Municipal State Aid (MSA) streets. Over 19% of the land area in the city is used for right-of-way. Since the municipal boundaries separating Roseville from adjacent cities often lie within a roadway right-of-way, partnership with adjacent cities is required to coordinate maintenance of these roadways. Figure 5.4 (Roadway Jurisdictional Classification) displays the jurisdictional classification of each roadway within Roseville. Table 5.1 displays the number of roadway miles associated with each jurisdictional class.

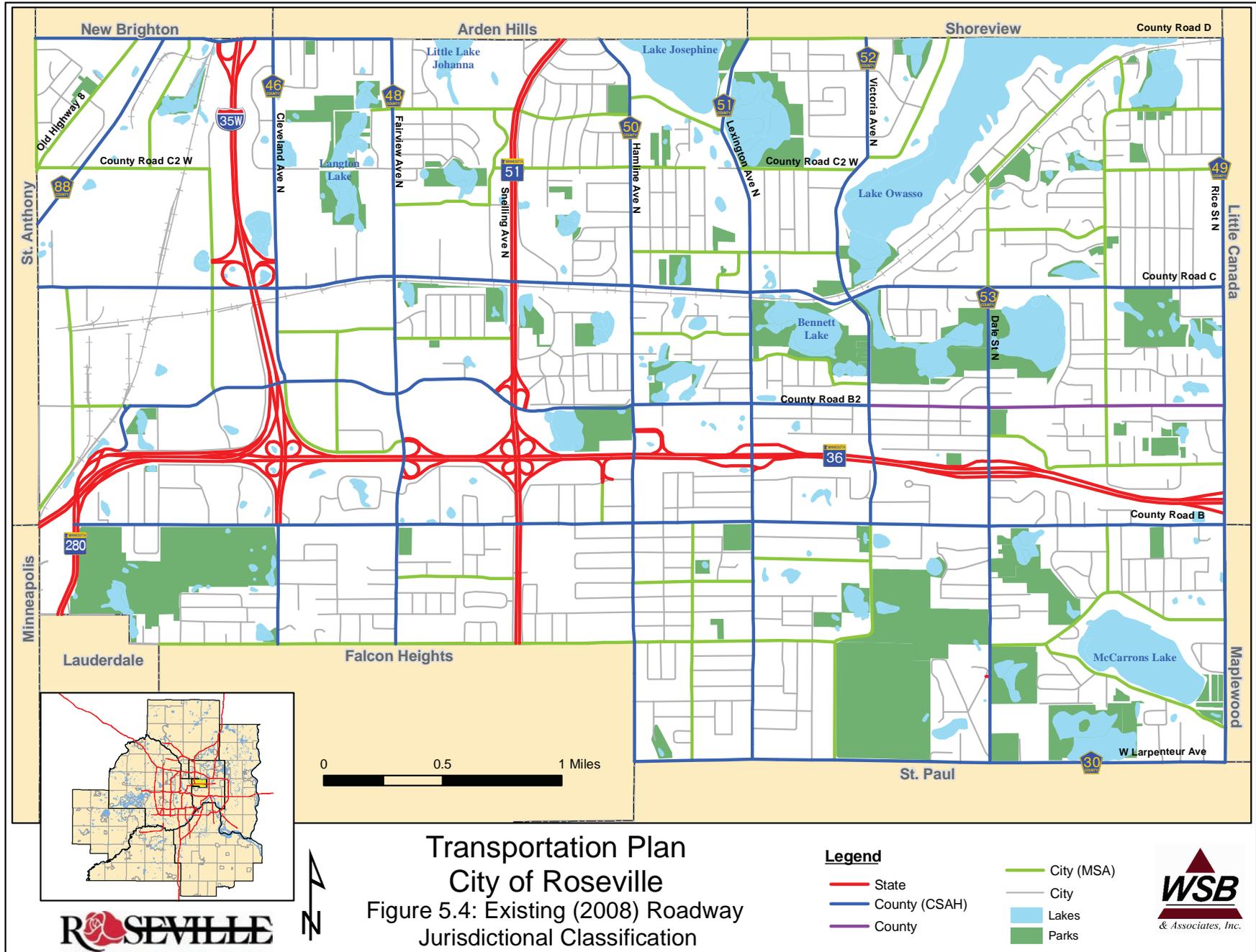
Jurisdictional Classification	Miles	Percent of Total Miles
State of Minnesota	10.6	6.2%
Ramsey County	37.9	22.1%
City of Roseville (MSA)	28.9	16.8%
City of Roseville	94.4	54.9%
TOTAL	171.8	100.0%

Source: City of Roseville, Metropolitan Council, WSB & Associates, Inc.

Existing (2008) Roadway Miles by Jurisdictional Classification
Table 5.1







Roseville continually upgrades the local road system according to its Pavement Management Program. The purpose of the program is to ensure the most efficient use of public funds through scheduled roadway maintenance and the strategic investment in roadway reconstruction projects. There is considerable input from local residents and other stakeholders in this program.

Functional Classification System

The purpose of a functional classification system is to create a hierarchy of roads that collect and distribute traffic from neighborhoods to the metropolitan highway system based on the principles of access and mobility. Access describes the extent to which a roadway allows users to reach destinations on adjacent land, while mobility describes the extent to which a roadway accommodates through traffic. All roadways provide a mixture of access and mobility based on the design features of the roadway and the surrounding land uses. Within the functional classification framework, roads

are located and designed to provide the designated levels of access and mobility.

The functional classification system used in Roseville conforms to the Metropolitan Council standards. The Metropolitan Council has published these criteria in its Transportation Development Guide/Policy Plan. This guide separates roadways into four primary classifications: principal arterials, minor arterials, collectors, and local roadways. These classifications address the function of state, county, and city streets from a standpoint of maximizing the safety and efficiency of traffic movement through the city while providing satisfactory access to residents and businesses.

Figure 5.5 (Existing (2008) Roadway Functional Classification) displays the existing functional classes of roadways in Roseville. Table 5.2 displays the number of miles of roadway in Roseville by functional classification.

Principal Arterials

Principal arterials are the highest roadway classification and are considered part of the metropolitan highway system. Principal arterials include all Interstate freeways and other limited access facilities designed to maximize traffic mobility and safety. These roadways are intended to connect the metropolitan centers with one another and to connect major business concentrations. Parallel facilities are typically spaced two to three miles apart, and interchanges are usually spaced at least one mile apart. Principal arterials place emphasis on mobility and provide very little, if any, access to adjacent land. They connect only with other principal arterials and select minor arterials and collectors.

In Roseville, there are three principal arterials: I-35W, TH 36, and TH 280. These facilities are envisioned to continue functioning as principal arterials for the planned future of Roseville. Table 5.3 lists the principal arterials located within Roseville and quantifies daily traffic volumes.

Functional Classification	Miles	Percent of Total Miles
Principal Arterial	8.8	3.5%
A Minor Augmentor Arterial	9.1	3.6%
A Minor Reliever Arterial	16.2	6.5%
B Minor Arterial	14.1	5.6%
Collector Roadways	10.1	4.0%
Local Roadways	192.4	76.8%
TOTAL	250.7	100.0%

Source: City of Roseville, Metropolitan Council, WSB & Associates, Inc.

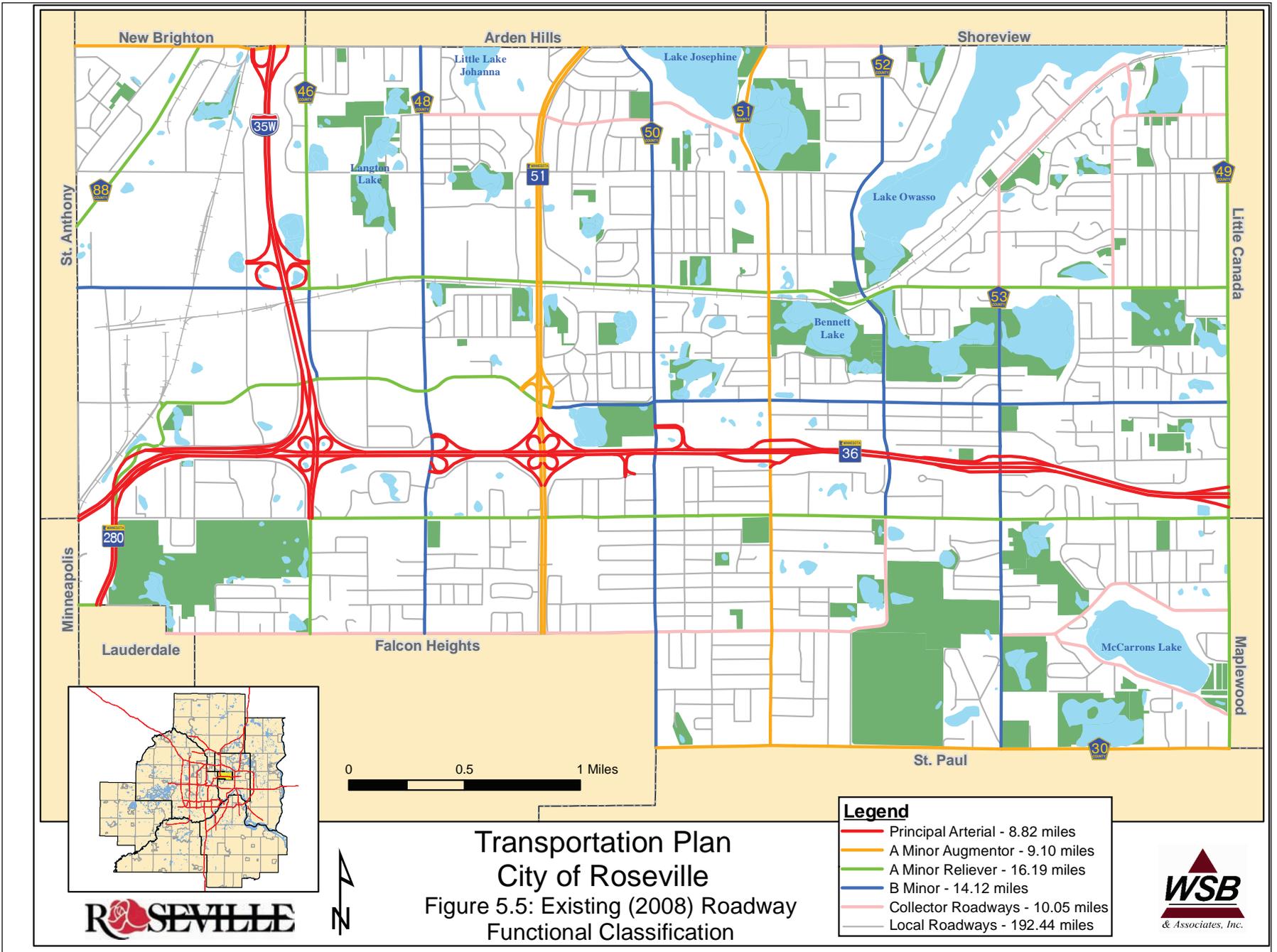
Existing (2008) Roadway Miles by Functional Classification
Table 5.2

Roadway	From	To	Lanes	2006 Daily Traffic Volumes
I-35W	West City Limits	TH 280	7	108,000
I-35W	TH 280	Cleveland Ave. (CSAH 46)	9	141,000
I-35W	TH 36	County Road C	8	111,000
I-35W	County Road C	County Road D	6	109,000
TH 280	South City Limits	I-35W	4	36,000
TH 36	I-35W	Fairview Ave. (CSAH 48)	4	87,000
TH 36	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	4	81,000
TH 36	Snelling Ave. (TH 51)	Lexington Ave. (CSAH 51)	4	83,000
TH 36	Lexington Ave. (CSAH 51)	Dale St. (CSAH 53)	4	84,000
TH 36	Dale St. (CSAH 53)	Rice St. (CSAH 49)	4	82,000

SOURCE: Mn/DOT, City of Roseville, WSB & Associates, Inc.

Principal Arterial Roadways - Existing Characteristics

Table 5.3



Roadway	From	To	Lanes	2006 Daily Traffic Volumes
Snelling Ave. (TH 51)	Roselawn Ave.	County Road B	4	38,000
Snelling Ave. (TH 51)	County Road B	TH 36	4	38,000
Snelling Ave. (TH 51)	TH 36	County Road B2	4	36,500
Snelling Ave. (TH 51)	County Road B2	County Road C	4	34,500
Snelling Ave. (TH 51)	County Road C	North City Limits	4	28,000-29,500
Lexington Ave. (CSAH 51)	Larpenteur Ave. (CSAH 30)	County Road B	3-4	16,200
Lexington Ave. (CSAH 51)	County Road B	County Road B2	3	16,200
Lexington Ave. (CSAH 51)	County Road B2	County Road C	3	14,200
Lexington Ave. (CSAH 51)	County Road C	North City Limits	3	14,000
Larpenteur Ave. (CSAH 30)	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	4	15,800
Larpenteur Ave. (CSAH 30)	Lexington Ave. (CSAH 51)	Dale St. (CSAH 53)	4	16,600
Larpenteur Ave. (CSAH 30)	Dale St. (CSAH 53)	Rice St. (CSAH 49)	4	13,200
County Road D	West City Limits	New Brighton Blvd. (CSAH 88)	4	18,400
County Road D	New Brighton Blvd. (CSAH 88)	I-35W	4	17,600

A Minor Augmentor Arterials - Existing Characteristics
Table 5.4

Minor Arterials

Minor arterials place emphasis on mobility within the metropolitan area. Minor arterials should connect to principal arterials, other minor arterials, and collector roadways, though limited connection to local roadways is acceptable. Minor arterials within Roseville have been further classified into A minor (reliever), A minor (augmentor), and B minor arterials. A minor (augmentor) arterials are found only within the I-494/694 beltway and are intended to serve medium to long trips where principal arterials do not exist. A minor (reliever) arterials are typically aligned roughly parallel to principal arterials and accommodate overflow traffic from congested principal arterials. A minor arterials are eligible for federal funding to help fund improvements.

Roadway	From	To	Lanes	2006 Daily Traffic Volumes
New Brighton Blvd. (CSAH 88)	West City Limits	North City Limits	4	12,200
County Road B	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	4	6,700
County Road B	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	4	9,700
County Road B	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	3-4	11,600
County Road B	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	3	8,500
County Road B	Lexington Ave. (CSAH 51)	Victoria Ave. N	3	6,200
County Road B	Victoria Ave. N	Dale St. (CSAH 53)	3	7,300
County Road B	Dale St. (CSAH 53)	Rice St. (CSAH 49)	2-4	5,600-6,000
St. Croix Street	TH 280	Terminal Road	4	4,600
Terminal Road	St. Croix Street	Long Lake Road	4	6,700
County Road B2	Long Lake Road	Cleveland Ave. (CSAH 46)	4	7,200
County Road B2	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	4	14,800
County Road B2	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	4	18,600
County Road C	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	4	15,000
County Road C	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	4	13,300
County Road C	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	3-4	10,200
County Road C	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	2-4	10,200
County Road C	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	4	9,100
County Road C	Victoria St. (CSAH 52)	Dale St. (CSAH 53)	4	9,100
County Road C	Dale St. (CSAH 53)	Rice St. (CSAH 49)	4	8,200
Cleveland Ave. (CSAH 46)	Roselawn Ave.	County Road B	3	9,800
Cleveland Ave. (CSAH 46)	County Road C	County Road D	4	7,500-9,800
Rice St. (CSAH 49)	Larpenteur Ave. (CSAH 30)	County Road B	3	16,300
Rice St. (CSAH 49)	County Road B	County Road B2	3	20,600
Rice St. (CSAH 49)	County Road B2	County Road C	3	15,100
Rice St. (CSAH 49)	County Road C	North City Limits	3	15,900

A Minor Reliever Arterials - Existing Characteristics
Table 5.5

Roadway	From	To	Lanes	2006 Daily Traffic Volumes
Fairview Ave. (CSAH 48)	County Road B	TH 36	4	15,400
Fairview Ave. (CSAH 48)	TH 36	County Road B2	4	34,700
County Road B	TH 280	Cleveland Ave. (CSAH 46)	2	2,700
County Road B2	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	4	10,800
County Road B2	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	2	6,200
County Road B2	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	2	6,200
County Road B2	Victoria St. (CSAH 52)	Dale St. (CSAH 53)	2	4,500
County Road B2	Dale St. (CSAH 53)	Western Ave.	2	4,500
County Road B2	Western Ave.	Rice St. (CSAH 49)	2	2,800
County Road C	West City Limits	Cleveland Ave. (CSAH 46)	4	12,200
County Road D	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	2	7,600
Cleveland Ave. (CSAH 46)	County Road B2	County Road C	3-4	10,500
Fairview Ave. (CSAH 48)	Roselawn Ave.	County Road B	2	7,100
Fairview Ave. (CSAH 48)	County Road B2	County Road C	4-5	15,800
Fairview Ave. (CSAH 48)	County Road C	County Road D	2-4	8,900
Hamline Ave. (CSAH 50)	Larpenteur Ave. (CSAH 30)	County Road B	3	8,000
Hamline Ave. (CSAH 50)	County Road B	County Road C	3	9,100
Hamline Ave. (CSAH 50)	County Road C	North City Limits	3	4,200-8,500
Victoria St. (CSAH 52)	County Road B	County Road B2	2-4	4,300
Victoria St. (CSAH 52)	County Road B2	County Road C	2-4	5,100
Victoria St. (CSAH 52)	County Road C	North City Limits	2	6,500-6,600
Dale St. (CSAH 53)	Larpenteur Ave. (CSAH 30)	County Road B	4	11,200
Dale St. (CSAH 53)	County Road B	County Road B2	4	12,800
Dale St. (CSAH 53)	County Road B2	County Road C	2	6,500

SOURCE: Mn/DOT, City of Roseville, WSB & Associates, Inc.

B Minor Arterials - Existing Characteristics

Table 5.6

Tables 5.4 and 5.5 list the A minor (augmentor) and A minor (reliever) roadways within Roseville.

All other minor arterials are considered B minor arterials. B minor arterials serve the same functions as A minor arterials, but are not eligible for federal funding.

The B minor arterial roadways within Roseville are summarized in Table 5.6.

Collector Roadways

The collector system provides connections between neighborhoods. Collector roadways are designed to serve shorter trips that can reasonably be completed

Roadway	From	To	Lanes	2006 Daily Traffic Volumes
Roselawn Ave.	West City Limits	Snelling Ave. (TH 51)	2	3,100
Roselawn Ave.	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	2	3,500
Roselawn Ave.	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	2	2,900
Roselawn Ave.	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	2	2,100
Roselawn Ave.	Dale St. (CSAH 53)	McCarron Blvd.	2	1,100
Victoria St. (CSAH 52)	Roselawn Ave.	County Road B	2	3,100
Lydia Ave W	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	2	3,600-8,400
Lydia Ave W	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	2	2,200
Josephine Road	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	2	2,500
Dale St. (CSAH 53)	County Road C	S Owasso Blvd.	2	2,800
S Owasso Blvd.	Dale St. (CSAH 53)	S Owasso Blvd.	2	1,900
S Owasso Blvd.	Western Ave N	Rice St. (CSAH 49)	2	2,600
Western Ave N.	County Road C	S Owasso Blvd.	2	1,300-1,700

SOURCE: Mn/DOT, City of Roseville, WSB & Associates, Inc.

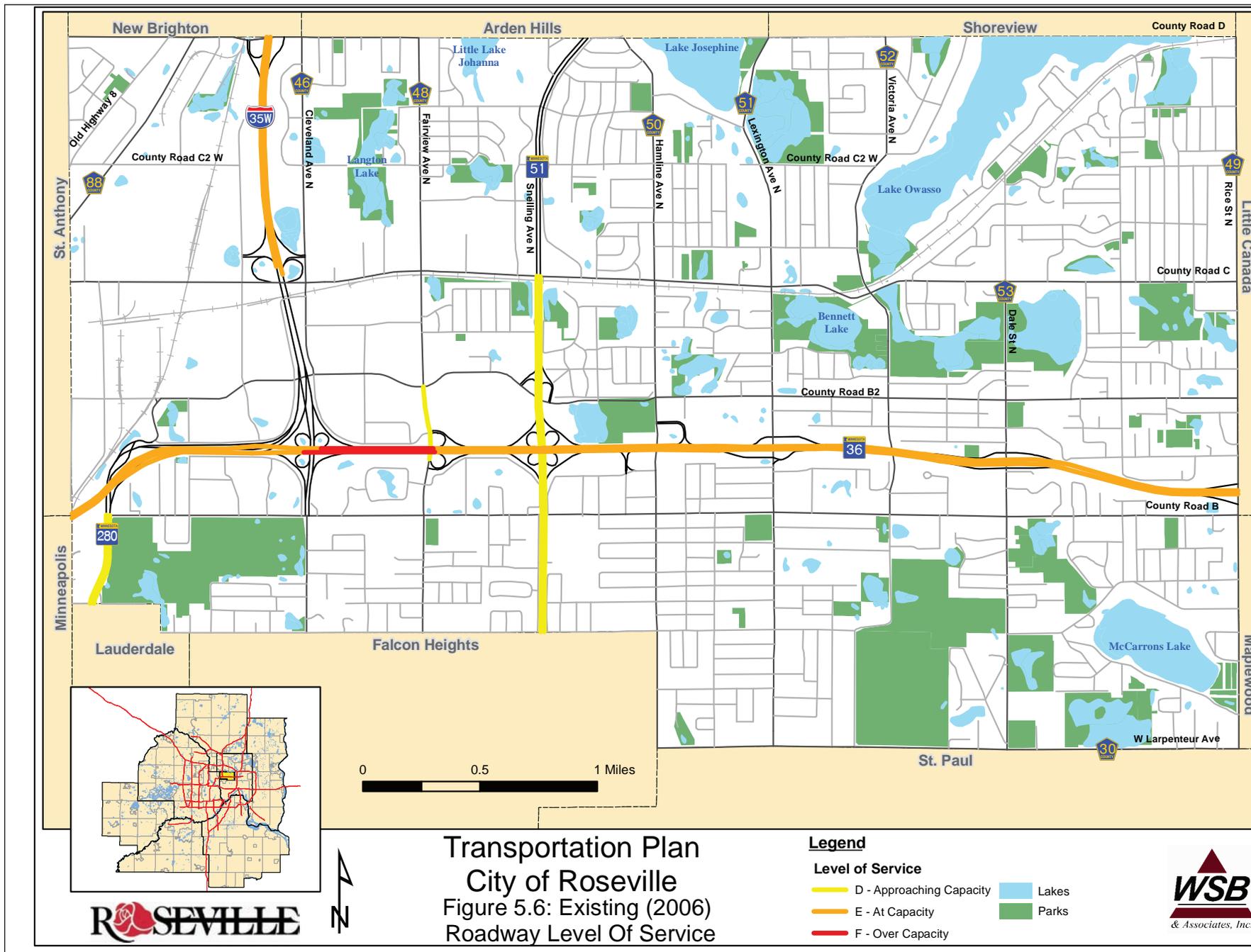
Collector Roadways - Existing Characteristics

Table 5.7

without utilizing roads with a higher classification, and to move traffic from local neighborhoods to roadways of higher classification. Collectors also provide supplementary interconnections of major traffic generators within the metro centers and regional business concentrations. Mobility and access are equally important. Collector roadways are typically spaced at one-half mile intervals within developed areas. Collector roadways are summarized in Table 5.7.

Local Streets

The local street network provides the most access and the least mobility within the overall functional classification system. Local streets provide access to individual homes and businesses, but are not intended to efficiently accommodate through traffic. Through



traffic should be discouraged from using local roads by using an appropriate combination of geometric designs, traffic control devices, and policies.

Existing (2006) Capacity Analysis

In general, the capacity of a roadway is a measure of its ability to accommodate a certain volume of moving vehicles. Segment level of service (LOS) refers to a quantitative comparison between an existing traffic volume and the maximum volume of traffic the roadway can accommodate in its present configuration. It should be noted that this level of analysis, typically referred to as a Planning Level Analysis, is not detailed intersection or site-specific analysis, and does not replace the need for a delay-based analysis, typically referred to as an Operations Analysis, to evaluate specific developments within smaller geographic areas. For clarification, each of these types of analyses is described in the following paragraphs.

Planning Level of Service

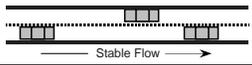
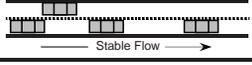
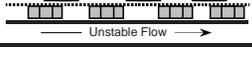
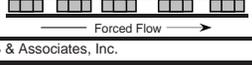
For the purpose of this study, a planning level of service (LOS) was used. Planning level of service compares volume-to-capacity (v/c) ratios, which correlate to a LOS letter grade. Using a capacity threshold equivalent to the D/E boundary, per MnDOT guidelines, provides an indication of whether a roadway is operating with excess capacity, at capacity, or over capacity. When the v/c ratio is below 1.00, the roadway is considered to be operating at an acceptable LOS. When the roadway is operating at or above 1.00, the roadway is considered to be operating at capacity or over capacity. The more the v/c ratio exceeds 1.00, the greater the traffic congestion. Table 5.8 contains a summary of generalized traffic thresholds for specific roadway types, LOS, and number

Facility Type	Number of Lanes	Level of Service Threshold (<i>upper capacity limits</i>)					
					Approaching Capacity	At-Capacity	Over-Capacity
		A	B	C	D	E	F
Interstate / Freeway	8	46,000	73,000	109,000	140,000	170,000	> 170,000
	6	34,000	55,000	82,000	105,000	127,000	> 127,000
	4	17,000	37,000	55,000	70,000	85,000	>85,000
Divided Arterial / Expressway	6	22,000	35,000	56,000	63,000	70,000	>70,000
	4	15,000	23,000	37,000	42,000	47,000	>47,000
Divided Minor Arterial	6	18,000	28,000	42,000	51,000	59,000	>59,000
	5	16,000	25,000	40,000	45,000	50,000	>50,000
	4	12,000	19,000	30,000	36,000	42,000	>42,000
	3	8,000	13,000	20,000	27,000	34,000	>34,000
	2	5,000	8,000	12,000	18,000	24,000	>24,000
	2 (one-way)	6,000	10,000	16,000	19,000	25,000	>25,000
Undivided Minor Arterial	6	17,000	27,000	40,000	49,000	57,000	>57,000
	5	15,000	24,000	38,000	43,000	47,000	>47,000
	4	11,000	18,000	28,000	34,000	40,000	>40,000
	3	7,000	12,000	19,000	26,000	32,000	>32,000
	2	4,000	7,000	11,000	17,000	23,000	>23,000
	2 (one-way)	6,000	9,000	15,000	18,000	24,000	>24,000
Collector	4	7,000	11,000	18,000	22,000	26,000	>26,000
	3	5,000	8,000	12,000	17,000	21,000	>21,000
	2	3,000	5,000	7,000	11,000	15,000	>15,000
	2 (one-way)	4,000	6,000	9,000	12,000	16,000	>16,000

SOURCE: Highway Capacity Manual, Twin Cities Regional Travel Demand Model, and WSB & Associates, Inc.

Generalized Average Daily Traffic Thresholds

Table 5.8

Level of Service	Volume/Capacity (V/C) Ratio	Traffic Flow	Description
A	0.00 to 0.39		FREE FLOW Low volumes and no delays.
B	0.40 to 0.59		STABLE FLOW Low volumes and speeds dictated by travel conditions.
C	0.60 to 0.79		STABLE FLOW Speeds and maneuverability closely controlled due to higher volumes.
D	0.80 to 0.99		RESTRICTED FLOW Higher density traffic restricts maneuverability and volumes approaching capacity.
E	1.00 to 1.19		UNSTABLE FLOW Low speeds, considerable delays, and volumes at or slightly over capacity.
F	1.20 and above		FORCED FLOW Very low speeds, volumes exceed capacity, and long delays with stop-and-go traffic.

SOURCE: Highway Capacity Manual and WSB & Associates, Inc.

Description of LOS Categories
Table 5.9

of traffic lanes. These capacity thresholds are based on the Highway Capacity Manual and the Twin Cities Regional Travel Demand Model.

In roadway planning and design, it is undesirable to either overbuild or underbuild a facility. The goal is to build a facility that effectively and efficiently moves traffic. The design of a roadway should reflect its location. In general, people in more urban environments expect to incur some congestion during the peak hours, hence the LOS D/E capacity threshold. In rural environments, LOS C is often used as the basis for roadway planning and design, as people typically have a lower tolerance for traffic congestion. Roseville falls into the urban environment category; therefore, the LOS D/E threshold represents the appropriate design capacity for roadways.

At this LOS, traffic is generally expected to experience restricted flow only during the peak travel periods. During off-peak periods, traffic flow generally operates at LOS A to LOS C.

Table 5.9 lists the level of service categories, approximate volume-to-capacity (v/c) ratios and general descriptions of the traffic operations for each category.

The LOS for roadways in Roseville was obtained by comparing the traffic level thresholds with the most recent available daily traffic counts (2006). Figure 5.6 (Existing (2006) Roadway Level of Service) displays the results of the capacity analysis completed for the existing conditions.

Operations Analysis

In a detailed traffic analysis, an operations level of service evaluation is conducted. In this type of analysis, the focus

Roadway	From	To	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)
			Lower	Upper	
I-35W	West City Limits	TH 280	1.03	only 1 count	E (At Capacity)
I-35W	TH 280	Cleveland Ave. (CSAH 46)	1.01	only 1 count	E (At Capacity)
I-35W	TH 36	County Road C	0.79	only 1 count	C (Below Capacity)
I-35W	County Road C	County Road D	1.04	only 1 count	E (At Capacity)
TH 280	South City Limits	I-35W	0.86	only 1 count	D (Approaching Capacity)
TH 36	I-35W	Fairview Ave. (CSAH 48)	1.24	only 1 count	F (Over Capacity)
TH 36	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	1.16	only 1 count	E (At Capacity)
TH 36	Snelling Ave. (TH 51)	Lexington Ave. (CSAH 51)	1.19	only 1 count	E (At Capacity)
TH 36	Lexington Ave. (CSAH 51)	Dale St. (CSAH 53)	1.20	only 1 count	E (At Capacity)
TH 36	Dale St. (CSAH 53)	Rice St. (CSAH 49)	1.17	only 1 count	E (At Capacity)

* When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).
SOURCE: Mn/DOT and WSB & Associates, Inc.

Principal Arterials - Existing (2006) Capacity Analysis
Table 5.10

Roadway	From	To	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
			Lower	Upper		
Snelling Ave. (TH 51)	Roselawn Ave.	County Road B	0.90	only 1 count	D	(Approaching Capacity)
Snelling Ave. (TH 51)	County Road B	TH 36	0.90	only 1 count	D	(Approaching Capacity)
Snelling Ave. (TH 51)	TH 36	County Road B2	0.87	only 1 count	D	(Approaching Capacity)
Snelling Ave. (TH 51)	County Road B2	County Road C	0.82	only 1 count	D	(Approaching Capacity)
Snelling Ave. (TH 51)	County Road C	North City Limits	0.67	0.70	C	(Below Capacity)
Lexington Ave. (CSAH 51)	Larpenteur Ave. (CSAH 30)	County Road B	0.45	0.60	B	(Below Capacity)
Lexington Ave. (CSAH 51)	County Road B	County Road B2	0.60	only 1 count	B	(Below Capacity)
Lexington Ave. (CSAH 51)	County Road B2	County Road C	0.53	only 1 count	B	(Below Capacity)
Lexington Ave. (CSAH 51)	County Road C	North City Limits	0.52	only 1 count	B	(Below Capacity)
Larpenteur Ave. (CSAH 30)	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	0.44	only 1 count	B	(Below Capacity)
Larpenteur Ave. (CSAH 30)	Lexington Ave. (CSAH 51)	Dale St. (CSAH 53)	0.46	only 1 count	B	(Below Capacity)
Larpenteur Ave. (CSAH 30)	Dale St. (CSAH 53)	Rice St. (CSAH 49)	0.37	only 1 count	A	(Below Capacity)
County Road D	West City Limits	New Brighton Blvd. (CSAH 88)	0.51	only 1 count	B	(Below Capacity)
County Road D	New Brighton Blvd. (CSAH 88)	I-35W	0.49	only 1 count	B	(Below Capacity)

* When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

SOURCE: Mn/DOT and WSB & Associates, Inc.

A Minor (Augmentor) Arterials - Existing (2006) Capacity Analysis

Table 5.11

Roadway	From	To	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
			Lower	Upper		
New Brighton Blvd. (CSAH 88)	West City Limits	North City Limits	0.29	only 1 count	A	(Below Capacity)
County Road B	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	0.19	only 1 count	A	(Below Capacity)
County Road B	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	0.27	only 1 count	A	(Below Capacity)
County Road B	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	0.32	0.43	A to B	(Below Capacity)
County Road B	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	0.33	only 1 count	A	(Below Capacity)
County Road B	Lexington Ave. (CSAH 51)	Victoria Ave. N	0.24	only 1 count	A	(Below Capacity)
County Road B	Victoria Ave. N	Dale St. (CSAH 53)	0.28	only 1 count	A	(Below Capacity)
County Road B	Dale St. (CSAH 53)	Rice St. (CSAH 49)	0.16	0.35	A	(Below Capacity)
St. Croix Street	TH 280	Terminal Road	0.14	only 1 count	A	(Below Capacity)
Terminal Road	St. Croix Street	Long Lake Road	0.20	only 1 count	A	(Below Capacity)
County Road B2	Long Lake Road	Cleveland Ave. (CSAH 46)	0.21	only 1 count	A	(Below Capacity)
County Road B2	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	0.44	only 1 count	B	(Below Capacity)
County Road B2	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	0.52	only 1 count	B	(Below Capacity)
County Road C	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	0.42	only 1 count	B	(Below Capacity)
County Road C	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	0.37	only 1 count	A	(Below Capacity)
County Road C	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	0.30	0.39	A	(Below Capacity)
County Road C	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	0.30	0.60	A to B	(Below Capacity)
County Road C	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	0.27	only 1 count	A	(Below Capacity)
County Road C	Victoria St. (CSAH 52)	Dale St. (CSAH 53)	0.27	only 1 count	A	(Below Capacity)
County Road C	Dale St. (CSAH 53)	Rice St. (CSAH 49)	0.24	only 1 count	A	(Below Capacity)
Cleveland Ave. (CSAH 46)	Roselawn Ave.	County Road B	0.38	only 1 count	A	(Below Capacity)
Cleveland Ave. (CSAH 46)	County Road C	County Road D	0.22	0.29	A	(Below Capacity)
Rice St. (CSAH 49)	Larpenteur Ave. (CSAH 30)	County Road B	0.63	only 1 count	C	(Below Capacity)
Rice St. (CSAH 49)	County Road B	County Road B2	0.79	only 1 count	C	(Below Capacity)
Rice St. (CSAH 49)	County Road B2	County Road C	0.58	only 1 count	B	(Below Capacity)
Rice St. (CSAH 49)	County Road C	North City Limits	0.61	only 1 count	C	(Below Capacity)

* When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

SOURCE: Mn/DOT and WSB & Associates, Inc.

A Minor (Reliever) Arterials - Existing (2006) Capacity Analysis

Table 5.12

is on quantifying seconds of delay, typically due to the traffic control device at an intersection. The results of the traffic operations analysis are typically presented in the form of a letter grade (A to F) that provides a qualitative indication of the operational efficiency or effectiveness. By definition, LOS A conditions represent high-quality operations (i.e., motorists experience very little delay or interference) and LOS F conditions represent very poor operations (i.e., extreme delay or severe congestion). Oftentimes, these conditions can be mitigated through the implementation of geometric improvements at the intersections, such as the addition of turning lanes and/or adjustment of signal timing. These measures are generally referred to as Transportation System Management (TSM) techniques, and are used to address congestion with minimal cost.

Principal Arterials

The congestion analysis suggests that only one roadway segment currently operates over capacity, or at LOS F. TH 36 between I-35W and Fairview Avenue N has a v/c ratio of 1.24, above the 1.2 threshold signifying LOS F. Table 5-10 lists the LOS calculated for all of the principal Arterials. Since TH 36 has four continuous lanes throughout Roseville, it is estimated to reach LOS F when daily traffic estimates reach 85,000 vehicles per day. All of TH 36 is estimated to carry over 80,000 vehicles per day, approaching the LOS F threshold.

Minor Arterials

Table 5.11 lists the current estimated LOS for the A minor (augmentor) arterials in Roseville.

Table 5.12 lists the estimated LOS for all A minor (reliever) arterials in Roseville.

Roadway	From	To	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
			Lower	Upper		
Fairview Ave. (CSAH 48)	County Road B	TH 36	0.43	only 1 count	B	(Below Capacity)
Fairview Ave. (CSAH 48)	TH 36	County Road B2	0.96	only 1 count	D	(Approaching Capacity)
County Road B	TH 280	Cleveland Ave. (CSAH 46)	0.16	only 1 count	A	(Below Capacity)
County Road B2	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	0.32	only 1 count	A	(Below Capacity)
County Road B2	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	0.36	only 1 count	A	(Below Capacity)
County Road B2	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	0.36	only 1 count	A	(Below Capacity)
County Road B2	Victoria St. (CSAH 52)	Dale St. (CSAH 53)	0.26	only 1 count	A	(Below Capacity)
County Road B2	Dale St. (CSAH 53)	Western Ave.	0.26	only 1 count	A	(Below Capacity)
County Road B2	Western Ave.	Rice St. (CSAH 49)	0.16	only 1 count	A	(Below Capacity)
County Road C	West City Limits	Cleveland Ave. (CSAH 46)	0.36	only 1 count	A	(Below Capacity)
County Road D	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	0.45	only 1 count	B	(Below Capacity)
Cleveland Ave. (CSAH 46)	County Road B2	County Road C	0.31	0.40	A to B	(Below Capacity)
Fairview Ave. (CSAH 48)	Roselawn Ave.	County Road B	0.42	only 1 count	B	(Below Capacity)
Fairview Ave. (CSAH 48)	County Road B2	County Road C	0.37	0.46	A to B	(Below Capacity)
Fairview Ave. (CSAH 48)	County Road C	County Road D	0.26	0.52	A to B	(Below Capacity)
Hamline Ave. (CSAH 50)	Larpenteur Ave. (CSAH 30)	County Road B	0.31	only 1 count	A	(Below Capacity)
Hamline Ave. (CSAH 50)	County Road B	County Road C	0.35	only 1 count	A	(Below Capacity)
Hamline Ave. (CSAH 50)	County Road C	North City Limits	0.16	0.33	A	(Below Capacity)
Victoria St. (CSAH 52)	County Road B	County Road B2	0.13	0.25	A	(Below Capacity)
Victoria St. (CSAH 52)	County Road B2	County Road C	0.15	0.30	A	(Below Capacity)
Victoria St. (CSAH 52)	County Road C	North City Limits	0.38	0.39	A	(Below Capacity)
Dale St. (CSAH 53)	Larpenteur Ave. (CSAH 30)	County Road B	0.33	only 1 count	A	(Below Capacity)
Dale St. (CSAH 53)	County Road B	County Road B2	0.38	only 1 count	A	(Below Capacity)
Dale St. (CSAH 53)	County Road B2	County Road C	0.38	only 1 count	A	(Below Capacity)

* When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

SOURCE: Mn/DOT and WSB & Associates, Inc.

B Minor Arterials - Existing (2006) Capacity Analysis

Table 5.13

Roadway	From	To	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
			Lower	Upper		
Roselawn Ave.	West City Limits	Snelling Ave. (TH 51)	0.28	only 1 count	A	(Below Capacity)
Roselawn Ave.	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	0.32	only 1 count	A	(Below Capacity)
Roselawn Ave.	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	0.26	only 1 count	A	(Below Capacity)
Roselawn Ave.	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	0.19	only 1 count	A	(Below Capacity)
Roselawn Ave.	Dale St. (CSAH 53)	McCarron Blvd.	0.10	only 1 count	A	(Below Capacity)
Victoria St. (CSAH 52)	Roselawn Ave.	County Road B	0.28	only 1 count	A	(Below Capacity)
Lydia Ave W	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	0.33	0.76	A to C	(Below Capacity)
Lydia Ave W	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	0.20	only 1 count	A	(Below Capacity)
Josephine Road	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	0.23	only 1 count	A	(Below Capacity)
Dale St. (CSAH 53)	County Road C	S Owasso Blvd.	0.25	only 1 count	A	(Below Capacity)
S Owasso Blvd.	Dale St. (CSAH 53)	S Owasso Blvd.	0.17	only 1 count	A	(Below Capacity)
S Owasso Blvd.	Western Ave N	Rice St. (CSAH 49)	0.24	only 1 count	A	(Below Capacity)
Western Ave N.	County Road C	S Owasso Blvd.	0.12	0.15	A	(Below Capacity)

* When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

SOURCE: Mn/DOT and WSB & Associates, Inc.

Collector Roadways - Existing (2006) Capacity Analysis

Table 5.14

B Minor Arterials

Table 5.13 lists the estimated LOS for all B minor arterials in Roseville. All of the B minor arterials are estimated to operate under capacity. Fairview Avenue N between TH 36 and County Road B2 is approaching capacity.

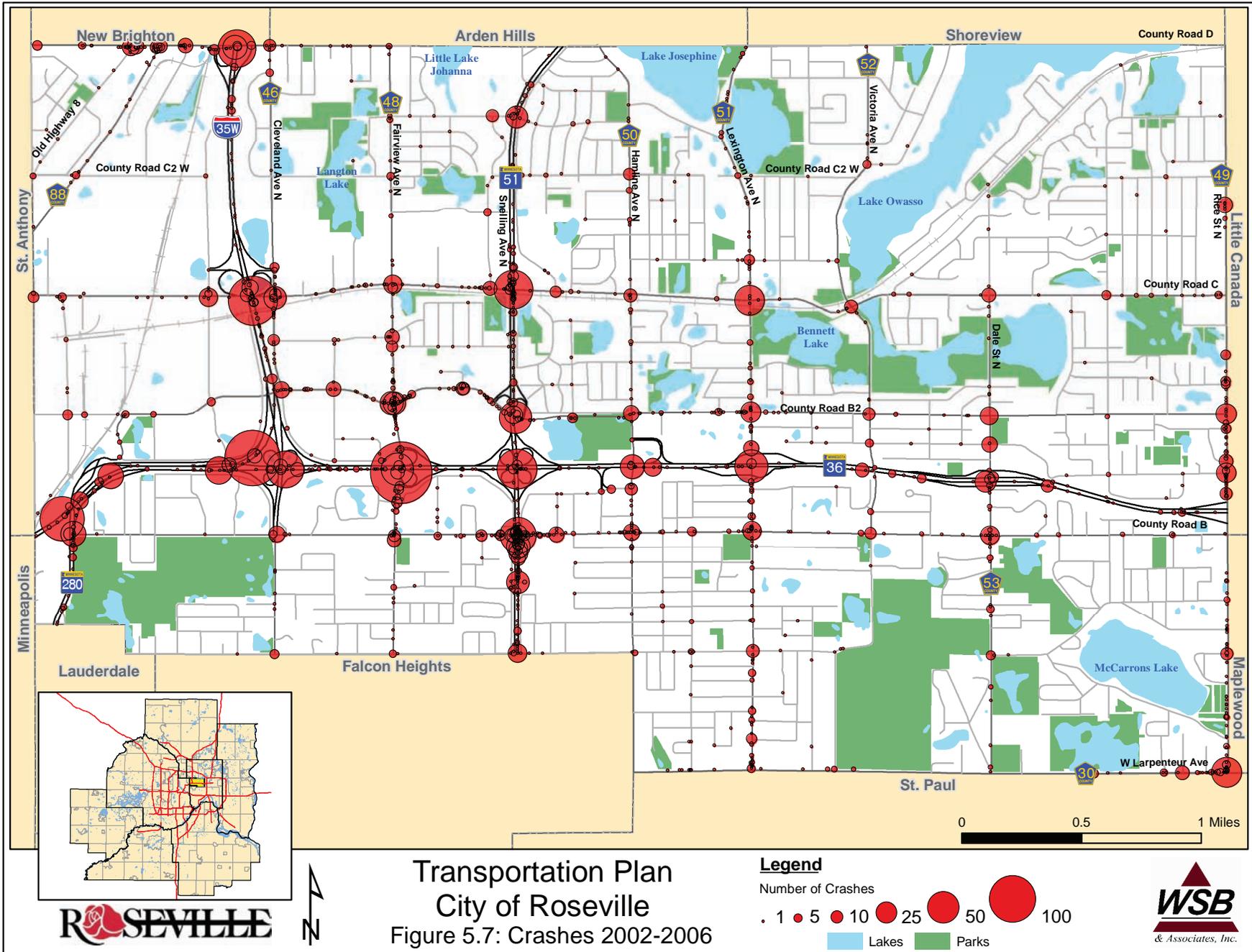
Collector Roadways

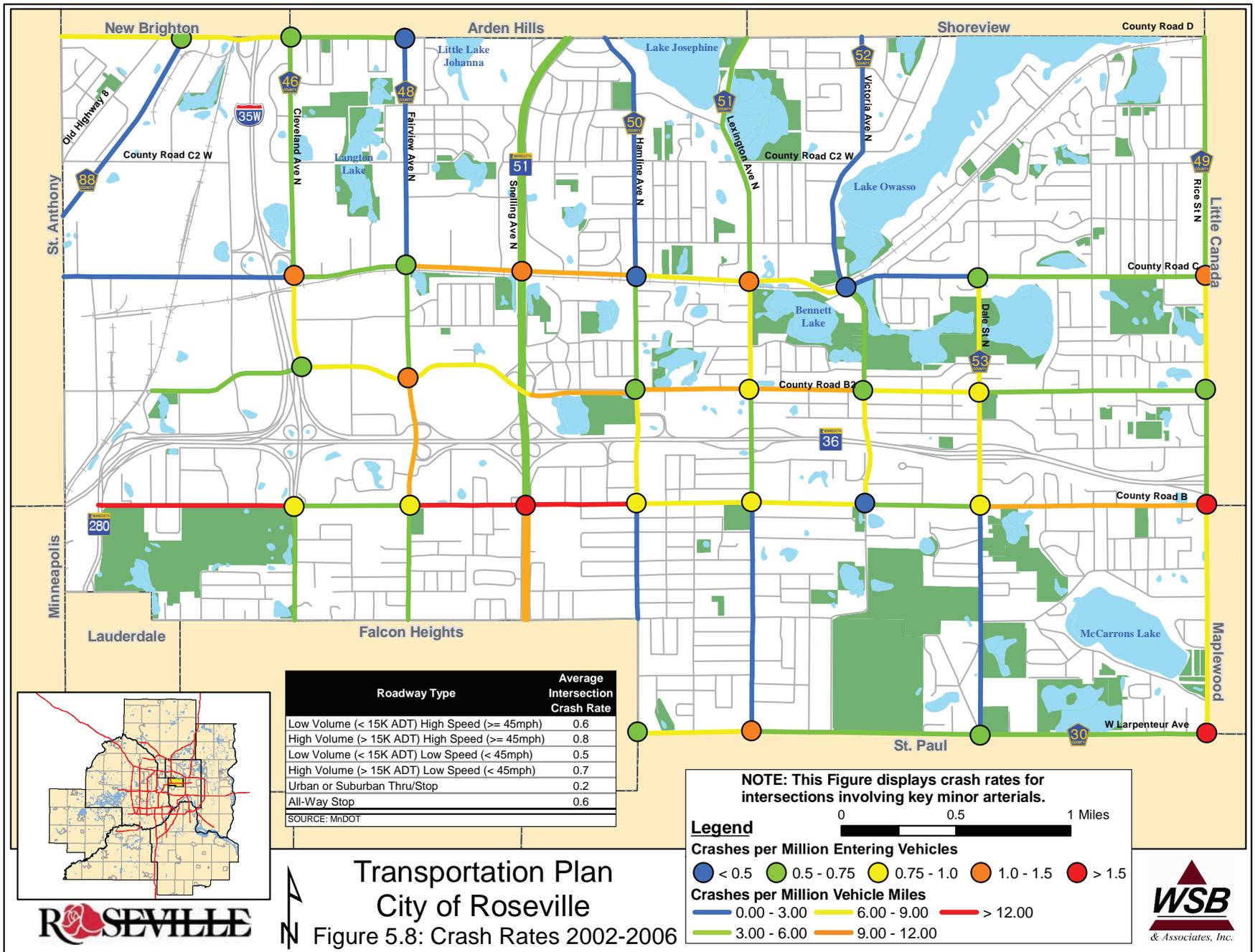
Table 5.14 lists the estimated LOS for all collector roadways within Roseville.

Crash Information

The locations and frequencies of crashes during this time frame for Roseville are depicted in Figure 5.7 (Crashes 2002-2006), using data obtained from MnDOT. However, it is often more useful to consider crash rates, which account for the number of vehicles passing through a certain segment or intersection. Figure 5.8 (Crash Rates 2002-2006) displays the crash rates for each major roadway segment and each major roadway intersection. Segment-based crash rates are displayed as the number of crashes per million vehicle

Roadway Type	Average Segment Crash Rate
4-lane; undivided	7.3
4-lane; divided	5.3
3-lane	6.0
5-lane	5.9
2-lane; 1,500 < ADT < 4,999	2.3
2-lane; 5,000 < ADT < 7,999	2.6
2-lane; ADT > 8,000	3.3
SOURCE: MnDOT	
Average Crash Rates for Urban Roadways in Metro District	
Table 5.15	





Transportation Plan City of Roseville

Figure 5.8: Crash Rates 2002-2006



miles traveled on each minor arterial roadway segment. A crash occurring within an intersection is included in the crash rate calculations for each of the roadway segments leading into the intersection. Intersection-based crash rates are displayed as the number of crashes per million vehicles entering the intersection. Table 5.15 lists the average crash rates calculated by MnDOT for each roadway type within the Metro District.

The following general observations can be made from this information:

- ♦ The largest numbers of crashes are occurring along I-35W and TH 36. Freeways are typically frequent crash locations. This is not surprising, given the high traffic volumes through these areas and the merge/weave maneuvers required.
- ♦ The highest three intersection crash rates are at the intersections of Rice Street and Larpenteur Avenue, Rice Street and County Road B, and County Road B and Snelling Avenue. The interchange of Fairview Avenue N with TH 36 has also experienced a large number of crashes.
- ♦ The roadway segments with the highest crash rates are County Road B between TH 280 and Cleveland Avenue and County Road B between Fairview Avenue and Hamline Avenue.

The MnDOT crash data files are such that individual intersections, areas, or corridors can be analyzed in detail. For each given study area, crashes can be sorted/analyzed in terms of severity of accident and other factors. For severity, the categories range from fatality to property (vehicle) damage only. The primary types of intersection conditions and/or deficiencies will lead to different patterns of crash types.

Non-Motorized Transportation

Non-motorized transportation facilities are considered a vital part of the City's transportation system. For the purposes of this Transportation Plan, non-motorized transportation is defined as walking, jogging, and cycling. While special consideration should be given to the accommodation of those who wish to use a different form of non-motorized transportation, it is believed that walking, jogging, and cycling are the most dominant modes.

The City's non-motorized transportation network consists of nearly 102.57 miles of on- and off-road pathways. Pathways are broken into the following types: foot paths, sidewalks, trails, and striped shoulder. To see the locations of these pathways, see Figure 5.9. The system has been designed and coordinated to provide connections with neighboring cities and regional corridors.

The non-motorized transportation network serves a variety of purposes and users, including recreational, commuter, and shopping trips. The network simultaneously serves walkers, joggers, cyclists, and persons with disabilities. Commuting bicyclists can play an important role in helping to reduce congestion during several months of the year. In addition, many of the users of the pathway system may be young children for whom additional safety measures may be desired. To ensure the highest level of efficiency and safety in the network, it is critical to consider the needs of all users.

The need is for a congruent system that links the existing non-motorized facilities with each other, creating a grid not unlike the street network. The goal is to provide a safe alternative to the automobile that can provide access

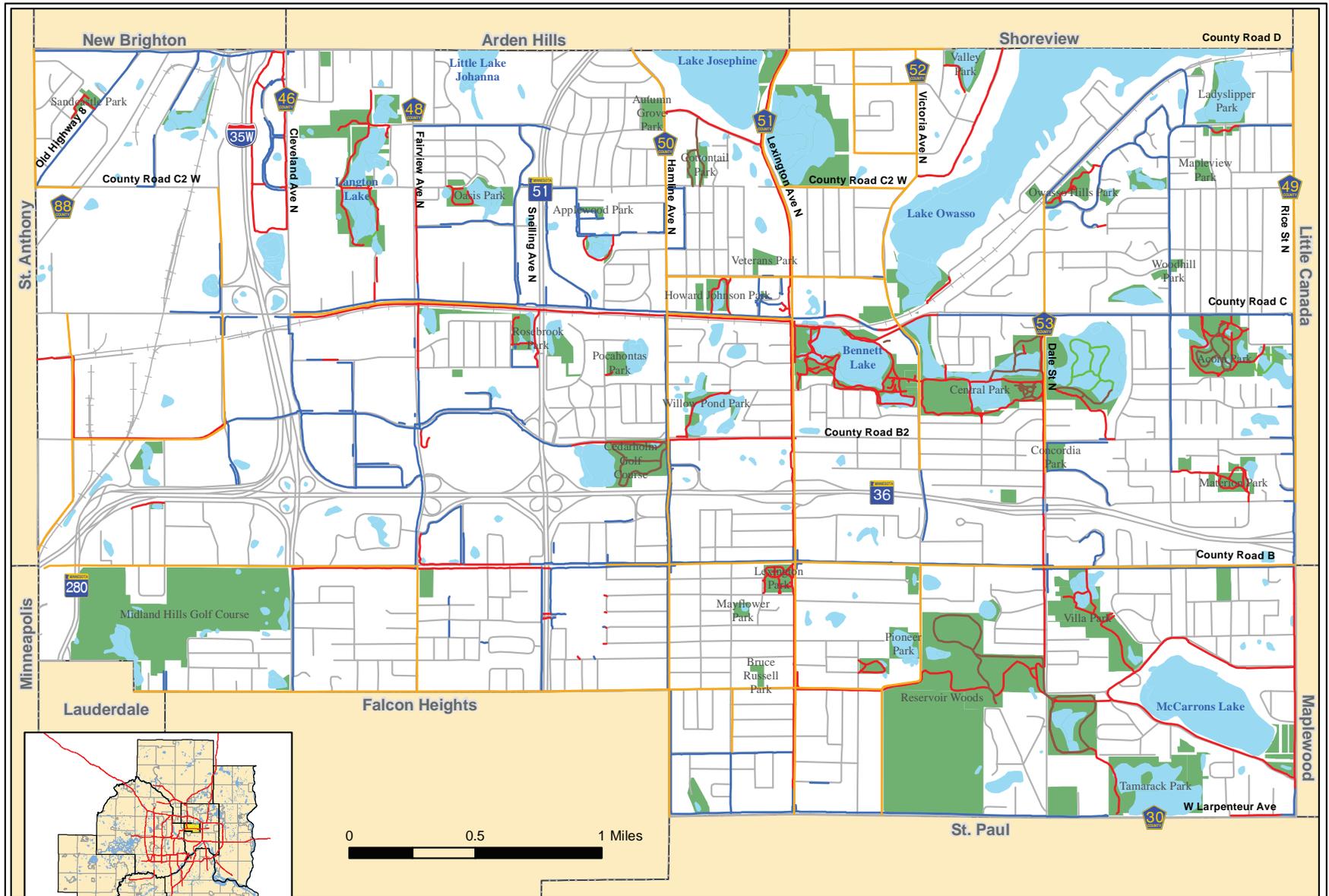
as conveniently and efficiently as that allowed for the automobile. Every street within the city should have a facility that provides safe travel for light traffic, i.e. pedestrians, cyclists and in-line skaters, whether it's a shared on-road facility or separated off-road facility.

The City's pathways can be classified into various functional categories based on their design and intended purpose. However, the classification system is not as rigid as the system applied to roadways.

Roseville has 75.35 miles of off-road pathways. These pathways are broken into three types: foot path, sidewalk, and trail. There are 6.42 miles of foot paths within city parks. These are constructed of woodchips, aggregate, and boardwalks. They meander through natural areas and are well suited for recreational use.

Roseville also has 36.4 miles of sidewalks, most of which are adjacent to roadways and within commercial areas. These are likely to be utilized primarily by those walking or by inexperienced cyclists. Nearly every walking or jogging trip whether recreational, utilitarian, or both, is likely to rely on sidewalks for a portion of the trip. In addition to recreational use by walkers and joggers, these facilities are likely to be used to access specific destinations for work or shopping purposes. They are not likely, however, to be attractive routes for experienced cyclists who may prefer more direct routes, smooth riding surfaces, or the ability to travel faster than is reasonably safe on sidewalks.

Roseville also has 32.5 miles of off-street trails that may be attractive routes for cyclists in addition to walkers and joggers. Some trails are better suited to recreational cyclists while others are attractive facilities for bicycle commuters or other utilitarian bicycle trips. These



Transportation Plan City of Roseville

Figure 5.9: Existing (2008) Pathways

- Legend**
- Trail (32.51 miles)
 - Sidewalk (36.42 miles)
 - Footpath (5.22 miles)
 - Striped Shoulder (27.22 miles)
 - Boardwalk (1.2 miles)

Source: City of Roseville



trails may range in attractiveness to bicycle commuters depending on the directness of route, pavement quality, and the number of street and driveway crossings. The trail along the south side of County Road C is a good example of a trail likely to attract bicycle commuters because of the directness of route and limited street and driveway crossings.

Many experienced cyclists prefer to cycle in the roadway because it does not require them to surrender the right of way to opposing traffic at each intersection. To accommodate these users, Roseville also has on-road pathways. These pathways are classified as bike route, bike lane, striped shoulder, and shared lane. There are currently no bike routes or bike lanes within Roseville. However, there are 27 miles of striped shoulder on the City's higher-volume roads. Sections of Hamline Avenue and Larpenteur Avenue have shoulders clearly delineated from the traffic lanes by striping or colored concrete that provide an attractive on-street alternative for cyclists.

The purpose of the Roseville Pathway Master Plan is to provide a set of guidelines for use in the development of a pathway network. These guidelines provide policies and standards for the planning, design, construction, maintenance, promotion, and regulation of the community's pathway facilities. The plan is used to assist decision makers on the strategic use of public funds to improve the non-motorized transport network. As new pathways are constructed, a citizen advisory committee updates the Pathway Master Plan. This plan is updated as needed and at least every five years. The plan was developed using the following guiding principles:

- ◆ Develop a pathway system that provides linkages to and between neighborhoods, educational facilities,

churches, business centers, transit stops, parks and open space.

- ◆ Develop safe pathway connections throughout the city, as well as around, between, and among the major shopping centers.
- ◆ Develop a pathway system that is accessible from all areas of the city, enabling residents to reach a pathway connection within a quarter mile of their home.
- ◆ Work to fill in gaps, providing continuous pathways that connect destinations and to the larger regional pathway system.
- ◆ All arterial roads and collectors should provide some accommodation for non-motorized transportation users. Consider construction of non-motorized pathways when roads and parking lots are designed or reconstructed.
- ◆ Work with the County and State to ensure that freeway and highway reconstruction projects provide accommodations for non-motorized transportation users.
- ◆ Work to improve the safety of pathway street crossings with signage, striping and lighting. Enhance pathways by using them to demonstrate strong programs of environmental protection such as native plantings, reforestation, and general beautification.
- ◆ Require pathways and connections to the existing system to be constructed as a part of all new developments and redevelopments.

Existing Transit Service

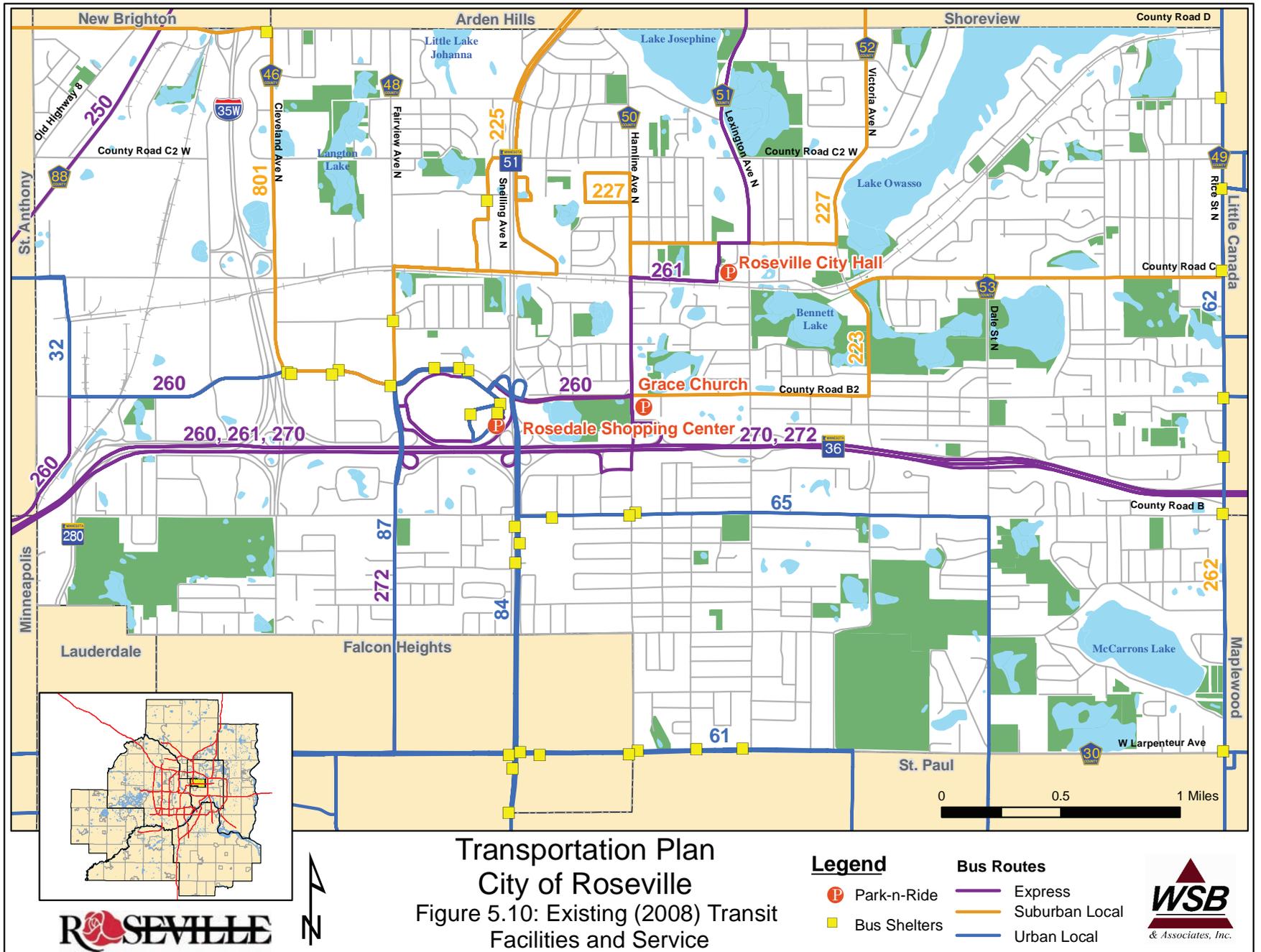
Transit has been and continues to be an important element of the transportation system within Roseville. As the cost of operating a vehicle continues to increase, transit is becoming a more attractive alternative to driving alone. Transit also supports the economic growth of the area by providing access to labor markets, economic centers, and employment, as transit is often the only means of transportation for some people. Transit can also help to reduce automobile trips, help to conserve energy, slow the growth in energy use, and increase the carrying capacity of existing roadways.

Roseville is within the Metropolitan Transit Taxing District and is within Market Areas II and III. Service options for Market Area II include regular-route locals, all-day expresses, small-vehicle circulators, special-needs paratransit (ADA and seniors), and ridesharing. Service options for Market Area III include peak-only express, small-vehicle circulators, mid-day circulators, special-needs paratransit, and rideshare.

The following sections describe the various components of transit service and facilities in Roseville.

Fixed-Route Transit Service and Facilities

The Rosedale Transit Hub, located adjacent to the Rosedale Shopping Center, serves as a major transit hub for the fixed-route transit services in Roseville. The hub was created by the City at the initiative of the Regional Transit Board (RTB), which is now part of the Metropolitan Council. The Rosedale hub is a focal point for suburban transit services north of Roseville and links these services to the two downtowns and to other suburban areas in the regional transit system. Figure 5.10



Route Number	Limited Stop	Rush Hours	Midday	Evening	Saturday	Sunday/Holiday	Roseville Route	Other Service Areas
32		30	30-60	-	-	-	Rosedale Transit Center, County Road B2, Terminal Drive, Walnut Street, County Road C	Robbinsdale - Robbinsdale Transit Center, North Memorial Medical Center; Minneapolis - Lowry Avenue; St. Anthony - St. Anthony Shopping Center
61		30	30	60	30	-	Larpenteur Avenue W	Downtown Minneapolis, St. Paul - Larpenteur Ave, Arlington Ave, Arcade Street, 7th St. E; Downtown St. Paul
62		30	30	60	30	60	Rice Street N	Shoreview - Shoreview Community Center, Vadnais Heights, Little Canada Transit Center, Rice Street, Downtown St. Paul
65		30	30	60	60	60	Dale Street N, County Road B, Snelling Avenue N, Rosedale Transit Center	Downtown St. Paul; St. Paul - Dale Street, Selby Avenue
84		15	15	30	15	30	Snelling Avenue N, Rosedale Transit Center	St. Paul - Snelling Avenue, Midway Shopping Center, Highland Park Neighborhood, Highland Village, Ford Avenue; Minneapolis - 46th Street Station
87		30	30	-	-	-	Fairview Avenue, Rosedale Transit Center	U of M St. Paul Campus, Raymond Ave., Cleveland Ave. in St. Paul
223	Yes	60	60	-	60	-	Rosedale Transit Center, County Road B2, Victoria Avenue N, County Road C	Little Canada Transit Center, County Road D in Maplewood, Maplewood Mall, White Bear Lake - Century College West, Mahtomedi - Century College East
225	Partial	30	30	-	30	-	Snelling Avenue N, County Road C, Fairview Avenue N, Rosedale Transit Center	Arden Hills - Northwestern College
227		-	60	-	60	-	Rosedale Transit Center, County Road B2, Hamline Avenue N, Woodhill Avenue, Victoria Avenue N	Shoreview - Shoreview Community Center, Deluxe, SuperTarget; Arden Hills - Land O'Lakes
260-261	Partial	5-31	60	-	-	-	Terminal Road, County Road B2, Rosedale Transit Center, Hamline Avenue N, County Road C, Lexington Avenue N	Minneapolis - 4th St. SE, University Ave. SE, Central Ave. SE, Downtown Minneapolis; Shoreview Community Center
262	Yes	30	-	-	-	-	Rice Street N	Lino Lakes - St. Joseph's Church Park & Ride; Circle Pines; Lexington; Blaine - 95th Ave. Park & Ride; Shoreview - Hogson Road; St. Paul - Rice Street; Downtown St. Paul
272	Yes	1-2 trips	-	-	-	-	Fairview Avenue N, Rosedale Transit Center, TH 36	Downtown Minneapolis, U of M Minneapolis Campus
801		60	60	-	-	-	Rosedale Transit Center, County Road B2, Cleveland Avenue N, County Road D	Brooklyn Center - Brooklyn Center Transit Center, Brookdale Shopping Center; Columbia Heights Transit Center; St. Anthony - Silver Lake Village

SOURCE: Metro Transit, WSB & Associates, Inc.

Existing (2008) Transit Service
Table 5.16

(Existing (2008) Transit Facilities and Service) lists the fixed-route transit options within Roseville. Table 5.16 lists each Metro Transit route within Roseville and the scheduled headways and destinations for each route. Although it is not located within Roseville city limits, the Little Canada Transit Hub, located near TH 36 and Rice Street, is convenient for many Roseville residents. Many residents of the northeastern portions of Roseville are closer to the Little Canada Transit Hub than the Rosedale Transit Hub.

In 1989, Roseville and the RTB established the Roseville Circulator, the first suburban circulator system in the metropolitan region, as a prototype for a new type of suburban transit service where neighborhood circulators act as feeder routes to the regional system and serve short, localized trips. In 1991, the RTB converted the system from a “demonstration” service to regular route service. In 2001, Metro Transit restructured the bus service into and around Roseville as part of the Sector 2 Restructuring Study.

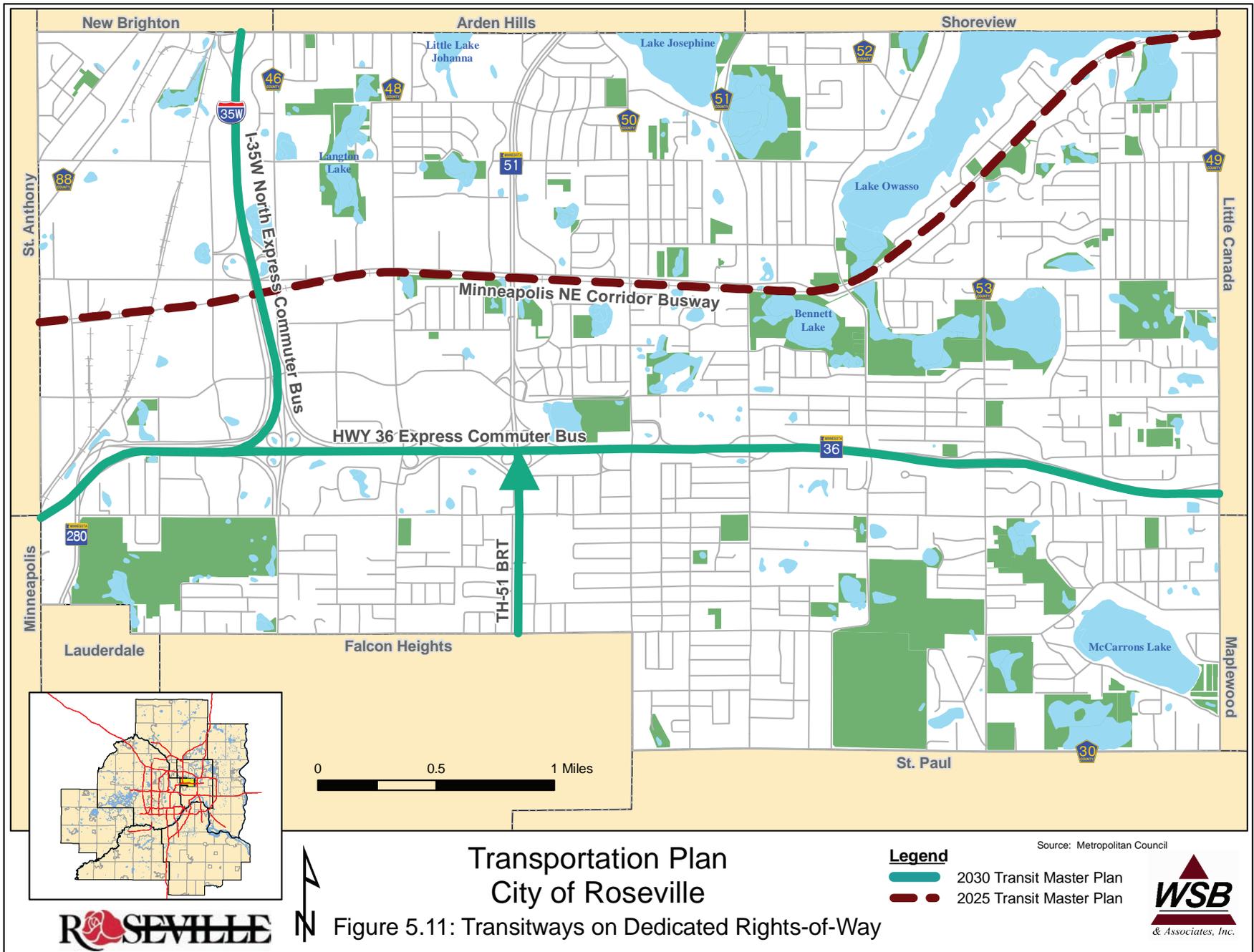
Additional measures are currently under way to increase the availability of fixed-route transit in Roseville. The

Type of Fare		Non-Rush Hours	Rush Hours*
Adults (Ages 13-64)	Local Fare	\$1.75	\$2.25
	Express Fare	\$2.25	\$3.00
Seniors (65+), Youth (6-12) & Medicare Card Holders	Local Fare	\$0.75	\$2.25
	Express Fare	\$0.75	\$3.00
Persons with disabilities	Any Trip	\$0.75	\$0.75

* Rush hours: Monday-Friday 6:00-9:00 am & 3:00-6:30 pm.

SOURCE: Metro Transit (2008)

Existing (2008) Metro Transit Fare Schedule
Table 5.17



City of Roseville
 Figure 5.11: Transitways on Dedicated Rights-of-Way

Metropolitan Council had identified the Northeast Diagonal (NED) Corridor as a potential busway and included it in the 2025 Transit Master Plan. However, when this plan was updated in 2004 this corridor was removed. Roseville believes that the NED corridor is an important fixed route link and will continue to work with Ramsey County Regional Rail Authority and the other communities along this rail corridor to promote this link. The Metropolitan Council has also identified I-35W and TH 36 as potential candidates for Fixed Guideway bus operations. Another project that is included within the 2030 Transportation Policy Plan as a bus rapid transit (BRT) study corridor is Snelling Avenue, which would link Roseville with the planned Central Corridor light rail transit service between Minneapolis and St. Paul. Roseville is in support of additional transit service within the city as well as the overall metropolitan area. Roseville recognizes the benefit that it has on the environment such as reducing vehicle emissions, particularly by slow-moving or idling cars at busy intersections, as well as for potentially minimizing traffic growth in the city. Figure 5.11 (Transitways on Dedicated Right-of-Way) displays

the dedicated right-of-way being considered for future transit operation.

Park-and-Ride Facilities

Since 1999, the Twin Cities Metropolitan Region has expanded park-and-ride capacity by 177%, but the number of users has grown by 223%. The system has grown from about 7,000 spaces and 4,700 users in 1999 to 19,400 spaces and 15,200 users in 2006. To address this increase in demand, the Metropolitan Council has been exploring potential options to continue to increase park-and-ride capacity, including the leasing of space as well as constructing additional facilities.

In Roseville, there are three park-and-ride lots, all of which have seen an increase in use in recent years. In the three current park-and-ride lot facilities serving the city, there are currently a total of 540 spaces. On a typical day in 2007, it was determined that 476, or 88%, of these spaces were occupied. As fuel costs rise, it is anticipated that the usage of these park-and-ride lots will increase. Roseville has been very supportive of the use of park-and-ride lots. Metro Transit has projected a need for 800 park-and-ride spaces in Roseville. To

address this need, Metro Transit is currently looking to develop two new facilities including a 400-space lot as part of the Twin Lakes development as well as another 400 spaces at a yet to be determined location near TH 36 in eastern Roseville. The City will continue to be an active participant in the promotion of park-and-ride lots as well as overall transit usage in the metropolitan region.

Table 5.18 lists the three park-and-ride lots serving Roseville as well as their capacity and 2007 level of utilization.

Non-Fixed Route Transit

Residents of Roseville have several non-fixed route transit options offering door-to-door services at reasonable prices. However, each program has eligibility requirements that will exclude much of the population of Roseville. The non-fixed route transit options are currently available to riders who are either unable to use fixed-route transit services because of disability or health condition or are of age 60 or above.

Metro Mobility is an ADA Paratransit program operated by Metro Transit and available to all. Residents within Roseville who are unable to use non-fixed-route transit because of disability or health condition. Riders may be eligible for Metro Mobility if they are physically unable to get to the regular fixed-route bus system, they are unable to navigate the regular fixed-route bus system once they are on board, or they are unable to board and exit the bus at some locations. Details regarding eligibility can be found on the Metro Transit website. Rides are provided for any purpose, but riders must have completed an ADA Paratransit Application

Park and Ride Lot	Location	Capacity	Utilization
Rosedale Transit Center	Rosedale Mall	375	99%
Grace Church	Hamline Ave. and CR B2	115	50%
Skating Center	Lexington Ave. and CR C	50	92%

SOURCE: 2007 Annual Park and Ride Lot System Survey Report, Metro Transit.

Park and Ride Lot Locations and Characteristics
Table 5.18

Form. Rides cost between \$2.50 and \$3.50 depending on the time of day.

The Roseville Area Senior Program is available to all residents of the Roseville Area School District 623 who are of age 60 or above. The program has two forms of transport: shuttle buses and volunteer rides. A shuttle bus ride is available for \$3.00, but riders must be flexible as to when the trip is completed. The volunteer ride program utilizes community volunteers to provide door-to-door service to the rider for medical or dental appointments at any time. The program costs \$13.00 each way.

The American Red Cross provides rides to all Ramsey County residents aged 60 or older to medical or dental appointments or for grocery shopping. The suggested donation is \$3.75 each way.

Other Transportation Sectors

Freight/Rail

There are currently two existing railroad tracks within Roseville. The Burlington Northern (BN) track runs roughly parallel to County Road C from the western city limits through Lexington Avenue. At this point, the track turns northward along the southern edge of Lake Owasso before leaving the city limits where the northern and eastern city limits meet. The Minnesota Commercial (MC) track runs north-south from the southwestern corner of the city and exits the northern edge of the city between New Brighton Boulevard and I-35W. Both are local service tracks and not main lines.

The Northeast Diagonal Land Use/Transit Study Report completed in 2002 considered the feasibility

of transit operating along the BN track. Ramsey and Hennepin Counties have recently purchased a portion of the track from the western city limits to Walnut Street. Additionally, in 2007, a multi-use pathway was constructed along the newly purchased right-of-way, which connects into the city of Minneapolis bicycle network.

The MC track currently has at-grade crossings at the following locations: Terminal Road, County Road C, County Road C2, and County Road D. A service spur line from the MC track has an at-grade crossing at Long Lake Road. The BN track has at-grade crossings at Walnut Street, Long Lake Road, Cleveland Avenue N, Fairview Avenue N, Snelling Avenue N, Hamline Avenue N, Lexington Avenue N, Victoria Street N, Dale Street N, S Owasso Boulevard, and numerous private drives along the alignment. The BN track has grade-separated crossings at I-35W, County Road C, and Rice Street N.

Aviation

Roseville neither contains nor is the city adjacent to any metropolitan system airports. However, Roseville's air space is used by aircraft operating from metropolitan area airports and other airports as well as certain public water bodies within the metropolitan area. The operation of all aircraft within the city must conform to Minnesota Administrative Rules Chapter 8800 and Minnesota Statutes Chapter 360, which regulate Airports and Aeronautics in the state of Minnesota. All structures in the city are required to conform to the Metropolitan Council's Transportation Policy Plan, which reflects Federal Regulation Title 14, Part 77 and establishes standards and notification requirements for objects affecting navigable airspace. Roseville must

confirm compliance with the Federal Aviation Agency notification requirements using Form 7460. A permit from Mn/DOT may be required for any structure more than 500 feet above ground level anywhere in the state, or when the structure is more than 200 feet above ground level within three nautical miles of an airport and increasing by 100 feet for each additional mile out to six miles and 500 feet.

Roseville currently has no existing structures of 200 feet or more in height, and has no plans to permit such

Minnesota Statute 360

Under Minnesota Statute 360, the state regulates the height of structures as they are defined and enforced under Aeronautics Rules and Regulations 8800.1200 Criteria for Determining Air Navigation Obstructions. Subparagraph 4(B) states that a general obstruction is:

Objects more than 200 feet above the ground or more than 200 feet above the established airport elevation, whichever gives the higher elevation, within three nautical miles of the nearest runway of an airport, and increasing the proportion of the 100 feet for each additional nautical mile of distance from the airport but not exceeding 500 feet above ground.

Notification to MnDOT Aeronautics is required when any object, as defined under this statute, would affect general airspace.

Local reporting is in addition to any federal permitting/review process (FAA Form 7460-1) involving a sponsor/proposal.

structures in the future. Any sponsor who proposes any construction or alteration that would exceed a height of 200 feet above ground level at site shall notify the Commissioner of Minnesota Department of Transportation at least 30 days in advance as required by Aeronautics Rule 14, MCAR 1.3015, Subdivision C, and shall present a certified copy of such notification to the City at least ten days before any building permit is issued.

Seaplane operations are currently permitted on Lake Owasso under Aeronautics Rule 14, MCAR 1.3018. Such operations are prohibited from 11:00 a.m. until 6:00 p.m. on Saturdays, Sundays, and holidays between June 1 and September 15, except for the holder of a Personal Use Seaplane Base License operating to and from a licensed base. At the present time, seaplane operations do not constitute a hazard. However, the City should continue to monitor seaplane use of the lake and may request review of the seaplane operations by the Aeronautics Division of MnDOT on a periodic basis.

There are no heliports in Roseville. Future proposals for heliports should be considered only in areas where they would not disrupt adjoining land uses.

Planning Context - Studies, Projects, and Issues

TH 36 Configuration Changes

Recently, MnDOT has been discussing the reconstruction of TH 36 to provide more travel lanes. As part of this reconstruction project, there has been a focus on interchange access, particularly at Hamline Avenue (CSAH 50). This interchange serves

an important role in providing access to Roseville's primary commercial district (Rosedale Mall area). Furthermore, the removal of this access point would result in putting additional pressure on the adjacent interchanges at Snelling Avenue North (TH 51) and Lexington Avenue North (CSAH 51). Although not part of the configuration plans for TH 36, there has been some interest on behalf of residents for the construction of a pathway connection over the freeway between the HarMar Mall and Rosedale Mall areas. This connection would improve non-motorized access between the areas north and south of TH 36, which bisects Roseville. Furthermore, this connection would make walking a much more attractive option for students living south of TH 36.

TH 280 Configuration Changes

After the collapse of the I-35W bridge over the Mississippi River in August 2007, TH 280 became the designated detour route for rerouted trips. MnDOT made several emergency modifications to TH 280 within Roseville to increase the capacity of that roadway. Just south of the city boundaries in the city of Lauderdale, the intersections of TH 280 with Roselawn Avenue and Broadway Avenue were closed. MnDOT also closed the intersections at Walnut Street and County Road B within Roseville. In addition, MnDOT expanded the ramp between north-bound TH 280 and north-bound I-35W from one lane to two lanes.

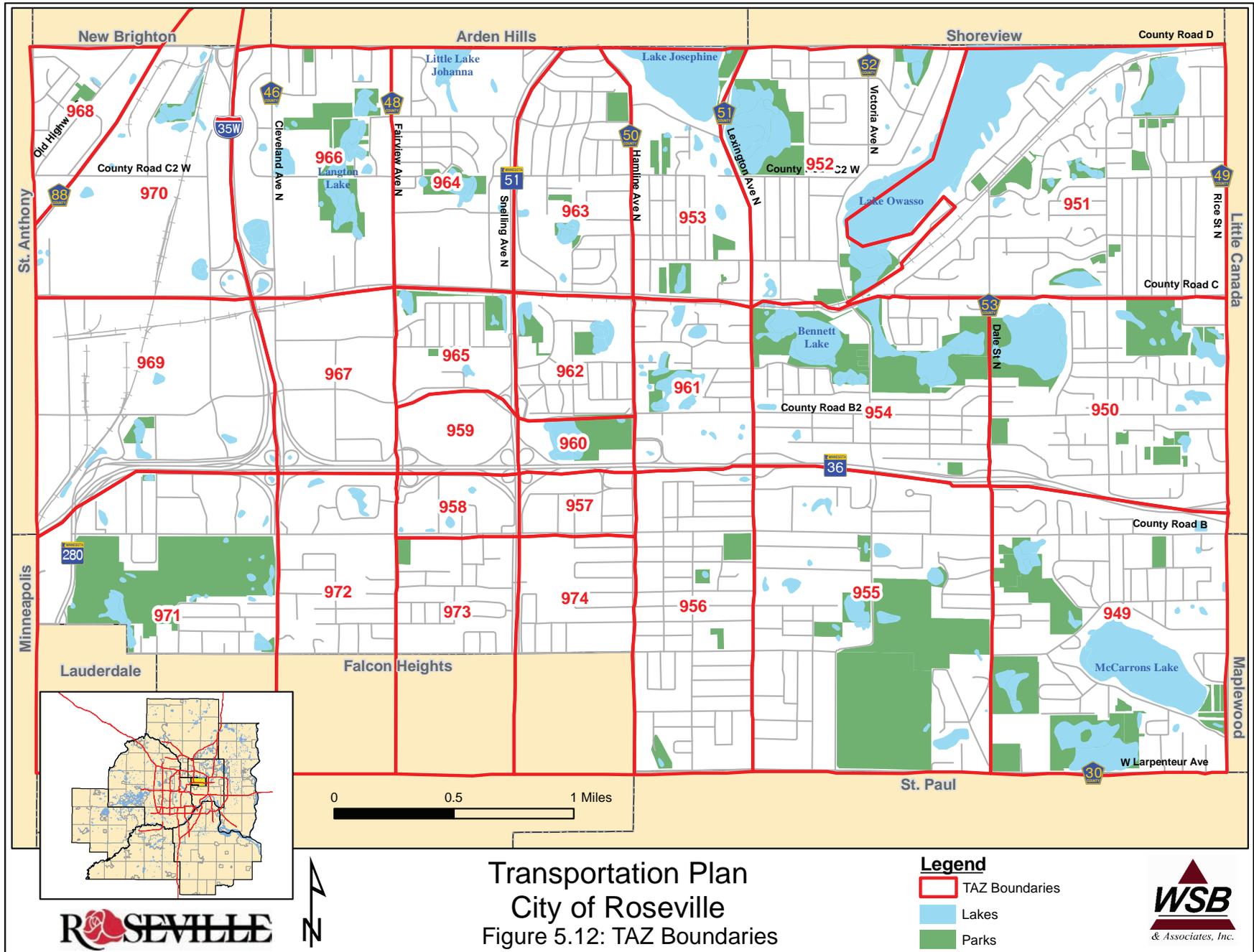
There are ongoing discussions regarding the future of these emergency modifications. MnDOT has indicated that they plan to make some of the changes permanent. It is expected, however, that there will continue to be partial access provided to the commercial property on the west side of TH 280 at County Road B.

Twin Lakes Redevelopment

Roseville has plans to redevelop 46 parcels dispersed within a 275-acre area over the next 20 years. The Twin Lakes redevelopment area contains most of the nonresidential areas north of County Road C between Cleveland Avenue and Snelling Avenue. The redevelopment of these parcels will replace existing trucking, outdoor storage, and industrial uses with new multilevel office, medical, high-tech, showroom, multifamily housing, and supporting commercial uses. As part of the redevelopment strategy, a new road—Twin Lakes Parkway—will be constructed in stages. According to the 2007 Alternative Area-wide Review (AUAR) Update, the road will be transit- and pedestrian-friendly, and will include walking and biking trails, safety, lighting, ponding, and landscaping enhancements.

The Twin Lakes redevelopment proposal includes aggressive growth in residential and commercial land use. In the most intense scenario under consideration, the proposal would add an additional 2,330,505 square feet of new office space, 919 new residential units, 618,319 square feet of service industry space, and a 466,583-square-foot hospital within the next 20 years. The Final Twin Lakes AUAR adopted on October 15, 2007, includes an analysis of the traffic impacts of the proposed redevelopment. The proposed increases in land-use intensity have not yet been incorporated into the Metropolitan Council travel demand model, and thus are not considered in the capacity analysis in this section.

The 2007 AUAR update included additional traffic study to model the operational impacts (intersection delay, queue length, etc.) of this redevelopment. This study was used to determine deficiencies at existing



intersections in the Twin Lakes Area and identified potential mitigation measures.

Cut-Through Traffic

Cut-through traffic, while affecting most parts of the city, is particularly problematic for the areas adjacent to TH 36 and I-35W. The entire city lacks good east-west roadway connectivity, which accentuates the impact of cut-through traffic on the limited east-west routes that exist in the community. Aside from TH 36, the only other roadways that fully traverse the city are County Roads B, B2, and C and Larpenteur Avenue. As TH 36 has become more congested, local residents have become concerned over the increase in traffic on these and other east-west roadways such as Roselawn Avenue located south of TH 36. It is hoped that the planned addition of travel lanes on TH 36 will help alleviate some of this traffic. Other measures that could assist in alleviating traffic include the addition of more park-and-ride lots, particularly east of Roseville. With the addition of these lots, as well as increased transit in general, more commuters will use transit as part of their trip, which will reduce peak hour travel through the city.

Future Transportation System

Future Roadway Needs

Traffic forecasts are estimated using a computerized travel demand model. The Metropolitan Council Travel Model was used to estimate future travel conditions on Roseville roadways by dividing the metropolitan area into 1,201 Transportation Analysis Zones (TAZs) and estimating the socioeconomic and demographic characteristics of the residents of each TAZ. The Metropolitan Council Travel Model was calibrated

to year 2000 average daily trips (ADT) volumes and subsequently used to predict 2030 travel conditions. The travel demand forecasting model estimates the amount of travel that can be expected in a future scenario. Modeling provides the analyst with the ability to test multiple scenarios and estimate the future impacts of transportation and land-use policies and network modifications.

Four-Step Modeling Process

Traditional transportation demand modeling involves four steps: trip generation, trip distribution, mode choice, and traffic assignment. The four-step modeling process is described in the following sections:

- ♦ **Trip Generation.** The first step in forecasting travel is trip generation. In this step, information about land-use, population, and economic forecasts are used to estimate how many person-trips will be made to and from each TAZ. Trip generation is estimated by applying complex equations involving land-use, economic, and demographic data for each TAZ. For example, the model estimates the number of trips expected to begin within a TAZ using data such as the average household size and the number of vehicles available. Similarly, the number of trips estimated to end in each TAZ is estimated using expected employment levels.
- ♦ **Trip Distribution.** The second step, trip distribution, links the trips generated in each TAZ during step one with an appropriate destination TAZ. These linked trip ends form an origin-destination trip matrix summarizing how many trips begin in each TAZ, and where the trips end. Trip distribution is based on the idea that the number of trips between two points is dependent upon their attractiveness

for a given trip purpose and the separation (in terms of distance or travel time) between the points. The number of trips between a given origin-destination zone pair decreases with increasing travel time between the origin zone and the destination zone.

- ♦ **Mode Choice.** The third step, mode choice, is the step where trips between a given origin and destination are separated into different modes of travel including public transit and personal vehicles. The attractiveness of travel by different modes based on various characteristics are estimated to determine their relative usage.
- ♦ **Traffic Assignment.** The fourth step, traffic assignment, uses an iterative process to assign trips to specific roadways. The particular routes used to travel from each origin to each destination are first determined based on the shortest travel times. Because travel time varies greatly depending on congestion levels, the assigned trip volumes are then compared to the capacity of each link to see which links, if any, are congested. If a roadway is congested, the travel speed will decrease, resulting in increased travel time on that roadway. During the next iteration, trips in the model shift to less congested links as drivers seek to minimize travel time. This process continues until there is a balance between travel demand and travel supply on the network and each driver is utilizing the quickest path between their origin and destination.

2030 Land Use

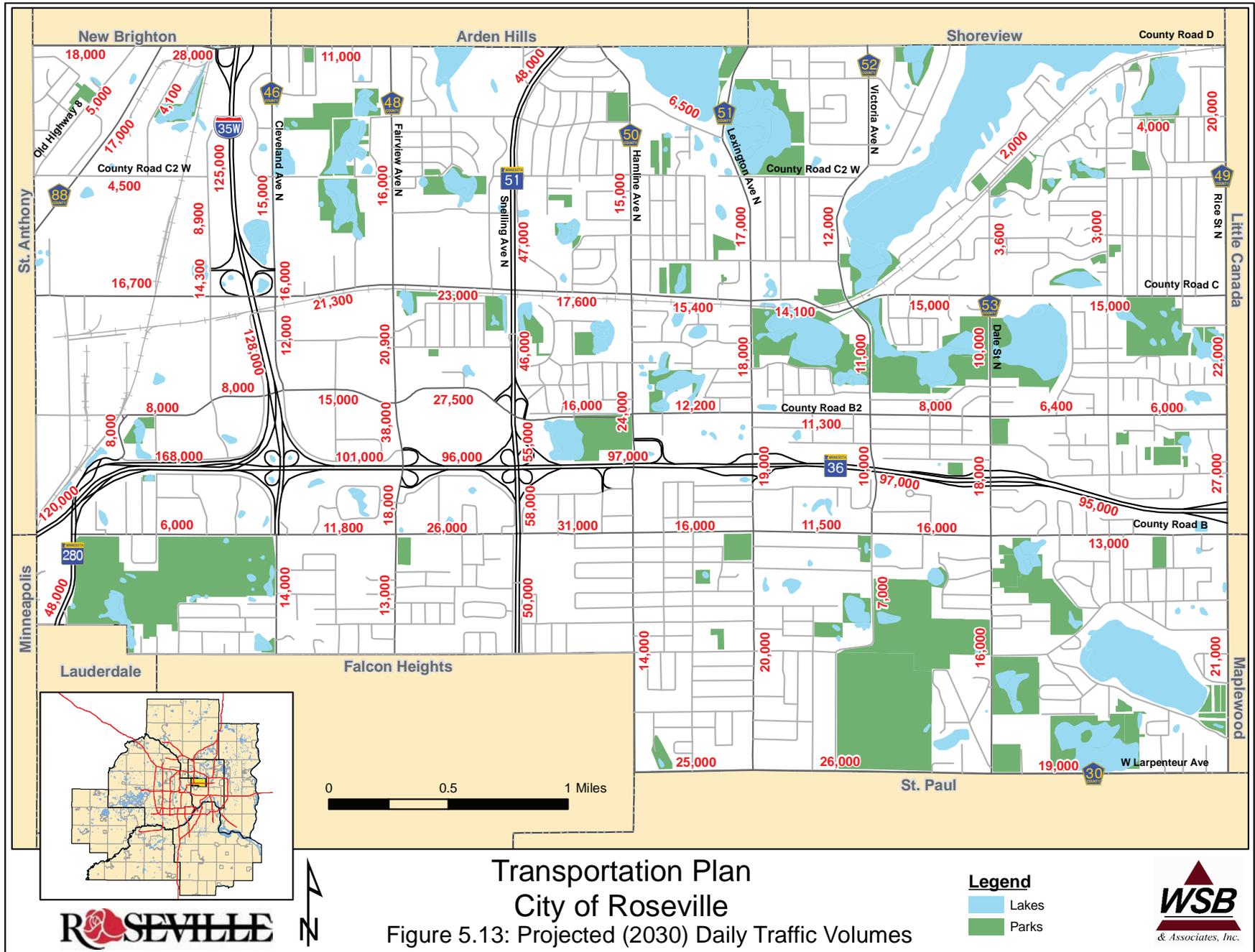
Future year land use requires the allocation of population and employment data to individual TAZs. Discussions with the City regarding future land-use plans and development proposals were used to assign future

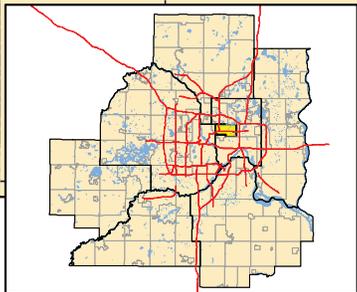
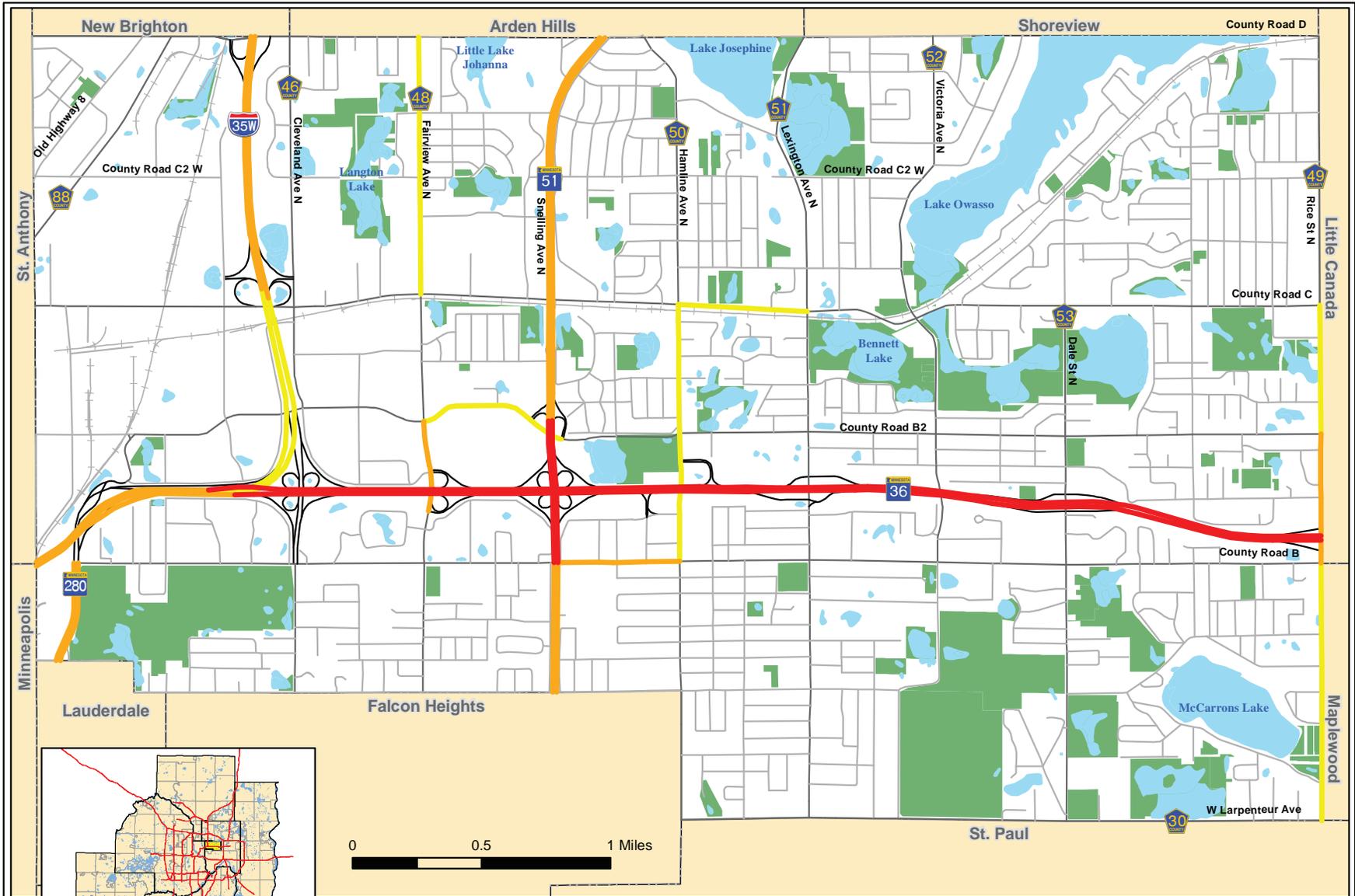
TAZ	Population			Households			Total Employment			Retail Employment			Non-Retail Employment		
	2000	2030	Change	2000	2030	Change	2000	2030	Change	2000	2030	Change	2000	2030	Change
949	3,299	3,750	451	1,596	1,804	208	555	654	99	108	128	20	447	526	79
950	2,600	2,956	356	1,044	1,180	136	1,217	1,435	218	197	235	38	1,020	1,200	180
951	4,531	5,151	620	1,975	2,232	257	164	193	29	15	18	3	149	175	26
952	2,116	2,406	290	912	1,031	119	563	664	101	15	19	4	548	645	97
953	1,389	1,579	190	657	743	86	436	514	78	9	12	3	427	502	75
954	2,051	2,332	281	883	998	115	215	254	39	0	1	1	215	253	38
955	2,730	3,104	374	1,208	1,365	157	928	1,094	166	251	298	47	677	796	119
956	2,653	3,016	363	1,114	1,259	145	1,338	1,577	239	423	501	78	915	1,076	161
957	450	512	62	190	215	25	1,075	1,267	192	825	973	148	250	294	44
958	537	610	73	351	397	46	3,301	3,856	555	554	659	105	2,747	3,197	450
959	0	0	0	0	0	0	2,355	2,736	381	2,236	2,636	400	119	100	(19)
960	62	70	8	49	55	6	21	25	4	0	0	0	21	25	4
961	785	892	107	346	391	45	186	219	33	0	0	0	186	219	33
962	813	924	111	406	459	53	901	1,062	161	450	531	81	451	531	80
963	2,059	2,341	282	1,007	1,138	131	2,320	2,735	415	715	847	132	1,605	1,888	283
964	1,832	2,083	251	466	527	61	3,302	3,881	579	938	1,112	174	2,364	2,769	415
965	445	506	61	174	197	23	1,098	1,295	197	921	1,087	166	177	208	31
966	685	779	94	206	233	27	3,557	4,182	625	483	577	94	3,074	3,605	531
967	0	0	0	0	0	0	4,005	4,714	709	1,629	1,927	298	2,376	2,787	411
968	813	924	111	374	423	49	230	271	41	30	36	6	200	235	35
969	4	4	0	2	2	0	5,280	6,210	930	113	146	33	5,167	6,064	897
970	177	201	24	103	116	13	4,040	4,758	718	987	1,171	184	3,053	3,587	534
971	778	884	106	308	348	40	212	250	38	0	0	0	212	250	38
972	1,184	1,346	162	517	584	67	319	376	57	50	59	9	269	317	48
973	896	1,019	123	407	460	53	531	626	95	56	67	11	475	559	84
974	801	911	110	303	343	40	1,062	1,252	190	669	790	121	393	462	69
TOTAL	33,690	38,300	4,610	14,598	16,500	1,902	39,211	46,100	6,889	11,674	13,830	2,156	27,537	32,270	4,733

SOURCE: Metropolitan Council, City of Roseville, WSB & Associates, Inc.

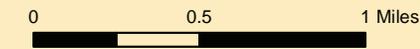
TAZ Population and Employment Projections

Table 5.19





ROSEVILLE



Transportation Plan
City of Roseville
 Figure 5.14: Projected (2030)
 Roadway Level Of Service

- Legend**
- Level of Service**
- D - Approaching Capacity
 - E - At Capacity
 - F - Over Capacity



Roadway	From	To	Daily Traffic Volumes 2030	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
				Lower	Upper		
I-35W	West City Limits	TH 280	120,000	1.14	only 1 count	E	(At Capacity)
I-35W	TH 280	Cleveland Ave. (CSAH 46)	168,000	1.20	only 1 count	E	(At Capacity)
I-35W	TH 36	County Road C	128,000	0.91	only 1 count	D	(Approaching Capacity)
I-35W	County Road C	County Road D	125,000	1.19	only 1 count	E	(At Capacity)
TH 280	South City Limits	I-35W	48,000	1.14	only 1 count	E	(At Capacity)
TH 36	I-35W	Fairview Ave. (CSAH 48)	101,000	1.44	only 1 count	F	(Over Capacity)
TH 36	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	96,000	1.37	only 1 count	F	(Over Capacity)
TH 36	Snelling Ave. (TH 51)	Lexington Ave. (CSAH 51)	97,000	1.39	only 1 count	F	(Over Capacity)
TH 36	Lexington Ave. (CSAH 51)	Dale St. (CSAH 53)	97,000	1.39	only 1 count	F	(Over Capacity)
TH 36	Dale St. (CSAH 53)	Rice St. (CSAH 49)	95,000	1.36	only 1 count	F	(Over Capacity)

* When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

SOURCE: Mn/DOT and WSB & Associates, Inc.

Projected 2030 LOS - Principal Arterials Table 5.20

Roadway	From	To	Daily Traffic Volumes 2030	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
				Lower	Upper		
Snelling Ave. (TH 51)	Roselawn Ave.	County Road B	50,000	1.19	only 1 count	E	(At Capacity)
Snelling Ave. (TH 51)	County Road B	TH 36	58,000	1.38	only 1 count	F	(Over Capacity)
Snelling Ave. (TH 51)	TH 36	County Road B2	55,000	1.31	only 1 count	F	(Over Capacity)
Snelling Ave. (TH 51)	County Road B2	County Road C	46,000	1.10	only 1 count	E	(At Capacity)
Snelling Ave. (TH 51)	County Road C	North City Limits	47,000	1.12	only 1 count	E	(At Capacity)
Lexington Ave. (CSAH 51)	Larpenteur Ave. (CSAH 30)	County Road B	20,000	0.56	0.74	B to C	(Below Capacity)
Lexington Ave. (CSAH 51)	County Road B	County Road B2	19,000	0.70	only 1 count	C	(Below Capacity)
Lexington Ave. (CSAH 51)	County Road B2	County Road C	18,000	0.67	only 1 count	C	(Below Capacity)
Lexington Ave. (CSAH 51)	County Road C	North City Limits	17,000	0.63	only 1 count	C	(Below Capacity)
Larpenteur Ave. (CSAH 30)	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	25,000	0.69	only 1 count	C	(Below Capacity)
Larpenteur Ave. (CSAH 30)	Lexington Ave. (CSAH 51)	Dale St. (CSAH 53)	26,000	0.72	only 1 count	C	(Below Capacity)
Larpenteur Ave. (CSAH 30)	Dale St. (CSAH 53)	Rice St. (CSAH 49)	19,000	0.53	only 1 count	B	(Below Capacity)
County Road D	West City Limits	New Brighton Blvd. (CSAH 88)	18,000	0.50	only 1 count	B	(Below Capacity)
County Road D	New Brighton Blvd. (CSAH 88)	I-35W	28,000	0.78	only 1 count	C	(Below Capacity)

SOURCE: Mn/DOT and WSB & Associates, Inc.

* When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

Projected 2030 LOS - A Minor (Reliever) Arterials Table 5.21

population and employment estimates to the TAZs within Roseville. Table 5.19 lists the year 2000 and projected 2030 population and employment estimates for Roseville. In every TAZ, the population and/or employment are expected to increase. It should be noted that land-use changes proposed in the Twin Lakes redevelopment area are not included in the population or employment estimates.

2030 Conditions and Deficiencies

The analysis of 2030 traffic conditions assumes no new roadways are constructed, and no roadways are expanded to increase capacity. Using the Metropolitan Council Travel Demand Model, forecast 2030 traffic volumes were developed for the future roadway system as depicted in Figure 5.13 (Projected (2030) Daily Traffic Volumes). These forecast volumes were then compared with the roadway capacity to determine the LOS. The roadway segments LOS is presented in Figure 5.14 (Projected (2030) Roadway Level of Service).

Principal Arterials

The analysis of 2030 congestion conditions determined that all of the roadways within Roseville are projected to experience an increase in congestion. All but one of the principal arterial roadway segments are projected to operate either at or above capacity. All of TH 36 is projected to experience over-capacity conditions. The results of the traffic projections are listed in Table 5.20.

A Minor (Reliever) Arterials

The analysis of 2030 congestion conditions determined that Snelling Avenue will experience over-capacity conditions and will operate at LOS F between County

Roadway	From	To	Daily Traffic Volumes 2030	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
				Lower	Upper		
New Brighton Blvd. (CSAH 88)	West City Limits	North City Limits	17,000	0.40	only 1 count	B	(Below Capacity)
County Road B	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	11,800	0.33	only 1 count	A	(Below Capacity)
County Road B	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	26,000	0.72	only 1 count	C	(Below Capacity)
County Road B	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	31,000	0.86	1.15	D to E	(At Capacity)
County Road B	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	16,000	0.62	only 1 count	C	(Below Capacity)
County Road B	Lexington Ave. (CSAH 51)	Victoria Ave. N	11,500	0.44	only 1 count	B	(Below Capacity)
County Road B	Victoria Ave. N	Dale St. (CSAH 53)	16,000	0.62	only 1 count	C	(Below Capacity)
County Road B	Dale St. (CSAH 53)	Rice St. (CSAH 49)	13,000	0.38	0.76	A to C	(Below Capacity)
St. Croix Street	TH 280	Terminal Road	8,000	0.24	only 1 count	A	(Below Capacity)
Terminal Road	St. Croix Street	Long Lake Road	8,000	0.24	only 1 count	A	(Below Capacity)
County Road B2	Long Lake Road	Cleveland Ave. (CSAH 46)	8,000	0.24	only 1 count	A	(Below Capacity)
County Road B2	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	15,000	0.44	only 1 count	B	(Below Capacity)
County Road B2	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	27,500	0.81	only 1 count	D	(Approaching Capacity)
County Road C	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	21,300	0.59	only 1 count	B	(Below Capacity)
County Road C	Fairview Ave. (CSAH 48)	Snelling Ave. (TH 51)	23,000	0.64	only 1 count	C	(Below Capacity)
County Road C	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	17,600	0.52	0.68	B to C	(Below Capacity)
County Road C	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	15,400	0.45	0.91	B to D	(Approaching Capacity)
County Road C	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	14,100	0.41	only 1 count	B	(Below Capacity)
County Road C	Victoria St. (CSAH 52)	Dale St. (CSAH 53)	15,000	0.44	only 1 count	B	(Below Capacity)
County Road C	Dale St. (CSAH 53)	Rice St. (CSAH 49)	15,000	0.44	only 1 count	B	(Below Capacity)
Cleveland Ave. (CSAH 46)	Roselawn Ave.	County Road B	14,000	0.54	only 1 count	B	(Below Capacity)
Cleveland Ave. (CSAH 46)	County Road C	County Road D	16,000	0.47	only 1 count	B	(Below Capacity)
Rice St. (CSAH 49)	Larpenteur Ave. (CSAH 30)	County Road B	21,000	0.81	only 1 count	D	(Approaching Capacity)
Rice St. (CSAH 49)	County Road B	County Road B2	27,000	1.04	only 1 count	E	(At Capacity)
Rice St. (CSAH 49)	County Road B2	County Road C	22,000	0.85	only 1 count	D	(Approaching Capacity)
Rice St. (CSAH 49)	County Road C	North City Limits	20,000	0.77	only 1 count	C	(Below Capacity)

SOURCE: Mn/DOT and WSB & Associates, Inc.

*When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

Projected 2030 LOS - A Minor (Augmentor) Arterials

Table 5.22

Road B and County Road B2. The remainder of Snelling Avenue is projected to experience LOS E. The results of the 2030 projections are listed in Table 5.21.

A Minor (Augmentor) Arterials

The 2030 congestion analysis determined that most A minor (augmentor) arterials will operate under capacity. County Road B between Snelling Avenue and Hamline Avenue is projected to experience LOS E, and several other segments are projected to experience LOS D. The results of the congestion analysis are listed in Table 5.22.

B Minor Arterials

The 2030 congestion analysis determined that all B minor arterials will operate under capacity. The results of the congestion analysis are listed in Table 5.23.

Roadway Network Planning

Roadway Improvements

The City's 2008 10-year Capital Improvement Plan (CIP) includes only roadways associated with the Twin Lakes redevelopment proposal. Because these roads are still in early planning stages, they are not included in

the capacity analysis of this transportation plan. These roadways, which are planned to be functionally classified as collectors, are conceived to be constructed in segments corresponding with adjacent redevelopment. Figure 5.15 (2030 Planned Roadway Improvements – 2008 10-year CIP) displays the planned roadways as designated in the 2008 10-year CIP.

Roadway Jurisdictional Classification

The jurisdictional assignment of a roadway describes the level of government that owns and maintains it. Based on an evaluation of the current transportation system, there does not appear to be a need for jurisdictional transfers within Roseville.

Functional Classification

Determining the appropriate functional class for a roadway involves a wide range of factors. According to MnDOT guidelines, the criteria measures deemed most useful include service to urban activity centers, system continuity, land-use considerations, route spacing, trip length, traffic volume, and control of access. Naturally, none of these can be applied independently, or to the exclusion of all others, in developing functional systems. Considering only one portion of the dynamic interactions between transportation and land use, the projected traffic volumes do not appear to warrant any changes to the current functional classification of roadways at this time. Additional insight regarding the appropriate functional classification for each roadway will be gained by establishing a long-range vision for each roadway corridor regarding the type of adjacent land uses desired and the levels of mobility and accessibility desired.

Roadway	From	To	Daily Traffic Volumes 2030	Volume/Capacity (V/C) Traffic Volume Range*		Existing Range of LOS (2006)	
				Lower	Upper		
Fairview Ave. (CSAH 48)	County Road B	TH 36	18,000	0.50	only 1 count	B	(Below Capacity)
Fairview Ave. (CSAH 48)	TH 36	County Road B2	38,000	1.06	only 1 count	E	(At Capacity)
County Road B	TH 280	Cleveland Ave. (CSAH 46)	6,000	0.35	only 1 count	A	(Below Capacity)
County Road B2	Snelling Ave. (TH 51)	Hamline Ave. (CSAH 50)	16,000	0.47	only 1 count	B	(Below Capacity)
County Road B2	Hamline Ave. (CSAH 50)	Lexington Ave. (CSAH 51)	12,200	0.72	only 1 count	C	(Below Capacity)
County Road B2	Lexington Ave. (CSAH 51)	Victoria St. (CSAH 52)	11,300	0.66	only 1 count	C	(Below Capacity)
County Road B2	Victoria St. (CSAH 52)	Dale St. (CSAH 53)	8,000	0.47	only 1 count	B	(Below Capacity)
County Road B2	Dale St. (CSAH 53)	Western Ave.	6,400	0.38	only 1 count	A	(Below Capacity)
County Road B2	Western Ave.	Rice St. (CSAH 49)	6,000	0.35	only 1 count	A	(Below Capacity)
County Road C	West City Limits	Cleveland Ave. (CSAH 46)	16,700	0.49	only 1 count	B	(Below Capacity)
County Road D	Cleveland Ave. (CSAH 46)	Fairview Ave. (CSAH 48)	11,000	0.65	only 1 count	C	(Below Capacity)
Cleveland Ave. (CSAH 46)	County Road B2	County Road C	12,000	0.35	0.46	A to B	(Below Capacity)
Fairview Ave. (CSAH 48)	Roselawn Ave.	County Road B	13,000	0.76	only 1 count	C	(Below Capacity)
Fairview Ave. (CSAH 48)	County Road B2	County Road C	20,900	0.49	0.61	B to C	(Below Capacity)
Fairview Ave. (CSAH 48)	County Road C	County Road D	16,000	0.47	0.94	B to D	(Approaching Capacity)
Hamline Ave. (CSAH 50)	Larpenteur Ave. (CSAH 30)	County Road B	14,000	0.54	only 1 count	B	(Below Capacity)
Hamline Ave. (CSAH 50)	County Road B	County Road C	24,000	0.92	only 1 count	D	(Approaching Capacity)
Hamline Ave. (CSAH 50)	County Road C	North City Limits	15,000	0.58	only 1 count	B	(Below Capacity)
Victoria St. (CSAH 52)	County Road B	County Road B2	10,000	0.29	0.59	A to B	(Below Capacity)
Victoria St. (CSAH 52)	County Road B2	County Road C	11,000	0.32	0.65	A to C	(Below Capacity)
Victoria St. (CSAH 52)	County Road C	North City Limits	12,000	0.71	only 1 count	C	(Below Capacity)
Dale St. (CSAH 53)	Larpenteur Ave. (CSAH 30)	County Road B	16,000	0.47	only 1 count	B	(Below Capacity)
Dale St. (CSAH 53)	County Road B	County Road B2	18,000	0.53	only 1 count	B	(Below Capacity)
Dale St. (CSAH 53)	County Road B2	County Road C	10,000	0.59	only 1 count	B	(Below Capacity)

SOURCE: Mn/DOT and WSB & Associates, Inc. *When the roadway segment has more than one count location, the V/C is provided for both volumes (low and high).

Projected 2030 LOS - B Minor Arterials
Table 5.23

Access Management

Proper access management is a key component of providing a roadway system that effectively balances mobility and access needs. Access management is based on the proper spacing of roadways and/or driveways that are allowed to access a given roadway. According to the Metropolitan Council guidelines, arterial roadways should primarily serve a mobility function and should have only limited access so as not to disrupt the flow of traffic and not create safety concerns for drivers. At the other end of the spectrum, the primary function of local streets is to provide access to local land uses, so there are fewer restrictions on these roadways. However, there are

important considerations regarding access control and design on local streets as well.

Numerous studies have demonstrated the safety and operational benefits of managing access in an appropriate manner. The government agency having jurisdiction over a given roadway has the applicable access management guidelines for that facility. MnDOT has access management guidelines that apply to Trunk Highways such as TH 36, TH 51, and TH 280. A substantial portion of the roads in Roseville are county roadways, and Ramsey County does not publish access management standards. Recommended City access

management guidelines are summarized in Table 5.24.

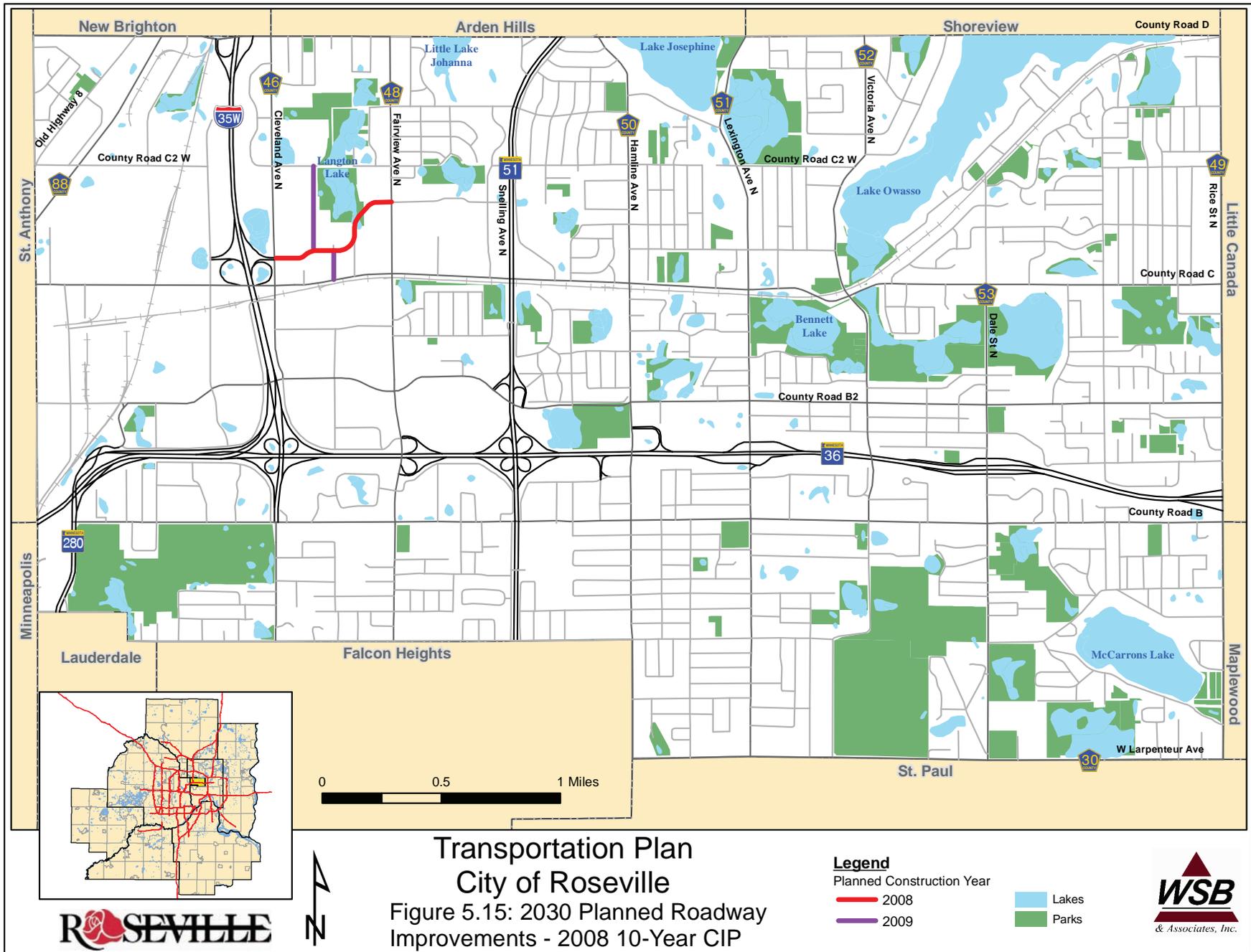
In addition, whenever feasible, the following policy guidelines should apply for access design:

- In general, access to a specific parcel should be limited to a single driveway unless the front footage is 200 feet or greater.
- In residential areas, no residential driveway should be placed closer than 40 feet to an intersection.
- The location of any driveway or access should be consistent with sight distance along the roadway. Where sight distance is not adequate, an alternate access location should be evaluated.
- Explore the development of common driveways in commercial areas when feasible.
- The use of medians should be considered to control multiple access locations and provide appropriate geometry for higher volume turning movements.

2030 Transit Plan

Service and Facilities

As identified in Section 4.5 (Existing Transit Service), Metro Transit is responsible for the provision of transit service in Roseville, under the broader transit policies identified by the Metropolitan Council. In addition, Ramsey County has played an increased role in planning and facilitating enhanced transit facilities and services. In general, transit and transit planning are subject to the constraints of existing funding levels and the uncertainties associated with future funding. Funding levels are determined to a large extent on decisions made at the State legislature.



The Metropolitan Council has established a series of Transit Market Areas throughout the metropolitan area as a guide for the provision of appropriate transit service. There are four market areas, I through IV, based on the propensity to use transit, or the likelihood of high transit ridership. The ranking is based primarily on four factors: population density, employment concentration and job density, trip volumes and patterns, and transit-dependent segments of the population.

With higher population and job density, high trip volumes, and relatively high percentages of transit-dependent individuals, more ridership is anticipated and higher levels of transit service are thus justified. Market Area I has the highest transit potential for transit ridership and associated justification for extensive service, and Market Area IV has the lowest potential for transit ridership.

Roseville is split between Market Areas II and III. Roughly, the area between Cleveland Avenue N and Hamline Avenue N has been designated Transit Market Area II, while the rest of Roseville is Transit Market Area III. As identified by the Metropolitan Council, appropriate service options for Market Area II include regular-route local (suburb to suburb) service, all-day express (via freeways to employment centers such as downtown Minneapolis or St. Paul), small vehicle circulators, special needs paratransit, and ridesharing. Service options for Market Area III include peak-only express, small vehicle circulators, midday circulators, special needs paratransit, and ridesharing.

As was shown on Figure 5.10 (Existing 2008 Transit Facilities and Service), the provision of transit service in Roseville is generally consistent with the Market Area designations identified above. Local and express

Type of Access	Minor Arterial	Collector	Local
Single Family Residential Driveways	No Direct Access	No Direct Access	As Required
Commercial/ Multi-Family Residential/ Mixed Use Driveways	Based on: Speed, Traffic Volume, Sight Distances, etc. (1/8 to 1/4 mile)	Based on: Speed, Traffic Volume, Sight Distances, etc. (min 330 ft.)	Based on: Speed, Traffic Volume, Sight Distances, etc. (min. 100 ft.)
Low Volume Streets	Full Access - 1/8 mile	Full Access - 1/8 mile	Full Access - 330 ft.
	Partial Access - 330 ft.	Partial Access - 330 ft.	Partial Access - 330 ft.
High Volume Streets < 10,000 ADT	Full Access 1/4 mile	Full Access - 1/8 mile	Full Access - 330 ft.
	Full Access - 1/8 mile	Partial Access - 330 ft.	Partial Access - 330 ft.
Collector Streets	Full Access - 1/2 mile	Full Access - 1/4 mile	Full Access 1/8 mile
	Partial Access 1/4 mile	Partial Access 1/8 mile	Partial Access - 330 ft.

SOURCE: WSB & Associates, Inc.

Proposed City of Roseville Access Management Guidelines

Table 5.24

service is more concentrated on the center portion of the city, converging on the Rosedale Transit Hub. The positioning of the Rosedale Transit Hub near the intersections of TH 36 and Snelling Avenue N allows express bus services to easily access the highway system. The park-and-ride element of the Rosedale Transit Hub is currently heavily utilized and is likely to continue to be the most successful element of transit services in Roseville.

Roseville will work with Metro Transit, Ramsey County, and the Metropolitan Council to support transit initiatives that will increase the transit mode share within Roseville. Because of the low-density housing and land-use pattern throughout most of the city, increasing park-and-ride capacity and express bus service to regional employment centers is likely to be

the most effective strategy. Initiatives towards this goal include the following:

- Local promotion of the benefits of transit use
- Working with Metro Transit and Ramsey County to increase parking capacity at the Rosedale Transit Hub as demand dictates
- Support and facilitate I-35W, TH 51, and TH 36 transit improvements where possible
- Support and promote transit initiatives such as the Northeast Diagonal Busway and the Snelling Avenue Busway proposals
- Support and promote increased frequency of express service, including mid-day service
- Support and promote increased park-and-ride lot capacity within the city as well as across the metropolitan area

- ◆ Promote redevelopment projects to assume a transit-supportive form
- ◆ Promote reverse commute and suburb to suburb bus service

Transit-Oriented Development

A transit-oriented development (TOD) is a mixed-use residential and/or commercial area designed to promote, support, and facilitate access to mass transit. In addition, TOD patterns typically incorporate design principles that encourage walking and bicycling. Common elements of TOD neighborhoods often include a mix of land uses that encourages street activity at all times of the day, increased residential densities, and more compact development. TOD design elements are becoming increasingly popular in the Twin Cities area. Some of the core principles of TOD neighborhoods are summarized below.

Compact Development: Medium-to high-density development in proximity to a transit station allows more people and activities to be within a walkable distance from the transit service. The Metropolitan Council considers approximately one-quarter mile to be a comfortable walking distance for most transit riders.

Mix of Land Uses: Mixing residential, retail, and office land uses within walking distance of the transit stop allows the neighborhood to become an origin and a destination for trips at the station. From a broader perspective, mixed land use should have the effect of reducing the need for vehicular trips by those who live, work, or pass through the neighborhood by allowing more opportunities to be accessed while covering less distance.

Pedestrian Orientation: A central component of TOD neighborhoods is walkability – the attractiveness of an area for those who choose to walk. A TOD neighborhood allows safe, efficient, and attractive pedestrian passage to and from the transit stop as well as between all buildings within the neighborhood. TOD design features intended to increase the walkability of a neighborhood include street-facing buildings on a network of pedestrian-scaled streets, attractive streetscaping, and appropriate motorized traffic control at pedestrian crossing points.

Transportation Interfaces: Different travel modes need to be effectively linked for TOD neighborhoods to be successful. The efficient integration of transit, motorized vehicle, bicycle and pedestrian networks is critical to the success of TOD neighborhoods. While the purpose of TOD neighborhoods is to reduce the use of private automobiles, those who choose to drive must still be safely and appropriately accommodated. Some TOD neighborhoods incorporate park-and-ride facilities.

TOD Opportunities in Roseville: As parcels become available for redevelopment, serious consideration should be given to whether TOD design characteristics would be appropriate for the specific location. In general, Roseville will have more success encouraging transit ridership if TOD design characteristics are implemented in areas adjacent to existing bus lines. Currently, Route 84, which travels on Snelling Avenue N between the south city limits and the Rosedale Transit Hub, features 15 minute headways and provides the most frequent transit service within Roseville.

Currently, the commercial areas surrounding the intersection of Snelling Avenue N and County Road B are configured in an automobile oriented configuration.

From the standpoint of increasing transit ridership, redevelopment in a more transit-supportive fashion could increase the walkability of the neighborhood and increase transit ridership. However, there are also major obstacles to overcome in this area before it can become a transit-oriented neighborhood. In 2006, this portion of Snelling Avenue N, part of the state trunk highway network, was estimated to carry approximately 38,000 vehicles per day. The current configuration, with Snelling Avenue situated within a wide right-of-way and frequent use of frontage/service roads to provide access to adjacent land, would require significant modifications before it would maximize its transit supportive potential.

Roseville should also encourage transit supportive development in other areas, even if the area currently is not served by transit. Metro Transit regularly reviews the routes and timetables of each route and expands service to areas where it will be most successful. By creating walkable neighborhoods with transit-supportive development, Roseville will be well prepared for future transit service. In addition, dedicated right-of-way transit lines provide opportunities for creating transit-supportive development. In particular, Roseville should proactively plan station areas where appropriate in anticipation of transit additions in the Northeast Diagonal Corridor.

To increase transit ridership, Roseville will need to retrofit its suburban pattern for urban level densities and traffic. To a limited extent, the City can develop and implement TOD guidelines and design criteria for local projects. However, because so many of the transportation corridors are under the control of

other agencies and jurisdictions, Roseville will need to advocate for improvements by other agencies as well.

2030 Non-Motorized Transportation Plan

The development of a pathway network in Roseville is essential in moving people to and from various destinations as well as providing additional recreational opportunities. Roseville utilizes an ad-hoc Citizen Pathway Advisory Committee to update the Pathway Master Plan approximately every five years. The most recent update was completed in 2008. The intent of the plan is to provide guidance for the future development of pathways throughout Roseville.

To increase the number of trips completed by walking or cycling, Roseville should provide safe, efficient, and attractive routes between destinations. Potential improvements to the non-motorized network include additional off-road pathways and on-road bicycle accommodations. The development of a master plan helped in identifying how the City can implement a complete pathway network. After studying the existing conditions of Roseville and outlining goals for a pathway network the City's Pathway Master Plan defined these issues as most relevant to Roseville.

1. Safety

- ◆ Improve transportation facilities for children, senior citizens, people with disabilities, pedestrians, bicyclists, students within school walking areas, all light traffic
- ◆ Design pathway facilities that can provide a safe alternative to the school busing program

- ◆ Encourage the use of traffic management techniques at intersections and along boulevards especially on the arterial roadways

2. Connectivity

- ◆ Improve the ability to safely travel from one location to the next
- ◆ Provide linkages between major destinations
- ◆ Extend system to connect to all dead-end pathways
- ◆ Develop pathway networks that relate to our neighboring communities' pathways
- ◆ Overcome barriers that deter pathway use:
 - TH 36, Snelling Avenue, Interstate 35W, arterials
 - Narrow bridge decks and underpasses
 - Poorly defined crosswalks at intersections
 - Intersections designed and engineered for vehicles, not young children or senior citizens
 - Traffic lights timed for vehicles, not children and senior citizens

3. Regional Links

- ◆ Expand pathway opportunities to the larger metropolitan area
- ◆ Create linkages to state trail facilities
- ◆ Utilize existing vehicular corridors to regional parks and pathways
- ◆ Redesign regional corridors to provide for pathway facilities

4. Maintenance

- ◆ Increase funding equipment and personnel to maintain a growing pathway network
- ◆ Meet the needs of a demanding public
- ◆ Reconstruct existing facilities that do not meet the current standards (primarily in parks)
- ◆ Redefine the pathway management program for maintenance and operations

5. Aesthetics

- ◆ Unify public design elements (i.e. signs, gateways, landscaping, lighting, and parking)
- ◆ Establish design criteria for private development (i.e. parking, lockers, and access)

6. Regulation and Enforcement

- ◆ Develop a consistent and appropriate signage program
- ◆ Expand signage program to include pathways beyond the parks
- ◆ Educate users about pathway etiquette and regulations
- ◆ Inform users through signage of destinations outside of the parks
- ◆ Increase policing of pathway system
- ◆ No consequences for violators

7. Education and Promotion

- ◆ Provide programs that are directed at teens and adults, as well as those for children
- ◆ Provide more programs that teach about safety and etiquette

- ◆ Continue to update the Pathway Map to make it user-friendly
- ◆ Make the Pathway Map readily available
- ◆ Create more pathway events like Tour de Roses
- ◆ Inform the local business community about our pathway goals
- ◆ Dispel common public myths about pathways
- ◆ Develop ways to count pathway users

Transportation Demand Management

Transportation Demand Management (TDM) is the application of strategies and policies to increase the efficiency of transportation systems by influencing traveler behavior. TDM strategies increase the efficiency of the transportation network through the redistribution of travel demand (both realized and latent) from congested modes and times to uncongested modes and times. At its most basic level, TDM strategies discourage the use of private-occupant vehicles during peak hours. Since many of these trips are commuter (work) trips, many TDM strategies involve workplace strategies and address travel associated with travel to and from employment centers. The primary methods or strategies typically employed are as follows:

- ◆ Transit
- ◆ Car/van-pooling
- ◆ Telecommuting
- ◆ Flex-time
- ◆ Non-motorized commuting (i.e. biking/walking)

TDM strategies must be implemented through a partnership of the City, State, region, and employers to encourage travelers change their behavior through

incentives and enhanced services. The greatest motivations for behavior change are the opportunities for individual travelers to save time or money. For example, employers can provide monthly discounts or passes to employees to use transit or provide coordination services to match up individuals for car/van pooling activities. Employers can also allow or promote telecommuting, particularly in various industries for which face-to-face contact is not important for task performance. Similarly, employers can allow or promote flex-time, which enables employees to travel to/from work at non-peak travel times. Employers can also facilitate bicycle commuting by providing shower and changing facilities. The State and regional government entities can provide increased or specialized transit options or High-Occupancy Vehicle (HOV) lanes on principal arterials, metered freeway entrances, and meter bypass lanes for those who choose not to travel alone.

There are a number of reasons why employers may wish to promote TDM strategies. In areas where parking is expensive or scarce, employers may save money by reducing the demand for parking. Retail businesses may desire to preserve parking spaces for customers rather than employees. Probably the most significant reason why employees may implement any number of TDM strategies is simply to make their businesses a more attractive place to work by allowing employees greater freedom in choosing when and where they work.

Roseville can actively promote TDM strategies by encouraging major employers to implement TDM strategies. Roseville may require TDM plans for new developments if they are large enough to have significant traffic impacts. Roseville may also facilitate the formation of transportation management organizations (TMOs), groups of employers and organizations that

may combine resources to have a larger influence in travel behavior. Roseville may wish to provide financial incentives to employers who actively promote TDM strategies. For example, new developments may be allowed to provide fewer parking spaces (thus lowering the cost of construction) if they are willing to actively promote TDM strategies.

The City can provide improved bicycle and pedestrian facilities between residential areas, work sites and transit facilities, and can put in place land-use controls that encourage development that encourages non-motorized transportation.

Implementation Plans and Recommendations

The previous section evaluated existing and future needs for transportation improvements in Roseville. The plan described below is recommended to address those needs using a wide range of innovative strategies and methods across all transportation modes.

Roadway Function and Jurisdiction

Roseville should continue to work with community residents, Ramsey County and the State of Minnesota to determine the most appropriate functional and jurisdictional classification for each roadway within Roseville. In making these decisions, a long-range plan should be developed for each corridor to simultaneously establish a vision incorporating goals for future land use, motorized and non-motorized transportation, transit, and urban design. Only after the community has established a comprehensive vision for the corridor should the appropriate functional and jurisdictional classification be determined.

Roadway Improvements

Expanding existing roadways within Roseville will be difficult or undesirable, and there are relatively few opportunities to construct new roadways. Thus, the City has established policies and objectives aimed at achieving maximum utilization of the existing infrastructure. Recommended roadway improvements can be divided into three overall categories: safety, preservation, and capacity.

Safety

The transportation network should be safe for all users of the roadway. The analysis of crash frequencies identified the intersections and roadway segments with the highest crash rates. While Snelling Avenue and County Road B was identified in this analysis as having a high crash frequency, it should be noted that this intersection was reconstructed in 2008. It is anticipated that the reconstruction will result in a reduced crash frequency because of improved roadway and intersection geometry. The following two intersections have high crash rates, with no programmed improvements:

- ♦ Larpenteur Avenue and Rice Street
- ♦ County Road B and Rice Street

These intersections should be evaluated to determine the cause of the crashes and identify appropriate measures to improve safety.

In addition, the analysis of segment crash rates indicated that there are two roadway segments on County Road B with high crash rates. Not surprisingly, the first segment, County Road B between Fairview Avenue and Hamline Avenue, corresponds with the high crash rate at the intersection of Snelling Avenue and County

Road B. Because of the 2008 geometric improvements at the Snelling and County Road B intersection, it is anticipated that the safety of this segment will improve. The second segment is County Road B between TH 280 and Cleveland Avenue. However, as a part of the conversion of TH 280 to freeway operation, access to County Road B has been disconnected. With a reduction in traffic on this segment, it is likely that the number of crashes will be greatly reduced.

Preservation

Roseville should continue to implement its Pavement Management Program to ensure that residential streets remain in good repair. In addition, the City should work with Ramsey County to monitor the need for pavement renovation or replacement on the roads under County jurisdiction. Although expansion of the system is not always feasible or desirable, roadway reconstruction and maintenance will allow the fullest and most efficient use of roadways.

Capacity

The City should work with Ramsey County to accommodate non-motorized transportation users on county roads at the time the road is reconstructed.

The City should work with MnDOT and other agencies to implement a staged reconstruction program to replace the bridges at Rice and Lexington to allow implementation of a high-occupancy vehicle (HOV) lane on TH 36. Increasing the capacity of TH 36 with the replacement of these bridges would also allow improvements to be made to the intersecting arterials at TH 36 to allow adequate turn lanes and queuing areas for vehicles waiting at ramp meters. Most stretches of

TH 36 also have sufficient right-of-way to incorporate a landscaping program to enhance the roadway.

The City should continue to work with Rosedale and the surrounding shopping centers to monitor traffic and potential improvements such as increased transit, IVHS, as well as additional roadway capacity.

The 2030 traffic forecast suggests that only County Road B from Snelling Avenue to Hamline Avenue will experience at-capacity conditions (other than roadways under State jurisdiction). Roseville should continue to monitor this roadway segment, carefully considering expansion while also considering the potential impacts the expansion would have on adjacent land uses, non-motorized transportation, and urban design.

As redevelopment occurs in the western part of the city, the need for new or improved roadways should be monitored.

Transit and Travel Demand Management

The Metropolitan Council should be encouraged to maintain the existing level of transit service in Roseville. Potential improvements include the addition of a new circulator route in the Twin Lakes/Centre Pointe area, mid-day service to the two downtowns and service connecting Rosedale to other suburban hubs. Additional park-and-ride lots are needed.

The City should work with the Metropolitan Council, the Ramsay County Rail Authority, and adjacent units of government to advance the Northeast Diagonal and Snelling Corridor.

The City should also work to ensure good pedestrian access to bus stops and shelters where necessary. In

addition, the City should provide improved bicycle and pedestrian facilities between residential areas, work sites, and transit facilities, and should put in place land-use controls that encourage development that is transit- and pedestrian-friendly.

In Roseville, the local sensitivities to expanding roads are reflected in the goals expressed in the Imagine Roseville 2025 report as well as this plan. Therefore the City should support travel demand management such as the HOV lane on TH 36.

Non-Motorized Transportation

Roseville updates the pathway master plan on a regular basis. The plan recognizes the following principles:

- ◆ Different types of facilities are appealing to different users, particularly when considering the individual experience levels. The Roseville pathway plan should address the needs of all users.
- ◆ Pathways are needed along all minor arterials and collectors, since they usually provide the most direct route for travelers.
- ◆ All development and redevelopment proposals should be reviewed for pathway connections or reservation of future pathway links.
- ◆ To provide the greatest benefit, Roseville's pathways should connect with neighboring communities and the regional system.
- ◆ Regular maintenance to non-motorized pathways is critical to ensuring their usefulness and attractiveness. Roseville should continue to support the pathway-management program that programs pathway rehabilitation and reconstruction.