
86th Street Multi-Modal Traffic Study

Final Report

City of Bloomington, Minnesota

Prepared by:



July 2010

SRF No. 6978

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1.0 Study Process

1.1 Study Purpose

In response to community concerns to improve the safety of pedestrian and bicycle facilities, the City of Bloomington developed the Alternative Transportation Plan (ATP). With the ATP, Bloomington is working towards increasing the use of alternative forms of transportation within the City as it focuses on the development of trails, pedestrian routes and bikeways, and identifies 86th Street as a proposed on-road bikeway. In addition to an important east-west corridor for bicycle and pedestrian travel, 86th Street serves as a feeder route, providing connections to other bikeways, trails, transit facilities and routes within the City's transportation system.

The purpose of this study is to develop a design for the 86th Street corridor from Xerxes Avenue to East Old Shakopee Road that balances the multi-modal needs of the facility. The corridor design of 86th Street will reasonably accommodate all transportation users, including pedestrians, bicyclists, transit riders, as well as trucks, buses and automobiles.

1.2 Study Limits

For the study, the 86th Street corridor from Xerxes Avenue to East Old Shakopee Road was divided into three segments. The west segment spans from Xerxes Avenue to Interstate 35W (I-35W), the central segment spans from I-35W to east of Nicollet Avenue and the east segment spans from east of Nicollet Avenue to East Old Shakopee Road.

1.3 Study Approach

With the majority of 86th Street as a four-lane configuration, there is currently no shoulder for safe bicycle travel. Consistent with the Complete Streets process, the study approach included a thorough analysis to determine how to accommodate pedestrian, bicyclists and transit riders with motorists, while considering the various trade-offs in order to best meet multiple transportation objectives.

Based on future 20-year traffic volumes, 86th Street is estimated to carry 5,000 to 15,000 vehicles per day. An operations analysis was conducted to evaluate existing and future roadway and intersection operations to determine where the capacity of the roadway could be reduced to be in line with the traffic it serves, allowing the space to accommodate other modes of transportation along the corridor. The 86th Street study delivers a design for the corridor based on the needs of different users, while looking beyond the corridor to consider its context in the City's larger transportation system.

As the study began, the City of Bloomington had plans to reconstruct the 86th Street segment from Penn Avenue to I-35W in 2010. Other segments of the study corridor are also planned for sealcoating improvements in 2010. The recommended corridor design resulting from this study forms the basis of improvements for the planned reconstruction project between Penn Avenue and I-35W and other maintenance projects for the 86th Street corridor in 2010.

1.4 Public Involvement

Public and agency participation are critical to developing a preliminary design that balances the needs of various stakeholders, each of which may view the roadway from a different perspective. An open and fair process was used to ensure that we build credibility with the residents. The study process included a comprehensive public involvement program, including stakeholders group meetings, neighborhood open houses, City Council study sessions and City Council public hearings. It was also important to keep the residents well informed with updated study information posted on the City's website.

The public involvement components for the study are described below:

Stakeholders Group Meetings

The stakeholders group played an important role in the study. Their responsibilities were to guide and direct the study process; review all materials, analysis and results; evaluate corridor options; and provide recommendations for consideration by the City Council. Members of the stakeholders group included:

- 86th Street corridor residents
- 86th Street corridor business representatives
- 86th Street corridor bicycle representative
- Metro Transit
- Hennepin County
- City of Bloomington Police
- City of Bloomington Fire
- City of Bloomington Street Maintenance
- City of Bloomington Public Health
- City of Bloomington Park and Recreation
- City of Bloomington Engineering

Meeting minutes are included in Appendix A.

Neighborhood Open Houses

Two open houses were strategically integrated into our study process to solicit input from the public on study corridor issues, needs, corridor options and impacts.

Open house summary comments are included in Appendix A.

Meeting Schedule

The public involvement components including the participation of the stakeholders group and open houses are listed below:

- Stakeholders Group Kick-Off Meeting – November 4, 2009
- Stakeholders Group Meeting #1 – December 2, 2009
- Neighborhood Open House – December 14, 2009
- Stakeholders Group Meeting #2 – January 6, 2010
- Bloomington City Council Study Session – January 11, 2010
- Bloomington City Council Public Hearing – January 25, 2010
- Stakeholders Group Meeting #3 – February 3, 2010
- Health Impact Assessment Workshop – March 3, 2010
- Neighborhood Open House – March 29, 2010
- Stakeholders Group Meeting #4 – April 14, 2010
- Hennepin County Update Meeting – May 12, 2010
- Bloomington City Council Study Session – May 17, 2010
- Bloomington City Council Public Hearing – June 7, 2010

Project Website

A link on the City's website was provided to post information at key points in the study process. This provided residents, business owners and stakeholders with up-to-date study information and another option to stay connected throughout the study process.

1.5 Statewide Health Improvement Program

The City of Bloomington Public Health and Traffic Engineering staff conducted Rapid Health Impact Assessment (HIA) as part of the 86th Street Corridor Multi-Modal Traffic Study. The purpose of the Rapid HIA was to determine the design factors that affect the health of the community. Results of the HIA are summarized in the Statewide Health Improvement Program section of the report.

2.0 Current Transportation Problems & Issues

2.1 Data Collection Plan

SRF's data collection efforts focused on gathering and organizing a variety of information related to the study corridor, which is summarized below:

Daily Traffic Volumes

Existing daily traffic volumes were provided by City staff to evaluate segment capacity needs for vehicles along the corridor.

Peak Hour Turning Movement Counts

Existing peak hour turning movement counts at seven major and four minor intersections were provided by City staff and collected by SRF to evaluate the current level of service, delays and queues. The four minor intersections were used to determine side-street delays currently experienced by motorists wanting to enter the 86th Street corridor.

Corridor and Intersection Data

A variety of information such as existing roadway widths, segment and intersection geometrics, sidewalk/trail facilities, routes and connections, on-street parking, transit routes and stops, adjacent development along the corridor, existing right-of-way widths, speed limits, and overhead utilities was collected to complete a thorough analysis of existing conditions.

Crash Data

Segment and intersection crash data was obtained from Mn/DOT's database for the most current three-year period (2005 to 2007) to identify any safety concerns along the corridor and at key intersections, with the exception of the intersection of 86th Street and Nicollet Avenue. Crash data from the City's database (2007 to 2009) was used for the analysis of this intersection.

Future Daily Traffic Forecasts

Future daily traffic forecasts from the City's updated Transportation Plan were used to evaluate segment capacity needs in year 2030. In addition, this data was used to develop 20-year intersection volumes to be used in the operations analysis for future conditions.

The City's Alternative Transportation Plan

The ATP includes important information that identifies existing and proposed trails, pedestrian-ways and on-road bikeways that collectively form the backbone of an integrated city-wide transportation system. The overall ATP goal and recommendation for the proposed on-road bikeway for 86th Street was included in the stakeholders group discussions throughout the study process.

2.2 Corridor Evaluation & Study Findings

Based on the data collected for 86th Street, a comprehensive evaluation of current transportation problems and issues along the corridor was conducted. The results of the data collection task and the analysis of existing conditions are summarized below and in the attached Figures 1 – 3 in Appendix B.

Segment Capacity Analysis

Congestion on the roadway system is known to exist when the ratio of traffic volume to roadway capacity (v/c ratio) approaches or exceeds 1.0. The volume to capacity ratio provides a measure of congestion along a segment of roadway and can help determine the number of lanes necessary to accommodate existing and future traffic volumes. As a planning-level exercise, average daily traffic capacity ranges for different facility types were used to determine the roadway design options that can be considered for the 86th Street corridor. As listed below, these volume ranges are based on guidance from the Highway Capacity Manual, discussion with the Metropolitan Council and professional engineering judgment.

- Two-lane undivided urban – 8,000 to 10,000 vehicles per day
- Three-lane urban – 14,000 to 17,000 vehicles per day
- Four-lane undivided urban – 18,000 to 22,000 vehicles per day

Based on the current traffic volumes ranging from 2,000 to 9,000 vehicles per day, the existing two-lane and four-lane design sections for 86th Street provide the necessary capacity for acceptable operations. Based on the future 20-year traffic forecasts ranging from 5,000 to 15,000 vehicles per day, there is the opportunity to reduce the capacity of the roadway to be in line with the future traffic it serves, allowing the space to accommodate other modes of transportation. Since this is a planning-level exercise and does not provide a basis for determining the need for specific intersection geometrics, an operations analysis at the key intersections was conducted to determine if other proposed sections can handle future peak hour volumes. Results of this analysis are summarized in the Roadway and Intersection Layout Options section of the report.

Existing Intersection Operations Analysis

To determine how traffic is currently operating along the corridor, an operations analysis was conducted for the study intersections. All signalized intersections were analyzed using the Synchro/SimTraffic software. The unsignalized intersections were analyzed using the Highway Capacity Software. Capacity analysis results identify a Level of Service (LOS), which indicates the quality of traffic flow through an intersection. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates an intersection where demand exceeds capacity, or a breakdown of traffic flow. LOS A through D are generally considered acceptable by drivers. LOS E indicates that an intersection is operating at, or very near its capacity and vehicles experience substantial delays.

The traffic operations at an unsignalized intersection with side-street stop control considers the overall intersection level of service that takes into account the total entering volume and the capability of the intersection to accommodate these volumes. It also considers the level of service on the side-street approach. Since the mainline does not have to stop at a side-street stop controlled intersection, the majority of intersection delay can be attributed to the side-street approaches. It is typical of intersections with higher mainline traffic volumes to experience high levels of delay on the side-street approaches (poor levels of service), but an acceptable overall intersection level of service during the peak hour periods. However, as the side-street delay increases, motorists tend to accept smaller gaps and/or take greater risks. These eventually could lead to safety problems.

As shown in Table 2.1, results of the analysis indicate that all study intersections currently operate at an acceptable level of service during the a.m. and p.m. peak hours, with existing traffic controls and geometrics.

**Table 2.1 Existing Conditions – Peak Hour Capacity Analysis
Level of Service Results**

86th Street Intersection	A.M. Peak Hour	P.M. Peak Hour
Penn Avenue	A	B
Knox Avenue *	A/B	A/B
Lyndale Avenue	C	C
Wentworth Avenue *	A/B	A/B
Nicollet Avenue	B	B
3rd Avenue *	A/C	A/B
Portland Avenue	B	B
12th Avenue	A	B
Old Cedar Avenue	B	B
TH 77 East Service Road *	A/B	A/B
East Old Shakopee Road	A	A

*Note: * Indicates the intersection is a side-street stop controlled intersection. The overall level of service is followed by the side-street approach level of service.*

Safety Analysis

Mn/DOT's Crash Mapping Analysis Tool (MnCMAT) was used to review the most current three-year period to identify safety concerns along the corridor and at the study intersections. In order to determine the significance of the reported crashes, the associated crash rate for the study intersections and segments were also calculated. Crash rates are numerical values that compare one particular intersection to intersections of similar characteristics. The results of the safety analysis are summarized below and on the attached Figures 4 – 6 in Appendix A.

West Segment (Xerxes Avenue to I-35W)

Based on the available crash data, there were no major safety concerns for the west segment of 86th Street. The calculated segment crash rates for Xerxes Avenue to Penn Avenue and Penn Avenue to I-35W are below Hennepin County's average crash rate for similar type roadways. In addition, the crash rate calculated for the intersection of 86th Street and Penn Avenue is below Hennepin County's average crash rate for similar type intersections.

Central Segment (I-35W to east of Nicollet Avenue)

Using the available crash data, the calculated segment crash rate for I-35W to east of Nicollet Avenue is below Hennepin County's average crash rate for similar type roadways. In addition, the crash rate calculated for the intersection of 86th Street and Lyndale Avenue is below Hennepin County's average crash rate for similar type intersections. However, the crash rate calculated for the intersection of 86th Street and Nicollet Avenue is above Hennepin County's average crash rate for similar type intersections.

When an intersection is above the average crash rate for a similar intersection, the critical crash rate can be computed to determine the significance of the greater than average rate. For the intersection of 86th Street and Nicollet Avenue, the calculated crash rate of 1.34 crashes per million entering vehicles is above the critical crash rate of 1.21 crashes per million entering vehicles, indicating that there is a statistically significant crash issue at the intersection.

Further review of the types of crashes occurring at the intersection of 86th Street and Nicollet Avenue was conducted. Recent crash data indicates that a majority (60 percent) of the intersection crashes only involve motorists traveling on Nicollet Avenue. In addition, a majority (55 percent) of the crashes are left-turn crashes. These left-turn crashes only involved motorists traveling on Nicollet Avenue. Since Nicollet Avenue is a County Road, the City will continue to work with Hennepin County to address safety concerns at this intersection. In addition, safety improvements at this intersection were considered during the development phase of the study options presented later in the report.

West Segment (Nicollet Avenue to East Old Shakopee Road)

Using the available crash data, the calculated segment crash rate for east of Nicollet Avenue to East Old Shakopee Road indicates the segment crash rate is below Hennepin County's average crash rate for similar type roadways. In addition, the crash rates calculated for the 86th Street intersections at 12th Avenue, Old Cedar Avenue and East Old Shakopee Road are below Hennepin County's average crash rate for similar type intersections. However, the crash rate calculated for the intersection of 86th Street and Portland Avenue is above Hennepin County's average crash rate for similar type intersections.

When an intersection is above the average crash rate for a similar intersection, the critical crash rate can be computed to determine the significance of the greater than average rate. For the intersection of 86th Street and Portland Avenue, the calculated crash rate of 1.23 crashes per million entering vehicles is below the critical crash rate of 1.25 crashes per million entering vehicles. Since the calculated crash rate is below the critical crash rate, this intersection is considered to be reasonably safe.

Further review of the types of crashes occurring at the intersection of 86th Street and Portland Avenue was conducted. Recent crash data indicates that a majority (53 percent) of the intersection crashes only involve motorists traveling on Portland Avenue. In addition, a majority (47 percent) of the crashes are left-turn crashes. Seventy-five percent of these left-turn crashes only involved motorists traveling on Portland Avenue. Since Portland Avenue is a County Road, the City will continue to work with Hennepin County to address safety concerns at this intersection. In addition, safety improvements at this intersection were considered during the development phase of the study options presented later in the report.

3.0 Roadway & Intersection Layout Options

Based on the corridor evaluation and study findings, the stakeholders group selected three roadway and intersection layout options for each segment, to be presented at the neighborhood open houses for public input. These options address the needs and issues identified through the data collection and evaluation, while providing an improved transportation system that balances the multi-modal needs of the facility. See attached Figures 7 – 16 in Appendix B.

3.1 Xerxes Avenue to I-35W Bridge

Based on the current roadway design and pavement condition, the west segment was divided into the following two separate segments.

Xerxes Avenue to Penn Avenue

Currently, the segment of 86th Street between Xerxes Avenue and Penn Avenue is a 36-foot wide, two-lane roadway with parking allowed on both sides of the street. Sidewalk exists on the south side of 86th Street between Xerxes Avenue and Thomas Avenue. The posted speed limit is 30 mph and there is no transit service on this segment of the corridor.



The following three options were considered for this segment.

Option 1 – Two-Lane with Bike Lanes

This option maintains the existing roadway width of 36 feet. It will be striped to include two 12-foot travel lanes and two six-foot bicycle lanes. The existing on-street parking will be eliminated. In addition, sidewalk will be constructed on the south side of 86th Street between Thomas Avenue and Penn Avenue.

Option 2 – Two-Lane with Bike/Parking Lane

This option maintains the existing roadway width of 36 feet. It will be striped to include two 11-foot travel lanes, one eastbound six-foot bicycle lane and one westbound eight-foot shared bicycle/parking lane. The shared bicycle/parking lane will be on the north side of 86th Street, with parking restricted during the morning/afternoon peak periods. In addition, sidewalk will be constructed on the south side of 86th Street between Thomas Avenue and Penn Avenue.

Option 3 – Two-Lane with Bike Lanes and One Parking Lane

This option requires widening the roadway six feet on the north side, resulting in a roadway width of 42 feet. It will be striped to include two 11-foot travel lanes, two six-foot bicycle lanes and one eight-foot parking lane on the north side of 86th Street. In addition, sidewalk will be constructed on the south side of 86th Street between Thomas Avenue and Penn Avenue.

Penn Avenue to I-35W

Currently, the segment of 86th Street between Penn Avenue and I-35W is a 44-foot wide, four-lane undivided roadway with limited on-street parking on the north side between Logan Avenue and Humboldt Avenue. Sidewalk exists on both sides of the corridor and the posted speed limit is 35 mph. There is no transit service on this segment of 86th Street. Due to the poor pavement conditions, this segment will be reconstructed in 2010.



The following three options were considered for this segment:

Option 1 – Three-Lane with Five-Foot Bike Shoulders

This option maintains the existing roadway width of 44 feet. It will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders. The limited on-street parking will be eliminated, resulting in no on-street parking between Penn Avenue to I-35W.

Option 2 – Three-Lane with Six-Foot Bike Lanes

This option will require widening the roadway two feet on the south side, resulting in a roadway width of 46 feet. It will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane and two six-foot bicycle lanes. The limited on-street parking will be eliminated, resulting in no on-street parking between Penn Avenue to I-35W.

Option 3 – Three-Lane with Six-Foot Bike Lanes and One Parking Lane

This option will require widening the roadway 10 feet, resulting in a roadway width of 54 feet. It will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane, two six-foot bicycle lanes and an eight-foot parking lane.

Future Intersection Operations Analysis

An operations analysis was conducted to determine how the study intersections are expected to operate within the west segment under year 2030 conditions. A no build scenario was included to illustrate how the intersections would operate with the current roadway design, intersection geometrics and future traffic volumes. The proposed geometrics remain consistent for all three options, including an eastbound shared left-turn/through/right-turn lane and westbound left-turn lane and shared through/right-turn lane at the Penn Avenue intersection. As shown in Table 3.1, results of the analysis indicate that all study intersections will continue to operate at acceptable levels of service during the a.m. and p.m. peak hours, with the proposed geometrics for the considered options.

**Table 3.1 Future Conditions – Peak Hour Capacity Analysis
Level of Service Results**

86th Street Intersection	Year 2030 No Build A.M. Peak Hour (P.M. Peak Hour)	Year 2030 Options 1, 2 and 3 A.M. Peak Hour (P.M. Peak Hour)
Penn Avenue	B (D)	B (D)
Knox Avenue *	A/B (A/B)	A/B (A/B)

*Note: * Indicates the intersection is a side-street stop controlled intersection. The overall level of service is followed by the side-street approach level of service.*

3.2 I-35W to East of Nicollet Avenue

Currently, the segment of 86th Street from I-35W to east of Nicollet Avenue is a 44-foot wide, four-lane undivided roadway with limited on-street parking on the north side between I-35W and Colfax Avenue. Sidewalk exists on both sides of the corridor and the posted speed limit is 35 mph. There is one transit route on this segment of 86th Street.



The following three options were considered for this segment:

Option 1 – Three-Lane with Five-Foot Bike Shoulders, “Share the Road” near Lyndale Avenue

This option maintains the existing roadway width of 44 feet. It will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders. The limited on-street parking will be eliminated, resulting in no on-street parking from I-35W to east of Nicollet Avenue. The future operations analysis identifies the need to retain two through lanes in each direction at the Lyndale Avenue intersection. Therefore, this option requires bicyclists to share the road with vehicular traffic through Lyndale Avenue. Proper signing will be posted to notify changes to the bike routes in this area.

Option 2 – Three-Lane with Five-Foot Bike Shoulders, Continuous Bike Shoulder near Lyndale Avenue

This option maintains the existing roadway width of 44 feet, with the exception of the Lyndale Avenue intersection. The roadway segment will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders. The limited on-street parking will be eliminated, resulting in no on-street parking from I-35W to east of Nicollet Avenue. This option requires widening the roadway five feet on both sides between Bryant Avenue and Harriet Avenue to accommodate a continuous bike shoulder through the Lyndale Avenue intersection. It also includes the installation of eastbound and westbound right-turn lanes at the intersection of Nicollet Avenue for increased capacity to handle future 20-year traffic volumes.

Option 3 – Five-Lane with Five-Foot Bike Shoulders

This option will require widening the roadway by 22 feet between Lyndale Avenue and Nicollet Avenue, providing two 11-foot travel lanes in each direction, a 12-foot center left-turn lane and two five-foot bicycle shoulders. The limited on-street parking will be eliminated, resulting in no on-street parking from I-35W to east of Nicollet Avenue. This option was considered by the stakeholders group to provide a wider section to accommodate trucks, higher volumes and eliminate the change in cross section from a three-lane to a five-lane roadway in the Lyndale Avenue intersection area.

Future Intersection Operations Analysis

An operations analysis was conducted to determine how the study intersections are expected to operate within the central segment under year 2030 conditions. A no build scenario was included to illustrate how the intersections would operate with the current roadway design, intersection geometrics and future traffic volumes. As shown in Table 3.2 and 3.3, results of the analysis indicate that all study intersections will continue to operate at acceptable levels of service during the a.m. and p.m. peak hours with the proposed geometrics for the considered options, with the exception of the Nicollet Avenue intersection.

**Table 3.2 Future Conditions – Peak Hour Capacity Analysis
Level of Service Results**

86th Street Intersection	Year 2030 No Build A.M. Peak Hour (P.M. Peak Hour)	Year 2030 Option 1 A.M. Peak Hour (P.M. Peak Hour)
Lyndale Avenue	C (D)	C (D)
Wentworth Avenue *	A/B (A/C)	A/D (A/E)
Nicollet Avenue	B (C)	C (E)

*Note: * Indicates the intersection is a side-street stop controlled intersection. The overall level of service is followed by the side-street approach level of service.*

**Table 3.3 Future Conditions – Peak Hour Capacity Analysis
Level of Service Results**

86th Street Intersection	Year 2030 Option 2 A.M. Peak Hour (P.M. Peak Hour)	Year 2030 Option 3 A.M. Peak Hour (P.M. Peak Hour)
Lyndale Avenue	C (D)	C (D)
Wentworth Avenue *	A/D (A/E)	A/B (A/C) ⁽²⁾
Nicollet Avenue	C (D) ⁽¹⁾	B (C) ⁽²⁾

*Note: * Indicates the intersection is a side-street stop controlled intersection. The overall level of service is followed by the side-street approach level of service.*

⁽¹⁾ *Improvement in level of service due to installation of right-turn lanes.*

⁽²⁾ *Improvement in level of service due to expanded five-lane section.*

For the intersection of 86th Street and Nicollet Avenue, eastbound and westbound right-turn lanes will need to be installed to accommodate 20-year traffic volumes. In addition, motorists on the side-street approach of Wentworth Avenue will experience heavier delays during the p.m. peak hour. However, it is typical for the side-street approaches to experience higher levels of delay during the peak period at intersections with higher mainline volumes. In addition, the intersection is expected to operate with an acceptable overall intersection level of service.

3.3 East of Nicollet Avenue to East Old Shakopee Road

Currently, the segment of 86th Street from east of Nicollet Avenue to East Old Shakopee Road is a 44-foot wide, four-lane undivided roadway with no on-street parking. Sidewalk exists on both sides of the corridor and the posted speed limit is 35 mph. There are two transit routes on this segment of 86th Street.



The following three options were considered for this segment:

Option 1 – Three-Lane with Five-Foot Bike Shoulders

This option maintains the existing roadway width of 44 feet. It will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders.

Option 2 – Three-Lane with Five-Foot Bike Shoulders and Low-Level Medians

This option maintains the existing roadway width of 44 feet. It will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders. In addition, low-level medians will be installed at four locations along the corridor. The purpose of the low-level medians is to add parkway enhancements to the corridor and provide a safe refuge area for pedestrians and bicyclists to cross 86th Street.

Option 3 – Three-Lane with Five-Foot Bike Shoulders, Intersection Improvements at Portland Avenue, Old Cedar Avenue and East Old Shakopee Road

This option maintains the existing roadway width of 44 feet. It will be striped to include two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders. In addition, the following intersection safety and capacity improvements are included at Portland Avenue, Old Cedar Avenue and East Old Shakopee Road:

- Portland Avenue – construct eastbound and westbound right-turn lanes
- Old Cedar Avenue – restripe northbound and southbound approaches to provide left-turn lanes
- East Old Shakopee Road – construct northbound and southbound left-turn lanes

Future Intersection Operations Analysis

An operations analysis was conducted to determine how the study intersections are expected to operate within the east segment under year 2030 conditions. A no build scenario was included to illustrate how the intersections would operate with the current roadway design, intersection geometrics and future traffic volumes. As shown in Table 3.4 and 3.5, results of the analysis indicate that all study intersections will continue to operate at acceptable levels of service during the a.m. and p.m. peak hours with the proposed geometrics for the considered options, with the exception of the East Old Shakopee Road intersection.

**Table 3.4 Future Conditions – Peak Hour Capacity Analysis
Level of Service Results**

86th Street Intersection	Year 2030 No Build A.M. Peak Hour (P.M. Peak Hour)	Year 2030 Options 1 and 2 A.M. Peak Hour (P.M. Peak Hour)
3rd Avenue *	A/D (A/C)	A/D (A/D)
Portland Avenue	B (C)	C (C)
12th Avenue	B (B)	B (C)
Old Cedar Avenue	C (C)	C (C)
TH 77 East Service Road *	A/B (A/B)	A/B (A/B)
East Old Shakopee Road	C (D)	C (E)

*Note: * Indicates the intersection is a side-street stop controlled intersection. The overall level of service is followed by the side-street approach level of service.*

**Table 3.5 Future Conditions – Peak Hour Capacity Analysis
Level of Service Results**

86th Street Intersection	Year 2030 Option 3 A.M. Peak Hour (P.M. Peak Hour)
3rd Avenue *	A/D (A/D)
Portland Avenue	C (C)
12th Avenue	B (C)
Old Cedar Avenue	B (C) ⁽¹⁾
TH 77 East Service Road *	A/B (A/B)
East Old Shakopee Road	B (C) ⁽¹⁾

*Note: * Indicates the intersection is a side-street stop controlled intersection. The overall level of service is followed by the side-street approach level of service.*

⁽¹⁾ *Improvement in level of service due to installation of left-turn lanes.*

For the intersection of 86th Street and East Old Shakopee Road, northbound and southbound left-turn lanes will need to be installed to accommodate 20-year traffic volumes. Traffic at this intersection will increase as development occurs in the South Loop Area. Therefore, future development in nearby areas will dictate the need for left-turn lanes at the intersection of 86th Street and East Old Shakopee Road.

4.0 Neighborhood Open Houses

Two open houses were scheduled during the study process to solicit input from the public on study corridor issues, needs, corridor options and impacts. The first open house took place on December 14, 2009, focusing on the west segment. The second open house took place on March 29, 2010 focusing on the central and east segments. At each open house, residents were asked to rank the three options and fill out comment sheets. A summary of the open house comments are included in Appendix B.

4.1 December Open House

Summary of the open house and ranking exercise on December 14, 2009:

Table 4.1 Summary Results – Xerxes Avenue to Penn Avenue

Option No.	Ranked #1	Ranked #2	Ranked #3
1	2	8	1
2	10	4	1
3	0	0	11

- Thirty-six people (representing 27 residences) attended the open house.
- Seventeen comment sheets were filled out.
- Four homeowners chose not to rank the options (Five including the homeowner who ranked all options with a 3).
- After reading the comments, two of the homeowners who chose not to rank the options made Option 2 their second choice after the existing layout.
- Ten homeowners commented to leave as is, although some ranked Option 2 as their first choice.

Table 4.2 Summary Results – Penn Avenue to I-35W

Option No.	Ranked #1	Ranked #2	Ranked #3
1	5	2	2
2	2	6	0
3	3	0	6

- Twelve comment sheets were filled out.
- The residents in favor of Option 3 do not live on 86th Street.

4.2 March Open House

Summary of the open house and ranking exercise on March 29, 2010:

Table 4.3 Summary Results – I-35W to East of Nicollet Avenue

Option No.	Ranked #1	Ranked #2	Ranked #3
1	9	5	5
2	7	10	1
3	4	2	14

- Sixty-five (representing 48 residences) attended the open house.
- Twenty-four comment sheets were filled out.
- Three homeowners chose not to rank the options.
- Three homeowners only ranked one option, leaving the other two options blank.
- Seven homeowners had not comment or preference.

Table 4.4 Summary Results – East of Nicollet Avenue to East Old Shakopee Road

Option No.	Ranked #1	Ranked #2	Ranked #3
1	9	12	11
2	9	7	17
3	13	12	7

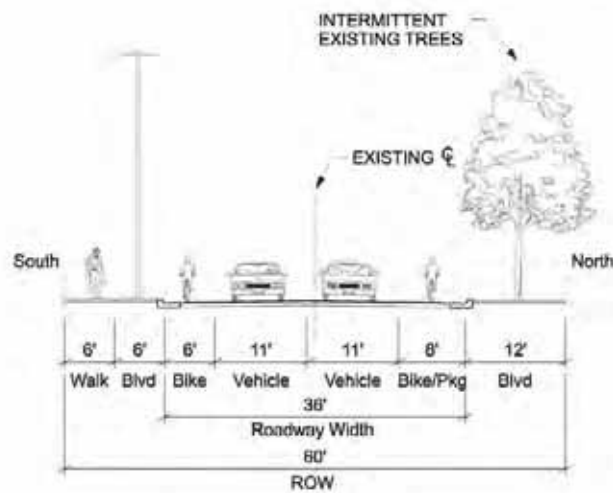
- Seventeen comment sheets were filled out.
- Thirty-four comment sheets were filled out.
- Two homeowners chose not to rank the options.
- One homeowner only ranked one option, leaving the other two options blank.
- Eight homeowners had no comment or preference.

5.0 Stakeholders Group Recommendations

5.1 Xerxes Avenue to I-35W Bridge

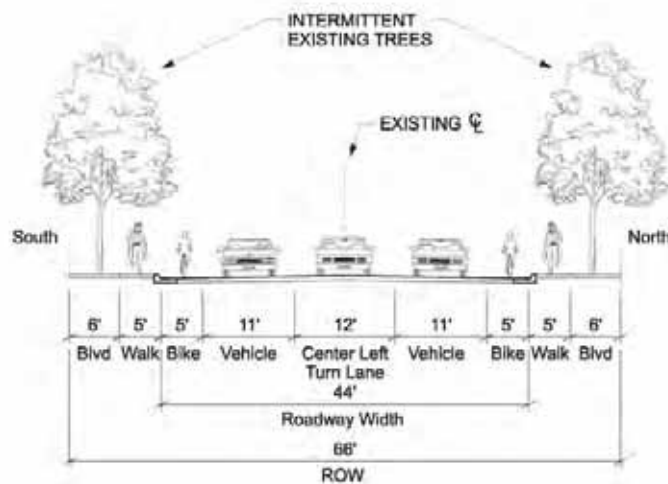
Xerxes Avenue to Penn Avenue

Based on stakeholder discussion of the corridor evaluation, study findings and public comments, the recommended option for the segment of 86th Street from Xerxes Avenue to Penn Avenue is Option #2. With a study objective to develop a corridor design to reasonably accommodate all transportation users, Option #2 will improve the safety for pedestrians, bicyclists and vehicles while continuing to provide on-street parking on one side of the street. In addition, Option #2 will not require expansion of the existing curb-to-curb width. As part of the recommendation, Option #3 should be considered in the future when pavement conditions require the reconstruction of this 86th Street segment.



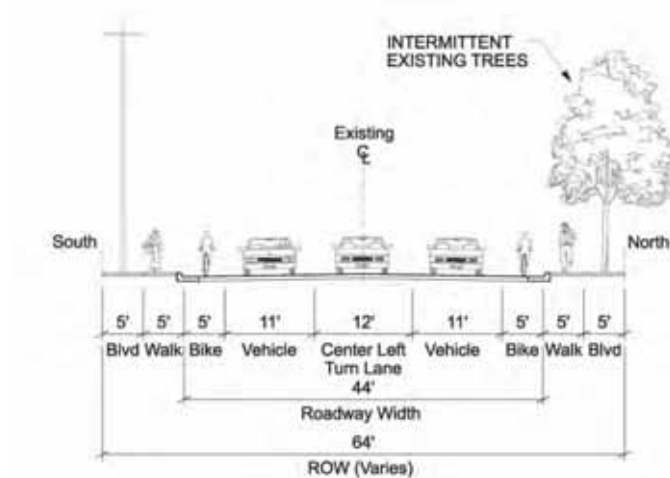
Penn Avenue to I-35W

Based on stakeholder discussion of the corridor evaluation, study findings and public comments, the recommended option for the segment of 86th Street from Penn Avenue to I-35W is Option #1. With a study objective to develop a corridor design to reasonably accommodate all transportation users, Option #1 will improve the safety for pedestrians, bicyclists and vehicles without the expansion of the existing curb-to-curb width. The recommended modification from a four-lane to a three-lane roadway with bicycle shoulders can be completed with the planned reconstruction project this construction season.



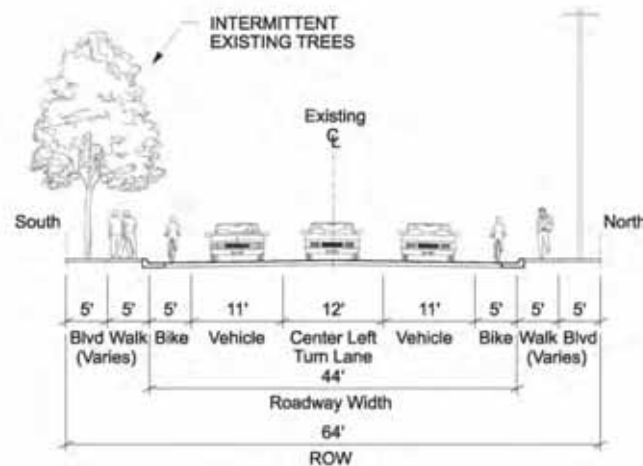
5.2 I-35W to East of Nicollet Avenue

Based on stakeholder discussion of the corridor evaluation, study findings and public comments, the recommended interim option for the segment of 86th Street from I-35W to east of Nicollet Avenue is Option #1. With a study objective to develop a corridor design to reasonably accommodate all transportation users, Option #1 will improve the safety for pedestrians, bicyclists and vehicles without the expansion of the existing curb-to-curb width. The ultimate recommendation is Option #2, to complete the improvements at Lyndale Avenue to continue the bicycle route through this intersection and construct the intersection improvements at Nicollet Avenue.



5.3 East of Nicollet Avenue to East Old Shakopee Road

Based on stakeholder discussion of the corridor evaluation, study findings and public comments, the recommended interim option for the segment of 86th Street from east of Nicollet Avenue to East Old Shakopee Road is Option #1. With a study objective to develop a corridor design to reasonably accommodate all transportation users, Option #1 will improve the safety for pedestrians, bicyclists and vehicles without the expansion of the existing curb-to-curb width. The ultimate recommendation is Option #3, to construct the intersection improvements at Portland Avenue.



6.0 Statewide Health Improvement Program

As part of the 86th Street Multi-Modal Traffic Study, a Health Impact Assessment (HIA) was conducted by the City's Public Health and Traffic Engineering staff. As a result of the Rapid HIA workshop and input from the March open house, several health concerns with the 86th Street corridor were identified under the following topics:

- Bike/pedestrian safety
- Automobile safety
- Access
- Recreational opportunities
- Traffic
- Crime

As summarized below, many of the concerns were addressed in the stakeholders group recommendations:

- **Vehicle Speeds** – The three-lane design for the 86th Street corridor is expected to reduce overall speeds. With only one through lane in each direction, motorists do not have a second lane to move around a slower moving vehicle. The City's speed data before and after the conversion of a roadway from a four-lane to a three-lane facility has indicated a slight reduction of vehicle speeds.
- **Pedestrian Safety and Sidewalk Width** – The three-lane design with a bicycle shoulder provides safer conditions for the pedestrian. This design moves the vehicular traffic further away from the pedestrian. In addition, pedestrians crossing 86th Street will be able to focus on crossing one lane of traffic in each direction, versus the two lanes of traffic under existing conditions.
- **Bicycle Safety** – The three-lane design with a bicycle shoulder provides safer conditions for the bicyclists with its own dedicated lane of travel.
- **Automobile Safety** – The three-lane design for the 86th Street corridor provides safer conditions for vehicular traffic. Under current conditions, motorists wanting to make a left-turn from the 86th Street corridor onto another local street or driveway are required to make their turn from the inside through lane. The three-lane cross section provides a two-way center left-turn lane for motorists wanting to make a left-turn, removing the turning vehicle from through traffic and reducing the potential for rear-end crashes.

In addition to the left-turn lanes, protective left-turn phasing will be installed at the key signalized intersections, in place of the current permissive left-turn phasing. Providing a protective left-turn phase will reduce the number of left-turn crashes at the intersections, improving the overall safety of the intersection.

- **Access and Recreational Opportunities** – The Alternative Transportation Plan includes a variety of trail, sidewalk and bike route improvements that will be implemented over time. Planning and implementing an on-road bikeway on the 86th Street corridor will provide an important east-west corridor for bicycle and pedestrian travel, serving as a feeder route and providing connections to other bikeways, trails, recreational facilities, transit facilities and routes within the City's transportation system.

An executive summary of the Assessment is included in Appendix C.

7.0 City Council Recommendation

7.1 City Council – January 25, 2010

At the City Council Public Hearing on January 25, 2010, the Council approved Option #2 for the 86th Street segment between Xerxes Avenue to Penn Avenue, providing two 11-foot travel lanes, one eastbound six-foot bicycle lane, one westbound eight-foot shared bicycle/parking lane and sidewalk construction between Thomas Avenue and Penn Avenue. The Council did not approve the recommended parking restriction on the north side during the morning/afternoon peak periods. Parking will continue to be allowed on the north side of 86th Street. However, if safety problems begin to develop, the City will need to consider parking restrictions during peak hour conditions.

For the segment between Penn Avenue and I-35W, the Council approved Option #1, providing two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders. The limited on-street parking will be eliminated, resulting in no on-street parking between Penn Avenue to I-35W.

7.2 City Council – June 7, 2010

At the City Council Public Hearing on June 7, 2010, the Council approved Option #1 for the 86th Street segment between I-35W and East Old Shakopee Road, providing two 11-foot travel lanes, a 12-foot center left-turn lane and two five-foot bicycle shoulders, with the exception of the Lyndale Avenue area. The existing configuration will remain through the Lyndale Avenue intersection, and bicyclists will have to “share the road” with vehicular traffic. The limited on-street parking will be eliminated, resulting in no on-street parking between I-35W and East Old Shakopee Road.

The City will continue to pursue funding for the intersection improvements at Lyndale Avenue, Nicollet Avenue and Portland Avenue.

Appendix A. Public Involvement

Stakeholders Group Meeting Minutes

86th Street Multi Modal Traffic Study

Stakeholders Group Meeting

Meeting Minutes
December 2, 2009

Attendees:

Shelly Pederson, Bloomington
Amy Marohn, Bloomington
Paul Jarvis, Bloomington
Maureen Scallen Failor
Cathie and John Pearson
Diana DiCristina
Roger Willette
Officer Bret Anderberg
Larry Tschida
Robyn Wiesman
Randy Quale
Amy Larson
Marie Cote
Josh Maus

1. Welcome

2. Meeting Purpose

Marie explained that the purpose of the meeting was to discuss the analysis results, concept alternatives and roadway cross sections for the west segment, in order to select three final options to present at the open house.

3. Issues Map/Existing Conditions

Based on feedback from the group, an issues map for existing conditions was prepared and discussed. Current daily traffic volumes and existing right-of-way widths will be added to the map.

4. Crash Analysis

The results of the crash analysis were presented to the group. No major safety concerns for the west segment of 86th Street. A question was asked whether trucks are allowed on the 86th Street corridor. Since it is a municipal state aid roadway, trucks are allowed.

5. Traffic Operations Analysis

An operations analysis was completed for the intersection of 86th Street and Penn Avenue. The results indicate that the intersection currently operates at an acceptable level of service during the a.m. and p.m. peak hours. Using the year 2030 future volumes, this intersection will include the necessary geometrics to maintain acceptable operations under the future design options.

6. Concept Alternatives and Roadway Cross Sections and 7. Concept Discussion/Selection of Three Final Options

Xerxes Avenue to Penn Avenue

The concept alternatives and roadway cross sections were presented. The following comments were made:

- A note (intermittent existing trees) above the trees on the cross sections should be added to the cross sections.
- From residents living on this segment, there are two different opinions on the future design of the roadway. There is the older age group who will be selling their home, but does not like change. Then there is the younger age group who would like to see bike lanes and sidewalks.
- If we need to keep parking, the north side is the most logical place.
- When will these improvements take place? If the selected option only involves striping improvements, the Council would need to decide if the work is done with the upcoming reconstruction project east of Penn Avenue. If the selected option includes moving the curb, the improvement would not take place until this segment was in the condition where the roadway needed reconstruction, which could be 10 years from now.
- The concept alternatives should only show the bike lane striping, not the symbol. At this time, the City is committing to the striping, but not the symbol or signing.
- What are the recommended lane widths? The standard state aid width is 12 feet. A variance allows 11 feet.
- The concept alternatives should indicate widening or no widening.
- What is the cost of option F and how would it be assessed? Shelly estimated a cost of \$500,000 to \$600,000. When the segment is ready for reconstruction, assessments would include the work to replace the existing 36-foot wide roadway. The remaining pavement width beyond the 36 feet would be covered by the City.
- There is the perception that traffic moves too fast on 86th Street. Can a stop sign be placed at Thomas Avenue? The City will check into any available speed data. Shelly commented that as you narrow the roadway by adding more modes of travel (such as bike lanes), traffic speeds tend to slow down. Marie commented that stop signs are not an effective measure to control speeding. If not warranted, the intersection becomes unsafe since vehicles on 86th Street may not come to a complete stop, knowing the volumes on the side street are low. Speed trailers are an option.
- All options will include extending the existing sidewalk on the south side of the street.

- For Option C, could you make the bike lanes wider and have 11-foot drive lanes? We do not want to vary from the standard bike lanes. If they are too wide, they start to look like a parking lane. A parking lane less than five feet is not recommended.
- Option E still allows vehicles biking both directions. Parking allowed during non-peak hours. Typical peak hour restrictions are 7 to 9 a.m. and 3 to 6 p.m. This cross section has been proven to work well in other areas of the City (Xerxes Avenue south of 106th Street).
- Option F would accommodate all modes of transportation.
- The three options moving forward to the open house are Options C, E and F. The options will be numbered. Existing/No Build will also be included.

Penn Avenue to I-35W

The concept alternatives and roadway cross sections were presented. The following comments were made:

- The Existing option needs to be modified to include the current parking on the north side.
- Consider recommendations to fix the sight distance at Humboldt.
- Check on the boulevard width to see if it varies.
- The shared parking/bike lane would not work on this segment. Only recommended for roadways with less than 5,000 vehicles.
- The limited parking currently on the north side of the roadway is a safety concern since it is unexpected. Most houses have deep driveways.
- Three-lane sections (with center left-turn lane) is well accepted in the City.
- Option C has 5-foot bike lanes. An example is on 102nd Street.
- Options D and E require moving the curb.
- Option E would cost approximately \$800,000.
- Option F may result in an increase of rear-end crashes. Concern from a safety standpoint.
- The three options moving forward to the open house are Options C, D and E. The options will be numbered. Existing/No Build will also be included.

8. Next Steps

The open house is scheduled for December 14, 2009. The City's website will post all of the materials presented at the open house, in case residents cannot make it. The comment sheet will include a section to rank the options.

Our next SAC meeting will be held on January 6, 2010. Stakeholders will discuss feedback from the open house and select a preferred alternative.

86th Street Multi Modal Traffic Study

Stakeholders Group Meeting

Meeting Minutes
January 6, 2010

Attendees:

Shelly Pederson, Bloomington
Amy Marohn, Bloomington
Paul Jarvis, Bloomington
Diana DiCristina
Myron Simon
Roger Willette
Officer Bret Anderberg
Larry Tschida
Robyn Wiesman
Randy Quale
Amy Larson
David Hanson
Marie Cote
Josh Maus

1. Meeting Purpose

Marie explained that the purpose of the meeting was to discuss feedback from the open house and select a preferred option to recommend to the City Council.

2. Meeting Minutes

No changes to the December 2, 2009 meeting minutes.

3. Discuss Feedback from the Open House

An open house summary was presented to the group.

Xerxes Avenue to Penn Avenue

Some additional notes for the Xerxes Avenue to Penn Avenue segment included:

- 4 homeowners chose not to rank the options (5 including the homeowner who gave all 3s)
- After reading the comments, 2 of the homeowners who chose not to rank the options made Option 2 their second choice after the existing layout
- 10 homeowners commented to leave as is, although some ranked Option 2 as their first choice

Main concerns at the open house were loss of parking and expanding the roadway. Some residents did not think there was enough bike traffic to justify changes to the roadway. There was one resident who was against any changes between Xerxes Avenue and Penn Avenue. He sat at the comment table and tried to influence other residents.

Representatives from this segment could not make the meeting. Amy passed on comments that a petition not to change 86th Street was submitted. However, those signing the petition were not informed of the proposed options to develop a corridor design to accommodate bicycle and pedestrian travel. The Pearsons held a meeting at their home where 45 residents were in favor of changes to make the corridor more appealing. A summary should be prepared and attached to the petition.

Robyn commented that the COB Public Health office prefers Option 1 or Option 3, due to concerns with the shared bike/parking lane.

Penn Avenue to I-35W

There were no comments made regarding the need to retain on-street parking. Based on the written comments, there was some confusion with their understanding of the proposed options.

Robyn commented that the COB Public Health office prefers Option 2.

A stakeholder asked whether the speed limit could be reduced from 35 mph to 30 mph. Officer Anderberg commented that the speed was appropriate for the type of roadway. In order to reduce the speed limit, an official study by Mn/DOT would need to be requested. It was explained that the residents need to be careful with making a request for an official speed study, since the results could indicate that the posted speed limit needs to increase.

A discussion of the bike lane took place. With a six-foot bike lane, the words could be placed on the roadway. However, maintenance cost is a concern. With a five-foot bike lane, the words would not be placed on the roadway, but it would be signed as a bike route. City staff attended a December variance committee meeting. The variance for 10-foot travel lanes was denied for 90th Street east of France Avenue. The City will move forward with 11-foot travel lanes and five-foot striped shoulders. If the Minnesota guidelines are modified in the future, the striped shoulders could be painted and signed as bike lanes.

4. 2030 Traffic Operations Analysis

An operations analysis was completed for the intersection of 86th Street and Penn Avenue using 2030 future volumes. The intersection will maintain acceptable operations with an eastbound shared left-turn/through/right-turn lane and westbound left-turn lane and shared through/right-turn lane). The intersection geometrics will work with any of the proposed options.

Shelly asked if there is a change in the level of service between existing and future. Existing is LOS B (a.m.) and LOS C (p.m.). In 2030, the level of service is expected to be LOS B (a.m.) and LOS D (p.m.). This information will be included in the recommendation letter to the Council.

For the intersection of 86th Street and Knox Avenue, motorists will not experience significant delays when entering 86th Street under future 2030 conditions.

5. Discuss and Select a Preferred Option

Xerxes Avenue to Penn Avenue

While discussing a preferred option, the following comments were made:

- The cost for Option 1 is \$80,000, Option 2 is \$80,000 and Option 3 is \$700,000. For Options 1 and 2, the majority of the cost is for the sidewalk construction. For Option 3, residents would be assessed the cost to reconstruct the current width of roadway. The City would be responsible for the additional cost for the extra width.
- Option 3 was eliminated due to the high cost and roadway widening impacts.
- Option 1 was eliminated due to its impact on on-street parking.
- A parking survey will be conducted to have a better understanding of on-street parking needs between Xerxes Avenue to Penn Avenue. These results will be available for the City Council meeting on January 25, 2009.
- This segment of roadway does not experience problems with parking today. It is not a hot spot with parked cars during snow removal.
- Leaving the roadway as it is today is not a preferred option since it is not an option that will better accommodate other users, such as pedestrians and bicyclists.
- Option 2 includes the construction of sidewalk from Thomas to Penn Avenue. No sidewalk is being added to the north side. On-street parking will be restricted during peak hours. Since volumes are lower on this segment, can the on-street parking remain during peak hours. The City has several segments with the shared bike/parking lane with on-street parking restricted during the peak hours. Residents can always request a change later, if needed.
- **After further discussion, the preferred option from the stakeholders group is Option #2.** With a study objective to develop a corridor design to reasonably accommodate all transportation users, Option #2 will improve the safety for pedestrians, bicyclists and vehicles while continuing to provide on-street parking on one side of the street. In addition, Option #2 will not require expansion of the existing curb-to-curb width. As part of the recommendation, Option #3 should be considered in the future when pavement conditions require the reconstruction of this 86th Street segment.

Penn Avenue to I-35W

While discussing a preferred option, the following comments were made:

- The cost for Option 1 is \$500,000, Option 2 is \$800,000 and Option 3 is \$1,100,000. With the cost of \$500,000 to reconstruct 86th Street at its current width under Option #1, the City would be responsible for the remaining cost of \$300,000 for Option 2. For Option 3, the City would be responsible for the remaining cost of \$600,000.

- Randy commented that the Parks department would accommodate parking in their park's parking lot, if residents held an event at their home where on-street parking was needed. This would work better for residents on the west end closer to Penn Avenue.
- Can bikes ride on the sidewalk? The City allows bicycles on sidewalks, but they need to yield to the pedestrian. Some trails are marked to restrict bicycle use.
- **After further discussion, the preferred option from the stakeholders group is Option #1.** With a study objective to develop a corridor design to reasonably accommodate all transportation users, Option #1 will improve the safety for pedestrians, bicyclists and vehicles without the expansion of the existing curb-to-curb width. In addition, the recommended five-foot bicycle lanes are consistent with the recent direction other government agencies are supporting.

6. Next Steps

The public hearing for the west segment of 86th Street is scheduled for January 25, 1020. Notifications will be sent out. Planning commission will be held on January 6, 2010 to develop their own recommendation to the Council.

For the public hearing, the presentation will include the ATP and background information on why 86th Street was identified as a primary east-west bicycle/pedestrian corridor.

Our next SAC meeting will be held on February 3, 2010. Data collection results and concepts for the central and east segments will be presented to the stakeholders.

86th Street Multi Modal Traffic Study

Stakeholders Group Meeting

Meeting Minutes
February 3, 2010

Attendees:

Kirk Roberts, Bloomington
Amy Marohn, Bloomington
Paul Jarvis, Bloomington
Diana DiCristina
Roger Willette
Officer Bret Anderberg
Larry Tschida
Robyn Wiesman
Amy Larson
David Hanson
Maureen Scallen Failor
Marie Cote
Josh Maus

1. Meeting Purpose and Updates

Marie explained that the purpose of the meeting was to present information on the Central and East segments of the study. This included the existing conditions analysis, crash analysis, intersection analysis and concept alternatives. The group will need to identify the alternatives being brought forward to the open house.

Kirk Roberts, the City's new traffic/transportation engineer has joined the stakeholders group and was introduced to other group members.

Amy provided an update on the west segment recommendations to the Council. The preferred options by the stakeholders group were approved, with one small change for the Xerxes Avenue to Penn Avenue segment. The approved option will not include on-street parking restrictions during the peak hours. Observations will be made to determine if problems develop and whether peak hour restrictions need to be reconsidered.

2. Health Assessment

Robyn (COB Public Health) explained that the City will conduct a rapid health impact assessment as part of the 86th Street Corridor Multi-Modal Traffic Study to determine the design factors that affect health. The benefit to completing a health assessment for the study corridor is additional funding in the future, which could include educational components. Marie suggested that it could include recommendations for other design features, such as countdown timers for safer pedestrian crossings at the signalized intersections.

The March 3rd scheduled meeting will be used for the health assessment.

3. I-35W to east of Nicollet Avenue

Issues Map/Existing Conditions

Based on feedback from the group at our first meeting, an issues map for existing conditions was prepared and discussed. Additional comments included:

- There is one transit route on this segment, with five stops. Metro Transit has no changes in service planned.
- Although there is sidewalk on both sides of the corridor, it is very narrow at five feet or less.

Crash Analysis

The results of the crash analysis were presented to the group. All crash rates are lower than the County's average crash rate for similar type roadways and intersections.

Officer Anderberg and City staff commented that the intersection of 86th Street and Nicollet Avenue is a major concern. It is an intersection identified in the Top 5 for Hennepin County (will double check). Through their experience, approximately one crash is occurring every couple of days, many of them being right-angle type crashes. There is no left-turn lane or protective left-turn phasing. SRF will work with the City to receive more detailed information to determine the need for additional safety improvements to determine what direction vehicles are traveling and crash patterns.

Concept Alternatives and Roadway Cross-Sections

I-35W to west of Lyndale Avenue

The following concepts were presented:

- Option A: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking and existing sidewalk. The proposed roadway design can fit within the existing curb-to-curb width.
- Option B: a three-lane roadway, continuous center left-turn lane and five-foot bike lane on the south side. This option includes on-street parking on the north side of the roadway between Emerson Avenue and Bryant Avenue. A wider bike lane (six-foot bike lane) would be provided on the north side to provide additional space next to the parked vehicles. The proposed roadway design will require widening the existing curb-to-curb width by nine feet.

Lyndale Avenue to east of Nicollet Avenue

A three-lane section cannot handle 20-year volumes through the 86th Street intersections at Lyndale Avenue and Nicollet Avenue. These intersections need two through lanes in each direction. Therefore, Options C, D and E were developed to provide the necessary geometrics at Lyndale Avenue and Nicollet Avenue. The following concepts were presented:

- Option C: the three-lane transitions into the existing geometrics at Lyndale Avenue. East of Garfield Avenue, 86th Street will transition back to a three-lane roadway. The three-lane then transitions into the existing four-lane geometrics at Nicollet Avenue. East of Nicollet Avenue, 86th Street will transition back to a three-lane roadway. This option includes five-foot bike lanes and no on-street parking. The proposed roadway design will require widening at key intersections and transition areas with the relocation of sidewalk in some locations and possible impacts to right-of-way.
- Option D: the three-lane transitions into the existing geometrics at Lyndale Avenue. East of Garfield Avenue, 86th Street will transition to a four-lane roadway through Nicollet Avenue. East of Nicollet Avenue, 86th Street will transition back to a three-lane roadway. This option includes five-foot bike lanes and no on-street parking. The proposed roadway design will require widening the existing curb-to-curb width by 10 feet.
- Option E: the three-lane transitions into the existing geometrics at Lyndale Avenue. East of Garfield Avenue, 86th Street will transition to a five-lane (two through lanes in each direction and a continuous center left-turn lane) roadway through Nicollet Avenue. East of Nicollet Avenue, 86th Street will transition back to a three-lane roadway. This option includes five-foot bike lanes and no on-street parking. The proposed roadway design will require widening the existing curb-to-curb width by 22 feet.

Intersection Analysis – at Lyndale Avenue

An operations analysis was completed for the intersection of 86th Street and Lyndale Avenue. The results indicate that the intersection currently operates at an acceptable level of service during the a.m. and p.m. peak hours. Using the year 2030 future volumes, this intersection will not operate acceptably as a three-lane. Two through lanes are needed. A simulation of the operations was shown.

Intersection Analysis – at Nicollet Avenue

An operations analysis was completed for the intersection of 86th Street and Nicollet Avenue. The results indicate that the intersection currently operates at an acceptable level of service during the a.m. and p.m. peak hours. Using the year 2030 future volumes, this intersection will not operate acceptably as a three-lane. Two through lanes are needed. A simulation of the operations was shown.

Concept Discussion/Selection of Three Final Options

The following comments were made:

- How much parking is used on the short north segment? Larry's staff is checking into this.
- Currently driveways are short in length. If the on-street parking needs to remain, the roadway widening will decrease the driveway length.
- Option A provides the benefit of handling traffic at a low cost.
- A seal coating project is planned for 2010. We can consider Option A as an interim plan.
- SRF will analyze when operational problems will develop for the three-lane at Lyndale Avenue and Nicollet Avenue.
- Option C provides no savings with right-of-way impacts.

- The three options moving forward to the open house are Options A, D and E. The options will be numbered. Existing/No Build will also be included. Option A will be identified as an interim solution.

4. East of Nicollet Avenue to East Old Shakopee Road

Issues Map/Existing Conditions

Based on feedback from the group at our first meeting, an issues map for existing conditions was prepared and discussed. Additional comments included:

- There are two transit routes on this segment, with 25 stops. Metro Transit has no changes in service planned.
- Sight distance issues were clarified to be for motorists entering 86th Street from the north.

Crash Analysis

The results of the crash analysis were presented to the group. The segment crash rate is lower than the County's average crash rate for similar type roadways.

The intersection crash rates are lower than the County's average for similar type intersections, with the exception of 86th Street and Portland Avenue. This intersection is a safety concern for the City with limited sight distance and shared left-turn/through lanes. SRF will work with the City to receive more detailed information.

Concept Alternatives and Roadway Cross-Sections

The following concepts were presented:

- Option A: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking and existing sidewalk. The proposed roadway design can fit within the existing curb-to-curb width.
- Option B: a three-lane roadway and a continuous center left-turn lane. This is a "share the road" option. Bike lanes would not be striped on the roadway. However, vehicles and bikes would share the through lane. This option includes no on-street parking and the existing sidewalk. The proposed roadway design can fit within the existing curb-to-curb width.
- Option C1: a three-lane roadway, continuous center left-turn lane, six-foot bike lanes, no on-street parking and existing sidewalk. The proposed roadway design will require widening the existing curb-to-curb width by two feet.
- Option C2: a three-lane roadway, continuous center left-turn lane, six-foot bike lanes, no on-street parking and existing sidewalk. In addition, low level center medians would be installed at selected locations. The proposed roadway design will require widening the existing curb-to-curb width by two feet.

A three-lane section can accommodate 20-year volumes for the entire segment and intersections. However, safety improvements at key intersections should be considered. Options D, E and F include a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking and existing sidewalk with improvements at selected key intersections. The following concepts were presented:

- Option D: intersection improvements at Portland Avenue to include a left-turn lane, through lane, and shared through/right-turn lane for the east and west approaches of 86th Street. The proposed intersection design will require widening the existing curb-to-curb width. SRF will review intersection to determine the appropriate geometrics.
- Option E: intersection improvements at Old Cedar Avenue to include exclusive left-turn lane and protective left-turn phasing for the north and south approaches of Old Cedar Avenue. The proposed roadway design can fit within the existing curb-to-curb width.
- Option F: intersection improvements at East Old Shakopee Road to include exclusive left-turn lane and protective left-turn phasing for the north and south approaches of East Old Shakopee Road. The proposed intersection design will require widening the existing curb-to-curb width on East Old Shakopee Road.

Concept Discussion/Selection of Three Final Options

The following comments were made:

- The seal coating project extends from I-35W to the Cedar Avenue bridge. The City could seal coat the segment east of the bridge (although done last year) for continuity, if a three-lane section is selected.
- What studies are available for “shared the road” facilities? Amy commented that bicycle travel is shown to be safer with a designated marked bike lane.
- Option C2 provides a median at a major planned north-south trail near Park Avenue. It would provide safer crossings with a pedestrian refuge area. Others had concerns with motorists having difficulty with something in the road only at selected locations.
- Options C1 and C2 provide a six-foot bike lane. The City is in support of five-foot bike lanes, which is consistent with the direction other communities are supporting.
- Option B does not have support from the stakeholders group.
- The options moving forward to the open house are Options A, C2 (with five-foot bike lanes), D, E and F. The options will be numbered. Existing/No Build will also be included.

5. Next Steps

- Next SAC meeting on March 3, 2010 will be used for the health assessment.
- The open house is scheduled for March 29, 2010.
- SAC meeting on April 14, 2010 will include feedback from the open house and selection of a preferred alternative.

86th Street Multi Modal Traffic Study

Stakeholders Group Meeting

Meeting Minutes
April 14, 2010

Attendees:

Shelly Pederson, Bloomington
Kirk Roberts, Bloomington
Amy Marohn, Bloomington
Paul Jarvis, Bloomington
Cathie Pearson
Roger Willette
Officer Bret Anderberg
Larry Tschida
Robyn Wiesman
Amy Larson
Maureen Scallen Failor
Marie Cote
Josh Maus

1. Meeting Purpose

Marie explained that the purpose of the meeting was to discuss feedback from the open house and select a preferred option to recommend to the City Council.

2. Health Impact Assessment Update

Robyn presented a report she prepared that documents the Rapid Health Assessment of the 86th Street Corridor Multi-Modal Traffic Study to determine the design factors that affect health. There was a lot of great input from the open house, with other health concerns being added to the list the stakeholders group developed. Each participant was given three stickers to place next to the health concerns they have with the 86th Street corridor. City staff interacted with approximately 35 residents. The most common health concerns were related to speeds and sidewalk. Robyn asked the group if we can consider these health concerns while developing our recommendations for the corridor.

3. Discuss Feedback from the Open House

Written Comments/Ranking Results/Other Comments

An open house summary was presented to the group, including the rankings of each option.

I-35W to East of Nicollet Avenue

Some additional notes for the Central segment included:

- 24 comment sheets were filled out
- 3 homeowners chose not to rank the options
- 3 homeowners only ranked one option, leaving the other two options blank
- Main comments:
 - no comment or preference (7), leave as is (2), bus related (2), concern with "share the road" concept (2), children crossing 86th Street (2), trucks (2), costs (2)

Nicollet Avenue to East Old Shakopee Road

Some additional notes for the East segment included:

- 34 comment sheets were filled out
- 2 homeowners chose not to rank the options
- 1 homeowners only ranked one option, leaving the other two options blank
- Main comments:
 - no comment of preference (8), Portland safety (8), do not like medians (5) and leave as is (4)

A stakeholder asked if any business owners came to the open house. A representative from SA did attend the meeting.

4. 2030 Traffic Operations Analysis and 5. Discuss and Select a Preferred Option I-35W to East of Nicollet Avenue

The following concepts were presented at the open house:

- Option 1: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking* and existing sidewalk. This segment including Lyndale Avenue would not include bike shoulders and bicyclists would share the road with motorists.

(*no on-street parking with the exception of the segment between Bryant Avenue and Harriet Avenue which will need to have parking removed)
- Option 2: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking* and existing sidewalk. The three-lane would transition into the existing geometrics at Lyndale Avenue, with widening the current curb-to-curb width to add a five-foot bike lane. Also includes eastbound and westbound right-turn lanes at Nicollet Avenue.
- Option 3: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking* and existing sidewalk west of Lyndale Avenue. A five-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking and existing sidewalk is proposed between Lyndale Avenue and Nicollet Avenue. Widening of the roadway between Lyndale Avenue and Nicollet Avenue will impact existing right-of-way.

While discussing a preferred option, the following comments were made:

- For Option 1, the three-lane transitions into the existing geometrics at Lyndale Avenue, since a three-lane section through the Lyndale intersection cannot handle 20-year volumes. This option can be implemented under the scheduled sealcoating project this summer, at no additional cost.
- Option 2 requires widening near the Lyndale Avenue and Nicollet Avenue intersections. The estimated cost is \$250,000. The right-turn lanes at Nicollet Avenue are not needed today, but will be required to handle traffic within 10 to 15 years.
- Option 3 requires significant widening of the entire segment. The capacity and number of lanes is not needed for the 20-year volumes. The estimated cost is \$1.3 to 1.5 million. This option was eliminated due to the high cost and roadway widening impacts.
- For Option 1, there are concerns with bicyclist sharing the road. Bicyclists will have the option to use the sidewalk or shoulder when the bike shoulder lane ends west of Lyndale Avenue. Josh reminded the group that the two through lanes in each direction are not needed during the off-peak conditions. During the off-peak hours, most vehicles will stay in the left through lane, since the roadway transitions to a three-lane on both sides of Lyndale Avenue. Therefore, the outer through lane will provide additional space for bikes during the off-peak hours.
- For Option 2, Shelly mentioned that some of the \$250,000 is already available. The City will be able to phase the intersection improvements, possibly reconstructing one leg of the intersection at a time, as funds become available.
- **After further discussion, the preferred option from the stakeholders group is Option #2.** In addition, the City should continue to work on the necessary funding to incrementally implement the Lyndale Avenue intersection improvement. The Lyndale Avenue intersection improvement needs to be done as soon as possible. The Nicollet intersection improvements are a high priority, as well. **Option #1 is recommended as the interim improvement**, which can be implemented under the scheduled sealcoating project this summer. It is important to provide the necessary signage to inform bicyclists that the bike shoulder lane drops near Lyndale Avenue.
- The stakeholders asked how do we decide the timeframe to implement Option #2. The City will look to see when the next overlay is scheduled, tentatively. This date will be considered, since the project would be done with the overlay, at the latest. City staff will add more detail to the # of years in their recommendation.
- With the stakeholder's recommendation, how have the health concerns been addressed?
 - Speeding was a high concern. The three-lane design will impact corridor speeds. Speed studies by the City have indicated that speeds are reduced by 1 to 2 mph when converting a four-lane to a three-lane roadway. In addition, City data shows that a three-lane roadway reduces the outliers (motorists traveling significantly higher than the posted speed limit) on the corridors. With only one through lane in each direction, a motorist traveling the speed limit will set the pace for other motorists, since there isn't another through lane for a motorist to change lanes and go faster.

- Another concern is the sidewalk location right next to the street. Installation of the bike shoulder moves the vehicular traffic five feet away, adding a “buffer” between the vehicles and pedestrians/bicyclists.
- Crossings will be easier for pedestrians/bicyclists, since there is one through lane in each direction to cross versus two through lanes.
- Bicycle safety will be addressed with the bike shoulder lane and associated signing.
- Automobile safety at the intersections will be improved with the center left-turn lane. Currently, there are no eastbound/westbound left-turn lanes for the minor intersections and some major intersections (such as Nicollet Avenue and Portland Avenue). The inside lane is a shared left-turn/through lane, which increases the potential for rear-end crashes. The center left-turn lane safely separates turning vehicles from through vehicles.

East of Nicollet Avenue to East Old Shakopee Road

The following concepts were presented at the open house:

- Option 1: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking and existing sidewalk. The proposed roadway design can fit within the existing curb-to-curb width.
- Option 2: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking and existing sidewalk. In addition, low-level center medians would be installed at selected locations. The proposed roadway design can fit within the existing curb-to-curb width.
- Option 3: a three-lane roadway, continuous center left-turn lane, five-foot bike lanes, no on-street parking and existing sidewalk. The proposed roadway design can fit within the existing curb-to-curb width. Additional intersection improvements at Portland Avenue, Old Cedar Avenue and East Old Shakopee Road.

While discussing a preferred option, the following comments were made:

- A concern with buses stopping along the corridor was raised. The resident claimed numerous stops along the corridor, which would impact traffic with the three-lane section, since there is only one through lane in each direction. The resident commented that buses are stopping at any location where a rider waves down a bus, without an actual bus stop sign. Vehicles and bicycles will have to stop behind a bus. Officer Anderberg informed the group that a ticket would be given to a motorist who went around a bus that has stopped to pick up a rider, encroaching the center left-turn lane. The City has not had any problems with bus operations and stops in the past. However, the City will work with Metro Transit to discuss bus stop locations and driver procedures for picking up riders only at designated stops.
- Right-turn lanes being added to Portland Avenue was raised as a safety concern for pedestrians and bicyclists. A clarification was made that free right-turn lanes are not being installed, which can increase the difficulty for pedestrians and bicyclists to cross the intersection.

- For Option 3, the intersection improvements are not necessary for 2030 operations, with the exception of the Old Shakopee Road intersection. The Old Shakopee Road intersection improvements are tied to the MOA expansion. The intersection improvements are recommended to address safety concerns.
- Option 1 can be implemented under the scheduled sealcoating project this summer, at no additional cost. Although the segment between Old Cedar Avenue and Old Shakopee Road was done last year, it will be redone this year for consistency.
- Option 2 requires more maintenance after the low-level medians are installed. The estimated cost is \$50,000. The right-turn lanes at Portland Avenue are not needed to accommodate 2030 volumes, but are necessary to address safety concerns.
- Option 3 includes improvements at three additional intersections. The estimated cost is \$150,000, without right-of-way or signal costs.
- **After further discussion, the preferred option from the stakeholders group is Option #1.** In addition, the City should continue to pursue the intersection improvements in Option #3, in the following order:
 - Portland Avenue is the highest priority – HSIP application in 2011 for safety funds. The City will work with the County to determine the safety improvements that are needed.
 - Old Cedar Avenue – staff will recommend timeline.
 - Old Shakopee Road – will be driven by the MOA development.
- A side recommendation was introduced to provide community education in the City newspapers. In addition, the City should continue to monitor speeds along the 86th Street corridor after changes are made.

6. Next Steps

- City Council study session – May
- Public hearing – late May/June
- Prepare Report for City Staff Review

Open House Summary Comments

86th Street Multi Modal Traffic Study - Open House Comments, December 14, 2009
Xerxes Av. To Penn Av.

Name	Address	Phone	Xerxes to Penn				Penn to I-35W				Comments
			Option 1	Option 2	Option 3		Option 1	Option 2	Option 3		
Craig P. Downey	8641 Thomas Ave	952-881-3558	2	1	3		2	1	3		Intersection of 86th and Penn needs turn signals at all four corners. Not just Penn South.
Louise Downey	8641 Thomas Ave	952-881-3558	2	1	3						Option 2 would not require moving of curbs. Bike traffic in entire area is minimal.
Ron & Gwen Scribner	8600 Penn Ave	952-884-5755	2	1	3						Option 2 doesn't move the curb. There should be more street lights on 86th Street. Dislike Option 3 as it moves the curb.
Alan Fossum	2807 W. 86th St	952-884-1885	3	3	3						No build - leave AS IS. Bikes already can use the road the way it is now. Number of people biking would be very very low. Bike lanes would force my wife's 92 year old grandmother to park around the corner and use her walker. Give me a break.
Zachary Vanselow	2920 W. 86th St	952-288-4684	1	2	3						The north side trees would all need to come down which is important to the aesthetics. Also widening to either side is undesirable to me. If something needs to go, make it be the parking and leave the rest (and our \$) alone. Thank you for your consideration.
Bill Curti	2810 W. 86th St	952-884-0984	2	1	3						Prefer nothing done. Option 3: absolutely not - beautiful trees gone and yards decreased.
Russell Norman	2620 W. 86th St	952-884-1167	1	2	3						I believe a bike path is a wonderful idea. However, I believe it should be put in with the least disturbance and cost to the neighborhood. Especially since the street can serve the purpose as it is now ... a very good reason to leave it as it is.
Tom Dokken	8540 Russell Ave	952-881-4359	2	1	3						My preference is to leave everything unchanged between Xerxes and Penn. Xerxes to Penn is only two lanes while Penn to Cedar, etc. is all four lanes. Obviously easier to put bike paths, etc. on wider streets. The main concern between Xerxes and Penn is the loss of parking on 86th. With current rental property, the on-street parking becomes a larger issue and they will have to park on side streets.
Jake & Kate Manahan	8516 Russell Ave	952-884-2435									Move the bike route to 90th and connect at Old Cedar. Existing because there isn't much traffic between Xerxes and Penn. Bikers can use the street as is. It's important to preserve parking for the residents on 86th.
Jim Tuff	8541 Thomas Ave	952-881-0830	2	1	3						
Iris Smith	8557 Thomas Ave	952-888-5284	2	1	3						Preference: Leave the street alone. Bikers bike there now and we still can park. Both have no problem.
Shirley Myrmel	8640 Queen Ave	952-881-3778		1				1			I feel Option 1 - 1st and foremost within budget. Making 2 bike trails particularly at 86th & Penn to 35W, the rest of 86th would become a problem. I can see kids and maybe adults switching from one side to the other in the middle of the blocks or wherever.
Harold Myrmel	8640 Queen Ave	952-881-3778		1				1			Be nice to have the sidewalk.
Bryant Broderick	8541 Russell Ave	952-888-4337	2	1	3						I like Option 2 because it provides a sidewalk all the way down 86th, but I don't think that my neighbors should lose the right to park in the street outside their house. I would rather that you continue the sidewalk and leave the rest of the street as it is.
Ross Kiehl	2720 W. 86th St	952-948-1765									Option 1: Leave existing road and parking. Option 2: Only if we cannot leave existing. This road is a residential side street and has been used safely for bicycle, walking, car traffic and parking for many years and should be left that way according to the response of the residents who live here.

Name	Address	Phone	Xerxes to Penn				Penn to I-35W				Comments
			Option 1	Option 2	Option 3		Option 1	Option 2	Option 3		
Kristen Olson	2800 W. 86th St	952-592-0911									I believe that the existing layout of the street is a good balance of ped/bike/motor. We don't currently have any issues with bike traffic at this time. If you feel the need to alter the roadway to cater to the bike traffic (which at this time is very limited), I feel that Option 1 is extremely disruptive to the day to day living of the residents both on and near 86th. Where should my 92 year old grandma park when she visits for Christmas? Over a block away on a side street? As for Option 2, I believe that is the best option because we are making a compromise but the disruption to the residents will only be slight. Option 3 is a terrible option because there really isn't enough traffic to require such a drastic change to the roadway. The value of my house will drop dramatically if you cut 6 feet into our property. We purchased our home 1 year ago. If we knew this was going to happen (causing us to lose on road parking or 6 feet of our property), we would never have purchased our home. The resale value is not ever going to be the same. No one wants to move into a home where they cannot park on the road. What are you supposed to do if you have a family get-together? Bus your family
Steve Scherping	2800 W. 86th St	612-803-3953									I am concerned about the cost/benefit of such a project. This type of City planning is prone to planning for special interests and irresponsible spending of taxpayer funds. If anything, this type of project should be funded by the stakeholders rather than grant money dangled in front of a misguided process for a study. Our area does not carry a substantial amount of foot or bicycle traffic. Justification on the idea that the project could increase such use seems to be unsupported. This type of initiative operates on planning of the 50's. It can easily utilize existing infrastructure, instead of creating more specialized codes and infrastructure that will not be utilized to capacity. Also, the options, other than the existing layout may have a significant impact on property values and benefits of the neighborhood.

Penn Av. To I-35W

Anne & David Ryan	2001 W. 86th St	952-884-1817					1	2	3		Major concern is the possibility of losing our ficus tree! Could there be far better options for bike paths than on this heavily trafficked street? Certainly not a street to encourage families to be using because of curves; sight lines are problematic.
Ingrid & Jim Lund	8754 Logan Ave	952-884-5840					1				Option 1 is better than others. However, we feel traffic should be only one lane from Penn to Logan for calming. We also feel that the sidewalk must be safe (widened and deeper toward the lake) for safety. Also where are plans for buses? Parking on north side is unnecessary - it is never used. Widening makes the road a raceway.
Greg Bormeister	1601 W. 86th St						2	1	3		Reducing traffic to one lane each way, there should be no on-street parking. Going westbound from 35W bridge going down hill with only one lane could be dangerous. One lane each way supports traffic load now, what about in the future?

[illegible]

86th Street Multi Modal Traffic Study - Open House Comments, March 29, 2010 I-35W to Nicollet Avenue

Name	Address	I-35W to Nicollet Avenue					Comments
		Option 1	Option 2	Option 3			
Russell Johnson	8600 1st Ave So	1	2	3			Remove Bus Stop
Kevin Rynda	8542 1st Ave So	1	2	3			No bus stop at corner just east of Nicollet Ave on right.
Dan Yetzer	1024 W. 86th St	3	1	2			For the options that are mentioned, I prefer Option 2 because of the full bike lane all the way through. I do not like Option 1because of the shared lane sections. Living on 86th I see many people biking this road and I feel they deserve a full lane all to themselves. I see many commuters on bikes on 86th and those times of the day are very busy on 86th. Thanks for asking for our input.
Laurie Beckman Yetzer	1024 W. 86th St	3	1	2			I'm concerned about safety with the "shared roadway" component near Lyndale Av. with Option 1. I prefer a dedicated bike lane all the way through. Thank you! I'm excited about this development on my street. I will use it.
Edward Souther	8544 Emerson Ave So	2	1	3			Cross lanes on Emerson & Bryant are used by neighborhood children to cross to Bryant Park. I wonder how to make it easier for them. I like having 86th a bike corridor. I would like to see cars slow down.
Delores Gilkeson	8520 Emerson Ave So						No! It's going to be hard for kids to cross 86th. The bikes will still use the car lane.
Brynn Yetzer	1024 W. 86th St	1	2	3			
Malia Esber	8627 Bryant Ave So	1	2	3			Because I live off of Bryant, I don't have too many concerns except if the number of traffic users increases as you predict. I don't logically see how going down to one lane each way will make a positive impact.
Mark VanderVegte	8508 Emerson Ave So	2	1	3			Would like to know more about costs. Like the idea of one lane on 86th. Hope enforcement of using neighborhood streets as short-cuts improve!
Marissa VanderVegte	8508 Emerson Ave So	1	2	3			Providing financial impact of which option.
Keith Johnson	8550 Bryant Ave So						Loss of parking on 86th doesn't seem like it should be a problem since I rarely see any one parked there. I really don't have a preference.
SuperAmerica	8600 Lyndale Ave So	1	2	3			
Joel Jennissen	3119 W. 88th St						I was unable to attend the open house for the section west of 35W so thought I'd take a look at the proposed changes. 1) I'd like to see a study on Option 1 where the bike lanes end and go back into traffic. 2) This would've been better presented with Option 4 (existing conditions) having the same highlighted paths, sidewalks, roads, etc. Plus it seems only Nicollet intersection currently needs attention. 3) Why aren't costs of each option presented? 4) Instead of eliminating 2 lanes of roadway to add bike paths, why can't the share the road policy work. 5) If bike paths are added, will there be additional enforcement of traffic controls with bicyclists? 6) If it costs more for the bike path options, will the costs be offset in any way? I didn't vote on any of the options as I believe the option of the existing road while fixing Nicollet is likely the best and least expensive option.
No Name		3	2	1			All options are superior to existing for bikes. Speed is very important (lack of consideration of residential foot traffic, especially during rush hour).
Pam Davis	1008 W. 86th St			1			Option 3 looks the safest.
Ed Field	8431 Wentworth Ave So	3	3	3			86th St. was made 4-lane for a reason to handle the traffic volume. Today traffic has increased and now you want it back to two lanes with bike lanes to accommodate a dubious amount of bike traffic. Are you nuts?

Name	Address	I-35W to Nicollet Avenue					Comments
		Option 1	Option 2	Option 3			
Susan Esber	8555 Aldrich Ave So	1	2	3			My driveway faces 86th Street and I am very concerned about cars bunching from Lyndale to Bryant. It is difficult to enter and leave my house now during rush hour. With these options, I feel this is a no-win situation for my particular property!
C.L. Stensrud	8710 Girard Ave So	2	1	3			
Janet Stensrud	8710 Girard Ave So	3	2	1			Lyndale to Nicollet is my reason semi's turn north in that stretch and Chieftain trucks and school buses turn south.
Walter Erickson	8720 Girard Ave So	2	1	3			
Ginger Erickson	8720 Girard Ave So	2	1	3			
Rebecca Garay	8721 Girard Ave So			1			With all the truck traffic Lyndale to Nicollet, I believe Option 3 with 5 lanes would be the best.
Jarrold S. Mueller	8718 Wentworth Ave So	1					
Karlla Senske	8541 Aldrich Ave. So	1	2	3			Option 1, in my opinion, would be the best selection. My main concern would be an increase in traffic on Aldrich Ave. especially going south to 86th St. Aldrich is narrow and traffic turning north from 86th onto Aldrich creates a problem especially when there is only on side street parking. Hard to make the turn when another car is at the stop sign. Also have had traffic coming west on 86th come over the hill at Lyndale and almost rear-end cars that want to turn north on Aldrich. Had many cars almost "in my trunk" when I make that turn.

86th Street Multi Modal Traffic Study - Open House Comments, March 29, 2010

Nicollet Avenue to East Old Shakopee Road

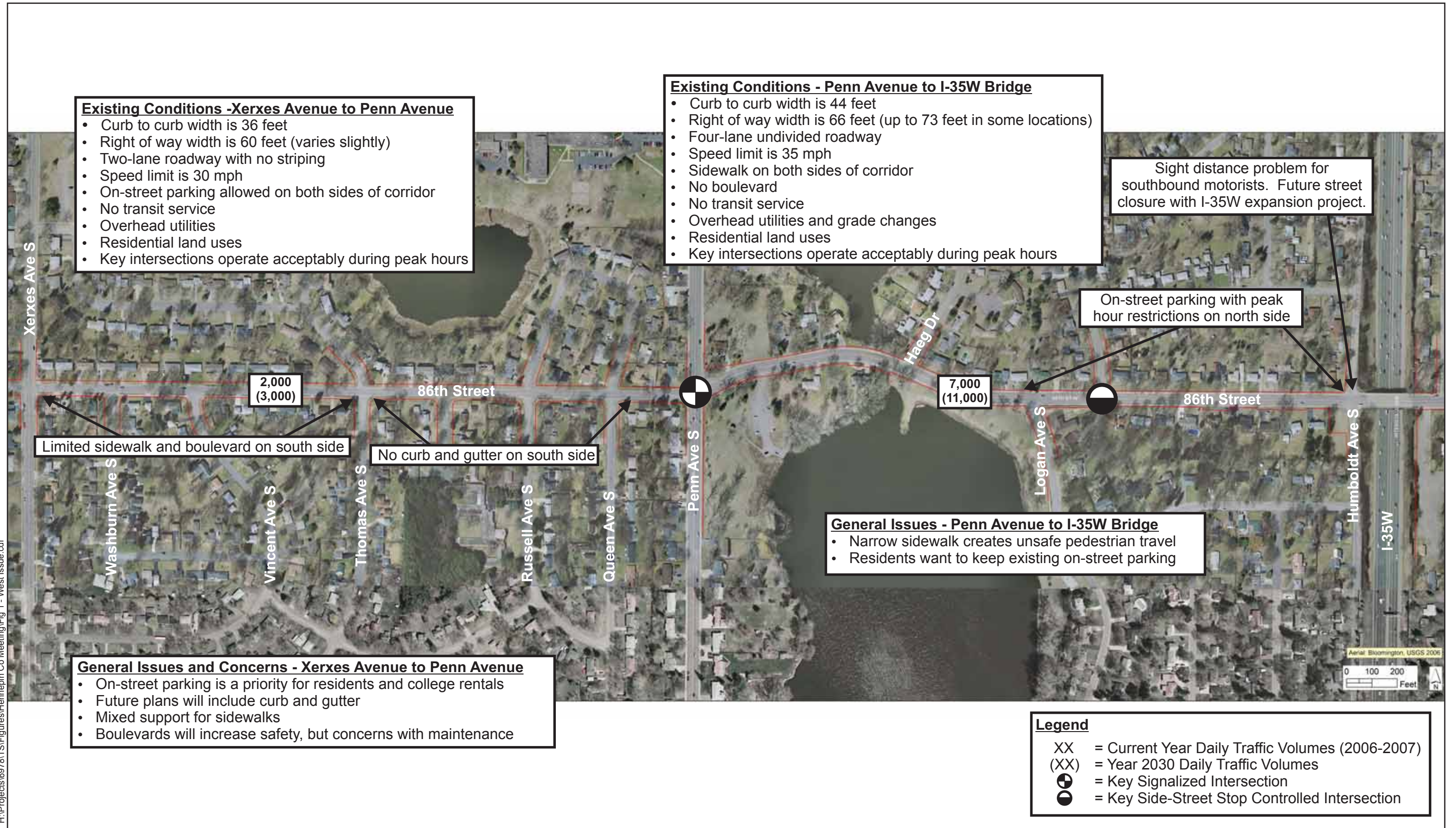
Name	Address	Nicollet Avenue to EOSR					Comments
		Option 1	Option 2	Option 3			
Sherwood Boyer	8544 5th Ave S	2	1	3			The Portland intersection definitely needs improvement due to problems with drivers speeding up to make it thru the intersection. I don't see much difference between 1 & 2.
Diane M. Ramsden	8542 2nd Ave S	3	2	1			Safety on 86th is my main concern and I like the plan for widening any of the main intersections especially on Portland. Pedestrians are sometimes forced to walk in the street when sidewalks on 86th are not attended to. Slower speeds along 86th Street would also be nice !
Irene Heintz	8613 Oakland Ave	1	3	2			We have so many accidents on Portland/86th. Please keep this in mind. Will it make it hard to get onto 86th Street from Oakland if we have a lot of bikes?
Jon Oleson	8725 2nd Ave S		1				Please "lessen the dips" in Nicollet & Portland intersections! Option 2 with understanding left turns are controlled by arrows.
Barbara Prinz	8617 Chicago Ave S	3	1	2			Option 2 - prefer due to greenway.
Robert A. Phenix	8614 Clinton Ave S	2	3	3			1) There needs to be sidewalk between Valley View Elementary School and 86th Street. 2) Leave 86th as is with turn lanes at Nicollet - Portland - Lyndale.
Lynnette Phenix	8614 Clinton Ave S	1	3	2			
Mike Spratt	8600 Clinton Ave S	1	3	2			Best to repave and leave lanes as they are. Road is too fast for bike traffic.
James Osweiler	8513 1st Ave	2	1	3			Please try and work with county to at least get left turn arrows on the stop lights, both for 86th Street and Nicollet.
Theresa Osweiler	8513 1st Ave	2	1	3			Not enough facts for future planning. What age will area people be? Less or more gas vehicles? Need much wider wheel (bike lane) paths for ages 60 and over to drive electric scooters and walk dogs. Hardly ever use bikes. Don't grow bigger than you can take care of or have dollars for. Improve what you have. No potholes or fill often. No ice on sidewalks. Keep runoff drains open. Cater to pedestrians not traffic on 86th.
Danna Conzemius	9301 3rd Ave	2	3	1			I believe that with only one or two medians, people will not know they are there and people may drive on them or get stuck on them.
Michael Retterath	8524 1st Ave S	3	3	3			The existing 4-lane configuration allows adequate traffic flow around service vehicles, delivery vehicles, buses, and cars turning at intersections. It does not correct the problem of snow on sidewalks in the winter. Please consider leaving the 4 lanes and stencil "Yield to Bicycles" at every block in the right lane or widen existing sidewalks to allow bikes and pedestrian traffic off-street.
Marty & Becky Conzemius	8700 Park Ave S	2	3	1			
Art Inselmann	1610 E. 86th St	2	3	1			
Darwin Muzzy	1516 E. 86th St	3	1	2			Option 1- I like the pedestrian median at the crosswalk signal. The length of center curb island needs to be modified to allow 1508 & 1516 E. 86th to access our driveway from both directions. Option 2 - I like the improvement at Cedar Av, left turn lane west onto 86th Street. Thank you for asking our input with the proposed project. I have always been concerned for the pedestrian and kids on bicycles riding along our busy narrow sidewalk street.

Name	Address	Nicollet Avenue to EOSR					Comments
		Option 1	Option 2	Option 3			
Barb Inselmann	1610 E. 86th St	3	1	2			Regarding Option 3, we do not live close to an intersection. It's difficult to be objective since it does not affect our house. Positive side: That there will be no assessments added to our taxes and foot traffic will not be closer to our house. Regarding Option 3: After looking at the number of crashes at large intersections, I changed the numbering from 3 to 2.
Laurel Crewe Cibik	1305 E. 86th St	3	1	2			I'd like to see both medians and improved intersections. I'd really like to see boulevards installed between sidewalk and street. I'd be willing to give up some of my front yard to have boulevard installed on the south side. (I know that's not being proposed). I am in favor of whatever option slows traffic as much as possible.
Elizabeth Slaby	8500 Columbus Ave S	2	3	1			Option 2: I do not like because of the barriers - they are a hazard. Option 1: Was OK but I like the extra turn for Portland that Option 3 has.
Thomas P. Slaby	8500 Columbus Ave S	2	3	1			Option 1 - no turn lane for Portland right turns. Option 2 - dislike center barriers, drivers will be hitting them.
Bill Brown	8649 22nd Ave S						I don't have a preference on the above options but are you aware of the traffic that uses 22nd Avenue as a thoroughfare to avoid the light at 86th and E. Old Shakopee? I believe it is more than it should be. There are lots of children on this street (22nd). Thanks.
Christine Simons	1214 E. 86th St	1	3	2			I feel that the raised vegetation would get in the way.
Zak Simons	1214 E. 86th St	1	3	2			I feel that widening the intersections is not necessary. Traffic moves along well enough in this area. The raised vegetation would look nice in better economic times but not necessary right now.
No Name		3	2	1			
John F. Perry	8631 3rd Ave S	2	3	1			
Sue Jorgensen	8530 2nd Ave S	3	2	1			
Tom Jorgensen	8530 2nd Ave S	3	2	1			
Lorraine R. Eggan	8600 Oakland Ave S	2	3	1			We might have less accidents on Portland and 86th if there is a left turn lane going east. Going west with right turn isn't as important. They don't seem to have that many accidents. We are usually the first to respond if home.
Dean Ginter	8601 Bloomington Ave S	1	3	2			
Carolyn Stadlher	8406 Columbus Ave S	1	3	2			(745 E. 86th Street - own this house) House on east side of 86th and Columbus has shrubs along sidewalk. They block your view of oncoming cars.
Wayne Eggan	8600 Oakland Ave S	2	3	1			Option 3 - includes an extra turn lane at 86th and Portland.
Kay Steffes	8543 Stevens Ave S	1	2	3			The study results and photo boards were excellent. I appreciate the high quality and the hard work behind them. Widening the roadway would reduce property size for homeowners. I prefer Option 1 because it is most like what we currently have. Regarding health, what I see is very young kids on scooters going down 86th Street. Please help me prevent a fatality(ies) or injuries by address this issue.
Robert Bump, Sr.	8616 1st Ave S	1	2	3			Where is current traffic going to go? 86th & Nicollet is four lane now and crowded at rush hour. Traffic is heavy on 86th Street at rush hours.

[illegible]

Appendix B. Study Figures

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Existing Conditions - I-35W Bridge to east of Nicollet Avenue

- Curb to curb width is 44 feet
- Right of way width is 64 feet west of Lyndale Avenue
- Right of way width is 80 feet+ east of Lyndale Avenue
- Four-lane undivided roadway
- Speed limit is 35 mph
- Sidewalk on both sides of the corridor
- Boulevard varies
- Transit service east of Lyndale Avenue
- Overhead utilities mainly on the south side
- Residential and mixed land uses
- Large intersection at Lyndale Avenue
- Key intersections operate acceptably during peak periods

On-street parking with peak hour restrictions on north side

7,000
(15,000)

86th Street

At-grade railroad crossing

9,000
(15,000)

Disabled users due to nearby clinic

General Issues and Concerns

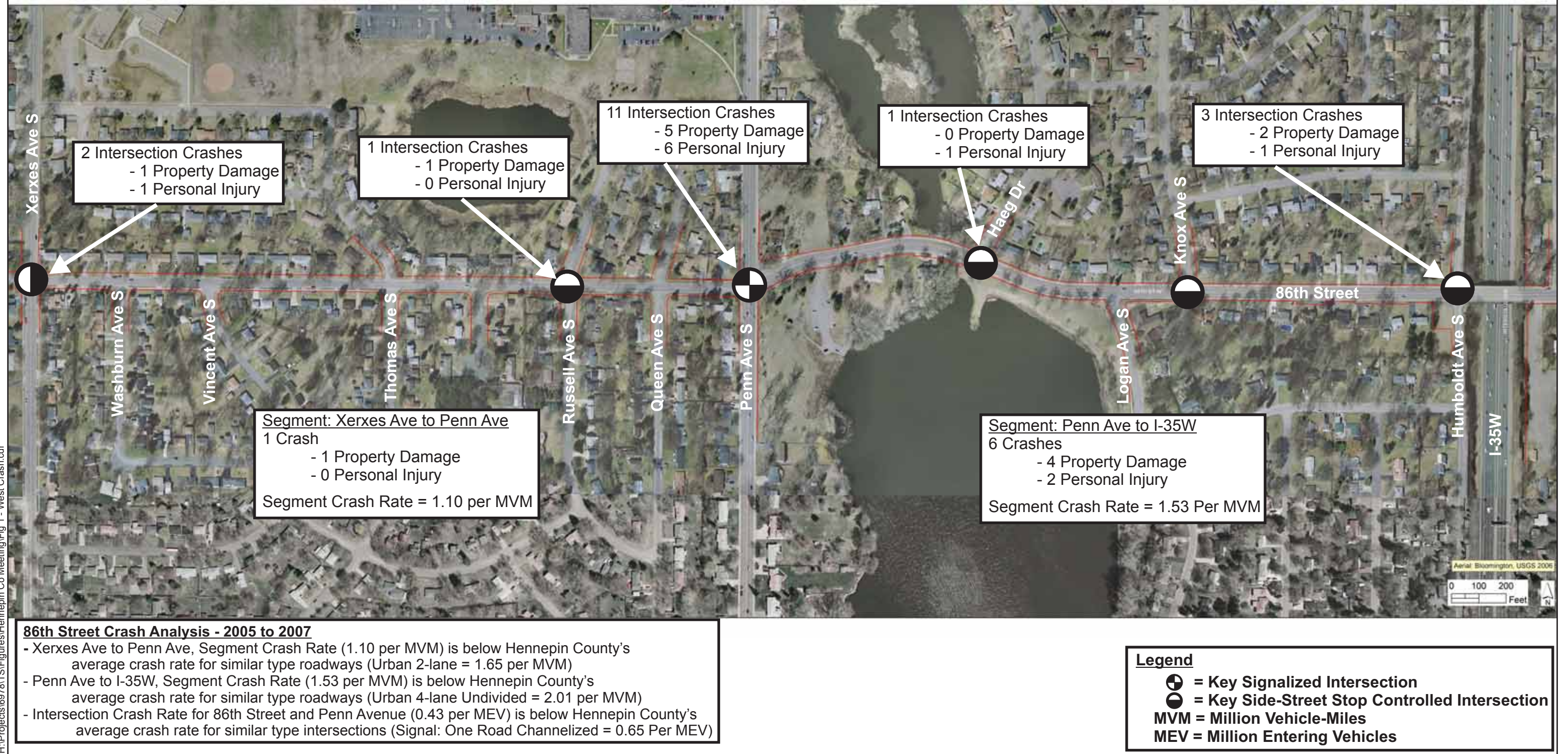
- Need to provide safer pedestrian and bicycle facilities
- Lack of sidewalk is a concern for Metro Transit
- High truck traffic volumes at Lyndale Avenue and into the nearby businesses

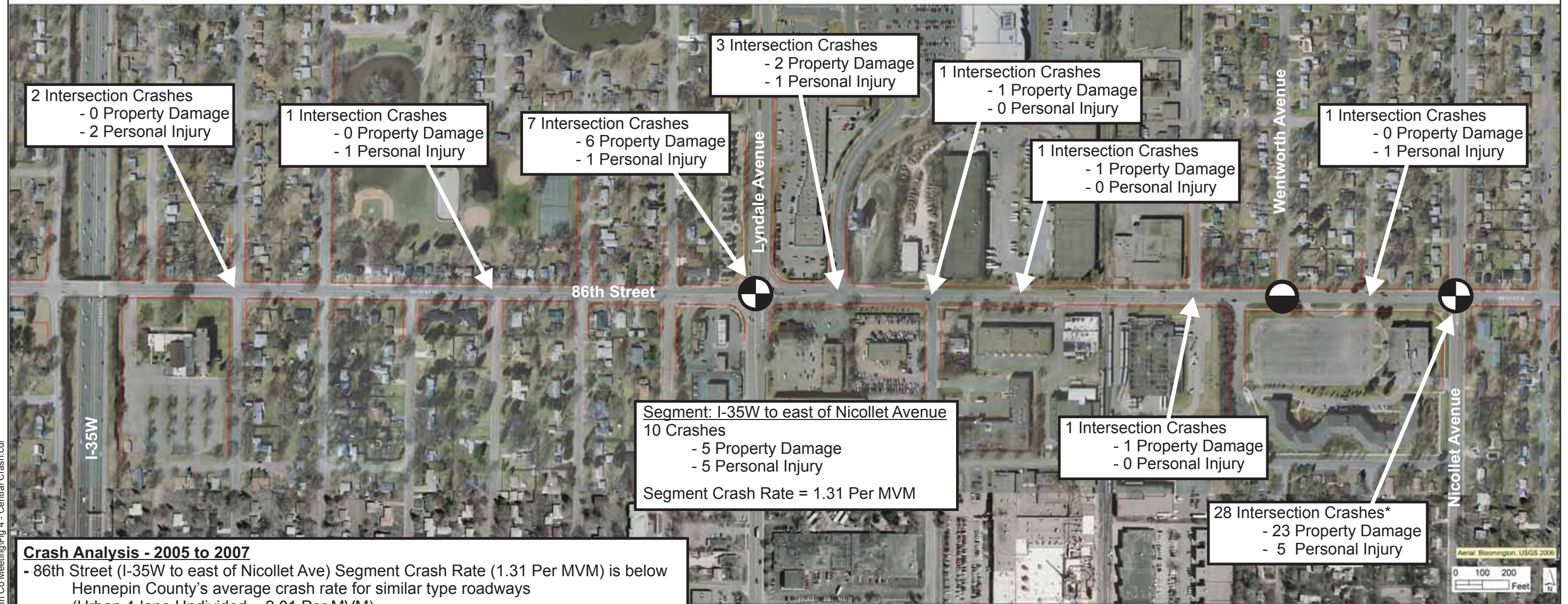
Legend

- XX = Current Year Daily Traffic Volumes (2006-2007)
- (XX) = Year 2030 Daily Traffic Volumes
- ⦿ = Key Signalized Intersection
- = Key Side-Street Stop Controlled Intersection



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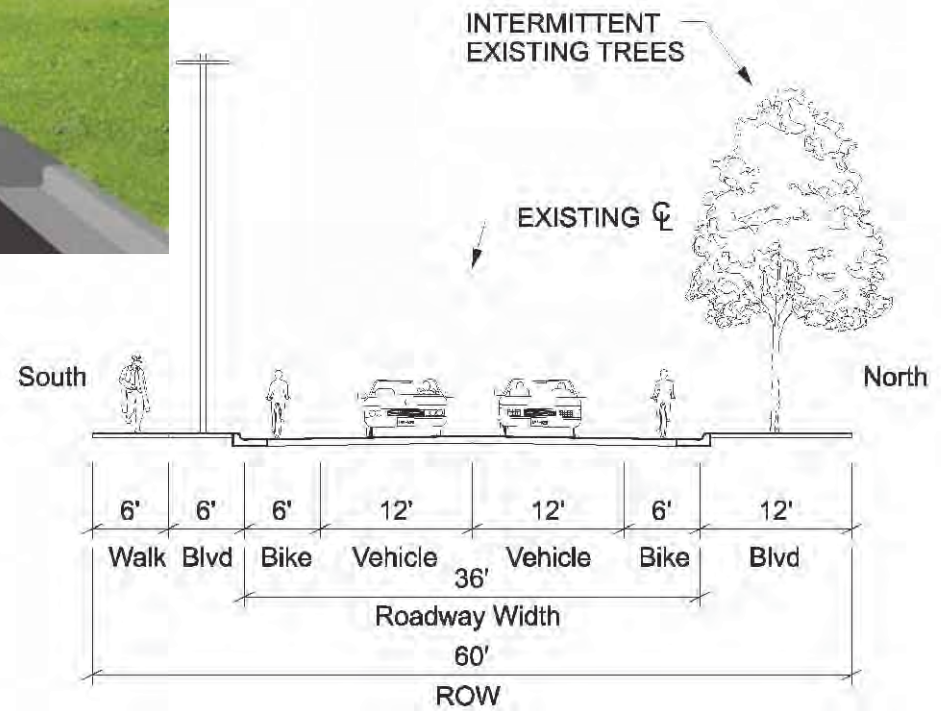
Crash Analysis - 2005 to 2007

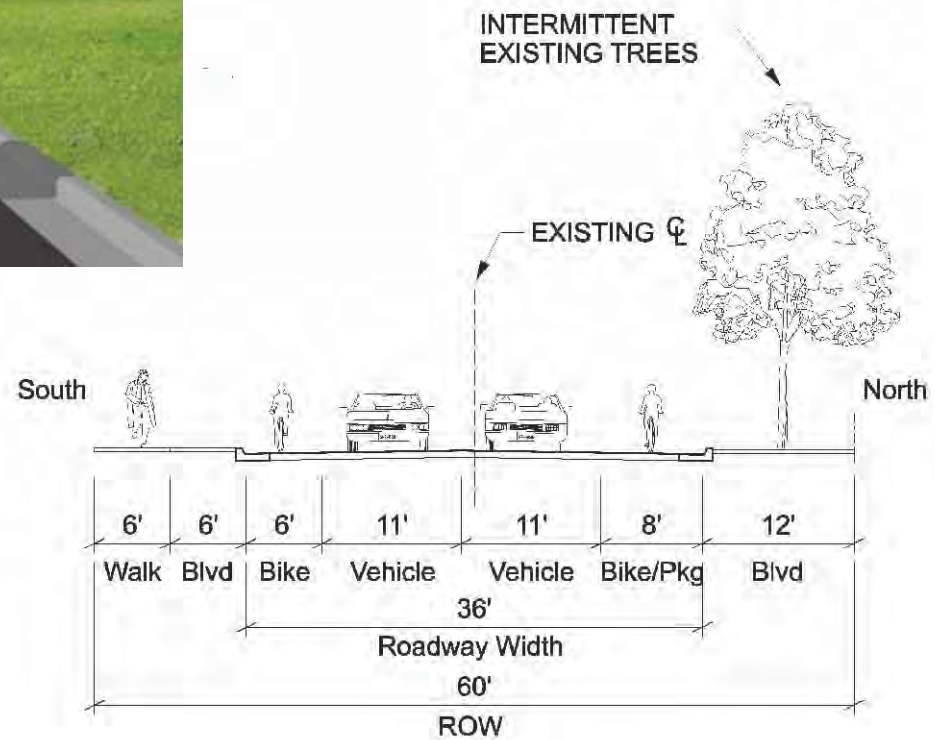
- 86th Street (I-35W to east of Nicollet Ave) Segment Crash Rate (1.31 Per MVM) is below Hennepin County's average crash rate for similar type roadways (Urban 4-lane Undivided = 2.01 Per MVM)
- Intersection Crash Rate for 86th Street and Lyndale Avenue (0.28 Per MEV) is below Hennepin County's average crash rate for similar type intersections (Signal: Both Roads Channelized with stub island = 0.50 Per MEV)
- Intersection Crash Rate for 86th Street and Nicollet Avenue (1.34 Per MEV)* is above Hennepin County's average crash rate for similar type intersections (Signal: No Channelization = 0.85 Per MEV)

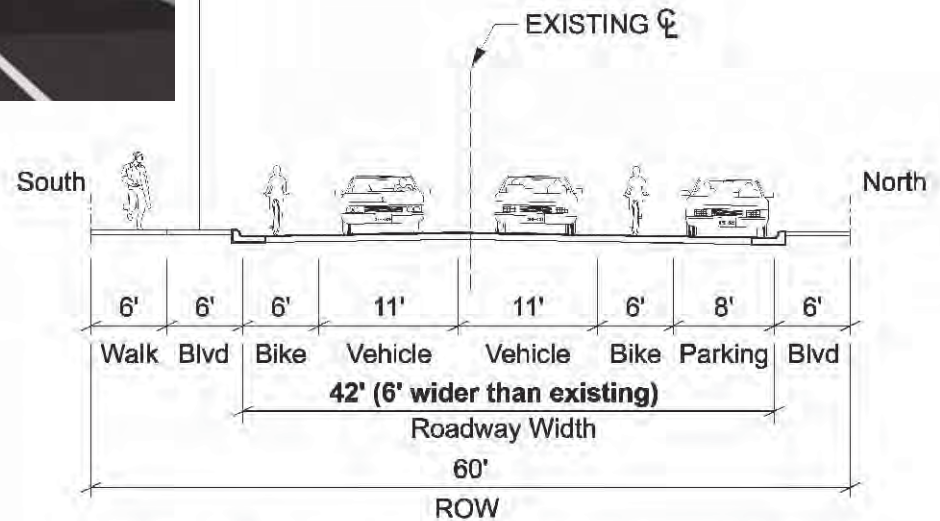
* Note: Year 2007-2009 data was used for 86th Street and Nicollet Avenue

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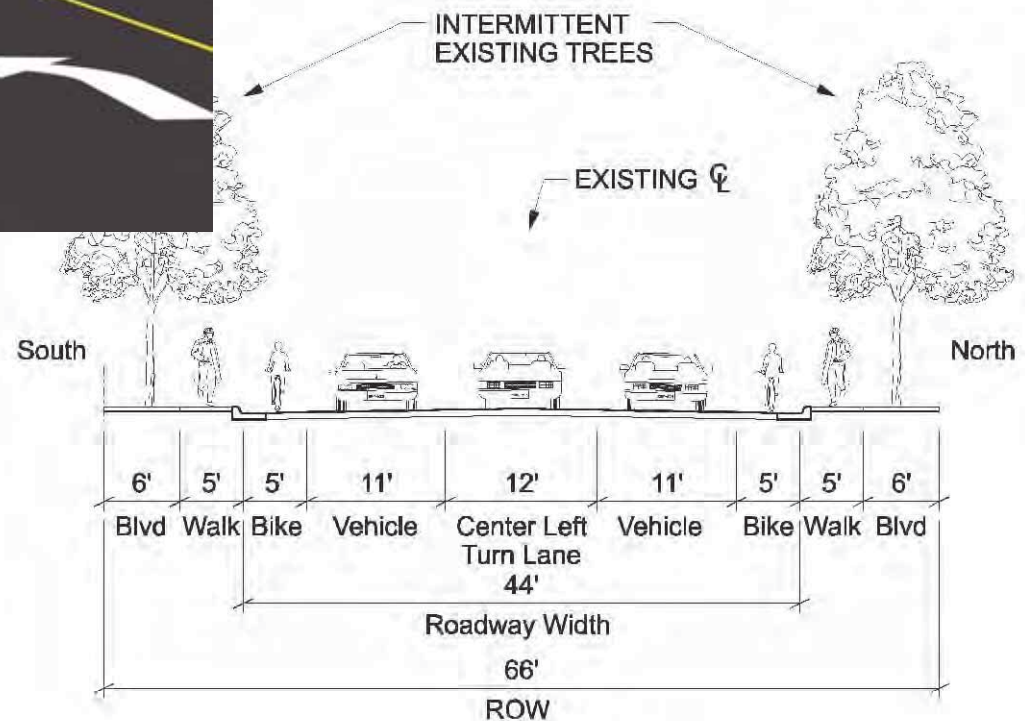


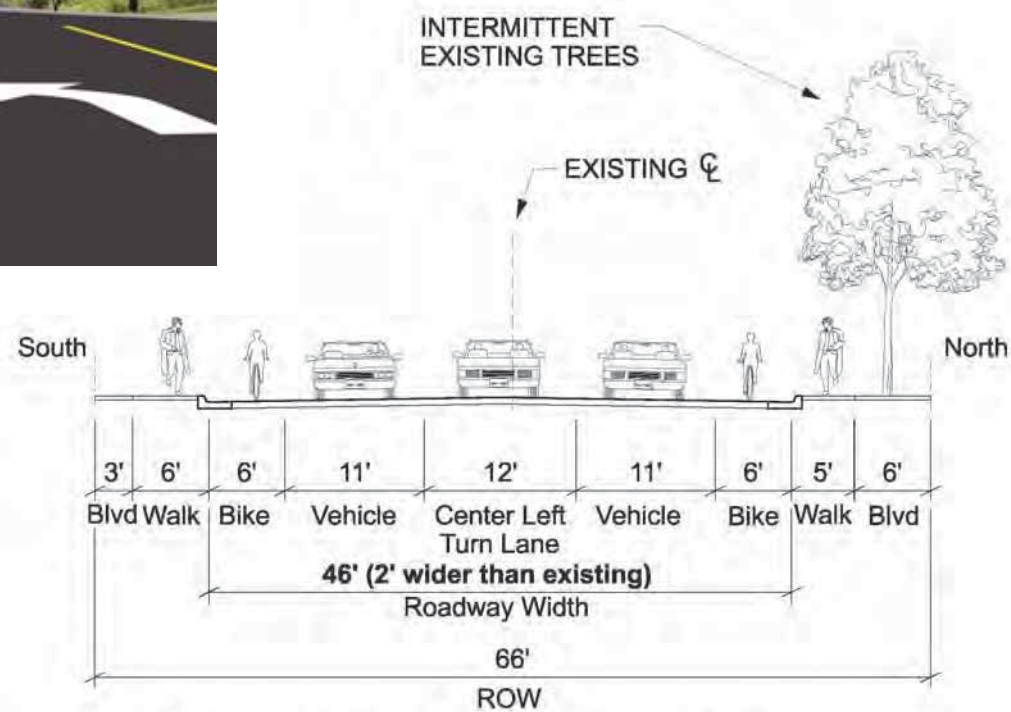




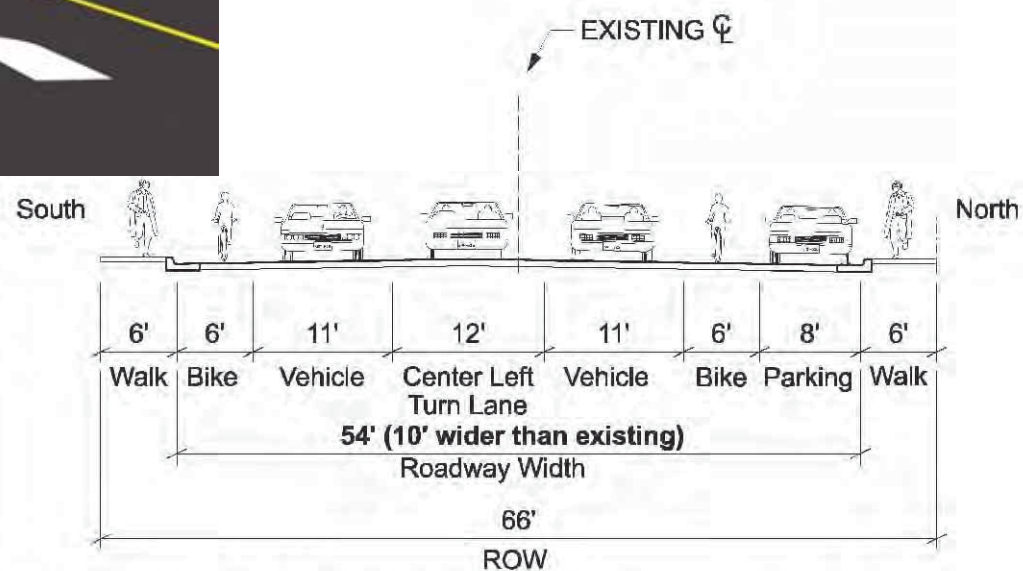


Note: South curb stays and the north curb moves 6 feet.

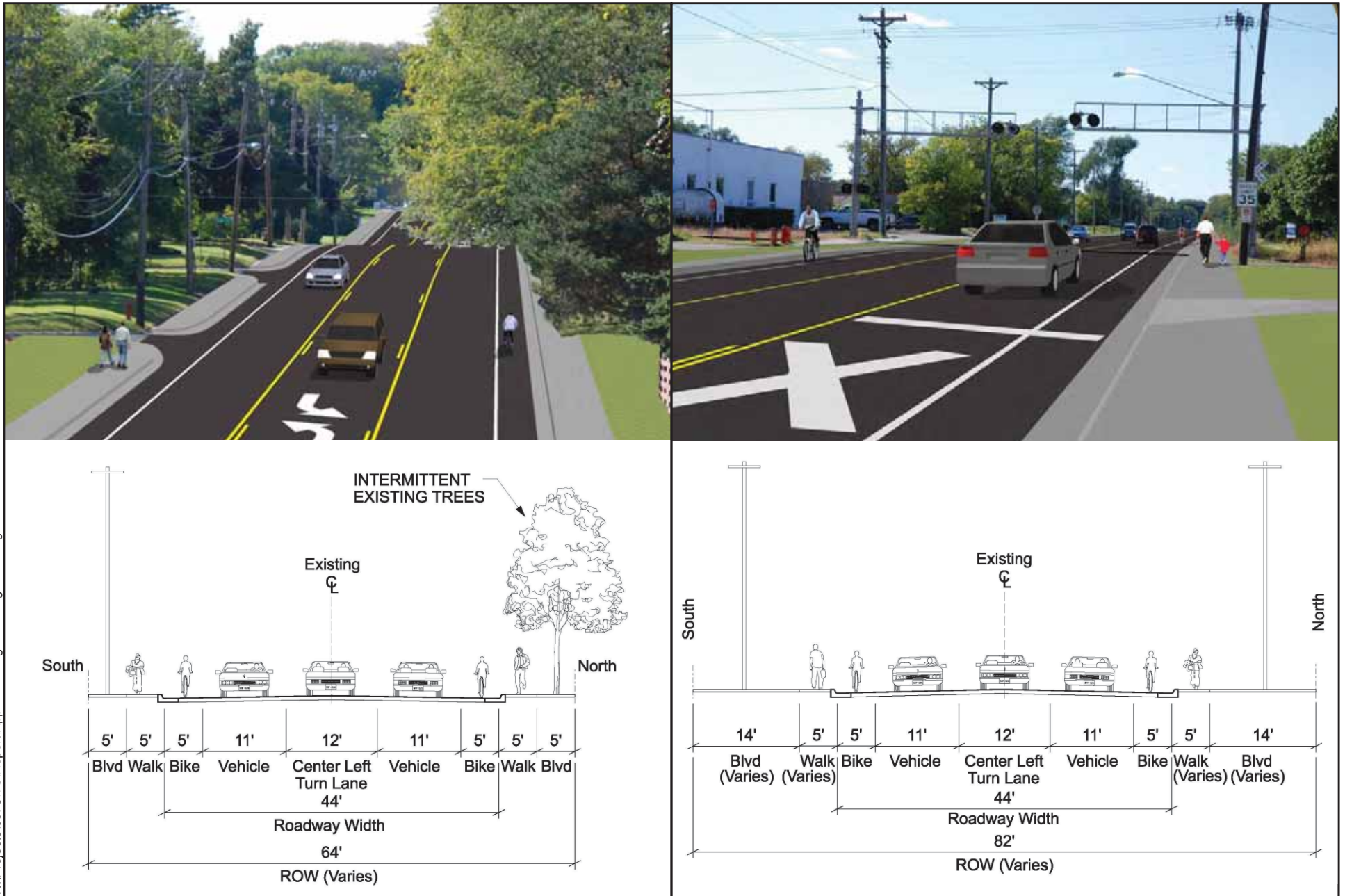


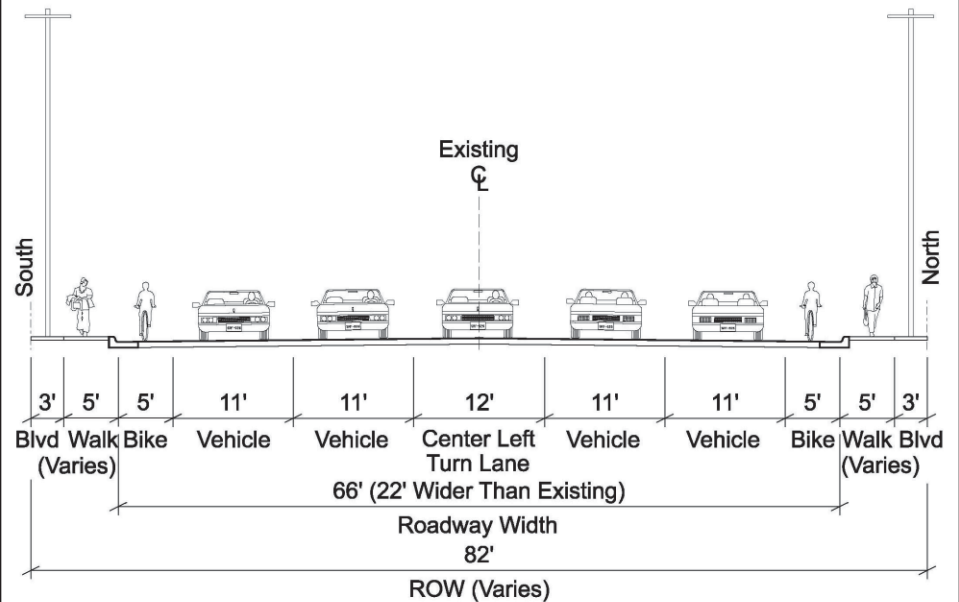
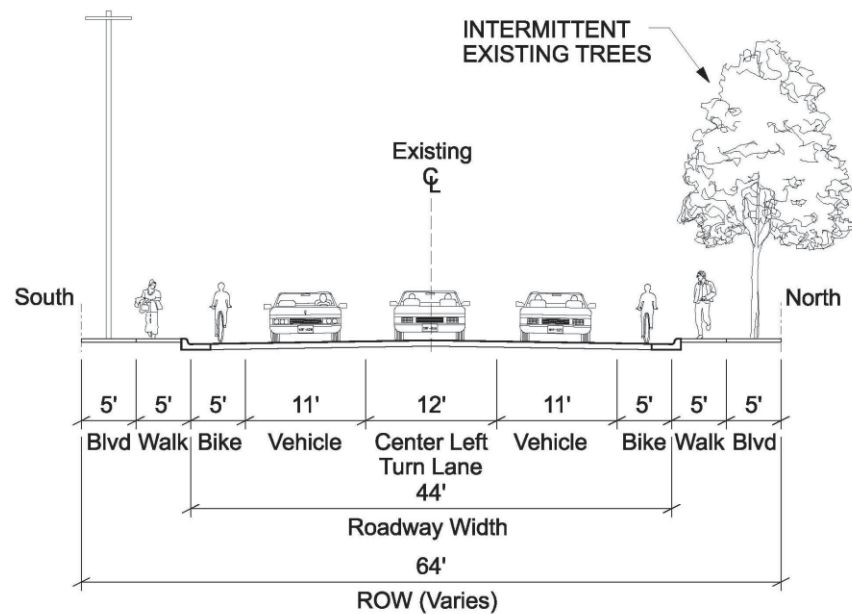


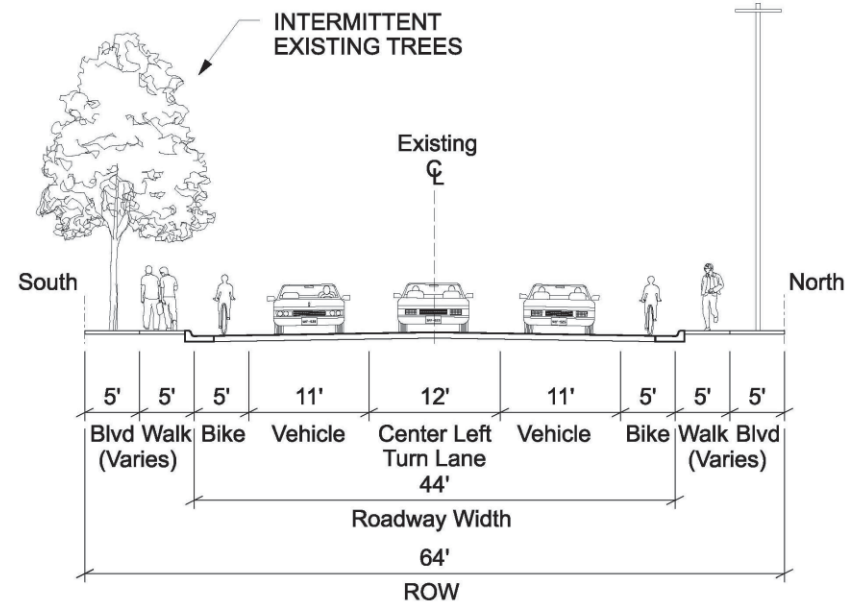
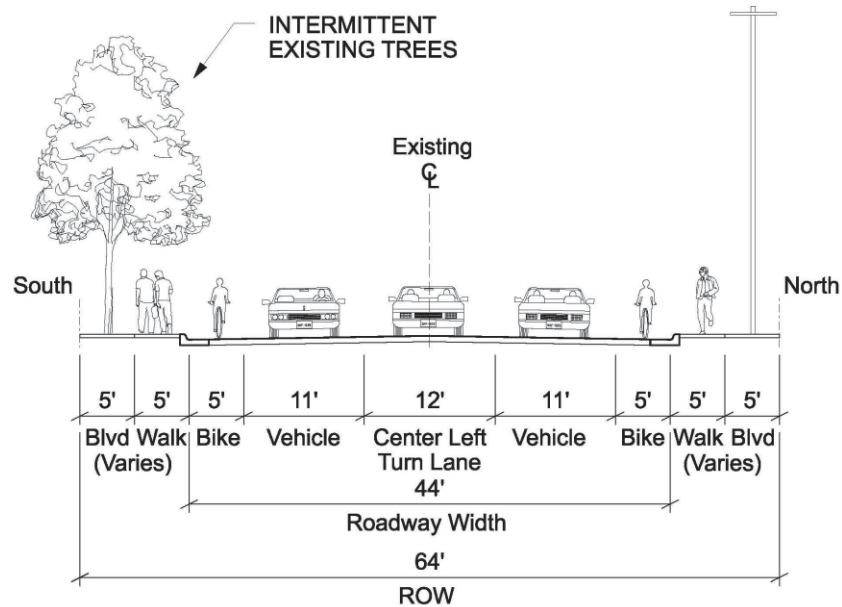
Note: North curb stays and the south curb moves 2 feet.

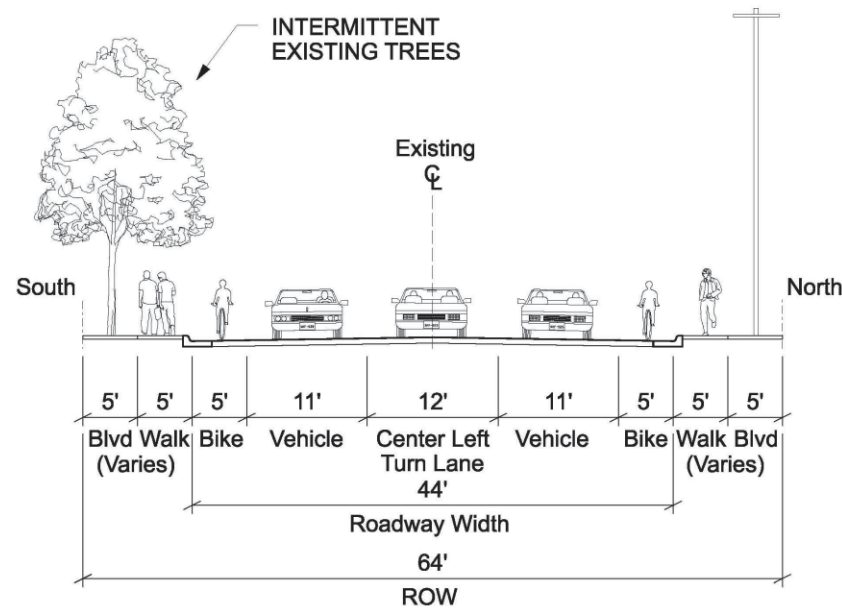
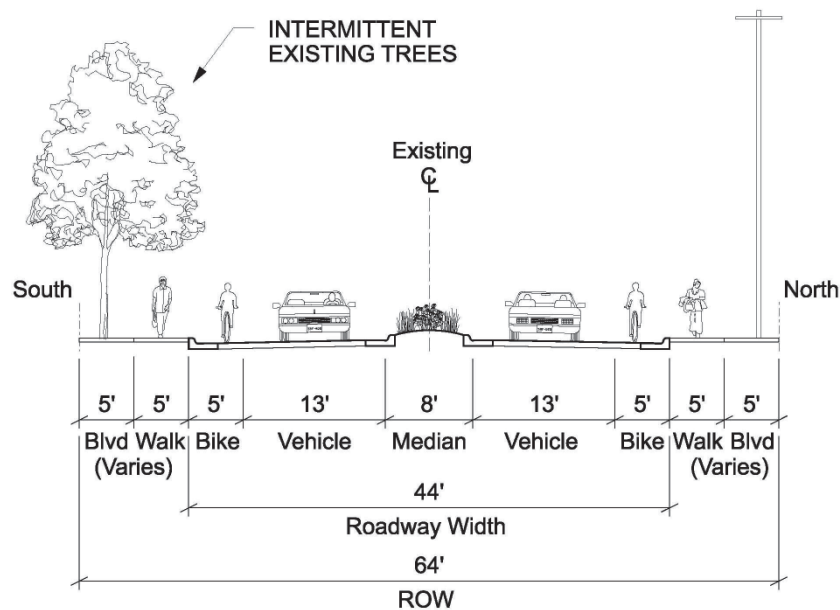


Note: Both curbs are moved to keep roadway within right-of-way.









Appendix C. Rapid HIA Executive Summary

Rapid Health Impact Assessment of the 86th Street Corridor Multi-Modal Traffic Study

Executive Summary

The City of Bloomington Public Health and Traffic Engineering staff conducted a Rapid Health Impact Assessment (HIA) as part of the 86th Street Corridor Multi-Modal Traffic Study. The purpose of the Rapid HIA of the 86th Street Corridor Multi-Modal Traffic Study was to determine the design factors that affect overall health. The 86th Street Corridor Multi-Modal Traffic Study aims to develop a preliminary design that allows for safer travel using various modes of transportation, i.e., vehicles, public transit, pedestrian and bicycles.

HIA Workshop

On March 3, 2010 the Bloomington Public Health Statewide Health Improvement Plan (SHIP) Community Liaison facilitated the Rapid HIA Workshop. Workshop participants were recruited from the 86th Street Multi-Modal Traffic Study Stakeholders Group and included representation from City Engineering, Public Health, City Parks and Recreation, City Police, Chamber of Commerce, residents and SRF Consultants, Inc. The agenda for the HIA Workshop included an introduction to HIAs and Bloomington health statistics, city demographics, health profile statistics, Alternative Transportation Plan (2008), 86th Street land uses, and 86th Street issues map.

The majority of the Rapid HIA Workshop was devoted to discussion in response to the question: What are the health impacts of the 86th Street Corridor Multi-Modal Traffic Study? Workshop participants brainstormed ways to enhance the positive impacts on health and mitigate the negative impacts on health.

Themes that evolved from the discussion were:

- bike/pedestrian safety
- automobile safety
- access
- recreational opportunities
- traffic
- crime

HIA Information at Open House

On March 29, 2010 an Open House was held for additional community input. Community members and residents were invited to attend the event. City staff created a display board using the themes and discussion responses that arose from the HIA Workshop.

Participants at the Open House received information about the Rapid HIA process and SHIP. Each participant was asked to rank their top three responses to the following question: Based on your experiences, what health concerns do you have about 86th Street? Participants placed stickers on the display board next to the health concerns that they have

about 86th Street. Conversations with participants prompted the addition of several health concerns to the display board (noted in bold).

Based on your experiences, what health concerns do you have about 86 th Street?	
Bike/Pedestrian Safety	Automobile Safety
• Lighting	• Left turn lanes
• Lane Markings	• Sightlines
• Signage	• Crosswalks/pavement markings
• Sidewalk width and placement	• Ice on roadway
• Other motorized vehicles	• Potholes
• Ice on Sidewalks	
Access	Recreational Opportunities
• Bike Racks	• Access to parks
• Getting to 86 th Street	• Use of sidewalks
• Bringing people to the area	• Use of roadway
• Shortcuts to other roadways	
Traffic	Crime
• Speed	• Lighting
• Pedestrian Crossings	• Sightlines
• Emissions	• Lurking

Speed was the most common health concern described by participants at the Open House. Seventeen stickers were placed next to speed and comments from participants include:

- “People drive between 45 and 50 miles an hour between 1st and 2nd Avenues.”
- “I agree that traffic flows too fast on 86th Street.”

Participants also noted that sidewalk width and placement is a health concern. Eleven stickers were placed next to this issue and comments from participants include:

- Sidewalks are “too narrow, and right next to the street.”
- “I don’t let my kids use the sidewalk on 86th Street because it’s not safe.”

Participants placed stickers next to lighting as part of Crime and Bike/Pedestrian Safety. A total of ten stickers were placed next to these issues however, no comments were captured from participants about lighting.

Pedestrian crossings and ice on sidewalks were described as health concerns by participants at the Open House. Nine stickers were placed next to each of these issues and comments from participants include:

Pedestrian Crossings

- “I’m very concerned about safety and kids being able to cross.”
- “It’s difficult to get across 86th Street in traffic.”

Ice on Sidewalks

- “People using the bus stop have to walk in the street.”

HIA Recommendations

City staff shared the combined results from the Rapid HIA Workshop and Open House with the 86th Street Corridor Multi-Modal Traffic Study Stakeholders Group. The Rapid HIA was incorporated into the design recommendations for 86th Street and presented at the June 7, 2010 Bloomington City Council meeting.

The concern about the speed of traffic on 86th Street was directly addressed in the recommendations with a modified lane configuration. A modification of a 3-lane striping conversion has been used on similar roadways in Bloomington and has resulted in reduced speeds.

The sidewalk on the corridor is not projected for reconstruction due to the limitations of public right-of-way on the corridor. However, by restriping the roadway into the 3-lane configuration the vehicles will be moved away from the curb and sidewalk and there will be a five foot on-street bikeway to serve as a buffer between the pedestrians and the vehicles. This change will address the concerns about the width and placement of the sidewalk.

With a limited number of controlled intersections along 86th Street, concerns were expressed with pedestrian safety crossing 86th Street. With a modification to the 3-lane striping configuration pedestrian crossing safety will be improved. With this configuration, pedestrians only have to maneuver across a single lane of traffic at a time and can use the center turn lane (with low vehicle frequency) as a refuge to wait for a traffic gap before proceeding across the last through lane.

Bus stop locations and street light placement will continually be evaluated along the corridor to address resident concerns with safety.

Summary

The City of Bloomington Public Health SHIP Liaison and Traffic Engineering staff conducted a Rapid HIA as part of the 86th Street Corridor Multi-Modal Traffic Study. During the Rapid HIA Workshop and Open House, participants expressed health concerns that were included in the HIA. The Rapid HIA was incorporated into the design recommendations for 86th Street that were presented to and accepted by the City of Bloomington City Council.

References

City of Bloomington. 2008. Alternative Transportation Plan. Accessed online at: <http://www.ci.bloomington.mn.us/cityhall/dept/commdev/planning/longrang/alttranplan/draft.htm>.

Design for Health. 2008. Rapid Health Impact Assessment Toolkit. Version 3.0. www.designforhealth.net

Robert Wood Johnson Foundation (RWJF) and the Pew Charitable Trusts. 2009. Health Impact Projects. Accessed online at: <http://www.healthimpactproject.org/hia>.