Section 4

Transportation Element

4.1 Introduction

Mission Statement

Bloomington's transportation mission is to facilitate movement of people and goods efficiently, safely, cost effectively, and comfortably to any desired destination while, at the same time, seeking to minimize associated impacts on community livability and the environment. Transportation is not an end in and of itself, but rather one of many means to achieve a desirable and livable community. Toward this end, the City advocates a range of transportation infrastructure (roadways, transitways, walkways, bikeways, railways and flyways), to support a variety of vehicles, each operating successfully side by side and in a manner that minimizes conflicts with surrounding land uses.

Bloomington is near fully developed and the existing roadway network is essentially complete. Today's primary transportation planning focus is not on building new roads on new alignments but on renewing, managing, and improving the existing transportation system and coordinating with development to appropriately size roadway capacities, improve the pedestrian/cyclist system, create transit supportive developments, increase safety, advocate for transit improvements and cost effectively maintain transportation assets. Bloomington endorses and will pursue a "Complete Streets" transportation system. "Complete Streets" consider the needs of all users and modes, including pedestrians, cyclists, motorists and transit users.

Transportation History

Until the mid-1800s, Minnesota's primary transportation corridors were not roads, but rivers. Native Americans traveled, settled, and traded along the Minnesota, Mississippi, and other area rivers for centuries. The first European explorers and settlers also relied primarily on the rivers. Early activity centers such as Fort Snelling, St. Paul, and Shakopee were sited based on their river accessibility. To augment river transportation between these early activity centers, overland trails were laid out. One of Bloomington's first roads originated as the trail connecting Fort Snelling with Shakopee, commonly referred to as the Shakopee Road. Today's Old Shakopee Road generally follows the alignment of this original trail.

The corner of 34th Avenue and American Boulevard, circa 2008.

Transportation Projects

The last decade has seen several significant transportation projects completed. In addition to numerous safety and capacity improvements throughout the City, the following projects were completed:

- Conversion of the at-grade intersections on U.S. 169 at Bloomington Ferry Road and Pioneer Trail to interchanges.
- Completion of the final link of the American Boulevard corridor with opening of the Lyle Berg Bridge over I-35W.
- Opening of Minnesota's first light rail transit (LRT) transitway connecting the Mall of America and Airport South with the airport and Minneapolis.
- Completion of the East Bush Lake Road Bikeway connecting Normandale Lake Park (at Chalet Road) with Bush Lake Beach, Hyland Park, the Forest Glen Road path and the 86th Street trails.
- Upgrading I-494 between U.S. 169 and MN 100.

In the 1850s the government sold most of the land that currently comprises Bloomington to settlers who started farms. It then became necessary to have a roadway system to support the movement of goods and people between farm and market. Dirt roads for horses and wagons were established primarily along the section lines.

Today, the original section roads, such as Portland, Lyndale, Penn, France, and Normandale, each spaced one mile from the previous, have become primary north-south streets in Bloomington. Primary east-west streets, such as 86th St. and 102nd St., were first constructed as section roads.

Without bridges over major rivers, travelers relied on ferries. The "Bloomington Ferry" was a major Minnesota River crossing for those traveling the Shakopee Road. As discussed in *Bloomington on the Minnesota* (1976, Judith A. Hendricks, Editor), the Bloomington Ferry was established in 1852 at a spot long used by Native Americans for fording horses. When Bloomington's first Minnesota River bridge, the "Bloomington Ferry Bridge," was completed at the same spot in 1890, the ferry went out of business and the ferryman became the bridge watchman. A second Minnesota River bridge was completed at Cedar Avenue in 1892.

Over the years, Bloomington's original roads were upgraded from trails to dirt and gravel roads to paved roads. As farms were converted to development, especially in the 1950s and 60s, local streets were added and the section roads were expanded. In later decades, facilities for additional modes of travel were added.

4.2 Cyclists and Pedestrians

Bloomington adopted an Alternative Transportation Plan in 2008 to increase emphasis on travel by foot or cycle, to promote active lifestyles, to improve safety, to support sustainability, to promote "Complete Streets", and to improve connections between neighborhoods, transit, and recreational amenities. The plan emphasizes that the alternative transportation system must be balanced, diverse, and flexible enough to adjust to ever-changing needs of the community and that quality is as, or more, important than quantity for encouraging use.

Bloomington supports the provision of a high quality, transportation system for cyclists and pedestrians through its *Alternative Transportation Plan* as a way to:

- Provide a viable transportation alternative to residents who may not have access to an automobile, such as the young, the elderly, the poor, and the disabled;
- Provide an attractive alternative to the automobile, thereby reducing auto trips, air and noise pollution, resource consumption, wear and tear on roadways, and the need for roadway expansions and automobile parking;
- Provide recreational opportunities, thereby improving residents' health and well being;
- Support establishing school route plans;
- Provide more convenient access to transit;
- Interconnect properties, thereby allowing access to several destinations from one parking spot; and
- Enhance the quality of life in the city and meet the needs of individuals and families living, working, and recreating in Bloomington.

The *Alternative Transportation Plan* discusses existing and proposed trails, pedestrian-ways (sidewalks) and bikeways under various classifications that collectively form the backbone of the larger system. The plan is based on four key principles:

- Using destination trails to form a core system of high value recreation, fitness, and transportation trails across the city.
- Using linking trails and pedestrian-ways ("enhanced" sidewalks) as a means to connect the destination trails together, along with providing pedestrian-level transportation routes to principal destinations that cannot otherwise be reached by destination trails.
- Using bikeways to serve recreational, fitness, and commuting cyclists comfortable with riding on the road.
- Developing a system plan that is ambitious in its vision, yet realistic and achievable in the context of resources available to the City.

Existing System

The existing pedestrian/bicycle system consists of a variety of trails, bikeways, and sidewalks defined under various classifications. Each classification serves a particular purpose in meeting local needs.

- Destination trails will form the backbone of the trail system that loops the city and connects to adjoining communities and the Minnesota River.
- Linking trails will be primarily used as a means to connect neighborhoods and developed areas to the destination trail system.
- Pedestrian-ways and sidewalks work in concert with linking trails and are primarily used as a means to connect neighborhoods and developed areas to the system, and provide routes to and between various destinations within neighborhoods, including residences and schools.
- Bikeways augment, but do not take the place of, the trail and sidewalk system.
- Natural surfaced trails will be primarily used as specialty recreation features in natural areas.

System Comparison Guide (Typical Features)

Destination Trail

- 10 to 12 feet wide.
- Asphalt surfaced, located in greenway-type setting.
- Serves pedestrians and cyclists equally well.

Linking Trail

- 10 feet wide (8-foot minimum).
- Asphalt surfaced, located in street right-of-way setting.
- Serves pedestrians and cyclists equally well.

Pedestrian-way

- 6 to 8 feet wide.
- Concrete surfaced, located in road right-of-way setting.
- Serves pedestrians more than cyclists.

Bikeways

- 6-foot minimum width.
- Located on the road.
- Serve cyclists, but not pedestrians.

Existing Alternative Transportation System

Bloomington's existing and future bikeways are depicted in ***Figure 4.1***, *page 4.5*, while existing and future walkways are depicted in ***Figure 4.2***, *page 4.7*. The *Alternative Transportation Plan* contains additional information on existing and proposed cyclist/pedestrian facilities, policies and practices. Except in parks, facilities generally run parallel to the street system. While the majority of the City's minor arterial and collector streets (depicted in ***Figure 4.8***, *page 4.23*) are accompanied by sidewalks and/or trails, most of the City's local streets are not.

Assessment of Existing Sidewalk and Trail System

There are excellent sidewalk and trail resources within the city. Prime examples include the destination trails within Hyland Lake Park Reserve and around Normandale Lake, pedestrian-ways along American Boulevard, and natural surface trails along the Minnesota River. The primary sidewalk and trail weaknesses in need of improvement from the City's perspective are:

- **Sidewalks Directly Adjacent to the Streets**

  In some areas, sidewalks are constructed directly adjacent to collector and minor arterial streets, such as 82nd and 86th Streets. Such situations are highly undesirable for maintenance and roadway snow storage and water/salt spray makes the sidewalk inhospitable and difficult to use. In addition, proximity to higher volume traffic can discourage use of the sidewalk.

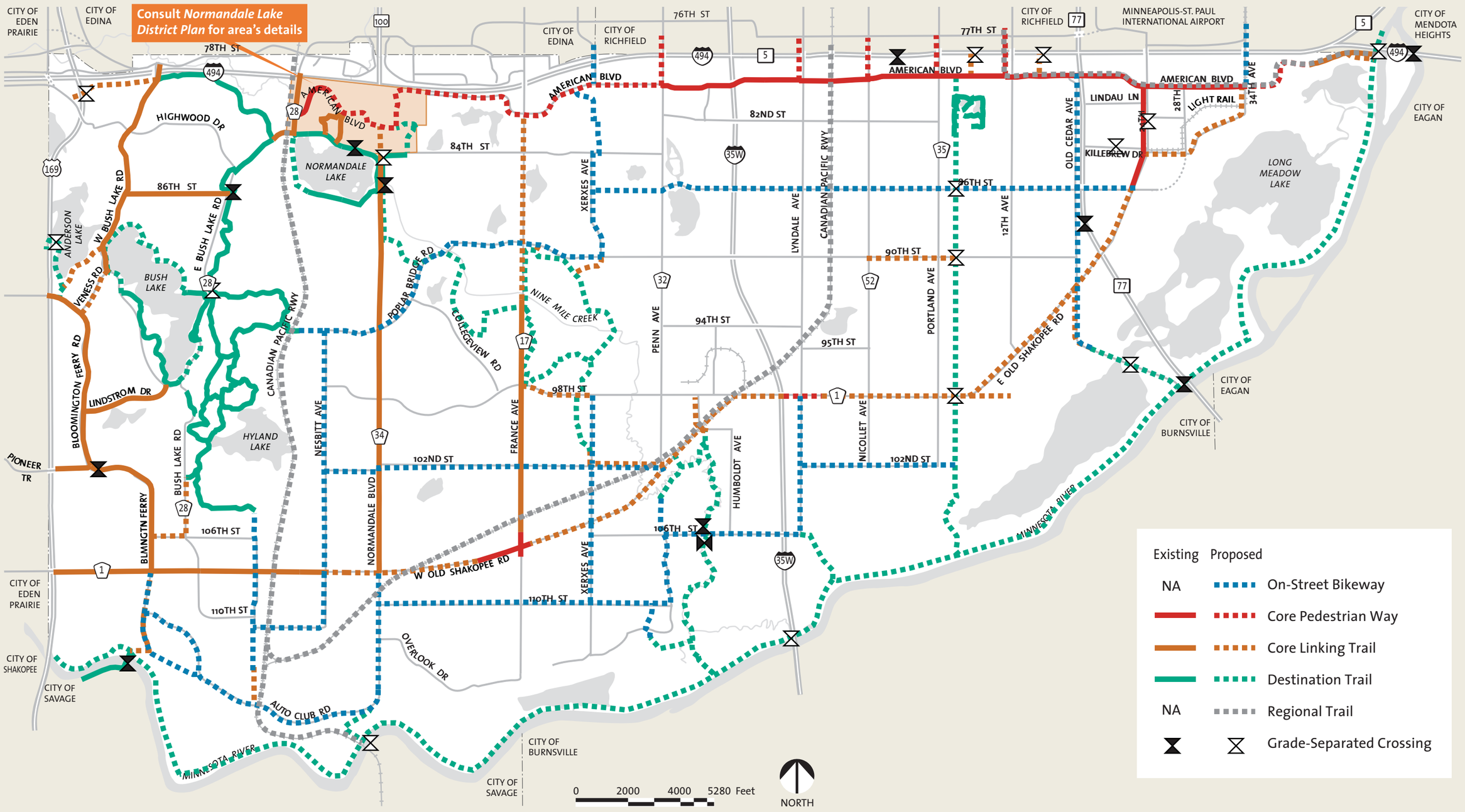
- **Freeways, Rivers and Other Natural Barriers Reduce Connectivity for Pedestrians and Cyclists**

  Freeways, rivers and streams that bisect and border Bloomington sometimes reduce connectivity to what would otherwise be easily accessible amenities and facilities. This situation can be improved through providing better pedestrian and cycle infrastructure at the time of freeway and bridge construction or reconstruction.

- **Pedestrian/Cyclist Environment**

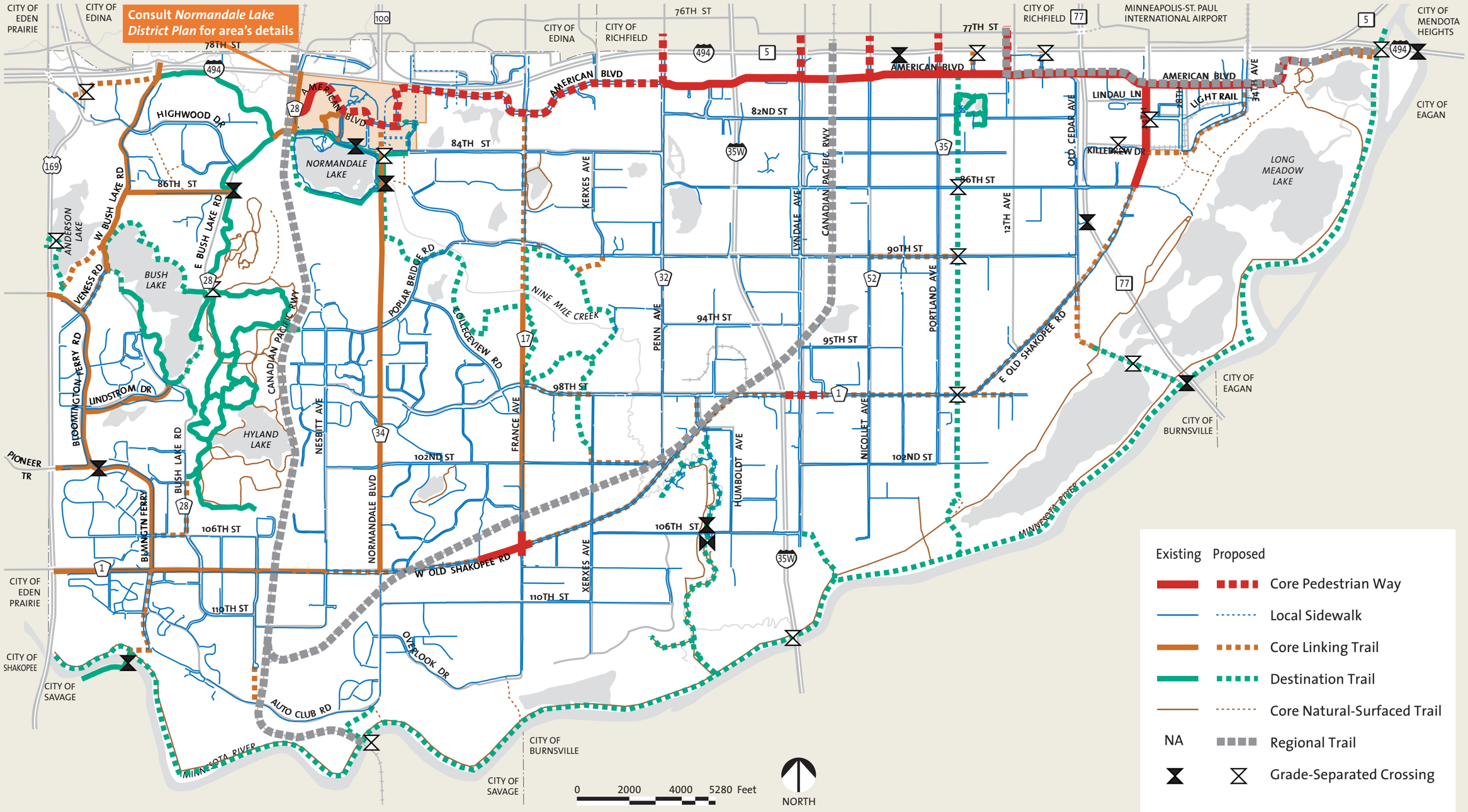
  Pedestrian connections between adjacent businesses are sometimes lacking, forcing customers to use roadways for very short trips. A lack of parking for cyclists at many businesses makes them less desirable to visit by this mode.

Figure 4.1 Bikeways



Source: Bloomington Engineering and Planning Divisions, 2008.

Figure 4.2 Walkways



Source: Bloomington Engineering and Planning Divisions, 2008.

Safety

As part of its focus on Complete Streets, Bloomington evaluates pedestrian and cyclist crash data. ***Figure 4.3**, below*, depicts the location of reported cyclist and pedestrian crashes in the three years from 2004 to 2006.

Within this period, there were 31 reported crashes or an average of 10 reported cyclist crashes per year. The frequency of reported cycle crashes has dropped in number since the City's *Bikeway Plan* was prepared. Between 1971 and 1974 there was an average of 34 reported cyclist crashes per year. It is difficult to analyze the drop in reported cyclist crashes because there is no comparative data on the relative number of cyclist trips for the two time periods.

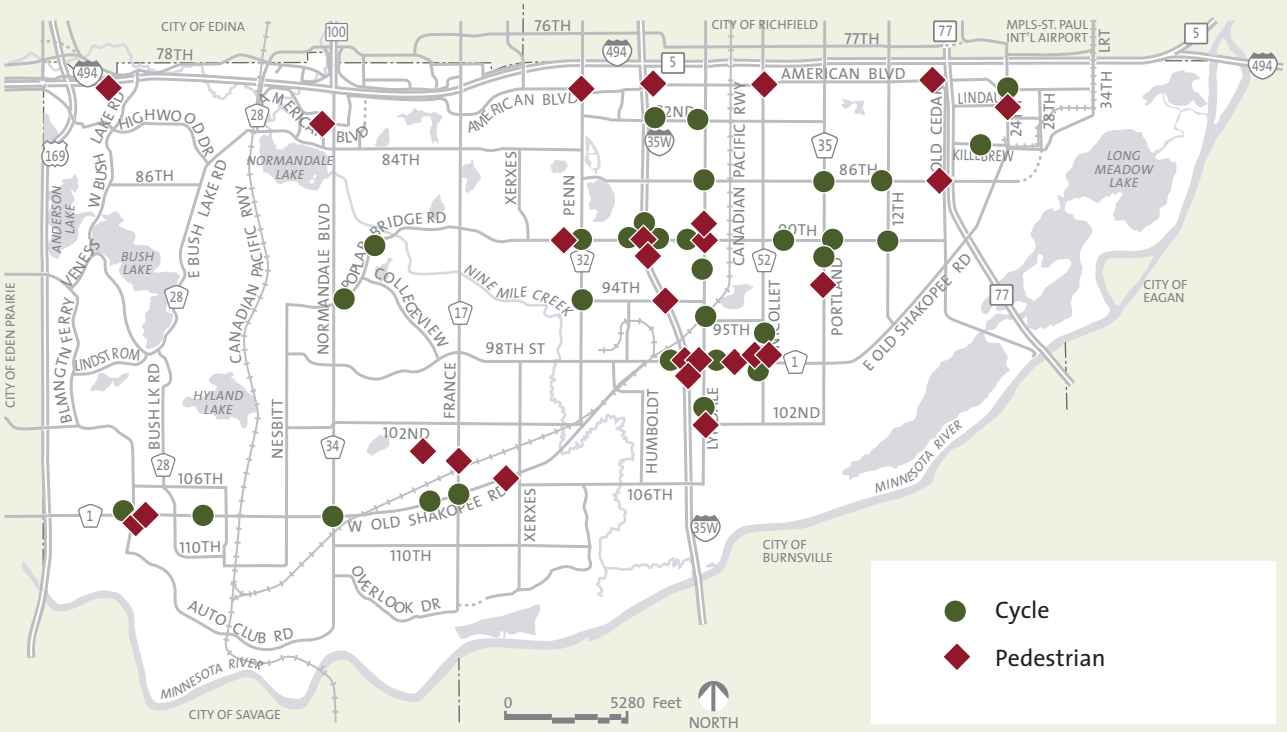
In the three years between 2004 and 2006 there were a total of 27 reported pedestrian crashes, or an average of nine per year. Pedestrian crash data has not been discussed prior to the 2000 Comprehensive Plan which makes it difficult to know if long-term trends are rising or falling.

Drawing conclusions from the location of cyclist and pedestrian crashes is difficult because of the lack of data on cyclist and pedestrian traffic levels. One could reasonably assume that an area with significantly more cyclist/pedestrian traffic would correspondingly have higher numbers of cyclist/pedestrian crashes. Still, analysis of cyclists/pedestrian crash locations can assist in identifying areas of highest priority for cyclists/pedestrian infrastructure improvements.

Factors that may account for the decrease in pedestrian and cyclist crashes include:

- A significant reduction in the number of school aged residents (from 22,000 in 1972 to approx. 13,000 in 2000);
- Improved cycle/rider safety features;
- Improvements to the infrastructure;
- Changing attitudes about public safety and the advisability of children traveling without adult supervision; and
- Decreased cyclist usage since the early 1970s energy crisis.

Figure 4.3 Reported Auto-Related Pedestrian and Cycle Crashes, 2004 - 2006



Source: Minnesota Department of Transportation, 2007.

Influencing Factors

The City also recognizes that numerous factors beyond actual pedestrian and cyclist infrastructure can have an influence on these trips. These factors and the City's role in positively shaping them include the following:

Weather – Minnesota's weather can be less than hospitable to pedestrian and cyclist trips for several months out of the year. The City has an important role to play in providing snow removal and in designing facilities to minimize negative impacts from snow storage.

Land Use – Well dispersed, pedestrian and cyclist oriented commercial nodes make these trips more feasible.

Building Orientation – Buildings that are set back from the road with large parking lots in front are uninviting for non-motorized traffic. Buildings close to, and oriented toward sidewalks, with parking in the rear or on the side, are more likely to encourage pedestrian and cyclist use.

Access Management – Every driveway creates conflicts for pedestrians and cyclists. Reducing the number of driveways and limiting movements from one or more directions improves pedestrian and cyclist safety and comfort while increasing vehicle safety as well.

Street and Parking Aisle Crossings – Crossings can be enhanced with design techniques such as refuge islands and curb extensions.

Public Education – The City plans to improve public understanding of available pedestrian and cyclist resources and guidance for safety through brochures, newsletter articles, and cable access TV programming.

Recommended Improvements

To improve Bloomington's cyclist and pedestrian transportation system, specific system improvements are shown in ***Figures 4.1*** (*page 4.5*), ***4.2*** (*page 4.7*) and ***4.14*** (*page 4.35)*. The proposed sidewalks and trails should meet the design standards and guidelines outlined in the *Alternative Transportation Plan*. While sidewalks may be desired along all streets, the focus of sidewalk system improvements will be on those improving connectivity within the existing system, connecting to schools and improving safety at locations correlated with crash concentrations.

Non-motorized facilities immediately adjacent to roadways are undesirable for a variety of reasons. All newly constructed sidewalks/trails should be separated from the adjacent roadway when cost effective. As those roadways that have immediately adjacent sidewalks are reconstructed, the sidewalks should be separated when right of way or easements are available. In situations where no roadway reconstruction is anticipated in the foreseeable future, the City should pursue available resources to accomplish separation.

To provide better pedestrian and cyclist connections, freeway and interchange redevelopment should include pedestrian and bicycle accommodations. The City should also pursue grade separated pedestrian and bicycle crossings over high volume streets at locations of high pedestrian and/or cyclist traffic and where site characteristics (grades, access control, etc.) would lead to natural use of the grade separated crossing.

Most transit trips are not "door to door" trips so travelers use an additional mode (walk, cycle, or car) at one or both ends of the trip to complete the connection. As a result, transit is dependent on connections with facilities that support these alternate modes. Providing pedestrian and cycle facilities between transit and areas unserved or infrequently served by transit can encourage increased pedestrian, cyclists, and transit activity. Providing amenities (such as shelters and cycle locking facilities) at connection points also encourages these activities.

As parking lots are an integral part of the motor vehicle transportation system, so is the case with end of trip facilities that support alternative forms of transportation, especially bicycles. At the time of site plan review and approval, the City will require pedestrian and cyclist connections with public sidewalks and between adjacent commercial uses, as well as parking for cyclists. The city will design typical details for parking/locking facilities and guidelines for cycle parking requirements.

4.3 Transit

Existing Public System

The Metropolitan Council divides the region based on density into four levels of service, with Market Area I having the highest levels of service. The bulk of Bloomington is designated within "Transit Market Area II," while southwestern Bloomington is designated to be within "Transit Market Area III." The existing transit system in Bloomington consists of several bus routes and one LRT route, as depicted in ***Figure 4.4***, *page 4.13*. Frequency of service varies among the routes. Several routes operate only during peak morning and evening commuting times. ***Figure 4.5***, *page 4.15*, depicts the frequency and duration of transit operations. Transit service is offered by a variety of providers, including:

Metro Transit – A division of the Metropolitan Council, Metro Transit operates most scheduled bus service in Bloomington and the Hiawatha LRT. Metro Transit routes focus on taking riders to downtown Minneapolis and St. Paul or to sub regional transit hubs such as the Mall of America.

BE Line – Metro Transit's BE (Bloomington-Edina) Line service currently consists of two bus routes (538 and 539) that circulate through Bloomington and Edina between Southdale and the Mall of America.

Minnesota Valley Transit Authority – Minnesota Valley Transit Authority (MVTA) operates bus service in five communities south of the Minnesota River. Four of MVTA's routes stop at the Mall of America. Several additional MVTA routes follow I-35W through Bloomington although only one makes a stop in Bloomington.

Southwest Metro – Southwest Metro operates bus service in Eden Prairie, Chanhassen, and Chaska. Southwest Metro previously operated routes to the Mall of America and other Bloomington destinations, but does not currently operate routes stopping in Bloomington.

City of Bloomington – Bloomington, through its Human Services Division, offers group route, door to door bus service within Bloomington using two buses that are wheelchair lift equipped. Those eligible to use this service include older adults and people with disabilities. Others may ride based on availability. Primary service is to and from Creekside Community Center. Other personal trips may be scheduled based on availability. Fee assistance is available to those who qualify.

Bloomington School District – Bus service is provided for many Bloomington Public School students by the School District.

Transit Support

Bloomington supports the provision of a high quality transit system as a way to:

- Diversify transportation options and provide transportation to residents who do not have access to an automobile or choose transit as their preferred mode;
- Increase the number of potential employees with access to employment in Bloomington;
- Make other modes of transportation more effective;
- Manage congestion on area roadways;
- Increase economic vitality and promote additional economic development; and
- Conserve natural resources.

As transit changes are considered, Bloomington will work with transit providers to facilitate high quality transit service and address the deficiencies of the current system.

Park and Rides

The locations of existing park and rides in Bloomington are shown in ***Figure 4.4**, page 13*. Bloomington has historically encouraged neighborhood park and rides dispersed throughout the city that utilize existing parking lots through agreements with land owners at minimal public cost. Religious assembly sites are particularly well adapted to shared use as park and rides due to their typically low parking demand during work days. Recently, Metro Transit has constructed two large park and rides in Bloomington: a surface lot at 98th St./Aldrich Ave. and a large parking ramp and surface lot at 28th Ave./82nd St.

While Bloomington has traditionally preferred high quality local bus service to the provision of large park and rides, the City also recognizes that Metro Transit may wish to construct additional large park and rides near transit stations as transitways and other high volume transit projects are developed. The development of new or expansion of existing park and rides should consider:

- Joint use or shared parking alternatives;
- Locations that minimize displacement of existing or future development (such as over public rights-of-way); and
- Locations that minimize traffic impacts on residential areas and support adjacent higher density mixed use development.

Metro Mobility – Metro Mobility, a division of the Metropolitan Council, offers door to door bus service for individuals with disabilities.

Private Services – Transit in Bloomington is also provided by numerous private taxicab companies, private disability transportation services, hotel and senior housing shuttles, subscription services, volunteer organizations and other private transit providers.

I-494 Commuter Services – While not a transit provider, I-494 Commuter Services provides a variety of transit assisting resources to residents, employees and employers in Bloomington and other communities along the I-494 corridor.

Transit Deficiencies

The primary transit deficiencies in need of improvement from the City's perspective are:

1. Lack of Suburb to Suburb Transit Connections – Existing transit service in Bloomington is designed primarily around transporting commuters to and from downtown Minneapolis. While this transit task is important, in recent years a large number of jobs have been generated outside of the downtown core. For example, current total employment in the cities of Bloomington, Richfield, Edina, Eden Prairie and at MAC/Ft. Snelling (the southern I-494 corridor) is 65 percent greater than the total employment in downtown Minneapolis. Current transit design makes it very difficult and time consuming for suburban residents to use transit to access employment or destinations in adjacent suburbs.

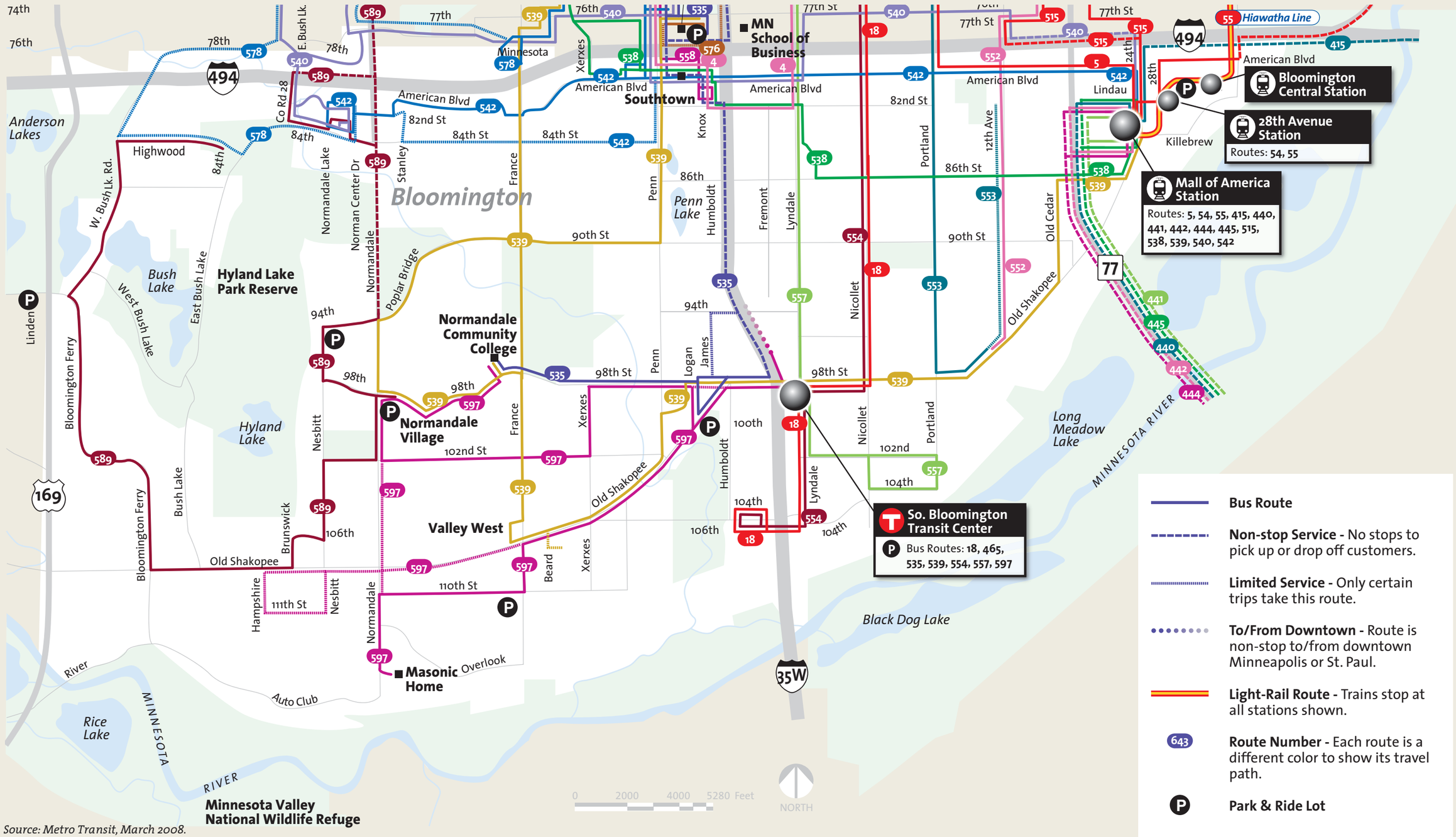
2. Lack of Service to Bloomington's Primary Employment Concentrations – Although the I-494/American Boulevard corridor has one of the region's densest employment concentrations, many parts of the corridor are not easily accessible by transit. Metro Transit's 540/542 east-west bus routes have been an important step in beginning corridor service, however these routes are circuitous and not well supported by north-south routes with easy connections. Many of the north-south routes with potential to support Routes 540/542 operate in directions and at times that do not match employee flow.

3. Frequency and Duration of Service – Most of Bloomington lacks the necessary frequency and duration of transit to make it a viable transportation option.

4. Directness of Service/High Travel Times – The circuitous nature of some Bloomington bus routes results in relatively high travel times compared to other modes and make travel by transit less intuitive.

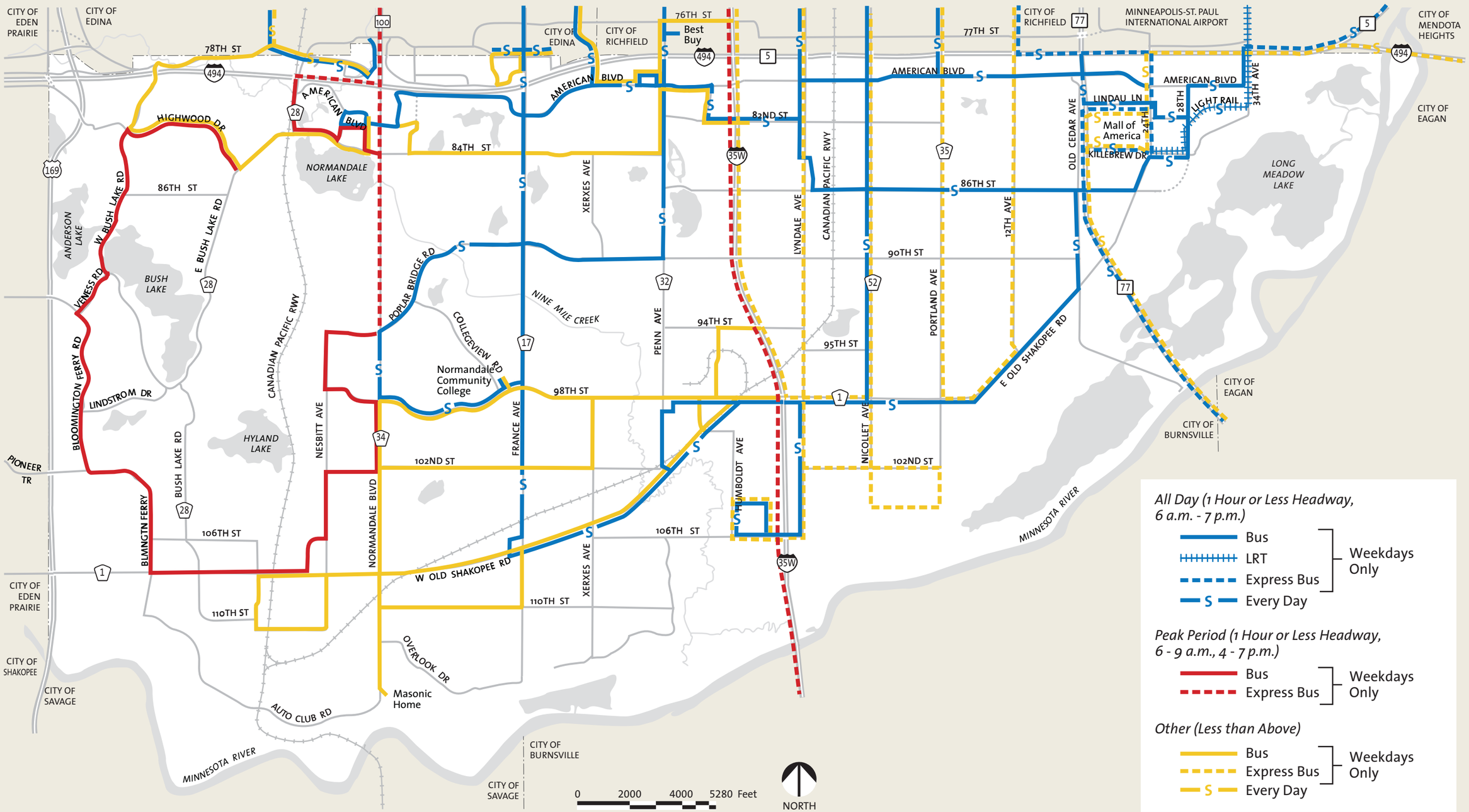
5. Waiting Facilities – Most transit stops lack shelter from inclement weather. Wait times, in addition to ridership, should be considered in selecting sites for shelters.

Figure 4.4 Existing Transit Routes and Large Park and Ride Lots



Source: Metro Transit, March 2008.

Figure 4.5 Transit Route Level of Service



Source: Metro Transit, June 2007.

Planned Transit Improvements

Significant transit improvements planned for Bloomington include:

Hiawatha LRT Improvements

Metro Transit, in partnership with the Bloomington Port Authority, is planning to construct an additional Hiawatha LRT Station in 2009 at American Boulevard and 34th Ave. The station will include a northbound platform north of American Blvd. with the southbound platform south of American Boulevard. This station will be a critical component in supporting high density, mixed use redevelopment in the eastern Airport South District. Metro Transit also plans to expand Bloomington LRT station platforms by 2010 to accommodate three car trains rather than the current two cars.

Cedar Avenue BRT

The Metropolitan Council and Dakota County plan to create a bus rapid transit (BRT) system linking Eagan, Burnsville, Apple Valley and Lakeville with Bloomington and the Hiawatha LRT line. The 16-mile line would extend from Highway 70 in Lakeville to the Mall of America LRT Station. Implementation will be phased beginning in 2010 as funds become available. Cedar Avenue BRT will improve the transit accessibility of Bloomington's Airport South District and the I-494 corridor.

I-35W BRT

The Metropolitan Council plans to create a BRT system linking Lakeville, Burnsville, Bloomington, Richfield and Minneapolis along I-35W. In Bloomington, BRT stations/stops are planned at 98th Street and near the I-494 corridor. Implementation will occur over time as funds are received and highways rebuilt. BRT-like service (frequent service, limited stops) has already commenced in the corridor in the form of Metro Transit Routes 535/597 and Minnesota Valley Transit Authority Route 465.

I-35W BRT service is a vital part of improving the transit accessibility of Bloomington employment. The success of BRT in supporting Bloomington employment trips will depend heavily on having user-friendly connection opportunities with direct east-west routes in the I-494 corridor. To best support east-west transit, Bloomington recommends that the planned online BRT station in the I-494 Corridor be located at or near American Boulevard rather than at 82nd Street.

Did you know?

- More Minneapolis and St. Paul residents work in Bloomington than Bloomington residents work in Minneapolis and St. Paul.
- The official name for the "Twin Cities" metropolitan area as assigned by the U.S. Census Bureau is the "Minneapolis-St. Paul-Bloomington Metropolitan Statistical Area."

Regional Transitway Network

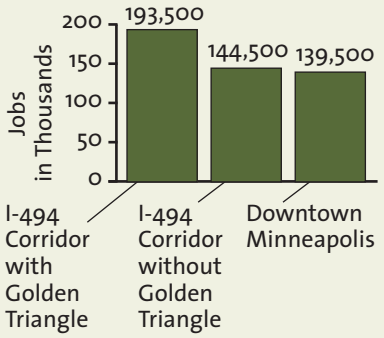
While not in Bloomington, the planned addition of the North Star Commuter Rail Transitway from Downtown Minneapolis to Big Lake, the Central Corridor LRT Transitway from Downtown Minneapolis to Downtown St. Paul and the Southwest LRT Transitway from Downtown Minneapolis to Eden Prairie will benefit Bloomington by expanding the existing Hiawatha LRT Transitway into a network of integrated transitways. The Southwest LRT Transitway will potentially provide LRT stations and park and ride opportunities near western portions of Bloomington.

I-494 Employment Corridor

The I-494/American Boulevard employment corridor through Bloomington and adjacent cities is one of the most logical and vital corridors in the Twin Cities for transitway planning. A recent Metropolitan Council presentation identified only eight employment concentrations in the Twin Cities with over 40,000 jobs. Three of those eight concentrations line the I-494 corridor between the MSP airport and Eden Prairie. Together, these three concentrations include 193,500 jobs. By comparison, downtown Minneapolis has 139,500 jobs, see ***Figure 4.6***, *below*.

In addition to current employment, the cities of Bloomington, Richfield, Edina and Eden Prairie, as well as MSP, plan to concentrate considerable additional commercial and residential growth within the corridor over the next 20 years. Existing high employment levels, forecast commercial and residential development, numerous redevelopment opportunities and the highly linear nature of the corridor combine to make a transitway connecting the Hiawatha and Southwest LRT lines a natural fit.

Figure 4.6 Employment Center Comparison



Source: Metropolitan Council, 2007.

Desired Transit Improvements

Bloomington advocates focusing regional transitway investments within existing high density corridors. Additional transit improvements desired by the City of Bloomington include:

I-494 Transitway

As a regional system of transitways is developed in the Twin Cities, a new transitway paralleling the I-494/American Boulevard employment corridor and linking the Hiawatha and Southwest LRT lines will be a vital and necessary component. Although completion of such a transitway may be 20 to 40 years in the future, planning for it needs to start today. Bloomington advocates; 1) that the Metropolitan Council include an I-494/American Boulevard transitway in its regional plans and 2) that a study be prepared to determine an alignment and mode for the transitway.

Until a transitway can be created, Bloomington advocates creation of limited stop bus service along I-494 to facilitate suburb to suburb transit trips. The service would transport riders between stations or transfer points along the corridor where they would be able to transfer to/from local and express routes.

I-35W BRT Stations

The present I-35W BRT plans anticipate two Bloomington stations, an online station near the I-494 Corridor/American Boulevard and second station at 98th Street. To provide efficient transfers with east-west bus routes, Bloomington advocates that the online station near the I-494 corridor be located at or near American Boulevard rather than at 82nd Street. Locating the station at 82nd Street would require east-west buses to use 82nd Street rather than American Boulevard between Knox and Lyndale Avenues, thereby increasing travel time and operating costs for east-west routes. An 82nd Street location would also reduce the potential land use benefits of the station and would increase walking times from the Penn-American redevelopment area. Bloomington also advocates an online BRT station at 98th Street.

Local Service

As transit funding grows, Bloomington advocates additional local bus service. One notable location for improved bus service is along Lyndale Avenue, where over 350 new multi-family dwelling units have been added within the last ten years.

Freeway Transit Facilities

Bloomington advocates regionwide inclusion of and dedication of right of way for transit supportive facilities including HOV ramp meter bypasses, bus lanes and online stations.

Alternative Transportation Facilities

Bloomington advocates the provision of alternative transportation facilities, such as paved loading areas, bicycle racks and bicycle lockers, at transit stops to promote cycling, reduce bus loading/unloading time, free rack capacity on buses and reduce bicycle locking in undesired locations.

Transit Support

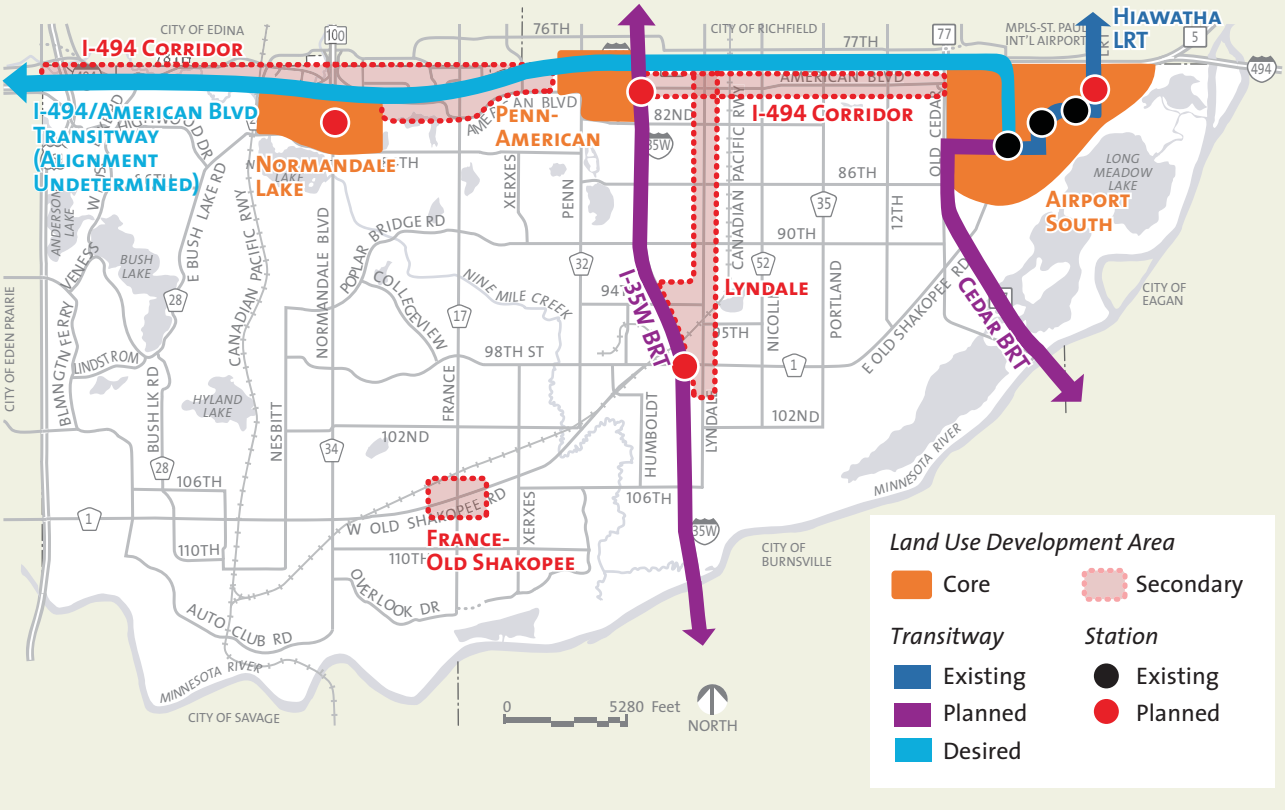
To do its part in supporting a quality transit system, Bloomington will:

- Focus additional development and redevelopment in locations that are easily served by high quality transit (see ***Figure 4.7***, *below*).
- Provide quality infrastructure connections between transit stops and origins/destinations.
- Use official controls where appropriate to require new development to be transit-friendly (reduced setbacks, streetside entrances, on-site sidewalks, transit shelter easements, pedestrian ways separated from drive aisles).
- Continue to evaluate its TDM policies and practices, including transit components, to determine effectiveness, react to new opportunities and lead the region in innovative practices.
- Create a citywide bikeway system that improves access to transit.

Transit Success

The success of a transit route is heavily dependent upon the land use and density along the route as well as the availability of connections between the transit stop and the destination. While transit providers control route locations and service characteristics, cities control land use, density and the infrastructure connecting transit stops and destinations.

Figure 4.7 Land Use – Transit Relationships



Source: Bloomington Planning Division, 2008.

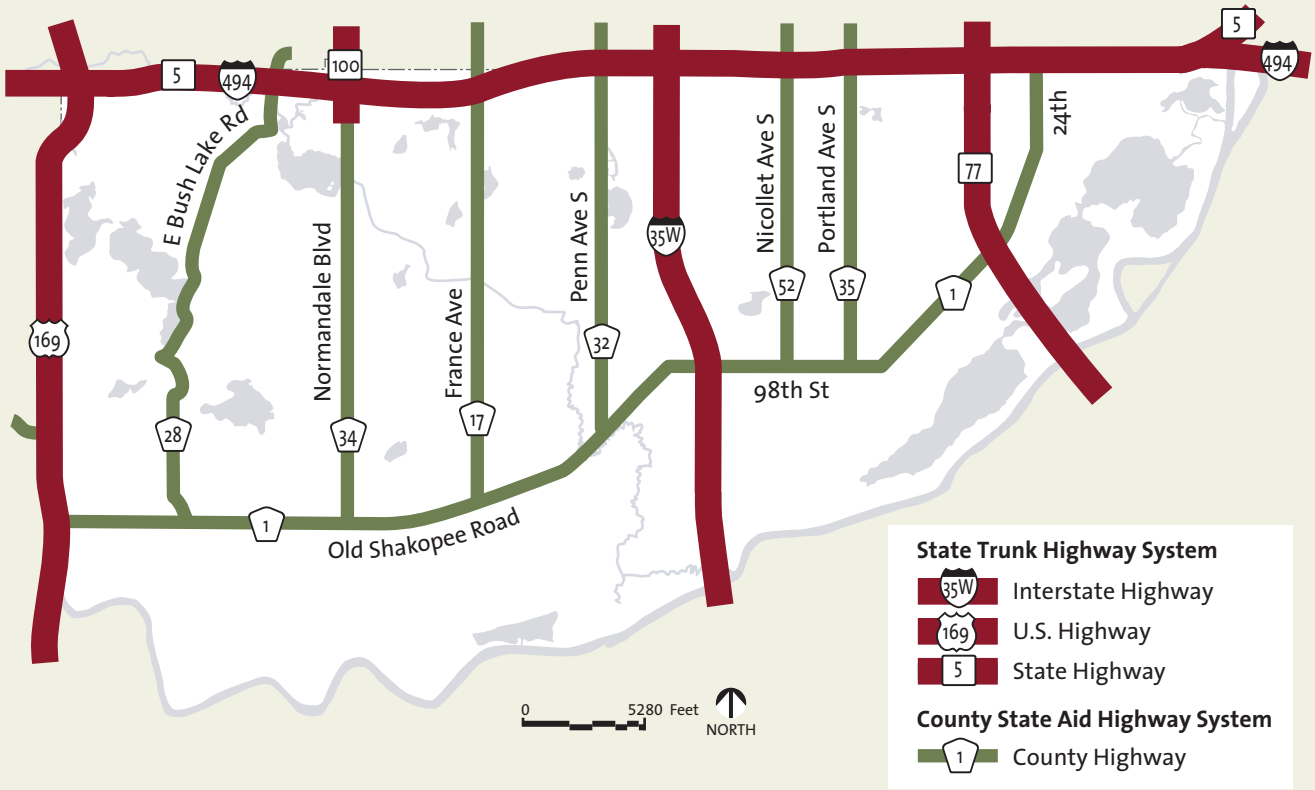
4.4 Roadways

Roadways serve two major functions: to provide mobility and to provide land access. From a design standpoint, these functions are divergent. To accommodate these equally necessary but incompatible functions, a hierarchy of roads has been developed which is commonly referred to as functional classification. Each roadway has its service to perform and needs to be designed accordingly, from the local residential roadway that accommodates frequent driveways to the multi-lane freeway with well-spaced, grade separated interchanges. ***Figure 4.8***, *page 4.23*, depicts the functional classification of roadways in Bloomington.

The typical characteristics of each classification of roadway are described in ***Table 4.1***, *page 4.25*. These characteristics can and do vary, however. While the table provides a general feel for the relative purpose and role of each classification, individual roadways can depart from these typical characteristics in some circumstances.

Figure 4.9, *page 4.27*, depicts the number of through lanes for roadways in Bloomington. Jurisdiction over roadways in Bloomington is held by the City, County, and State. Generally, the Minnesota Department of Transportation maintains the interstate and trunk highway system on behalf of the State, Hennepin County maintains the County State Aid Highway system, and the City

Figure 4.10 Roadway Jurisdiction



Source: Bloomington Traffic Engineering Section, 2007.

maintains the remaining public roadways. ***Figure 4.10***, *page 4.20*, depicts roadways within Bloomington under State and County jurisdiction.

A system of streets within Bloomington (shown in ***Figure 4.11***, *page 4.29*) receive funding collected by the State of Minnesota. These streets:

- Carry relatively higher traffic volumes or are classified as collector or arterials.
- Connect shipping points, markets, schools, industrial areas, recreation areas and other traffic generators.
- Provide and integrated and coordinated system affording, within practical limits, a network consistent with projected traffic demands.

The State Aid Program and System is governed by a statewide board that develops policies and procedures for the use of the funds.

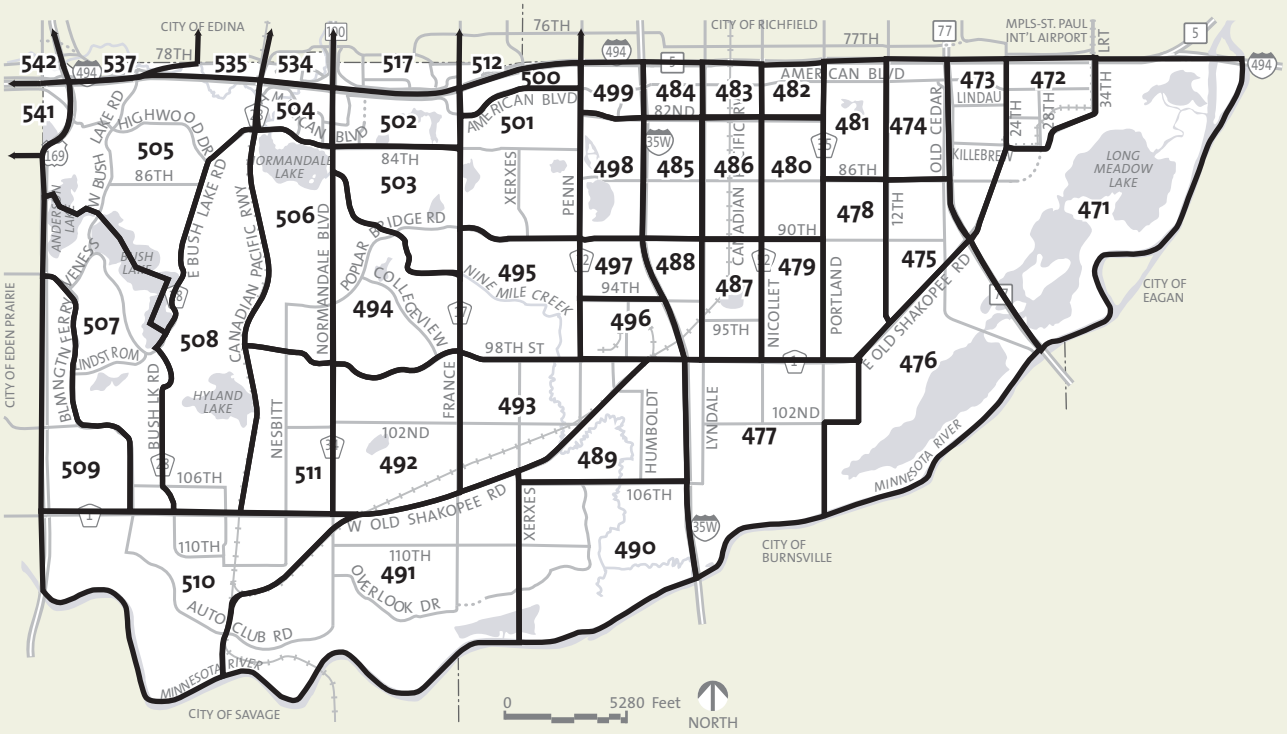
The City's Engineering Division has prepared average daily traffic forecasts for the year 2030 for Bloomington's arterial and collector streets. These 2030 forecasts along with year 2006 volumes are depicted in **Figure 4.12**, *page 4.31*. The forecast methodology used multiple data inputs and considered anticipated land development and other trip generation factors. Some of the 2030 forecasted volumes were calculated by using an annual trip growth rate. Some forecasts were developed from anticipated changes of land use/trip generation in the travel shed. In addition, some of the calculated forecast volumes were adjusted because of planned modifications to the existing infrastructure.

Some collector roadways are forecast to experience slow traffic volume growth in the next 20 years. Generally the proposed width of street sections and rights-of-way should not be diminished in those instances as future decades could see a new generation of redevelopment and transportation needs, including new and alternate travel modes (i.e. transit, cycles), in addition to the need to accommodate greater traffic volumes.

The Bloomington 2030 travel forecasts do not differentiate or assign modal splits. The availability of alternate mode trip accommodation in Bloomington is anticipated. Although alternate modes are a very important and forward looking component of the transportation system within the region and within Bloomington, the percentage of trip miles carried is likely to remain low outside of the major transit corridors and will not eliminate the need for roadway capacity. Bloomington recognizes that ongoing telecommunication improvements are likely to have an impact on travel patterns and that future traffic levels are therefore difficult to accurately predict.

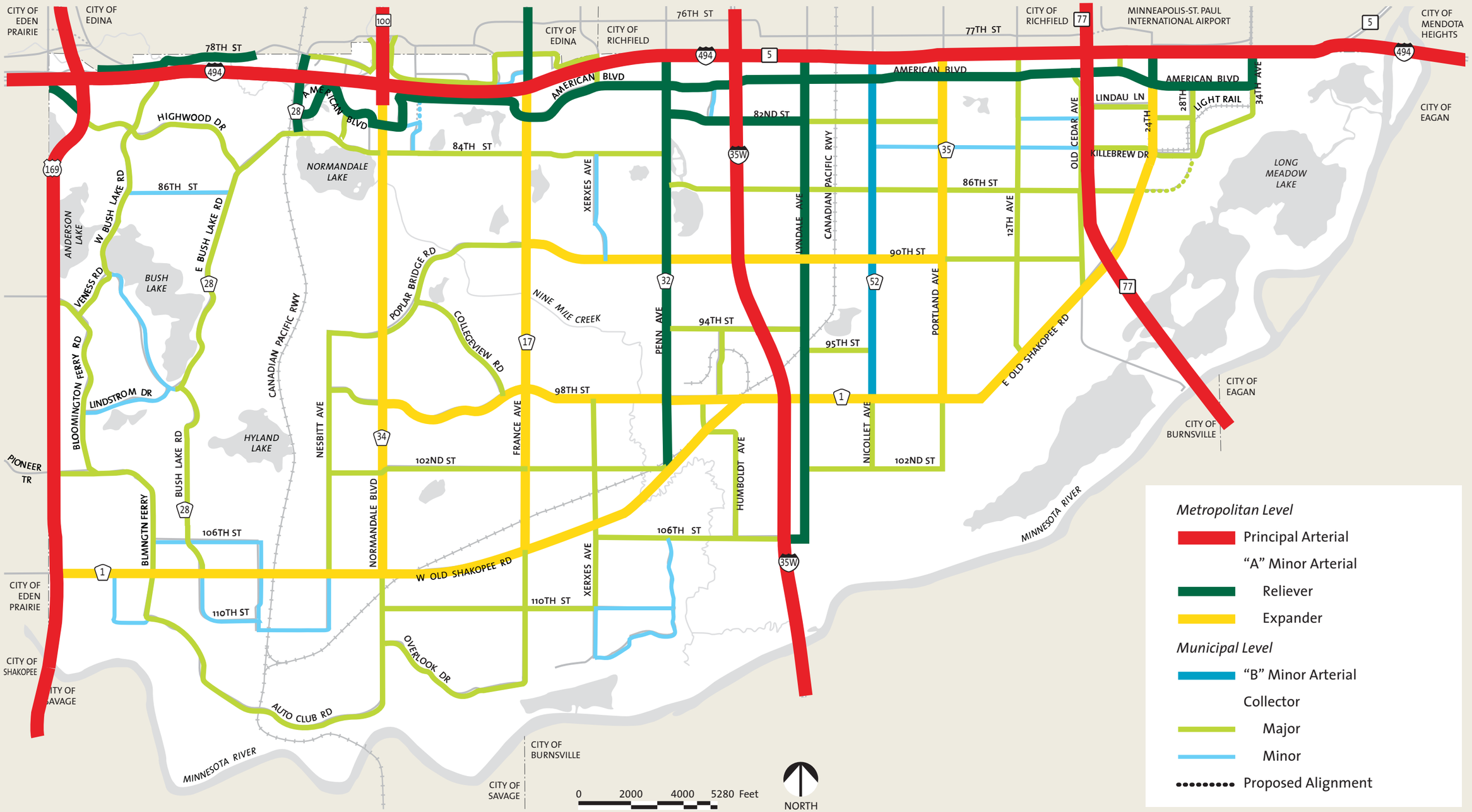
Traffic forecasts on the regional roadway system are prepared by the Metropolitan Council. To assist the Metropolitan Council in preparing regional traffic forecasts, ***Table 4.2***, *page 4.33*, depicts the City's household, population, and employment forecasts out to the year 2030 broken down by traffic analysis zones for easy insertion into the regional model. Traffic Analysis Zone boundaries are depicted in ***Figure 4.13***, *page 4.22*.

Figure 4.13 Traffic Analysis Zones (TAZ)



Source: Bloomington Traffic Engineering Section, 2007.

Figure 4.8 Functional Roadway Classification, 2008



Source: Bloomington Engineering Division, 2008.

Table 4.1 Functional Classification System Criteria and Characteristics

Criteria and Characteristics	Principal Arterial		Minor Arterial ("A" or "B")	Collector	Local
	Freeway	Other Principal Arterial			
Place Connections	Interconnect the metro centers and regional business concentrations, important transportation terminals and large institutional facilities within the MUSA.	Interconnect the metro centers and regional business concentrations, important transportation terminals and large institutional facilities within the MUSA.	Provide supplementary connections to metro centers and regional business concentrations within the MUSA. Provide interconnection of major traffic generators within the metro centers and regional business concentrations.	Interconnect neighborhoods and minor business concentrations within the MUSA. Provide supplementary interconnection of major generators within the metro centers and regional business concentrations.	Interconnect blocks within residential neighborhoods and land parcels within commercial/industrial developments.
Spacing	Fully developed area: 2-3 miles. Developing area: 3-6 miles.	Fully developed area: 2-3 miles. Developing area: 3-6 miles.	Metro centers and regional business concentrations: 1/4-3/4 mile. Fully developed area: 1/2-1 mile. Developing area: 1-2 miles.	Metro centers and regional business concentrations: 1/8-1/2 mile. Fully developed area: 1/4-3/4 mile. Developing area: 1/2-1 mile.	As needed to access land uses.
Management	Maintain at least 40-mph average speed during peak-traffic periods.	Maintain at least 40-mph average speed during peak-traffic periods.	To most Interstate freeways and other principal arterials, other minor arterials and collectors and some local streets.	Sometimes to Interstate freeways and other principal arterials. To minor arterials, other collectors and local streets.	To a few minor arterials. To collectors and other local streets.
System Connections and Access Spacing*	To other Interstate freeways, other principal arterials and selected minor arterials. Connections between principal arterials should be of a design type that does not require vehicles to stop. Access at distances of 1-2 miles.	To Interstate freeways, other principal arterials, selected minor arterials and selected collectors. Connections between principal arterials should be of a design type that does not require vehicles to stop. Intersections should be limited to one-half mile with 1-2 miles desired.	Medium-to-short trips (2-6 miles depending on development density) at moderate speeds. Longer trips accessing the principal arterial network. Local and limited-stop transit trips.	Short trips (1-4 miles depending on development density) at low-to-moderate speeds. Longer trips access the arterial network. Local transit trips.	Short trips (under 2 miles) at low speeds. Longer trips accessing the collector or collector and arterial network.
Trip-Making Service	Trips greater than 8 miles with at least 5 continuous miles on principal arterials. Express transit trips.	Trips greater than 8 miles with at least 5 continuous miles on principal arterials. Express transit trips.	Maintain the following minimum average speed during peak-traffic periods. Metro centers and regional business concentrations: 15 mph. Developing area: 30 mph.	Equal emphasis on mobility and land access. Direct land access predominantly to development concentrations.	Emphasis on land access, not on mobility. Direct land access predominantly to residential land uses.
Mobility vs. Land Access*	Emphasis is placed on mobility rather than land access. No direct land access should be allowed.	Greater emphasis is placed on mobility than on land access. Little or no direct land access within the urban area.	Emphasis on mobility rather than on land access. Direct land access within the MUSA restricted to concentrations of commercial/industrial land uses.	Equal emphasis on mobility and land access. Direct land access predominantly to development concentrations.	Emphasis on land access, not on mobility. Direct land access predominantly to residential land uses.
System Mileage	Suggested limits for Interstate and other principal arterials at 5-10% of system.	See "Freeway."	Suggested limits for principal arterials and minor arterials at 15-25% of system.	Suggested federal limitations: 5-10%.	Suggested federal limitations: 65-80%.
Percent of Vehicle Miles Traveled	Suggested limits for Interstate and other principal arterials at 40-65% of system.	See "Freeway."	Suggested limits for principal arterials and minor arterials at 65-80% of system.	Suggested federal limitations: 5-10%.	Suggested federal limitations: 10-30%.
Intersections	Grade separated.	Grade separated desirable. At a minimum, high-capacity controlled at-grade intersections.	Traffic signals and cross-street stops.	Four-way stops and some traffic signals	As required.
Parking	None.	None.	Restricted as necessary.	Restricted as necessary.	Permitted as necessary.
Large Trucks	No restrictions.	No restrictions.	Restricted as necessary.	Restricted as necessary.	Permitted as necessary.
Management Tools	Ramp metering, preferential treatment for transit, interchange spacing.	Ramp metering, preferential treatment for transit, access control, median barriers, traffic signal progression, staging of reconstruction, intersection spacing.	Traffic signal progression and spacing, land-access management/control, preferential treatment for transit.	Number of lanes, traffic signal timing, land-access management.	Intersection control, cul-de-sacs, diverters
Vehicles Carried Daily	25,000-200,000	15,000-100,000	5,000-30,000	1,000-15,000	Less than 1,000
Posted Speed Limit	45-55 mph	40-50 mph	35-45 mph	30-40 mph	Maximum 30 mph
Right-of-Way	300 feet	100-300 feet	60-150 feet	60-100 feet	50-80 feet
Transit Accommodations	Priority access and movement for transit in peak periods where needed.	Priority access and movement for transit in peak periods where possible and needed.	Preferential treatment where needed.	Cross-sections and geometrics designed for use by regular-route buses.	Normally used as bus routes only in nonresidential areas.

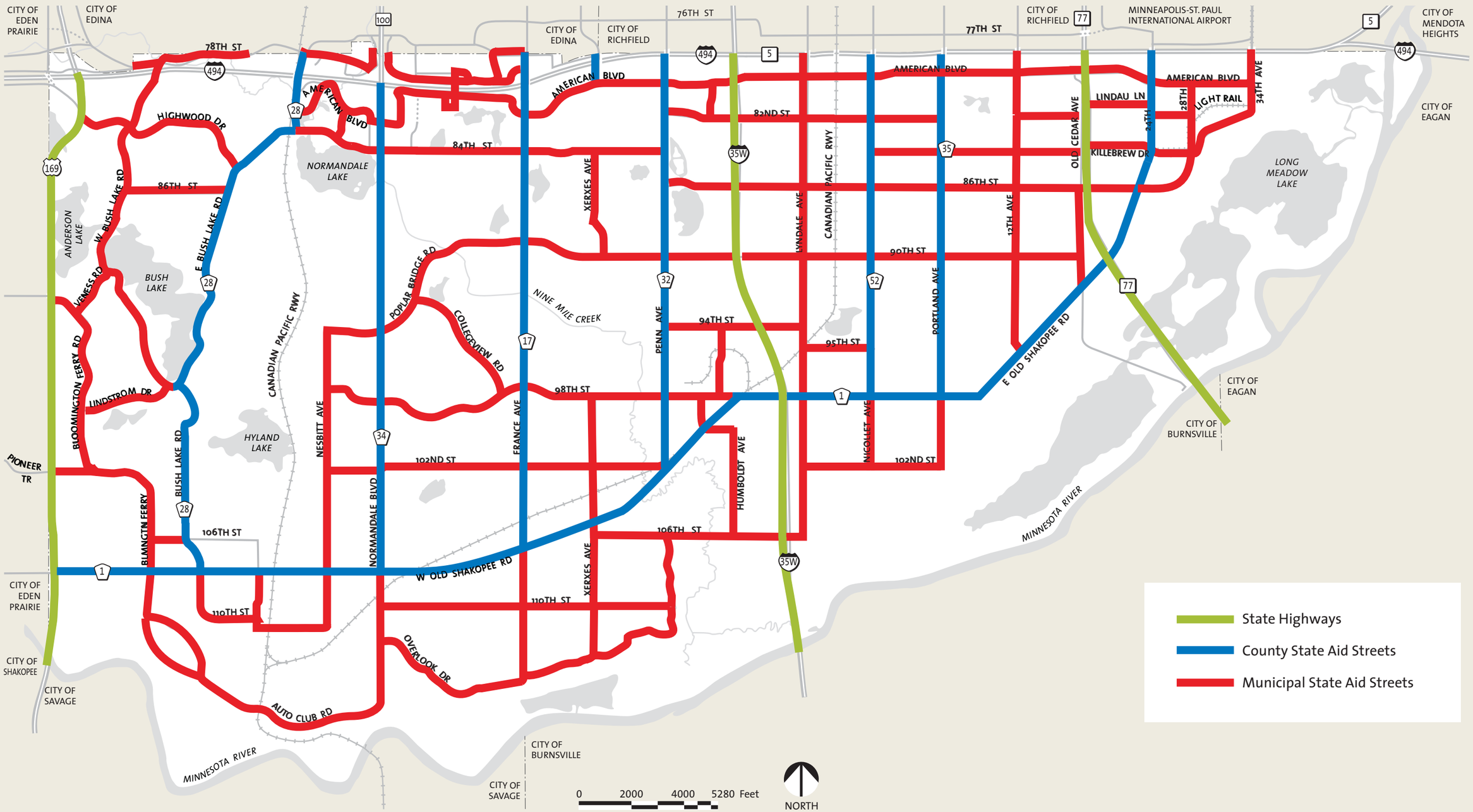
** The key objective is stated under "Management" heading in this table.*

Source: Based on Metropolitan Council Functional Classification System Criteria and Characteristics, Transportation Policy Plan Appendix, 2004.

Figure 4.9 Existing Through Lanes in Each Direction

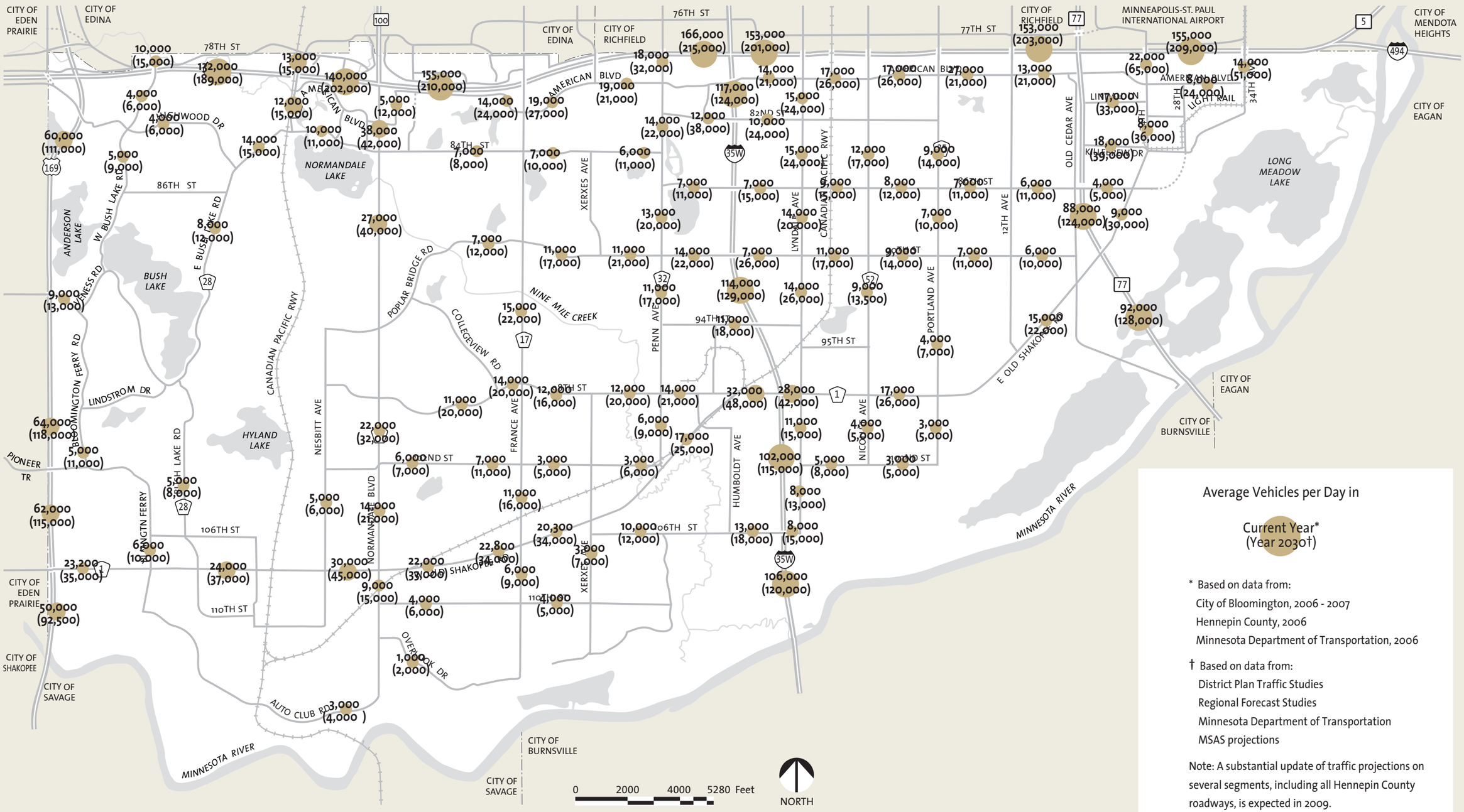
Source: Bloomington Engineering Division, 2007.

Figure 4.11 State Aid Street System



Source: Bloomington Engineering Division, 2008.

Figure 4.12 Daily Traffic Volumes



Source: Bloomington Engineering Division, 2007.

Table 4.2 Households, Population and Employment Forecasts

	Households				Population				Employment			
TAZ	**2006**	**2010**	**2020**	**2030**	**2006**	**2010**	**2020**	**2030**	**2006**	**2010**	**2020**	**2030**
471	142	142	138	582	324	324	314	1,057	3,313	3,313	6,003	6,535
472	249	249	1,054	1,293	446	446	1,774	2,169	7,903	7,654	14,066	20,369
473	689	689	689	689	1,351	1,351	1,351	1,351	16,189	26,656	27,041	27,471
474	923	923	923	923	2,047	2,047	2,047	2,047	1,741	1,741	1,741	1,866
475	1,087	1,087	1,087	1,087	2,507	2,507	2,507	2,507	343	343	343	343
476	969	969	981	981	2,221	2,221	2,252	2,252	79	79	79	79
477	2,247	2,442	2,450	2,450	5,325	5,702	5,714	5,714	1,317	1,317	1,317	1,317
478	1,072	1,279	1,279	1,279	2,860	3,201	3,201	3,201	-	-	-	-
479	806	817	817	961	1,952	1,980	1,980	2,217	-	-	-	-
480	743	743	743	743	1,981	1,981	1,981	1,981	-	-	-	-
481	845	845	845	845	1,949	1,949	1,949	1,949	1,919	1,919	1,919	2,044
482	270	270	270	270	713	713	713	713	743	779	872	872
483	74	74	74	57	199	199	199	155	2,661	2,661	2,661	3,013
484	173	173	173	173	427	427	427	427	907	1,020	1,020	1,145
485	857	857	905	905	2,052	2,052	2,131	2,131	307	307	307	307
486	767	767	767	767	1,695	1,695	1,695	1,695	4,781	4,781	4,781	4,781
487	1,068	1,116	1,116	1,140	2,121	2,200	2,200	2,239	2,031	2,031	2,031	2,031
488	206	206	328	352	497	497	497	536	1,874	2,002	2,371	2,995
489	1,404	1,404	1,404	1,414	3,038	3,038	3,275	3,301	280	280	280	280
490	1,073	1,073	1,073	1,073	2,882	2,882	2,882	2,882	-	-	-	-
491	2,308	2,308	2,408	2,504	5,725	5,725	5,898	6,056	365	365	365	365
492	2,175	2,175	2,175	2,175	4,867	4,867	4,867	4,867	1,542	1,542	1,542	1,542
493	1,756	1,760	1,767	1,968	4,134	4,144	4,162	4,504	146	244	244	244
494	967	967	967	967	2,255	2,255	2,255	2,255	-	-	-	-
495	589	589	589	589	1,560	1,560	1,560	1,560	74	74	74	74
496	36	36	36	36	67	67	67	67	5,115	5,449	5,802	5,802
497	216	216	216	216	507	507	507	507	4,039	4,039	4,039	4,039
498	606	606	606	606	1,624	1,624	1,624	1,624	428	428	428	428
499	201	201	491	491	359	359	837	837	3,981	3,862	5,057	5,330
500	-	-	-	-	-	-	-	-	7,245	7,245	7,245	7,370
501	1,590	1,681	1,681	1,681	4,075	4,225	4,225	4,225	1,815	1,815	1,815	1,815
502	630	630	900	900	1,357	1,357	1,802	1,802	3,105	2,948	2,948	3,569
503	1,004	1,004	1,004	1,004	2,403	2,403	2,403	2,403	-	-	-	-
504	110	110	110	110	217	217	217	217	7,800	9,829	11,954	12,819
505	1,669	1,669	1,689	1,689	3,908	3,908	3,959	3,959	275	275	275	275
506	965	965	965	965	2,345	2,345	2,345	2,345	-	-	-	-
507	1,656	1,656	1,656	1,656	3,736	3,736	3,736	3,736	-	-	-	-
508	697	697	697	697	1,422	1,422	1,422	1,422	96	96	96	96
509	1,186	1,186	1,186	1,186	2,848	2,848	2,848	2,848	376	376	376	376
510	1,272	1,254	1,807	1,807	2,741	2,710	3,623	3,623	4,467	4,706	4,706	4,706
511	1,267	1,267	1,267	1,267	2,990	2,990	2,990	2,990	184	184	184	184
512*	-	-	-	-	-	-	-	-	200	200	200	200
517*	-	-	-	-	-	-	-	-	1,352	2,307	4,516	4,529
534*	-	-	-	-	-	-	-	-	2,306	2,306	2,306	2,306
535*	2	2	2	2	5	5	5	5	2,305	2,305	3,057	3,057
537*	1	1	1	1	3	3	3	3	-	-	-	-
541*	36	36	36	36	97	97	97	97	132	132	132	132
542*	-	-	-	-	-	-	-	-	507	507	507	507
Citywide	**36,604**	**37,141**	**39,371**	**40,536**	**85,832**	**86,787**	**90,542**	**92,477**	**94,245**	**108,118**	**124,700**	**135,214**

Source: Bloomington Planning Division.

There are meaningful steps that cities can take individually and in groups to combat congestion. Bloomington will continue to work individually and with multi-jurisdictional groups, such as the I-494 Corridor Commission and the I-35W Solutions Alliance, to combat congestion. Bloomington's strategy for combating congestion includes the following elements:

- Better integrate land use and transportation decisions to reduce trips.
- Pursue targeted roadway improvements.
- Use technology to manage the existing transportation system and make it more efficient.
- Take steps to reduce travel demand, especially during peak periods.

Roadway Network Challenges

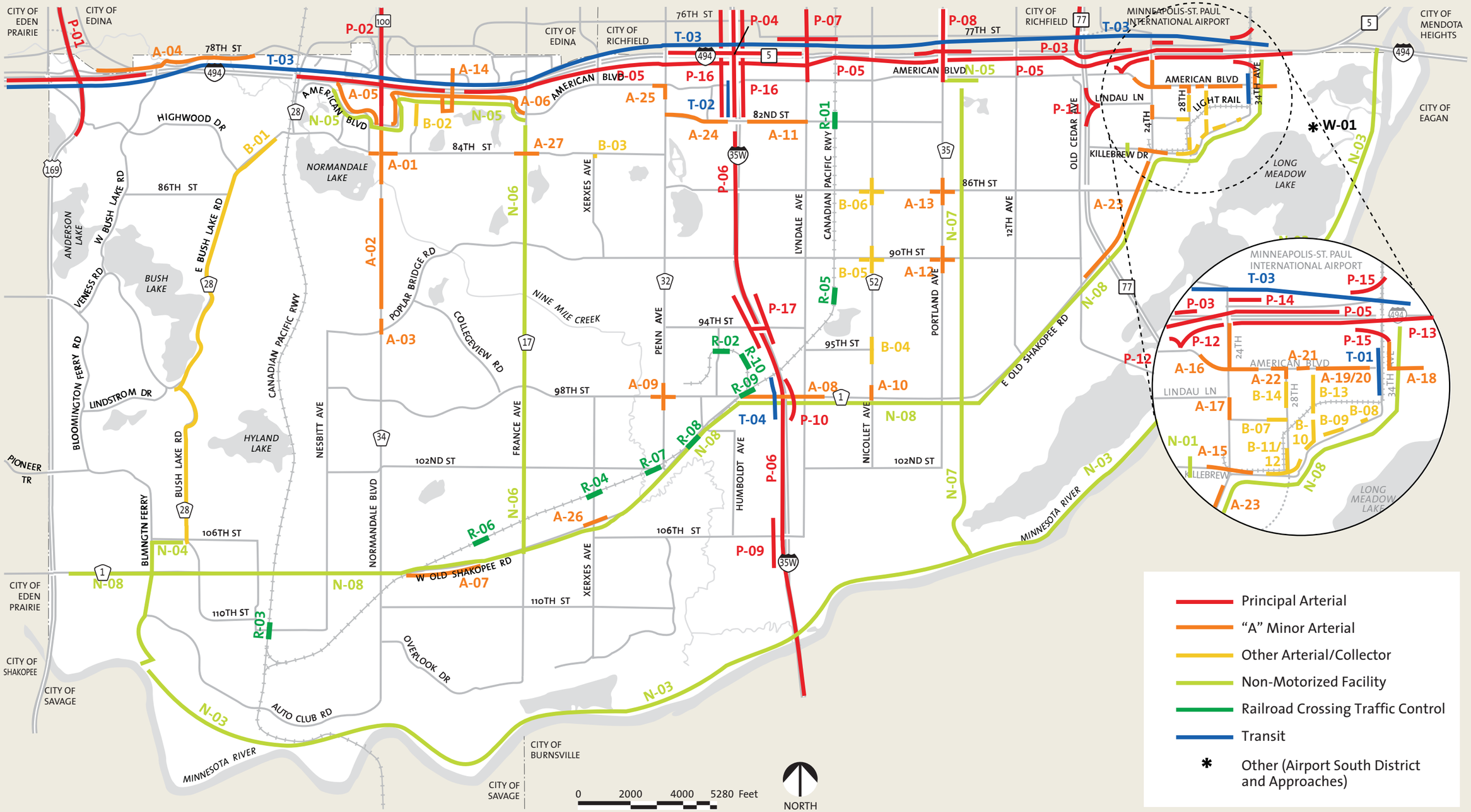
Congestion

The most significant challenge facing Bloomington's roadway network in the next 20 years is increasing congestion, particularly on the regional highway system. Congestion is costly to society in environmental terms and represents a significant drain on the economy. Severe congestion can negatively impact the ability to attract residents and employers and, ultimately, the ability to redevelop and revitalize. Bloomington must continue to take aggressive steps to combat congestion. These steps are outlined in the goals and strategies of this element and in the proposed transportation improvements specified in ***Figure 4.14,*** *page 4.35*, and in the *Transportation Appendix, page A4*.

Roadway congestion is a complex phenomenon that is influenced by numerous issues, many of which are beyond the jurisdiction of individual municipalities. A detailed analysis of congestion would have to include discussion of issues as varied as federal tax policy, federal and state highway funding, regional growth management strategies, fuel prices, and consumer housing preferences to name only a few relevant issues. A portion of Bloomington's congestion is simply a function of the amount of development within the City. But another portion is a function of traffic from outside Bloomington spilling onto local streets in an effort to avoid highly congested regional roadways. Perhaps the largest factor influencing congestion that cities can directly impact is local land use. When considering proposed amendments to the *Comprehensive Plan* for additional development, the impacts of that development on congestion and livability must be carefully studied.

Bloomington will continue to grow, redevelop and revitalize. To close the door on further growth would result in many undesirable consequences. Businesses and the residential and institutional uses that follow employment opportunities would be forced ever outward, leading to inefficient land use patterns, continuing infrastructure expansions, and longer trip distances which would itself increase congestion. The lack of density would make it very difficult to provide transit service. Resulting sprawl would consume valuable farmland and open spaces. Such an approach would also be in conflict with the market dynamics that drive businesses in their location decisions. For these reasons, the Metropolitan Council has wisely pursued a policy of focusing growth within and along the I-494/694 corridor in communities such as Bloomington.

Figure 4.14 Capital Infrastructure Improvements



Source: Bloomington Public Works Department, October 2008.

Roadway Improvements

Bloomington will support numerous roadway improvements to increase roadway capacity, remove existing bottlenecks, and enhance efficiency and safety through improved operational integrity of the travelways and supportive networks. These improvements are discussed in the section on Planned Transportation System Improvements.

Reducing Travel Demand

Many area cities are starting to require new development within congested areas to commit resources and prepare plans that document how developers, employers, and property managers will encourage employees to place less of a burden on the transportation system. These plans are referred to as Travel Demand Management (TDM). TDM is especially important to combating congestion in a city like Bloomington that has almost twice as many jobs as residents in the work force.

Bloomington will work with local employers and neighboring cities to combat congestion through TDM. As an incentive to pursue TDM, the City will continue to offer the potential of reduced parking requirements for sites with approved TDM plans. As a major employer with over 500 employees, the City of Bloomington has a responsibility to practice what it promotes with respect to TDM. The City will consider a telecommuting policy for City employees, study the idea of staggered or flexible hours for City employees, support bike commuting, ensure transit users and bike/foot commuters have access to city vehicles for work related travel and create preferential parking for carpools at City facilities.

One clear inefficiency in our present transportation system is the peaking phenomenon, often referred to as "rush hour". Since most people's work hours start and end at roughly the same times, a large burden is placed on the roadway and transit systems during these periods. To minimize congestion, transportation systems are designed with the peak period in mind. Roadways that are frequently congested during peak periods may be well under capacity at other times. Large buses that are full during rush hours may run close to empty at non-peak times. The peaking phenomenon is very expensive for the taxpayer since transportation systems need to be sized to meet heavy demands that are present for only a portion of the day.

Congestion could be substantially reduced if employers and employees were willing to stagger work hours. Staggered work hours would more evenly disperse trips over the course of the day and reduce the number of trips taken during peak periods, thereby reducing congestion. The City of Bloomington has a role to play in encouraging staggered work hours by promoting the benefits to local employers and by setting a positive example through its own work hours.

Increased Efficiency through New Technology

Bloomington will continue to identify, promote, and implement technologies that can increase the efficiency of existing transportation infrastructure. Some of this technology, such as ramp metering and traffic dependent signal timing, has been around for many years, but continues to improve while other technology is new.

Intelligent Transportation System (ITS) technology has proven to be applicable in numerous transportation systems. A promising new technology is the wealth of traffic information available on the web. Travelers can view real time video and maps of traffic conditions. The information can be used to select an alternative, less congested route or to delay a trip until travel conditions improve. Travelers can even receive daily e-mail summarizing traffic conditions along their route and projecting travel time. As technology advances, there will continue to be new applications for increasing transportation efficiency.

Land Use and Transportation Coordination

Bloomington will work to coordinate land use and transportation planning and minimize vehicle miles traveled by:

- Implementing the *Alternative Transportation Plan*.
- Encouraging the construction of additional transitways and improved transit service;
- Concentrating new growth in priority areas close to transit, services, amenities and employment;
- Promoting higher densities in appropriate locations to help make transit more viable;
- Promoting a variety of land uses well distributed throughout the City. Trip lengths can be reduced if residents have access to goods and services in close proximity to their homes;
- Coordinating city plans with transit agencies;
- Promoting mixed land uses and non-motorized vehicle access ways; and
- Considering all modes when planning and designing the transportation system ("Complete Streets").

Another way TDM strives to improve the efficiency of the existing transportation system is by encouraging the public to choose modes of travel such as carpools, cycling, walking and transit that have a lower impact on congested roadways. Increasing the occupants per vehicle reduces the vehicles on the road, which in turn reduces congestion. While reducing congestion is an important objective in and of itself, multiple occupant vehicles have the added benefit of improving air quality, reducing resource consumption, and lowering the need for parking spaces. However, convincing large numbers of people to carpool or use transit is not an easy task. The single occupant vehicle is widely regarded as the most flexible and desirable mode choice. Most commuters will resist a change in modes unless they can realize substantial time and/or cost savings.

Methods of encouraging commuters to consider carpooling include high occupancy toll (HOT) lanes, HOV (high occupancy vehicle) ramp meter bypasses, preferential parking for carpools, and ride-matching services. HOV lanes currently exist in Bloomington on I-35W south of 86th Street and are proposed for implementation on I-35W north of 86th Street. The flexibility to provide for HOV lanes is included in preliminary MnDOT plans for I-494 improvements throughout Bloomington. Section A4.1 of the appendix provides detailed information on the location of existing freeway ramp meters and HOV ramp meter bypasses.

Methods to make transit more viable and attractive include service improvements (including increased duration and frequency of service), HOT and HOV facilities, park and rides, bus shelters, and timed transfer stations. Recommendations regarding needed transit improvements in Bloomington are offered later in this element.

One of the best ways to encourage commuters to consider alternatives to the single occupant vehicle is through promotion at the workplace. A few examples of incentives and resources that employers can provide include:

- Ride matching services.
- Lobby kiosks with transit, carpooling, and commuting information.
- Commuting newsletters.
- Commuter fairs.
- Bus shelters.
- Sidewalks to bus stops.
- Subsidized or free transit passes to interested employees.
- Preferential carpool/vanpool parking.
- Vanpool subsidies.
- Showers, lockers and bicycle storage facilities to encourage biking to work.

Safety

Safety has historically been and will continue to be a principal City focus in managing its transportation infrastructure. Bloomington will continue to emphasize the Three Es of Safety: Engineering, Enforcement and Education. To promote roadway safety, the City will pursue the following actions:

- Use fundamentals of visibility, spatial relationships, adequate geometrics, and appropriate gradients in roadway and sidewalk/path design.
- Apply traffic control devices consistently with best practices.
- Acquire adequate right-of-way for safety enhancing features such as medians and boulevard type sidewalks.
- Provide raised median channelization when feasible.
- Provide turn lanes when feasible.
- Require setbacks sufficient to maintain visibility and safety.
- Coordinate reviewing and permitting of access to county and state roadways with appropriate agencies.
- Permit driveway approach designs and locations only in conformance with the City's access management practices.
- Take access and safety factors into consideration in the review of development proposals. Access management has the added benefit of improving street capacity.
- Ensure compatibility between land uses and adjacent streets as new development or redevelopment occurs.
- Minimize hazards at the sides of roadways by using safer traffic control devices, utility equipment, lighting poles, street furnishing and similar objects and by using good engineering principles when locating such objects along roadways.
- Provide appropriate street lighting levels.
- Enforce traffic laws and implement promising, emerging enforcement techniques.
- Perform snow and ice removal and other maintenance activities as necessary.
- Analyze crash data to focus resources on concentrations of crash types and locations.
- Educate residents on transportation safety issues.
- Stripe selected roadways with bike lanes and develop guidance for installation of cyclist warning signage.

Figure 4.15, *page 4.41*, and ***Table 4.3***, *page 4.40*, depict reported traffic crashes for the three year period 2004-2006. It should be noted that nearly all of the injury crashes occurred at intersections with traffic control devices (traffic signals, stop and yield signs) present. Only a small percentage of all reported traffic crashes, (less than 1% in Bloomington) occur on the local street network where statutory laws dictate the rights of way obligations (yield right-of-way based on intersection approach) and where design encourages slower speeds.

Traffic Law Enforcement

While traffic law violations and less conscientious driving habits occur on all levels of streets, they are of particular concern on local residential streets. Because of lower volumes and lower speeds, residents may take fewer precautions on local residential streets, parents are more likely to let children cross roadways randomly, and children are more likely to play in the street. The lack of sidewalks along most Bloomington local streets results in children and adults using the street when walking or biking. In this environment, running a stop sign, speeding, not yielding the right-of-way, and not driving in a careful, conscientious manner is particularly objectionable and may be dangerous.

Compatibility with Residential Areas

A frequently voiced resident concern relates to the issue of traffic in residential neighborhoods, particularly in regards to volume and traffic law violations or driving manner. Like most American cities, Bloomington's streets are set up in a hierarchical fashion, ranging from a typical low volume local street, to a collector street such as Highwood Drive or 86th Street, to a minor arterial such as Old Shakopee Road, to a principal arterial such as I-35W. Each street has its role, which is reflected by traffic volumes and speed and by the design of the street itself (see ***Table 4.1***, *page 4.25*). Problems begin to occur when congestion, delay or some other bottleneck becomes severe enough to cause drivers to leave higher classification streets for alternative routes or "short cuts" along streets that were not expected to carry that level of traffic. Frustrated with the delay, drivers may ignore posted or statutory speed limits, stop signs, or traffic signals, thereby creating safety hazards.

A desirable, livable community needs an efficient roadway transportation system. But such a community also needs safe and quiet neighborhoods. Achieving a balance requires efficient arterial and collector streets with minimal bottlenecks coupled with local streets that do not encourage speeding or cut-through traffic and residents who are willing to conscientiously monitor their driving behavior.

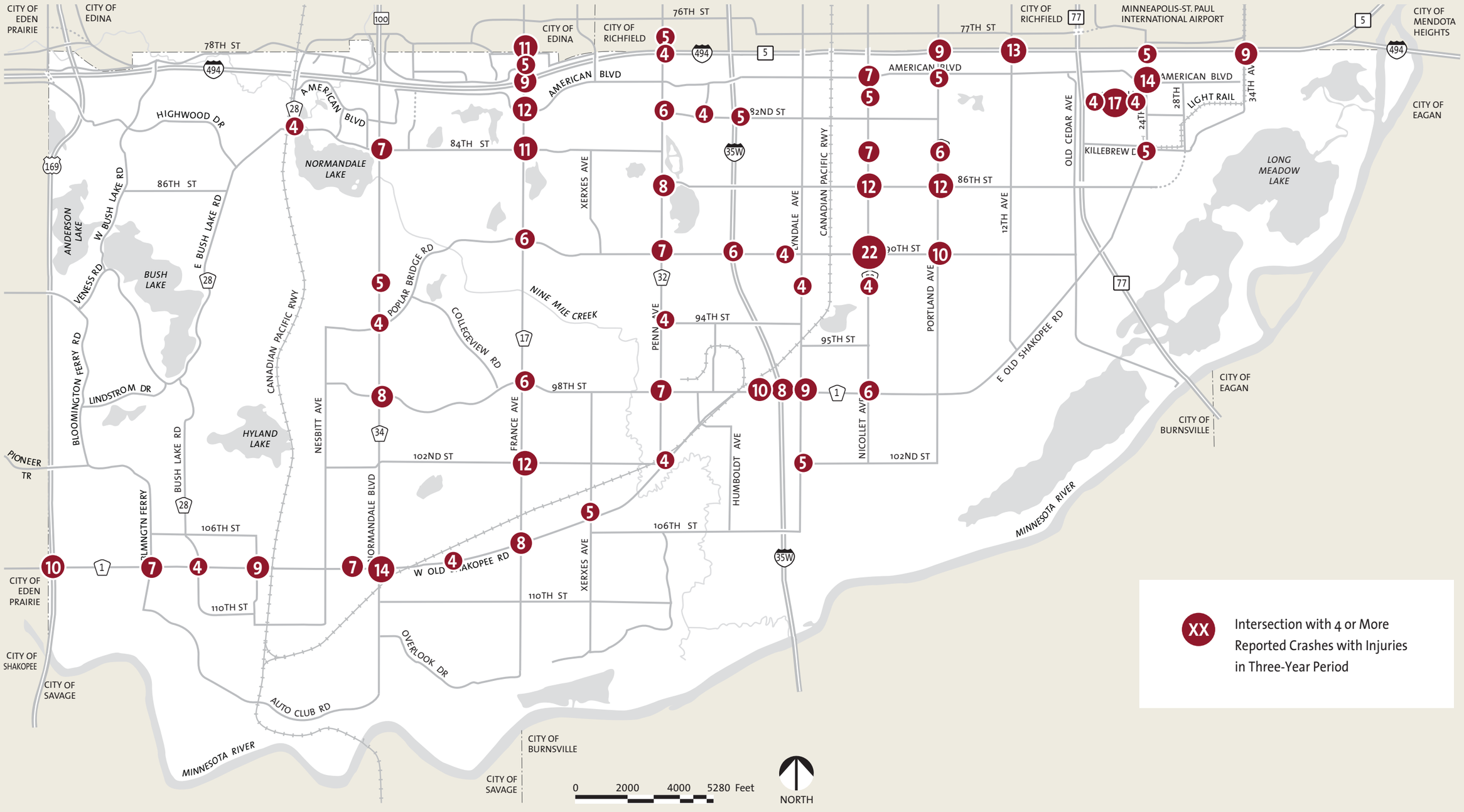
Table 4.3 Reported Crashes 2004-2006

Roadway System Type of Crash	Crashes Reported 2004	2005	2006	Yearly Average
All Routes - Total	**2259**	**2017**	**1729**	**2002**
Fatal	5	0	3	2.7
Personal Injury	642	644	589	625
Property Damage	1612	1373	1137	1374
Interstates - Total	**1022**	**884**	**786**	**897**
Fatal	1	0	2	1
Personal Injury	238	215	236	230
Property Damage	783	669	548	667
USTH System - Total	**216**	**193**	**187**	**199**
Fatal	1	0	0	0.3
Personal Injury	56	32	47	45
Property Damage	159	161	140	153
MNTH System - Total	**110**	**87**	**69**	**89**
Fatal	0	0	0	0
Personal Injury	27	24	19	23
Property Damage	83	63	50	65
CSAH System - Total	**524**	**462**	**404**	**463**
Fatal	1	0	0	0.3
Personal Injury	184	216	174	191
Property Damage	339	246	230	272
MSAS System - Total	**317**	**309**	**230**	**285**
Fatal	1	0	1	0.7
Personal Injury	117	129	94	113
Property Damage	199	180	135	171
Municipal System - Total	**70**	**82**	**53**	**68**
Fatal	1	0	0	0.3
Personal Injury	20	28	19	22
Property Damage	49	54	34	46

Source: Minnesota Transportation Information System Yearly Accident Reports.

There are at least two groups of traffic law violators on local residential streets, those who live in the neighborhood and those who do not and may live a great distance away. For the driver who lives in the neighborhood and violates traffic laws and careful practices, the problem can only be addressed through changing the driver's behavior whether through voluntary means, enforcement, or mandatory or influencing restraints. The violating driver from outside the neighborhood is usually not there by choice but by virtue of congestion or bottlenecks on a more direct, higher classification roadway. Their violations may be a function of frustration, or being unable to meet a deadline due to congestion or bottlenecks. Such a driver identifies less with the neighborhood and may be less likely to change behavior voluntarily. They may also be out of the reach of City traffic law compliance efforts. Unlike the violator who resides in the neighborhood, it may be possible to eliminate the non-neighborhood violator if the congestion, bottleneck, or route inadequacy that forces them onto the local residential street in the first place can be addressed.

Figure 4.15 Traffic Crashes, 2004 - 2006



Source: Minnesota Department of Transportation, 2007.

Traffic Management

If traffic law violations remain persistent at specific locations, the City will consider the feasibility of design features to physically discourage violations. Drivers tend to choose a speed that is comfortable to maintain given the design and operational characteristics of their roadway. Communities across the country have been experimenting with design features that reduce a driver's comfort level in order to slow down traffic and reduce the street's appeal as a cut through. Such design features are commonly referred to as traffic management measures and can include features such as speed humps, narrowing, chicanes, and turn restraints. More dramatic measures such as diagonal diverters or cul-de-sac closures involve route influencing physical barriers within streets to redirect traffic flow. A Bloomington example of this feature can be seen on James Avenue at 92nd Street. Formerly a through street, a diagonal diverter was added to James Avenue to separate industrial and residential land uses and traffic. Bloomington has historically employed cul-de-sacs, street loops, severances, turn restraints, and other operational management techniques.

Any implementation of traffic management measures must take into consideration impacts on pedestrians, bicyclists, emergency vehicles, as well as costs and benefits. Climate, maintenance needs, and safety must also be considered. Since most Bloomington local residential streets do not have sidewalks, residents use the roadway for walking or biking. Any design feature that narrows the roadway to slow traffic may create negative impacts to walkers and bikers who also need to use the roadway. Implementation of traffic management may therefore require installation of a sidewalk along the affected roadway before other restraining devices are added.

Traffic Volumes in Residential Neighborhoods/Cut Through Traffic

The level of automobile traffic on residential streets is a significant concern for some Bloomington residents. In some cases, the volumes may simply be a reflection of a street's functional classification and may be unavoidable. Bloomington does have many high volume arterial and collector streets with adjacent residential land uses where the traffic volume is a reflection of traffic traveling the expected route. In these cases, traffic volume impacts must be addressed through encouraging compatible land uses and appropriate physical design (setbacks, building orientation, structural type, acoustic insulation, window placement, etc.) along the route, which is possible to do with new development or redevelopment but is not helpful to existing incompatible residential uses. In other cases, excess volumes are primarily a reflection of cut through traffic due to congestion or bottlenecks on arterials. In these cases, volume can be addressed through roadway improvements or design features as discussed below.

Experimental speed table to reduce traffic speed.

Enhanced Traffic Law Enforcement

Bloomington will also continue traffic law enforcement on local residential streets. New enforcement technologies should also be explored and tested. With appropriate state legislation, automated enforcement of red light and other traffic violations is feasible.

Coordinated Effort to Improve Driver Behavior

While there are important steps that government can take to encourage traffic law compliance, in the end, change is up to the individual driver. Bloomington's approach for addressing the compliance issue will therefore start with a coordinated effort to improve driver behavior. The effort must utilize communication devices, such as the City newsletter, City website, community television, and direct staff contact.

The route drivers select is usually based on time. If an alternative route can save time and avoids stop and go conditions, drivers will tend to use it. When congestion or bottlenecks affect more direct, higher classification streets, drivers seeking short cuts may result in excess volumes on particular stretches of neighborhood streets. The best option and the City's first strategy for addressing these situations is to correct the bottleneck that is creating or influencing the cut through traffic. To this end, the next section discusses numerous proposed short and long range improvements to the Bloomington roadway system.

In some cases, however, bottlenecks will not be easy to correct. Cost or physical circumstances will preclude or significantly delay their correction. In these cases, the City will consider the feasibility and appropriateness of design features that discourage use of local residential streets as cut throughs. Such measures will need to be implemented in a manner that does not simply transfer the cut through traffic to the next local residential street.

Roadway Improvements

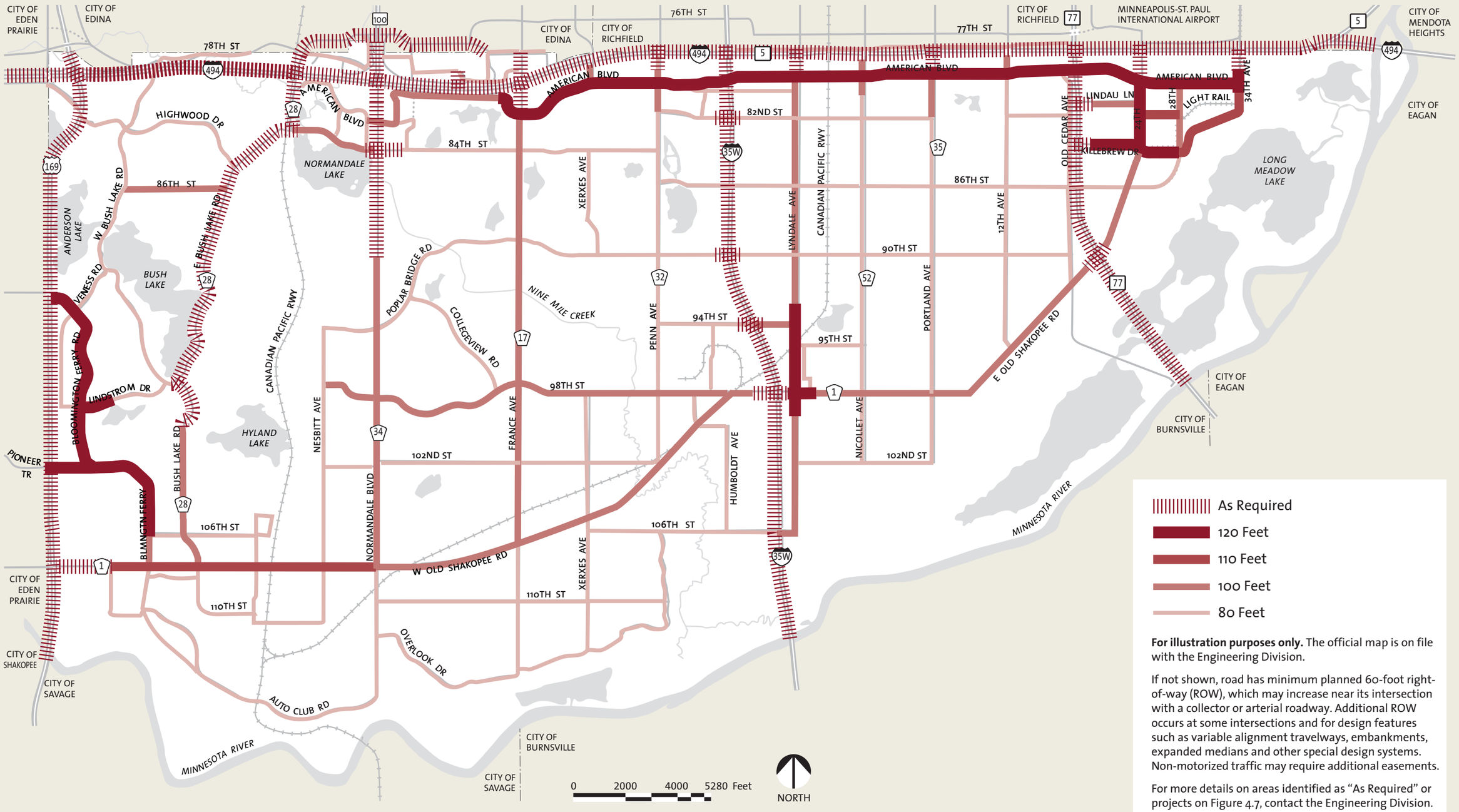
In addition to an effort to change driver behavior and increased enforcement, planned roadway improvements are another central element to the City's approach on this issue. The roadway improvements discussed in the next section are proposed to address specific congestion points and bottlenecks. Improving traffic flow on more direct, higher classification streets will reduce the volume of non-neighborhood traffic (and traffic law violators) on local residential streets.

Planned Transportation System Improvements

To combat congestion, improve safety, promote residential compatibility, and meet the needs of forecast future development, the City proposes numerous improvements to the existing transportation system. These improvements are depicted in ***Figure 4.14***, *page 4.35*, and summarized in the *Transportation Element Appendix, page A4*. Some of the depicted improvements are already scheduled for construction; others are included for future evaluation.

Improvements require sufficient physical space for construction. To ensure that new development does not negatively impact upon future right of way needs, the Zoning Ordinance requires all building setbacks to be measured from planned, widened right-of-way lines. Right-of-way needs are documented on an official map maintained in the Public Works Department. For illustration purposes, a non-official map depicting minimum right-of-way requirements is included within this plan as ***Figure 4.16***, *page 4.45*.

Figure 4.16 Minimum Right-of-Way Requirements



For illustration purposes only. The official map is on file with the Engineering Division.

If not shown, road has minimum planned 60-foot right-of-way (ROW), which may increase near its intersection with a collector or arterial roadway. Additional ROW occurs at some intersections and for design features such as variable alignment travelways, embankments, expanded medians and other special design systems. Non-motorized traffic may require additional easements.

For more details on areas identified as "As Required" or projects on Figure 4.7, contact the Engineering Division.

Source: Bloomington Engineering Division, 2008.

Infrastructure Upkeep and Renewal

The typical street with little or no maintenance will last less than 20 years before it needs to be completely rebuilt. By performing pavement sealcoats and overlays at the correct time, a street's lifespan can be more than tripled before costly reconstruction is needed.

To provide quality streets in a manner that minimizes total expenditures, the City has implemented a maintenance plan for its streets called the Pavement Management Program or PMP. Under this program, streets are regularly inspected for condition to allow maintenance crews to perform proper maintenance techniques (be it sealcoating, overlay, or reconstruction) at the optimum time. Results of the PMP include:

- Prolonged pavement life.
- Reduced overall cost for streets.
- Reduced overall assessment rates for property owners.

Truck Parking

Given mandates for driver rest breaks, supplying truck parking is an important freight transportation issue. This issue is best handled at the State level. The City encourages MnDOT to continue evaluating needs and leading development of facilities to address truck parking needs.

4.5 Freight

Truck Transportation

Truck transportation is the primary method for delivery of freight to and from most properties in the City of Bloomington. These trips are concentrated on, but not limited to, serving commercial and industrial land uses. The City of Bloomington is served by four principal arterials (I-35W, I-494, US-169 and MN-77) and a system of minor arterials (see ***Figure 4.10***, *page 20*). Bloomington land uses that generate the most truck trips (commercial and industrial) are predominately located on or near these roadways.

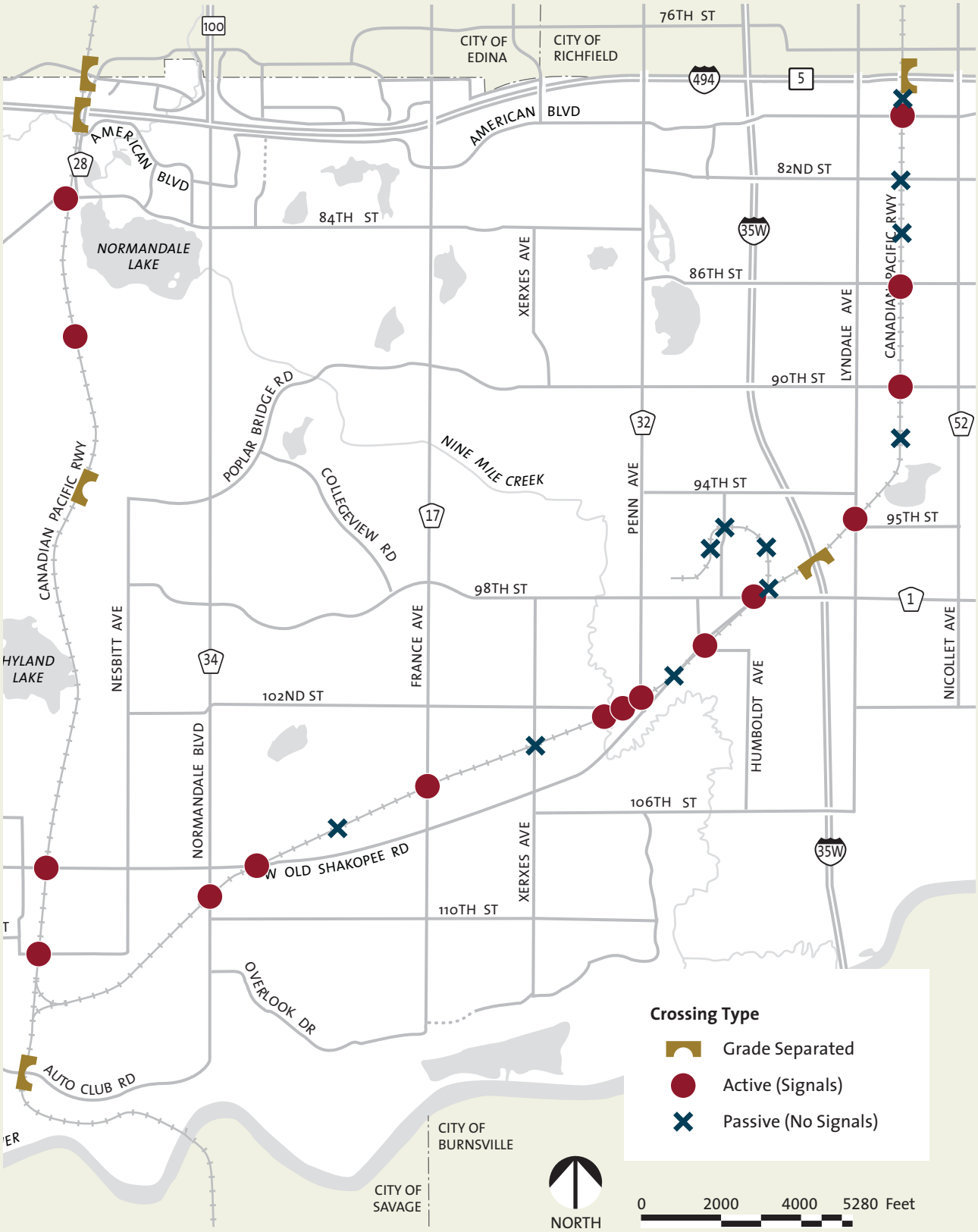
To maintain satisfactory truck circulation that meets the needs of Bloomington's land uses and economic development objectives and to minimize the disruptive impacts of trucks on traffic flow and residential neighborhoods, the City intends to:

- Continue to review arterial roadway system operations and access to industrial and commercial land uses, ensuring these routes are the most convenient routes for truck use.
- Separate arterial and collector roadway systems for industrial and commercial use from residential collector roadways as feasible.
- Improve land use and landscape buffers between residential areas and high truck traffic volume roadways when there is feasible opportunity.
- Encourage site designs that minimize visual and sound impacts of parked trucks and truck docks on adjacent residential properties and discourage on-street standing or queuing, loading and unloading and disruptive maneuvering for access.
- Continue enforcement of applicable truck related safety, aesthetic and sound level statutes and ordinances.

Rail Transportation

The Canadian Pacific Railway owns two railroad routes in Bloomington. The five mile western route is operated by Canadian Pacific and runs north-south approximately 3/4 mile west of Normandale Boulevard. The seven mile eastern route is operated by Progressive Rail and branches off from the western route to run southwest to northeast through Bloomington and on to Richfield and Southwest Minneapolis. The eastern route has several spurs and sidings, including some new and reactivated facilities, serving industries in Bloomington. ***Figure 4.17***, *page 4.49*, details the freight railway system in Bloomington. There are five grade separated crossings (including one non-motorized only crossing), 14 public at-grade crossings with signals and 11 public at-grade crossings with passive traffic control.

Figure 4.17 Railway System and Public Crossings



Source: Bloomington Traffic Engineering Section, 2007.

River Transportation

The Minnesota River upstream from TH77 is one of three principal port areas in the metropolitan region. Barge traffic on the Minnesota River carries petroleum products, fertilizers, metal products and grains. While there are barge ports adjacent to Bloomington in Burnsville and Savage, in Bloomington the only barge uses are fleeting and mooring areas on the north side of the river channel.

The U.S. Army Corps of Engineers is responsible for maintaining a nine-foot barge navigation channel upriver to Savage. An additional seven miles of nine foot channel from Savage to Shakopee is privately maintained.

The City of Bloomington controls land use on the north bank of the Minnesota River. However, the City does not have permitting responsibilities with respect to the waterway system itself. The Bloomington land use guide plan classifies all Minnesota River floodplains for conservation use. The City opposes river uses or land uses on the south side of the river that would conflict with the conservation and residential uses on the north side of the river.

In 2006, the western route typically carried three trains per day with an operating speed of ten miles per hour or less. The eastern route typically carried seven trains per day, although switching operations resulted in more or fewer crossings per day at some crossing locations. Operating speed on the eastern route is 10 miles per hour or less.

Bloomington's railways connect the city with a rail network spanning North America. The Canadian Pacific Railway operates as far west as Vancouver and east to New York City. Other Progressive Rail partner railroads provide freight service to much of the U.S. With fuel costs increasing, organizations are evaluating alternate methods to trucking for moving freight. Due to an increasing price advantage relative to truck transport, the popularity of rail freight transport has increased significantly in recent years, which is reflected in the increased number of trains and rail cars per day using Bloomington's eastern railway route. Access to rail transportation is an important factor for prospective industrial users. Bloomington has a limited supply of land with railroad access. Sustainable land use practices would suggest retaining such sites for industrial and other land uses that can benefit from freight rail access and are compatible with rail operations.

Increased rail traffic can lead to increased crash exposure and increased concerns with train horn noise. The City of Bloomington has participated in and is planning to participate in several crossing upgrades from passive to active traffic control devices that will reduce crash potential and could be incorporated into a future "quiet zone" with reduced train horns. Improved traffic control devices, in conjunction with grade separated crossings, crossing consolidations and improved crossing surface conditions, have the potential to allow the benefits of increased rail freight while minimizing negative impacts.

While the current role of Bloomington's railroad corridors is for freight movement, over time these corridors may support alternative modes of transportation.

4.6 Airport South District

Airport South District looking south

Due to its concentration of employment, Bloomington's Airport South District is one of four areas within the region (along with downtown Minneapolis, downtown St. Paul, and the University of Minnesota) that the Metropolitan Council designates as requiring "transportation facilities and services significantly different from those in other areas of the region." Bloomington has a history of planning for the Airport South District that is being carried forward in 2008 and 2009 with the preparation of an *Airport South District Plan* and an update of the *Alternative Urban Areawide Review* (AUAR) that applies to the district.

Transportation infrastructure improvements for the Airport South District have been identified as part of several traffic impact studies conducted for proposed developments in the Airport South District. Locations of these improvements are shown in ***Figure 4.14***, *page 35*, and detailed in the *Transportation Element Appendix, page A4*.

The primary freight destination in the Airport South District is expected to be the Mall of America (MOA). The MOA is located near access to freeways and truck staging has been identified as an issue to address in final design of the MOA expansion.

Bloomington has amended its official controls to require the inclusion of dense residential uses near LRT stations. 263 units at an average of 91 units per acre have been added since LRT opened. Bloomington forecasts close to 1,500 additional high density units in the Airport South District between 2009 and 2030.

As the Airport South District intensifies, movement of people to, from and within the area will become a greater challenge. Existing infrastructure including streets, transit and pedestrian ways/trails will be enhanced with the transportation infrastructure improvements discussed previously. In addition to citywide goals, strategies and actions, Bloomington will also pursue the specific transportation strategies and actions in the Airport South District that are outlined under Transportation Goal #6. One expected outcome is to achieve changes in travel behavior that will increase the efficiency of the transportation system and allow intensification of development.

4.7 Goals, Strategies, Actions

Goal 1 Create a sustainable, multi-modal transportation system focused on mobility and community renewal.

Strategy 1.1

Improve the existing pedestrian and cycle infrastructure.

- Implement the *Alternative Transportation Plan* and pursue infrastructure improvements outlined in ***Figures 4.1***, *page 4.5* and ***4.2***, *page 4.7*.
- Consider all users and modes, including pedestrians, cyclists, motorists and transit users, when planning and designing transportation systems and reviewing development proposals with the intent of creating a "Complete Streets" transportation system.
- Develop design standards that encourage cycling and walking.
- Provide physical separation, where appropriate, between bikeways/sidewalks and roadways.
- Provide uniform traffic control devices for bikeways and walkways.
- Work with other agencies such as the Three Rivers Parks District, the State Department of Natural Resources, and the U.S. Fish and Wildlife Service to coordinate pathway connections, promotions, and information materials.

Strategy 1.2

Improve cycle and pedestrian facilities through redevelopment.

- Require pedestrian and cycle connections between adjacent properties at the time of site plan review and approval.
- Require cycle storage and locking facilities as necessary at the time of site plan review and approval.
- Develop standards for cycle storage and locking facilities.

Strategy 1.3

Improve public understanding of available pedestrian and cyclist resources and of general cyclist/pedestrian safety.

- Prepare information online regarding cycle and pedestrian facilities within Bloomington.
- Develop cycling and walking safety education to improve skills and observance of traffic laws, and promote overall safety for cyclists and pedestrians.
- Develop safety education aimed at motor vehicle drivers to improve awareness of the needs and rights of cyclists and pedestrians.
- Utilize the City website, newsletter and cable access TV programming to publicize cycle and pedestrian facilities and safety issues.

Strategy 1.4

Increase regional roadway system capacity.

- Support adequate transportation related funding levels to implement needed transportation improvements including increasing the gas tax, metro-wide transportation pricing and other methods which raise revenue dedicated for transportation improvements directly from highway, transit, cycle and pedestrian path users. The City opposes collection of tolls on only portions of the regional system.
- Join with the Metropolitan Council to focus transportation investments within and along the I-494/I-694 corridor.
- Encourage MnDOT to update its official map for regional highways and related transportation facilities and to acquire rights of way for future expansion of freeways when parcels become available for purchase.
- Encourage innovative partnerships with MnDOT, the Metropolitan Council, and Hennepin County to allow development while preserving necessary rights of way for transportation facilities.

Strategy 1.5

Appropriately size minor arterial and collector system capacity for anticipated redevelopment.

- Complete the transportation improvements discussed in this plan as funds become available.
- Where appropriate, obtain rights-of-way, by dedication where possible, as shown on the City's master plan.

Strategy 1.6

Promote travel demand management (TDM) strategies.

- Encourage multi-jurisdictional and regional TDM efforts.
- Continue to be actively involved in the multi-jurisdictional groups devoted to reducing freeway congestion such as I-494 Corridor Commission and the I-35W Solutions Alliance.
- Support the efforts of 494 Commuter Services.
- Amend the City Code to formalize TDM plan requirements and thresholds.
- Promote use of TDM techniques by working with business organizations such as the Chamber of Commerce.
- Increase the average number of occupants per vehicle by promoting the use of transit, vanpools, and carpools. The City will encourage the development of high occupancy/toll (HOT) lanes, additional park and ride facilities, meter bypass lanes for high occupancy vehicles (HOV), and transit oriented design requirements.

- Encourage telecommuting to work by continuing to allow non-intrusive home occupations as permitted uses, by requiring two way high speed communication service in conjunction with the City's cable television franchise agreement, and by encouraging and facilitating the continued development of a high quality wired and wireless communications infrastructure while minimizing any adverse impacts upon the community.
- Measure and improve the year over year TDM participation of City employees through implementation of TDM techniques.
- Provide commuting information on the City's website, including easy links to sites that display information on travel times, crashes, and construction areas.
- Encourage businesses to use shuttles to bridge gaps to public transit routes or gaps in service duration for employees.
- Encourage organizations to use transit equipment to shuttle residents/customers to and from areas not well served by transit.

Strategy 1.7

Encourage land use that enhances sustainability.

- Promote a variety of land uses well distributed throughout the City to reduce trip lengths and the development of complementary uses within walking distance of one another.
- Locate regionally oriented land uses near regional transportation facilities (freeways, railroads and transitways).

Strategy 1.8

Track mobility levels over time to call attention to problem areas and to changing conditions that may impact residential areas or inhibit economic activity.

- In addition to level of service measures, use additional performance measures such as travel time between points and person through-put.

Goal 2 Create a viable, high quality transit system.

Strategy 2.1

Provide suburb to suburb transit connections.

- Encourage transit providers to establish limited stop, multi-city, trunk bus service along I-494 until a transitway can be created in the corridor.
- Encourage transit providers to improve connections from Bloomington to the Southwest Transit Center and the Burnsville Transit Center.
- Participate in efforts to increase coordination among the providers offering transit service in Bloomington and surrounding communities.

Strategy 2.2

Provide a network of strategically placed transitways.

- Advocate for inclusion of a transitway along the I-494/American Boulevard employment corridor on the Metropolitan Council's regional transitway map to promote increased density and economic activity.
- Advocate for preparation of a study to determine the alignment and mode for a transitway in the I-494/American Boulevard employment corridor.
- Encourage the rapid implementation of the planned I-35W BRT system.
- Encourage the rapid implementation of the planned Cedar Avenue BRT system.
- Support the creation of a robust regionwide transitway network that includes the addition of the Central Corridor LRT line, the Northstar Commuter Rail line, and the Southwest LRT line along with additional future transitways.
- Encourage the focus of regional transit investments on existing high density corridors.

Strategy 2.3

Maximize the benefits of existing and planned transit investments.

- Complete the planned addition of a Hiawatha LRT station at American Boulevard.
- Advocate for creation of a user-friendly, online BRT station on I-35W near American Boulevard.
- Advocate for creation of a user-friendly, BRT station on I-35W near 98th Street.
- Work with Metro Transit to create informational materials designed to increase awareness of the BE Line circulator routes and how to use them.

Strategy 2.4

Facilitate transit supportive land uses.

- Guide the placement of high density and intensity land uses to existing or planned transit corridors.
- Require new development and redevelopment to incorporate transit friendly design features.
- Support transportation network improvements that facilitate transit use. Improvements that can be made to the transportation network include additional park and ride facilities, bikeways/sidewalks, cycle storage, paved loading areas, improved signage, and transit shelters.

Strategy 2.5

Strive to meet the transit needs of residents and employees.

- Provide transportation for transit dependent residents.
- Assist transit providers in tailoring their services to meet the needs of Bloomington's transit dependent residents.
- Encourage transit providers to establish "reverse" commute service.
- Encourage transit providers to establish additional circulator bus service.

Goal 3 Provide transportation facilities that are safer for users.

Strategy 3.1

Provide improvements that increase safety.

- Emphasize priority of transportation system improvements outlined in this plan that increase safety.
- Use fundamentals of visibility, spatial relationships, adequate geometrics, appropriate gradients and other features in transportation system design.
- Provide consistently applied traffic control devices in conformance with the Minnesota Manual on Uniform Traffic Control Devices.
- Acquire adequate rights of way to provide safety enhancing features such as medians and boulevard type sidewalks.
- Develop and analyze motor vehicle, cyclist and pedestrian crash data and use the analysis in transportation planning.

Strategy 3.2

Manage the public rights-of-way to minimize risk from obstacles along transportation facilities.

- Consider requiring local service electric distribution and communication cables to be placed underground whenever the adjacent arterial or collector street is widened requiring utility pole relocation.
- Provide breakaway signs and poles meeting state and federal guidance.
- Minimize negative safety impacts from private structures placed in the right-of-way.
- Minimize the number of unshielded obstacles within 20 feet of a roadway.
- Require structure and other obstruction setbacks as necessary to maintain safety and visibility.

Strategy 3.3

Manage access points and intersections along arterial roadways.

- Remove or restrict direct access to minor arterial streets, where feasible.
- Require driveway designs and locations to conform with the City's access management practices.
- Coordinate review and permitting of access to county and state roadways with appropriate agencies.
- Encourage land uses that are compatible with adjacent streets as new development and redevelopment occurs.

Strategy 3.4

Manage and maintain public roadways and sidewalks.

- Perform snow removal as called for in the City's snow removal policy.
- Restrict on street parking through signs in areas where on street parking obstructs access or is deemed hazardous.

Strategy 3.5

Further promote compliance with traffic laws.

- Advocate authorization of technology to support traffic law enforcement.
- Encourage neighborhood participation in improving traffic law compliance utilizing the Neighborhood Watch Group and National Night Out Structure.
- Encourage traffic law compliance utilizing City communication devices such as the website, newsletter, and community television.
- Consider additional police enforcement personnel focused specifically on traffic.
- Continue to support Police Department involvement to educate and encourage safer practices.
- Establish uniform traffic complaint procedures.
- Summarize complaint procedures in an easy to read brochure.

Goal 4 Protect the public investment in transportation infrastructure through regular maintenance and management.

Strategy 4.1

Maintain 90 percent of City streets in a condition above the "problem" category.

- Adequately fund the Pavement Management Program.
- Pursue roadway infrastructure maintenance and replacement grants.
- Convert transitional streets to permanent streets as they can be phased into the reconstruction program.
- Continue to study and implement promising new techniques in pavement management.
- Recover appropriate costs from utilities and others using the right-of-way to compensate for their impact on public streets.

Strategy 4.2

Maintain high quality transportation infrastructure.

- Manage City roadway rights-of-way to require private utilities to be installed in a manner that does not hinder improvements to the adjacent roadway.
- Inventory and rate condition of all transportation infrastructure (including traffic signals, street lights, signs, sidewalk/bikeways and streetscaping).
- Develop target conditions for assets.
- Develop maintenance plans and funding system to achieve targets.
- Monitor asset conditions.
- Coordinate the timing of signalized intersections controlled by separate jurisdictions.

Goal 5 Address the specific transportation needs and opportunities of the Airport South District.

Strategy 5.1

Support land uses that minimize the need for single occupant vehicle travel.

- Guide and zone land for dense residential uses mixed with non-residential uses near LRT stations.
- Require new development and redevelopment to incorporate transit, pedestrian and cycle friendly design features.

Strategy 5.2

Create a viable, high quality transit system.

- Advocate for the designation and creation of an east-west transitway that connects the Mall of America and the existing Hiawatha Transitway with the planned Southwest Transitway along the I-494/American Boulevard employment corridor.
- Encourage the rapid implementation of the Cedar Avenue BRT system.
- Complete the planned addition of a Hiawatha LRT station at 34th Avenue and American Boulevard.
- Implement plans for Hiawatha LRT stations that can accommodate LRT trains of three car lengths.

Strategy 5.3

Minimize levels of congestion.

- Promote travel demand management (TDM) strategies.
- Implement and pursue the infrastructure improvements outlined in ***Figure 4.14***, *page 4.35*.
- Join with the Metropolitan Council to focus transportation investments within and along the I-494/I-694 corridor.

Strategy 5.4

Provide a comprehensive, convenient and safe pedestrian and cycle transportation system.

- Implement the *Alternative Transportation Plan* and pursue infrastructure improvements outlined in ***Figures 4.1***, *page 4.5*, and ***4.2***, *page 4.7*.
- Develop skyway connections between the Mall of America Phase I, Mall of America Phase II and IKEA.

Strategy 5.5

Minimize the negative impacts of freight movement within Airport South.

- Encourage freight deliveries, especially to the Mall of America, to occur during off-peak hours.