

Submitted
August 22, 2011

Normandale Boulevard (CSAH 34) From W. 94th Street to 8500 Block

STP - "A" Minor Arterial Expander



2011 Submittal
Surface Transportation Program Funding

Federal STP-UG Funding Application (Form 1)

INSTRUCTIONS: Complete and return completed application to Kevin Roggenbuck, Transportation Coordinator, Transportation Advisory Board, 390 North Robert St., St. Paul, Minnesota 55101. (651) 602-1728. Form 1 needs to be filled out electronically. Please go to Metropolitan Council's Regional Solicitation website for instructions. Applications must be received by 5:00 PM at the Metropolitan Council FTP site or postmarked on July 18, 2011. *Be sure to complete and attach the Project Information form.	Office Use Only
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I. GENERAL INFORMATION

1. APPLICANT: <i>City of Bloomington</i>			
2. JURISDICTIONAL AGENCY (IF DIFFERENT): Same as Applicant			
3. MAILING ADDRESS: <i>1700 W. W 98th Street</i>			
CITY: <i>Bloomington</i>	STATE: <i>MN</i>	ZIP CODE: <i>55431-2501</i>	4. COUNTY: <i>Hennepin</i>
5. CONTACT PERSON: <i>Shelly Pederson, P.E.</i>	TITLE: <i>City Engineer</i>		PHONE NO. <i>(952) 563-4866</i>
CONTACT E-MAIL ADDRESS: <i>spederson@ci.bloomington.mn.us</i>			

II. PROJECT INFORMATION

6. PROJECT NAME: <i>Normandale Blvd.(CSAH 34)-W 94th Street to 8500 Block (Nine Mile Creek)</i>
7. BRIEF PROJECT DESCRIPTION: <i>The proposed project includes the upgrade of Normandale Boulevard to a four-lane divided roadway with exclusive left-turn lanes at intersections, in order to improve safety and traffic operations. The project will also include construction of a multi-use trail along both sides of the corridor, which will greatly enhance the non-motorized transportation system within the area. The proposed project extends approximately one mile, from W 94th Street to the 8500 Block of Normandale Boulevard.</i>
8. STP PROJECT CATEGORY - Check only one project grouping in which you wish your project to be scored. <div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p style="margin: 0;">"A" Minor Arterials:</p> <p><input type="checkbox"/> Reliever</p> <p><input type="checkbox"/> Connector</p> </div> <div style="width: 30%;"> <p><input checked="" type="checkbox"/> Expander</p> <p><input type="checkbox"/> Augmenter</p> </div> <div style="width: 30%;"> <p><input type="checkbox"/> Non-Fwy. Principal Arterial</p> <p><input type="checkbox"/> Bikeway/Walkway</p> </div> </div>

III. PROJECT FUNDING

9. Are you applying or have you applied for funds from another source(s) to implement this project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, please identify the source(s):	
10. FEDERAL AMOUNT: <i>\$5,800,000</i>	13. MATCH % OF PROJECT TOTAL: <i>20 Percent</i>
11. MATCH AMOUNT: <i>\$1,450,000</i>	14. SOURCE OF MATCH FUNDS: <i>MSA, Local Jurisdiction</i>
12.* PROJECT TOTAL: <i>\$7,250,000</i>	15. REQUESTED PROGRAM YEAR (CIRCLE): <input type="checkbox"/> 2015 <input checked="" type="checkbox"/> 2016
16. SIGNATURE: 	17. TITLE: <i>City Engineer</i>

Form 2: PROJECT INFORMATION

(To be used to assign State Project Number after project is selected)

Please fill in the following information as it pertains to your proposed project. Items that do not apply to your project, please label N/A. **Do not send this form to the State Aid Office. For project solicitation package only.**

COUNTY, CITY, OR LEAD AGENCY: City of Bloomington

FUNCTIONAL CLASS OF ROAD: "A" Minor Arterial Expander

ROAD SYSTEM: CSAH

NAME OF ROAD: Normandale Boulevard (CSAH 34)

ZIP CODE WHERE MAJORITY OF WORK IS BEING PERFORMED: 55437

APPROXIMATE BEGIN CONSTRUCTION DATE (MO/YR): April 2016

APPROXIMATE END CONSTRUCTION DATE (MO/YR): October 2016

LOCATION: From: W 94th Street

To: 8500 Block

TYPE OF WORK: Urban roadway construction with multi-use path on both sides

Project Elements and Estimate of Construction Costs

Fill out the scoping sheet below or attach the worksheet Appendix U and provide the cost estimate for each element. You may add additional eligible costs (construction costs) that are not accounted for in the blank spaces at the bottom of the table. Applicants may instead use the more exhaustive checklist of the Mn/DOT scoping sheet in lieu of this checklist. The total cost should match the total cost reported for the project. Please use 2011 cost estimates, the TAB may apply an inflation factor to awarded projects.

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES		
Check all that apply	ITEM	COST
<input checked="" type="checkbox"/>	Mobilization (approx. 5% of total cost)	\$360,000
<input checked="" type="checkbox"/>	Removals (approx. 5% of total cost)	\$360,000
<input checked="" type="checkbox"/>	Roadway (grading, borrow, etc.)	\$600,000
<input checked="" type="checkbox"/>	Roadway (aggregates and paving)	\$1,915,000
<input checked="" type="checkbox"/>	Subgrade Correction (muck)	\$905,000
<input checked="" type="checkbox"/>	Storm Sewer	\$750,000
<input type="checkbox"/>	Ponds	\$
<input checked="" type="checkbox"/>	Concrete Items (curb & gutter, sidewalks, median barriers)	\$595,000
<input checked="" type="checkbox"/>	Pedestrian Curb Ramps (ADA)	\$15,000
<input checked="" type="checkbox"/>	Path/Trail Construction	\$150,000
<input checked="" type="checkbox"/>	Traffic Control	\$365,000
<input checked="" type="checkbox"/>	Striping	\$20,000
<input checked="" type="checkbox"/>	Signing	\$15,000
<input checked="" type="checkbox"/>	Lighting	\$5,000
<input checked="" type="checkbox"/>	Turf - Erosion & Landscaping	\$585,000
<input type="checkbox"/>	Bridge	\$
<input checked="" type="checkbox"/>	Retaining Walls	\$365,000
<input type="checkbox"/>	Noise Wall	\$
<input checked="" type="checkbox"/>	Traffic Signals	\$125,000
<input checked="" type="checkbox"/>	Wetland Mitigation	\$50,000
<input type="checkbox"/>	Other Natural and Cultural Resource Protection	\$
<input type="checkbox"/>	RR Crossing	\$
<input type="checkbox"/>		\$
<input checked="" type="checkbox"/>	Utilities (hydrant relocate, adjust curb stop, revise irrigation, etc.)	\$70,000
<input type="checkbox"/>		\$
<input type="checkbox"/>	Contingencies	\$
	TOTAL CONSTRUCTION COST	\$7,250,000

**STP Funding Application, “A” Minor Arterial – Expander
Normandale Boulevard (CSAH 34): W 94th Street to 8500 Block (Approx. Nine Mile Creek)**

PROJECT DESCRIPTION

The City of Bloomington is seeking funding under the Surface Transportation Program in the “A” Minor Arterial Expander category, to improve Normandale Boulevard (CSAH 34), in the City of Bloomington in Hennepin County (see Figure 1). The proposed project will extend approximately one mile, from W 94th Street on the south to the 8500 Block (approximately Nine Mile Creek) on the north (see Figure 2). The proposed project is located on Normandale Boulevard, an “A” Minor Arterial route that originates at Old Shakopee Road (CSAH 1) in the southern portion of Bloomington and extends to I-494 at the Bloomington/Edina border, where it becomes Trunk Highway 100 (a Principal Arterial route). The proposed project entails the reconstruction of Normandale Boulevard from a four-lane undivided roadway without turn lanes to a four-lane divided facility with protected turn lanes. In addition, the proposed project will provide enhanced accommodations for pedestrians, bicyclists, and other non-motorized transportation modes, via the construction of multi-use trails on both sides of the roadway. Appendix A-1 includes a preliminary concept layout and typical cross-section for the proposed improvements.

The proposed project includes the reconstruction of Normandale Boulevard with capacity, geometric and access management improvements. The installation of a raised center median will improve traffic flow and increase safety by minimizing full access to Normandale Boulevard and providing separation between vehicle traffic in opposing lanes. In addition, the provision of protected left-turn lanes will separate turning vehicles from through traffic, further improving overall corridor safety and operations by minimizing the potential for vehicle conflicts. Finally, the additional roadway capacity will enhance the efficiency of the corridor, improving traffic operations and eliminating congestion on this regionally significant route.

In addition to the roadway improvements, the proposed project also includes the construction of separate (minimum of six-feet from the roadway) 10-foot wide multi-use trails along both sides of the corridor. These trails will provide bicyclists and pedestrians with enhanced non-motorized access to the range of activity centers within the area; connect commuters and transit users to existing and future jobs and transit facilities; and provide safe and efficient linkages to other existing and planned segments of the Bloomington and Hennepin County trail systems; thereby enhancing the already popular non-motorized transportation system in the area.

These improvements are needed to maintain and enhance user safety while supporting increasing traffic volumes along Normandale Boulevard. Addressing safety and mobility concerns in the project area is a priority for the City of Bloomington and has been identified in the *Bloomington Comprehensive Plan (2008)*, as well as various traffic studies and other planning documents, such as the *Normandale Lake District Plan (2008)*. As the City continues to experience growth, especially with plans for the intensification of development at the commercial/office node surrounding the intersection of Normandale Boulevard and W 84th Street, improvements to Normandale Boulevard have become a critical element in overall growth plans for the area. The City is already concerned about the impacts of cut-through traffic in adjacent residential neighborhoods and the magnitude of these impacts will only increase as development within the area continues. The proposed improvements will address neighborhood concerns and support the City’s vision for future development, by providing the additional safety and capacity improvements necessary to accommodate existing and future users of the corridor.

“A” MINOR ARTERIAL - EXPANDER - QUALIFYING CRITERIA

The applicant must show that the project meets all the following criteria to qualify for priority evaluation. Answer each criterion in a numbered sequence. **Failure to respond to any of the qualifying criteria will result in a recommendation to disqualify your project.**

1. The project must be consistent with the policies in the Metropolitan Council's officially adopted Metropolitan Development Guide, which includes the Transportation Policy Plan (TPP) (2010) and the Regional Development Framework (2004). Consistency with the TPP includes its appendix, which contains the regional functional classification criteria. Funding allocation to projects involving interchange construction and reconstruction on the Principal Arterial system (regardless of whether the project is on the Principal Arterial or and intersecting “A” Minor Arterial) are made conditional on the successful completion of the Highway Interchange Requests Procedures described in Appendix E of the Transportation Policy Plan. The applicant must list the documents and corresponding policy numbers or portions of text that help illustrate the project’s consistency.

RESPONSE:

Consistency with the 2030 Transportation Policy Plan (TPP):

- The proposed project is consistent with **TPP Policy 2 “Prioritizing Regional Transportation Investments” Strategy 2a (page 7) “System Preservation,” and Strategy 2b (page 8) “Highway System Investments.”** Included in this project are capacity, geometric and access management improvements along Normandale Boulevard, such as the installation of a center median, protected turn lanes, and separated pedestrian and bicycle accommodations. These improvements will improve overall operations and safety along the corridor.
- The proposed project is consistent with **TPP Policy 2 “Prioritizing Regional Transportation Investments” Strategy 2d (page 8) “Bicycle and Pedestrian Investments” and Strategy 2e (page 8) “Multimodal Investments;” Policy 3 “Investments in Regional Mobility” Strategy 3f (page 9) “Promoting Alternatives;” and Policy 4 “Coordination of Transportation Investments and Land Use” Strategies 4b (page 9) “Alternative Modes” and 4f (page 10) “Local Transportation Planning.”** In addition to providing automobile accommodations, multi-use trails are proposed on both sides of the corridor. The median installed as part of the conversion of the roadway to a divided facility will also provide pedestrian refuge areas for east-west non-motorized traffic crossing the corridor. Further, by separating the trails from the roadway, a safe and convenient connection will be provided for pedestrians and bicyclists. The trails will also promote continuity in the regional system, as they will connect to the City of Bloomington and Hennepin County trail systems.

In addition, the proposed project will create the potential to expand transit service and enhance the use of park-and-ride lots east and west of Normandale Boulevard on W 94th Street and W 98th Street, by providing a trail connection to the adjacent and surrounding communities. By separating the trails from the roadway, a safe and convenient connection will be provided for pedestrians and bicyclists who wish to access these facilities.

- The proposed project supports **TPP Policy 8 “Energy and Environmental Transportation Emissions (page 12),” Strategies 8a “Reduction of Transportation Emissions” and 8e “Reduction of Green House Gas Emissions.”** The proposed project has the potential to decrease vehicle and green house gas emissions by providing an alternative to motorized vehicle use, and increasing access to transit. The project includes a multi-use trail on both sides of the corridor which will provide improved access to transit services through a trail connection to the two park-and-ride lots located east and west of Normandale Boulevard on W 94th Street and W 98th Street. In addition, the proposed project will reduce transportation emissions along the corridor, due to its additional capacity and improved peak hour speeds.

- The proposed project is consistent with **TPP Policy 11 “Highway System Management and Improvements,” Strategy 11e (pages 15), “Access Management.”** The proposed project manages and reduces access to Normandale Boulevard, an “A” minor arterial, through the installation of a center median along the corridor. The project includes modification of five full-access intersections to partial access (right-in/right-out only) with complete removal of two intersection access points. The median will improve existing traffic flow and increase overall safety along Normandale Boulevard.
- The proposed project is consistent with **TPP Policy 12 “Transit System Planning,” Strategy 12d “Park-and-Rides (page 16),” and Policy 18 “Provide Pedestrian and Bicycle Travel Systems,” Strategy 18b “Connectivity to Transit (page 19).”** The proposed project includes construction of multi-use trails on both sides of the corridor. These trails will connect to other trails on the City of Bloomington and Hennepin County systems, which can be used by pedestrians and bicyclists to reach bus stops and park-and-ride lots along the corridor. These improvements will create a safe and enjoyable pedestrian environment and provide the opportunity to expand the use of regional park-and-ride facilities by creating enhanced trail linkages.
- The proposed project is consistent with **TPP Policy 18 “Provide Pedestrian and Bicycle Travel Systems,” Strategy 18c “Local Planning for Bicycling and Walking (Page 19),” and Strategy 18d “Interjurisdictional Coordination (page 19).”** The proposed project includes bicycle/pedestrian trails on both sides of Normandale Boulevard, which are shown in the *Bloomington Comprehensive Plan (2008)*. In addition, the proposed segment of Normandale Boulevard is shown in the *Bloomington Alternative Transportation Plan (2008)* as a “Core Linking Trail.” Core linking trails are located within the roadway right-of-way (ROW) and are intended to serve both pedestrians and bicyclists. The proposed improvements are consistent with this designation. The proposed trail will provide an enhanced connection to other City and County trail systems and will serve both recreational and commuter purposes.
- The proposed project is consistent with **TPP Policy 18 “Provide Pedestrian and Bicycle Travel Systems,” Strategy 18e “Complete Streets (page 20).”** The proposed project includes construction of a multi-use trail on both sides of the corridor, which will be separated from the roadway via a six-foot grass boulevard. Since the trail is a separated facility, safety for pedestrians and bicyclists will be enhanced. The proposed facility will meet state and federal design and accessibility guidelines.
- The proposed project is consistent with the system criteria for minor arterials, including spacing, access spacing, and management (**Appendix D of the TPP**). The spacing guidelines for minor arterials in developed areas call for a half-mile to one-mile spacing. The nearest north-south minor arterial parallel to Normandale Boulevard is France Avenue, approximately one mile to the east. The closest minor arterial to the west is Flying Cloud Drive, which is approximately 4.4 miles away.

Consistency with the 2030 Regional Development Framework:

The proposed project is consistent with the Policies set forth in the 2030 Regional Development Framework and supports the strategies therein. The **Framework** Planning Designation for the proposed project is “**Developed Community (2030 Regional Development Framework, page 19).**” The project supports the **Framework** strategies for a Developed Community (**2030 Regional Development Framework, Table 2, page 20-21**), by supporting more intense, mixed-use development through investment in the regional highway system, and pedestrian and bicycle improvements. These improvements will facilitate connections between workplaces, residences, retail, services, and entertainment activities to accommodate growth and reinvestment. In addition, the proposed trail will create the potential to expand transit service and enhance the use of park-and-ride lots east and west of Normandale Boulevard on W 94th Street and W 98th Street by providing a trail connection to the adjacent and surrounding communities.

2. The project must be included in, be part of, or address a transportation problem or need identified in one of the following: 1) an approved local or county comprehensive plan found to be consistent with Metropolitan Council plans; 2) a locally approved capital improvement program; 3) an officially adopted corridor study (trunk highway studies must be approved by Mn/DOT and Metropolitan Council); or 4) the official plan or program of the applicant agency. It also must not conflict with the goals and policies in these adopted regional plans; the 2030 Transportation Policy Plan (2010), the 2030 Regional Framework (2004), and the 2030 Regional Parks Policy Plan (2010). The applicant must reference the appropriate comprehensive plan, CIP, approved corridor study document, or other plan or program and provide copies of the applicable pages.

RESPONSE:

This project implements a solution to the transportation situation discussed in the City of Bloomington *Comprehensive Plan* (see Appendix A-2). The proposed project is included in the City's combined Capital Improvement Program (see Appendix A-3). It is also identified in Hennepin County's Transportation Systems Plan as a potential shortfall from a corridor capacity standpoint (see Appendix A-4). In addition, the Bloomington City Council has passed a resolution endorsing the proposed Normandale Boulevard Improvement project (see Appendix A-5). **Furthermore, the proposed project does not conflict with, but rather is supportive of, as stated in Response #1 above, adopted regional plans, including the 2030 Transportations Policy Plan, the 2030 Regional Framework, and the 2030 Regional Parks Policy Plan.**

3. The proposed project must be identified as on an "A" Minor Arterial Expander shown on the TAB approved roadway functional classification map adopted by the TAB on or before May 18, 2011 and recorded in the Council's electronic file. The vast majority of the project must be physically located on the "A" Minor Arterial Expander roadway between logical termini. The project may include construction on small portions of non-eligible roads, as long as the construction is essential to the operation of the entire project. Examples include but are not limited to reconstruction of the approaches on intersecting collector roads and construction or reconstruction of on-ramps or off-ramps. The applicant must provide a map or sketch of the project relative to the "A" Minor Arterial Expander system.

RESPONSE:

The proposed Normandale Boulevard (CSAH 34) project is on the minor arterial system adopted by the TAB on or before May 18, 2011.

4. At least seventy-five (75) percent of the length of the proposed "A" Minor Arterial Expander project must be within the 2000 urbanized area defined by the Bureau of the Census or the 2020 Metropolitan Urban Service Area (MUSA) as defined in the local comprehensive plan accepted by the Metropolitan Council; or if a route connects two MUSA areas and the Average Daily Traffic (ADT) standards qualify the roadway segment for expansion. In either case, the entire project length would be eligible for federal funding. The applicant must provide a map or sketch of the project relative to the urbanized area.

RESPONSE:

The entirety of this proposed Expander project is within the 2000 urbanized area defined by the Bureau of the Census, as well as the 2020 (and 2010) Metropolitan Urban Service Area (MUSA) (see Figure 3).

5. STP funds are available for roadway construction and reconstruction on new alignments or within existing right-of-way, including associated construction or installation of traffic signals, signs, utilities, bikeway or walkway components and public transit components. The cost of constructing a new bridge deck or reconstructing an existing bridge deck is eligible but the remainder of the superstructure and all elements of the substructure are not eligible. The applicant must describe the proposed project and state that the application includes only the eligible components.

RESPONSE:

The proposed project includes the reconstruction of Normandale Boulevard from a four-lane undivided roadway without turn lanes to a four-lane divided roadway with protected turn lanes. Accommodations for bicyclists and pedestrians will also be provided, via trails constructed on both sides of the roadway. All components of the proposed project are eligible for STP funds.

6. Studies, preliminary engineering, design, construction engineering, etc. are not eligible for STP funding and should not be included in the required local match or the total project cost. Right-of-way costs are not eligible for STP funding and should not be included in the required non-federal match or the total project cost. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for STP funding as stand-alone projects, but are eligible if included as part of a larger, eligible project. The applicant must state that pre-construction work and ROW costs are not part of the total project cost in this application.

RESPONSE:

Pre-construction work and right-of-way costs are not part of the total project cost listed in this application. Only eligible components of the proposed project are included in the total project cost listed in this application.

7. An STP construction or reconstruction project must be a permanent improvement. Traffic management projects as part of a construction project are exempt from this policy. Temporary construction is defined as work that must be essentially replaced in the immediate future (within 5 years). Staged construction is considered permanent rather than temporary so long as future stages add to, rather than replace, previous work. The applicant must state that the proposed project is a permanent improvement and does not replace any regionally funded project that was opened to traffic within five years.

RESPONSE:

The proposed project is a permanent improvement and does not replace any regionally funded project that was opened to traffic within five years

8. Applicants can request up to a cap of \$7,000,000 in STP funds for a specific "A" Minor Arterial Expander project. Other federal funds may be combined with the requested STP funds, but the source(s) must be identified in the application. The cost of preparing a project for funding authorization can be substantial. For that reason, the project's federal cost must exceed \$1,000,000. The applicant must show the requested federal amount and total project cost on the cover page.

RESPONSE:

As shown on the cover page, the total estimated construction cost for the project is \$7,200,000. The City of Bloomington is requesting \$5,760,000 in Surface Transportation Program funds (80 percent of the total project cost). The requested amount exceeds the minimum of \$1,000,000 and does not exceed the \$7,000,000 maximum for STP funds.

9. STP funds awarded in the regional solicitation must be matched with non-federal funds. The non-federal match for any STP project must be at least 20% of the total cost. The applicant must state that it is responsible for the local (nonfederal) share. If the applicant expects any other agency to provide all or part of the local match, the applicant must include a letter or resolution from the other agency agreeing to participate financially in the project's construction.

RESPONSE:

The City of Bloomington will provide the 20 percent local match with non-federal funds (MSA and local funds). The total estimated construction cost is \$7,200,000 and the local match is anticipated to be \$1,440,000 (20 percent of total).

10. The applicant must include a letter from the agency with jurisdiction over the road indicating that it is aware of and understands the project being submitted, and that it commits to operate and maintain the facility for its design life and not change the use of any right-of-way acquired without prior approval from MN/DOT and the Federal Highway Administration.

RESPONSE:

Hennepin County is supportive of the proposed project and agrees to operate and maintain Normandale Boulevard for its design life. See Appendix A-6 for a letter of support from Hennepin County.

“A” MINOR ARTERIAL - EXPANDER - PRIORITIZING CRITERIA

Applicants must respond to each of the following prioritizing criteria. Label your responses clearly. If a criterion is not applicable to your project, explain why.

A. Relative importance of the route as an “A” Minor Arterial Expander. 100 points

Although Expander routes are located in growing suburban communities, the relative importance of each Expander is not the same. Some Expanders play a more significant role than others do in providing roadway capacity in areas where travel demand cannot be met with the existing system of principal arterials and public transit service. Some Expanders are the only minor arterial roadway available to provide medium and long-range trips for many miles. The following criteria are intended to measure the relative importance of each Expander route submitted for funding in this solicitation.

Definition and characteristics of the Expander route.

0-100 points The applicant must respond to the two items below and provide a map to help answer items a) and b). The Expander ‘route’ is defined as the uninterrupted length of the arterial that provides medium to long trips in the expanding urban area. The route may be an existing or planned road on the TAB adopted system. The route may be longer than the proposed project and include more than one street name, but it must be continuous. The endpoints of the route must be a principal or other minor arterial, or the edge of the 2020 MUSA. Provide a map showing the length of the Expander route and the closest parallel ‘A’ Minor or Principal Arterials on both sides of the Expander. Two projects on the same route will not be selected for funding unless they are at least 3.5 miles apart. Points under this criterion are assigned based on the current and forecasted traffic volume on the Expander route and the current transit ridership on the Expander route.

- a) Provide the current (2009) and forecasted (2030) average daily traffic volume at two or more locations on the Expander route. MN/DOT 50-series maps should be used for current counts. Use approved City or county comprehensive plans, Met Council, accepted State Aid traffic factors by county, or a transportation study with documented acceptable forecasting methodology for forecasted volume.

RESPONSE:

The proposed project is located on Normandale Boulevard (CSAH 34), a continuous “A” Minor Arterial Expander route shown on the TAB adopted Functional Classification System Map (May 2011). As shown in Figure 3, the endpoints of the route fall within the 2010 MUSA boundaries. As shown in Figure 4, the “A” Minor Arterial Expander route extends 3.6 miles from Old Shakopee Road (CSAH 1), an “A” Minor Arterial Expander route, to I-494, a Principal Arterial route. The closest parallel “A” Minor or Principal Arterial routes are France Avenue (“A” Minor Arterial Expander) one mile to the east, and Trunk Highway 169 (Principal Arterial) 2.4 miles west of the proposed project.

According to the 2009 Mn/DOT Metro Area Index Traffic Volume Map (50-series map), current (2009) Average Daily Traffic Volumes (ADT) on Normandale Boulevard within the project area are 30,000 vehicles per day, with volumes of 39,000 vehicles per day near the interchange of Normandale Boulevard and I-494 (approximately 1/4-mile north of the proposed project limits). Based on the *Bloomington Comprehensive Plan (2008)*, the forecast (2030) ADT is 40,000 vehicles per day within the project area and 42,000 vehicles per day near the Normandale Boulevard and I-494 interchange (see Figure 4).

- b) Is public transit currently provided on this Expander route? If yes, what is the average annual ridership? The applicant does not need to provide this information in its funding application. Data will be provided by the Metropolitan Council staff based on the project location map and description.

RESPONSE:

Public transit is provided on this "A" Minor Arterial route (see Figure 5). Normandale Boulevard is a vital transit corridor served by a diverse range of transit service, including Metro Transit bus service connecting activity centers within Bloomington, the south/southwest metro, and downtown Minneapolis and St. Paul. Bus routes serving the project area include 589 and 539, providing service to the Normandale Lake District office park, the Southdale Transit Center, Normandale Community College, Best Buy Corporate Headquarters, South Bloomington Transit Center, Mall of America, and ultimately downtown Minneapolis and St. Paul. Bus service within the project area includes a connection to the Hiawatha LRT line (via the Mall of America Station), providing regular service to the Minneapolis/St. Paul International Airport and downtown Minneapolis. Further, this line will provide a transit linkage to activity centers within the City of St. Paul via the Hiawatha LRT connection to the planned Central Corridor LRT line, which is currently under construction. In addition, the 2030 *Transportation Policy Plan (TPP) (2030 Transit Plan, pg. 142)* identifies American Boulevard as a candidate corridor for Bus Rapid Transit (BRT), and Metro Transit has included American Boulevard in a BRT Transit Corridor Study now in progress. The existing transit service along the project corridor (Normandale Boulevard) would provide a direct connection to any future transitway along American Boulevard, such as BRT.

B. Deficiencies and Solutions on Expander.

300 points

The regional solicitation process is one means of implementing regional plans. The region's Transportation Policy Plan states that the regional highway and street system will be preserved, managed, improved and expanded to support existing and planned land uses and safety and mobility needs consistent with the Regional Development Framework, the Transportation Policy Plan and approved local and county comprehensive plans. The following criteria reflect these objectives.

1. Crash Reduction.

0-150 points

Calculate the total number of crashes reduced due to improvements on the 'A' Minor Arterial Expander made by the proposed project. Points will be awarded based on the total three-year number of crashes projected to be reduced by the proposed project. The applicant must base the estimate of crash reduction on the methodology found in Appendix E. The applicant must calculate the frequency using the Mn/DOT TIS system average for calendar years 2007 through 2009.*

RESPONSE:

As indicated in the project description, the proposed improvements on Normandale Boulevard will increase safety on the corridor. Presently, according to Mn/DOT's TIS system data from January 1, 2007 through December 31, 2009, there are a total of **21 crashes** on Normandale Boulevard within the project area (see Appendix B). The 21 crashes include 13 personal injury crashes and 8 property damage crashes.

* Applicants should request crash data from Mn/DOT as early as possible. An agency that wishes to dispute the results of their crash data requests can contact Ryan Coddington at 651-234-7841 (or Ryan.Coddington@state.mn.us) to reconcile those differences.

For the Normandale Boulevard intersections, the proposed improvements include the installation of a raised median and installation of a left-turn lane at an unsignalized intersection. As shown below, crash reduction factors from the FHWA Desktop Reference for Crash Reduction Factors (see Appendix B) were used in the crash analysis:

Installation of a Raised Median

FHWA Desktop Reference for Crash Reduction Factors – Table 7, p.73

All crashes – CRF = 23 (average of available CRF)

Installation of Left-Turn Lane

FHWA Desktop Reference for Crash Reduction Factors – Table 2, p.21

All crashes – CRF = 32 (average of available CRF)

All Crashes

$CR = 1 - [(1 - 0.23)(1 - .32)] = 0.48 \times 21 \text{ crashes} = \mathbf{10 \text{ crashes reduced}}$

2. **Air Quality.** The Transportation Policy Plan strongly supports environmental considerations when making transportation funding decisions. The Council supports funding priorities for transportation projects that ensure prevention of air quality violations through the reduction of mobile source emissions.

The applicant must show that the project will reduce emissions and help the region to maintain its attainment of federal carbon monoxide standards. All assumptions and calculations must be clearly documented and explained in order to receive points. The applicant must include documentation of how the VMT reduction was determined and specify the speed used for the assumptions. Speed assumptions shall be based on the methodology found in Appendix F. Points under this criterion will be awarded based on the reduction of carbon monoxide (CO), nitrogen oxides (NO_x), and/or volatile organic compounds (VOC) emissions the proposed project is expected to provide.

0-50 points

The applicant must demonstrate through a quantitative analysis that CO, NO_x, and/or VOC emissions (in KILOGRAMS/DAY) will be reduced compared to the no-build alternative. The applicant must estimate CO NO_x, and/or VOC emissions reductions using the MOBILE6 emissions factors and vehicle emissions reduction worksheet in Appendix G.

RESPONSE:

To determine the reduction of emissions, an analysis to determine the increase in peak hour speed on Normandale Boulevard (northbound direction) due to the proposed project was conducted. Details of the analysis are shown below:

Segment Length = 1.0 mile
Posted Speed Limit = 45 mph

Existing Conditions

Free-flow travel time (minutes) = (1 mile /45 mph) x 60 = 1.33 minutes

No Signalized or All-Way Stop Controlled Intersections
Mid-block Delays due to left-turns at minor streets/drives (7 locations)
Mid-block delay = 7 x 10 seconds = 70 seconds = 1.17 minutes

Arterial Speed = (1 mile/(1.33 + 1.17 minutes)) x 60 = 24.0 mph

Proposed Conditions

Free-flow travel time (minutes) = (1.0 mile /45 mph) x 60 = 1.33 minutes

No Signalized or All-Way Stop Controlled Intersections

All mid-block delays due to left-turns at minor streets/driveways will be reduced to zero since exclusive left-turn lanes will be constructed at (three locations), a median will restrict left-turn movements (two locations) and two streets will be closed.

Arterial Speed = 1 mile/1.33 x 60 = 45.1 mph

Based on the analysis, the peak hour average speed will increase by **21 mph** on this segment after proposed project improvements. Using the MOBILE5B emission factors and vehicle emissions reduction worksheet (see Appendix C), a quantitative analysis was conducted for total emissions for both baseline (without project) and build (with project) conditions. The total emissions reduction due to the proposed improvements is **529.5 kilograms/day**.

3. Congestion Reduction.

0-100 points

The applicant must show that the proposed project will reduce congestion at the most congested location on the Expander. The applicant must include the current volume to capacity (v/c) ratios in the AM and PM peak hours and the improvement in the ratios resulting from the project. Projects that have low existing v/c ratios will receive less credit for the improvement resulting from the project than projects that address a problematic existing v/c ratio. The applicant must use the methodology, worksheet and look-up tables found in Appendix H. The applicant must conduct a corridor analysis for new alignments, comparing parallel routes that will be affected by the project.

RESPONSE:

The volume to capacity (v/c) ratio analysis was conducted at the intersection of Mt. Normandale Drive in the a.m. and p.m. peak hours. Details are shown below:

Existing Conditions

Northbound a.m. peak hour volume = 1670 vph

Vehicle capacity = 1200 vph (one shared left-turn/through lane and one through lane)

A.M. volume/capacity ratio = 1670/1200 = 1.39

Southbound p.m. peak hour volume = 2160 vph

Vehicle capacity = 1200 vph (one through lane and one shared through/right-turn lane)

P.M. volume/capacity ratio = 2160/1200 = 1.80

Proposed Conditions

Northbound a.m. peak hour volume = 1670 vph

Vehicle capacity = 1500 vph (two through lanes and left-turn lane)

A.M. volume/capacity ratio = 1670/1500 = 1.11

Southbound p.m. peak hour volume = 2160 vph

Vehicle capacity = 1400 vph (two through lanes and right-turn lane)

P.M. volume/capacity ratio = 2160/1400 = 1.54

A.M. Improvement in Volume/Capacity Ratio = 1.39 – 1.11 = 0.28

P.M. Improvement in Volume/Capacity Ratio = 1.80 – 1.54 = 0.26

Total Improvement in Volume/Capacity Ratio = 0.28 + 0.26 = 0.54

C. Cost Effectiveness.

275 points

The Regional Development Framework and Transportation Policy Plan document the need for adequate transportation funding to implement regional transportation plans. The region must allocate transportation funds in such a way that the selected projects provide the most benefit for the amount of funding requested. Cost effectiveness is an essential component of the regional solicitation process. Cost effectiveness calculations must be based on the total cost of the project, not just the portion of the project eligible for federal funding.

1. Crash Reduction.

0-125 points The applicant must calculate the cost per crash reduced on the Expander by the proposed project. The applicant must divide the total cost of the project by the answer from criterion B.1. Points will be awarded based on the relative cost per crash reduced.

RESPONSE:

The proposed improvements will be expected to eliminate a total of 10 crashes. The total project cost is \$7,250,000. The cost per crash reduced by the proposed project is **\$725,000**.

2. Air Quality

0-75 points The applicant must calculate the cost per kilogram per day that will be reduced by the proposed project compared to the no-build alternative. The applicant must divide the total project cost by the estimated reduction in CO, NOx, and/or VOC emissions per day calculated in question B.2.

RESPONSE:

The proposed improvements will be expected to reduce total emissions by **529.5 kilograms per day**. The total project cost is \$7,250,000. The cost per kilogram reduced by the proposed project is **\$13,692**.

3. Congestion reduction.

0-75 points The applicant must calculate the cost per increase in hourly person throughput provided by the proposed improvement. The applicant must use the worksheet in Appendix I. Points will be awarded based on the lowest cost per increase in person throughput, but if there is little congestion under existing conditions fewer points will be awarded for increasing person throughput.

RESPONSE:

The hourly throughput in the a.m. peak hour, in the peak direction of travel (northbound), at the most congested location (Normandale Boulevard/Mt. Normandale Drive) was calculated for existing and proposed conditions. Details of the analysis are shown below:

Existing Conditions

Vehicle capacity = 1200 vph (one shared left-turn/through lane and one through lane)

A.M. peak hour vehicle occupancy = 1.13

A.M. peak hour ridership = 0, assume no increase in service

Hourly person throughput = 1200 x 1.13 = 1356 persons per hour

Proposed Conditions

Vehicle capacity = 1500 vph (two through lanes + left-turn lane)

A.M. peak hour vehicle occupancy = 1.13

A.M. peak hour ridership = 0, assume no increase in ridership with this project

Hourly person throughput = $1500 \times 1.13 = 1695$ persons per hour

Total increase in hourly person throughput = $1695 - 1356 = 339$ persons per hour

Cost per increase in hourly person throughput = $\$7,250,000/339 = \$21,386$

D. Development Framework Implementation.

425 points

The Metropolitan Development Guide is comprised of the *2030 Regional Development Framework* and system plans for transportation, including highways, transit and aviation; water resources management; and regional parks and trails. Together, the Development Framework and system plans create a vision for the region and are intended to help ensure the orderly, economical development of the seven-county area. The *Framework* is organized around four overall goals:

- **Efficient Growth.** Work with local communities to accommodate growth in a flexible, connected and efficient manner.
- **Multi-modal Transportation.** Plan and invest in multi-modal transportation choices, based on full range of costs and benefits, to slow the growth of congestion and serve the region's economic needs.
- **Housing Choices.** Encourage expanded choices in housing locations and types, and improved access to jobs and opportunities
- **Natural Resource protection.** Work with local and regional partners to conserve, protect and enhance the region's natural resources.

Under the Metropolitan Land Planning Act, local communities must prepare and submit to the Council local comprehensive plans that are consistent with the Council's regional systems plans. Local communities have submitted plans for 2030 and these have been reviewed by the Council.

1. Development Framework Planning Area Objectives

0-100 points

Strategies for regional development relate directly to growth patterns within the region. The *Framework* communities are identified according to their regional planning area designation which is based on its geographic location, existing development patterns, forecast growth, planned land uses, and the availability of infrastructure. The project's relationship to **Framework** and **TPP** are addressed in the qualifying criteria.

The objective of this section is to address the land use and transportation linkages and how the project supports development and the accommodation of growth for the communities affected.

What are the 2030 land uses proposed in the community(ies) adopted plan for the project area/corridor affected? Identify the TAZs that lie partially or wholly within the project limits.

RESPONSE:

The proposed improvements to Normandale Boulevard will provide the infrastructure necessary to support the growth called for in the *2030 Regional Development Framework*, as well as the future land use and development plans of the City of Bloomington. Existing land use surrounding the project area consist of primarily low-density (single-family) residential, with some public, quasi-public, and conservation uses in the areas around Normandale Lake Park and Nine Mile Creek (see Appendix A-7). The City of Bloomington is planning for significant growth along Normandale Boulevard over the next 20 years, including further intensification of in the areas affected by the proposed project. According to the *Bloomington Comprehensive Plan (2008)* redevelopment/in-fill development is anticipated to occur along portions of the corridor within the project area, as some existing areas of low-density residential land uses are converted to higher-density residential uses in the future. The City's *2030 Land Use Guideplan* (approved 2030 land use plan) identifies a range of future uses within the project area, including some medium- and high-density residential, in addition to the existing low-density residential, as well as continued protection of public and conservation areas. Further, approximately 25 percent of Bloomington's future growth is expected to occur in the area just north of the project, thus adding to the importance of the proposed transportation improvements.

In addition to the areas directly adjacent to the study corridor, the proposed project will also serve existing and planned development/growth within the Normandale Lake District, as Normandale Boulevard is the primary north/south roadway within this area. The Normandale Lake District is a significant mixed-use development located immediately north of the project area, surrounding the intersection of Normandale Boulevard and W 84th Street (see Figure 6). Existing development in this area consists of a mix of retail, office, entertainment, residential and parkland. The *2030 Land Use Guideplan (2008)* for the Normandale Lake District calls for continued intensification of land uses in this area, including high-density office, general business, high-density residential, regional commercial, community commercial, and public/conservation land. The *2030 Land Use Guideplan Map* is included in Appendix A-8.

In addition, as part of the *Normandale Lake District Plan (2008)*, the City of Bloomington has identified numerous parcels in the Normandale Lake District which are anticipated to redevelop to a more intense use in the future. By 2030, a total of 1.5 million square feet of additional commercial and office space, as well as 4,827 jobs are anticipated to be added to the Normandale Lake District. In recent years, this area has seen continued development and redevelopment, with two new office towers and several new retail establishments opening since 2009. Further, the City has recently approved a proposal for the redevelopment of a vacant parcel into a high-density residential complex; known as Luxemburg Apartments, this development will add approximately 300 dwelling units to the area. Given the proximity of the project area and the Normandale Lake District to I-494, as well the fast-growing South Loop (formerly Airport South) District (six miles east), there is a high likelihood that this area will continue to redevelop as a major node of business, commercial, and entertainment activities.

As shown in Figure 7, the project is physically located within the following TAZs: 494, 503, and 506. In addition, the project will directly impact TAZ 502 and 504 (Normandale Lake District), as it will serve planned growth and development in this area, providing a safe and efficient connection between the Normandale Lake District and residential areas to the south. Therefore, TAZ 502 and 504 should be included when considering the impacts of the proposed project. The following is a summary of the planned 2030 land use for the affected TAZs.

2030 Land Use Summary for Affected TAZs

- **506:** High-Density Residential (10+ DU/acre), Medium-Density Residential (5-10 DU/acre), Low-Density Residential (0-5 DU/acre), public/quasi-public.
- **503:** High-Density Residential (10+ DU/acre), Low-Density Residential (0-5 DU/acre), conservation, public/quasi-public.
- **494:** High-Density Residential (10+ DU/acre), Medium-Density Residential (5-10 DU/acre), Low-Density Residential (0-5 DU/acre), conservation, public/quasi-public.
- **504:** Office, High-Density Residential
- **502:** Office, General Business, Regional Commercial, Community Commercial, High-Density Residential, Low-Density Residential, public/quasi-public

How does the project support this 2030 land use plan in the project area? Refer to the land use map and provide the land use categories and their description from the adopted local comprehensive plan.¹

RESPONSE:

The proposed project supports the City's 2030 land use plan and the anticipated growth and development within the area, accommodating more intense, mixed-use development through investment in the regional highway system, as well as pedestrian and bicycle improvements. These improvements will facilitate enhanced connections between workplaces, residences, retail, services, and entertainment activity centers, to facilitate growth and reinvestment along Normandale Boulevard. **Further, the project is a recommended improvement in the Normandale Lake District Plan (see Appendix A-9), which calls for the intensification of development and redevelopment within the district.** In addition, Normandale Boulevard is identified in the *Bloomington Comprehensive Plan (2008)* as an important connection between existing and planned residential nodes. Figure 6 illustrates the development nodes served by the project.

As previously described, existing land use within the project area consists of primarily low-density residential (see Appendix A-7). In order to fulfill future growth plans, this area is expected to continue to intensify as some existing low-density residential areas are converted to higher-density residential uses in the future. The *Bloomington 2030 Land Use Guideplan*, calls for a range of future uses within the project area, in order to support this anticipated growth and development/redevelopment. In addition to the existing low-density residential uses, planned future land uses include high- and medium-density residential, as well as continued protection of public use and conservation areas (see Appendix A-8).

The project will also have a significant impact on the Normandale Lake District, just north of the proposed project, surrounding the intersection of Normandale Boulevard and W 84th Street. Existing development in this area consists of a mix of retail, office, entertainment, residential and parkland (see Appendix A-6). The future land use plan calls for continued intensification of land uses in this area, including high-density office, general business, high-density residential, regional commercial, community commercial, and public/conservation (see Appendix A-8).

1 Future Land Use map (planned land use 2030) and description for example: "low density residential—Mostly single-family homes with some two-family homes and open space within or related to a residential development at a gross density of 2 to 4 units per acre." "Residential mixed use—Residential at a gross density of 7 to 30 units per acre, neighborhood commercial uses may be appropriate." "General Commercial—Broad range of businesses, generally highway-oriented, serving other businesses and City residents and requiring buffering from surrounding residential areas." "Agriculture—primarily agricultural purpose, including farming and horticulture, including farmstead or rural residence." [Examples from City of Coon Rapids Comprehensive Plan]

The following is a description of the future land use classifications for the areas affected by the proposed project, as defined by the *Bloomington Comprehensive Plan (2008)*.

- High-Density Residential: This designation allows residential development greater than 10 dwelling units per acre. Typical development includes multiple story apartments and condominiums. Given that access requirements for high density residential uses are high, this designation should be located only in areas adjacent to arterial and collector streets, and some level of transit service should generally be available.
- Medium-Density Residential: This designation allows residential development between five and 10 dwelling units per acre. Typical development includes townhomes, patio homes, two family dwellings, condominiums, and low rise apartments. Access requirements in this designation are moderate, therefore locations with access to nearby arterial and collector streets are most appropriate.
- Low-Density Residential: This designation allows residential development between zero and five dwelling units per acre. Typical development includes detached single family homes, although cluster housing below five units per acre and individual two family units meeting the minimum lot size requirements of the Zoning Ordinance are also allowed. Access requirements in this designation are low compared to other uses.
- Public: This designation applies to areas set aside for public uses. Typical uses include parks, schools, fire stations, municipal buildings, libraries, and open space. Access requirements of public uses vary widely and must be evaluated according to the nature of the particular use.
- Conservation: This designation applies to areas preserved in their natural condition for the protection of habitat, wildlife, and surface water drainage. Typical uses include natural areas, park reserves, wildlife conservation areas, storm water storage and associated facilities. Access to conservation areas should be controlled and roadways which border or cross conservation areas require special design consideration.
- Office: This designation allows professional and business offices and related accessory retail and restaurant uses serving the needs of office building tenants. Access requirements for office uses are high, so land should only be designated Office when adjacent to arterial and collector streets. Non-accessory commercial uses are not allowed within this designation based on the desire to establish areas free from the intrusion of more intensive commercial enterprises. Residential uses are allowed within this designation when fully integrated with an office land use and allowed in the underlying zoning district. Due to compatible land use characteristics, hotels are allowed on sites guided Office, provided the site is appropriately zoned for a hotel and within one mile of a freeway interchange.
- General Business: This designation allows a wide range of commercial uses that are suitable for the relatively small, shallow parcels of the City's neighborhood commercial nodes. Allowed development includes retail and service uses such as neighborhood supermarkets (20,000 sq. ft. and below), small shopping centers (up to 100,000 sq. ft. total with individual tenants of 20,000 sq. ft. or less), drug stores, restaurants (10,000 sq. ft. or less), and gas stations. Office uses are allowed within this designation when integrated with a commercial use or as a standalone use. Residential uses are allowed within this designation only when fully integrated with a general business land use and allowed in the underlying zoning district. Access requirements for this designation are moderate to high, so land should only be designated General Business when in close proximity to arterial or collector streets. This designation excludes larger scale retail and service uses that require larger parcel sizes or freeway visibility, such as hotels and motels, "big box" retail, medium and large sized shopping centers, hospitals, and automobile sales.

- **Regional Commercial:** This designation allows all “General Business” and “Community Commercial” activities, plus additional service and retail uses that require easy access from the freeway system such as hotels and motels, “big box” retail, large shopping centers, hospitals, and automobile sales. Office uses are allowed within this designation when integrated with a commercial use or as a standalone use. Residential uses are allowed within this designation only when fully integrated with a commercial land use and allowed in the underlying zoning district. Access requirements of regional commercial uses are very high, so land should only be designated Regional Commercial when it is in close proximity to freeways and adjacent to arterial or collector streets.
- **Community Commercial:** This designation allows all General Business activities plus additional, larger scale service and retail uses that require larger parcels such as supermarkets and restaurants of any size, medium sized shopping centers (up to 250,000 sq. ft. total with individual tenants of 80,000 sq. ft. or less), and theaters. Hotels and motels are allowed within the Community Commercial designation only when the site is within one mile of a freeway interchange. Office uses are allowed within this designation when integrated with a commercial use or as a standalone use. Residential uses are allowed within this designation only when fully integrated with a commercial land use and allowed in the underlying zoning district. Access requirements for this designation are high, so land should only be designated Community Commercial when adjacent to arterial or collector streets. This designation excludes regionally oriented retail and service uses that demand easy access from the freeway system, such as large shopping centers, “big box” retail, hospitals, or automobile sales.

In addition to serving planned future land use changes within the area, the proposed project is also listed in the *Bloomington Comprehensive Plan (2008)* as a planned transportation improvement to support forecast needs (see Appendix A-2), and is a key recommendation of the *Normandale Lake District Plan (2008)*, which calls for a range of improvements along Normandale Boulevard in order to support future growth and development (see Appendix A-9).

The proposed project is critical to supporting the planned growth and development described above, as it will provide the transportation improvements necessary to accommodate the City's future land use and development plans. By increasing capacity on Normandale Boulevard, the proposed project will safely and efficiently serve the more intense land uses planned along the corridor, playing an important role in serving north-south transportation movements in the City of Bloomington and surrounding areas. The proposed improvements will allow safer and more efficient operations for traffic accessing the office, retail and other uses within the area and the regional transportation linkages provided by I-494, while supporting the additional traffic volumes resulting from the anticipated development and redevelopment along the corridor. In addition, the proposed project will also enhance the non-motorized transportation system of the area, and provide improved linkages to public transit service. In this way, the proposed project will support development and accommodate growth within the City of Bloomington and the larger Twin Cities Region.

How does the project support 2030 forecasts for the project area? [Council staff will evaluate this criterion and will provide the following information to assist in the evaluation of this criterion: TAZ Project Area demographic profile population, household, employment and retail employment. The applicant does not need to provide a response.]

2. Progress Towards Affordable Housing Goals

0-50 points

NOTE: Information and analysis in this section will be provided by Council staff

Methodology for Evaluating Progress Made Towards Affordable Housing Goals

Up to 50 points can be awarded to a project, based upon a community's or group of communities' progress in addressing their affordable housing goals for 1996-2010.

For communities that participate in the Livable communities Local Housing Incentives Program, data from their 1996-2010 negotiated housing goals was used to determine the progress they have made toward providing opportunities to address their affordable housing goals.

For communities that do not participate in the Local Housing Incentives Program, progress will be measured against what the benchmarks were for their community in the Council's LCA goal setting methodology used in determining goals for 1996 to 2010.

Communities negotiated goals for both ownership and rental housing. Analysis consisted of comparing the goal, progress made to date and determining the percentage of the goal achieved for both ownership and rental combined.

Example of Analysis:

	Negotiated Goal	Progress to Date	Overall Progress Made - %
Rental Units	900	200	
Ownership Units	200	125	
Total Housing Units	1,100	325	30%

Scoring:

Percent of Progress Made:	Points Awarded:
90-100%	50
71-89%	40
51-70%	30
31-50%	20
11-30%	10
1-10%	5

For projects with 2 or more communities, scores are averaged and then applied to the project. Communities that do not have negotiated goals are given the same average score of the other communities within their group.

3. Land Use and Access Management Planning

0-100 points

The Development Framework includes support for connected land use patterns served by an integrated street network. Access management along highways is a key component of planning for these objectives. In addition, various access management strategies can reduce crashes, improve traffic flow, and add operational capacity for the applicable roadway. Higher scores will be given to projects that are developed using a local access management plan and to projects located in communities that have a regulatory framework established to protect and improve access control in the future. Additional points will be awarded to projects that implement these plans by reducing undesired access points.

Reference and describe the local access management plan used to develop the proposed project, and describe the corresponding county or state access management plan which supports the regional road network. Higher scores will be awarded to projects developed with an approach that is consistent with county or state access management plans.

RESPONSE:

Normandale Boulevard is a County State Aid Highway (CSAH) route falling under the jurisdiction of Hennepin County (CSAH 34). As such, the access management strategy for the proposed project was developed using the Hennepin County Access Management Plan, as documented in the 2030 Hennepin County Transportation Systems Plan (HC-TSP). The Hennepin County Access Management Plan is consistent with Mn/DOT policies, and is intended to provide a balance between safe and efficient roadway operations and the need to provide property access. The Hennepin County Access Management Plan includes a set of Access Spacing Guidelines which will be implemented as part of the proposed project (refer to Appendix A-10).

The City of Bloomington also endorses the Hennepin County Access Management Plan and has a policy objective to coordinate review and permitting of access to county roadways with the appropriate Hennepin County staff. Moreover, Bloomington also has a policy objective to minimize the number of access points and intersections along arterial roadways, to improve safety and enhance roadway operations (Appendix A-11).

Provide and identify intersection spacing and signal spacing guidelines, and driveway allowance criteria used for the proposed project and the corresponding county or state access management guidelines.

RESPONSE:

As previously noted, the access management plan used for this project corresponds to the Hennepin County Access Management Guidelines included in Appendix A-10. The Hennepin County Access Management Guidelines recommend full-movement access spacing of 1/4-mile (1,320 feet) for arterial and major collector roadways, local public streets and private high volume access driveways (>1,000 ADT). For divided minor arterial roadways, local public streets and low/high volume private access driveways should be spaced 1/8-mile apart (600 feet). The Hennepin County Access Management Guidelines are illustrated in Figure 8.

Having the necessary regulatory framework is essential for protecting the efficient functioning of the regional roadway network. Reference (adoption date) and describe the local zoning and subdivision ordinance regulations that are in place to maintain the access plan as adjacent properties are developed and/or redeveloped. Higher scores will be awarded to projects in communities with existing or proposed local support of the access management plan through existing regulations or ordinances.

RESPONSE:

Jurisdictional authority for this roadway is with Hennepin County, which requires access permits as an integral component of its access management program along this route. The City of Bloomington also has a policy objective to minimize the number of access points and intersections along arterial roadways and will coordinate review and permitting of access to county roadways with Hennepin County (Appendix A-11). The City's access management policies and supportive zoning ordinance are included or referenced in the approved *Bloomington Comprehensive Plan (2008)*. The City of Bloomington evaluates and regulates development along this route. Therefore, it is through the joint effort of both Hennepin County and the City of Bloomington that access will be optimized and maintained along this corridor. This access management program extends to ongoing design improvements, driveway relocation, and the consolidation of access points and is continuously pursued as development occurs and land uses change.

4. Corridor Access Management Improvements

0-100 points

Projects that help to implement the access management plan by removing or modifying non-conforming access points will receive points in this criterion. Identify the access locations and access management that currently exists and that will be allowed once the project is completed. Indicate by the following

classifications, the existing access locations inconsistent with the proposed access management approach and any access locations that will be modified:

RESPONSE:

The proposed project will implement the access management plan described above by removing and modifying all non-conforming access points within the project area. Currently, there are a total of 11 access locations within the project segment of Normandale Boulevard, including seven public streets, two low-volume private driveways, and two private residential driveways. Of these, six access points do not conform to the access management plan. Upon construction of the proposed project, all six of the non-conforming access points will be brought into compliance with the access management plan, including closure of two access points and modification of four access locations from full access to right-in/right-out only access. The access locations that currently exist along the study segment of Normandale Boulevard are identified in Figure 9. The proposed access modifications, and the access locations that will be allowed upon completion, are shown in Figure 10. The table below summarizes the number and type of access locations that are inconsistent with Hennepin County’s access management guidelines, and the proposed access modifications along the project corridor.

Type of Access	Existing Access (Inconsistencies)	Proposed Number of Closures	Proposed Access Modifications (right-in/right-out)
a. Private Residential Driveways/Field Entrances	2	0	2
b. Low Volume Private Driveways (Under 500 trips per day)	2	0	2
c. High Volume Private Driveways (Over 500 trips per day)	0	0	0
d. Public Streets	2	2	0

The proposed access modifications include the closure of Norman Ridge Drive and Northwood Ridge Drive at Normandale Boulevard, both of which are low-volume public streets. Additionally, two private residential driveways and two low-volume private property driveways are proposed to be modified from full access to partial access (right-in/right-out). A public hearing to discuss access closures will be held during the implementation process. The access management strategy to be implemented as part of the proposed project represents a significant improvement over the existing access control along the project segment of Normandale Boulevard, and will help to implement Hennepin County’s access management plan along this high-volume roadway.

5. Integration of Modes

0-75 points

The *Transportation Policy Plan* requires that explicit consideration of all users of the transportation system be considered in the planning and scoping phase of roadway projects. The integration of modes criteria evaluate the value of the proposed project in providing better accommodations for pedestrians, bicyclists, transit and freight vehicles. Such accommodation should be provided within the existing right-of-way and provide the same level of access as motor vehicles unless it is shown to be impractical. In such cases, the project may include facilitation of such travel outside of the roadway right-of-way along a close parallel route. “A” Minor Expanders are routes that make connections between developing areas outside the interstate ring. These roads may or may not be able to be served by transit but serve rapidly growing areas of the region. Roadway improvements provide an opportunity to improve non-motorized connectivity between these growing areas.

Pedestrians: Examples of pedestrian improvements include construction or reconstruction of walkways or multi-use paths, separating pedestrian walkways from vehicle traffic through the installation of a buffer such as a boulevard, and providing pedestrian lighting. Equally important to improving pedestrian movement along the project area is improving the safety and ease of pedestrian crossings of the roadways. Some examples of these kinds of improvements are installation of pedestrian countdown signals with crosswalks, reducing the effective crossing distance by installing curb extensions and pedestrian medians, and reducing the speed of vehicles making turning movements at intersections. Different treatments are appropriate for different types of roadway conditions.

Include a map that shows all new or reconstructed walkways or multi-use paths that will be constructed as part of this project as well as all pathways that these walkways will connect to and any potential pedestrian destinations such as schools, residences, transit stops, parks, and businesses within ¼ mile of the project area that will be accessible to pedestrians. In the response field, indicate the characteristics of these pedestrian facilities (i.e. multi-use trail, sidewalk, or crosswalk etc.) and whether they are brand new facilities or a replacement of an existing facility.. All pedestrian facilities must be designed to be ADA-compliant at a minimum.

RESPONSE:

The proposed project is located on a segment of Normandale Boulevard that is designated by the Bloomington Alternative Transportation Plan (2008) as a “Core Linking Trail (see Figure 11).” Core linking trails are located within the roadway right-of-way and are designed to serve both pedestrians and bicyclists (see Appendix A-12). There are currently multi-use paths on both sides of the roadway within the project area; however, these paths are only five-feet wide, have very little separation or buffer from the roadway (none in some areas), and are in need of maintenance (see Appendix A-13). Further, the existing trails do not meet the design standards set by the City for Core Linking trails (eight-foot minimum width). In addition, there is a lack of adequate pedestrian crossing facilities and the high volume of traffic on the roadway makes crossing Normandale Boulevard within the project area unsafe for pedestrians.

The proposed project will facilitate integration of modes through an emphasis on improving facilities for pedestrians, bicyclists, and other non-motorized transportation modes. As shown in Appendix A-1, the proposed project includes the reconstruction of Normandale Boulevard from a four-lane undivided roadway to a four-lane divided roadway, including two-way, multi-use trails, on both sides of the Normandale Boulevard. The proposed trails will replace the existing five-foot wide trails with ten-foot wide trails which will improve the pedestrian experience along the corridor. In addition, the trails will be separated from the roadway by a minimum of six-feet, via a grass boulevard area which will further increase pedestrian safety. Further, the new trail configuration will enhance safety by providing a clear zone between the trail and retaining wall, where none currently exists. By replacing the existing substandard trails with new multi-use trails and providing a buffer between the trails and roadway, the proposed project will create a safer and more efficient pedestrian environment.

Due to the inadequate pedestrian facilities described above, and the high traffic nature of Normandale Boulevard, there are currently very few safe pedestrian crossing locations within the project area. According to Minnesota State Statutes (MN 2006, c169.21 s2), “Where traffic-control signals are not in place or in operation, the driver of a vehicle shall stop to yield the right-of-way to a pedestrian crossing the roadway within a marked crosswalk or at an intersection with no marked crosswalk.” Therefore, there are currently five unsignalized pedestrian crossings and one signalized pedestrian crossing (Normandale Boulevard/W 94th Street) along the project corridor. There are currently pedestrian curb ramps and pavement markings at the signalized intersection of Normandale Boulevard and W 94th Street, and curb ramps at all north to south crossings within the corridor, however there are no sidewalks, curb ramps, or pavement markings at any of the unsignalized east to west crossing locations along the corridor. Moreover, as an undivided facility (existing conditions), pedestrians and bicyclists are currently required to cross four-lanes of traffic,

in order to cross Normandale Boulevard east to west. The lack of adequate pedestrian facilities at crossing locations creates an unsafe pedestrian environment.

As part of the conversion from an undivided to a divided roadway, a raised concrete median will be installed in the center of the roadway (see Appendix A-1). This median will provide pedestrian refuge areas for east-west non-motorized traffic crossing the corridor. In addition, the proposed project will include pavement markings and curb ramps at all north to south and east to west crossing locations along the corridor, including both signalized and unsignalized intersections. Finally, the proposed multi-use trails will provide safe and convenient connections to the existing grade-separated trail underpass at the north end of the project area, and the planned future pedestrian bridge at the intersection of Normandale Boulevard and W 84th Street (see Figure 11). This enhanced pedestrian trail connectivity will encourage the use of grade-separated trail crossings, thereby improving overall roadway safety by minimizing the potential for vehicle/pedestrian conflicts.

The enhanced trail facilities included as part of the proposed project will provide improved pedestrian connectivity within the area, creating safe and enjoyable linkages between the residential uses along the project corridor and a range of pedestrian destinations. These include the already popular regional park and trail system in the area, schools, retail and entertainment, and transit. Further, the proposed trails will connect to a wider pedestrian network which includes both the City and Hennepin County trail system. In addition, these trails provide a connection to the park-and-ride lots and transit stop on W 94th Street and W 98th Street. As shown in Figures 12 and Appendix A-14, there are several parks, schools, and playgrounds within a 1/4-mile and 1/2-mile radius of the proposed project which will realize enhanced pedestrian linkages as a result of the proposed improvements. These include Poplar Bridge Elementary School and playground on W 84th Street (1/2 mile east of the project area), Normandale Hills Elementary School on Normandale Boulevard (1/4 mile south of W 94th Street), and Ridgeview Elementary School and playground on W 94th Street (1/2 mile west of Normandale Boulevard).

The popular Normandale Lake Park is located just north and west of the project corridor (less than 1/4 mile) and is directly connected to the proposed project via the existing trail underpass at the north end of the project area (Nine-Mile Creek). Normandale Lake Park has a paved-loop walking trail and a separate bike trail, fishing, and picnic amenities. The park also has a bandshell and park shelter used for a variety of events. The Hyland-Bush-Anderson Lakes Park Reserve is adjacent to Normandale Lake Park and provides a large variety of activities including the Richardson Nature Center, ski facilities, camping, canoeing, biking, hiking, and play areas. These areas are connected to Normandale Lake Park, and in turn the proposed project, via the East Bush Lake Road Regional Trail. Both Normandale Lake Park and the Hyland-Bush-Anderson Lakes Park Reserve area are part of the Three Rivers Park District. Further, the proposed project will also create an enhanced pedestrian linkage to the Hyland Greens Golf Course which is adjacent to Normandale Boulevard, approximately 1/4 mile south of the project area. Finally, the proposed improvements will provide connections to residential nodes along both sides of the corridor and a significant node of mixed-use development located immediately north of the project area, surrounding the intersection of Normandale Boulevard and W 84th Street.

As described above, the proposed project will promote integration of modes through enhanced pedestrian safety, improved pedestrian mobility, and by providing better linkages to a wide range of pedestrian destinations. All pedestrian facilities will be ADA compliant and where possible, trails will be built to optimum trail design standards, which include a maximum of five percent (5%) running grade and a cross slope of two percent (2%) for drainage.

Bicyclists: Examples of bicycle improvements include striping a bike lane or a marked shoulder that is 5 feet wide or greater, installing an off-road pathway where conditions favor one, and intersection treatments designed to reduce motor vehicle and bicycle conflict. Different treatments are appropriate for different types of roadway conditions.

Include a map that shows all new or reconstructed bikeways that will be constructed (or striped) with this project, and show how they connect to an existing or planned bikeway network. Also show potential destinations along the roadway segment and within a ¼ mile of the project area that will be accessible with this bikeway network such as schools, parks residences, transit stops, and businesses. In the response field, indicate the characteristics of these bicycle facilities (i.e. bike lane, striped shoulder, cycle track, multi-use trail etc.) and whether they are brand new facilities or a replacement of an existing facility.

RESPONSE:

The proposed project will provide enhanced facilities for bicyclists. The proposed project is located on a segment of Normandale Boulevard that is designated by the Bloomington Alternative Transportation Plan (2008) as a "Core Linking Trail (see Figure 13)." Core linking trails are located within the roadway right-of-way and are designed to serve both pedestrians and bicyclists (see Appendix A-12). There are currently multi-use paths on both sides of the roadway within the project area; however, these paths are only five-feet wide, they have very little separation or buffer from the roadway (none in some areas), and are in need of maintenance (see Appendix A-13). Further, the existing trails do not meet the design standards set by the City for Core Linking trails (eight-foot minimum width). In addition, there is a lack of adequate bicycle crossing facilities and the high volume of traffic on the roadway makes crossing Normandale Boulevard within the project area unsafe for bicycles.

The proposed project will facilitate integration of modes through an emphasis on improving facilities for pedestrians, bicyclists, and other non-motorized transportation modes. As shown in Appendix A-1, the proposed project includes the reconstruction of Normandale Boulevard from a four-lane undivided roadway to a four-lane divided roadway, including two-way, multi-use trails, on both sides of the Normandale Boulevard. The proposed trails will replace the existing five-foot wide trails with ten-foot wide trails which will improve the bicycle experience along the corridor. In addition, the trails will be separated from the roadway by a minimum of six-feet, via a grass boulevard area which will further increase bicycle safety and mobility. Further, the new trail configuration will enhance safety by providing a clear zone between the trail and retaining wall, where none currently exists. By replacing the existing substandard trails with new multi-use trails and providing a buffer between the trails and roadway, the proposed project will create a safer and more efficient environment for bicyclists.

Due to the inadequate bicycle facilities described above, and the high traffic nature of Normandale Boulevard, there are currently very few safe bicycle crossing locations within the project area. According to Minnesota State Statutes (MN 2006, c169.21 s2), "Where traffic-control signals are not in place or in operation, the driver of a vehicle shall stop to yield the right-of-way to a pedestrian or bicyclist crossing the roadway within a marked crosswalk or at an intersection with no marked crosswalk." Therefore, there are currently five unsignalized pedestrian/bicycle crossings and one signalized crossing (Normandale Boulevard/W 94th Street) along the project corridor. There are currently curb ramps and pavement markings at the signalized intersection of Normandale Boulevard and W 94th Street, and curb ramps at all north to south crossings within the corridor, however there are no trails, curb ramps, or pavement markings at any of the unsignalized east to west crossing locations along the corridor. Moreover, as an undivided facility (existing conditions), pedestrians and bicyclists are currently required to cross four-lanes of traffic, in order to cross Normandale Boulevard east to west. The lack of adequate bicycle facilities at crossing locations creates an unsafe environment for bicyclists.

As part of the conversion from an undivided to a divided roadway, a raised concrete median will be installed in the center of the roadway (see Appendix A-1). This median will provide refuge areas for east-west non-motorized traffic crossing the corridor. In addition, the proposed project will include pavement markings and curb ramps at all north to south and east to west crossing locations along the corridor, including both signalized and unsignalized intersections. Finally, the proposed multi-use trails will provide safe and convenient connections to the existing grade-separated trail underpass at the north end of the project area, and the planned future pedestrian/bicycle bridge at the intersection of Normandale Boulevard and W 84th Street (see Figure 13). This enhanced trail connectivity will encourage the use of grade-separated trail crossings, thereby improving overall roadway safety by minimizing the potential for vehicle/bicycle conflicts.

The enhanced trail facilities included as part of the proposed project will provide improved bicycle connectivity within the area, creating safe and enjoyable linkages between the residential uses along the project corridor and a range of bicycle destinations. These include the already popular regional park and trail system in the area, schools, retail and entertainment, and transit. Further, the proposed trails will connect to a wider bicycle trail network which includes both the City and Hennepin County trail system. In addition, these trails provide a connection to the park-and-ride lots and transit stop on W 94th Street and W 98th Street. As shown in Figures 12 and Appendix A-14, there are several parks, schools, and playgrounds within a 1/4-mile and 1/2-mile radius of the proposed project which will realize enhanced bicycle linkages as a result of the proposed improvements. These include Poplar Bridge Elementary School and playground on W 84th Street (1/2 mile east of the project area), Normandale Hills Elementary School on Normandale Boulevard (1/4 mile south of W 94th Street), and Ridgeview Elementary School and playground on W 94th Street (1/2 mile west of Normandale Boulevard).

The popular Normandale Lake Regional Park is located just north and west of the project corridor (less than 1/4 mile) and is directly connected to the proposed project via the existing trail underpass at the north end of the project area (Nine-Mile Creek). Normandale Lake Park has a paved-loop walking trail and a separate bike trail, fishing, and picnic amenities. The park also has a bandshell and park shelter used for a variety of events. The Hyland-Bush-Anderson Lakes Park Reserve is adjacent to Normandale Lake Park and provides a large variety of activities including the Richardson Nature Center, ski facilities, camping, canoeing, biking, hiking, and play areas. These areas are connected to Normandale Lake Park, and in turn the proposed project, via the East Bush Lake Road Regional Trail. Further, the proposed project will also create an enhanced bicycle linkage to the Hyland Greens Golf Course which is adjacent to Normandale Boulevard, approximately 1/4 mile south of the project area (see Figure 12). Finally, the proposed improvements will provide connections to residential nodes along both sides of the corridor and a significant node of mixed-use development located immediately north of the project area, surrounding the intersection of Normandale Boulevard and W 84th Street.

As described above, the proposed project will promote integration of modes through enhanced bicycle safety, improved bicycle mobility, and by providing better linkages to a wide range of bicycle destinations. All bicycle facilities will be ADA compliant and where possible, trails will be built to optimum trail design standards, which include a maximum of five percent (5%) running grade and a cross slope of two percent (2%) for drainage.

Transit: Examples of transit improvements include improving accessibility to transit stops by pedestrians, installing bus stop amenities for passengers, and placing bus stops on the far side of intersections. In some cases, other improvements to the roadway, including curb bump-outs for bus stops or the construction of bus lanes can improve transit service reliability and speed along the roadway.

Is there transit service on the roadway? If so, what elements of this project will enhance the mobility of transit vehicles, if any? What elements of this project will improve passenger access to transit stops?

RESPONSE:

The proposed improvements will enhance mobility for buses traveling on Normandale Boulevard and for the motorists, pedestrians, and bicyclists traveling on it to access the bus stops and park-and-ride lots along the corridor, as well as the nearby Southdale Transit Hub.

Normandale Boulevard is a vital transit corridor served by a diverse range of transit service, including Metro Transit bus service connecting activity centers within Bloomington, the south/southwest metro, and downtown Minneapolis and St. Paul. Bus routes serving the project area include 589 and 539 (see Figure 5), providing service to the Normandale Lake District office park, the Southdale Transit Center, Normandale Community College, Best Buy Corporate Headquarters, South Bloomington Transit Center, Mall of America, and ultimately downtown Minneapolis and St. Paul. Bus service within the project area provides a connection to the Hiawatha LRT line (via the Mall of America Station), providing regular service to the Minneapolis/St. Paul International Airport and downtown Minneapolis. Further, this line will provide a linkage to activity centers within the City of St. Paul via the Hiawatha LRT connection to the planned Central Corridor LRT line, which is currently under construction. In addition, the 2030 *Transportation Policy Plan (TPP) (2030 Transit Plan, pg. 142)* identifies American Boulevard as a candidate corridor for Bus Rapid Transit (BRT), and Metro Transit has included American Boulevard in a BRT Transit Corridor Study now in progress. The existing transit service along the project corridor (Normandale Boulevard) would provide a direct connection to any future transitway along American Boulevard, such as BRT.

There are currently two park-and-ride lots, one transit stop, and one major transit center within the project corridor. Park-and-ride lots along the project corridor include one on W 94th Street west of Normandale Boulevard and one on W 98th Street east of Normandale Boulevard. The Southdale Transit Center, which provides connections to Metro Transit routes 6, 114, 152, 515, 538, 539, 578, 631 and 693 is located just north of the project area and is served by routes using Normandale Boulevard (see Figure 5).

The proposed improvements will enhance mobility for buses traveling on Normandale Boulevard and motorists, pedestrians, and bicyclist traveling on it to access transit service. As previously noted, the proposed project includes the reconstruction of Normandale Boulevard from a four-lane undivided roadway to a four-lane divided roadway, including two-way, multi-use trails, on both sides of the Normandale Boulevard. The proposed project includes roadway capacity, geometric, and access management improvements which will decrease congestion along the project segment of the heavily traveled Normandale Boulevard, thereby improving mobility for transit buses traveling along the corridor. In addition, these improvements will improve access to the existing park-and-ride lots within the area (W 94th Street and W 98th Street) for motorists traveling on Normandale Boulevard to access these facilities.

The proposed project will also enhance user access to transit services by improving pedestrian and bicycle access to transit stops. As noted above, the proposed project includes the provision of multi-use trails on both sides of the roadway. These 10-foot wide trails will replace the existing five-foot wide trails and will be separated by a minimum of six feet from the roadway, thereby providing a safer, more efficient, and more enjoyable route for people who walk or bike to access transit services within the corridor.

By improving mobility for transit vehicles, and increasing accessibility for motorists, pedestrians, and bicyclists who use transit, the proposed project will enhance existing transit services and encourage increased transit ridership in the area.

Freight: Freight improvements will be evaluated on the role of the roadway in providing freight mobility.

What is the current daily heavy commercial traffic along the project segment? Is the roadway used to access any of the regional intermodal freight terminals in Appendix J and does the road connect any of these terminals to a freeway?

RESPONSE:

The proposed project is located in an important freight moving area and will help to improve freight mobility by providing enhanced access to a regional intermodal freight terminal and providing a safe and efficient route for regional freight traffic.

Heavy Commercial Traffic

According to Mn/DOT Traffic Flow maps, the daily heavy commercial traffic volume on Highway 100 (1/4 mile north of the project area) is 1,800 (2009). In addition, daily heavy commercial traffic volume on I-494 at the Highway 100/Normandale Boulevard interchange (1/4 mile north of the project area) is 6,900 (2009). As heavy commercial traffic in the region is primarily concentrated on Principal Arterials, there is no heavy commercial traffic volume data available for the project area (Minor Arterial). Using a standard factor of three-percent of the current AADT (30,000 vpd), the daily heavy commercial traffic volume within the project segment of Normandale Boulevard is estimated to be approximately 900 vehicles per day and 1,170 vehicles per day just north of the project area, near the I-494 interchange.

Regional Intermodal Freight Terminals

The proposed project will improve access to a major regional intermodal freight terminal. The proposed project lies less than ten miles from the Minneapolis - St. Paul International Airport, which is an intermodal freight terminal of statewide significance. **From the airport, air cargo and passengers are disseminated throughout the region, primarily on principal arterials. However, with the completion of the parallel minor arterial system along I-494, short- and medium-length trips from the airport bound for Bloomington destinations (or from Bloomington bound for the airport) can use these minor arterial, such as Normandale Boulevard, as an alternative route.** As it will improve an important route on the minor arterial system (Normandale Boulevard), the proposed project will provide enhanced access to this regional intermodal freight facility.

Terminal Freeway Connections

By improving mobility and operations along Normandale Boulevard, the proposed project will enhance freeway connections to the Minneapolis - St. Paul International Airport, a major regional intermodal freight terminal. By improving Normandale Boulevard, the proposed project will enhance access to I-494 (1/4 mile north of the project area), providing a safe and efficient minor arterial route connection. In addition, the proposed project will also improve access to I-494 for the major freight generators, and to the regional highway system for truck traffic. Numerous truck terminals and over 200,000 jobs are located on both sides of the I-494 corridor, within the City's parallel arterial system (including Normandale Boulevard). The parallel arterial system is intended to provide enhanced connectivity to the areas immediately north and south of the I-494 alignment within the cities of Bloomington, Richfield, and Edina. This system is designed to provide convenient access to the commercial/office uses along the corridor and to keep local trips off the I-494 mainline. With its connection to the parallel arterial system, the proposed Normandale Boulevard project will improve access to these major metro truck terminals and employment centers. Finally, the project will also improve access to the many freight generating warehouse areas along Old Shakopee Road, approximately 1/4 mile south of the project area.

E. Maturity of Project Concept. 100 points

Projects selected through this solicitation will be programmed for construction in 2015 or 2016. That is a fairly long time but it takes several years to complete preliminary engineering, environmental studies and acquire right-of-way. The region must manage the federal funds in each year of the TIP. Projects that are not implemented in their original program year are carried over to the next program year, or the funding sunset date. This requires other projects to shift program years to maintain fiscal balance in the TIP and STIP. Proposed projects that have already completed some of the work are more likely to be ready for funding authorization in their program year. A schedule is important to know what kind of work might be needed. Large projects that need right-of-way require more work than those that do not.

0-100 points Applications involving construction must complete the project implementation schedule found in Appendix K. A detailed schedule of events is expected for all phases of the project. Applications involving non-construction projects must include a detailed discussion of the timeframes involved for initiating and completing each phase of planned activities. Points under this criterion are assigned based on how many steps have been taken toward implementation of the project. These steps reflect a federally funded project development path.

RESPONSE: Please complete the project implementation schedule found in Appendix K.

TOTAL: 1,200 POINTS

Appendix K
Project Implementation Schedule

Please check those that apply and fill in anticipated completion dates

1) Project Scope

- Stake Holders have been identified
 Meetings or contacts with Stake Holders have occurred

2) Layout or Preliminary Plan

- Identified Alternatives
 Selected Alternatives
 Layout or Preliminary Plan started
 Layout or Preliminary Plan completed
Anticipated date or date of completion December 2009

3) Environmental Documentation

- EIS EA PM
Document Status
 Document not started
 Document in progress; environmental impacts identified
 Document submitted to State Aid for review (date submitted _____)
 Document approved (need copy of signed cover sheet)
Anticipated date or date of completion/approval December 2014

4) R/W

- No R/W required
 R/W required, parcels not identified
 R/W required, parcels identified
 R/W has been acquired
Anticipated date or date of acquisition January 2016

5) Railroad Involvement

- No railroad involvement on project
 Railroad R/W Agreement required; negotiations not begun
 Railroad R/W Agreement required; negotiations have begun
 Railroad R/W Agreement is complete
Anticipated date or date of acquisition _____

6) Construction Documents/Plan

- Construction plans have not been started
 Construction plans in progress
Anticipated date or date of completion September 2015
 Construction plans completed/approved

7) Letting

- Anticipated Letting Date April 2016

FIGURES AND APPENDICES

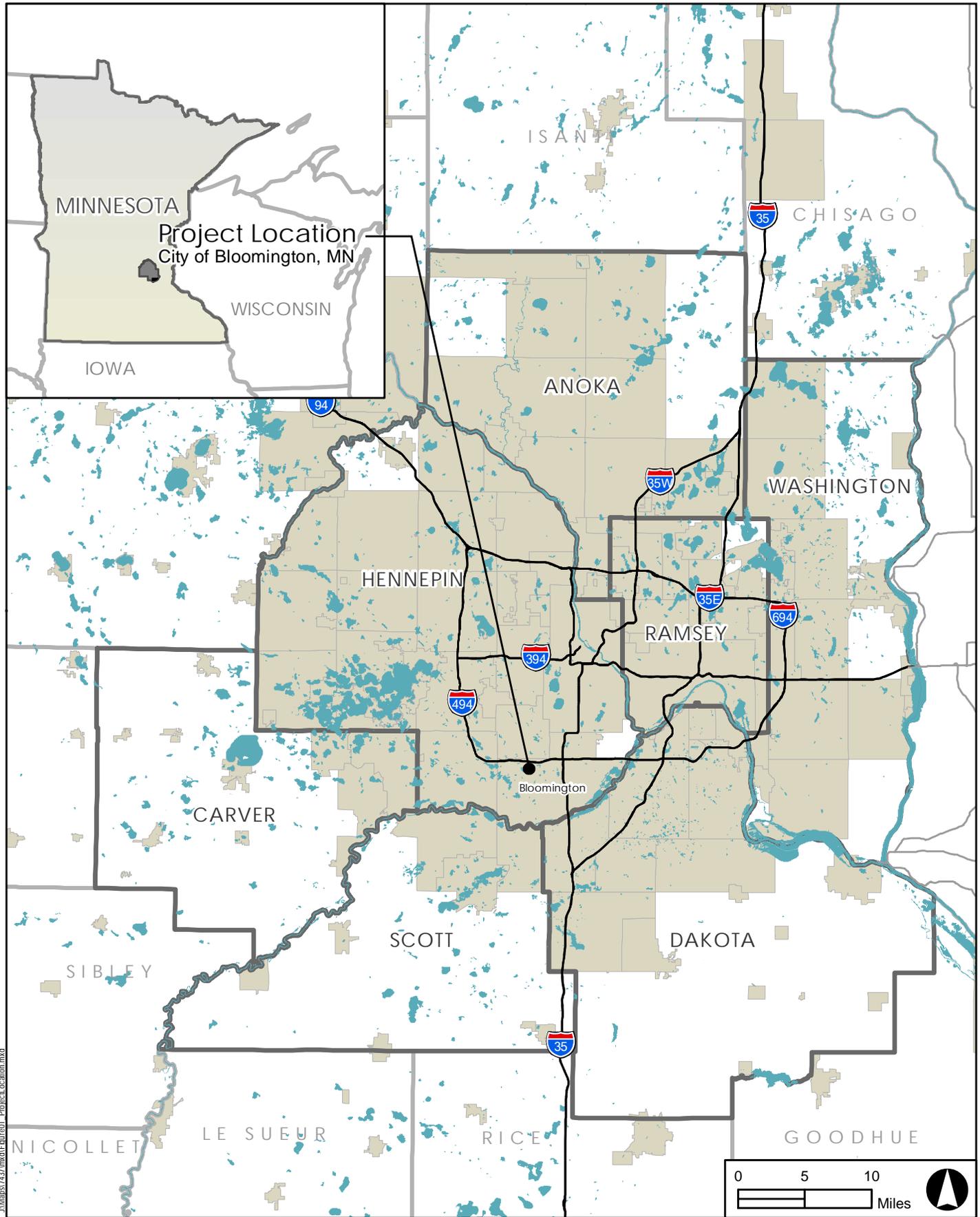
Figures

Figure 1	Project Location
Figure 2	Project Limits
Figure 3	Metropolitan Urban Service Area (MUSA)
Figure 4	Minor Arterial Route
Figure 5	Transit Facilities
Figure 6	Development Nodes
Figure 7	Impacted Transportation Analysis Zones (TAZ)
Figure 8	Access Management Plan
Figure 9	Existing Access Locations
Figure 10	Proposed Access Modifications
Figure 11	Walkways
Figure 12	Trail Destinations
Figure 13	Bikeways

Appendices

Appendix A-1	Preliminary Concept Layout and Typical Cross-Section
Appendix A-2	City of Bloomington Comprehensive Plan: Planned Improvements
Appendix A-3	5-Year Community Investment Program
Appendix A-4	Hennepin County Systems Evaluation
Appendix A-5	City Council Resolution
Appendix A-6	Hennepin County Support Letter
Appendix A-7	City of Bloomington Comprehensive Plan: Existing Land Use Map
Appendix A-8	City of Bloomington 2030 Land Use Guideplan Map
Appendix A-9	Normadale Lake District Plan
Appendix A-10	Hennepin County Access Spacing Guidelines
Appendix A-11	City of Bloomington Access Policy Strategy (Strategy 3.3)
Appendix A-12	Alternative Transportation Plan – Core Linking Trail
Appendix A-13	Alternative Transportation Plan – Existing Trail Condition
Appendix A-14	Alternative Transportation Plan – School Location Map
Appendix B	Mn/DOT TIS Data Listing, SRF Highway Safety Analysis Tool Listing, Crash Diagrams and Crash Reduction Factors
Appendix C	Vehicle Emissions Worksheet

Figures

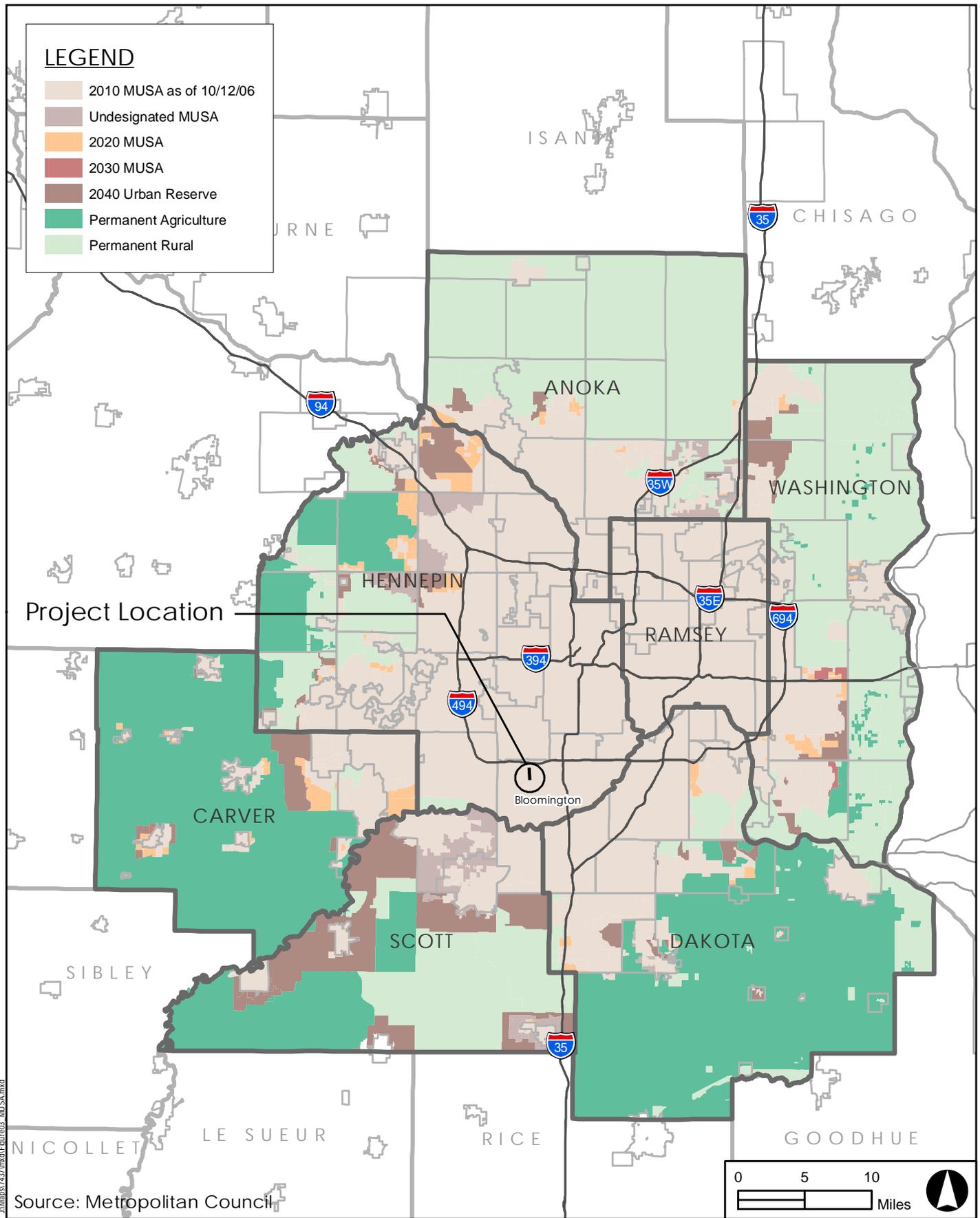


J:\Maps\27\mxd\Figure01 - Project Location.mxd

Project Location

Normandale Blvd from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington, Minnesota

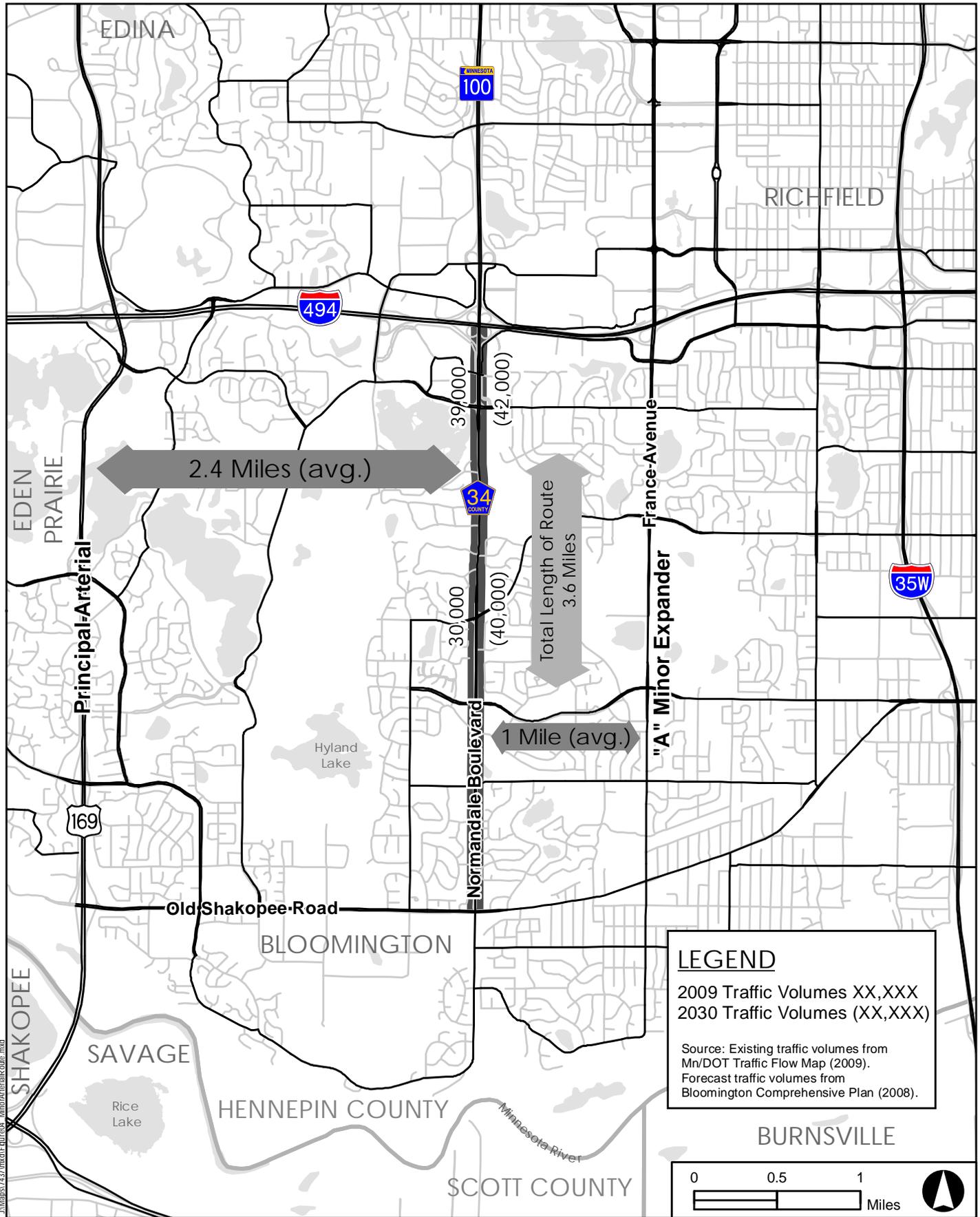
Figure 1



Metropolitan Urban Service Area (MUSA)

Normandale Blvd from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington, Minnesota

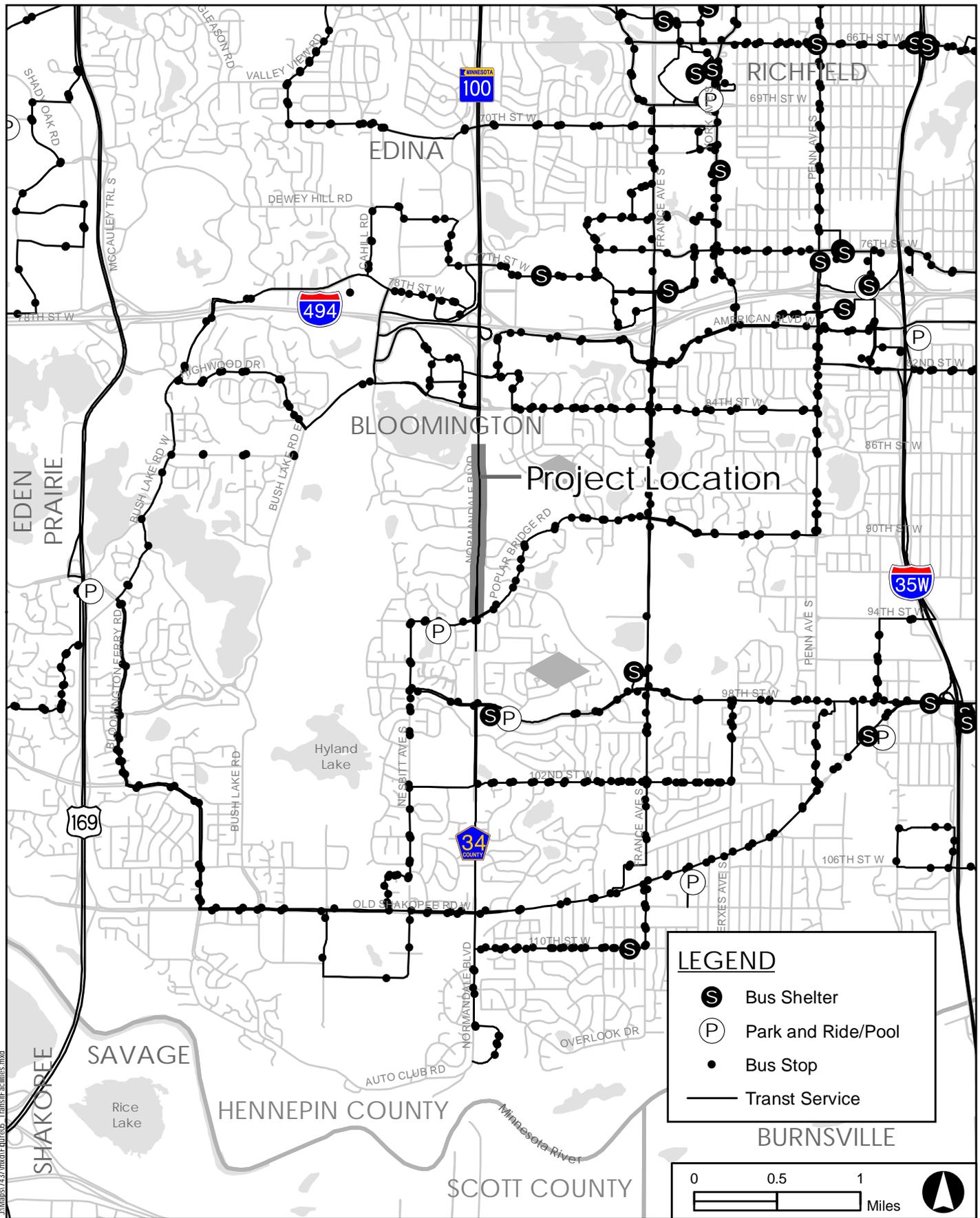
Figure 3



Minor Arterial Route

Normandale Blvd from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington, Minnesota

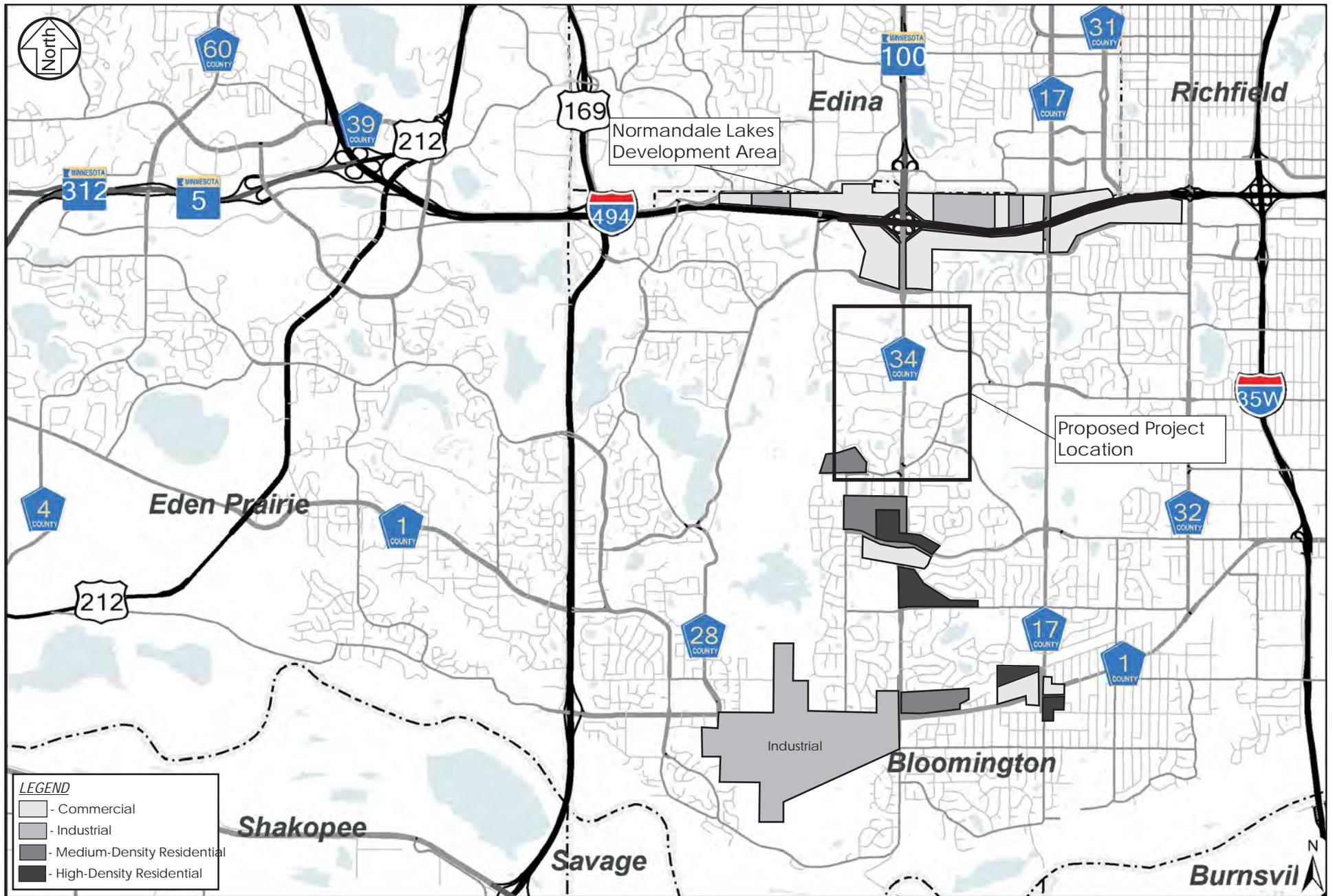
Figure 4



Transit Facilities

Normandale Blvd from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington, Minnesota

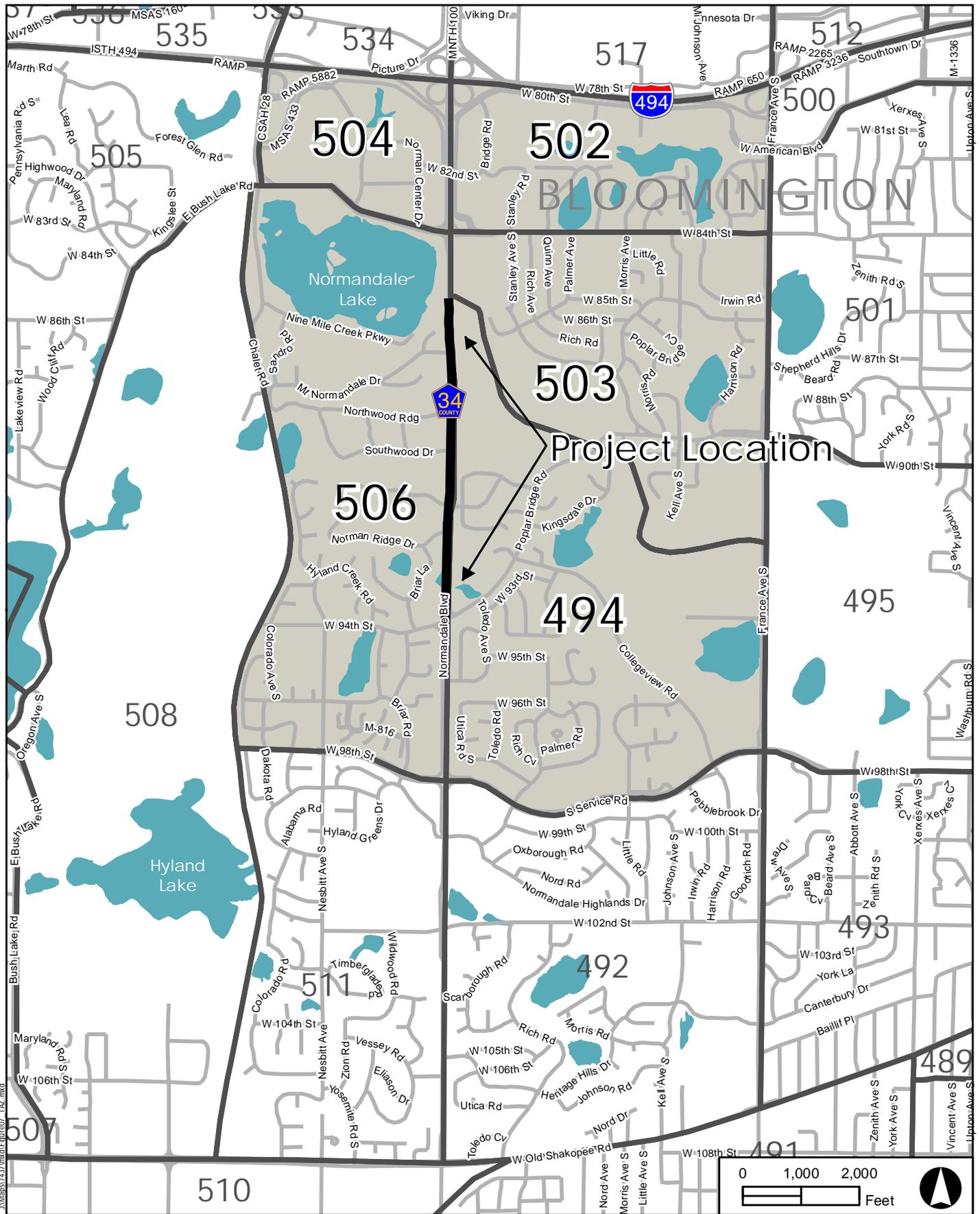
Figure 5



Development Nodes

Normandale Boulevard from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington

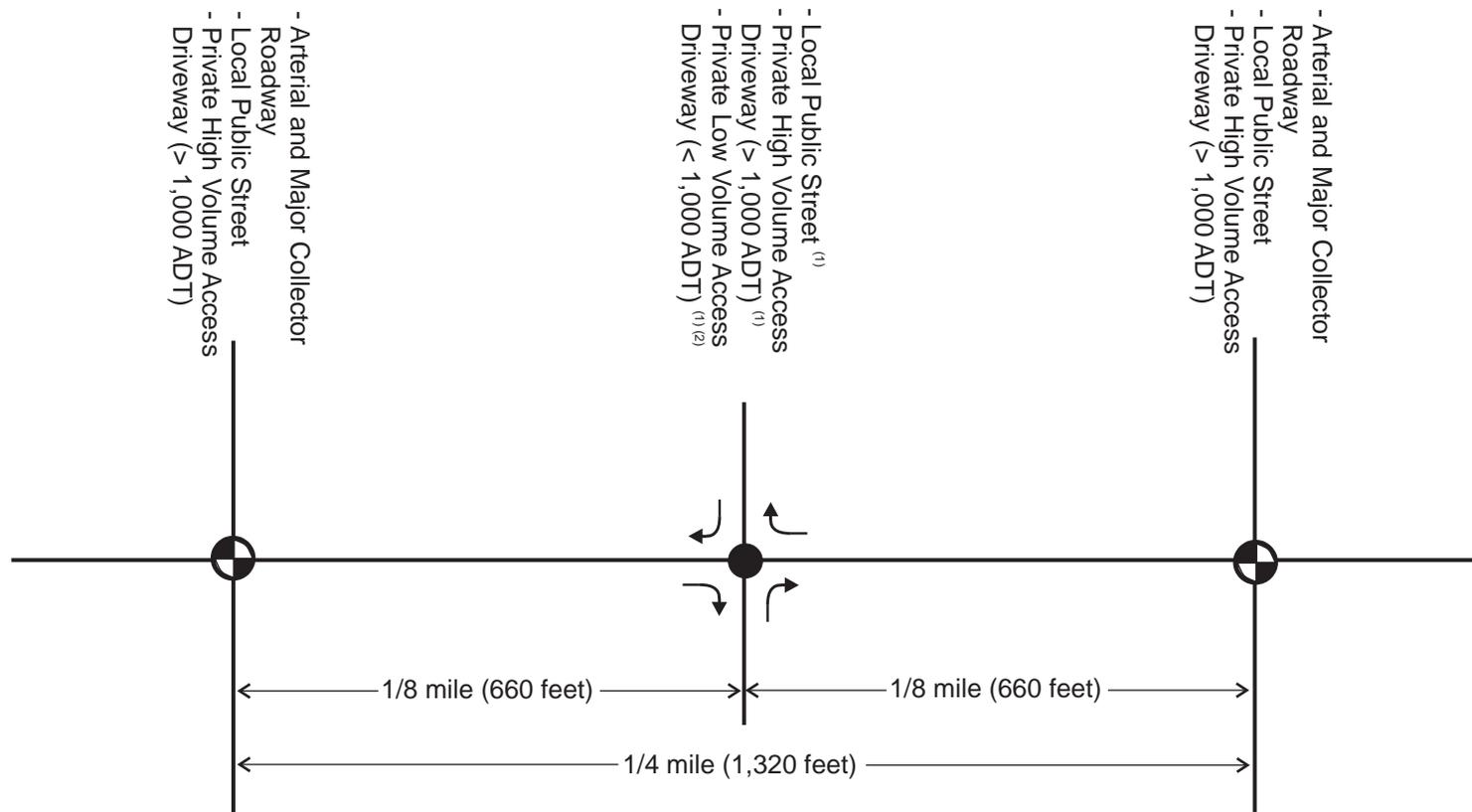
Figure 6



Impacted Transportation Analysis Zones (TAZ)

Normandale Blvd from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington, Minnesota

Figure 7



⊕ Full-Access Intersection

(1) Partial access allowed for divided Minor Arterial roadways.

(2) Access via alternative facility required for undivided roadways.

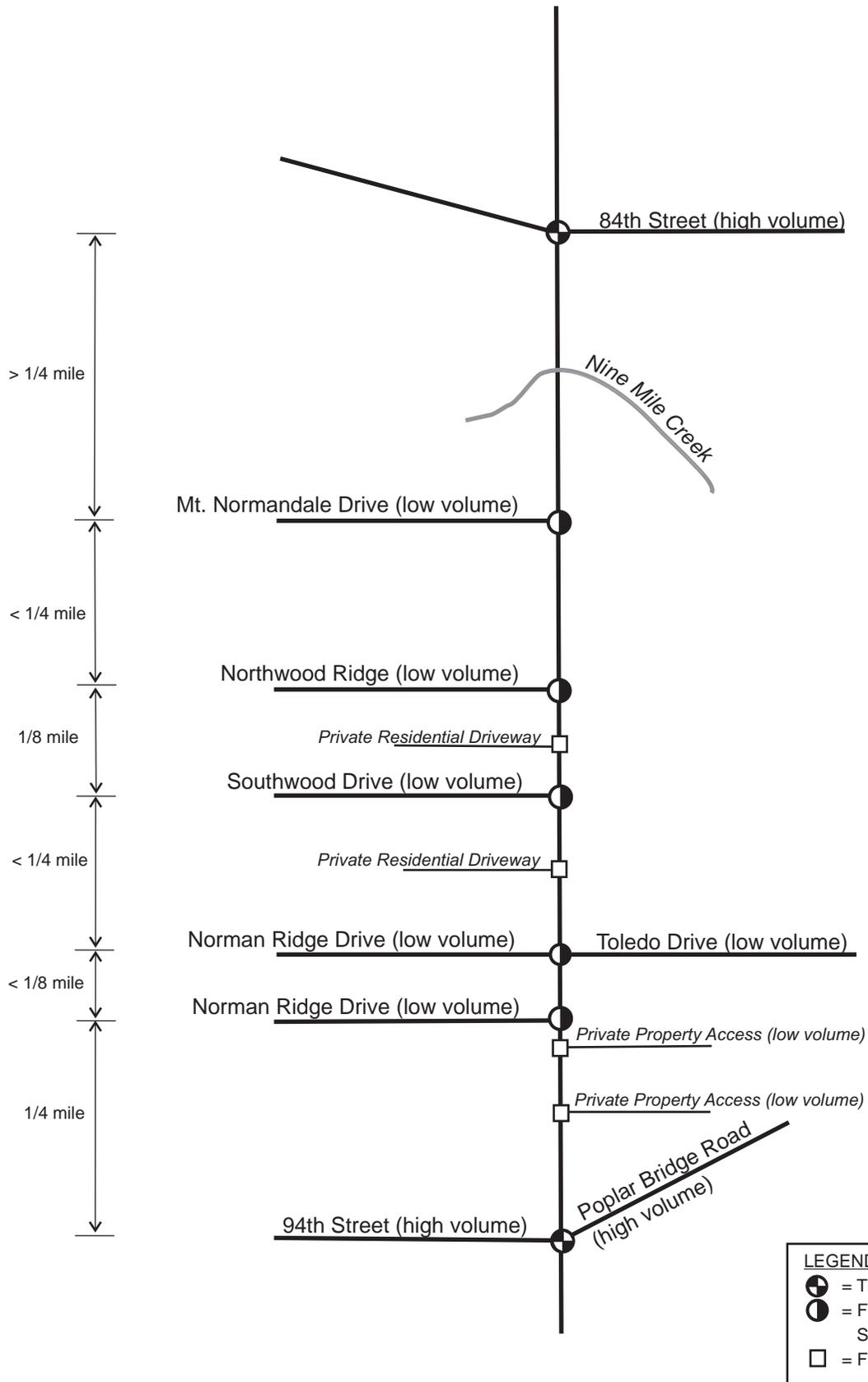
Hennepin County Access Spacing Guidelines

Normandale Boulevard from W 94th Street to 8500 Block

STP - "A" Minor Arterial Expander

City of Bloomington

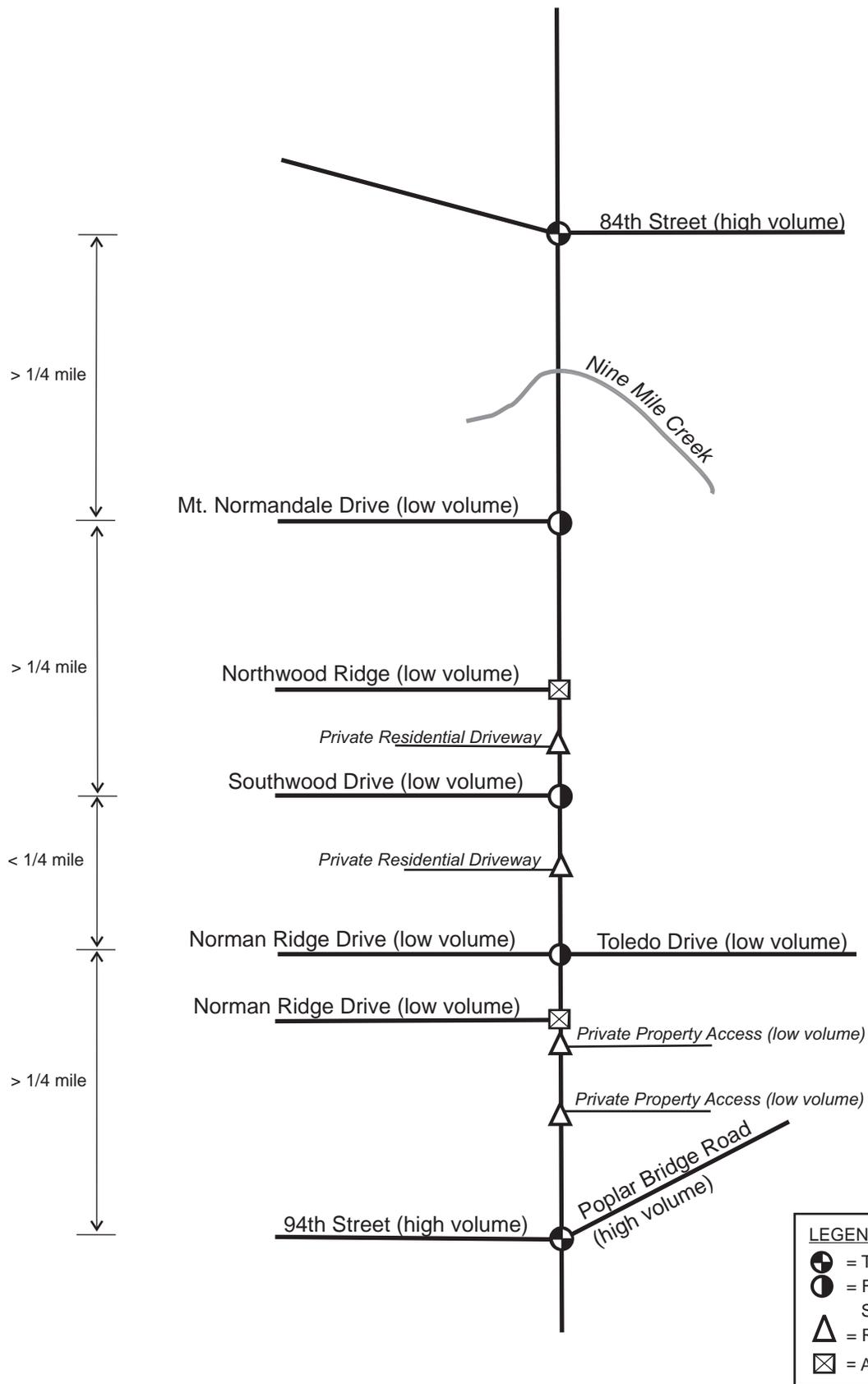
Figure 8



Existing Access Locations

Normandale Boulevard from W 94 Street to 8500 Block
STP - "A" Minor Arterial Expander
City of Bloomington

Figure 9

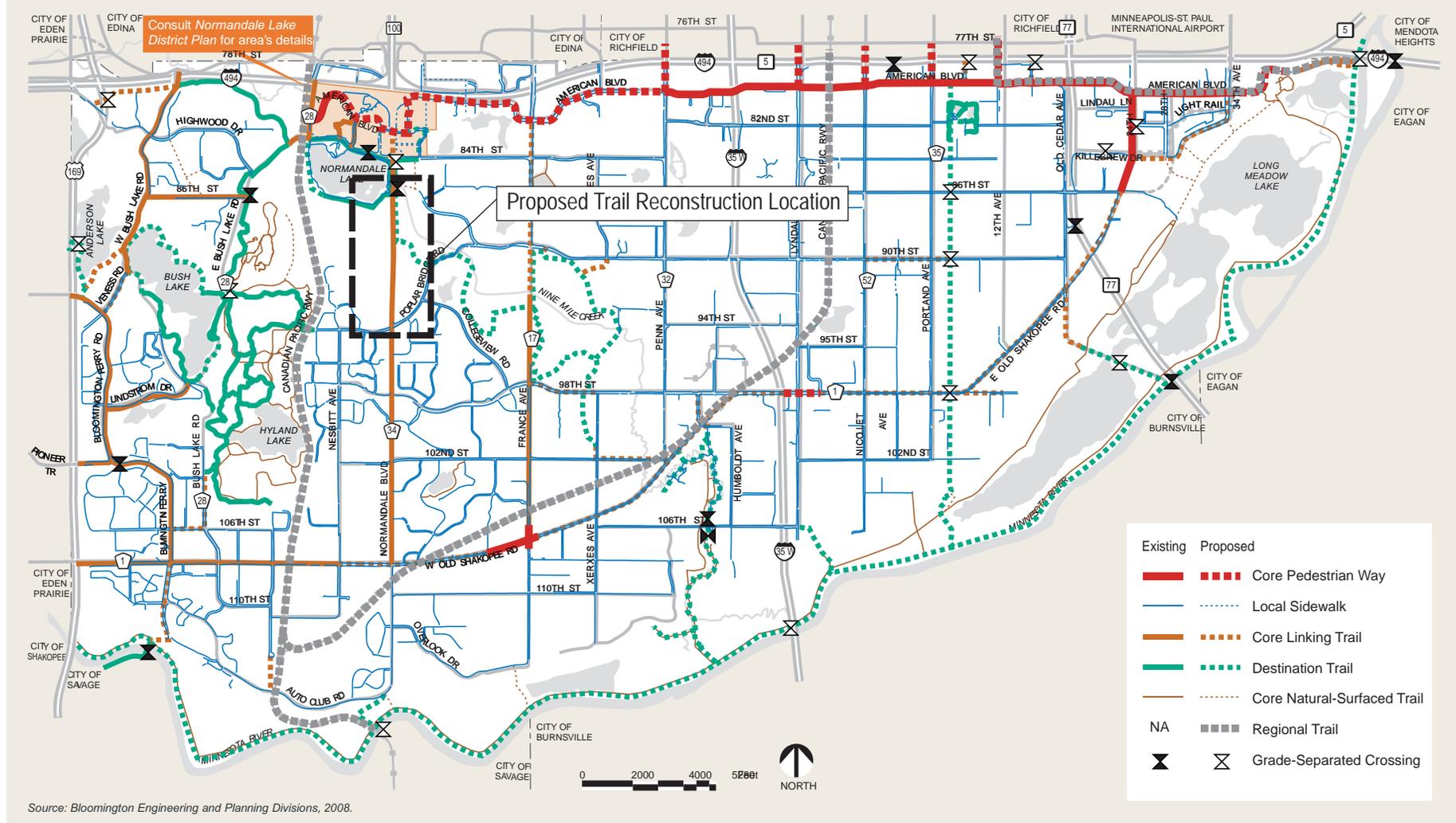


Proposed Access Locations

Normandale Boulevard from W 94th Street to 8500 Block
STP - "A" Minor Arterial Expander
City of Bloomington

Figure 10

Figure 4.2 Walkways

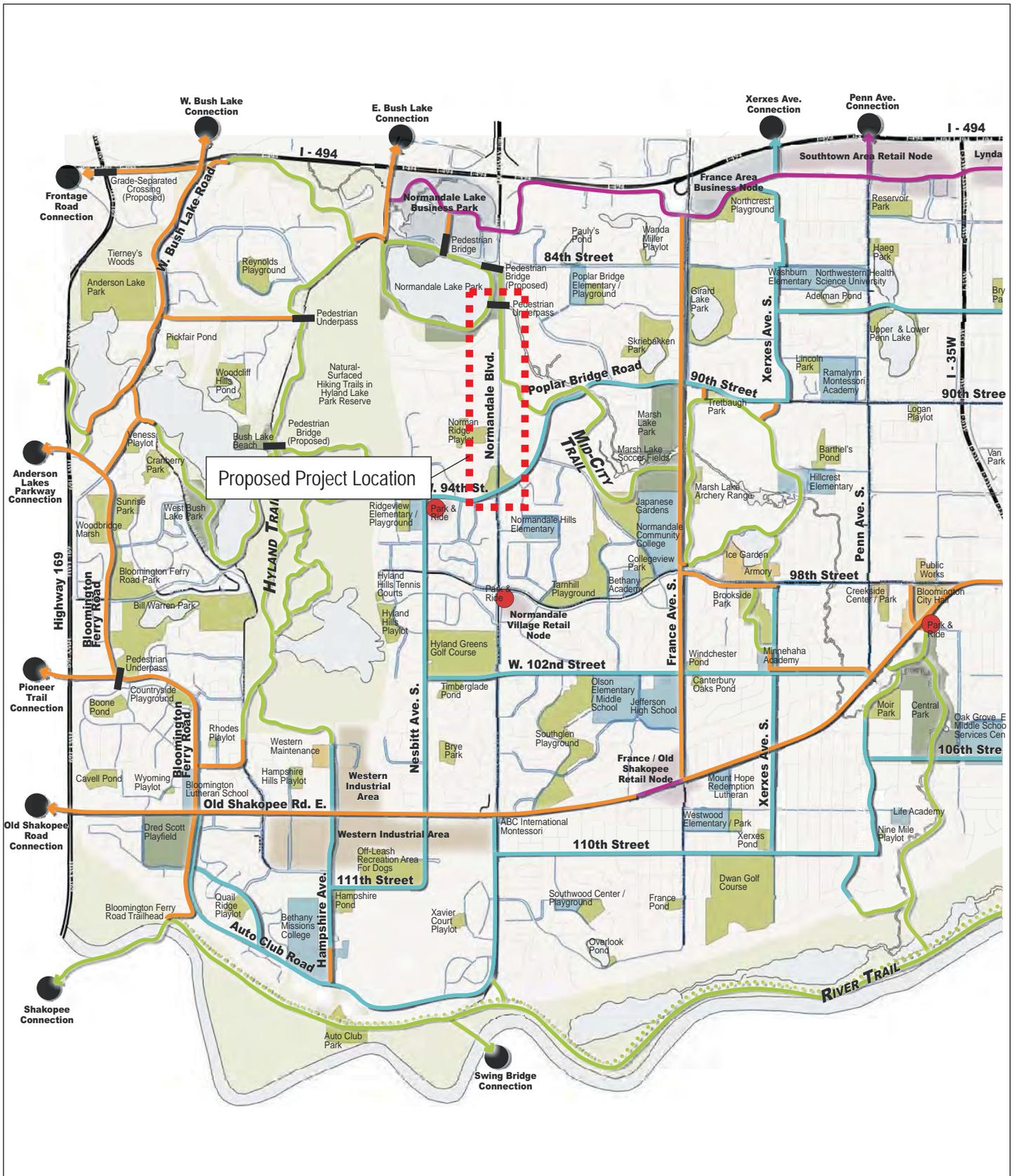


Transportation 4.7

Source: Bloomington Comprehensive Plan (May 2009)

Walkways

Normandale Boulevard from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington



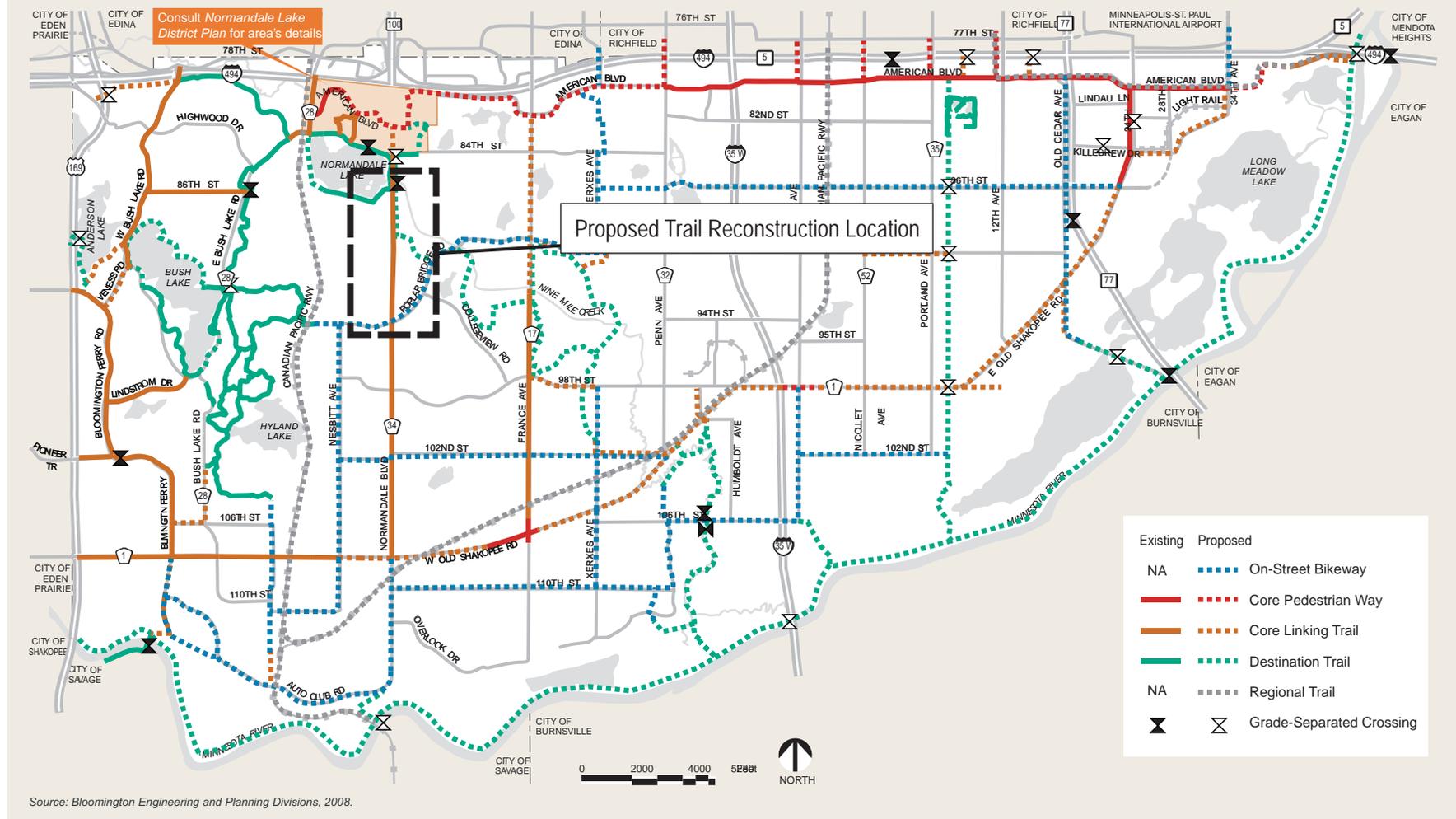
Source: City of Bloomington Alternative Plan (July 2008)

Trail Destinations

Normandale Boulevard from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington

Figure 12

Figure 4.1 Bikeways



Source: Bloomington Comprehensive Plan (May 2009)

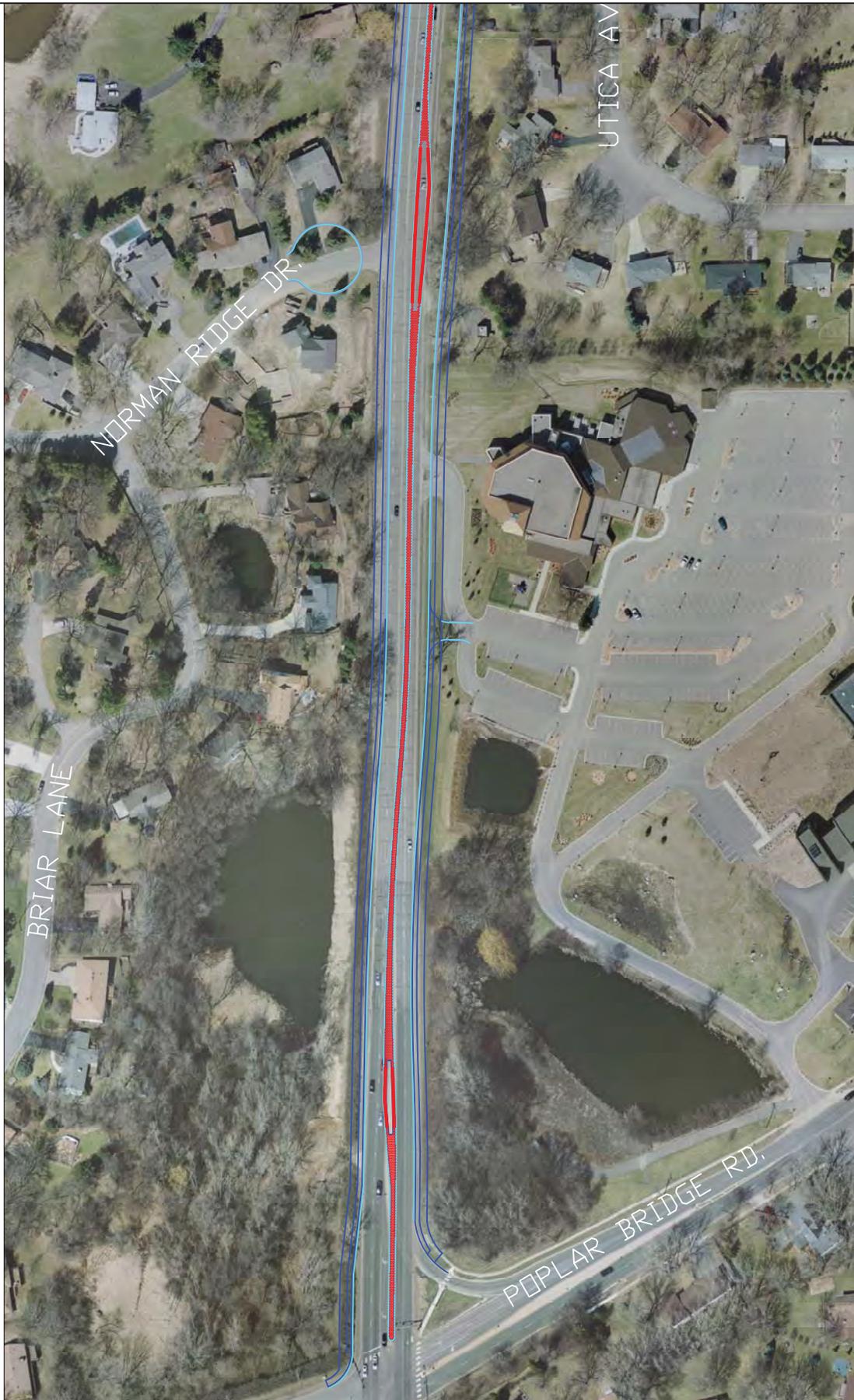
Bikeways

Normandale Boulevard from W 94th Street to 8500 Block
 STP - "A" Minor Arterial Expander
 City of Bloomington

Appendix A-1
Preliminary Concept Layout and Typical Cross-Section

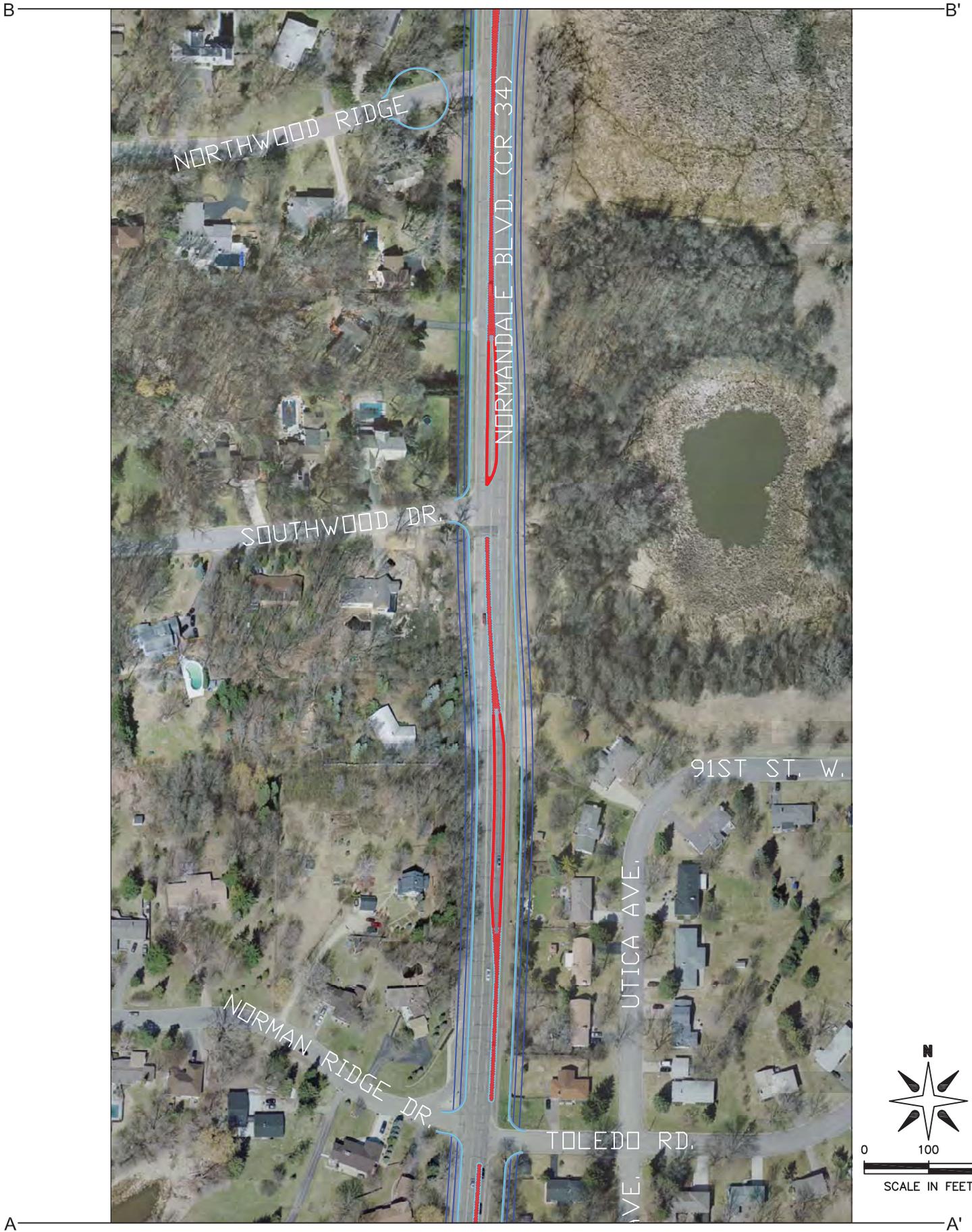
A

A'



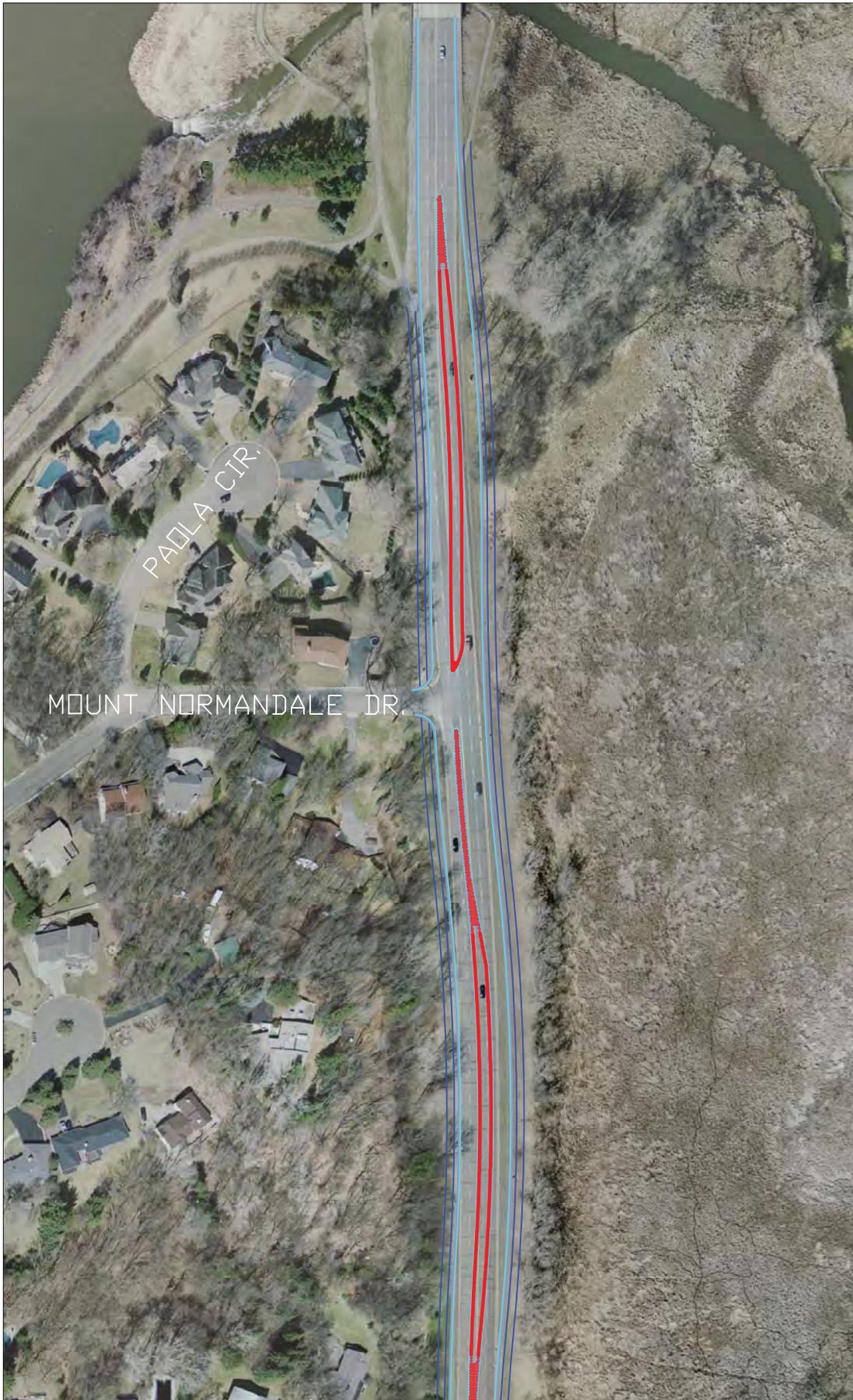
Normandale Blvd Concept Layout (1 of 3)

Normandale Blvd from W 94th Street to 8500 Block
STP - "A" Minor Arterial Expander
City of Bloomington, Minnesota



Normandale Blvd Concept Layout (2 of 3)

Normandale Blvd from W 94th Street to 8500 Block
STP - "A" Minor Arterial Expander
City of Bloomington, Minnesota



B

B'

Normandale Blvd Concept Layout (3 of 3)

Normandale Blvd from W 94th Street to 8500 Block
STP - "A" Minor Arterial Expander
City of Bloomington, Minnesota

Appendix A-2
City of Bloomington Comprehensive Plan: Planned Improvements

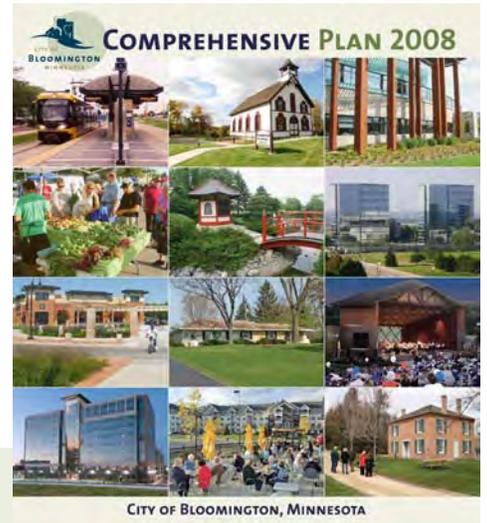
COMPREHENSIVE PLAN 2008



City of Bloomington, Minnesota COMPREHENSIVE PLAN 2008

The Bloomington City Council adopted and placed this *Comprehensive Plan* into effect on May 18, 2009, through Resolution 2009-52. The Metropolitan Council adopted its review record of the plan on May 13, 2009, (Item #2009-88, Review File #20427-1).

Note that comprehensive plans are amended from time to time. The City maintains an up-to-date version of its *Comprehensive Plan* on its website: www.ci.bloomington.mn.us. A hard copy of the latest version is available at the Planning Division, Bloomington Civic Plaza, 1800 West Old Shakopee Road, Bloomington MN 55431-3027, PH 952-563-8920.



City Council

December 2008

Mayor	Councilmembers	Rod Axtell	Amy Grady	Steve Peterson
Gene Winstead		Steve Elkins	Karen Nordstrom	Vern Wilcox

Planning Commission

October 2008

Chair	Commissioners	Jack Baloga	Loren Klassen	Jon Oleson
Doug Bruce		Laura Catania	James Lucas	Jim Saccoman

City of Bloomington

October 2008

City Manager	Senior Planners	Support Staff
Mark Bernhardson	Glen Markegard**	Cyndi Osberg*
Community Development Director	Bob Sharlin	Mike Hiller*
Larry Lee	Planners	Graphic Design
Planning Manager	Michaela Ahern*	Julie Farnham
Bob Hawbaker	Carol Dixon*	Londell Pease
	Galen Doyle	Elizabeth Shevi
		Photography
		Cassandra Heiberg*

* Project Staff ** Project Manager

Section A4

TRANSPORTATION
APPENDIXA4.1 Locations of Planned Improvements
and Forecast Needs

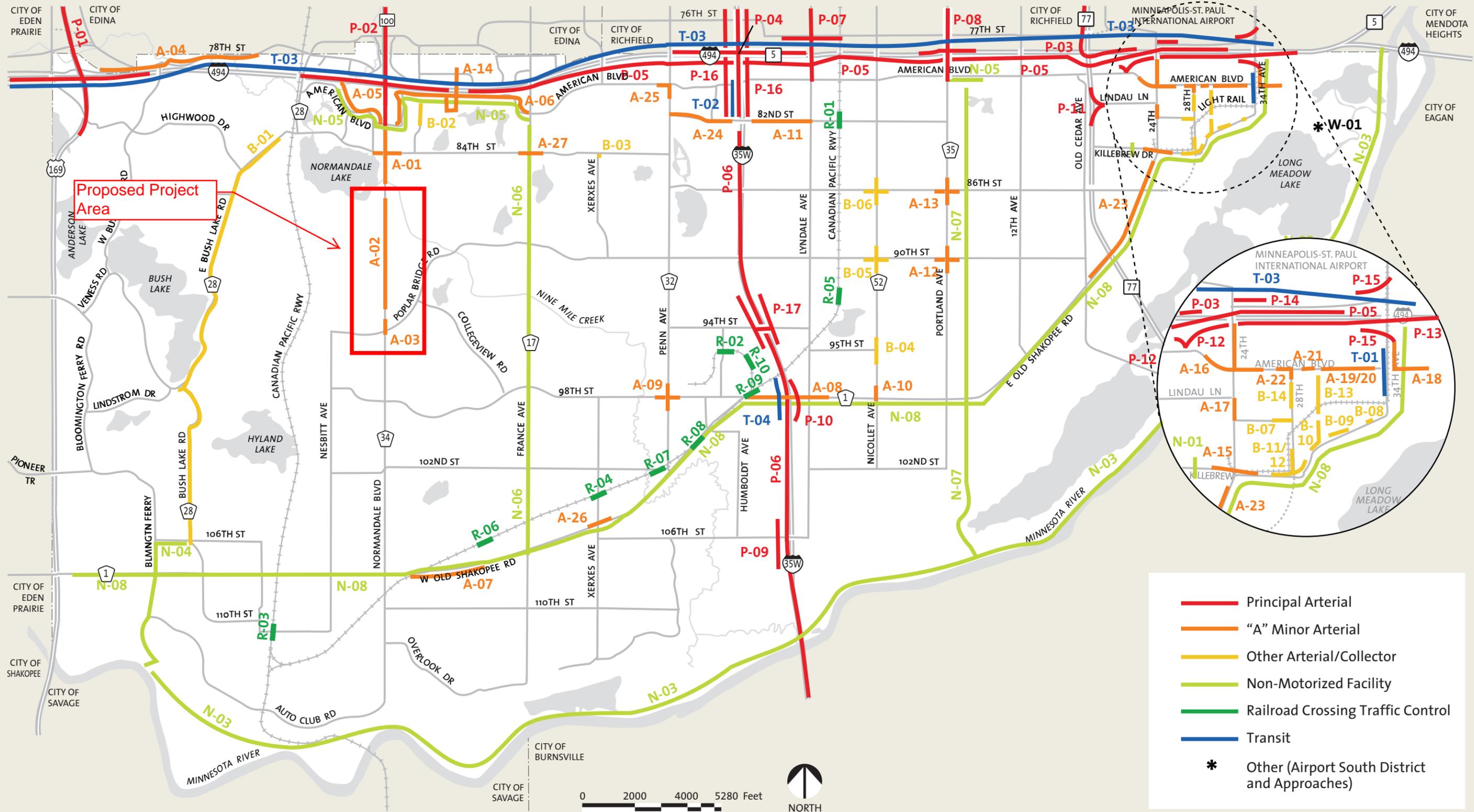
City of Bloomington, Minnesota

Appendix
Reference
Number

A-01	Normandale Blvd.(CSAH 34): American Blvd. (Bridge) to the 8600 block of Normandale Blvd. – Construct additional left and right turn lanes at Normandale Blvd. (CSAH 34) and 84th St. and non-motorized grade-separated crossing over Normandale Blvd (CSAH 34) South of 84th St.
A-02	Normandale Blvd. (CSAH 34): 8600 Block to 9200 Block of Normandale Blvd. – Construct left turn lanes and medians.
A-03	Normandale Boulevard (CSAH 34) and Poplar Bridge Rd. – Extend southbound left turn and construct right turn lane.
A-04	W. 78th St.: US 169 to 7000 Block of W. 78th St. – Construct left turn lanes.
A-05	American Blvd.: Norman Center Dr. to Green Valley Dr. – Construct left turn lanes, traffic signals, right turn lanes, and medians.
A-06	American Blvd.: 82nd St. to France Ave. (CSAH 17) – Construct left turn lanes, right turn lanes, medians, and traffic signals.
A-07	Old Shakopee Rd. (CSAH 1): Rich Ave. to Kell Ave. – Construct left turn lanes, right turn lanes, and medians.
A-08	Old Shakopee Rd. (CSAH 1): 98th St. to Grand Ave. – Construct additional east-west through lanes, right turn lanes, and medians.
A-09	98th St. and Penn Ave. (CSAH 32) – Construct left turn lanes, right turn lanes, and medians.
A-10	Old Shakopee Rd. (CSAH 1) and Nicollet Ave. (CSAH 52) – Construct southbound right turn lane.
A-11	82nd St.: I-35W to Lyndale Ave. – Construct left turn lanes, right turn lanes, and medians.
A-12	90th St. and Portland Ave. (CSAH 35) – Construct left turn lanes or roundabout.
A-13	86th St. and Portland Ave. (CSAH 35) – Construct left turn lanes or roundabout.
A-14	Nord Ave. – 81st St. to 78th St. – Construct a grade-separated crossing over I-494 along the alignment of Nord Avenue. Includes a connection from American Blvd. via Oxborough Ave. and 81st St., and a new alignment of 78th St. from 78th Street Cir. to Computer Ave.
A-15	Old Shakopee Rd. / 24th Ave. (CSAH 1) and Killebrew Dr. – Extend eastbound and westbound left turn lanes.



Figure 4.14 Capital Infrastructure Improvements



Source: Bloomington Public Works Department, October 2008.

Appendix A-3
5-Year Community Investment Program

Appendix A-3

5-Year CIP

2011 *thru* 2015

City of Bloomington, MN

Department Surface Transportation
Contact Shelly Pederson
Type Economic-Renewal
Useful Life Unassigned
Category Roads and Streets
Priority 2

Project # ST-99-015
Project Name Normandale-86th to 94th

Total Project Cost: \$10,280,000

Description

Normandale Boulevard - 86th Street to 94th Street. Widen, channelize, turn lanes, signals and bike/walkways. Staff will be applying for Federal Transportation Grants for 2015-16 construction period.

Justification

Public safety, manage traffic volumes.

Future

10,280,000

Total

Future

10,280,000

Total

Appendix A-4
Hennepin County Systems Evaluation



2030 Hennepin County Transportation Systems Plan (HC-TSP)

2030 Hennepin County Transportation Systems Plan (HC-TSP)

The Hennepin County Transportation Systems Plan (HC-TSP) is a document that was originally created in the late 1990's and was adopted by the Hennepin County Board of Commissioners on July 19, 2000 (Resolution No. 00-7-475). Attached below is the 2030 Hennepin County Transportation Systems Plan (HC-TSP). This document is an update of the plan prepared by the county in 2000 (see link at right). The HC-TSP articulates a long term vision of how transportation services should be provided over the next 20+ years. To implement this vision, the plan provides a framework of policies, guidelines, technical analyses, and recommendations.

The use of the word "systems" is plural since there are many transportation systems, including roadways, light rail transit lines, bus routes, potential commuter rail lines, park & ride stations, bicycle facilities, and sidewalks. To work at their best, these systems must interact and interconnect with each other.

The HC-TSP also represents an on-going planning effort. From time to time, the plan's maps are updated and the guideline charts are revised to reflect the latest thoughts.

Highlights of the 2030 HC-TSP Plan Updates

Some of the features of this version of the HC-TSP include:

- Streamlined and simplified text, with details moved to the support documents
- Expanded section on Pedestrian accommodations
- Major update to 1967 Driveway Design Specifications - incorporated into the Access Management Guidelines (in support documents)
- Revised and reformatted policies to guide the implementation of the plan

The HC-TSP is a component of the County Comprehensive Plan, and it in turn is comprised of such transportation planning elements as the Bicycle Transportation Plan, the Travel Demand Management Plan, and the Light Rail Transit Plan. The Hennepin County Transportation Systems Plan includes all modes of travel and reflects these basic tenets:

- Hennepin County respects its residents' values and lifestyle choices
- Transportation Systems are important to the county's quality of life
- The county's role in transportation is to enhance residents' mobility
- Hennepin County is committed to inter-agency coordination

These viewpoints form the basis for how transportation planning is accomplished by Hennepin County. In short, it is envisioned that:

HENNEPIN COUNTY

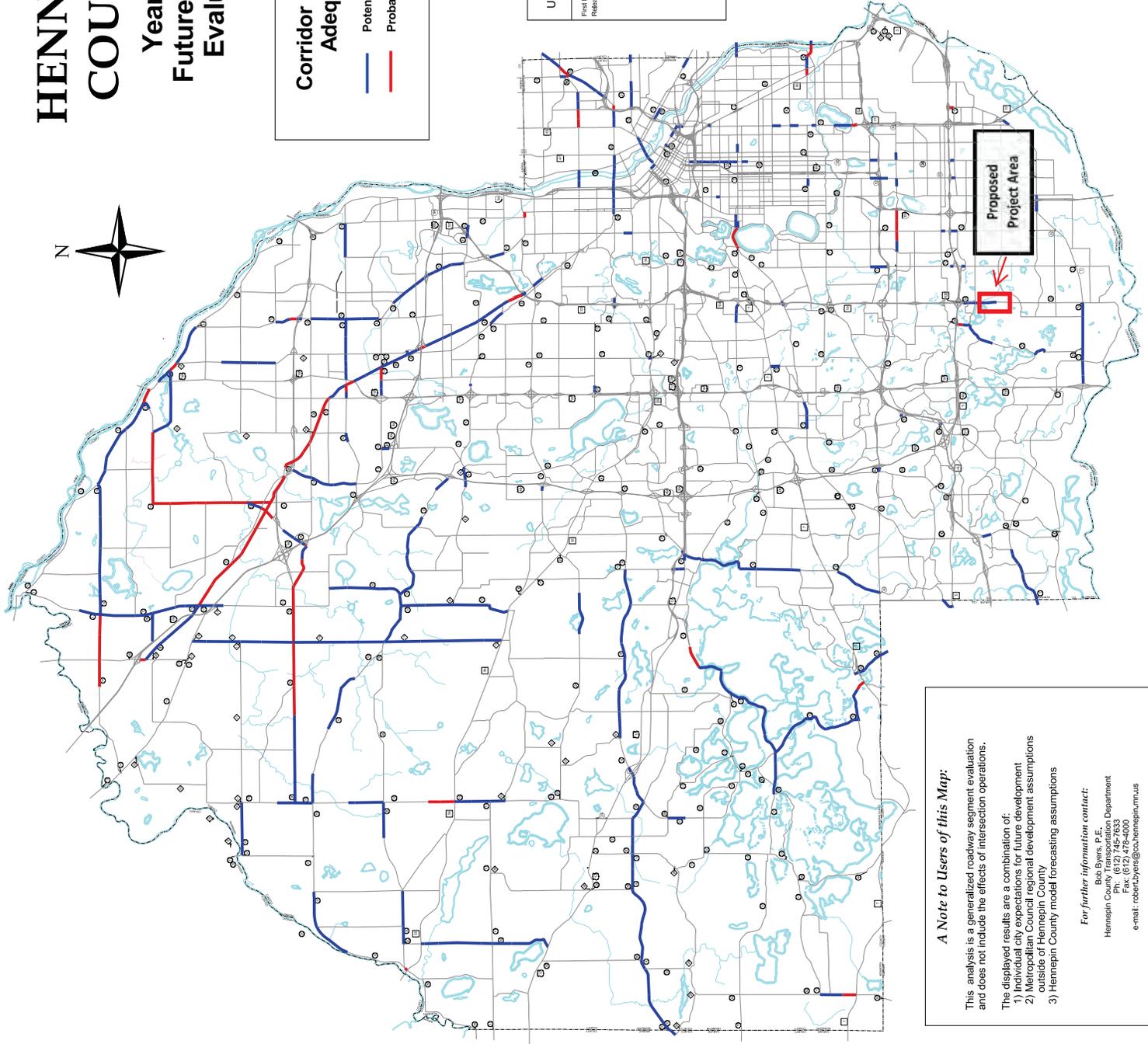
Year 2020 Future System Evaluation



Corridor Capacity Adequacy

- Potential Shortfall
- Probable Shortfall

UPDATE HISTORY
First Draft: Oct. 26, 1999
Released for Final Report: July 2000



A Note to Users of this Map:

This analysis is a generalized roadway segment evaluation and does not include the effects of intersection operations.

The displayed results are a combination of:

- 1) Individual city expectations for future development
- 2) Metropolitan Council regional development assumptions outside of Hennepin County
- 3) Hennepin County model forecasting assumptions

For further information contact:

Bob Byers, P.E.
 Hennepin County Transportation Department
 Ph: (612) 745-7633
 Fax: (612) 745-7633
 e-mail: robert.byers@co.hennepin.mn.us

Appendix A-5
City Council Resolution

RESOLUTION NO. 2011- 80

RESOLUTION OF SUPPORT OF PROJECT NO. 2016-1, AN EXPANDER PROJECT ON
NORMANDALE BOULEVARD BETWEEN 8550 AND 9400 NORMANDALE BOULEVARD,
BLOOMINGTON, MINNESOTA

WHEREAS, the City Council of the City of Bloomington is the official governing body of the City of Bloomington; and

WHEREAS, the City, in conjunction with Hennepin County, documents its acceptance of the responsibility for operation and maintenance of the project facility throughout its useful life; and

WHEREAS, there is great demand for operational and safety upgrade of Normandale Boulevard (CSAH 34) in the multi-intersection area as the combination of high traffic volume and terrain with limited alternate access for intersecting streets results in safety and operation issues; and

WHEREAS, there is an above-average incidence of personal injury accidents along Normandale Boulevard from 94th Street to the Nine Mile Creek Bridge; and

WHEREAS, the project would include walkway/bikeway facility upgrades and assist non-motorized travel safety along the higher speed "A" minor arterial carrying high volumes of traffic both to and from the interstate highway system, including ten ton per axle truck loads; and

WHEREAS, the project implements a long needed solution to a transportation safety problem and provides an upgrade to the benefit of local and regional transportation needs; and

WHEREAS, the Project No. 2016-1 is consistent with the City of Bloomington Comprehensive Development and Capital Improvement Plans and it is believed to be consistent with policies of the Metropolitan Council's Development Guide, including the Transportation Policy Plan and Regional Development Framework as identified on the project submittal form; and

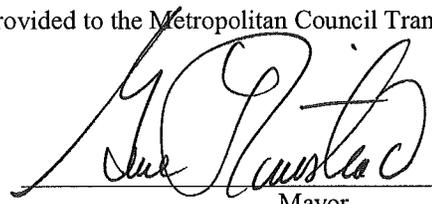
WHEREAS, the City of Bloomington accepts responsibility for an amount equal to or greater than 20% of the eligible project construction cost, together with costs for design, administration, rights-of-way, and peripheral project costs, and when the roadway and abutting property jurisdictional or ownership responsibility is shared by Hennepin County or others; the City of Bloomington will anticipate sharing of local costs through a subsequent cooperative agreement where applicable.

NOW THEREFORE, BE IT RESOLVED by the City Council of the City of Bloomington in regular meeting assembled to adopt this Resolution in support of the request for federal funds under the Expander Program of Title 1 of the Safe Accountable Flexible Efficient Transportation Equity Act (SAFETEA-LU) for the Bloomington Surface Transportation Project No. 2016-1.

BE IT FURTHER RESOLVED, that the City agrees to provide enforcement for the prohibition of on-street parking in accordance with Mn/DOT State Aid standards and encourages transit and bikeway-walkway multi-modal travel accommodations thereon.

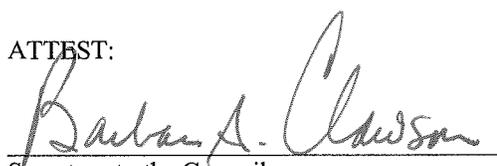
BE IT FURTHER RESOLVED, that a copy of this Resolution be provided to the Metropolitan Council Transportation Advisory Board with the Bloomington Project 2016-1 submittal.

Passed and adopted this 20th day of June, 2011.



Mayor

ATTEST:



Secretary to the Council



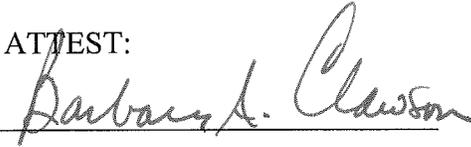
Resolution Number 2011- 80

The attached resolution was adopted by the City Council of the City of Bloomington on June 20, 2011.

The question was on the adoption of the resolution, and there were 7 YEAS and 0 NAYS as follows:

COUNCILMEMBERS:	YEA	NAY	OTHER
Gene Winstead	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tim Busse	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amy Grady	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tom Hulting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Karen Nordstrom	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steve Peterson	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vern Wilcox	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

RESOLUTION ADOPTED.

ATTEST:

 Secretary to the Council

Appendix A-6
Hennepin County Support Letter



Hennepin County Transportation Department

1600 Prairie Drive
Medina, MN 55340-5421

612-596-0300, Phone
763-478-4000, FAX
763-478-4030, TDD
www.hennepin.us

June 28, 2011

Mr. Tom Bowlin, PE
Civil Engineer - Transportation
City of Bloomington
1700 West 98th Street
Bloomington, MN 55431

RE: Letter of Support for City of Bloomington STP Federal Funding Application and Project
City Project 2016-1: CSAH 34 (Normandale Boulevard) Reconstruction

Dear Mr. Bowlin:

Hennepin County wishes to extend its support for your STP-Expander application and project for the reconstruction of CSAH 34 (Normandale Boulevard) from 94th Street to 9-Mile Creek. Hennepin County concurs with the City in its efforts to reconstruct this county road.

Although this intersection is included as provisional county project (CP 34/9748) in our 2011-2015 Capital Improvement Program (CIP), at this time, I am unable to express any willingness to participate in the funding of this project because of its status as an unfunded provisional project.

Thank you for making us aware of this application effort and the opportunity to provide support. Hennepin County looks forward to working with you on this project. Good luck with your application.

Sincerely,

A handwritten signature in blue ink that reads 'James N. Grube'.

James N. Grube, PE
Transportation Department Director and County Engineer

JNG/pml

Appendix A-7
City of Bloomington Comprehensive Plan: Existing Land Use Map

Appendix A-8
City of Bloomington 2030 Land Use Guideplan Map

Appendix A-9
Normadale Lake District Plan

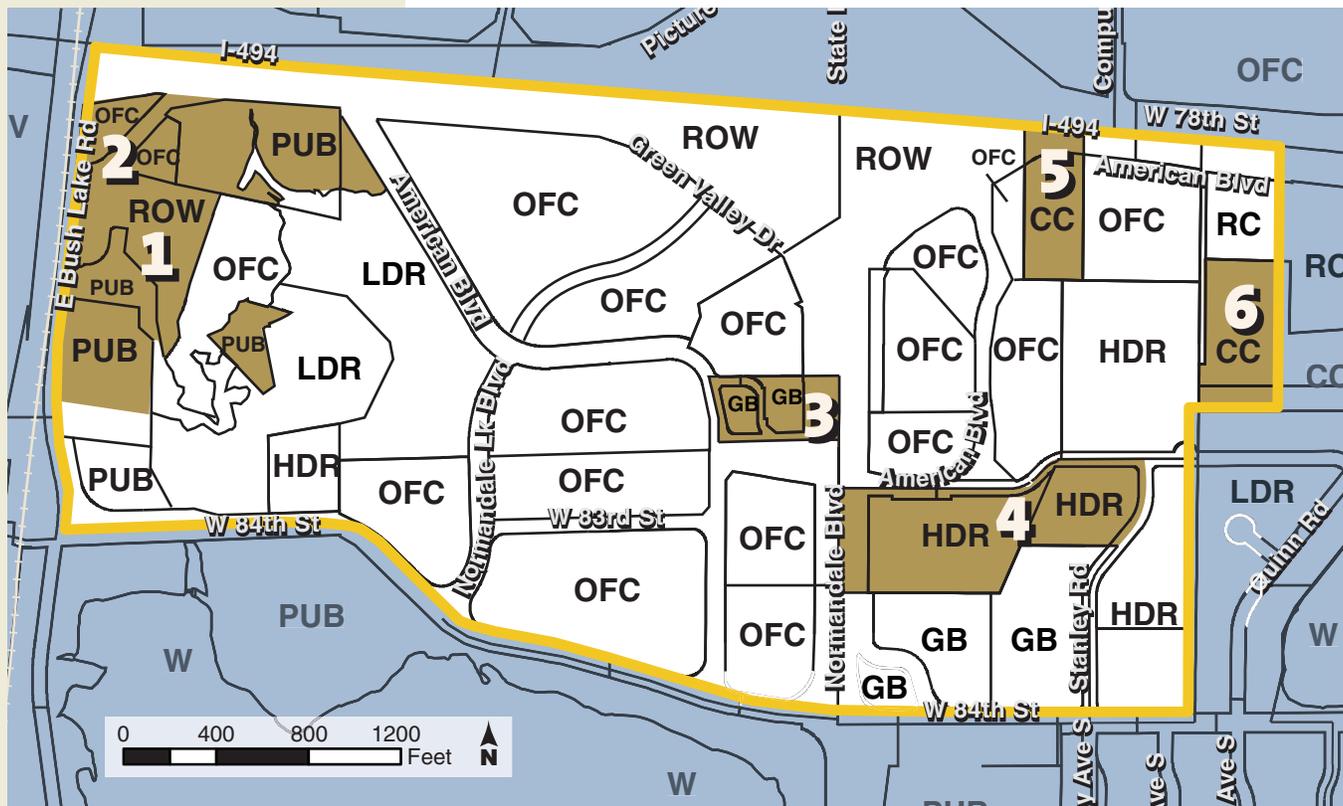


NORMANDALE LAKE DISTRICT PLAN



May 19, 2008

Figure 5.3 Parcels Proposed for Land Use Guide Changes



Source: Bloomington Planning Division.



The parcels owned by MnDOT or the City of Bloomington along East Bush Lake Road are used for road right-of-way. The recommended land use change will reflect actual use. (See #1 and #2.)

Summary of Recommended Land Use Changes

Land use changes are recommended on the parcels shown on **Figure 5.3**, above, and described below:

1. Change from Public to Right-of-Way.

These five parcels are owned by MnDOT or the City of Bloomington and used for road right-of-way. The recommended change will reflect actual use.

2. Change from Office to Right-of-Way.

These three parcels are owned by MnDOT and used for road right-of-way. The recommended change will reflect actual use.

3. Change from General Business to Office.

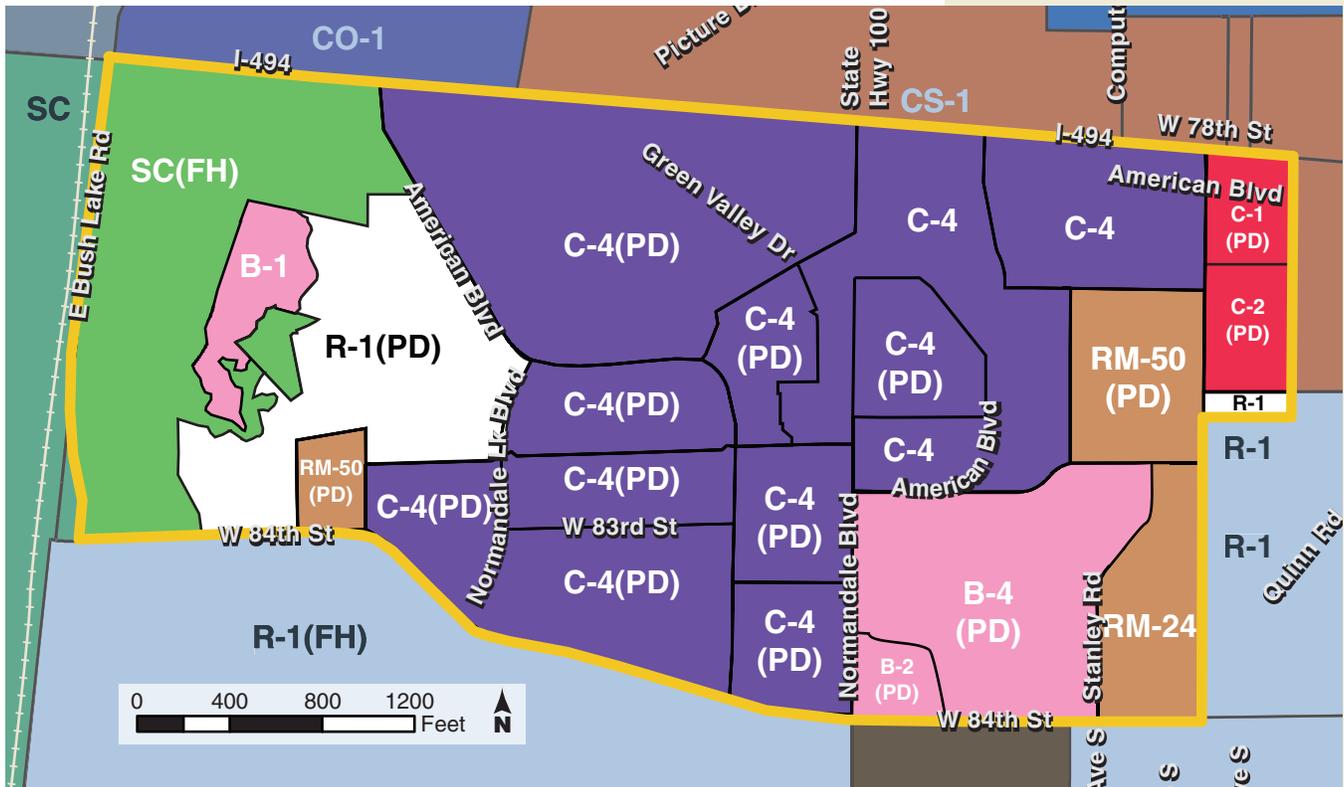
These three parcels contained a gas station, which has been removed and the property has been purchased by the adjacent hotel owner. The proposed land use allows for expansion of the hotel development.

4. Change from High Density Residential to General Business.

Two of these parcels currently contain apartment buildings constructed in the 1960s. The third is a small remnant owned by the City of Bloomington. The recommended land use would allow new development in coordination with redevelopment of the retail/commercial parcels to the south. The GB land use designation

NORMANDALE LAKE DISTRICT PLAN

Figure 5.4 Proposed Future Zoning



Legend	C-1 Freeway Office and Service	B-1 Neighborhood Office	R-1(PD) Single Family (Planned Development)
	C-2 Freeway Commercial	B-2 General Office	RM-24 Multiple-Family
	C-4 Freeway Office	B-4 Neighborhood Commercial Center	RM-50 Multiple-Family
			SC(FH) Conservation (Flood Plain)

Source: Bloomington Planning Division.

Table 5.4 Uses Permitted by Proposed Zoning District

Zoning District	Typical Uses Permitted
C-1 (Freeway Office and Service)	Auto Dealerships, Office, Restaurants.
C-2 (Freeway Commercial)	Office, Hotel, Retail and Service, Auto Fueling and Service.
C-4 (Freeway Office)	Office, Hotel, Restaurant (in Office or Hotel), Accessory Retail and Service.
B-1 (Neighborhood Office)	Office.
B-2 (General Commercial)	Office, Retail and Service, Restaurant, Auto Fueling and Service.
B-4 (Neighborhood Commercial Center)	Office, Retail and Service, Restaurant, Residential uses integrated with non-residential uses.
R-1 (PD) (Single Family – Planned Development)	Single Family Dwellings, Multiple Family Dwellings, if part of a Planned Development.
RM-24 (Multiple Family)	Multiple Family Dwellings (e.g., Apartments, Condominiums) with density of 12 to 24 units per acre, Senior Housing.
RM-50 (Multiple Family)	Multiple Family Dwellings (e.g., Apartments, Condominiums) with density of 20 to 50 units per acre, Senior Housing.
SC (Conservation)	Natural Areas, Conservation Areas, Wildlife Management.

Source: Bloomington Planning Division.



Rezoning will allow the retail center to redevelop in coordination with adjacent apartments.

Summary of Recommended Zoning Changes

Zoning changes are proposed for most of the parcels in the District. However, only a few result in significant changes that would allow uses different from what are allowed under the current zoning. Some of the recommended changes “clean up” existing designations that do not accurately reflect existing development on the property.

Many of the recommended changes will apply the new commercial zoning district designations and will not significantly impact use of the property. However, the new designations contain development standards such as building setbacks or Floor-Area-Ratio (FAR) that would apply to new development or redevelopment on the property.

Zoning changes that would allow significantly different uses on the property are shown on *Figure 5.5*, next page, and include:

1. Change from CS-1 to C-4.

These three parcels (5311, 5301, 5400 Green Valley Drive) are under the same ownership as the adjacent hotel. The gas station has been removed and the proposed zoning will make these parcels consistent with the zoning on the adjacent hotel property and allow redevelopment as part of the hotel.

2. Change from R-4 to B-4.

Two of these parcels (5233 West 82nd Street and 8200 Stanley Road) contain older apartment buildings.

The proposed zoning is consistent with proposed zoning on the adjacent parcels to the south and will allow coordinated redevelopment of the existing neighborhood center as a mixed use development, with integrated residential, retail and commercial uses.

3. Change from B-2 (PD) to B-4 (PD).

These four parcels (8301 Normandale Boulevard, 5270 and 5200 West 84th St., and 8250 Stanley Road) comprise a mix of retail and commercial uses. The proposed zoning will allow all existing uses to remain as permitted uses, but also allow redevelopment with a mix of uses, including integrated residential. The intent of the recommended zoning is to allow these parcels to redevelop in coordination with the apartment properties to the north.

4. Change from CS-0.5(PD) to C-1 (PD) and C-2 (PD).

The proposed zoning on these two parcels (4901 and 4951 American Boulevard West) reflects the existing auto dealership and health club uses. The primary change resulting from the proposed rezoning of the health club property to C-2 (PD) will be to make the existing use conforming. It will also allow for retail development, which is limited to a provisional use under the existing CS-0.5 zoning.

Appendix A-10
Hennepin County Access Spacing Guidelines

**Exhibit 7-5
Access Spacing Guidelines - Urban**

Access Type	Movements Allowed	Minor Arterials		Collector Streets
		Undivided	Divided	
Single Family Resid. & Farm Field Entrance	Full	⊘	⊘	1/8 mile (660 ft.)
	Partial	⊘	⊘	1/16 mile (330 ft.)
Low Volume Private (less than 1,000 trips/day)	Full	⊘	⊘	1/8 mile (660 ft.)
	Partial	⊘	1/8 mile (660 ft.)	1/16 mile (330 ft.)
High Volume Private (more than 1,000 trips/day)	Full	1/4 mile (1,320 ft.)	1/4 mile (1,320 ft.)	1/8 mile (660 ft.)
	Partial	⊘	1/8 mile (660 ft.)	⊘
Low Volume Public (less than 2,500 ADT)	Full	1/4 mile (1,320 ft.)	1/4 mile (1,320 ft.)	1/8 mile (660 ft.)
	Partial	⊘	1/8 mile (660 ft.)	⊘
High Volume Public (more than 2,500 ADT)	Full	1/4 mile (1,320 ft.)	1/4 mile (1,320 ft.)	1/4 mile (1,320 ft.)
	Partial	⊘	1/8 mile (660 ft.)	⊘

⊘ - Not allowed or non-applicable

Further justification, evaluation, and analysis may be required if the guidelines can not be met.

Notes:

- 1) Urban definition is based on being within the Year 2000 Metropolitan Urban Service Area (MUSA) boundary.
- 2) Average Daily Traffic (ADT) volumes are based on the 20-year forecasts.
- 3) Measurements for access spacing are taken to the next access (driveway or street) on either side of the roadway for undivided roads – measurement is to next access on the same side if a divided road. Measurement is from centerline to centerline.
- 4) Existing medians will not be opened or broken even under circumstances where the above guidelines would suggest that full access is allowed.
- 5) Other criteria are also reviewed for access requests such as entering and stopping sight distances, speeds, traffic volumes and other elements (truck traffic, land use activities, etc.).
- 6) Partial access means some intersection movements are restricted. Examples would be a design that allows right-in only movements or the presence of median channelization that restricts access movements to right-in / right-out only.

Appendix A-11
City of Bloomington Access Policy Strategy (Strategy 3.3)

Strategy 3.3

Manage access points and intersections along arterial roadways.

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

Strategy 3.4

Manage and maintain public roadways and sidewalks.

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

Strategy 3.5

Further promote compliance with traffic laws.

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

Appendix A-12
Alternative Transportation Plan – Core Linking Trail

ALTERNATIVE TRANSPORTATION PLAN

CITY OF BLOOMINGTON, MINNESOTA



TO ENHANCE THE QUALITY OF LIFE IN THE CITY THROUGH STRATEGIC INVESTMENTS OVER TIME IN MULTI-MODAL TRANSPORTATION FEATURES THAT MEET THE NEEDS OF INDIVIDUALS AND FAMILIES LIVING, WORKING, AND RECREATING IN BLOOMINGTON.



JUNE 2008

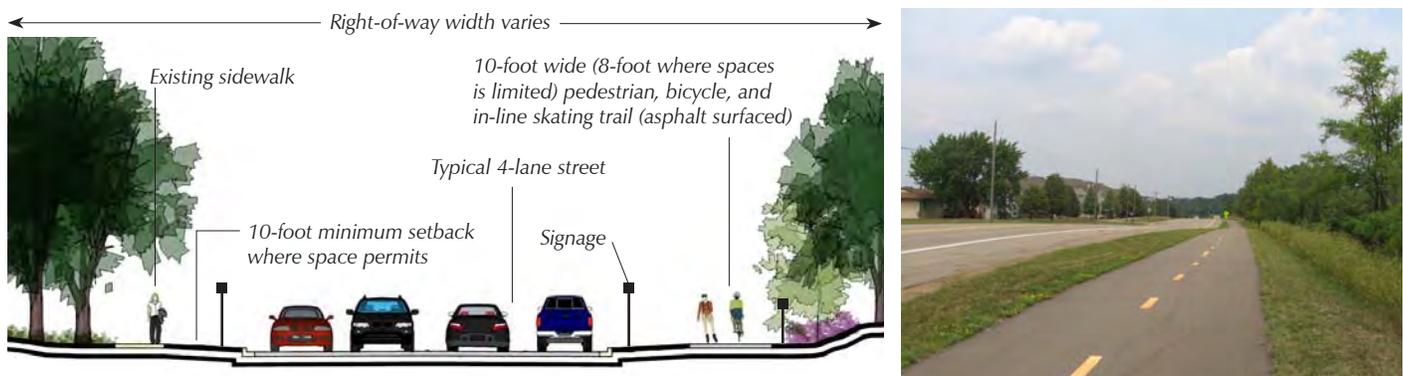
CORE LINKING TRAILS AND PEDESTRIAN-WAYS

Distinction Between Trail Types: Whereas destination trails emphasize a recreational experience in a greenway or park-like setting, linking trails emphasize safe travel for pedestrians and bicyclists to and from parks and to destinations around the community. Linking trails do provide recreational value, but not to the level of destination trails due to vehicular traffic (safety, noise, odors), more street crossings, and a less scenic setting.

As illustrated on the *System Plan*, a core system of linking trails and pedestrian-ways are proposed that, in combination with destination trails and on-road bikeways, form the backbone of the alternative transportation system. The core trails and pedestrian-ways are complemented by a secondary system of sidewalks and trails, which are considered in greater detail on page 3.42 under Neighborhood Pedestrian/Safe Routes to School Program.

Linking trails, which are 10-foot wide (8-foot where space is limited) and asphalt surfaced, are primarily located within road rights-of-way. The advantage of linking trails over a concrete sidewalk is better accommodation of bicyclists and in-line skaters due to extra tread width and smoother surface. In Bloomington, linking trails of varying width and condition are currently provided along a select number of streets (as defined on the map in Figure 3.2 as asphalt sidewalk). In most cases, existing trails are only on one side of the street, typically in combination with a sidewalk on the opposite side. Within the context of this plan, the objective is to upgrade the current infrastructure of linking trails along the core routes shown on the *System Plan* to a consistent standard. In most cases, this will entail continuing the current practice of providing a trail on one side of the street and leaving a sidewalk on the opposite side. Although providing linking trails on both sides is a common approach in new construction to accommodate the broadest range of users, continuing the current practice is the most cost-effective approach to bringing the current trail infrastructure up to a consistent standard. Thereafter, replacing sidewalks with linking trails on both sides of designated streets could be considered as resources allow. Figure 3.7 illustrates a typical linking trail situation in Bloomington, along with a photo of a newer trail.

FIGURE 3.7 – RIGHT-OF-WAY-BASED LINKING TRAILS



In Bloomington, when provided, the current approach is to provide a linking trail on one side of the street and a sidewalk on the opposite side. Continuing this approach is recommended until the core alternative transportation system is completed to attain a consistent standard along the core routes. Thereafter, greater consideration can be given to providing a linking trail on both sides of the street, if warranted by demand.

In contrast to linking trails, **pedestrian-ways** are essentially enhanced sidewalks designed as part of an overall streetscape along key street corridors and within retail and business nodes across the city, as illustrated on the *System Plan*. Typically, pedestrian-ways include a 6- to 8-foot wide concrete sidewalk with an adjoining band of stamped colored concrete of varying width, which serves as a boulevard behind the curb line. The difference between pedestrian-ways and standard sidewalks is the greater attention given to aesthetic qualities and detail streetscape features that make them more appealing to pedestrians. Detail features include transit stops, benches, and shade trees – all of which entice individuals to walk instead of drive between destinations. The photos on the next page illustrate the difference between pedestrian-ways and sidewalks.

Appendix A-13
Alternative Transportation Plan – Existing Trail Condition

ALTERNATIVE TRANSPORTATION PLAN

CITY OF BLOOMINGTON, MINNESOTA



TO ENHANCE THE QUALITY OF LIFE IN THE CITY THROUGH STRATEGIC INVESTMENTS OVER TIME IN MULTI-MODAL TRANSPORTATION FEATURES THAT MEET THE NEEDS OF INDIVIDUALS AND FAMILIES LIVING, WORKING, AND RECREATING IN BLOOMINGTON.

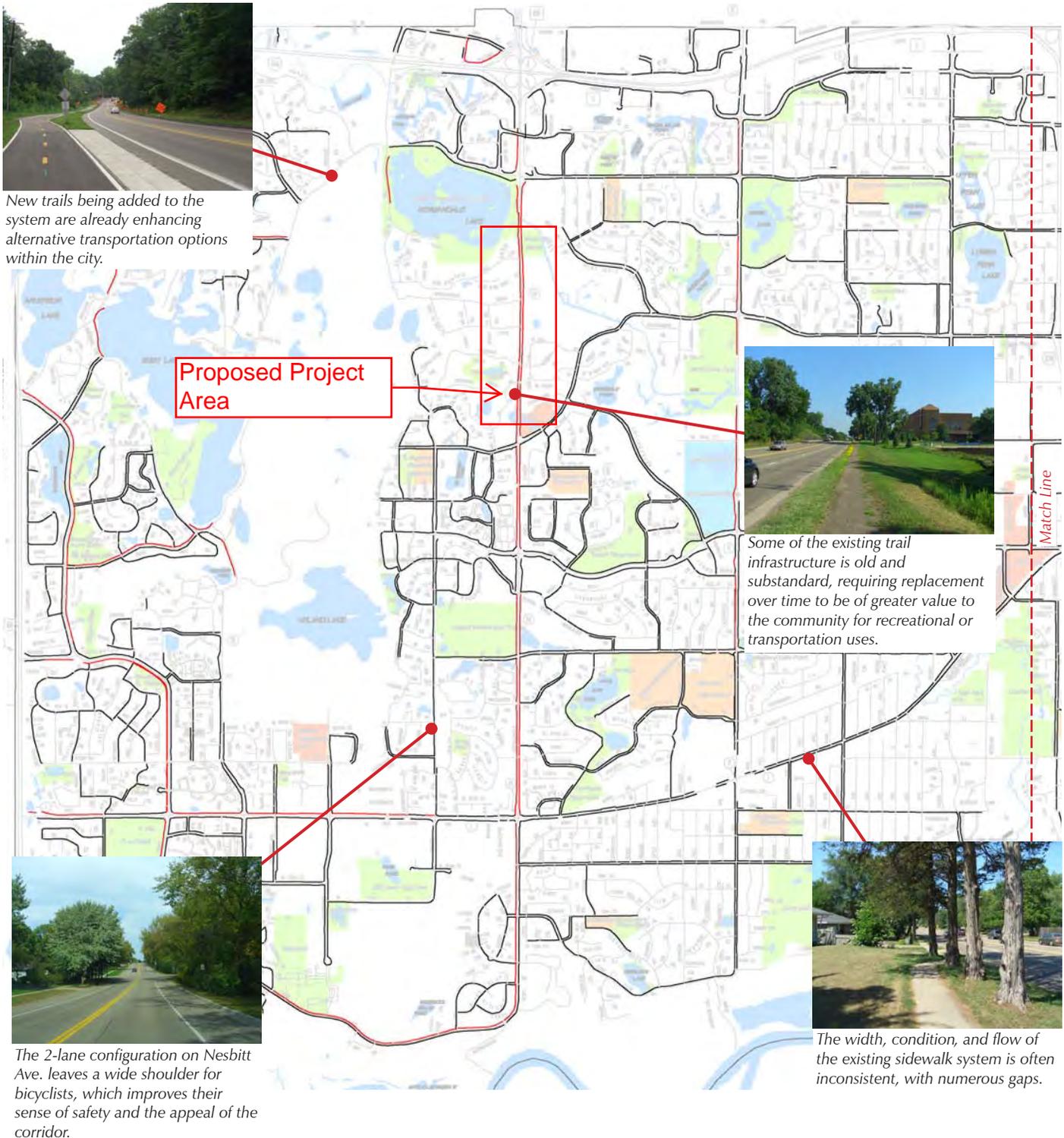


JUNE 2008

VALUE OF EXISTING TRAILS, SIDEWALKS, AND BIKEWAYS INFRASTRUCTURE

The existing infrastructure of alternative transportation features includes an eclectic collection of trails, sidewalks, and bike routes throughout the city that have evolved over time. While residents clearly value these features, input during the public process suggests that the system is often fragmented, lacks consistency, and basically needs upgrading if the use of alternative forms of transportation is to be fostered.

FIGURE 3.2 – EXISTING ASPHALT TRAILS AND CONCRETE SIDEWALKS WITHIN BLOOMINGTON



Appendix A-14
Alternative Transportation Plan – School Location Map

ALTERNATIVE TRANSPORTATION PLAN

CITY OF BLOOMINGTON, MINNESOTA



TO ENHANCE THE QUALITY OF LIFE IN THE CITY THROUGH STRATEGIC INVESTMENTS OVER TIME IN MULTI-MODAL TRANSPORTATION FEATURES THAT MEET THE NEEDS OF INDIVIDUALS AND FAMILIES LIVING, WORKING, AND RECREATING IN BLOOMINGTON.



JUNE 2008

- Potential to reduce child injuries and fatalities
- Potential to create a safer walking and bicycling built environment within approximately two miles of a school
- Potential to encourage walking and bicycling among students
- Identification of current and potential safe walking and bicycling routes to schools
- Number of child pedestrians or bicyclists currently using routes
- Number of child pedestrians or bicyclists anticipated to use routes
- Community support for application

The National Center for Safe Routes to School provides assistance to communities in developing successful Safe Routes programs and strategies. The Center offers a centralized resource of information on how to start and sustain a Safe Routes to School program, case studies of successful programs, as well as many other resources for training and technical assistance.

From a practical implementation standpoint, continuing to work with the local school district to identify and prioritize infrastructural improvements needed around schools is recommended. Making incremental improvements radial to a priority school site is a common approach, **As a starting point, 1/4 mile to 1/2 mile radius is commonly considered an acceptable walking distance to schools** from within a neighborhood or school service area. Beyond that, the willingness of students to walk to school drops off considerably. As Figure 3.19 illustrates, using these radii also effectively link safe route to school enhancement areas to many of the core alternative transportation plan features.

FIGURE 3.19 – SAFE ROUTES TO SCHOOL EFFECTIVE SERVICE AREAS



Circles illustrate 1/4 mile and 1/2 mile radii from the various local schools. Beyond these distances, it becomes less likely that a student will walk or ride a bike to school. Note that school attendance areas will affect actual safe routes to school route considerations. In other words, the service area for a given school may be more lopsided than the service radii suggest.

Appendix B
Mn/DOT TIS Data Listing, SRF Highway Safety Analysis Tool Listing,
Crash Diagrams and Crash Reduction Factors

NORMANDALE BLVD FROM 94TH STREET TO NINE MILE CREEK (2007-2009)

LIST ACCIDENT BY REFERENCE POINT

01/01/2007 THROUGH 12/31/2009

REPORT DATE: MAY 9,2011

CSAH ROUTE SYSTEM - ROUTE 27000034 - BEGINNING AT 001+00.723 - ENDING AT 002+00.830

SELECT=NO

ROUTE NUMBER	REFERENCE POINT	I		DATE	TIME	V	L L L W W D V D A F F P												ACCIDENT NUMBER						
		E R N D C	L E V I N T W N P				# J I T D O	I T T S C E T I	C C C C	S V U M Y I C T G H H U H S Y R	T T T O	A S													
		E L E S T O R	E E N I P A	C H R R R A G P T	I R R N	G E													ACCIDENT						
		M Y S T Y CITY					V H C T E G	1	D	T	1	2	F	R	N	E	N	N	1	2	D	E X	NUMBER		
CSAH 34	001+00.780	1 00	27 0385	1/15/2007	1200	N	3 00 40 01 01 00 01 01 02 00 05 00 00 01 N																070850051		
																							03 N 10 00 00 00 31 F		
																							99 00 00 00 00 895 Z		
CSAH 34	001+00.780	1 03	27 0385	5/28/2007	2139	N	2 04 35 02 01 01 01 04 01 00 01 02 05 04 NE																	071480103	
																								03 N 11 01 00 01 40 M	
CSAH 34	001+00.780	1 00	27 0385	9/07/2007	1130	N	2 00 35 01 01 00 01 01 01 00 01 00 00 03 N																	073450032	
																								01 N 01 00 00 00 19 F	
CSAH 34	001+00.780	2 03	27 0385	12/11/2007	1750	B	2 01 45 01 01 01 98 05 01 00 01 03 05 01 S																	073450324	
																								03 S 11 01 01 01 17 M	
CSAH 34	001+00.780	1 00	27 0385	9/23/2007	0838	C	2 00 30 01 01 00 06 01 90 00 01 00 00 01 N																	080100128	
																								01 E 11 00 00 00 49 M	
CSAH 34	001+00.780	1 00	27 0385	12/01/2007	1220	N	2 00 40 01 02 00 01 01 04 00 03 00 00 01 N																	080510343	
																								01 N 01 00 00 00 34 M	
CSAH 34	001+00.780	2 00	27 0385	12/25/2007	1810	N	2 00 35 01 01 00 01 04 04 00 04 00 00 02 N																	080570260	
																								03 N 01 00 00 00 41 F	
CSAH 34	001+00.780	1 03	27 0385	2/29/2008	1521	N	2 07 45 01 02 01 01 01 01 00 01 02 05 02 S																	080600464	
																								01 S 06 01 00 01 26 M	
CSAH 34	001+00.780	1 03	27 0385	12/11/2008	1444	C	2 04 35 01 01 01 01 01 02 00 01 03 05 01 NW																	083460280	
																								03 NW 03 01 00 01 58 F	
CSAH 34	001+00.780	1 00	27 0385	11/15/2008	0345	N	2 00 35 01 01 00 01 01 01 00 01 00 00 01 W																	083580270	
																								01 W 01 00 00 00 21 M	
CSAH 34	001+00.780	1 00	27 0385	12/30/2008	9998	N	2 00 00 90 00 00 00 00 00 00 00 00 00 03																	090400139	
																								01 00 00 00 00 53 M	
CSAH 34	001+00.780	1 03	27 0385	10/19/2009	0950	N	2 04 45 01 01 01 01 01 01 00 01 01 05 01 N																	092920049	
																								01 N 05 01 00 01 62 F	
CSAH 34	001+00.784	1 98	27 0385	5/06/2009	1722	N	3 00 45 01 01 00 01 01 01 00 01 00 00 01 S																	091350115	
																								01 S 01 00 00 00 21 F	
																								04 S 00 00 00 00 45 M	
CSAH 34	001+00.795	1 98	27 0385	3/13/2009	1310	C	3 00 30 01 01 00 01 01 01 00 01 00 00 01 S																	090820114	
																								01 S 11 00 00 00 54 M	
																								01 S 38 00 00 00 59 M	
																								03 S 11 00 00 00 43 F	
CSAH 34	001+00.803	1 03	27 0385	3/26/2007	1515	N	2 01 45 01 02 01 98 01 01 00 01 02 05 07 N																	071060115	
																								01 01 01 00 01 32 F	
CSAH 34	001+00.920	3 00	27 0385	2/13/2008	0850	N	3 00 45 01 01 00 98 01 04 00 02 00 00 04 S																	081220065	
																								01 S 01 00 00 00 18 M	
																								01 S 11 00 00 00 49 M	
CSAH 34	002+00.070	1 03	27 0385	8/19/2009	1121	N	3 04 45 01 01 01 98 01 03 00 02 01 05 04 S																	092310135	
																								01 S 11 01 00 01 64 F	
																								04 S 11 01 00 01 41 F	
CSAH 34	002+00.093	2 03	27 0385	12/18/2007	0718	C	2 01 45 01 09 01 98 02 01 00 90 03 05 01 S																	073520088	
																								01 N 01 01 00 01 46 M	
CSAH 34	002+00.150	1 00	27 0385	9/22/2007	1720	N	2 00 45 01 01 00 01 01 01 00 01 00 00 01 N																	080100081	
																								03 N 11 00 00 00 36 M	
CSAH 34	002+00.150	1 00	27 0385	3/24/2008	0945	B	4 00 40 01 01 00 98 01 01 00 01 00 00 01 S																	081620094	
																								01 S 01 00 00 00 56 M	

LOG POINT LISTING

TRUNK HIGHWAY LOGPOINT LISTING

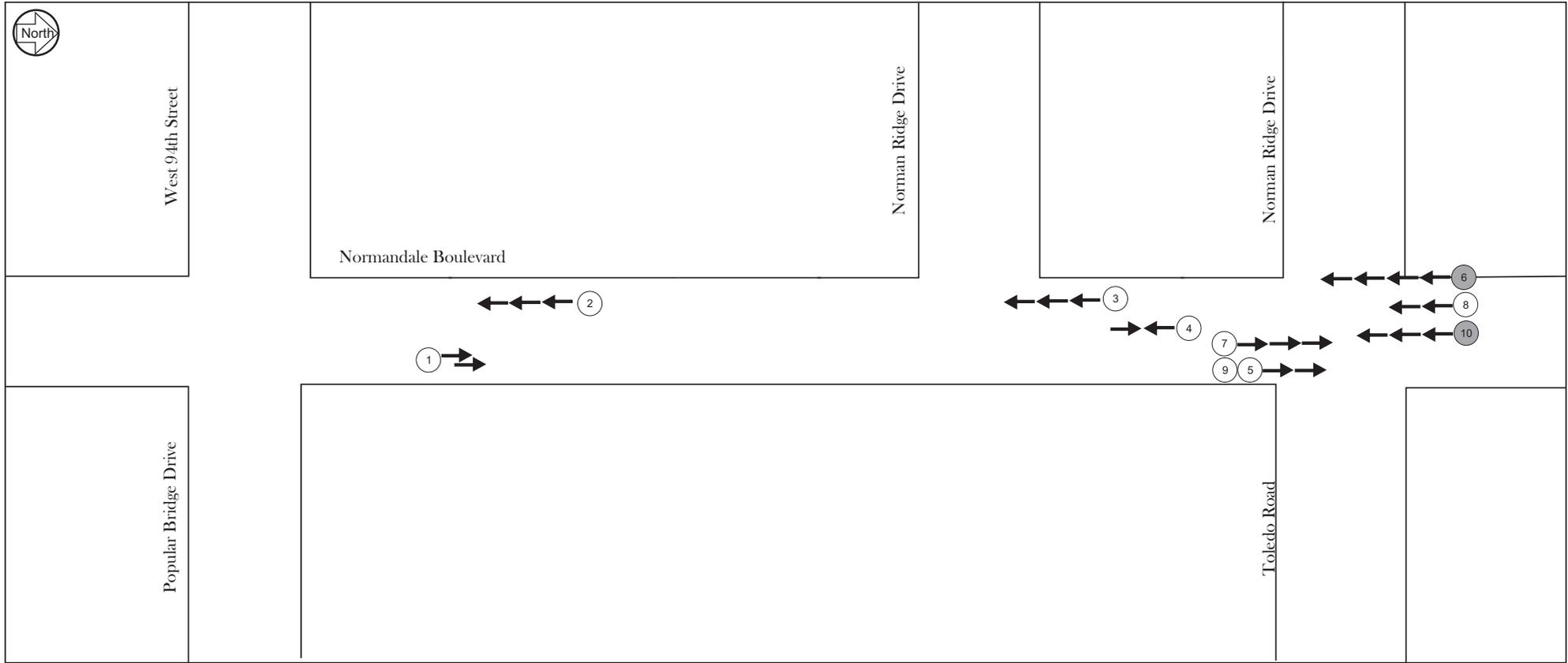
MAY 9,2011

CSAH ROUTE SYSTEM - ROUTE 27000034 - BEGINNING AT 001+00.723 - ENDING AT 002+00.830

ROUTE NUMBER	REF-POINT (MILES)	FEATURES	ACCUM (MILES)	C D	M A	CNTRL SECTN	PTRL STAT	TWN CITY	2009 NUM AADT
CSAH 34	001+00.780	94TH ST W LT POPLAR BRIDGE RD RT; MSAS-130 X-ING	1.780						28147
CSAH 34	001+00.830	LEG FROM POPLAR BRIDGE RD MSAS-130 RT	1.830						28147
CSAH 34	002+00.070	NORMAN RIDGE DR M-59 LT	2.070						28147
CSAH 34	002+00.150	TOLEDO RD M-97 RT	2.150						28147
CSAH 34	002+00.160	NORMAN RIDGE DR M-59 LT	2.160						28147
CSAH 34	002+00.340	SOUTHWOOD RIDGE DR M-57 LT	2.340						28147
CSAH 34	002+00.470	NORTHWOOD RIDGE DR M-51 LT	2.470						28147
CSAH 34	002+00.660	MT NORMAN DALE DR M-53 LT	2.660						28147

DETAILS OF ACCIDENT HISTORY

Period Studied: From: 1/1/2007 To: 12/31/2009 36 Months			# V E H I C L E S	S E V E R I T Y	L I G H T	R O A D C H A R	S U R F A C E	W E A T H E R	Route Number/Street Name: CSAH 34 Municipality: Bloomington County: Hennepin Reference Markers: 001+00.723 - 002+00.830		
No.	DATE	TIME							CONTRIB. FACTORS	ACC. TYPE	ACCIDENT NUMBER
1	3/26/2007	1515	2	N	01	02	01	01	08,33,01	Sideswipe-Same Direction	071060115
2	2/13/2008	850	3	N	01	00	02	04		Rear End	081220065
3	8/19/2009	1121	3	N	01	01	02	03	01,01,01	Rear End	092310135
4	12/18/2007	718	2	C	02	03	90	01	06,21,01	Sideswipe-Opposing	073520088
5	9/22/2007	1720	2	N	01	00	01	01		Rear End	080100081
6	3/24/2008	945	4	B	01	00	01	01		Rear End	081620094
7	5/29/2009	9998	3	N	01	00	01	01		Rear End	091820219
8	11/17/2009	1517	2	C	01	03	01	01	04,01	Rear End	093210135
9	8/28/2007	1747	2	C	01	01	02	03	15,01	Rear End	072760105
10	11/25/2008	1705	3	B	03	00	01	02		Rear End	090020112
11	12/24/2009	1645	2	B	04	00	04	01		Rear End	100280143
12	12/24/2009	2230	2	C	04	00	05	04		Sideswipe-Same Direction	100280167
13	1/16/2007	1940	2	C	06	00	02	07		Rear End	070750112
14	2/27/2009	2022	3	N	04	01	01	01	03,04,01,01	Head On	09058367
15	3/7/2007	730	2	N	01	00	01	01		Right Angle	071230024
16	5/17/2007	1135	2	C	01	00	01	01		Rear End	071770058
17	9/18/2007	1524	3	B	01	01	02	03	15,04,01	Rear End	072610309
18	3/8/2007	1740	2	C	03	02	01	02	03,15	Rear End	070930117
19	6/25/2008	1739	2	C	01	01	01	01	15,01	Rear End	081780001
20	7/3/2008	1917	2	N	03	01	01	01	01,04,15	Rear End	081860027
21	8/1/2008	1900	2	C	01	01	01	01	02,02,01,01	Head On	082140150



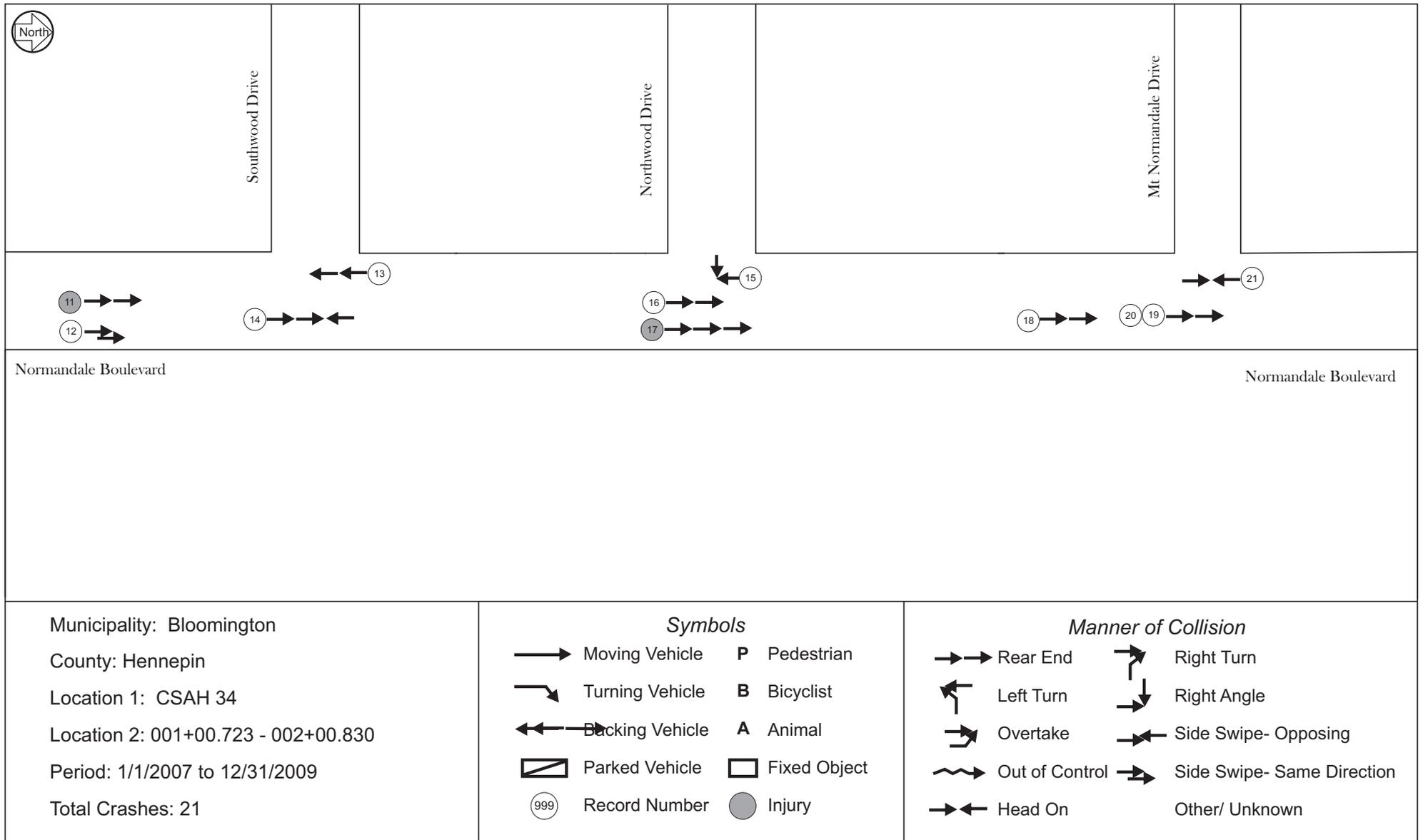
Municipality: Bloomington
 County: Hennepin
 Location 1: CSAH 34
 Location 2: 001+00.723 - 002+00.830
 Period: 1/1/2007 to 12/31/2009
 Total Crashes: 21

- Symbols**
- Moving Vehicle
 - Turning Vehicle
 - Backing Vehicle
 - Parked Vehicle
 - Record Number
 - Pedestrian
 - Bicyclist
 - Animal
 - Fixed Object
 - Injury

- Manner of Collision**
- Rear End
 - Left Turn
 - Overtake
 - Out of Control
 - Head On
 - Right Turn
 - Right Angle
 - Side Swipe- Opposing
 - Side Swipe- Same Direction
 - Other/ Unknown

Collision Diagram

CSAH 34 Reconstruction
 Hennepin County



Collision Diagram

CSAH 34 Reconstruction
 Hennepin County

Desktop Reference for Crash Reduction Factors



Report No. FHWA-SA-07-015
U.S. Department of Transportation
Federal Highway Administration

September 2007

Table 2: Geometric Countermeasures



Countermeasure(s)	Crash Type	Crash Severity	Area Type	Config	Control	Major	Minor	Ref	Obs	Effectiveness				Study Type
						Daily Traffic Volume (veh/day)				Crash Reduction Factor / Function	Std Error	Range		
												Low	High	
LEFT-TURN COUNTERMEASURES														
Add indirect left-turn treatments to minimize conflicts	All	All			Stop	>34,000		59		18	8			Cross-section
	All	All			Stop	>34,000 4 lanes		59		-24	35			Cross-section
	All	All			Stop	>34,000 6 lanes		59		26	8			Cross-section
	All	All			Stop	>34,000 8 lanes		59		24	63			Cross-section
	All	Fatal/Injury			Stop	>34,000		59		27	12			Cross-section
	All	PDO			Stop	>34,000		59		6	11			Cross-section
Create directional median openings to allow left-turns and u-turns	All	All			Signal			51		51				
Install left-turn lane	All	All	All					1		25				
	All	All	Rural	3-Leg	Signal	4,200-26,000	1,300-11,400	22	199	15				Expert Panel
	All	All	Rural	3-Leg	Stop	1,100-32,400	25-11,800	22		44	6			EB Before-After
	All	All	Rural	4-Leg (1 app)	Signal	4,200-26,000	1,300-11,400	22	199	18				Expert Panel
	All	All	Rural	4-Leg (1 app)	Stop	1,100-32,400	25-11,800	22		28	3			EB Before-After
	All	All	Rural	4-Leg (2 app)	Stop	1,100-32,400	25-11,800	22		48	3			EB Before-After
	All	All			No signal			15		34				
	All	All			No signal			15		35				Simple Before-After
	All	All			No signal			15		35				Cross-section
	All	All			No signal			15		25				Simple Before-After

Countermeasure(s)	Crash Type	Crash Severity	Area Type	Road Type	Daily Traffic Volume (veh/day)	Ref	Effectiveness			Study Type	
							Crash Reduction Factor / Function	Std Error	Range		
									Low		High
Install median barrier (steel)	All	Injury		Multilane divided		5	35	8		Meta Analysis	
Install or upgrade median barrier near gore area	All	All			<5,000/lane	15	17				
	All	All			>5,000/lane	15	17				
	All	All				15	17				
	ROR	All			<5,000/lane	15	56				
	ROR	All			>5,000/lane	15	56				
	ROR	All				15	56				
	Rear-end	All			<5,000/lane	15	39				
	Rear-end	All			>5,000/lane	15	39				
Install raised median	All	All				15	20				
	All	All				15	25				
	Head-on	All				15	75				
	Ped	All				15	25				
Vary median width	All	All	Urban	Urban Street		6	$100(1 - ((b_0(\text{EXP}(b_1 W_m^{b_2}) - 1.0) + 1.0) / (b_0(\text{EXP}(b_1 \times 16^{b_2}) - 1.0) + 1.0)))$; b ₀ , b ₁ , and b ₂ =regression coefficients (for values of b ₀ , b ₁ , and b ₂ , refer to source), W _m =median width (ft).				
	All	All	Rural	Rural Highway		6	$100(1 - ((b_0(\text{EXP}(b_1 W_m^{b_2}) - 1.0) + 1.0) / (b_0(\text{EXP}(b_1 W_{mb}^{b_2}) - 1.0) + 1.0)))$; b ₀ , b ₁ , and b ₂ =regression coefficients (for values of b ₀ , b ₁ , and b ₂ , refer to source), W _m =median width (ft), W _{mb} =base median width (ft) (16 for surfaced median, 76 for depressed median).				
	All	All		Freeway		6	$100(1 - ((b_0(\text{EXP}(b_1 W_m^{b_2}) - 1.0) + 1.0) / (b_0(\text{EXP}(b_1 W_{mb}^{b_2}) - 1.0) + 1.0)))$; b ₀ , b ₁ , and b ₂ =regression coefficients (for values of b ₀ , b ₁ , and b ₂ , refer to source), W _m =median width (ft), W _{mb} =base median width (ft) (24 for surfaced median, 76 for depressed median).				

Appendix C
Vehicle Emissions Worksheet

**VEHICLE EMISSIONS REDUCTION WORKSHEET
(APPENDIX G)
System Management**

BASELINE EMISSIONS WITHOUT PROJECT					
Average Weekday Travel Speed Before Installation:				24	mph
	Emissions Factor (grams/mile)*	Daily VMT (miles)	Emissions (kg/day)		
CO Emissions	19.77	43,800	865.9	kg/day	
NO _x Emissions	1.65	43,800	72.3	kg/day	
VOC Emissions	1.71	43,800	74.9	kg/day	
			1013.1	kg/day	
EMISSIONS AFTER PROJECT					
Average Weekday Travel Speed After Installation:				45	mph
	Emissions Factor (grams/mile)*	Daily VMT (miles)	Emissions (kg/day)		
CO Emissions	8.35	43,800	365.7	kg/day	
NO _x Emissions	1.73	43,800	75.8	kg/day	
VOC Emissions	0.96	43,800	42.0	kg/day	
Total Emissions			483.6	kg/day	
Net Emissions Reductions due to Project			529.5	kg/day	
COST EFFECTIVENESS					
Total Cost of the Project:				\$7,200,000	
Cost Effectiveness:				\$ 13,596.66	

*Use auto emissions factors in Appendix for speeds in F4 and F5