# Section 4 • Transportation Element

## 4.1 Introduction

Bloomington's transportation mission is to facilitate movement of people and goods safely, efficiently, cost effectively, and comfortably to desired destinations while minimizing negative impacts on community livability and the environment. To accomplish that, the City strives to provide a multi-modal transportation network comprised of roadways, transit, walkways and bikeways, and rail facilities that support the needs of residents, businesses, and visitors.

Bloomington is near fully developed and the existing roadway network is essentially complete. Thus, the primary transportation planning focus is not on building new roads, but on renewing, managing, and improving the existing transportation system to accomodate a broader spectrum of users and improve coordination with new development. This involves addressing street capacity, closing gaps in the pedestrian and cyclist system, enhancing transit facilities and services in areas with higher densities and employment, increasing safety, and cost effectively maintaining transportation assets.

### Bloomington Transportation History

Until the mid-1800s, Minnesota's primary transportation corridors were 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.

As white settlers began farming the area in the 1850s it became necessary to build roads to enable the movement of goods and people between farm and market. Dirt roads for horses and wagons were established primarily along surveyed section lines. Today, the original section roads, such as Portland, Lyndale, Penn, France, and Normandale, spaced one mile apart, have become primary north-south streets in Bloomington. Primary east-west streets, such as 86th Street and 102nd Street, were also first constructed as section roads.

Before bridges were constructed, travelers relied on ferries to cross major rivers. The "Bloomington Ferry", established in 1852 at a spot long used by Native Americans for fording horses, was a major Minnesota River crossing for those traveling the Shakopee

### Significant Transportation Projects Completed in the Last Decade

Over the last decade several significant transportation projects were completed, in addition to numerous safety and capacity improvements throughout the City, including:

- Diverging Diamond Interchange at 34th Avenue and I-494
- Conversion of the at-grade crossing at US 169 at Highwood
- Lindau Lane extension and streetscape enhancements
- South Loop ITS Wayfinding System
- Nokomis-Minnesota River Regional Trail
- Old Cedar Avenue Bridge Rehabilitation
- School Crossing Safety Enhancement Projects
- Hyland Trail Project
- 86th Street Bikeway

Road. This also became the location of Bloomington's first Minnesota River bridge, the "Bloomington Ferry Bridge", completed in 1890. 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 gave way to development 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 Bicycles and Pedestrians

Bloomington is working to establish a safe, convenient, and inter-connected bicycle and pedestrian network to meet the needs of individuals and families living, working, and recreating in Bloomington. To achieve that, Bloomington must retrofit and transform the existing transportation network, which was largely developed to prioritize motorized vehicles. Some of the challenges include:

- *Lack of sidewalks* – One of the most cited barriers to walking and biking is lack of sidewalks. Sidewalks provide a safe space for pedestrians who otherwise would walk in the street. While sidewalks exist along most major roads, most local roads were built without sidewalks given lower speeds and traffic volumes.
- *Insufficient width and lack of buffers* – In some areas, sidewalks are constructed directly adjacent to high traffic streets without boulevard separation (e.g., 86th St). Some of these sidewalks are quite narrow, creating an environment where sidewalk users feel exposed and unsafe. Narrow sidewalks are also undesirable as snow storage and water/salt spray makes the sidewalk inhospitable and difficult to use and maintain.
- *Network Gaps* – Gaps in sidewalk or trail networks make travel between destinations challenging and deter those who are not comfortable traveling in the street.
- *Insufficient Right-of-Way* – In some locations, the existing right-of-way is not wide enough to accommodate sidewalks/off-road trails, on-road bikeways, trees, snow storage, etc.
- *Bike Parking* – A lack of convenient, secure parking for bicycles at many locations deters some people from bicycling to these destinations.
- *Limited Regional Connections* – While the regional bicycle network is expanding, additional connections are needed to facilitate convenient multi-modal travel between communities.
- *Bridging Barriers* – Major roadways (e.g., freeways) and rivers that bisect and border Bloomington reduce connectivity to what would otherwise be easily accessible amenities and facilities. This situation can be improved by providing better pedestrian and bicycle infrastructure at the time of bridge construction or reconstruction.
- *Intersection Designs* – Many intersections are designed to accommodate vehicular movements and reduce delays (i.e., "free right" lanes). These design elements can increase pedestrian and bicyclist safety risk and expose users to fast moving vehicles.

## Existing System

Large areas of the City developed in the 1960s and '70s when sidewalks were not considered standard amenities; particularly in suburban subdivisions. While some off-road multi-use trails were constructed along major roads and through parks, these facilities are inadequate by today's design standards (ie less than 10 feet wide) and rarely provide connections between destinations. Demand for pedestrian and bicycle facilities has grown steadily over the past two decades, in part because people want alternative transportation options that:

- Help reduce dependency on automobiles, which can help reduce congestion and improve air quality;
- Accommodate short trips to nearby destinations reducing unnecessary vehicle trips;
- Improve community health by encouraging residents to be active and connect with their environment and neighborhood; and
- Enhance the safety and convenience of walking and bicycling.

The City's current pedestrian and bicycle system is comprised of on-street bike lanes and bikeways, off-street multi-use trails, and sidewalks. The existing system is depicted on Figure 4.1 and existing mileage is summarized in Table 4.1.

Table 4.1 Existing Pedestrian and Bicycle Network

| Facility | Miles |
|---|---|
| Sidewalks | 212 |
| On Street Bike Lane | 65 |
| Multi-Use Trail in Right-of-Way | 25 |
| Multi-Use Trail in Park (City Maintained) | 13 |
| Multi-Use Trails in Parks (Not Maintained by City) | 20 |

*Source: City of Bloomington, 2018*

## Alternative Transportation Plan (ATP)

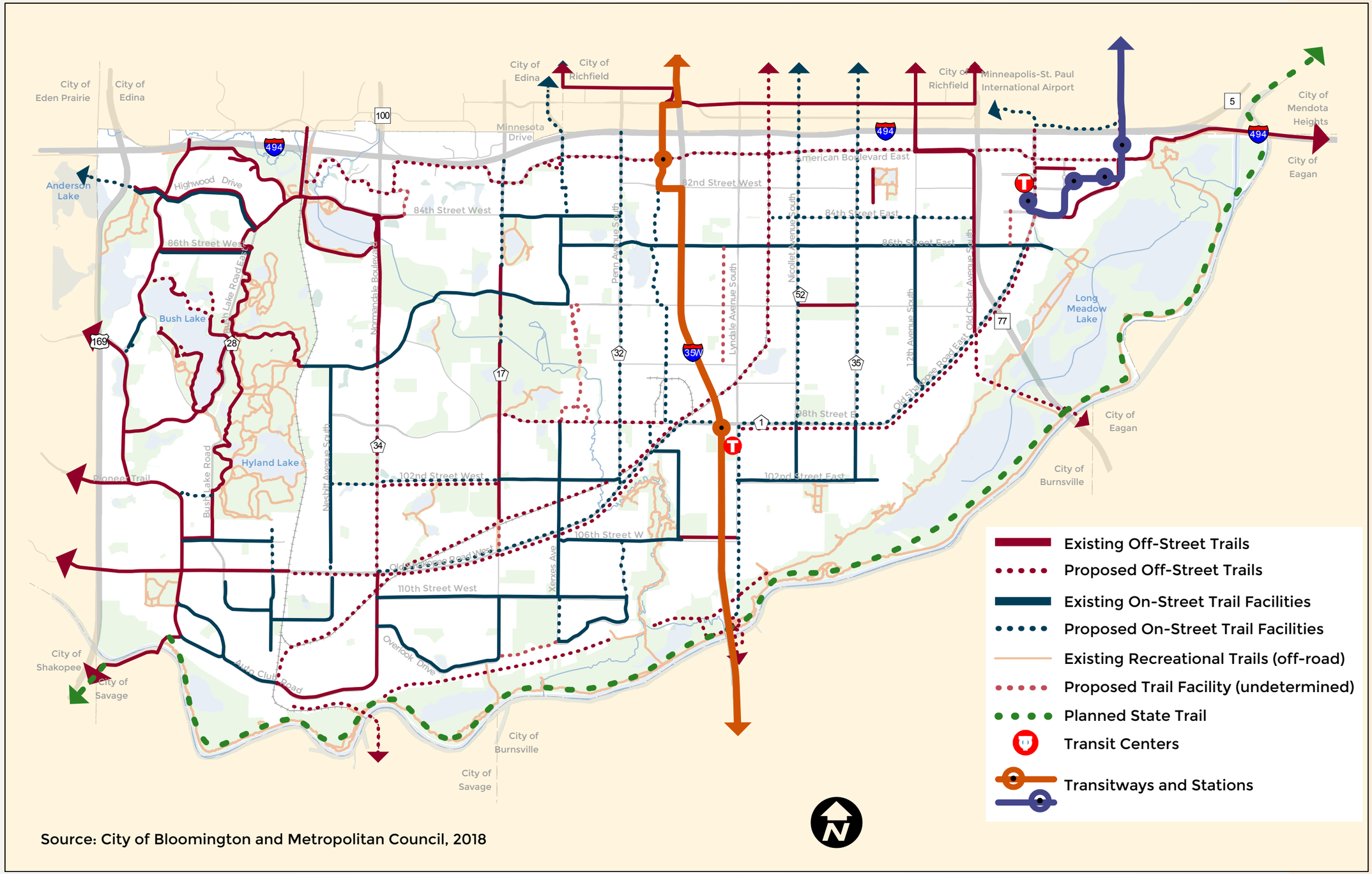
In 2008, the City adopted the *Bloomington Alternative Transportation Plan* (ATP) to create pedestrian and bicycle facility goals, identify and prioritize facility improvements (System Plan), and outline an implementation and maintenance plan for the system. The ATP identified key corridors that comprise the system consisting of Regional Trails, Community Corridors, and Local Connectors. The ATP was updated in 2016 to reflect progress made to local and regional pedestrian and bicycle facilities. It also prioritizes needed investments to bring facilities up to current standards to enhance the City's multi-modal transportation network.

The ATP system is depicted in Figure 4.1 and consists of proposed off-street trails, on-street bicycle facilities, and facilities that have not yet been determined to be on or off-street (i.e., "undertermined"). The facility type is determined by a number of factors, including: connection designation, the adjacent roadway, and type of user. For example, an on-street bicycle facility is most suitable for roadways with moderate traffic volumes and sufficient right-of-way that can be readily restriped in conjunction with repaving projects. On-street bike lanes are generally suitable for more experienced bicyclists seeking fitness or commuting rather than family recreation.

### Regional Barriers

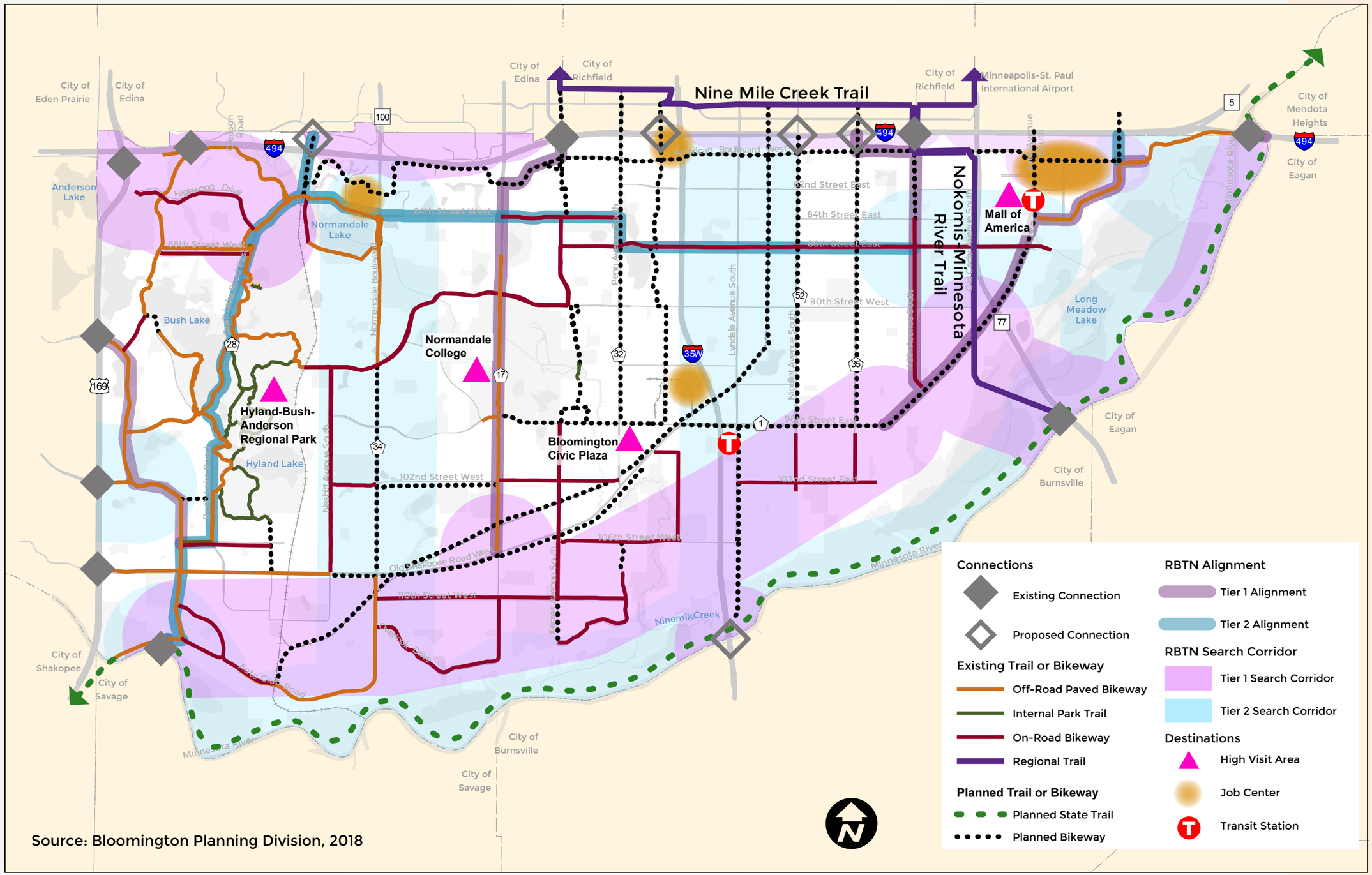
The City is bordered by a number of physical barriers that make it challenging to connect bicycle facilities to adjacent communities. Primary barriers include the Minnesota River to the south and east, I-494 to the north, and US 169 to the west. Addressing these barriers requires coordination among agencies and jurisdictions. Existing and proposed connections that close these gaps in Bloomington include the recently completed 12th Street pedestrian/bicycle bridge and the planned replacement of the I-35W bridge over the Minnesota River.

Figure 4.1: Existing and Proposed Trails and Bicycle Routes




Source: City of Bloomington and Metropolitan Council, 2018

Figure 4.2: Regional Bicycle Transportation Network




Source: Bloomington Planning Division, 2018

## Implementing Complete Streets

Some approaches currently used by Bloomington Public Works to implement complete streets include:

- ***Collector Streets Program*** evaluates the City's collector street striping configurations to identify safety improvements to benefit all users and neighborhood quality of life. Reconfiguring lane geometry (eg. 4-lanes to 3-lanes) by restriping is an inexpensive strategy that can quickly create bicycle facilities and routes and more friendly pedestrian environments.
- ***Neighborhood Traffic Calming Policy and Procedure for Local Streets*** is a resident driven program that aims to reduce traffic speeds on local streets through installation of traffic calming devices such as speed tables and traffic circles. Reducing traffic speed and volume in a neighborhood makes walking and biking more enjoyable and enhances the livability of the neighborhood.
- ***Transportation Demand Management (TDM) Ordinance*** requires owners of new, non-residential developments or additions over 1,000 square feet to prepare a TDM Plan for their proposed development. The plans outline a combination of services, incentives, facilities and actions owners will use to reduce single occupancy vehicle trips. This program helps address traffic congestion and reduces air pollution.

While specific facility types are proposed in the ATP, the designations on the map are not meant to be prescriptive. The appropriate facility type will be determined when project implementation becomes a possibility.

The ATP implementation section prioritizes the proposed facilities based on its designation as a Regional Trail, Community Corridor, or Local Connection. The ATP highlights controlled and uncontrolled crosswalks recommended for enhancements. Estimates are also provided for construction and annual maintenance costs.

## Complete Streets

The City adopted a complete streets policy in 2012 that promotes benefits to health, quality of life, the environment, and safety. This approach is integrated in construction budgets in coordination with the Pavement Management Program (PMP). A complete street is designed to safely support multiple modes of transportation, including: pedestrian, bicycle, transit, and vehicular operations. There is no single model for complete street design. Rather, the City strives to implement the right modes on the right roads in order to safely, effectively and economically serve all modes of transportation users. Geographic context and the purpose of a roadway must be considered in determining what modes of transportation should be supported in a specific location.

## Regional Bicycle Transportation Network (RBTN) within Bloomington

The Regional Bicycle Transportation Network (RBNT), shown in Figure 4.2, was developed by the Metropolitan Council to identify a proposed network of bicycle transportation routes throughout the Twin Cities. The network consists of prioritized alignments and corridor search areas that are intended to act as the trunk arterials of the regional bicycle network. Alignments represent specific routes that have been identified for investment in the bicycle network. Corridors represent search areas for which a specific dedicated alignment should be studied. Tier 1 alignments and corridors are the highest priority and provide direct connections between regional destinations and serve the highest transportation function.

There are several Tier 1 and Tier 2 alignments and corridors in Bloomington. Several existing bicycle facilities coincide with the RBTN alignments. These should be acknowledged when the *2040 Transportation Policy Plan* is next updated. It is also noted that the RBTN search corridors are incorporated into the City's adopted ATP.

# 4.3 Transit

## Transit Market Area

The Metropolitan Council divides the region into five Transit Market Areas defined by demographic and urban design factors associated with successful transit service. Levels of transit service vary, with Transit Market Area I providing the highest levels of service. As shown on Figure 4.3, most of Bloomington is designated for Transit Market Area III. The area including and between the Penn American and South Loop Districts is designated Transit Market Area II and a small section of southwestern Bloomington, encompassing the SW Industrial area, is designated Transit Market Area IV.

## Existing Transit System

The existing transit system in Bloomington, shown in Figure 4.3, consists of several bus routes, one highway Bus Rapid Transit route (METRO Red Line) and one Light Rail Transit route (METRO Blue Line). Frequency and duration of service varies among the routes, as shown on Figure 4.4. Several routes operate only during peak morning and evening commuting times.

Bloomington is served by multiple transit providers, including:

- ***Metro Transit –*** A division of the Metropolitan Council, Metro Transit operates most scheduled bus service in Bloomington and the METRO Blue Line LRT. Metro Transit routes provide inter and intra community service in Bloomington, with the highest volumes on routes providing connections to downtown Minneapolis and Saint Paul or to sub-regional transit hubs such as the Mall of America.
- ***Minnesota Valley Transit Authority (MVTA) –*** MVTA operates bus service in seven communities south of the Minnesota River on behalf of the Metropolitan Council. Three of MVTA's routes stop at the Mall of America, including the METRO Red Line BRT and MVTA Route 495. Several additional MVTA routes follow TH 77 and I-35W through Bloomington although only one along I-35W makes a stop in Bloomington.
- ***Transit Link –*** Transit Link is a dial-a-ride service operated by the Metropolitan Council that provides curb-to-curb minibus or van service for the general public. Transit Link operates on weekdays throughout the seven-county metropolitan area. It is a shared-ride service, which must be reserved in advance. If a trip involves a combination of Transit Link and regular transit route service, transfers in Bloomington will occur at either the Mall of America Transit Center or the Bloomington South Transit Center (98th Street).
- ***Metro Mobility –*** Metro Mobility, a division of the Metropolitan Council, offers door-to-door bus service for individuals with disabilities. Metro Mobility meets the requirements of the Americans with Disabilities Act (ADA) by providing transit service to people with disabilities certified as not able to use the regular-route transit system.
- ***SouthWest Transit –*** SouthWest Transit operates bus service in Eden Prairie, Chanhassen, Chaska, and Carver. Southwest primarily offers transit service from the Southwest Transit area to Normandale Community College in Bloomington.
- ***Bloomington School District –*** Bus service is provided for many Bloomington Public School students by the Independent School District #271.


### 98th Street Station Area Plan

The City of Bloomington developed a plan for the area around the METRO Orange Line 98th Street Station and park and ride facility. The plan identifies public infrastructure projects to enhance access and mobility at the 98th Street Transit Station and establishes a land use vision to foster transit supportive redevelopment. Proposed infrastructure enhancements include improving the sidewalk and bikeway network, streetscape enhancements, and roadway modifications to improve pedestrian/cyclist safety. Policy changes include zoning and land use recommendations to support a greater mix of uses, higher intensity of development, and enhanced urban design standards.

- ***Private Services –*** Numerous private transport services operate in Bloomington, including: taxicab companies, private disability transportation services, hotel and senior housing shuttles, rideshare services, volunteer organizations, and other private transportation providers.
- ***Commuter Services –*** This outreach arm of the I-494 Corridor Commission, is not a transit provider but provides a variety of transit assistance resources to residents, employees, and employers in Bloomington and other communities along the I-494 corridor.

***Park and Rides*** - Existing park and ride facilities in Bloomington are shown in Figures 4.3 and 4.4. Bloomington has historically encouraged park and rides to be dispersed throughout the City. They typically utilize existing parking lots through agreements with land owners at minimal public cost. Religious assembly sites are particularly well suited to accommodate park and rides given their usual low parking demand during work days. There are two large Metro Transit park and ride facilities in Bloomington: a surface lot at 98th Street and Aldrich Avenue just east of I-35W, and a parking ramp and surface lot at 28th Avenue and 82nd Street in the South Loop District.

## Planned Transit Improvements

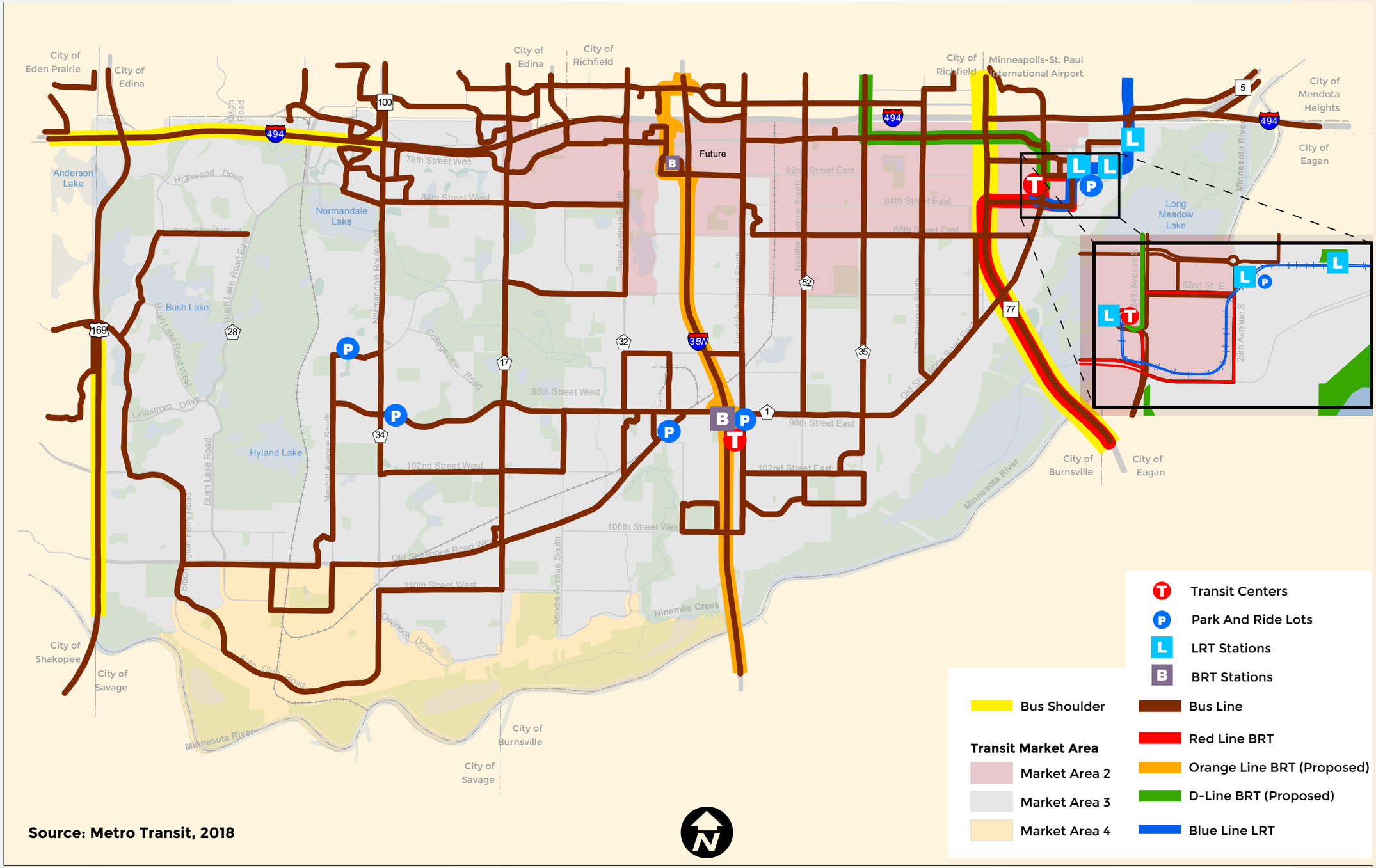
The Metropolitan Council's *2040 Transportation Policy Plan* (TPP) identifies several planned future transitways in Bloomington. Those with identified funding are included in the Current Revenue Scenario, while those not yet funded are part of an Increased Funding Scenario. These transitways are described below:

***METRO Orange Line BRT*** - The METRO Orange Line Bus Rapid Transit (BRT) is a highway bus rapid transit line planned to run through Bloomington along I-35W. The 17 mile transitway will connect Burnsville, Bloomington, Richfield, and Minneapolis. There are twelve stations proposed, including two in Bloomington. One will be located at the existing Bloomington South Transit Center (98th Street park and ride). The second will be located off of I-35W at Knox Avenue and American Boulevard in the Penn American District. The METRO Orange Line route will leave I-35W between 76th Street in Richfield and 82nd Street in Bloomington. A dedicated tunnel under I-494 will connect the Penn American District to the Best Buy campus in Richfield. The tunnel will provide a much needed bicycle and pedestrian connection under I-494 and eliminate a significant regional bicycle barrier.

Future study is needed for the area around W. 98th Street and I-35W to explore options to improve the bridge over the freeway and the interchange as a whole. The long-term goal is to incorporate an in-line transit station on I-35W and other improvements that would increase the efficiency of the METRO Orange Line, make the area along W. 98th Street more attractive and safer for pedestrians and bicyclists, while maintaining vehicular capacity and efficiency in the area.

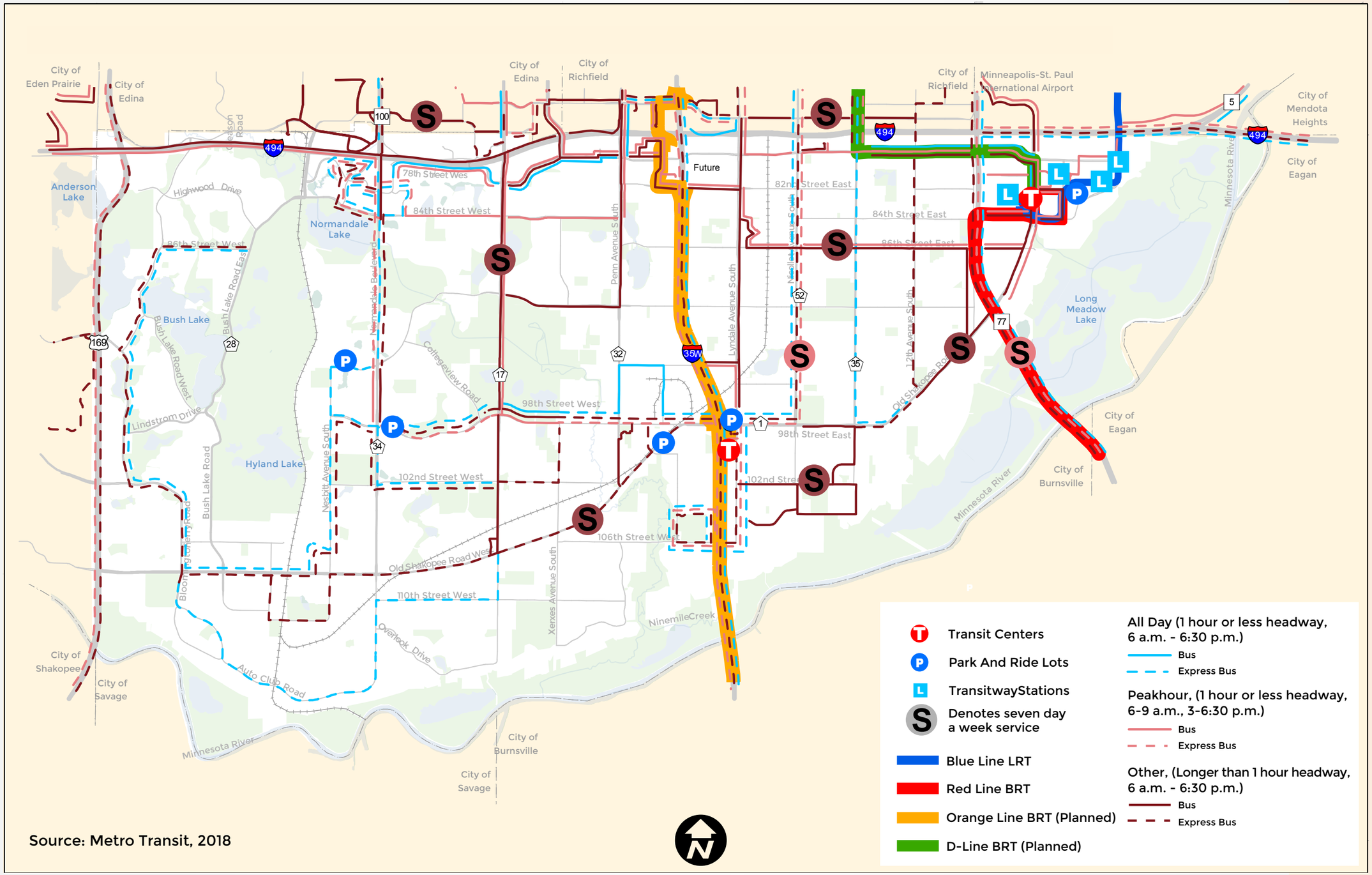
**D-Line (Chicago-Emerson-Fremont)** - This arterial bus rapid transit line will substantially replace the existing Route 5, the Twin Cities' busiest bus route. During rush hours, Route 5 buses currently make up less than 2 percent of vehicle traffic but carry more than 20 percent of people traveling through the corridor. The D-line is expected to be 20-25 percent faster in connecting the Mall of America Transit Station to downtown Minneapolis and on to the Brooklyn Center Transit Center. While not included in the fiscally constrained plan of the *2040 Transportation Policy Plan*, this project has been prioritized for funding by local partners or implementing

Figure 4.3: Transit Routes




**Source: Metro Transit, 2018**

Figure 4.4: Transit Route Level of Service, 2018




Source: Metro Transit, 2018

agencies. Of the projects with partial funding, this project is the highest priority for implementation and the Metropolitan Council is aggressively seeking funding for the remaining capital costs. It is currently in design stages and is expected to be in construction during 2020 or 2021. Opening day service is expected to carry over 15,000 passengers per weekday. Preliminary stop locations in Bloomington have been identified along American Boulevard at Portland-Chicago Avenue, Bloomington Avenue, Thunderbird Road, and the Mall of America Transit Station. Bloomington staff served on the D-Line Technical Advisory Committee (TAC) and will continue participation throughout the design and construction phases of the project.

**Riverview Corridor -** The Riverview Corridor is proposed to connect downtown St. Paul, Minneapolis-St. Paul International Airport (MSP Airport), and the Mall of America. The eastern and western ends of the corridor are connected by light rail to downtown Minneapolis via the METRO Blue and METRO Green lines. Current transit service along the corridor is provided by Metro Transit's Route 54 bus. The Riverview Corridor Technical and Policy Advisory Committees identified a modern streetcar route along West 7th Street as the locally preferred alternative (LPA) route. The route would run along the METRO Blue line LRT tracks between the South Loop District and MSP International Airport then follow West 7th Street into Saint Paul. This project is not yet adopted as part of the *2040 Transportation Policy Plan's* current revenue scenario. However, it has been identified as a financial priority for Hennepin and Ramsey counties and could be the subject of a future amendment to the 2040 TPP. It is expected to take another 10 years to complete project development, engineering, and construction before the streetcar alternative becomes operational. Bloomington staff and elected officials have been members on the Technical and Policy Advisory Committees through analysis of modes, alignment, station locations and selection of the locally preferred option. The City will continue to be involved through project development and construction.

**Future Transitways -** Transitways along American Boulevard and US 169 are under consideration, although they are not included in the 2040 TPP funding scenario. MnDOT is coordinating a study of the US 169 Corridor from Marschall Road in Shakopee to Highway 55 in Plymouth/ Golden Valley. A route on US 169 could serve an often neglected part of Bloomington and provide much needed suburb to suburb transit service. While it is difficult to determine at this time if the study will lead to an actual bus rapid transit line in Bloomington, the study provides the underlying foundation to move forward.

The American Boulevard transitway is identified in the 2040 TPP as an additional arterial Bus Rapid Transit (BRT) Line under the increased revenue scenario. This transitway would serve Bloomington's three development districts: Normandale Lake, Penn-American, and South Loop. These districts all support high-density residential development and concentrations of employement that would benefit from an east-west BRT line. Furthermore, the ability to connect to the METRO Blue Line at the Mall of America and planned METRO Green Line Extension in Eden Prairie make this an attractive commuting corridor. Recent construction of a westbound I-494 on-ramp at East Bush Lake Road in the Normandale Lake District can help facilitate BRT along this corridor.

**Mall of America (MOA) Transit Station Renovation -** The Mall of America Transit Station is the busiest transit station in Minnesota; as a transfer point and terminus for major transit routes serving the region. Twelve (12) transit routes connect directly to the station. Of the approximately 220 transit routes in the region, 189 connect to the MOA Transit Station with one transfer. The City and the Mall of America have

Mall of America transit station renovations began in 2018 with completion expected in late 2019.

### State Aid Streets

The State Aid Program and System is governed by a statewide board that develops policies and procedures for the use of State Aid funds. These dedicated funds are derived from a variety of sources, including: motor fuel tax and motor vehicle sales tax 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 an integrated and coordinated system affording, within practical limits, a network consistent with projected traffic demands.

partnered with Metro Transit to renovate the existing station to improve efficiency, increase exterior visibility, and improve access. Construction began in the summer of 2018, with completion expected near the end of 2019.

### Transit Advantage Opportunities

Growing congestion can negatively impact transit movements on streets and at signalized intersections. To mitigate these impacts, transit advantage methods can be implemented such as: dedicated bus lanes, dynamic parking lanes, traffic signal coordination with transit service and/or provision of transit priority, and queue jump lanes. These improvements all work to reduce transit delays, which improves the attractiveness of transit use while increasing the capacity of city streets.

Transit advantage methods currently used in Bloomington include: transit signal priority for METRO Red Line (BRT) and both signal preemption and priority for METRO Blue Line (LRT). The City and Metro Transit are collaborating on an agreement to use transit signal priority on the METRO Red and METRO Orange Line (BRT) routes. The agreement will allow amendments to include other future highway and arterial BRT lines in Bloomington when they become operational.

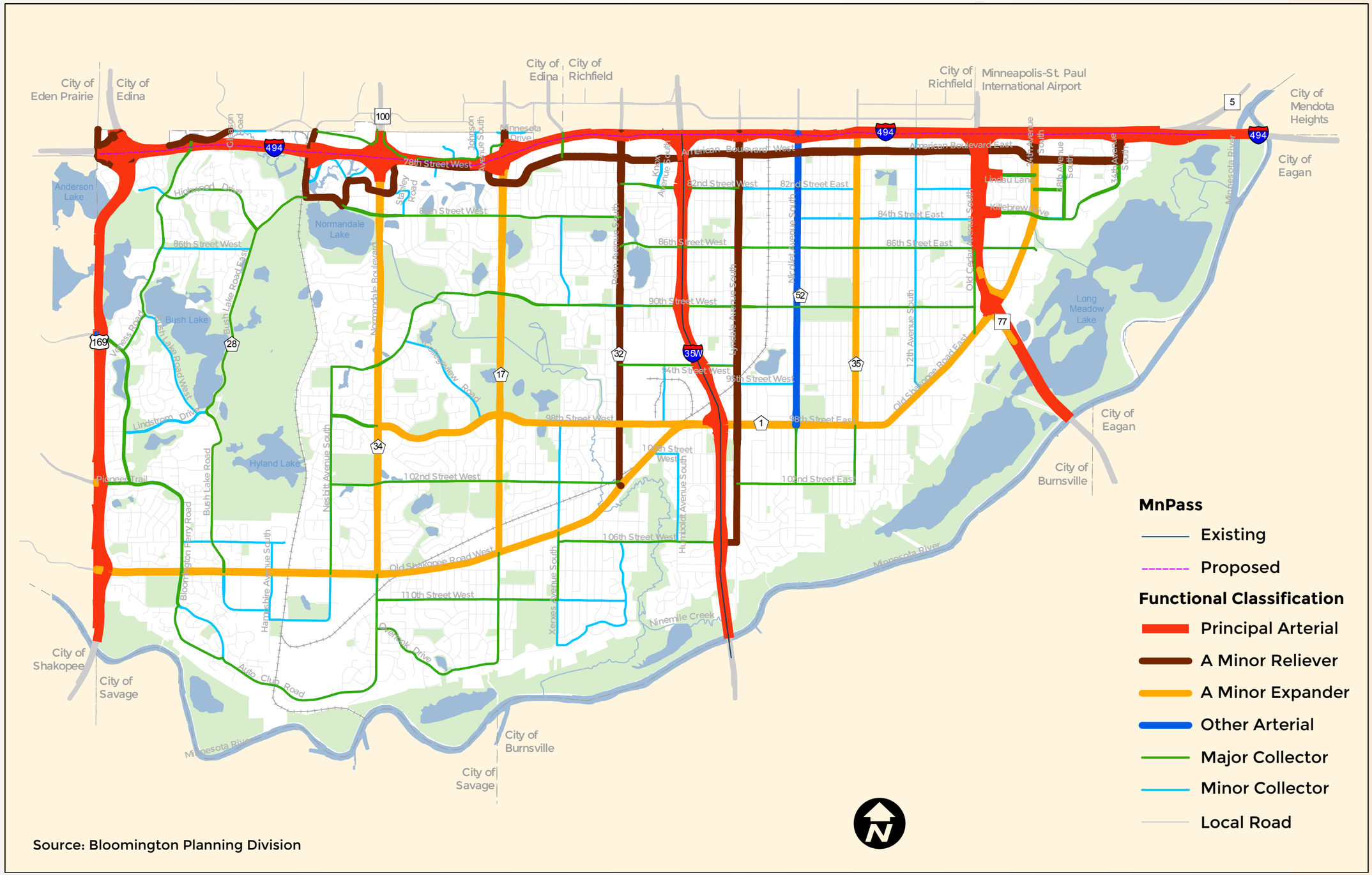
## 4.4 Roadways

### Functional Classifications

Roadways serve two major functions: to provide mobility for a range of users and to provide access to property. From a design standpoint, these functions are sometimes in conflict. To accommodate these equally necessary, but sometimes incompatible functions, a hierarchy of roads has been developed which is commonly referred to as functional classification. The highest class - principal arterials - have the highest speeds and traffic volumes whereas the lowest class - local roads - have the lowest speeds and traffic volumes. Roadway classifications are described below and depicted on Figure 4.5. A more detailed description of functional classification is found in Appendix D of the 2040 TPP.

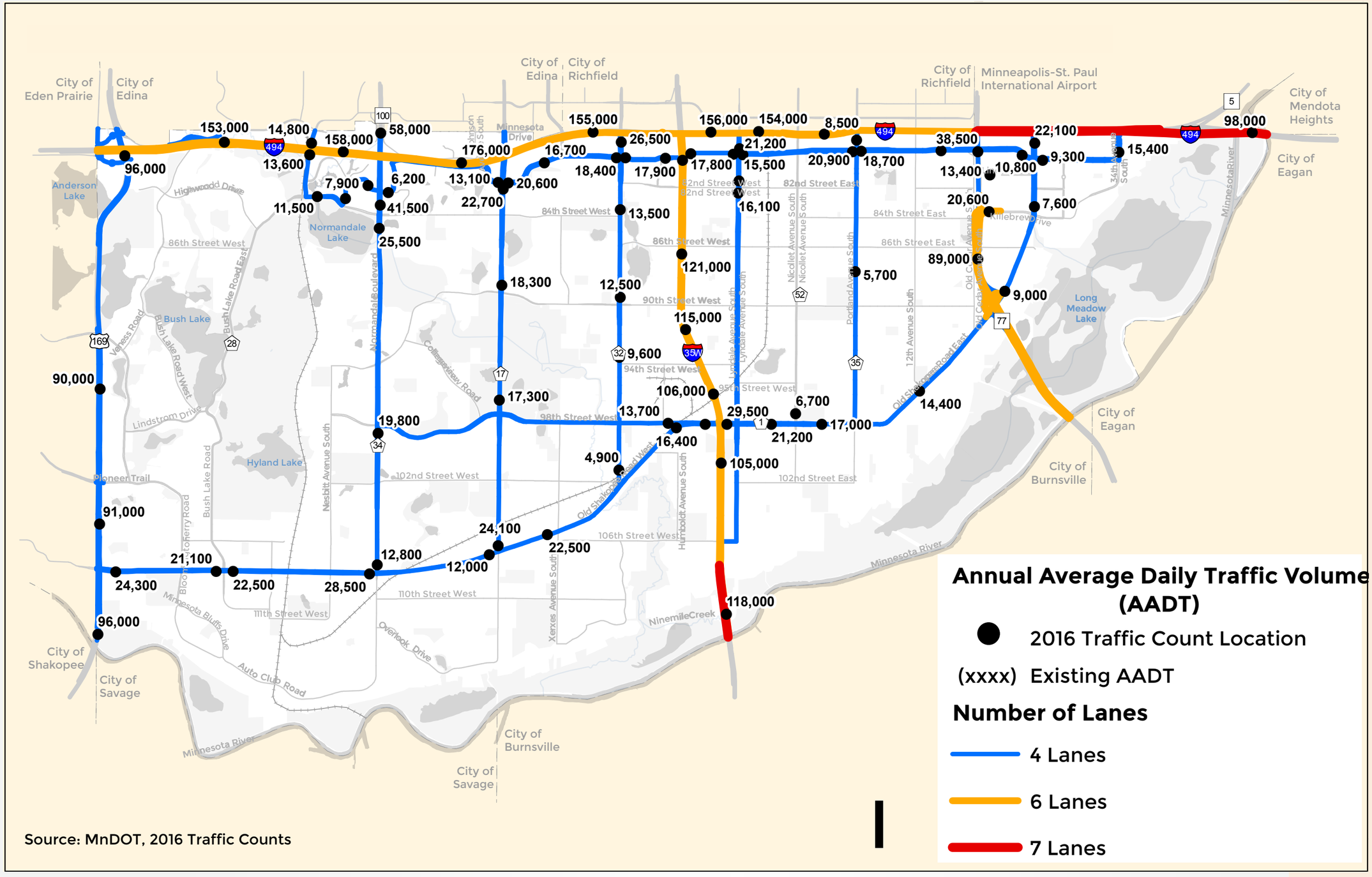
- ***Principal Arterials*** are designed to move large volumes of traffic over long distances. They generally have limited access points which allows for higher posted speed limits. Bloomington examples: I-494, I-35W, US Highway 169, TH 77 and TH 100.
- ***Minor Arterials*** supplement the principal arterial road network. They move a relatively large number of vehicles over medium to short distances. They connect to large traffic generators and provide minimal direct access to abutting land. Bloomington examples: Old Shakopee Road, Lyndale Avenue, France Avenue, and Normandale Boulevard.
- ***Collector Roads*** feed into the higher functional class roadways and provide direct access to abutting land. They provide a balance between mobility and access and are typically used for shorter trips. Bloomington examples: 86th Street, 12th Avenue, and Nesbitt Avenue S.
- ***Local Roads*** are the lowest functional class and are generally used for short trips or to connect to higher function class roadways. They provide direct access to abutting land and typically have relatively low traffic volumes and speed limits.

Figure 4.5: Functional Roadway Classification




Source: Bloomington Planning Division

Figure 4.6: Existing Lanes and Average Annual Daily Traffic Volumes




Source: MnDOT, 2016 Traffic Counts

Figure 4.6 depicts the number of through lanes and average daily traffic volumes on major roadways in Bloomington. There is no anticipated need to add lanes or expand right-of-way on Principal or Minor Arterial roadways in Bloomington to accommodate forecast development.

**Roadway Jurisdiction** - Roadways in Bloomington are under the jurisdiction of either the City, County, or the State. Generally, the Minnesota Department of Transportation maintains the interstate and trunk highway system (I-494, US 169, TH 77), Hennepin County maintains the County State Aid Highway system (streets with pentagon shields in Figure 4.5), and the City maintains the remaining public roadways.

## Existing and Forecast Transportation Demand

Traffic forecasts on the regional roadway system are prepared by the Metropolitan Council. To assist in preparation of regional traffic forecasts, the City prepared household, population, and employement forecasts and distributed them into individual traffic analysis zones (TAZ) for easy insertion into the regional model (see Figure 4.7.) The City prepared its projections using its internal development and planning tool called Forecast Tracker. The tool works from the ground up by estimating potential future development based on land use guiding and zoning, taking into consideration known (entitled) and anticipated new development or redevelopment. Growth components are assigned to parcel specific development/redevelopment with Bloomington specific assumptions about households, population, and employment and then aggregated by TAZ. Projected households, population, and employment by TAZ for the years 2020, 2030, and 2040 are found in Table 4.2.

The Metropolitan Council prepared average daily traffic forecasts for Bloomington's arterial and collector streets for 2020, 2030, and 2040 (see Figure 4.8). The forecast methodology used multiple data inputs and considered anticipated land development and other trip generation factors. Some of the 2040 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 forecast volumes were adjusted in consideration 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 be maintained to accommodate future redevelopment and transportation needs, including new and alternative travel modes (i.e., transit, bicycle), in addition to the need to accommodate greater traffic volumes.

While Bloomington's 2040 traffic forecasts do not differentiate or assign modal splits, the availability of alternate mode trip options is anticipated. Although alternate modes are a very important component of the transportation system, the percentage of trip miles carried is likely to remain low outside of the major transit corridors and will not significantly impact demand for roadway capacity. Likewise, advances in telecommunication technology and use of "smart" devices is expected to influence travel patterns. Impacts on future traffic levels are difficult to accurately predict however, wide-scale disruptions in travel are not anticipated in the foreseeable future.

Figure 4.7: Transportation Analysis Zones

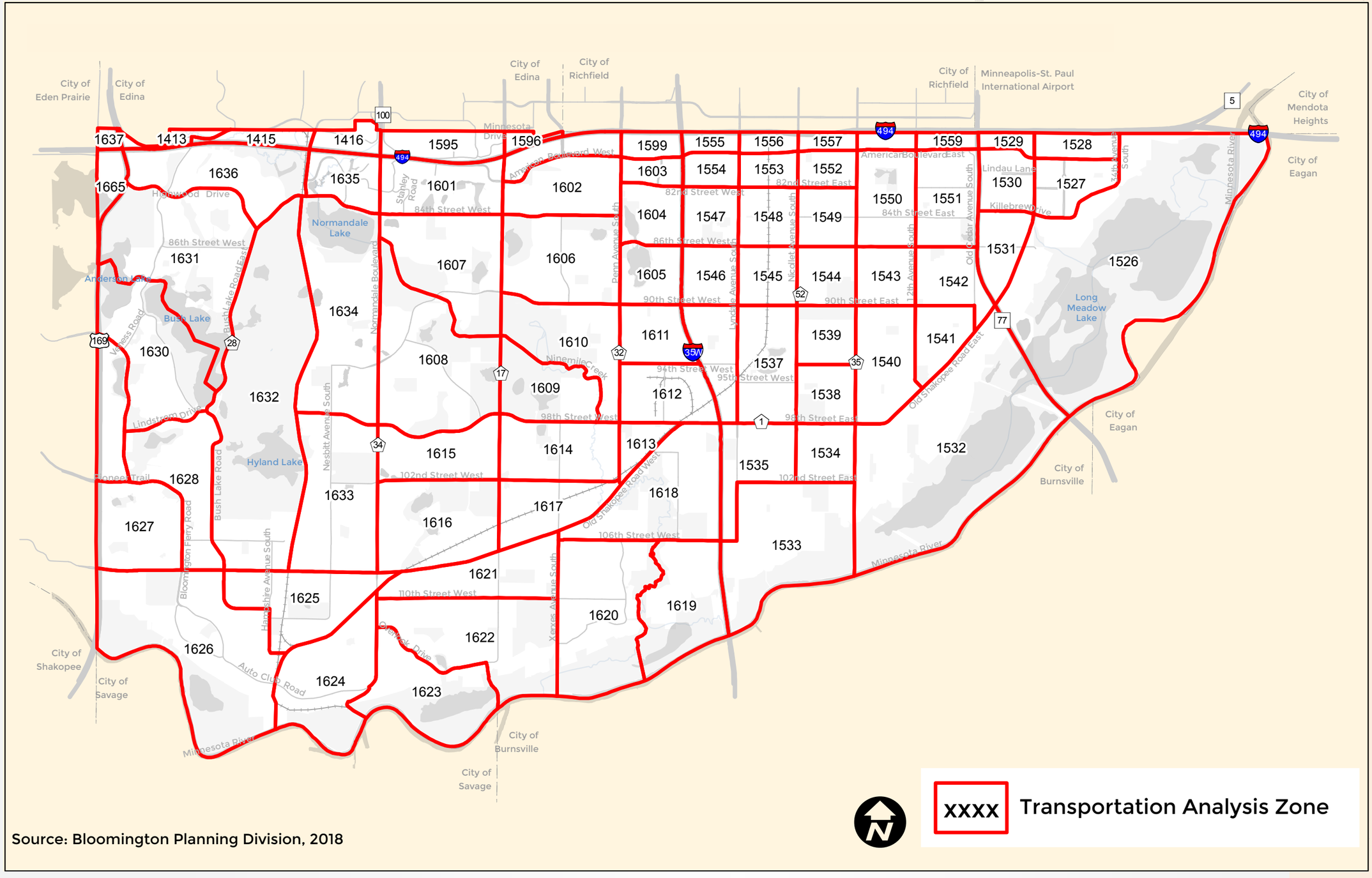


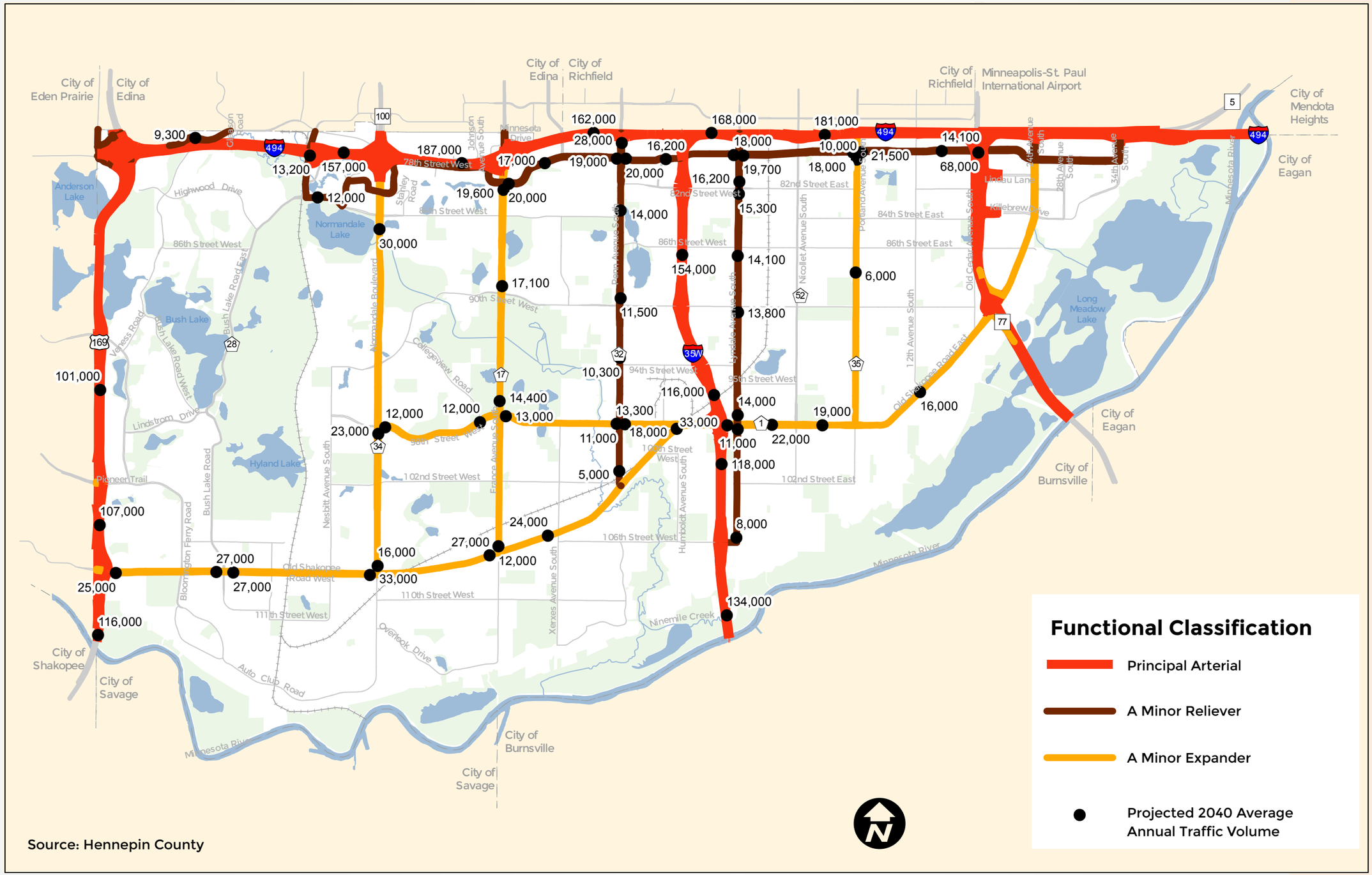
Table 4.2: Forecast Households, Population and Employment by Traffic Analysis Zone (TAZ)

| TAZ | Households | | | Population | | | Employment | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2020 | 2030 | 2040 | 2020 | 2030 | 2040 | 2020 | 2030 | 2040 |
| 1413 | 1 | 1 | 1 | 3 | 3 | 3 | 183 | 182 | 181 |
| 1415 | - | - | - | - | - | - | 2,168 | 2,147 | 2,136 |
| 1416 | - | - | - | - | - | - | 1,746 | 1,729 | 1,720 |
| 1526 | 145 | 385 | 716 | 345 | 763 | 1,340 | 3,626 | 4,496 | 5,421 |
| 1527 | 636 | 1,063 | 1,063 | 1,124 | 1,870 | 1,870 | 3,254 | 8,886 | 9,803 |
| 1528 | - | 240 | 479 | - | 419 | 838 | 3,109 | 3,427 | 3,409 |
| 1529 | - | - | - | - | - | - | 872 | 863 | 1,389 |
| 1530 | 115 | 115 | 115 | 201 | 201 | 201 | 13,229 | 13,103 | 15,071 |
| 1531 | 707 | 707 | 707 | 1,392 | 1,392 | 1,392 | 1,643 | 1,627 | 1,618 |
| 1532 | 1,266 | 1,287 | 1,287 | 2,864 | 2,919 | 2,919 | 295 | 292 | 291 |
| 1533 | 936 | 936 | 936 | 2,326 | 2,326 | 2,326 | 504 | 499 | 497 |
| 1534 | 424 | 424 | 424 | 1,033 | 1,033 | 1,033 | 33 | 33 | 33 |
| 1535 | 924 | 976 | 1,120 | 1,859 | 1,951 | 2,203 | 756 | 749 | 745 |
| 1536 | 208 | 208 | 232 | 490 | 490 | 532 | 1,531 | 1,741 | 2,487 |
| 1537 | 1,140 | 1,140 | 1,140 | 2,201 | 2,201 | 2,201 | 1,624 | 1,608 | 1,697 |
| 1538 | 400 | 400 | 400 | 947 | 947 | 947 | 930 | 921 | 916 |
| 1539 | 415 | 415 | 415 | 992 | 992 | 992 | 62 | 62 | 61 |
| 1540 | 723 | 723 | 723 | 1,888 | 1,888 | 1,888 | 98 | 97 | 97 |
| 1541 | 457 | 457 | 553 | 1,145 | 1,145 | 1,313 | 204 | 202 | 201 |
| 1542 | 645 | 645 | 645 | 1,368 | 1,368 | 1,368 | 551 | 546 | 543 |
| 1543 | 400 | 559 | 559 | 1,004 | 1,282 | 1,282 | 27 | 27 | 27 |
| 1544 | 279 | 279 | 279 | 710 | 710 | 710 | 518 | 513 | 510 |
| 1545 | 383 | 334 | 334 | 760 | 635 | 635 | 1,685 | 1,718 | 1,709 |
| 1546 | 367 | 367 | 367 | 874 | 874 | 874 | 370 | 367 | 365 |
| 1547 | 519 | 567 | 567 | 1,178 | 1,262 | 1,262 | 81 | 80 | 79 |
| 1548 | 406 | 406 | 406 | 978 | 978 | 978 | 762 | 755 | 751 |
| 1549 | 463 | 463 | 463 | 1,218 | 1,218 | 1,218 | 52 | 51 | 51 |
| 1550 | 856 | 856 | 856 | 1,935 | 1,935 | 1,935 | 477 | 473 | 470 |
| 1551 | 930 | 930 | 930 | 2,031 | 2,031 | 2,031 | 696 | 689 | 685 |
| 1552 | 271 | 271 | 271 | 693 | 693 | 693 | 150 | 149 | 148 |
| 1553 | 59 | 59 | 59 | 154 | 154 | 154 | 1,074 | 1,241 | 1,356 |
| 1554 | 174 | 174 | 174 | 419 | 419 | 419 | 393 | 350 | 348 |
| 1555 | - | - | - | - | - | - | 960 | 1,073 | 1,067 |
| 1556 | - | - | - | - | - | - | 469 | 464 | 462 |
| 1557 | - | - | - | - | - | - | 442 | 438 | 718 |
| 1558 | - | - | - | - | - | - | 1,121 | 1,110 | 1,226 |
| 1559 | - | - | - | - | - | - | 1,248 | 1,358 | 1,351 |
| 1595 | - | - | 240 | - | - | 419 | 5,149 | 6,728 | 7,288 |
| 1596 | - | - | - | - | - | - | 914 | 1,066 | 1,061 |
| 1599 | - | 48 | 335 | - | 84 | 586 | 1,592 | 2,481 | 2,882 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1600 | - | 144 | 144 | - | 251 | 251 | 6,566 | 6,621 | 6,586 |
| 1601 | 640 | 736 | 832 | 1,363 | 1,530 | 1,698 | 3,066 | 3,169 | 3,419 |
| 1602 | 932 | 932 | 985 | 2,221 | 2,221 | 2,314 | 723 | 716 | 533 |
| 1603 | 447 | 542 | 542 | 790 | 958 | 958 | 1,916 | 1,897 | 1,887 |
| 1604 | 336 | 336 | 384 | 871 | 871 | 955 | 220 | 218 | (0) |
| 1605 | 271 | 271 | 271 | 702 | 702 | 702 | 138 | 137 | 136 |
| 1606 | 762 | 762 | 762 | 1,979 | 1,979 | 1,979 | 1,389 | 1,376 | 1,368 |
| 1607 | 1,015 | 1,015 | 1,015 | 2,379 | 2,379 | 2,379 | 269 | 267 | 265 |
| 1608 | 985 | 985 | 985 | 2,231 | 2,231 | 2,231 | 1,557 | 1,542 | 1,534 |
| 1609 | 155 | 155 | 155 | 407 | 407 | 407 | 20 | 20 | 20 |
| 1610 | 435 | 435 | 435 | 1,098 | 1,098 | 1,098 | 226 | 224 | 222 |
| 1611 | 218 | 218 | 218 | 501 | 501 | 501 | 2,482 | 2,459 | 2,494 |
| 1612 | 35 | 35 | 35 | 64 | 64 | 64 | 2,023 | 2,004 | 1,993 |
| 1613 | 395 | 587 | 587 | 746 | 1,081 | 1,081 | 828 | 820 | 816 |
| 1614 | 840 | 840 | 879 | 1,948 | 1,948 | 2,048 | 131 | 130 | 129 |
| 1615 | 1,169 | 1,169 | 1,169 | 2,507 | 2,507 | 2,507 | 409 | 405 | 403 |
| 1616 | 1,047 | 1,142 | 1,142 | 2,407 | 2,574 | 2,574 | 2,252 | 2,230 | 2,218 |
| 1617 | 565 | 565 | 565 | 1,482 | 1,482 | 1,482 | 103 | 102 | 101 |
| 1618 | 1,530 | 1,540 | 1,540 | 3,289 | 3,314 | 3,314 | 1,144 | 1,133 | 1,127 |
| 1619 | 275 | 284 | 284 | 722 | 747 | 747 | - | - | - |
| 1620 | 796 | 796 | 796 | 2,092 | 2,092 | 2,092 | 83 | 82 | 81 |
| 1621 | 943 | 1,020 | 1,020 | 2,216 | 2,350 | 2,350 | 468 | 463 | 461 |
| 1622 | 797 | 797 | 816 | 2,090 | 2,090 | 2,140 | 182 | 180 | 179 |
| 1623 | 177 | 177 | 177 | 417 | 417 | 417 | - | - | - |
| 1624 | 452 | 452 | 452 | 1,146 | 1,146 | 1,146 | 30 | 30 | 30 |
| 1625 | 11 | 11 | 11 | 26 | 26 | 26 | 2,061 | 2,115 | 2,176 |
| 1626 | 1,301 | 1,429 | 1,429 | 2,910 | 3,135 | 3,135 | 1,308 | 1,295 | 1,289 |
| 1627 | 786 | 786 | 786 | 2,066 | 2,066 | 2,066 | 131 | 130 | 129 |
| 1628 | 1,236 | 1,236 | 1,236 | 2,531 | 2,531 | 2,531 | 61 | 60 | 60 |
| 1629 | 406 | 406 | 406 | 1,035 | 1,035 | 1,035 | 271 | 268 | 267 |
| 1630 | 443 | 443 | 463 | 1,165 | 1,165 | 1,215 | - | - | - |
| 1631 | 916 | 916 | 916 | 2,207 | 2,207 | 2,207 | 26 | 25 | 25 |
| 1632 | 710 | 710 | 710 | 1,430 | 1,430 | 1,430 | 600 | 594 | 591 |
| 1633 | 1,274 | 1,519 | 1,519 | 2,950 | 3,378 | 3,378 | 499 | 494 | 492 |
| 1634 | 972 | 982 | 982 | 2,441 | 2,466 | 2,466 | 252 | 250 | 249 |
| 1635 | 284 | 284 | 284 | 555 | 555 | 555 | 8,564 | 9,305 | 9,256 |
| 1636 | 753 | 753 | 753 | 1,741 | 1,741 | 1,741 | 229 | 227 | 226 |
| 1637 | - | - | - | - | - | - | 424 | 420 | 418 |
| 1665 | 31 | 31 | 31 | 81 | 81 | 81 | - | - | - |
| Grand Total | 38,585 | 40,873 | 42,511 | 88,939 | 92,940 | 95,862 | 95,250 | 105,750 | 112,050 |
| Decade Growth | 951 | 2,288 | 1,637 | 1,694 | 4,001 | 2,922 | 3,372 | 10,500 | 6,300 |
| Yearly Average | 238 | 229 | 164 | 424 | 400 | 292 | 843.08 | 1,050 | 630 |
| Thrive 2040 | 38,100 | 39,700 | 41,250 | 86,100 | 89,400 | 93,300 | 98,700 | 104,300 | 109,700 |
| Decade Growth | 466 | 1,600 | 1,550 | (1,145) | 3,300 | 3,900 | 6,822 | 5,600 | 5,400 |

*Source: City of Bloomington, 2018*

Figure 4.8: Forecast Average Annual Daily Traffic Volume for Year 2040




## Functional Classification

- Principal Arterial
- A Minor Reliever
- A Minor Expander
- Projected 2040 Average Annual Traffic Volume

Source: Hennepin County

# 4.5 Freight

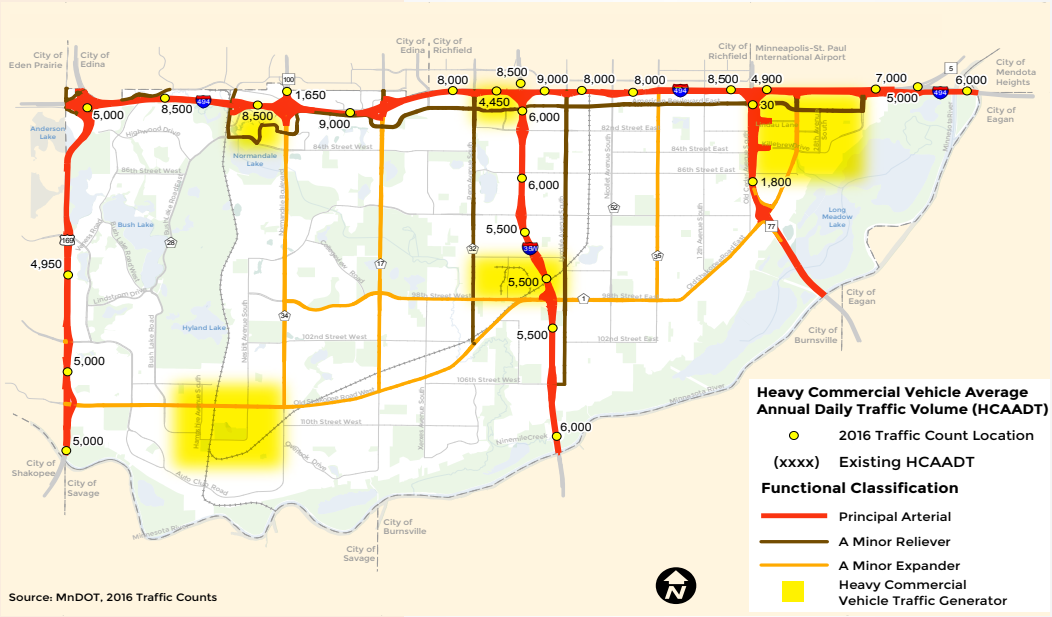
## Truck Transportation

Truck transportation is the primary method of freight delivery to and from most properties in Bloomington. These trips are concentrated on, but not limited to, four principal arterials (I-35W, I-494, US 169, and TH 77) and a system of minor arterials that contribute to the regional and national highway freight system (see Figure 4.9). Through its land use guide plan and zoning, the City has long directed land uses that generate the most truck trips (commercial and industrial) to locate on or near these major roadways. Figure 4.9 depicts the most heavily used commercial routes and corresponding existing heavy commercial vehicle traffic counts (HCAADT) as well as the City's primary job centers and industrial areas.

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

- 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 feasible.
- Encourage site designs that minimize visual and sound impacts of parked trucks and truck docks on adjacent residential properties and discourage on-street parking or queuing, loading and unloading, and disruptive maneuvering for access.
- Continue enforcement of applicable truck related safety, aesthetic and sound level statutes and ordinances.

Figure 4.9: Existing Heavy Commercial Average Annual Daily Traffic Volume



## Rail Transportation

There are currently three operating rail routes in Bloomington. The Canadian Pacific Railway owns two railroad routes. The five mile western route is operated by Canadian Pacific and runs north-south approximately a half mile west of Normandale Boulevard. Twin Cities and Western Railroad operates a portion of the track leading south across the Minnesota River to the Port of Savage and has made improvements to the river crossing in recent years with the intent of resuming grain shipments by rail to Savage. The seven mile eastern railroad route is operated by Progressive Rail and branches off from the western route to run southwest to northeast through Bloomington to Richfield and southwest Minneapolis. The eastern route has several spurs and sidings, including some new and reactivated facilities, serving industries in Bloomington.

Figure 4.10 depicts the freight railway system in Bloomington. Operating speeds on the routes are 10 mph or less. Across the system there are five grade separated crossings including one non-motorized only crossing, 19 signalized at-grade crossings, and 6 unsignalized at-grade crossings with passive traffic control. Increased rail traffic can lead to increased crash exposure and increased concerns about train horn noise. The City has, and continues to participate in efforts to upgrade crossings from passive to active traffic control devices in an effort to reduce crash potential. Improved traffic control devices, in conjunction with grade separated crossings, crossing consolidations and improved crossing surface conditions, have the potential to provide for the benefits of increased rail freight while minimizing negative impacts.

Figure 4.10: Freight System


Source: Federal Railroad Administration, 2018

## River Transportation

The Minnesota River upstream from TH 77 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 in Burnsville and Savage (see Figure 4.10), Bloomington only accommodates barge fleeting and mooring areas on the north side of the river channel. The US 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 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.

## Air Transportation

Minneapolis-St. Paul International (MSP) Airport serves as the major air freight terminal for the region as well as most of Minnesota and adjacent areas of Wisconsin, North and South Dakota. The air freight system primarily accommodates low-weight and time-sensitive goods that must be transported large distances. Heavy commercial vehicle traffic to disperse freight arriving at MSP Airport utilize the regional and national highway freight system abutting Bloomington, including I-494 and TH 77 (see Figures 4.9 and 4.10).

## 4.6 South Loop District

South Loop is intended to be a dense, mixed use neighborhood. It is the largest of the City's three development districts where the majority of new development is forecast to occur through 2040.

As a major regional employment hub and tourist destination, the South Loop District has been the subject of several transportation studies. The most recent was completed in conjunction with an update to the *South Loop Alternative Urban Areawide Review* (AUAR) the City completed in 2017. A summary of key findings and recommendations related to needed transportation improvements through 2040 is provided below. For more detail, see the South Loop AUAR and traffic study updates and the South Loop District Plan at BLM.MN/SouthLoopAUAR.

**Intersection Level of Service (LOS) –** The AUAR traffic study analyzed intersection level of service (LOS) based on forecast development in the near-term (2025) and at full development (2040). All intersections in the South Loop currently operate at LOS D or above, although four were identified as having unbalanced lane utilization. LOS ratings use letters A through F, similar to academic grading, with LOS E and F considered unacceptable. By 2025, nine intersections are forecast to operate at an unacceptable LOS of E or F, if all forecast development is in place. Likewise, with all forecast development in place by 2040, twelve intersections will operate at an LOS E or F during peak hours.

Improvements recommended to address these concerns include:

- I-494 westbound off-ramp improvements at 24th Avenue;
- I-494 eastbound on-ramp improvements at 24th and 34th Avenues;
- Geometric improvements at American Boulevard and 34th Avenue, East Old Shakopee Road and TH 77;
- Install traffic signals or round-abouts at several intersections;
- Increase capacity for southbound approach at American Boulevard and Thunderbird Road;
- Potentially add grade separated crossings near the 24th Avenue & Killebrew Drive intersection; and
- Signal timing updates at multiple intersections.

To help alleviate congestion and improve circulation, the City will work to improve access to transit, advocate for improvements along I-494, encourage TDM strategies, and implement Intelligent Transportation Systems (ITS) strategies.

**Transit Improvements –** Several transit improvements affecting the South Loop are already planned or have been identified for detailed study. The most significant transit improvement is the renovation of the Mall of America Transit Station. Construction on this project began in summer 2018 with final completion expected near the end of 2019. Other improvements are recommended to connect surrounding residents and visitors to the employment and shopping opportunities located in South Loop and facilitate transit connections to other areas in the City and region.

SOUTH LOOP

BLOOMINGTON

*A pedestrian bridge, improved signal timing, active pedestrian crossing treatments, and larger refuge islands have been constructed to facilitate pedestrian safety and circulation in the South Loop District.*

**TDM Strategies –** The City adopted an ordinance requiring private property owners to implement TDM strategies in conjunction with redevelopment or expansion. The TDM requirements apply throughout the City, however requirements vary by size of the development and type of use. TDM strategies are aimed at reducing employee and visitor traffic volumes, during peak travel hours. The ordinance does not dictate use of specific strategies but requires the property owner to identify strategies that will be most effective in reducing peak hour single occupancy vehicle (SOV) use in their specific circumstance and commit to implementing them. Potential strategies include flexible work times to allow for the work day to start and stop at times other than peak demand, subsidizing transit, providing preferential parking to car and van pools, and providing secure bicycle parking and shower facilities. It also could mean restricting freight deliveries to off peak hours to avoid traffic conflicts on adjacent roadways.

**Intelligent Transportation Systems (ITS) –** ITS systems help improve flow and alert travelers when traffic congestion occurs and direct motorists to less congested roads and routes. The South Loop District ITS/Wayfinding system is comprised of electronic changeable message signs on adjacent freeways (I-494, TH 77), collector and local roads throughout the district, and roadways within the Mall of America property. The signs can be changed remotely in real time to direct motorists away from congested areas and onto available roads to access parking nearest their destination. Information provided via the ITS system can be used by freight vehicles as well to help navigate throughout the district and avoid congested areas.

**Pedestrian/Bicycle Enhancements –** The *South Loop District Plan* describes a number of projects to enhance pedestrian and bicycle movement and use in the District. One of the key objectives is to improve access to the Minnesota Valley National Wildlife Refuge (Refuge). While the existing pedestrian and bicyclist network is not well-developed, adopted plans identify specific improvements to be made as opportunities and funding allow. As existing roads are reconstructed and new roads built to break up the large land blocks, pedestrian and bicycle enhancements can be implemented.

**Regional Trails –** The Nine Mile Creek Regional Trail will terminate at the Refuge headquarters facility at the east end of American Boulevard. At this time, the exact alignment of the Bloomington segment of this trail has not been finalized. One option would extend along American Boulevard from 12th Avenue to the Refuge headquarters. Another option would follow an alignment on the north side of I-494, crossing into Bloomington on 34th Avenue. While not technically within the South Loop District, the Nokomis-Minnesota River Regional Trail is located along Old Cedar Avenue, just west of TH 77. Three Rivers Park District completed construction on this trail to the intersection of Old Cedar Avenue and East Old Shakopee Road. The City is currently constructing the southern segment of the trail to extend from East Old Shakopee Road to its terminus at the Old Cedar Avenue Bridge trailhead, where users can cross the Minnesota River and connect to the Dakota County trail system as well as the planned Minnesota Valley State Trail. It is noted that the approved *Nokomis-Minnesota River Regional Trail Master Plan* officially terminates the trail at East 86th Street. The City intends to work with Three Rivers Park District to request an amendment to the master plan to formally designate the segment south of 86th Street as a regional trail.

# 4.7 Opportunities and Challenges

## Mobility

Mobility is about connecting people to destinations in a convenient and efficient manner. Mobility involves balancing access and safety. Improving mobility can also result in better utilization of existing roads, which helps the City avoid unnecessary and costly expansion projects. Opportunities to enhance mobility for various modes of transportation are described below.

**Vehicle Mobility -** Enhancing mobility for vehicles on our roadways is a fundamental goal. It involves continual improvement and refinement of roadways to reduce congestion and move vehicles efficiently. However, these improvements must be conducted in a manner that is safe for all users and maintains necessary access to property and other destinations.

**MnPASS Lane Proposals -** MnPASS offers dynamic tolling for vehicles to access high occupancy vehicle (HOV) lanes as a way to relieve congestion and collect funds to maintain roadways. MnDOT operates MnPASS and is in charge of adding additional lanes. MnPASS lanes are in place on I-35W through Bloomington. In 2018, funding was awarded through the Corridors of Commerce program to install MnPASS lanes on I-494 through Bloomington. The Metropolitan Council's 2040 TPP identifies TH 77 as a Tier 3 MnPASS Expansion, which means the project is not currently funded but the corridor should be studied for possible MnPASS installation. A study of TH 77 determined that the full benefits of a MnPASS Lane would not be realized until congestion on I-494, from TH 77 to I-35W, is addressed.

**Local Street Traffic Management –** The City uses various approaches to address neighborhood traffic concerns, including: education, increased police enforcement, and engineering techniques. Road design modifications such as temporary speed tables, radar signs, and intersection controls can encourage drivers to obey speed limits and improve safety. These techniques can also be used to reduce cut through traffic. Temporary or semi-permanent implementation can be used to test effectiveness before committing resources to install permanent modifications.

**Right-Size Roadways -** Some roadways in Bloomington have more capacity than needed to accommodate average daily traffic volumes. Excess lanes or roadway width can encourage drivers to operate at unsafe speeds. The City evaluates capacity when roads are identified in the Pavement Management Program (PMP) for improvement or maintenance. In some cases the current lane configuration remains. In other cases four lane roads are reduced to two or three lanes. Narrowing roadways or reducing lanes can encourage drivers to slow down. The excess right-of-way can be repurposed to provide space for bicyclists on the shoulder.

**Access management -** Access management involves limiting or consolidating driveway access along roadways, particularly those that accommodate high traffic volumes. Limiting access reduces the number of turning vehicles and potential conflicts. Traffic flow is improved by reducing collisions or near collisions and back ups that occur when vehicles turn into an abutting property. The traffic flow benefits of access management must be balanced against the need to provide access to adjacent land uses. In some situations, property access must be restricted to maintain safety. The City and County will continue to implement their access standards as development occurs.

Conversion of 4-lane road to 3-lane road with bike lanes in shoulder.

## Coming to a Car Dealership Near You!

Autonomous vehicles have received a lot of attention from automakers and the media. General Motors and Ford have announced their intentions to mass produce AVs by 2019 and 2021 respectively. While recent concerns about safety have reigned in some of the enthusiasm, by the year 2040, mass production of AVs appears to be a real possibility.

- **Autonomous vehicles (AV)** are self-driving and operate without direct driver input to control the steering, acceleration and braking. This vehicle is designed so the driver is not expected to constantly monitor the roadway while operating in self-driving mode. Autonomous vehicle technology provides accessibility and opportunity for people who are not able to drive or who might not otherwise travel via a car.
- **Connected vehicles (CV)** use different communication technologies to communicate with the driver, other cars on the road, roadside infrastructure (such as traffic signals and street lighting) and the "cloud." These technologies can improve vehicle safety and vehicle efficiency and commute times.

**Land Use Coordination -** Bloomington has and will continue to coordinate land uses with transportation planning. The different ways land use supports transportation planning include:

- Increasing density near existing and future transit stations (See Land Use Element, station area analysis for more detail)
- Promoting TDM strategies for new developments
- Promoting a variety of land uses throughout the City in a manner that helps reduce trips and improves accessibility.
- Coordinating City plans and development proposals with transit agencies
- Apply our Complete Streets policy in conjunction with redevelopment or road construction.

**Transportation Demand Management (TDM) -** TDM strategies are intended to incentivize employees to use alternative travel modes to get to work. They help smooth out peak demand, thus increasing road system efficiency and reducing congestion. Improvements in technology have made TDM strategies such as flexible work schedules or coordinating ride sharing much easier. The City adopted a TDM ordinance that requires development over a set size to implement TDM strategies.

In addition to enforcing its TDM requirements, the City can encourage TDM through:

- Collaboratation with partners to implement multi-jurisdictional and regional TDM efforts.
- Continued active involvement in the I-494 Corridor Commission and the I-35W Solutions Alliance.
- Continued support for shared use of under-utilized parking via public/private partnerships for park and ride use.
- Continuing support for non-intrusive home occupations as permitted uses and by encouraging and facilitating the continued development of a high quality wired and wireless communications infrastructure.
- Continuing to offer City employees flex work schedules and telework options.

## New Technologies

We are on the cusp of widespread application of new technologies that have the potential to dramatically reshape our transportation systems. These changes are occurring rapidly, although there remains much debate about when, where, and to what extent these changes will be realized. In light of this uncertainty, the most effective approach will be to vigilantly track and expand our understanding of these technologies to ensure we remain nimble to respond when the time is right. It is also important to recognize how these technologies are inter-connected in order to leverage potential beneficial synergies.

**Electric Vehicle (EV) Charging Stations -** As demand for electric vehicles has increased, demand for places to charge them has increased. Over the last few years, the City has received several inquiries and requests from private developers to create EV charging stations. The City does not currently have standards to regulate EV charging stations, although developing such standards has been identified as a near-term project. It is also likely the City will eventually add electric vehicles into its fleet.

**Autonomous / Connected Vehicles** - One of the most revolutionary changes expected to impact transportation systems and traffic patterns is the introduction of autonomous and connected vehicles. AVs are expected to completely change transportation as we know it. However, there are widespread views on when and how AV/CV technology will impact current travel conditions; particularly outside of central cities.

While their impact may not be on the near-horizon, it is clear that AVs will affect land use and development, infrastructure, safety regulations, and the transit system. It will be important for the City to stay abreast of best practices related to site design and infrastructure investment in order to accommodate autonomous and connected vehicle technology and minimize potential negative impacts. Some possible implications and considerations include:

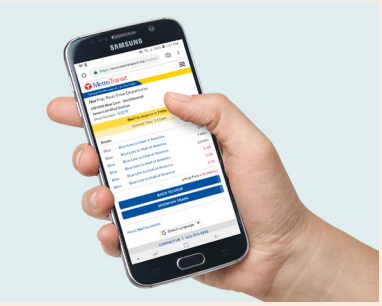
- **Flexible Site and Parking Ramp Design –** As new development occurs there is an opportunity to identify how the site can be adapted or redeveloped if future parking demand is significantly reduced. Site features such as drop off zones and reuse of parking areas can be factored into the site design. Parking ramps are specialized structures that involve significant investment and have long lifespans. New building techniques are being developed that make parking ramps easily adaptable for other uses, such as using flat, rather than sloped floor plates. Also, inclusion of a wireless communication network within parking ramps allows information to be directly transmitted to connected vehicles, such as the location of available parking spaces in the ramp.

- **Large Roadway Investments –** There is a lot of uncertainty about whether AVs will increase or decrease vehicle miles of travel and roadway congestion. Investments in significant roadway capacity improvements will need to be carefully scrutinized to guard against facilities becoming prematurely obsolete or underutilized.

- **Enhanced Roadway Communication Network –**The backbone of autonomous and connected vehicle technology is a robust roadway communication network. It is expected that the federal government will mandate installation of enhanced roadway communication equipment in the foreseeable future. Fiber optic technology is currently used to monitor and remotely control traffic signals and electronic changeable message signs and will be vital bandwidth when other technologies are adopted. Laying fiber optic along roadways and installing communication equipment within traffic signal cabinets will be beneficial in the future as connected vehicles communicate with City infrastructure.

- **Maintain Right-of-Way Assets –** Road striping is one of the right-of-way assets that must be well maintained to support AV use. Pavement markings are used by AV's to help guide the vehicles and ensure safety of pedestrians. Changes in AV technology may require different types of pavement marking. The City will need to stay on top of industry trends to remain current.

- **Shared Vehicles –** Some research suggests use of shared AVs to augment transit systems by filling first- and last-mile gaps has the potential to become commonplace in the foreseeable future. Many automobile companies are rolling out AVs as ride hail services and some larger shuttle type AV vehicles are being tested. This suggests a future where people have the option to utilize shared vehicle services rather than own a personal vehicle. It could also significantly impact paratransit services.



## Real time Tracking

Metro Transit and MnDOT use real time data to improve travel throughout the Metro Area.

- **Metro Transit** provides real time transit information that can be accessed with smart personal communication devices. Real time information can make using transit easier and reduces stress of waiting for transit vehicles. In the future, personal communication devices might be able to directly interact with autonomous and connected vehicles or transit service to seamlessly coordinate use of these two modes.

- **MnDOT** provides real time information on traffic and road conditions as part of its 511 system. This information is updated regularly and helps commuters determine the safest and most efficient travel routes.


## Transit Support

The City works cooperatively with Metro Transit to address transit needs and demand in Bloomington. To support a quality and effective transit system, Bloomington can:

- Focus new development and redevelopment in locations that are well served by transit.
- Improve sidewalk connections between transit stops and origins/destinations.
- Use official controls to foster transit-supportive development and enhancements (parking flexibility, density bonuses, on-site sidewalks, transit shelter easements).
- 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.
- Continue staff and elected official participation on technical and policy advisory committees for transitway corridor studies.

**Intelligent Transportation Systems (ITS).** ITS systems are designed to help advance mobility, safety, and wayfinding. ITS systems can be as simple as dynamic message signs along roads or as complicated as traffic management centers with central system software collecting real time information used to immediately improve operations. As computers and new technologies advance, ITS will play an increasing role in improving mobility.

The City is working with MnDOT and Hennepin County to install fiber along its roadways to assist with sending real time data to each agency. This data can be used to monitor and improve traffic signal timing and improve traffic management. Loop detectors in the roadway, cameras mounted on street lights, and controllers in traffic signal cabinets are just some of the ways data is collected. Updated traffic signal timing helps improve efficiency of traffic flow which reduces overall travel times, vehicle stops and air pollution associated with idling vehicles. Currently, systems installed at key signals in the South Loop and along American Boulevard provide real time information about traffic. These systems can also provide information when a signal goes down so repair crews can be sent out quickly, minimizing delays that arise from signal malfunctions during peak traffic periods.

ITS coupled with AVs will allow vehicles to connect to each other, to pedestrians and bicyclists, and to infrastructure and share real time data. This information will be used to enhance routing efficiency, especially as AV use increases. It will also be used to prevent crashes making roads safer.

The National Highway Traffic Safety Administration estimates vehicle-to-vehicle communications could prevent more than half a million accidents and save more than 1,000 lives annually in the United States. U.S. Transportation Secretary Anthony Foxx thinks "Safety is our top priority, and vehicle-to-vehicle technology represents the next great advance in saving lives. This technology could move us from helping people survive crashes to helping them avoid crashes altogether..."

## Transit Deficiencies

**Employment Connections –** Existing transit service in Bloomington is designed primarily to transport commuters to and from downtown Minneapolis. While this service is important, a large number of jobs are located outside of the downtown core. The I-494 corridor supports one of the regions most dense concentrations of employment, including Bloomington's three development districts. This corridor attracts employees from Bloomington and Minneapolis as well as from suburbs throughout the metro area. Improving connections within this corridor, especially east-west connections between the three districts and the Mall of America Transit Station, could entice more people to use transit to access employment or destinations in Bloomington and other communities along the corridor.

**Limited Accessibility –** Convenient access to the transit network is critical to meeting the needs of existing and potential transit users. More frequent bus service, longer hours of operation, and more options for suburb to suburb and intracity routes are frequently cited as factors needed to make transit a viable transportation option in Bloomington. Identifying gaps in route spacing, frequency, span of service, or stop spacing will provide the necessary data to measure the overall accessibility of the network. As new developments create new destinations, the City works proactively with Metro Transit to explore potential route creation and modifications to improve service. Citizen and visitor input will continue to help guide where transit routes and service could be improved to enhance ridership.

**Enhancements and Support Facilities –** Lack of support facilities to enhance comfort, safety, and convenience can be a deterent to transit use. Bloomington advocates for the provision of facilities that support pedestrians and bicyclists, such as bicycle racks, bicycle lockers, and transit shelters. Bloomington's development standards require bicycle parking stalls and sidewalk connections between building entrances and adjacent public sidewalks to facilitate use of bicycles as a transportation mode choice.

Bloomington staff routinely participate with Metro Transit during transitway studies to review and coordinate proposed station locations and route service areas with the existing sidewalk and trail networks. Analysis during design phases allow for early identification of deficiencies and needed improvements to enhance the pedestrian and bicycle environment and ensure advantageous placement of stations.

## Pavement Management Components

Three maintenance tasks involved in the PMP program include:

- ***Sealcoating,*** which involves spraying a bituminous adhesive on the existing surface and topping it with small graded aggregate rock. The excess aggregate is swept off and recycled. City Maintenance Division crews perform this work, which helps protect the pavement from oxidation and the effects of moisture.
- ***Mill and Overlay,*** which involves grinding off the top layer of surface and installing a new top layer of pavement. This is a structural improvement and extends the life cycle of the original pavement.
- ***Reconstruction,*** which removes and replaces the existing asphalt pavement and aggregate base and installs curb and gutter. The City hires outside contractors to perform both the overlay and reconstruction projects.

# 4.8 Proposed Improvements

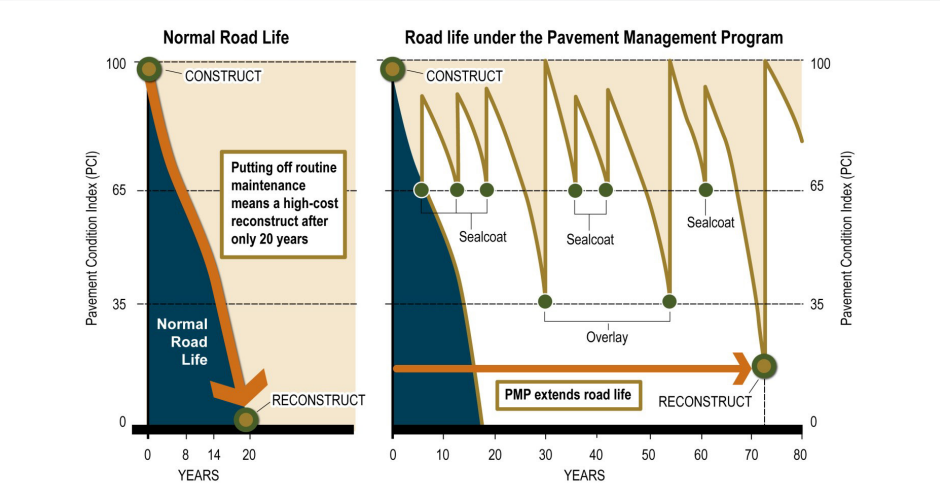
## Pavement Management Program (PMP)

The City of Bloomington is responsible for the upkeep of approximately 342 center lane miles of city streets within its boundaries. This includes seasonal maintenance activities such as snow removal, crack sealing, street patching, sweeping, as well as structural maintenance of the street system. The City utilizes a pavement management plan (PMP) to systematically prioritize street repairs. This ensures City streets are serviceable, safe, and functional, and that repairs are made in a cost effective manner.

The PMP program is organized around three major types of maintenance treatment: sealcoat; mill and overlay; and reconstruction. By utilizing the right treatment at the right time, the life of a road can be extended considerably. Furthermore, routine road maintenance minimizes deterioration, reducing the cost of the road over its lifespan. Without regular maintenance, a road might require reconstruction every 20 years. Routine sealcoating and overlays may extend the life of a road to over 70 years, depending on underlying soils. In addition to being less costly, these routine maintenance tasks are less disruptive to users than full reconstruction. The road maintenance cycle is depicted in Figure 4.11.

Data collected on road condition is used to assign a Pavement Condition Index (PCI). The PCI rating is used to determine the appropriate treatment needed. Software is used to model when roads will deteriorate to a PCI rating that signifies maintenance is needed. Staff use this information to budget funding for road improvements through the 10-year Capital Improvement Program (CIP). This process minimizes unforeseen maintenance and helps reduce overall maintenance and capital costs while ensuring roads are maintained at an acceptable level.

Figure 4.11 Pavement Management Roadway Lifespan




## Current Roadway Projects

There are two significant improvements to the regional road system located in Bloomington that are in the construction stage. Additional regional road projects that are planned and/or funded are described under Future Roadway Improvements.

**East Bush Lake Road – Westbound on-ramp to I-494 -** The East Bush Lake Road (CSAH 28) interchange on I-494 did not include a westbound on-ramp when initially constructed in 1960. The Normandale Lake area has since developed with a number of office buildings, hotels, townhomes, apartments, and high-rise condominiums, located both north and south of I-494. Traffic studies conducted in 2015 indicate the westbound ramp will relieve traffic problems in the area and assist in more efficient operation of the already congested interchange at TH 100/I-494. The westbound on-ramp is completed and opened in November 2018.

**I-35W Minnesota River Bridge Replacement –** This project extends from 106th Street in Bloomington to Cliff Road in Burnsville. The new bridge will include an additional truck lane and the roadway will be raised out of the floodplain. The new bridge will also include a pedestrian and bicycle connection over the Minnesota River. This will lead to a proposed bikeway located on Lyndale Avenue and will provide access to the Minnesota Valley State Trail and the trail system in Dakota County.

Reconstruction of the 106th Street interchange is part of the I-35W Bridge Replacement Project. This interchange will be improved to provide clear sightlines under the bridge and reduce vehicle turning conflicts. Currently, support pillars for the freeway bridge over 106th Street block sightlines between pedestrians and vehicles. A large number of pedestrians and bicyclists travel this route to access nearby schools. The new bridge design eliminates these center columns, which greatly improves sightlines and visibility. The project will also result in permanent closure of W. Bloomington Freeway Road and close or restrict access to River Terrace Road. These roads are located very close to the on/off ramps and cause traffic conflicts.

*The first phase of the I35W/I494 interchange reconstruction is expected to begin in 2022.*

## Future Roadway Improvements

The City uses various approaches to determine future roadway improvements. Detailed descriptions and timing of future roadway improvements are generally identified in the following:

- **Forecast Tracker –** The City uses its Forecast Tracker program to estimate growth in population, households, and employment in each Traffic Analysis Zone (TAZ) in the City. These forecasts specify the location and intensity of future development and are used to determine if road capacity is sufficient to support forecast development, or if new roads or modifications are needed.
- **District Plans –** As described in the Land Use element, most future development is anticipated to occur in Bloomington's three development districts. Plans prepared for each district describe area specific transportation investments needed to accommodate forecast development through 2040.
- **Pavement Management Program (PMP) –** This program, described previously, involves systematic evaulation of road conditions to identify and budget for needed maintenance and upgrades.
- **Capital Improvement Program (CIP) –**Bloomington uses a 10-year CIP to schedule infrastructure improvements, including routine upgrades, replacement, and new construction. A list of road projects included in the current CIP is provided in Table 8.2 (Section 8 – Implementation).

Because timing of most redevelopment is market driven, new road projects – beyond routine maintenance and PMP projects – are typically implemented at the time increased demand warrants upgrades. Beyond the projects identified in District Plans, the City does not anticipate any major improvements to the local roadway system. Planned regional road improvements are described below.

**Planned Regional Road Improvements –** There are a number of planned projects identified in the Metropolitan Council's *2040 Transportation Policy Plan* (TPP) that affect the regional roadway system located in Bloomington. These include:

- ***I- 494 Minnesota River Bridge Rehabilitation*** – This will involve rehabilitation of the I-494 Bridge over the Minnesota River connecting to Bloomington.
- ***I-35W Mill and Overlay*** – This will involve resurfacing I-35W to make the driving surface smoother and quieter for users.
- ***I-35W/I-494 Interchange*** – This project will involve reconfiguring the interchange from a clover leaf design to a turbine design. This design will improve efficiency and safety for the nearly 300,000 vehicles served by the interchange daily. Funding has been granted for the first phase with construction anticipated to begin in 2022.
- ***I-494 MnPASS Lanes*** – This project will involve implementation of MnPASS lanes on I-494 through Bloomington. Funding was awarded and implementation is anticipated in 2022.

## Bicycle and Pedestrian Improvements

Over the last decade, there has been a notable increase in people traveling by bicycle or walking to get to work or school, to go shopping and conduct daily errands, and to get exercise. Providing an inter-connected system of bicycle and pedestrian paths is increasingly viewed as an important asset to attract and retain residents and businesses. Bloomington is taking steps to retrofit its auto-oriented development pattern to expand opportunities to safely and conveniently walk and bicycle throughout Bloomington. Key challenges to establish a robust network of bicycle and pedestrian paths include:

- **Improved Connectivity –** A system of connected pedestrian and bike paths expands travel options. The ultimate goal is to provide an interconnected network that enables walkers and bicyclists to travel safely to destinations throughout the City (see Figure 4.4.) Destinations can include local parks, schools, commercial nodes, transit stops, job centers, and places of assembly. Eliminating gaps in the network is an ongoing challenge. To ensure this is a priority, the City could consider adopting a policy that requires sidewalk installation during street reconstruction to close identified gaps.

- **Accommodating of Shared Use –** Multi-use, off-road paths typically serve both pedestrians and bicyclists. However, some existing shared paths do not meet current design standards for a multi-use trail. Often times older facilities are not wide enough to safely accommodate both bicycling and walking. The anticipated frequency, type of user, and the purpose of the facility determine the appropriate design characteristics. Where possible shared use facilities should be reconstructed to accommodate both pedestrians and bicyclists.

- **Accessible Facilities** – The importance of providing pedestrian facilities that are accessible for persons with disabilities cannot be overstated. According to the 2016 American Community Survey (ACS) five year estimates, about 11 percent of the City's population has some disability. It is further estimated that 70 to 80 percent of the population will experience a disability that restricts mobility at least once in their lifetime. Furthermore, the City's senior population is growing. The City is committed to implementing its Americans with Disabilities Act (ADA) Transition Plan for Public Right-of-Way, Facilities, and Parks. Each year the City evaluates infrastructure such as pedestrian ramps and replaces non-compliant infrastructure adjacent to City projects.

- **Intersection and Road Crossings –** Well designed road crossings are essential to ensure the pedestrian and bicycle network is safe and inviting. Community surveys conducted with the ATP update rated "intersection and street crossing safety improvements" as "very important" or "somewhat important" making it one of the highest priority improvements. Each crossing is unique and requires its own treatment. Crossing improvements include: leading pedestrian-only signals, bicycle detectors, count down timer's at signalized intersections, crosswalks at uncontrolled intersections, and in high traffic areas, grade separated crossings.

- **Last Mile Connections to Transit –** It is not feasible for transit to directly connect every location in the City. As a result, transit users usually travel the last or first part of their trip by other modes of transportation, most often walking or bicycling. This final trip segment is often referred to as the "last mile." Bus stops and transit stations should be accessible by sidewalks and multi-use trails to facilitate the "last mile" movement. Additionally, locating bicycle support facilities such as secure bicycle parking at transit stations can incentivize bicycle transportation by enhancing a sense of security and comfort.

## Other Supporting Measures

- **Bike Parking –** The City of Bloomington requires that bike parking be provided in new developments. This can make bike commuting more attractive by eliminating uncertainty about the availability of safe, convenient bike storage.

- **Bike Repair Stations –** Bike repair stations make it easier for bicyclists to make simple repairs when they are out and about. These compact structures are equipped with a bike stand, air pump, and sometimes repair tools. They are often located at or near major destinations, such as parks, schools, and institutions. Several bike stations have been installed around the City; more may be needed as the City's bicycle network expands.

*Segments of the multi-use trail along Normandale Boulevard were reconstructed in 2018.*


*Bike repair station at Civic Plaza.*


- **Trailheads and Rest Stops** – Providing adequate trailheads and rest stops can encourage cycling. For commuters traveling long distances having a place to rest and recover is appreciated. These areas can be equipped with regional and local maps helping direct bicyclists and pedestrians.

- **Wayfinding Signage and Maps –** Signs located along major trail routes help those on foot and bike naviage and orient themselves. They can also provide information about local history and/or attractions and about distances to nearby destinations. Wayfinding signs are often located at rest areas or near key designations along major bike routes. Three Rivers Park District provides directional signage as well as kiosks with maps along their routes. The City has wayfinding sign systems in the Normandale Lake and South Loop districts and along the Hyland Trail. Wayfinding signage is proposed to be installed along France Avenue in the next year or two.

- **Education and Promotion** – There are a number of ways the City promotes its active living facilities. An important resource for promotion is the City's *Active Living Biking and Hiking Guide*. This pamphlet includes a map of options in the City as well as trail descriptions and safety tips. The City works closely with schools, the Public Health Agency, and other bicycle advocacy organizations to promote its growing infrastructure. In the future, the City can work to strengthen its relationships with community members and organizations and support Bicycle Friendly Business Designation and Bicycle Friendly Community Certification.

- **Temporary Infrastructure –** Installation of temportary infrastructure is a means to test possible permanent improvements to ensure their effectiveness prior to committing significant funding. Demonstration projects can help promote active transportation infrastructure, such as on-street bike lanes. While this approach is not viable for all potential projects, it is an option the City should consider using more frequently.

## Implementation and Maintenance of Pedestrian and Bicycle Facilities

Approaches the City takes to implement bicycle and pedestrian improvements:

**Trail Pavement Management Program (PMP) –** The majority of sidewalks and multi-use paths are located along major roadways. Improvements to these facilities are covered by the Pavement Management Program for trails that addresses the design, construction, and maintenance of the City's existing bituminous trails. The City maintains twenty-five miles of trails along roadways and thirteen miles of park trails. Staff evaluates existing trail conditions to determine trail segments needing rehabilitation and design improvements needed to meet current trail standards, including minimum trail widths and proper geometry.

**Alternative Transportation Plan (ATP) –** The Bloomington ATP focuses primarily on bicycle facilities and identifies a number of proposed trail corridors to establish a citywide inter-connected bicycle system (see Figures 4.1 and 4.2.) Improvements include Regional Trails as described in the RBTN that connect Bloomington to other cities; Community Corridors that provide connections across the City to key destinations; and Local Connections that support shorter connections that link destinations not located along the Regional or Community Corridors. The Local Connections also provide neighborhood access to the larger trail network.

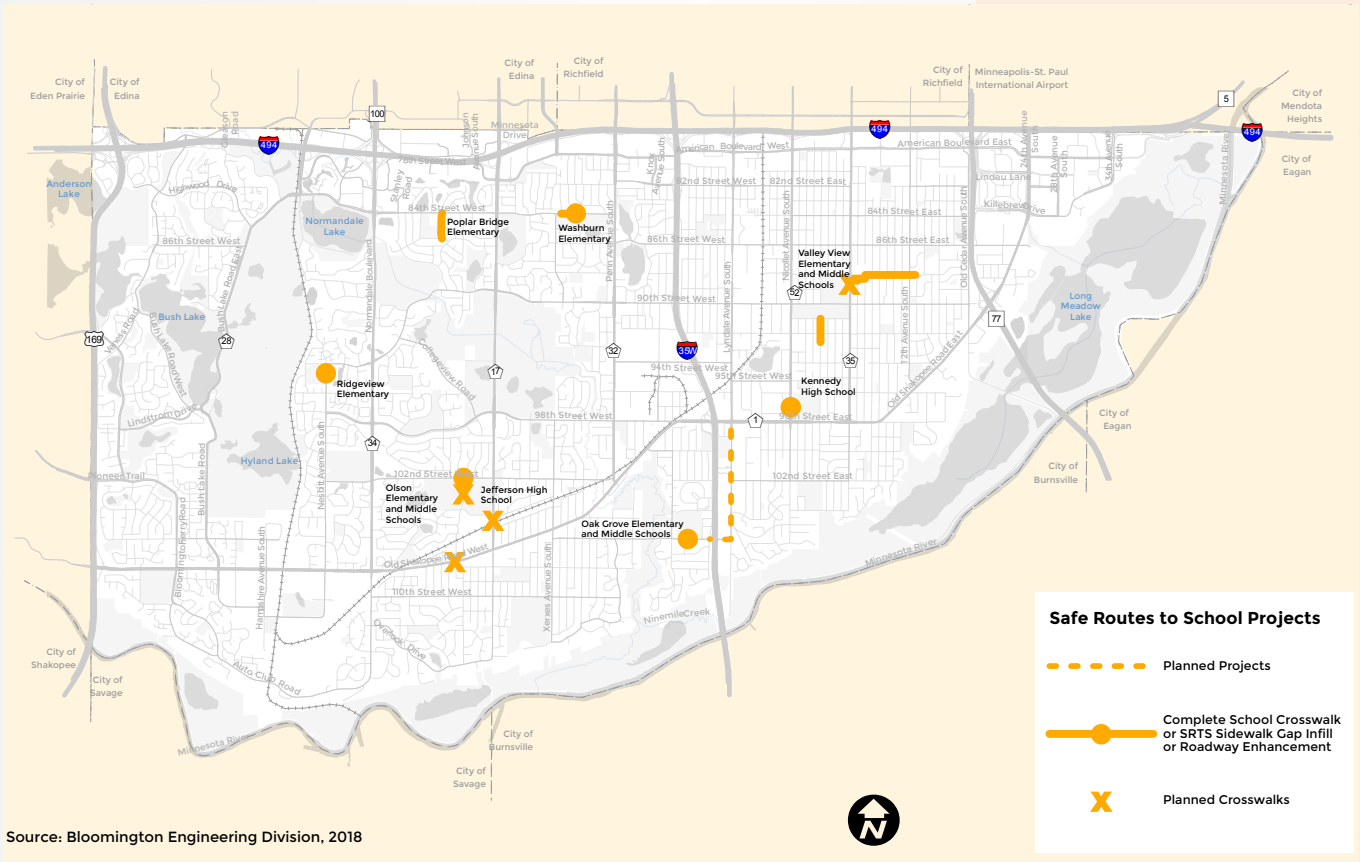
To a lesser extent, the ATP provides recommendation for sidewalk improvements. It recommends that sidewalks in developed neighborhoods be installed as road improvements are made through the PMP process, particularly in locations where a new sidewalk would close a gap in the network. The ATP also stresses that road reconstruction should be done in accordance with the Complete Streets Policy.


**Safe Routes to School (SRTS) –** The City of Bloomington partners with the Bloomington School District to conduct Safe Routes to School activities. These activities include assessments and construction of facilities that improve safety for pedestrians and bicyclists near schools. Past projects include sidewalk infill, enhanced crosswalks, mid-block crossings, and bike rack installation. Schools that have had projects completed are shown in Figure 4.12.

Pedestrian and bicycle improvements around schools are a priority because they facilitate safe access for children. Facilities must be designed in a manner that improves safety to promote pedestrian and bicycling as a mode of transportation to schools. Federal and State funding opportunities help offset the cost of construction.

**Franchise fees** - The City currently collects a franchise fee to support maintenance of streets and trails. The fee helps pay for overlays of streets and reconstruction of trails and other routine maintenance. As more multi-use trails are developed they will also require maintenance and there will be a funding shortfall if the franchise fee remains at its current level. The City will need to explore additional funding sources to help maintain expansion of the multi-use trail system.

Figure 4.12: Safe Routes to School Projects




Source: Bloomington Engineering Division, 2018

# 4.9 Goals, Strategies, Actions

## Goal 1: Enhance mobility.

***Strategy 1.1: Remove key bottleneck areas of the regional roadway system.***

- Support efforts to improve funding for regional transportation improvements.
- Continue to work with the Metropolitan Council, coalition partners (I-494 and I-35W Coalitions), MnDOT and other local agencies to focus transportation investments into regional corridors, including I-494, I-35W, TH 77, and US 169.
- 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.
- Cooperate with MnDOT in planning for the development and implementation of MnPASS lanes, meter bypass lanes for high occupancy vehicles (HOV), and transit oriented design requirements.
- Work with other jurisdictions to improve coordination of the timing of signalized intersections managed by different agencies.
- Identify barriers to mobility caused by the regional transportation system and support efforts to minimize barriers.

***Strategy 1.2: Alleviate bottlenecks on the minor arterial and collector system.***

- Identify and prioritize transportation improvements that enhance mobility.
- Proactively obtain rights of way, by dedication where possible, as shown on the City's master rights of way plan.
- Implement Intelligent Transportation Systems (ITS) technologies to improve traffic flow.

***Strategy 1.3: Promote Transportation Demand Management (TDM) strategies***

- Continue to be actively involved in multi-jurisdictional groups devoted to TDM and mobility enhancements such as I-494 Corridor Commission and the I-35W Solutions Alliance.
- Continue to enforce the City's TDM requirements and encourage employers to promote TDM techniques such as: use of transit, vanpools, carpools, and flex work schedules.
- Continue to advocate for public/private partnerships to allow shared use of under-utilized off-street parking for park and ride use.
- Promote telework by continuing to allow non-intrusive home occupations as permitted uses and by encouraging and facilitating the continued development of a high quality wired and wireless communications infrastructure.

- Provide commuting information on the City's website, including easy links to sites that display information on travel times, crashes, and construction areas.
- Educate and encourage businesses and organizations to use shuttles and other methods to compliment public transit and close gaps in service for employees/ customers, including "first mile, last mile" service.

***Strategy 1.4: Maximize land use and transportation coordination.***

- Promote a variety of land uses and development of complementary uses within walking distance of one another.
- Locate regionally oriented land uses near regional transportation facilities (freeways and transitways).
- Use land use controls to encourage medium and higher density residential and mixed use development in areas where significant investments in transit service and/or facilities have been made or are planned.

***Strategy 1.5: Minimize traffic impacts on residential neighborhoods***

- On local residential streets with identified traffic issues, consider implementing traffic management measures such as curb bump outs and traffic circles to reduce traffic speeds.
- Improve mobility on collector and arterial streets to reduce potential cut-through traffic on local residential streets.

***Strategy 1.6: Improve and maintain pedestrian and bicycle infrastructure.***

- Improve pedestrian and bicycle facilities to make walking, biking, and use of mobility devices safer, more convenient, and a viable transportation option for people of all ages and abilities.
- Provide physical separation between bikeways/sidewalks and roadways when appropriate and cost effective.
- Provide uniform traffic control devices for bikeways and walkways.
- Work with other agencies and neighboring jurisdictions to eliminate barriers to biking and walking, and coordinate regional connections, promotions, and information materials on regional trail systems.
- Coordinate year-round maintenance of sidewalks, shared-use paths, bike lanes, transit stops, and areas connecting to and within transit shelters.
- Where feasible, create connecting paths for pedestrians and bicycles where dead-end streets or existing street networks prevent through circulation in neighborhoods.
- Research and consider implementing a citywide bicycle sharing program.
- Develop standards for bicycle storage requirements, short and long term, and recommendations for storage types and installation.
- Support the development of the Regional Bicycle Transportation Network and other regional bicycle connections.

***Strategy 1.7: Improve public understanding of pedestrian and bicyclist resources and safety.***

- Maintain and routinely update information online, in newsletters, cable access TV, and other media outlets regarding bicycle and pedestrian facilities within Bloomington.
- To promote overall safety for bicyclists and pedestrians, develop education materials about safety for bicyclists, pedestrians, and motor vehicle drivers to improve skills and observance of traffic laws and increase awareness bicyclists and pedestrians rights.
- Support Bloomington Bicycle Alliance and other local advocacy groups.

***Strategy 1.8: Design and plan transportation facilities to consider the needs of all road users.***

- Apply the "Complete Streets" policy in planning and construction of new roads to ensure consideration of various transportation modes, such as transit, bicycling, pedestrian use, vehicular traffic, and parking.
- Develop context-sensitive street cross sections that consider the right of way needs of various users including, but not limited to, transit, parking, bicycling, pedestrian use, and vehicular traffic on raodways.
- Develop location and design standards for electric charging stations.
- Consider pedestrian, bicycle, and transit service when conducting Level of Service (LOS) analysis on roadways..

***Strategy 1.9: Prepare for new technologies that might influence mobility.***

- Develop design standards for new parking ramps to facilitate conversion to a new use if the required amount of adjacent parking decreases.
- Stay apprised of and consider implementation of new Intelligent Transportation Systems (ITS) technologies that could positively affect traffic flow and management.
- Strategically plan for incorporation of "smart" technology to accommodate vehicle-to-vehicle communications and vehicle-to-infrastructure communications.
- Work cooperatively with State and County partners to identify and prioritize roadways where dedicated lanes should be provided to accommodate autonomous vehicles (AV).

## Goal 2: Maximize user safety throughout the City's roadway system.

***Strategy 2.1: Prioritize safety improvements.***

- Install traffic control devices in conformance with the latest Minnesota Manual on Uniform Traffic Control Devices.
- Acquire adequate rights of way to provide safety enhancing features such as medians and sidewalks with boulevards, where needed.

- Develop and analyze motor vehicle, cyclist and pedestrian crash data and use the analysis to prioritize improvements.

***Strategy 2.2: Manage the public rights of way to maximize safety.***

- Advocate for State support in reducing the amount of private infrastructure permitted and mandated within the public right-of-way.
- Maintain adequate setback requirements to minimize negative safety impacts from private structures placed in the right of way.

***Strategy 2.3: Apply Access Management guidelines.***

- Manage and minimize direct access to minor arterial streets.
- Require driveway designs and locations to conform to the City's access management practices.
- Continue to coordinate review and permitting of access to county and state roadways with appropriate agencies.

***Strategy 2.4: Promote compliance with traffic laws.***

- Consider implementation 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.
- Work with the Police Department and communications staff to develop and conduct education about traffic law awareness for all roadway users to encourage safe driver practices.
- Support police enforcement staffing focused on traffic.
- Establish and publicize uniform traffic complaint procedures.

## Goal 3: Protect the public investment in transportation infrastructure.

***Strategy 3.1: Manage the maintenance of public roadways, sidewalks and mixed-use trails.***

- Implement an asset management program that inventories and rates condition of all transportation infrastructure (including traffic signals, street lights, signs, sidewalk/bikeways and streetscaping), develops target conditions for assets, and use condition rating to create maintenance plans that identify priorities, costs, and funding sources to achieve desired target conditions.
- Continue to adequately fund the Pavement Management Program and Trail Pavement Management Program.
- Develop a sidewalk maintenance program.
- Continue to pursue roadway infrastructure maintenance and replacement grants.
- Continue to study and implement new techniques in pavement management to improve efficiency and effectiveness.

- Manage on-street parking for public use but restrict in areas where parking presents a safety concern or limits mobility.
- Continue to coordinate street construction projects with private utility company projects.

***Strategy 3.2: Manage and maintain right-of-way.***

- Where authorized, require private utilities to be installed in City roadway rights of way in a manner that does not hinder improvements to the roadway, sidewalk, trails, signage and public utilities.
- Work to recover appropriate costs from private utilities and others using the City's right of way to compensate for their impact on public streets.
- Monitor activity in the right-of-way to protect the integrity of public infrastructure and public safety while the activity is taking place.

## Goal 4: Support an accessible, inter-connected transit system.

***Strategy 4.1: Advocate for a network of strategically placed transitways***

- Work with transit providers to establish bus rapid transit along regional corridors and implement the planned METRO Orange Line, D-Line, American Boulevard and US 169 BRT systems.
- Support regional transit investments on existing high density corridors.
- Participate in efforts to increase coordination among transit providers offering transit service in Bloomington and surrounding communities to improve connections between Bloomington and other regional transit centers and destinations.

***Strategy 4.2: Work to enhance the local transit network to meet the needs of residents and employees.***

- Work with transit providers to improve access and level of service throughout Bloomington.
- Encourage transit providers to establish "reverse" commute (urban to suburban) service.
- Work with transit providers and business/community leaders to identify opportunities to provide circulator bus service and shuttles to compliment public transit and close gaps in service for employees, customers, and visitors.
- Advocate and explore partnerships with ridesharing services to provide "first mile, last mile" arrangements within the City.
- Encourage transit providers to continue updating and implementing new technology, such as real-time departures, to enhance the transit rider experience.
- Continue to provide transit providers information on changing demographics and/or land use for use in analyzing service improvements.

- Work with Metro Transit, Minnesota Valley Transit Authority, SouthWest Transit and other providers to increase awareness of transit options serving Bloomington.
- Advocate and support transportation network and transit station improvements to remove barriers to transit use, including but not limited to additional park and ride facilities, bicycle storage, paved loading areas, improved signage, transit shelters, and integrated bike and pedestrian improvements.

## Goal 5: Address the specific transportation needs and opportunities of the South Loop District.

***Strategy 5.1: Support a viable, high quality transit system.***

- Advocate for the implementation of the planned east-west transitway to connect the Mall of America and the METRO Blue and Red Lines with the planned METRO Orange and Green Lines along the I-494/American Boulevard employment corridor.
- Encourage the Metropolitan Council to focus transportation investments within and along the I-494 and I-35W corridors.

***Strategy 5.2: Improve mobility throughout the District.***

- Continue to require implementation of Transportation Demand Management (TDM) strategies in conjunction with new development.
- Continue to expand and improve the Intelligent Transportation System (ITS.)
- Create standards to require new development and redevelopment to incorporate transit, pedestrian and bicycle friendly design features.
- Install new through streets in conjunction with redevelopment of large land blocks.

***Strategy 5.3: Provide a comprehensive, convenient and safe pedestrian and bicycle transportation system.***

- Implement the infrastructure improvements outlined in the *South Loop District Plan* and *Alternative Transportation Plan* (ATP).
- Develop grade-separated connections at critical locations throughout the district.