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MAPO
MANKATO/NORTH MANKATO AREA PLANNING ORGANIZATION

BLUE EARTH COUNTY

Mankato/North Mankato Area Planning Organization (MAPO)

South Bend Safe Routes to Multimodal Final Report

South Bend Township, Minnesota
December 2022

Submitted by:
Bolton & Menk, Inc.
1960 Premier Drive
Mankato, MN 56001
P: 507-625-4171
F: 507-625-4177

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I. Introduction

The Mankato/North Mankato Area Planning Organization (MAPO), with assistance from Blue Earth County and South Bend Township, is examining portions of CSAH 33 (Hemlock Road) and CSAH 69 (South Bend Avenue) in South Bend Township to consider options for safe, multimodal options that provide more travel opportunities for people living and working in the area (Figure 1 Placeholder). These roads provide important connections for residential development and variety of commercial and industrial uses along the corridors to US 169, the City of Mankato, and beyond. CSAH 33 and CSAH 69 do not currently have any dedicated facilities for people walking or bicycling. MAPO, Blue Earth County, and South Bend Township desire to define a comprehensive vision for CSAH 33 and CSAH 69 in preparation for future street reconstruction projects. The study included:

- Defining the issues and potential opportunities along the corridors
- Establishing a corridor vision and goals
- Developing and evaluating potential multimodal infrastructure improvement alternatives
- Developing an implementation plan in preparation that identifies potential projects and cost estimates

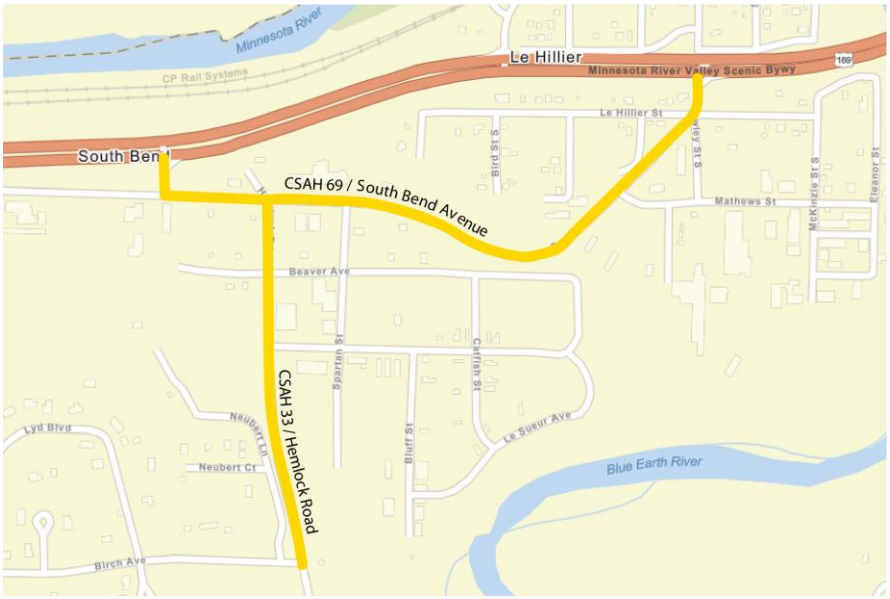


Figure 1. Corridor Study Area

II. Study Partners

The South Bend Safe Routes to Multimodal study was a joint effort between:

- MAPO
- Blue Earth County
- South Bend Township

These agencies served as a project management team (PMT) and met throughout the study process to review project materials, discuss study progress, and develop technical deliverables.

III. Public Involvement

Public involvement was an integral part of the South Bend Safe Routes to Multimodal Study. Input from business owners, property owners, interested citizens, elected officials and other corridor users was critical to understanding issues and needs and to vet improvement concepts and priorities. A technical memo that provides a detailed summary of public involvement undertaken for this study is included in **Appendix A** for reference.

The following methods were used to promote public involvement during the study:

1. *Pop-Up Meeting* – Project staff met with business owners and residents at the South Bend Township at the South Bend Firefighter's Relief Association Golf Tournament on September 24th, 2022. This event was located at Minneopa Golf Club, approximately one mile west of the study area. The same day, project staff also held a pop-up at the Clarks Service Station, located at the CSAH 69's eastern access to US 169. A project sign-in sheet was present at both pop-up events, and ten people signed up the receive project updates.

2. *Township Board Update* – Project staff made a presentation to the South Bend Township Board on October 4th. A quorum was not met, so no official meeting was held. Project staff discussed the project and alternatives with the two board members present.

3. *County Board Updates* – Project staff made a presentation to the Blue Earth County board on October 4th. The board didn't have any questions or comments.

4. *MAPO Updates* – Project staff made a presentation to the MAPO Transportation Advisory Committee Meeting on October 20th and the MAPO Policy Board on November 3rd. Neither group had any questions or comments.

5. *Study Communications* – The South Bend Township website was updated to inform the public of the South Bend Safe Routes to Multimodal Study.

IV. Existing Conditions

Existing conditions were documented for CSAH 33 and CSAH 69 with a focus on previous studies, land use, traffic operations, safety, access, pedestrian/bicycle accommodations, and environmental resources. This information served as the basis for developing improvement goals for CSAH 33 and CSAH 69 into the future and was also the basis for the technical study analysis. A detailed Existing Conditions technical memo was prepared and is included in **Appendix B** for reference.

Early in the development of the study, the project team identified several specific environmental and anthropological factors along the project corridor that could feasibly present environmental justice issues, which would in turn warrant specific mitigation strategies to prevent disproportionate impacts to vulnerable populations and resources. This study prepared a preliminary Environmental Justice analysis following guidance set by the Environmental Protection Agency (EPA) and the National Environmental Policy Act (NEPA). The results of this initial analysis were compiled into a technical memo and included in **Appendix C** of this report.

Additionally, a Purpose and Need Framework was developed based on study findings and is included in **Appendix D** for reference. This document has been developed to aid in any future NEPA documentation that may be required based on project impacts and funding opportunities.

Key elements of existing CSAH 33 and CSAH 69 conditions are as follows:

A. Transportation System Characteristics

In the context of the overall transportation system, CSAH 33 serves as a major collector under the jurisdiction of Blue Earth County and provides a key connection between CSAH 90 (Hawthorne Road) and CSAH 69. The road speed is signposted for 30 miles per hour and has a significant vertical curve between Birch Avenue and Beaver Avenue, and steep embankments on either side of the right of way. CSAH 33 is the primary access for the Blue Earth County Recycling Center and the Waste Management Hauling and Transfer Station, as well as assorted housing developments.

CSAH 69 is a minor collector also under the jurisdiction of Blue Earth County and provides a key connection between CSAH 33's northern terminus at Highway 169 and Highway 169 at Hawley Street. The roadway is signposted at 40 miles per hour and has a significant horizontal and vertical curve between Spartan Street and Matthews Street.

Pavement condition data from the 2045 LRTP Update reported that pavement quality for the entirety of CSAH 33 between Birch Avenue and CSAH 69 was deemed satisfactory. A two-lane rural reconstruction with safety improvements was identified as an illustrative project in the same plan.

The areas east of CSAH 33 south of the project study area include potential future residential development, which would influence traffic and use along CSAH 33. Likewise, the improvements suggested by the Highway 169 corridor study would have significant impacts on use and traffic along CSAH 69.

B. Traffic Operations

CSAH 33

CSAH 33 in the study area links US Highway 169 to CSAH 69 at it's northern terminus and Hawthorne Road to the south. This segment of the CSAH 33 had an estimated 2021 average annual daily traffic (AADT) of 3,233 vehicles per day (VPD), as per MnDOT's Traffic Mapping Application. The volume of traffic along the study portion of CSAH 33 is projected increase to 5,100 VPD by 2045, as per the MAPO 2045 Long Range Transportation Plan Update. This increase in traffic volume will likely have significant impacts to level of service at the intersection of Highway 169 and CSAH 33. Operations at this intersection were explored in detail during the MAPO-led *Highway 169 Corridor Study.*

In addition to the impacts that increased traffic would have on vehicle operations along the corridor, it would have impacts on pedestrian and bicycle level of traffic stress and level of service. The high roadway speeds along the corridor and lack of signed crossings or dedicated facilities are not conducive to bicycle and pedestrian trips, especially for more vulnerable road users, such as children or the elderly. There was no estimate for daily heavy commercial vehicles, but uses along the corridor, such as the Blue Earth County Recycling Center, suggest that there is regular heavy truck traffic along the corridor.

CSAH 69

The segment of CSAH 69 that runs between CSAH 33 and Matthew Street had an estimated 2021 AADT of 2,580 vehicles per day (VPD), as per MnDOT's Traffic Mapping Application. The segment of CSAH 69 between Matthew Street and US Highway 169 had an estimated AADT of 2,756. As per the MAPO 2045 LRTP, the volume of traffic along the study portion of CSAH 69 is projected to increase to 5,500 VPD at the western end of the corridor, and up to 4,700 at the eastern end of the corridor. This increase in traffic is projected to have massive impacts on intersection operations, as detailed in the MAPO-led *Highway 169 Corridor Study*.

Like the intersection of CSAH 33 and Highway 169, the increase in traffic volume is projected to impact intersection level of service, as well as pedestrian and bicycle level of traffic stress and level of service. The high roadway speeds along the corridor and lack of signed crossings or dedicated facilities are not conducive to bicycle and pedestrian trips, especially for more vulnerable road users, such as children or the elderly. During the pop-up event held in late September, project staff observed that the eastern end of the corridor has a significant amount of foot traffic between nearby residential areas and the Clark Service station. There was no estimate for daily heavy commercial vehicles along these segments, but nearby commercial and industrial use suggest that there is some amount of heavy commercial vehicle usage.

C. Traffic Safety

1. Intersection Crash Analysis

Crash data from 2017 – 2021 was analyzed at all key intersections and along segments. Crash data was taken from MnCMAT2. This analysis followed the methodology used by the Minnesota Department of Transportation (MnDOT), in which a comparison of the crash rate and the critical rate are used to determine if there is a safety issue at an intersection. The crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside of the expected, normal range. The critical index reports the magnitude of this difference. A critical index of less than one indicates that the intersection is operating within the normal range and a critical index of greater than one indicates that the intersection is operating outside the normal range. **Table 1** provides a crash summary for each intersection on CSAH 33. This table details the total crash rate data, not the fatal & serious injury crash rate. Some of the intersection crashes occurred on minor approaches for the intersections listed and will not be reflected during the segment analysis.

Table 1 – CSAH 33 Intersection Crash Summary (2017 - 2021)

Intersection	Total Crashes	Severe Crashes (K + A)	Intersection Crash Rate	Statewide Average Crash Rate	Critical Rate	Critical Index
CSAH 33 & Birch Avenue	2	0	0.3	0.13	0.54	0.56
CSAH 33 & 4th Street	2	0	0.3	0.13	0.54	0.56
CSAH 33 & Beaver Avenue	0	0	0	0.13	0.56	0
CSAH 33 & CSAH 69 (South Bend Avenue)	3	0	0.29	0.13	0.46	0.64

Table 2 provides a crash summary for each intersection on CSAH 69 between Hemlock Road (CSAH 33) and United States Highway 169. This table details the total crash rate data, not the fatal and serious injury crash rate. Some of the intersection crashes occurred on minor approaches for the intersections listed and will not be reflected during the segment analysis.

Table 2 – CSAH 69 Intersection Crash Summary (2017-2021)						
Intersection	**Total Crashes**	**Severe Crashes (K + A)**	**Intersection Crash Rate**	**Statewide Average Crash Rate**	**Critical Rate**	**Critical Index**
CSAH 69 & Hemlock Road (CSAH 33)**	3	0	0.29	0.13	0.46	0.64
CSAH 69 & Blue Earth Street	0	0	0	0.13	0.56	0
CSAH 69 & Matthew Street	0	0	0	0.13	0.56	0
CSAH 69 & Hawley/Le Hillier (Chapman) Street	0	0	0	0.13	0.59	0
CSAH 69 & US Highway 169	3	0	0.07	0.13	0.28	0.26
* This intersection is also detailed in Table 1						

Table 1 and **Table 2** show that none of the intersections in the study area have a critical index greater than one, which indicates that all the intersections within the study area are operating within the normal range when compared to similar intersections statewide. Some of the intersection crashes occurred on minor approaches and will not be reflected during the segment analysis.

2. Segment Crash Analysis

A segment crash review was also completed along the corridor, using data from 2017 to 2021. Like the intersection analysis, this segment crash analysis followed MnDOT's methodology for corridor sections safety analysis. This analysis includes crashes that occurred at intersections. There were eleven (11) segment crashes between 2017 and 2021. CSAH 33's segment crashes are detailed in **Table 3**, and CSAH 69's crashes are detailed in **Table 4**.

Table 3 – CSAH 33 Segment Crash Summary (2017-2021)						
Segment	**Total Crashes**	**Severe Crashes (K + A)**	**Intersection Crash Rate**	**Statewide Average Crash Rate**	**Critical Rate**	**Critical Index**
Birch Avenue to 4th Street	2	0	1.25	0.834	3.01	0.42
4th Street to Beaver Avenue	0	0	0	0.834	4.99	0
Beaver Avenue to CSAH 69	2	0	3.75	0.834	4.99	0.75

Table 4 – CSAH 69 Segment Crash Summary (2017-2021)						
Segment	**Total Crashes**	**Severe Crashes (K + A)**	**Intersection Crash Rate**	**Statewide Average Crash Rate**	**Critical Rate**	**Critical Index**
CSAH 33 to Blue Earth St	2	0	3.5	0.834	4.83	0.73
Blue Earth St to Matthew St	5	1	2.13	0.834	2.58	0.82
Matthew St to US Highway 169	0	0	0	0.834	3.48	0

A ten-year analysis (2012 through 2021) found that there was a single fatal crash on CSAH 69 between Spartan Street and Matthew Street in 2012. All the segments in the study area have critical indexes below 1.0, indicating that the segments are operating with a generally acceptable level of safety. The final portion of this analysis looked at corridor crash type and severity

3. Corridor Crash Types

Reported crashes are detailed in **Table 5**. The most common crash type reported was run off the road crashes. These are followed by sideswipe crashes, usually related to large trucks making turning movements and other vehicles failing to yield. Finally, there were two right angle crashes, one at the intersection of CSAH 33 and CSAH 69, and another occurring at the intersection of Waseca Avenue and CSAH 33, near the Waste Management Transfer station. Notably, there were no bicycle or pedestrian involved crashes reported in the past ten years (2012 to 2021). This should not be interpreted as indication that the corridor is intrinsically safe for cyclists and pedestrians, as there is a chance that people simply do not make biking and walking trips in the area due to a lack of facilities rather than the adequacy of the built environment.

Table 5 – CSAH 33 & CSAH 69 Corridor Crash Type

Crash Type	Frequency – CSAH 33	Frequency – CSAH 69	Frequency - Total
Right Angle	2	0	2
Rear End	0	1	1
Single Vehicle Run Off Road	3	3	6
Sideswipe Same Direction	1	2	3
Bicycle/Pedestrian	0	0	0
Crashes per Corridor	6	6	12

The severity of crashes is another element of understanding crash safety and need along a corridor. Most of the crashes along the corridor resulted in property damage only. There was one serious injury crash on CSAH 69 between Spartan Street and Matthews Street. There were two minor injury crashes. Crash severity is detailed in **Table 6**.

Table 6 – CSAH 33 & CSAH 69 Corridor Crash Severity

Crash Severity	Frequency – CSAH 33	Frequency – CSAH 69	Frequency - Total
Fatal	0	0	0
Serious Injury	0	1	1
Minor Injury	1	1	2
Possible Injury	0	1	1
Property Damage Only	5	3	8
Crashes per Corridor	6	6	12

D. Pedestrian and Bicycle Connections

There are no sidewalks present in the study area outside of a short solitary segment of sidewalk at the intersection of CSAH 69/Hawley Street at its terminus with Highway 169. This sidewalk previously linked to an at-grade crossing of Highway 169. The crossing was decommissioned owing to operation and safety issues at the intersection, such as a multiple threat situation (Figure 2). Pedestrian signage at the intersection advises pedestrians that cross traffic will not stop. There is evidence that people are using the corridor for pedestrian trips, such as pedestrian paths worn into the vegetation on the southside shoulder of CSAH 69.

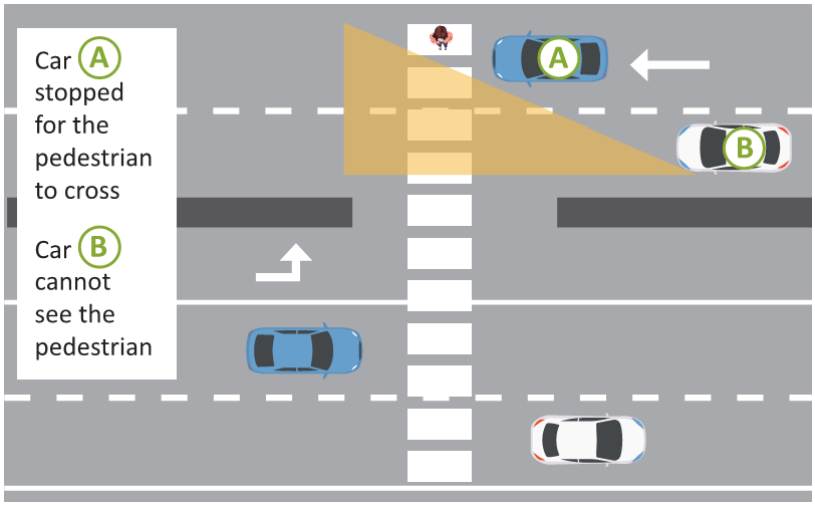


Figure 2. Multiple Threat Situation

E. Future Development

There are multiple large parcels south of the study area that access CSAH 33 that are held by property development groups. While these are not yet platted or have definitive plans for development, the potential for an increase in residential development was considered, as it would impact travel patterns along both project corridors. Likewise, the Highway 169 Corridor study was examined to see how any multimodal improvements along CSAH 33 and CSAH 69 might integrate with future investments.

V. Key Transportation Issues

An important element of the study was the identification of key transportation issues. The following information provides a summary of issues identified by existing conditions analysis and public input. This information is also documented in **Appendix D** in more detail.

Issues were identified as primary and secondary issues. Primary issues are vital to the success of a potential project in making the required improvements needed. Secondary issues are also important but were not considered to set the framework for potential improvements. They may relate to items that can be addressed regardless of the alternative selected from this study.

A. Primary Issues

1. Lack of Bicycle and Pedestrian Connectivity

This study was conducted to examine conditions for bicyclists and pedestrians along segments of CSAH 33 and CSAH 69 and propose improvements that would address the lack of bicycle and pedestrian connectivity along these corridors in South Bend Township. Currently, the only dedicated pedestrian facilities in the study area are located on CSAH 69 where it intersects with Highway 169. There are no dedicated bicycle facilities. Pedestrians and cyclists must use the paved shoulder to make connections within the study area, or to travel to multimodal resources beyond the study area, like the Minneopa Trail on the north side of Highway 169. Input collected from the PMT and the study's public engagement indicated there is community desire for increased pedestrian connectivity throughout the study area.

A primary issue is the lack of bicycle and pedestrian connectivity throughout and across the study area. This lack of connectivity reduces the rate at which active transportation trips are made, but this should not be interpreted as a total lack of bicycle and pedestrian trips along the corridor.

Input from the pop-up event indicated that people regularly walk and bike along the shoulder of CSAH 69 to reach destinations in South Bend Township, such as the Clark's Service Station.

2. Lack of Comfortable Crossings

The study area has a lack of comfortable pedestrian and bicyclist crossings across either of the corridors, further reducing connectivity. The lack of safe crossings suppresses the latent demand for active transportation throughout the corridor, especially for more vulnerable populations, such as young children or the elderly.

B. Secondary Issues

Public engagement and discussions with the PMT also identified a variety of secondary issues in the study area, including:

- Alignment of the roadway/steep grades/narrow shoulders and ROW/horizontal and vertical curves on the road. Room for improvements will have to work within the confines of the ROW, as well as the terrain surrounding the ROW. Vertical curves limit the appeal of dedicated bicycle and pedestrian facilities, and horizontal curves can introduce safety conflicts between road users.
- Access point sight lines and safety related to vehicle speeds. During community engagement and the survey, respondents highlighted the fact that several of the access points to CSAH 33 and CSAH 69 from minor streets have limited sight distance, which combined with roadway speeds introduces potential safety issues for all roadway users.

VI. Study Goals and Objectives

Following the identification of issues and needs along the CSAH 33 and CSAH 69 corridors through both a technical and public process, study partners developed the following Corridor Study goals:

- Safely accommodate all users (vehicles, transit, pedestrians, bicycles)
- Provide infrastructure improvements compatible with the historic and natural environment
- Develop a financially responsible implementation plan

The goals developed for this study are consistent with the key performance goals discussed in the MAPO 2045 Long Range Transportation Plan including: Accessibility and reliability, economic vitality, safety, and multimodal transportation. These LRTP goals were used to identify and evaluate the trade-offs between improvement options for CSAH 33 and CSAH 69. Each LRTP goal was comprised of specific objectives and performance measures as well related to specific components or factors in the study goals. Information on these can be seen in **Appendix D**.

VII. Identification and Evaluation of Alternatives

The study produced two alternatives for CSAH 33, and four alternatives for CSAH 69. Multiple improvement alternatives were identified and evaluated based on the existing conditions analysis, issues and need framework, and public, agency, and stakeholder involvement. For the development of alternatives, each corridor was sub-divided into sections, as shown in **Figure 3**. Full copies of the alternative drawings discussed within this report are available in **Appendix E**.

An evaluation matrix was used to compare the benefits and tradeoffs between alternatives as compared to the study's goals, but only as a technical exercise, and did not produce long-term implementation plans for improvements. It was assumed that all of these alternatives are tentative and will be iterated and refined upon reconstruction of CSAH 33 and/or CSAH 69.

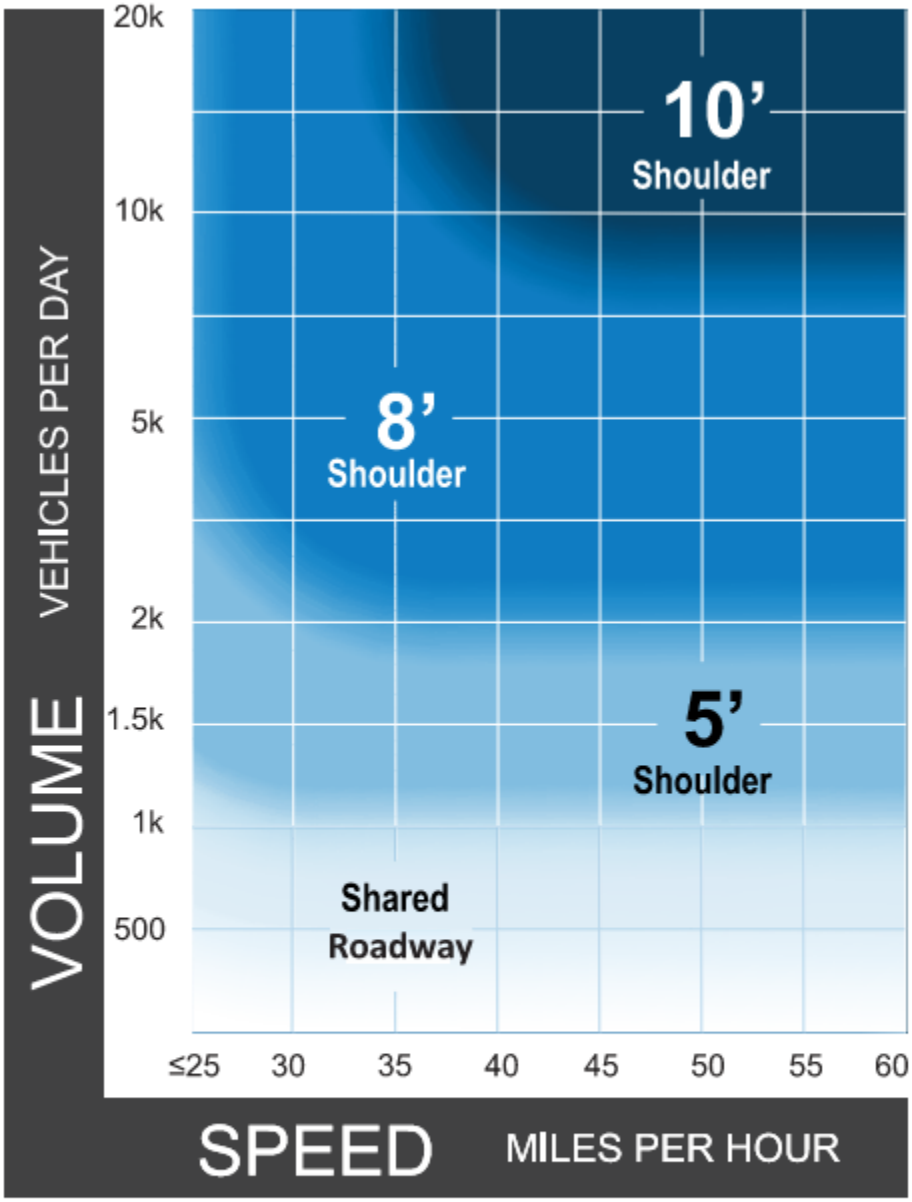
Alternatives shared with the public during engagement were presented using pros/cons, which are included in this report, versus scoring of technical metrics. This evaluation matrix can be seen in **Appendix G**. Each alternative's probable costs are based on MnDOT 2021 statewide average bid prices. To develop planning-level opinions of probable costs, it was necessary to make some assumptions about construction. The opinions of probable costs include typical construction materials and costs such as excavation, grading, base, pavement, pavement markings, and signing and markings.

Each alternative includes a range for the opinions of probable costs. The high end of the range includes an allowance for design and engineering. Each opinion of probable cost also includes a 20% contingency that may account for unexpected costs or unknown project-specific cost items at this planning-level phase. These opinions of probable costs also include lump sum allowances for construction cost incidentals such as landscaping/ turf establishment, drainage/utilities, and erosion and sediment control. Individual project costs may vary; these opinions of probable costs are only intended to be used at a planning level and should be refined throughout project development.

Figure 3. Typical Section Locations on CSAH 33 & CSAH 69

The concepts were developed based on the context of the corridors. This includes vehicle speed, vehicle volume, topography, and roadway and driveway crossings. Based on these factors and

using the MnDOT Bicycle Facility Design Manual and the FHWA Bikeway Selection Guide, it was determined that the appropriate on-street facility would be an 8’ shoulder, as shown below in Figure 4.



Source: FHWA Bikeway Selection Guide

Notes

1 A separated shared use pathway is a suitable alternative to providing paved shoulders.

2 Chart assumes operating speeds are similar to posted speeds. If they differ, use operating speed rather than posted speed.

3 If the percentage of heavy motor vehicles is greater than 5%, consider providing a wider shoulder or a separated pathway.

Figure 4. Preferred Bikeable Shoulder Width for Rural Roadways

CSAH 33

CSAH 33 was split into two segments for this study. The first section (Section A-A) covers the right-of-way between Birch Avenue and Waseca Avenue. The second section (Section B-B) covers the right-of-way between Waseca Avenue and CSAH 69. Two concepts were produced for consideration.

Concepts 1 & 2 for Section A-A – Paved Shoulder

Section A-A has two twelve-foot travel lanes with a paved shoulder on the eastern side of the right-of-way. The west side shoulder varies in width and fronts a steep drop in elevation. The segment itself has a slight vertical curve, with about 50' in elevation gain between Birch Avenue and Waseca Avenue. Both concepts produced for Section A-A show the paved shoulder that the county recently installed on the east side of the right-of-way and make no changes to the west side of the roadway (Figure 5).

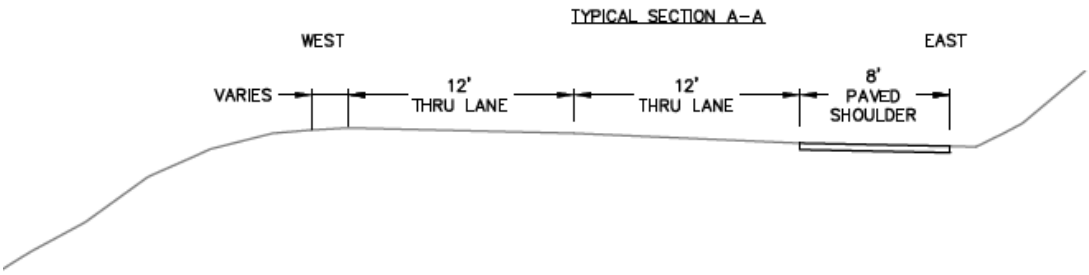


Figure 5. Typical Section A-A for CSAH 33 Concepts 1 & 2

Pros:

- Linear connection between Birch Avenue and Waseca Avenue
- An already existing resource
- No conflicts with utilities or property owners

Cons:

- Paved shoulders offer minimal separation from the roadway, increasing stress for some users
- Trips between CSAH 33 and Birch Avenue require crossing at an unsignalized and unmarked crosswalk

Concept 1 – Paved Shoulder

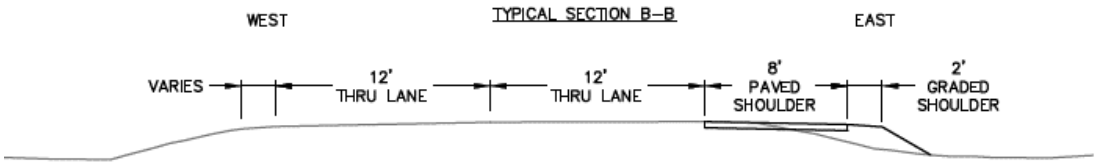


Figure 6. Typical Section B-B for CSAH 33 Concept 1

Concept 1 Overview:

The second section of CSAH 33 (Section B-B) covers the right-of-way north of Waseca Avenue to where it intersects with CSAH 69. Section B-B has two twelve-foot travel lanes with a paved shoulder on the eastern side of the right-of-way that fronts a drainage ditch. The west side shoulder varies in width, and fronts a slight change in elevation, and provides access to Beaver Avenue. Concept 1 (Figure 6) would extend the east side paved shoulder along the remainder of CSAH 33, creating a continuous eight-foot-wide shoulder between Birch Avenue and CSAH 69. Paved shoulders are generally suitable for more experienced and confident pedestrians and cyclists, but might not be suitable for less experienced, less confident, or more vulnerable users.

Pros:

- Linear connection between Birch Avenue and CSAH 69
- Lowest cost
- The paved shoulder can be used as an automobile recovery area
- Users are more visible for large trucks turning in and out of Waseca Avenue Recycling Center

Cons:

- Walking or biking along the shoulder might not be comfortable for less confident or able cyclists and pedestrians
- Not a dedicated facility

Concept 1 Opinions of Probable Costs

The planning-level opinions of probable costs to implement Concept 1 are $230,000-$280,000. The estimate includes the cost of extending the roadway to include a paved shoulder, striping, signing and marking, site restoration, and a 20% contingency for unexpected costs. The higher end of the opinions of probable costs range includes the costs for roadway design and engineering. More information on the opinions of probable costs is provided in **Appendix F**.

Concept 2 – Asphalt Trail

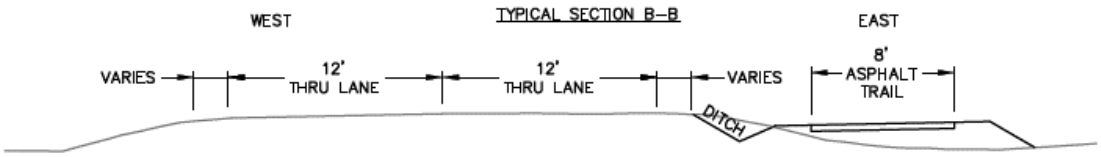


Figure 7. Typical Section B-B for CSAH 33 Concept 2

Concept 2 Overview:

Concept 2 (Figure 7) would install an eight-foot-wide asphalt trail behind the drainage ditch. This asphalt trail would provide a lower level of user stress for trail users when compared to a paved shoulder but comes with the caveats that it might have higher maintenance costs and could require acquisition of right-of-way.

Pros:

- Bicyclists and pedestrians are separated from the roadway, with the lowest stress

Cons:

- Conflict points at Waseca Avenue
- Maintenance costs

Concept 2 Opinions of Probable Costs

The planning-level opinions of probable costs to implement Concept 2 are $240,000-$290,000. The estimate includes the cost of constructing a multi-use trail, new ADA-compliant curb ramps, signing and marking, site restoration, and a 20% contingency for unexpected costs. The higher end of the opinions of probable costs range includes the costs for roadway design and engineering. More information on the opinions of probable costs is provided in **Appendix F**.

CSAH 69

CSAH 69 was split into four segments for the sake of this study. Each section is comprised of two twelve-foot-wide travel lanes, with variations in the conditions along the roadway in terms of shoulders and topography. The first section (Section C-C) covers the right-of-way between CSAH 33's intersection with Highway 169 to Spartan Street.

Section C-C has two twelve-foot-wide travel lanes with narrow unpaved shoulders on each side. There are private residences along both sides of the right-of-way. This segment has regular traffic queues that extend to CSAH 33 as vehicles wait to make left turns onto south bound Highway 169.

The second section (Section D-D) begins at Spartan Street and extends along approximately half of the distance of CSAH 69 between Spartan Street and Matthew Street. There are two twelve-foot-wide travel lanes in this section, with variable width shoulders. Both sides of the right of way have steep topographical changes, and there is a significant horizontal curve.

The third section (Section E-E) covers the other half of the distance on CSAH 69 between Spartan Street and Matthews Avenue, terminating at Matthew Street. There are two twelve-foot-wide travel lanes with narrow shoulders and a significant horizontal curve.

The final section (Section F-F) covers CSAH 69 between Matthew Street and the intersection with Highway 169 north of Chapman Street. There are two twelve-foot-wide travel lanes, but the intersection of Hawley Street, Chapman Street, and Highway 169 is a large amorphous pad of concrete, with little striping or signage to guide road users through safely traversing the intersection.

Three concepts were produced for consideration.

Concept 3 – Paved Shoulders

Concept 3 Overview:

This concept would install eight-foot-wide paved shoulders along the entirety of CSAH 69 within the study area. There would be no shoulder on the eastern side of the right-of-way north of Hawley Street, owing to the sidewalk that exists today.

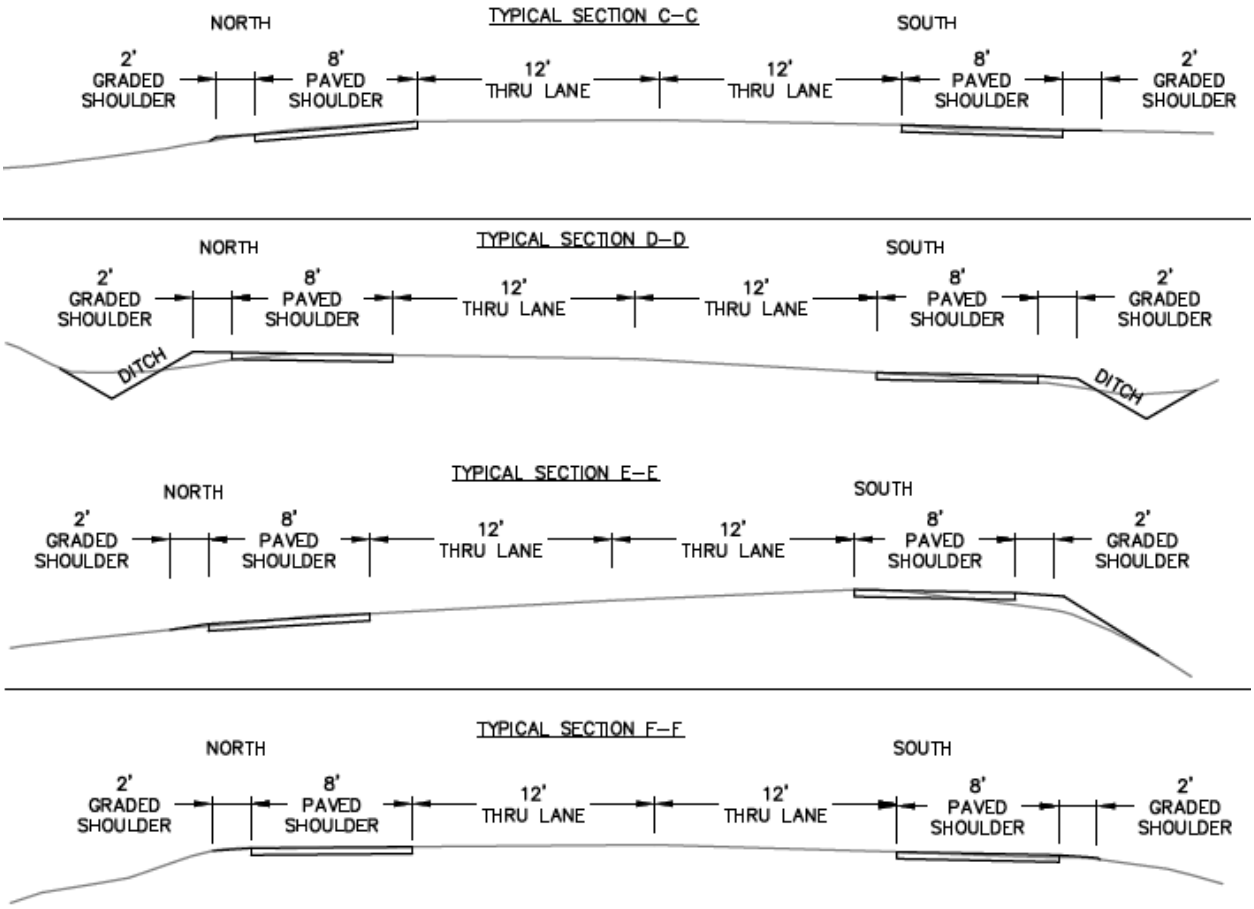


Figure 8. Typical Sections for CSAH 69 Concept 3

Pros:

- Easily implementable concept
- Provides a recovery area for vehicles using CSAH 69

Cons:

- Walking or biking along the shoulder might not be comfortable for less confident or able

cyclists and pedestrians

- Not a dedicated facility
- Alignment of intersection between CSAH 69, Chapman Street, Hawley Street, and Highway 169 would remain poorly defined, leading to higher stress for bicyclists, pedestrians, and motorists

Concept 3 Opinions of Probable Costs

The planning-level opinions of probable costs to implement Concept 3 are $710,000-$860,000. The estimate includes the cost of extending the roadway to include a paved shoulder on each side of the road, striping, signing and marking, site restoration, and a 20% contingency for unexpected costs. The higher end of the opinions of probable costs range includes the costs for roadway design and engineering. More information on the opinions of probable costs is provided in **Appendix F**.

Concept 4 – Northside Asphalt Trail

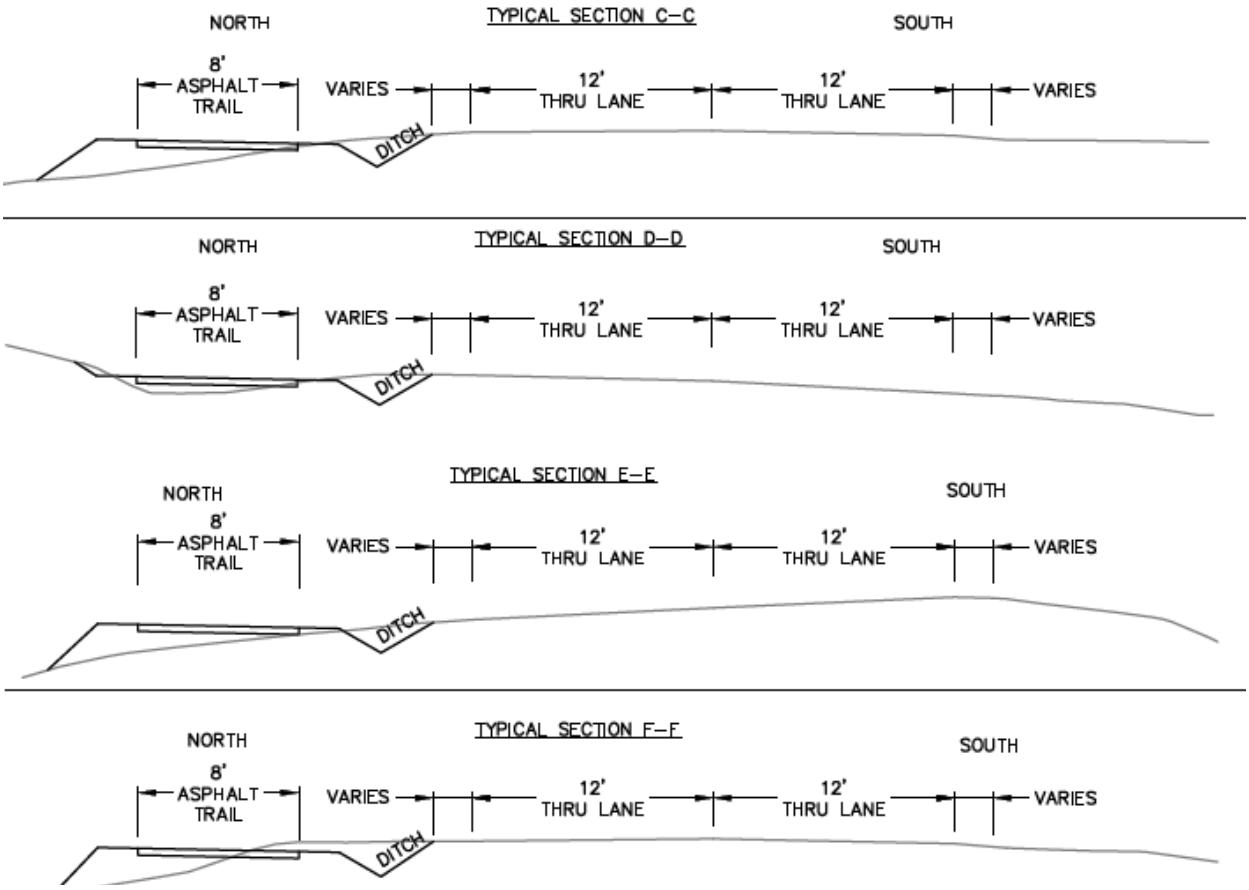


Figure 9. Typical Sections for CSAH 69 Concept 4

Concept 4 Overview:

This concept would install an eight-foot-wide asphalt path along the northern side of CSAH 69 within the study area behind a drainage ditch. There would be no changes to the shoulder on the southern side of the right-of-way. This would better define the intersection of CSAH 69, Hawley Street, Chapman Street, and Highway 169, putting the service station behind a drainage ditch and asphalt path, and creating a clear access point to Chapman Street and the service station.

Pros:

- Bicyclists and pedestrians are separated from the roadway, lowest stress.
- Address alignment of intersection of CSAH 69, Hawley Street, Chapman Street, and Highway 169.

Cons:

- No direct connection to proposed concepts for CSAH 33.
- Some conflicts with vehicle turning movements with parking lots and access to Chapman Street, service station, and business along CSAH 69.
- ROW acquisition needed for earthwork
- Impacts at the service station.

Concept 4 Opinions of Probable Costs

The planning-level opinions of probable costs to implement Concept 4 are $600,000-$720,000. The estimate includes the cost of constructing a multi-use trail, new ADA-compliant curb ramps, signing and marking, site restoration, and a 20% contingency for unexpected costs. The higher end of the opinions of probable costs range includes the costs for roadway design and engineering. More information on the opinions of probable costs is provided in **Appendix F**.

Concept 5 – Southside Asphalt Trail

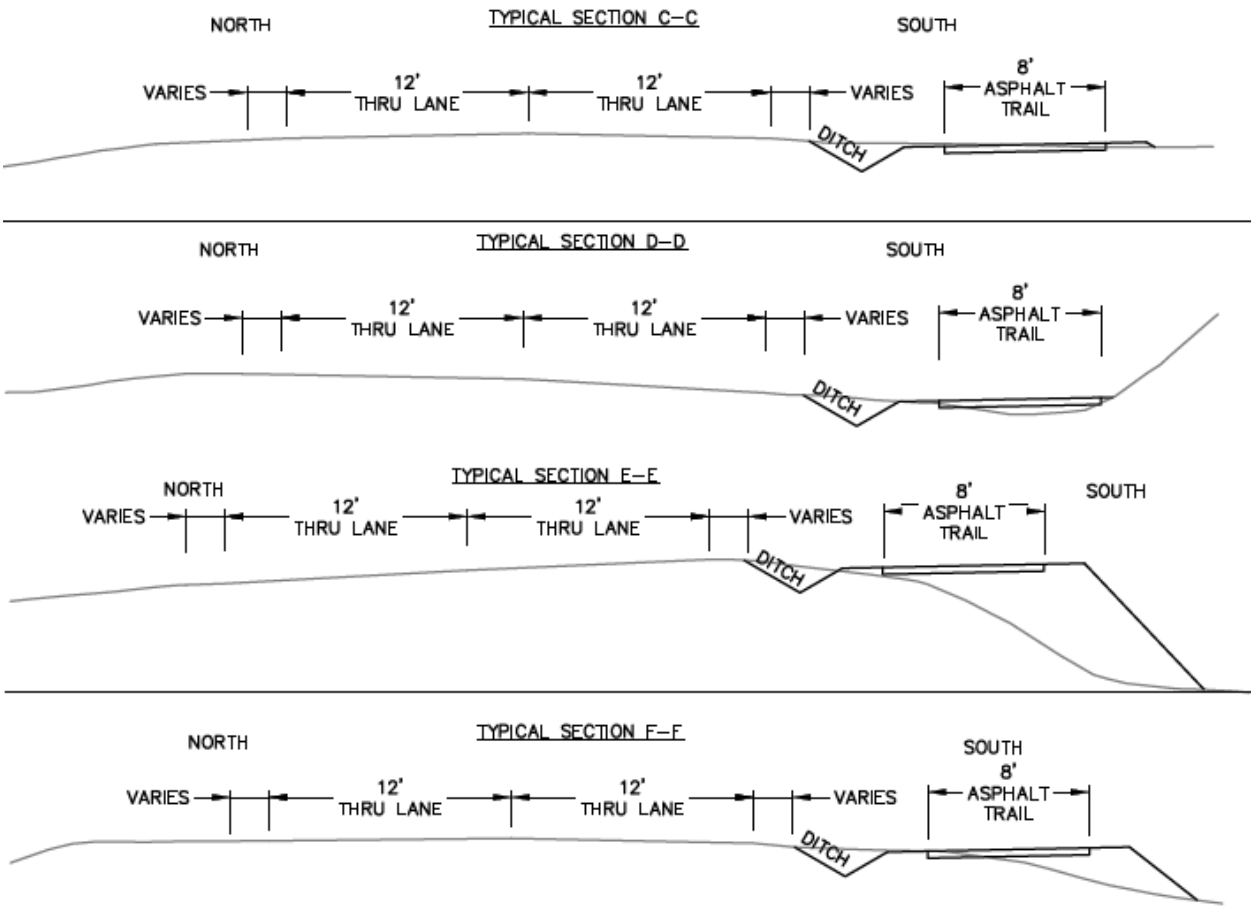


Figure 10. Typical Sections for CSAH 69 Concept 5

Concept 5 Overview:

This concept would install an eight-foot-wide asphalt path along the southern side of CSAH 69 within the study area behind a drainage ditch. There would be no changes to the shoulder on the northern side of the right-of-way. This would offer direct connections to any facilities installed along CSAH 33.

Pros:

- Bicyclists and pedestrians are separated from the roadway, lowest stress.
- Direct connection to improvements along CSAH 33

- Fewer conflict points than other alignments

Cons:

- Some conflicts with vehicle turning movements with access to CSAH 33, Spartan Street, and business access along CSAH 69.
- ROW acquisition needed for earthwork.

Concept 5 Opinions of Probable Costs

The planning-level opinions of probable costs to implement Concept 5 are $700,000-$840,000. The estimate includes the cost of constructing a multi-use trail, new ADA-compliant curb ramps, signing and marking, site restoration, and a 20% contingency for unexpected costs. The higher end of the opinions of probable costs range includes the costs for roadway design and engineering. More information on the opinions of probable costs is provided in **Appendix F.**

VIII. Recommended Alternative and Implementation Plan

The PMT considered the results of the technical analysis as well as public input and feedback when working towards a recommended alternative. The following describes the recommendations for CSAH 33 and CSAH 69 as part of this study. See **Appendix H** for a figure of the recommended alternative.

CSAH 33
Of the two alternatives proposed for this segment of CSAH 33 that were presented to the public and stakeholders, feedback didn't indicate a preference toward either concept, though a general preference for a separated trail was given. Given the paved shoulder already existing south of Waseca Avenue and no facility along the west side of CSAH 33 in that southern section, the recommended alternative for the CSAH 33 corridor is Concept 2. There is right-of-way available, and the shoulder on CSAH 33 is already installed. The shared use path would be the lowest stress option for most users and could connect to improvements along CSAH 69 either directly (for southside improvements) or via crossing CSAH 69.

Partner agencies should also consider continuing the option of a shared use path along the eastern side of CSAH 33, south of Birch Avenue, to connect to the existing trail on the north side of CSAH 90 (Hawthorn Road).

CSAH 69
Of the three alternatives proposed for this segment that were presented to the public, feedback from attendees indicated a preference for a design that included dedicated bicycle accommodations along CSAH 69, but there are several operational and feasibility issues that would prevent an asphalt path along either side of the right-of-way. First and foremost were concerns about impacts to private property and access to CSAH 69. Second, there were projections for significant costs associated with earthwork to address the steep grades and cut stone along either side of the roadway. Finally, a trail along a single side of the corridor only directly serves half of the project area population, requiring the other half to cross a high-speed roadway to access any facilities. Considering these issues this study recommends Concept 3, even though it comes in at a higher price, which would install paved shoulders on both sides of the right-of-way. The south side shoulder would directly connect to the improvements on CSAH 33 and would allow for a vehicle recovery zone when needed. The northside shoulder would address operational and alignment issues at the service station at Chapman Street, in addition to providing

a vehicle recovery zone when needed.

IX. Next Steps

The purpose of the South Bend Safe Routes to Multimodal Study was to develop a long-term plan for improvements to CSAH 33 and CSAH 69, part of which will guide what could be implemented ahead of a future reconstruction of these roadways. The concepts developed as part of this study are high-level and will need additional refinement through preliminary and final design. Environmental review and permitting will also be required with exact requirements based on the scope of the project and the funding source. As projects turn from plan to reality, they will move forward as part of the County's CIP process. This process could involve additional public engagement specific to the project area and timing. County policy dictates that the South Bend Township provides some matching funds as part of a cost participation agreement.

The improvement options identified within this study and the projects prioritized as part of the implementation plan will help the South Bend Township, MAPO, and Blue Earth County to continue to maintain functioning yet safe major and minor collector roadways.

Study partners will continue to work together to further plan, obtain funding, design, and implement the recommended improvement project. All partners have an active role in implementing these improvements. All competitive funding sources should be considered. Agencies should also update their comprehensive and transportation plans to include these findings to better leverage funding sources.

Appendix A: Engagement Summary

BOLTON & MENK
Real People. Real Solutions.

1960 Premier Drive
Mankato, MN 56001-5900

Ph: (507) 625-4171
Fax: (507) 625-4177
Bolton-Menk.com

SOUTH BEND SAFE ROUTES TO MULITMODAL STUDY
OPEN HOUSE SUMMARY
SEPTEMBER 24, 2022 – 2:30 TO 5:30 PM
Clark Gas Station – Pop-up
Minneopa Golf Course, South Bend Fire Department Fundraiser Event, Pop-up

I. Purpose

The Mankato/North Mankato Area Planning Organization (MAPO) is examining portions of CSAH 33 (Hemlock Road) and CSAH 69 (South Bend Avenue) in South Bend Township to consider alternatives for safe, multimodal options that provide more travel opportunities for people living and working in the area. These roads connect residential areas abutting a variety of commercial and industrial uses to both US 169 and the City of Mankato. CSAH 33 and CSAH 69 do not current have any dedicated facilities for people walking or bicycling. The project team, after conducting a review of the existing plans, policies, and conditions of the corridor, created six alternatives and presented them to members of the community during two pop-up events on September 24th, 2022.

II. Attendees

Ten people total signed into the events. Members of the South Bend Township Board were also in attendance.

III. Materials Presented

The meetings were set up as pop-up events, taking advantage of where community members were already going to be and giving attendees the opportunity to view materials and speak with project staff at their leisure. No formalized presentation on the project was given. The following information was available for public review and input:

- Study Purpose, Process, Timeline, and Goals
- Two general concept cross sections with benefits and considerations (Appendix A)
- Matching concept layouts to contextualize the options along the corridor (Appendix A)

IV. Comments Received

Public input was collected throughout the duration of the pop-up events through discussions with staff. The following summarizes public comments collected:

A. Meeting Discussion

All of the feedback gathered during the events was through discussion of the provided

options between project staff, Township staff, and members of the South Bend Township public.

1. Option 1 – Paved Shoulder

Members of the public generally agreed that CSAH 33 and CSAH 69 need something to improve the roadways for people walking and biking. The public agreed that even something as simple as adding a paved shoulder would be a vast improvement over what is there today. Points of discussion included:

- Adding lighting along the roadways
- Concerns about how the paved shoulder would get people safely through the Hawley Street intersection. Citizens noted that there are a lot of people using CSAH 69 to get to the convenience store and get across US 169. This was also seen several times during the pop-up engagement at the gas station.

2. Option 2 – Shared Use Path

This option was liked by a majority of the public, if it was able to fit within the stone cut on CSAH 69 and not require a lot of fill along the properties at the bottom of the CSAH 69 hill. A few members of the public wanted to see a guardrail or other barrier along the path on CSAH 69. There was no clear indication on whether the path would be best suited on the north or south side of CSAH 69. Other points of discussion included:

- The impacts to drainage along CSAH 69.
- Improved connections at Birch Street and Hawley Street.
- Concerns about who would be paying for these improvements

B. Digital Correspondence (survey)

A digital survey and print survey was made available at the pop-up events, and was also distributed via a local elementary school newsletter and forwarded along to people who gave their contact information at the pop-up event. The survey was available digitally from September 25th to October 15th. As of October 15, 2022, there were 23 responses, with 59 percent completion rate. Internal campaign tracking indicates that 16 of these responses came from the school distributed newsletter, two responses came out as a result of the follow up email sent to people who gave feedback at the pop-up events, and remaining five came from distribution via the PMT. A copy of the survey responses is included as an appendix to the report (**Sub-Appendix A**).

Key data and insights from the survey include:

- When asked, 40 percent of survey respondents indicated that they never take walking or biking trips along CSAH 33 or CSAH 69
- A follow up question asked survey respondents to indicate the three largest factors that discouraged them from biking and walking in South Bend Township from a pool of eight options. The most common responses were:
  - Amount of motor vehicle traffic (66 percent of respondents)
  - Lack of connected multi-use trails/sidewalks (52 percent of respondents)

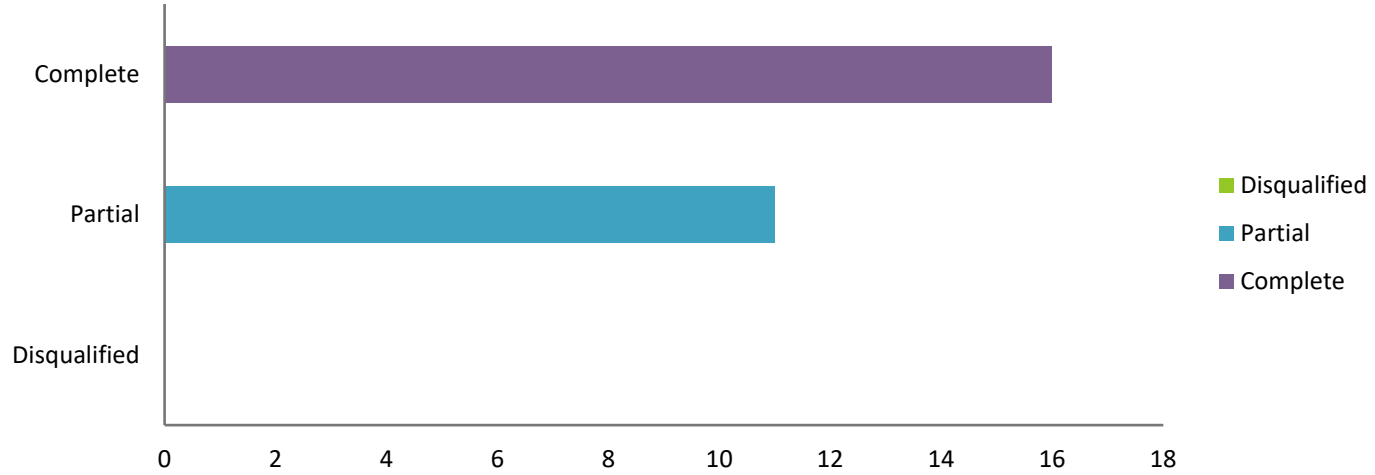
        - Personal safety concerns (43 percent of respondents)
    - Survey respondents then ranked which improvements were most likely to increase the likelihood of them walking trips along the CSAH 33 and CSAH 69 corridors. The most common responses were:
        - Streetlights (50 percent of respondents)
        - Sidewalk on one side of the roadway (50 percent of respondents)
        - Paved shoulders (44 percent of respondents)
        - Marked crossings (44 percent of respondents)
    - Survey respondents then ranked which improvements were most likely to increase the likelihood of them cycling trips along the CSAH 33 and CSAH 69 corridors. The most common responses were:
        - Paved Shoulders (83 percent of respondents)
        - Streetlights (50 percent of respondents)
        - Buffered Bike Lane (44 percent of respondents)
        - Shared Use Path (44 percent of respondents)
    - The Survey concluded with an option for respondents to give free form feedback via a comment box. There were seven responses, and highlights include:
        - Concerns about grades along both roadways discouraging cyclists
        - Need for greater connectivity along Highway 169, either a pedestrian overpass or a trail and walkway along the southern side of the highway
        - Concerns about cycling or walking along CSAH 33 given the volume and speed of heavy commercial vehicle traffic

Sub-Appendix A: Survey Summary

Report for South Bend SRTM Survey

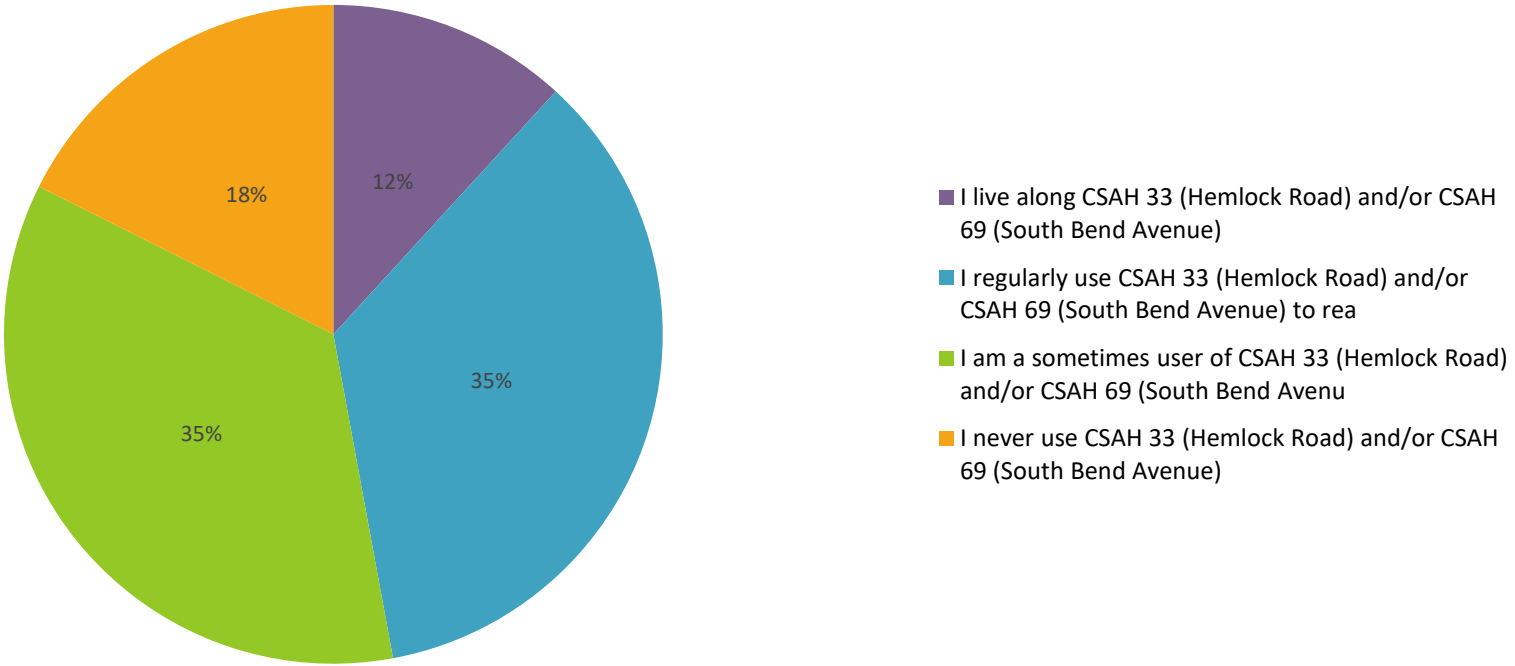
South Bend SRTM Survey

Response Statistics



	Count	Percent
Complete	16	59.3
Partial	11	40.7
Disqualified	0	0
Totals	27	

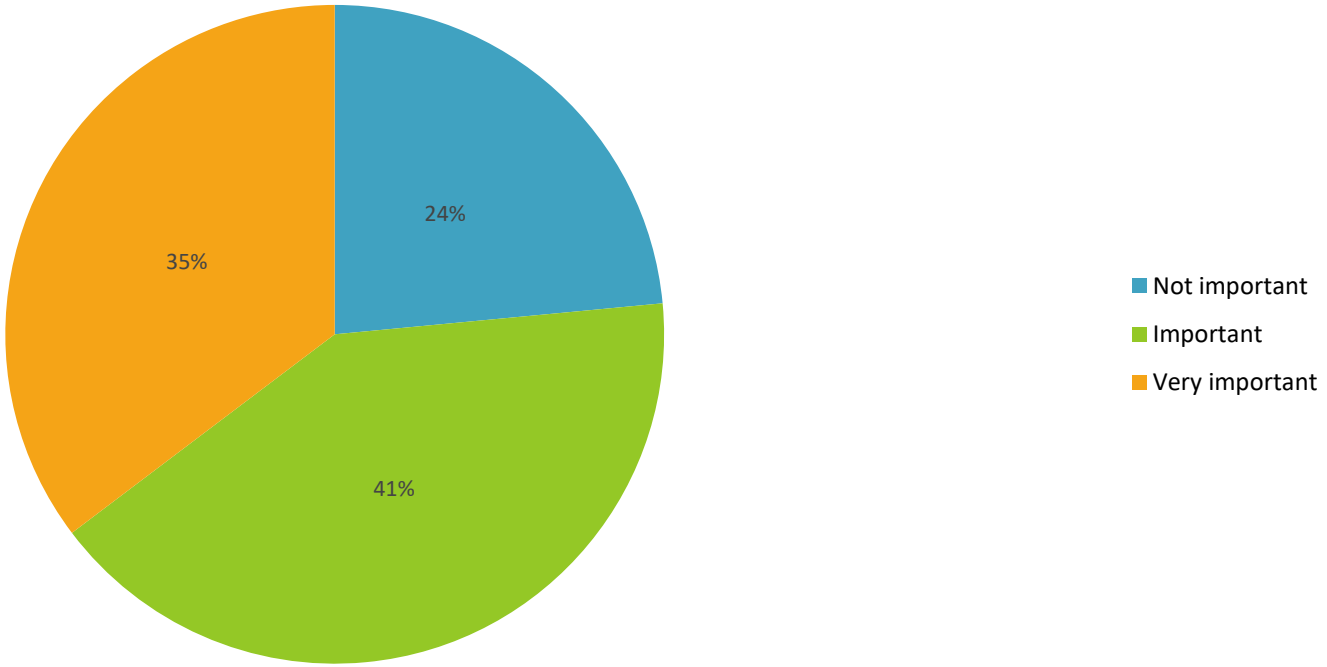
1.Which of the following best describes your relationship with the project corridors? (check all that apply)



1.Which of the following best describes your relationship with the project corridors? (check all that apply)

Value		Percent	Count
I live along CSAH 33 (Hemlock Road) and/or CSAH 69 (South Bend Avenue)		11.8%	2
I regularly use CSAH 33 (Hemlock Road) and/or CSAH 69 (South Bend Avenue) to reach destinations (e.g., trips to work, home, recreational destinations, or other land uses), but do not live in the area.		35.3%	6
I am a sometimes user of CSAH 33 (Hemlock Road) and/or CSAH 69 (South Bend Avenue)		35.3%	6
I never use CSAH 33 (Hemlock Road) and/or CSAH 69 (South Bend Avenue)		17.6%	3
Totals			17

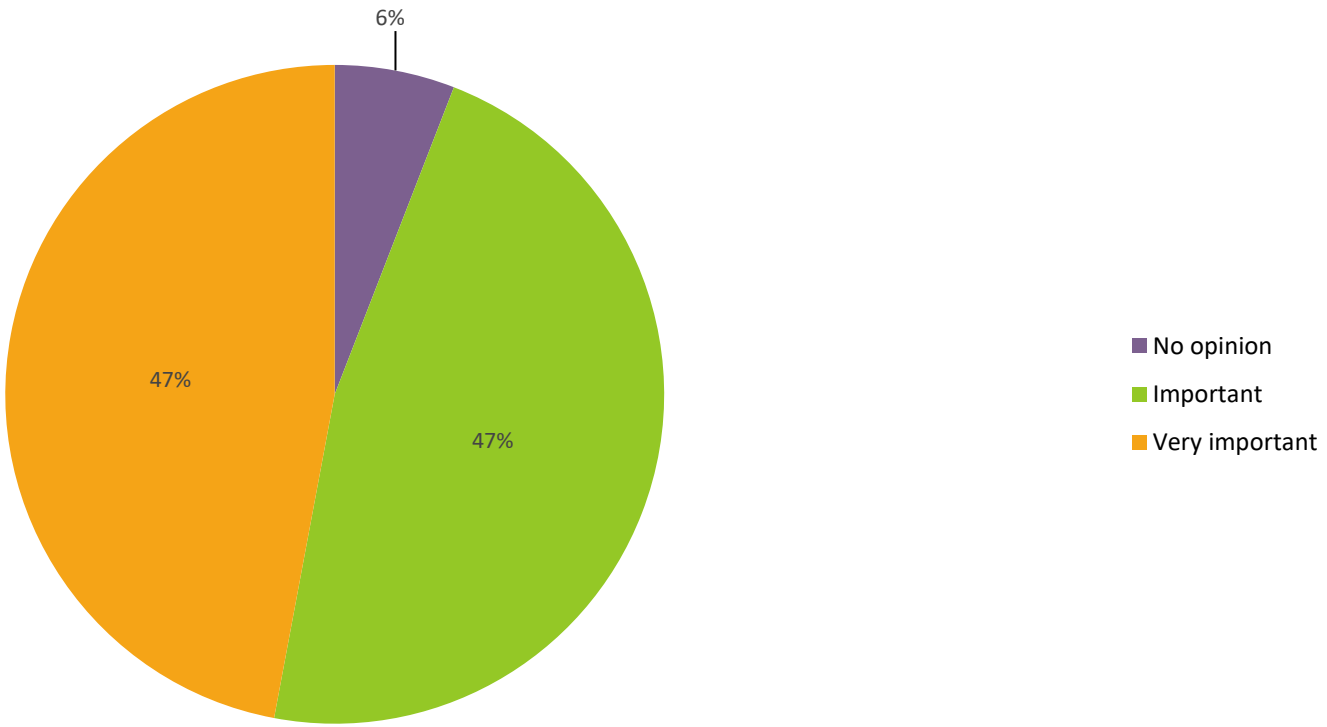
2.How important is being able to comfortably bike or walk when choosing where to live or work?



2.How important is being able to comfortably bike or walk when choosing where to live or work?

Value		Percent	Count
Not important		23.5%	4
Important		41.2%	7
Very important		35.3%	6
Totals			17

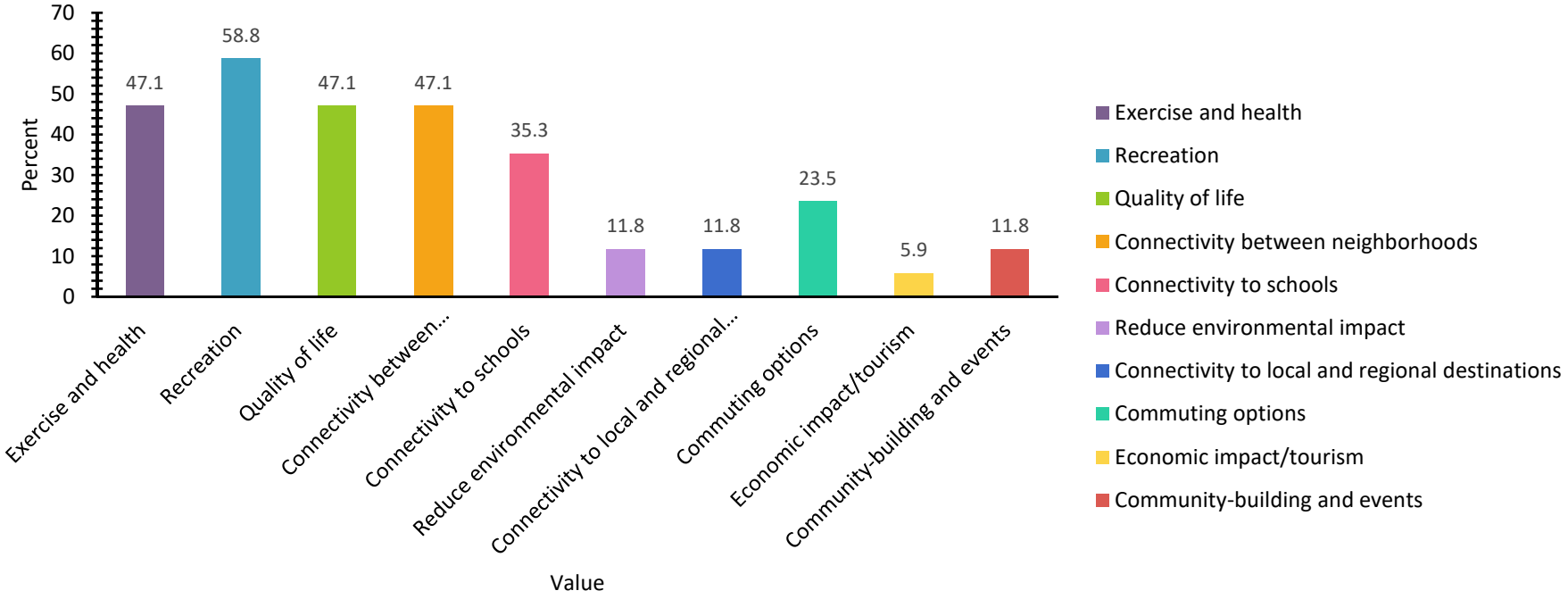
3.How important is it for city, county, and regional governments to invest in bicycle and pedestrian systems?



3.How important is it for city, county, and regional governments to invest in bicycle and pedestrian systems?

Value		Percent	Count
No opinion		5.9%	1
Important		47.1%	8
Very important		47.1%	8
Totals			17

4.In your opinion, what are the most important benefits and uses of a bicycle and pedestrian system? (Choose 3 that are most applicable)



4.In your opinion, what are the most important benefits and uses of a bicycle and pedestrian system? (Choose 3 that are most applicable)

Value	Percent	Count
Exercise and health	47.1%	8
Recreation	58.8%	10
Quality of life	47.1%	8
Connectivity between neighborhoods	47.1%	8
Connectivity to schools	35.3%	6
Reduce environmental impact	11.8%	2
Connectivity to local and regional destinations	11.8%	2
Commuting options	23.5%	4
Economic impact/tourism	5.9%	1
Community-building and events	11.8%	2

Other - Write In	Count
Totals	0

5.How often do you walk or bike to make trips between home and work, school, or to run an errand?

	At least once a day		At least once a week		At least once a month		At least once a year		Never		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count
Biking	2	11.8%	4	23.5%	0	%	3	17.6%	8	47.1%	17
Walking	3	17.6%	4	23.5%	0	%	4	23.5%	6	35.3%	17

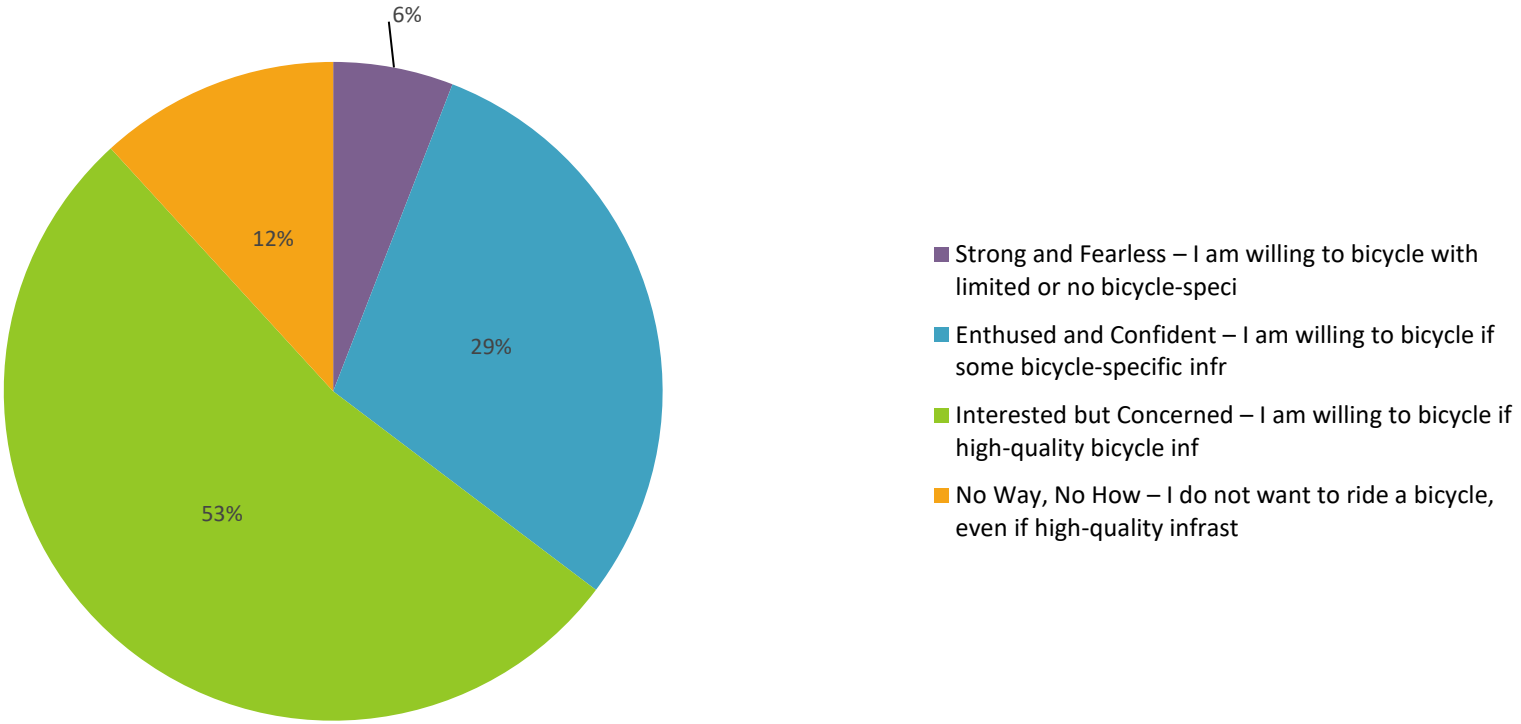
6.How often do you walk or bike for social reasons, recreation, or exercise?

	At least once a day		At least once a week		At least once a month		At least once a year		Never		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count
Biking	4	23.5%	4	23.5%	3	17.6%	4	23.5%	2	11.8%	17
Walking	5	29.4%	5	29.4%	4	23.5%	2	11.8%	1	5.9%	17

7.How often do you walk or bike along either CSAH 33 or CSAH 69 for any reason?

	At least once a day		At least once a week		At least once a month		At least once a year		Never		Responses
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count
Biking	0	%	1	5.9%	4	23.5%	4	23.5%	8	47.1%	17
Walking	3	17.6%	1	5.9%	3	17.6%	2	11.8%	8	47.1%	17

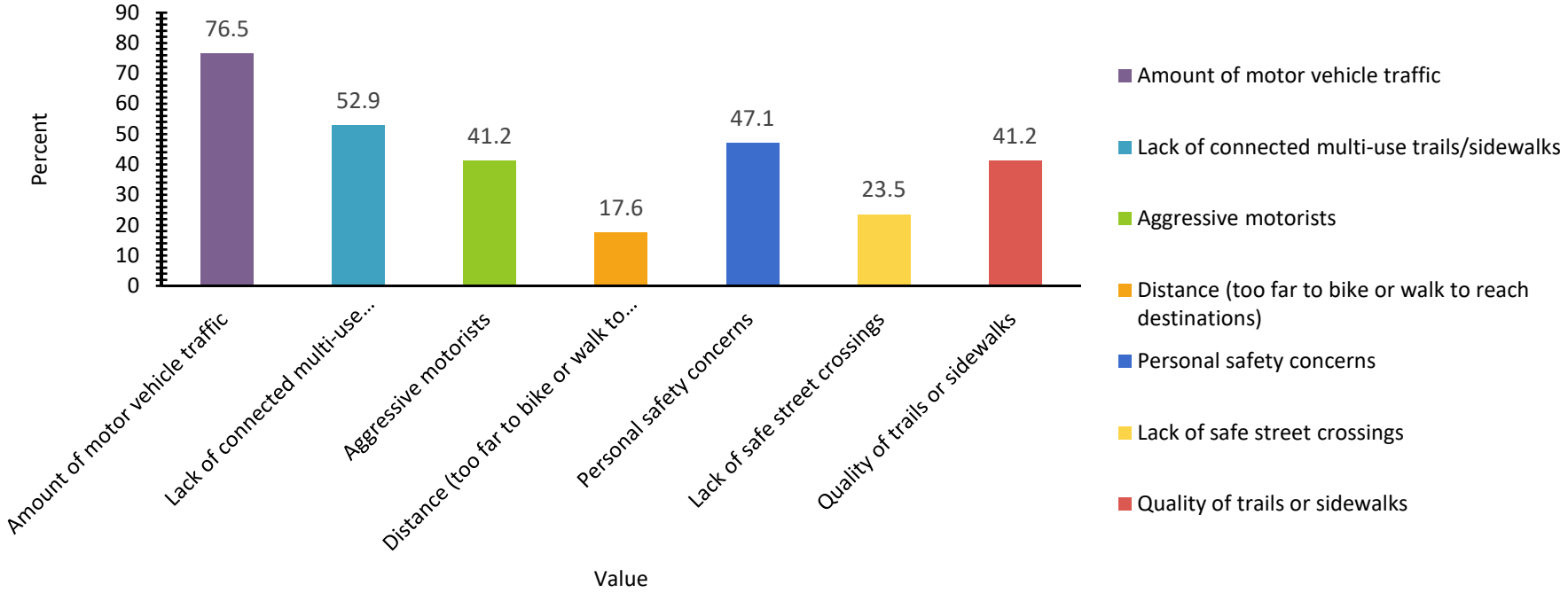
8.What is your level of comfort when cycling in South Bend Township?



8.What is your level of comfort when cycling in South Bend Township?

Value		Percent	Count
Strong and Fearless – I am willing to bicycle with limited or no bicycle-specific infrastructure.		5.9%	1
Enthused and Confident – I am willing to bicycle if some bicycle-specific infrastructure is in place.		29.4%	5
Interested but Concerned – I am willing to bicycle if high-quality bicycle infrastructure is in place		52.9%	9
No Way, No How – I do not want to ride a bicycle, even if high-quality infrastructure is in place.		11.8%	2
Totals			17

9.What are some things you find discouraging for bicycling or walking along CSAH 33 and CSAH 69? (Choose 3 that are most applicable)

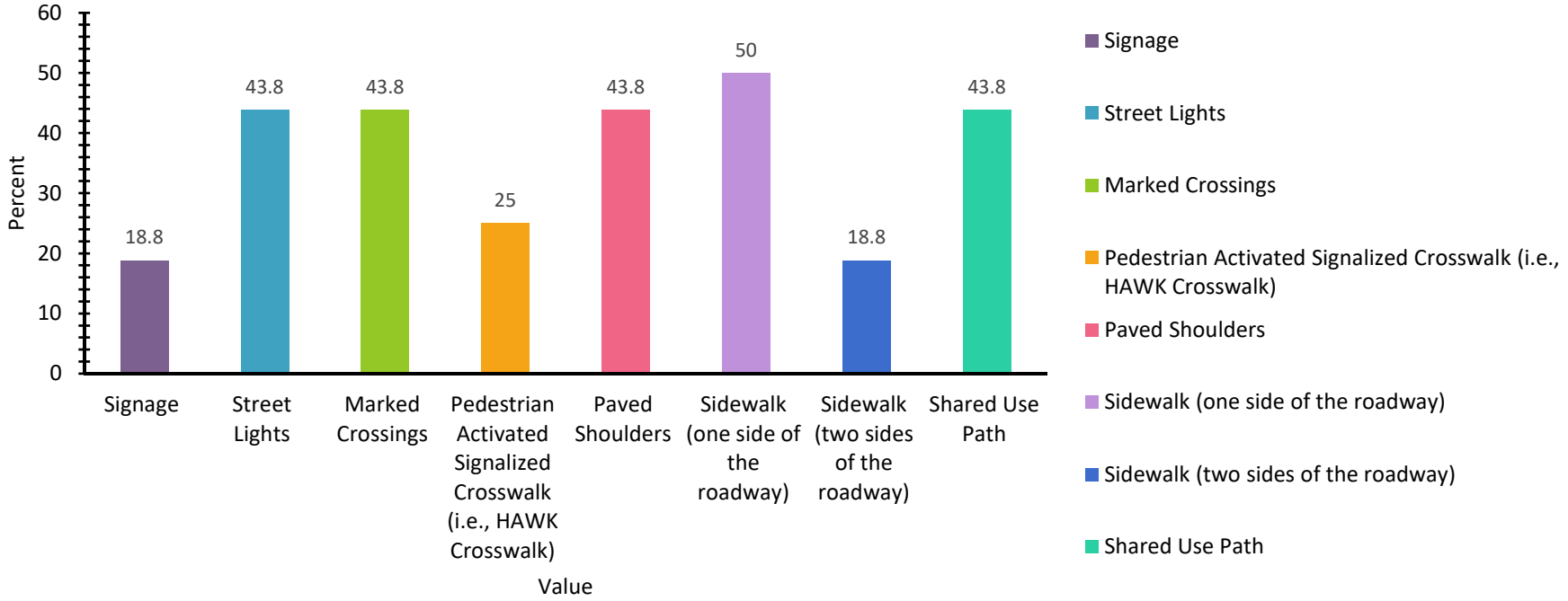


9.What are some things you find discouraging for bicycling or walking along CSAH 33 and CSAH 69? (Choose 3 that are most applicable)

Value		Percent	Count
Amount of motor vehicle traffic		76.5%	13
Lack of connected multi-use trails/sidewalks		52.9%	9
Aggressive motorists		41.2%	7
Distance (too far to bike or walk to reach destinations)		17.6%	3
Personal safety concerns		47.1%	8
Lack of safe street crossings		23.5%	4
Quality of trails or sidewalks		41.2%	7

Other - Write In	Count
Totals	0

10.Which of the following improvements would be most likely to increase the rate at which you taking walking trips along CSAH 33 and/or CSAH 69? (Select 3 that are most likely)

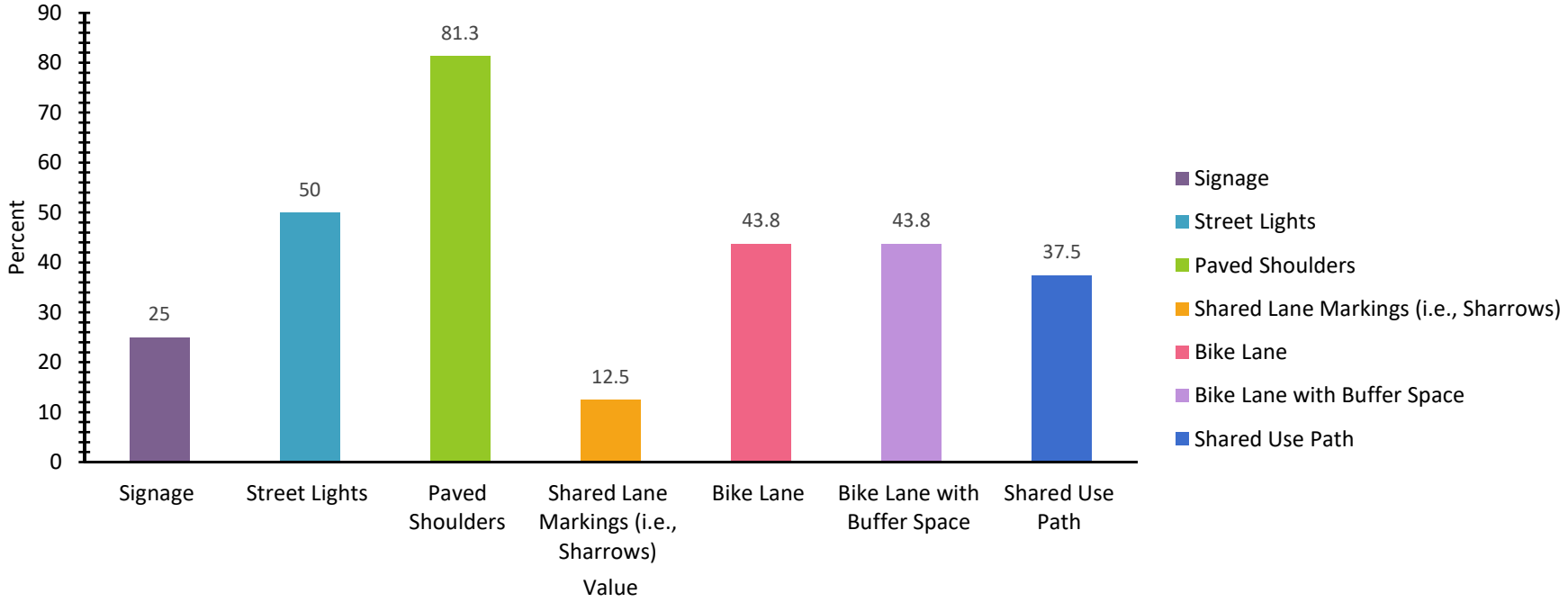


10.Which of the following improvements would be most likely to increase the rate at which you taking walking trips along CSAH 33 and/or CSAH 69? (Select 3 that are most likely)

Value		Percent	Count
Signage		18.8%	3
Street Lights		43.8%	7
Marked Crossings		43.8%	7
Pedestrian Activated Signalized Crosswalk (i.e., HAWK Crosswalk)		25.0%	4
Paved Shoulders		43.8%	7
Sidewalk (one side of the roadway)		50.0%	8
Sidewalk (two sides of the roadway)		18.8%	3
Shared Use Path		43.8%	7

Other - Write In	Count
Totals	0

11.Which of the following improvements would be most likely to increase the rate at which you taking bicycling trips along CSAH 33 and/or CSAH 69? (Select 3 that are most likely)



11.Which of the following improvements would be most likely to increase the rate at which you taking bicycling trips along CSAH 33 and/or CSAH 69? (Select 3 that are most likely)

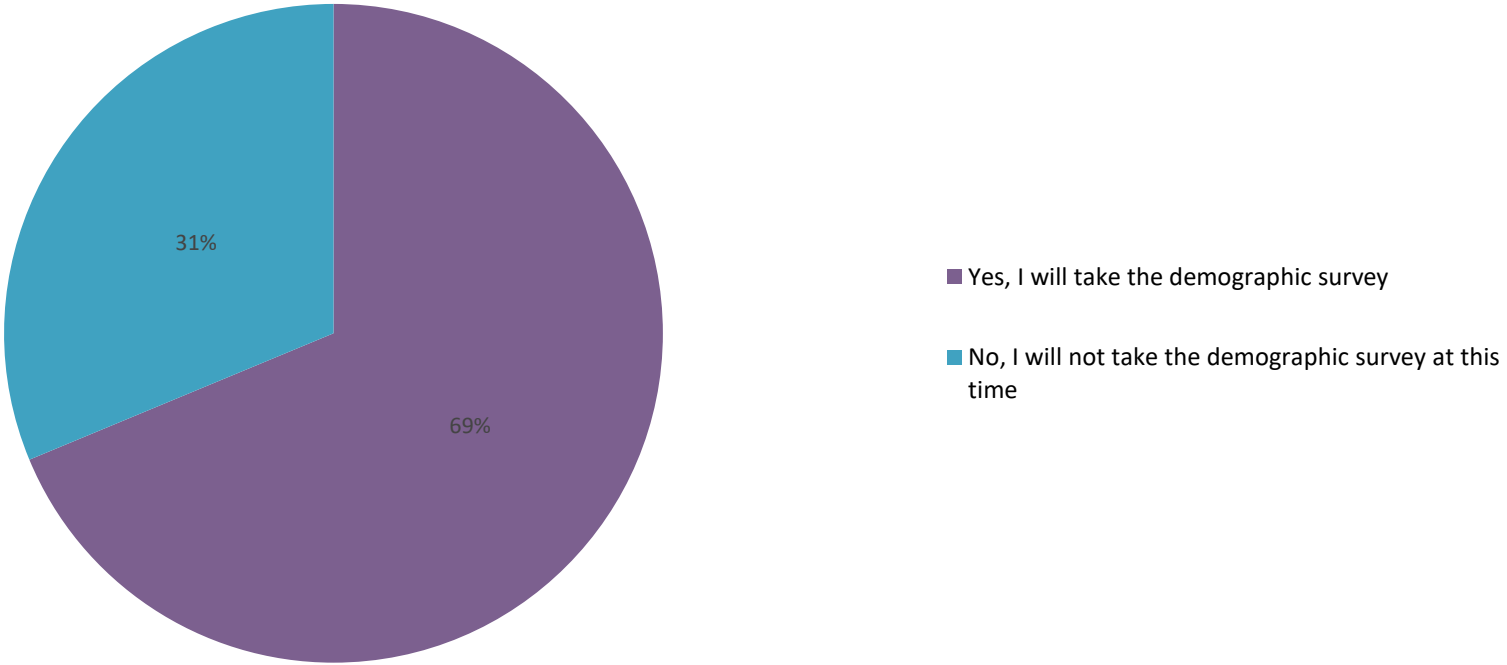
Value		Percent	Count
Signage		25.0%	4
Street Lights		50.0%	8
Paved Shoulders		81.3%	13
Shared Lane Markings (i.e., Sharrows)		12.5%	2
Bike Lane		43.8%	7
Bike Lane with Buffer Space		43.8%	7
Shared Use Path		37.5%	6

Other - Write In	Count
Totals	0

12.Do you have any other ideas or concerns you would like us to know about? Please let us know in the comment box below:

ResponseID	Response
16	I live to far out to ride or bike along CSAH 33 or CSAH 69...but as a driver it's ridiculous and unsafe the amount of bikers along this route. This includes CR 1 and CSAH 33 all the way to Rapidan. There are some very nice trails already completed and the bikers insist on not using them...even along CR 90. There's a great trail system and yet for whatever reason, the bikers insist on riding on the highway. I question whether they would actually use a trail system if it was even put in.
27	Hemlock road is narrow and a hill past waste management, there is no way I or my kids will ride bike there now. I don't like my kids getting off the bus at Hemlock and Beaver, so much fast truck traffic.
30	A bike trail along the south side of 169 or a pedestrian bridge across to the other side would be very helpful and encourage much more walking and biking in the area.
32	I would be nice to have a safe way to cross 169 as well.

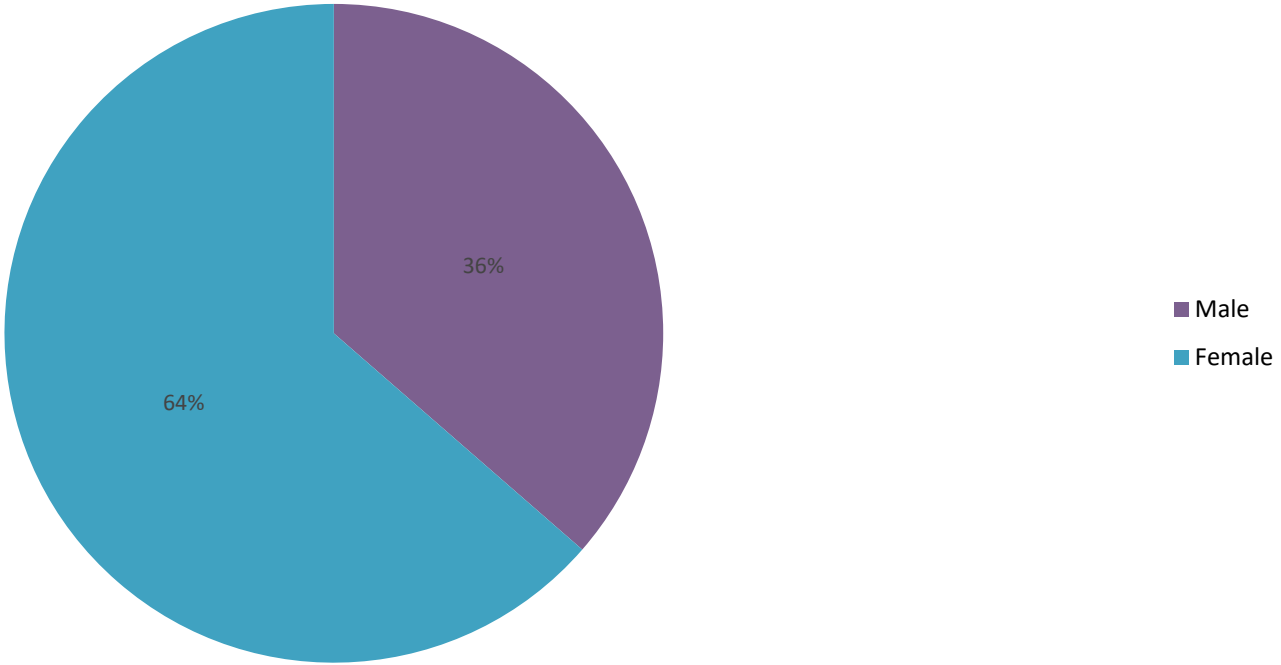
13.Will you participate in a short demographic survey?



13.Will you participate in a short demographic survey?

Value		Percent	Count
Yes, I will take the demographic survey		68.8%	11
No, I will not take the demographic survey at this time		31.3%	5
Totals			16

14.To which gender identity do you most identify?

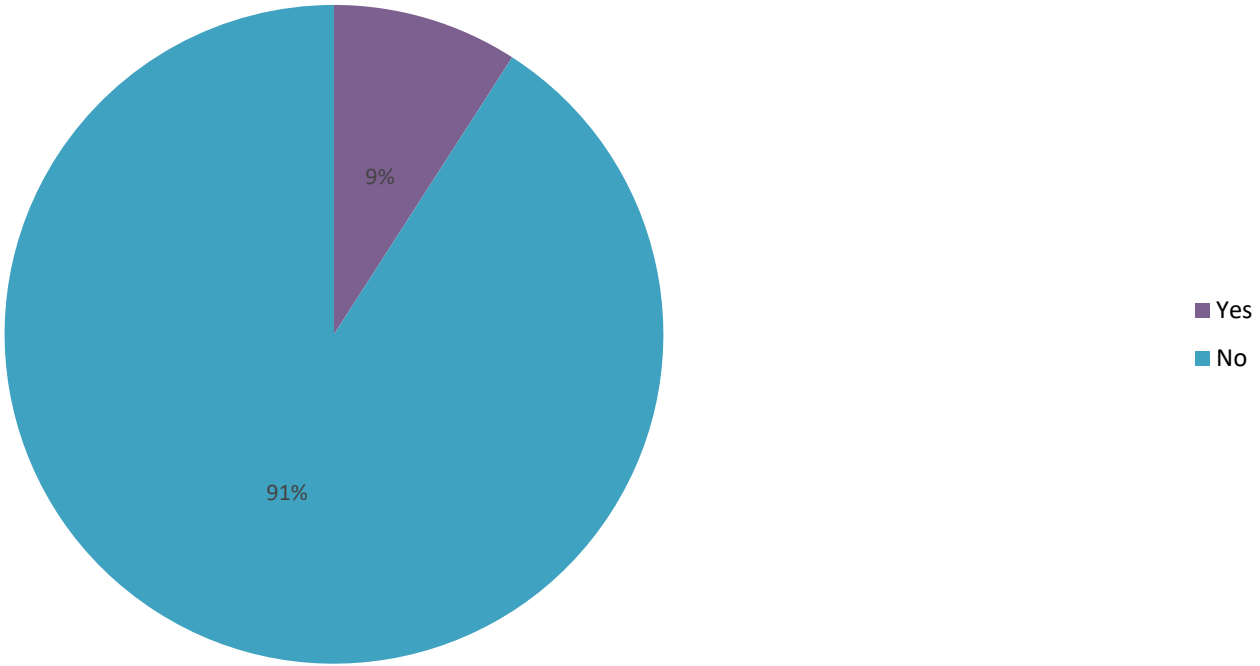


14.To which gender identity do you most identify?

Value		Percent	Count
Male		36.4%	4
Female		63.6%	7
Totals			11

Other - Write In	Count
Totals	0

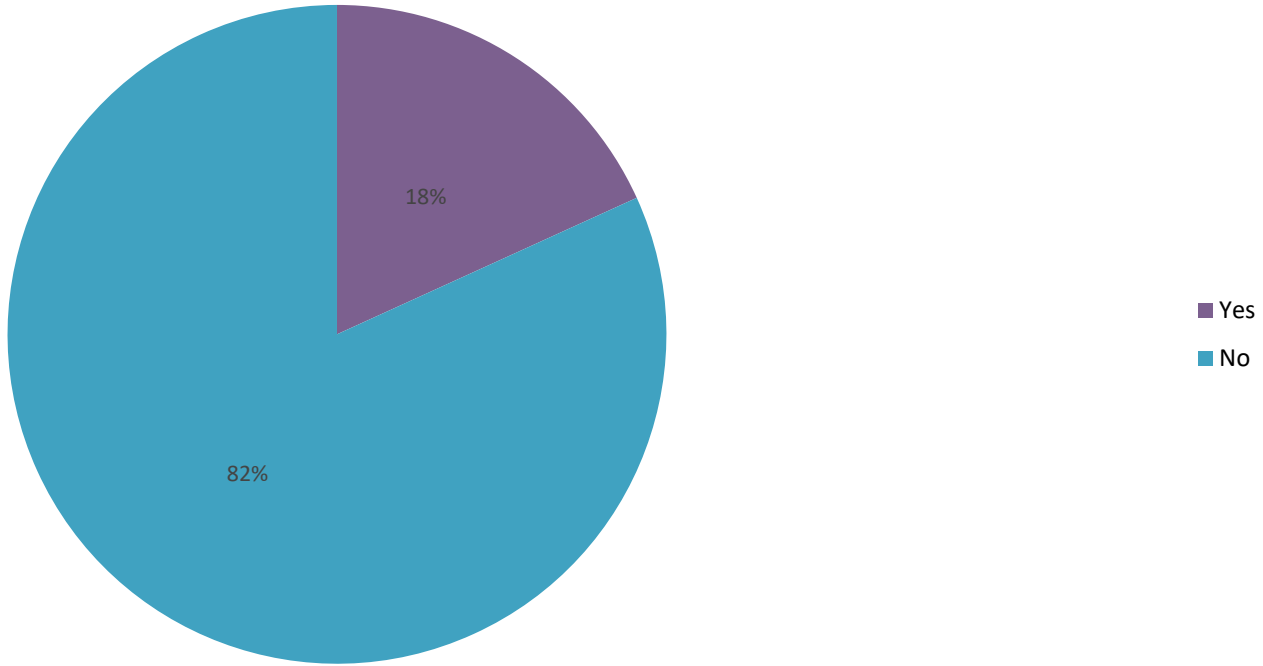
15.Do you identify as to having any disability? This includes but is not limited to self-reported hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty.



15.Do you identify as to having any disability? This includes but is not limited to self-reported hearing difficulty, vision difficulty, cognitive difficulty, ambulatory difficulty, self-care difficulty, and independent living difficulty.

Value		Percent	Count
Yes		9.1%	1
No		90.9%	10
Totals			11

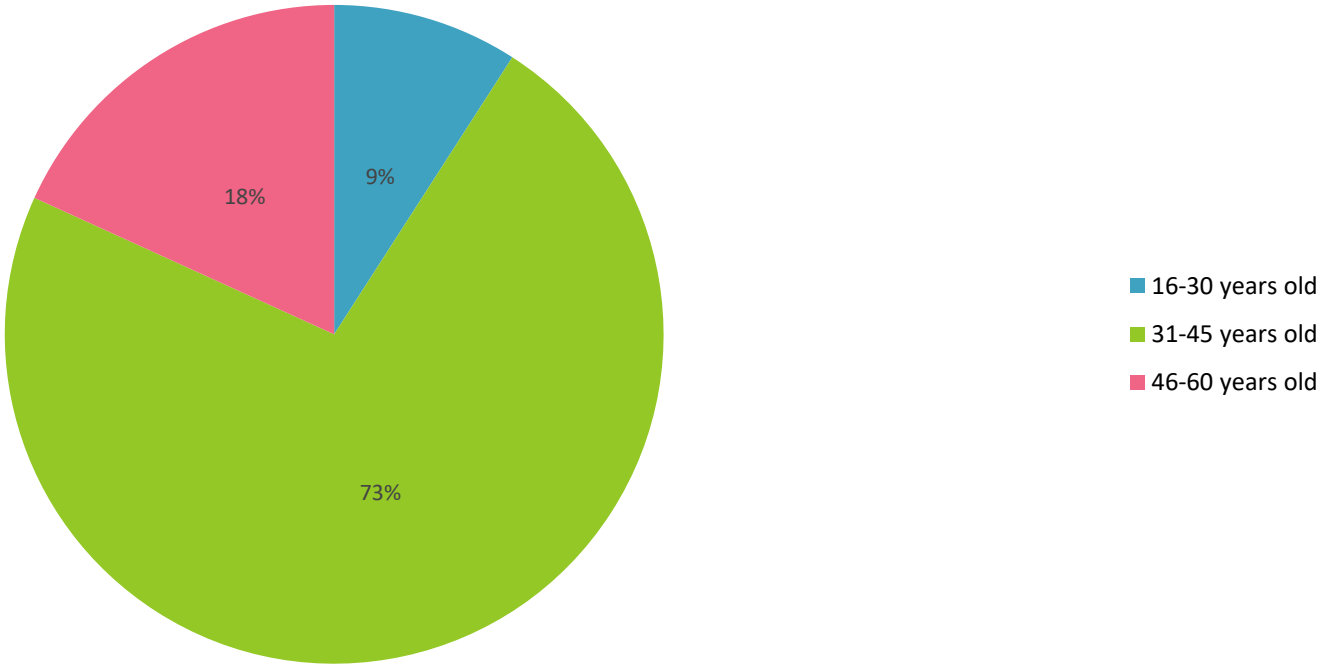
16.Do you receive public assistance (e.g., cash assistance, housing, energy assistance, WIC, food stamps, national school lunch program, Medicaid, child care assistance)?



16.Do you receive public assistance (e.g., cash assistance, housing, energy assistance, WIC, food stamps, national school lunch program, Medicaid, child care assistance)?

Value		Percent	Count
Yes		18.2%	2
No		81.8%	9
Totals			11

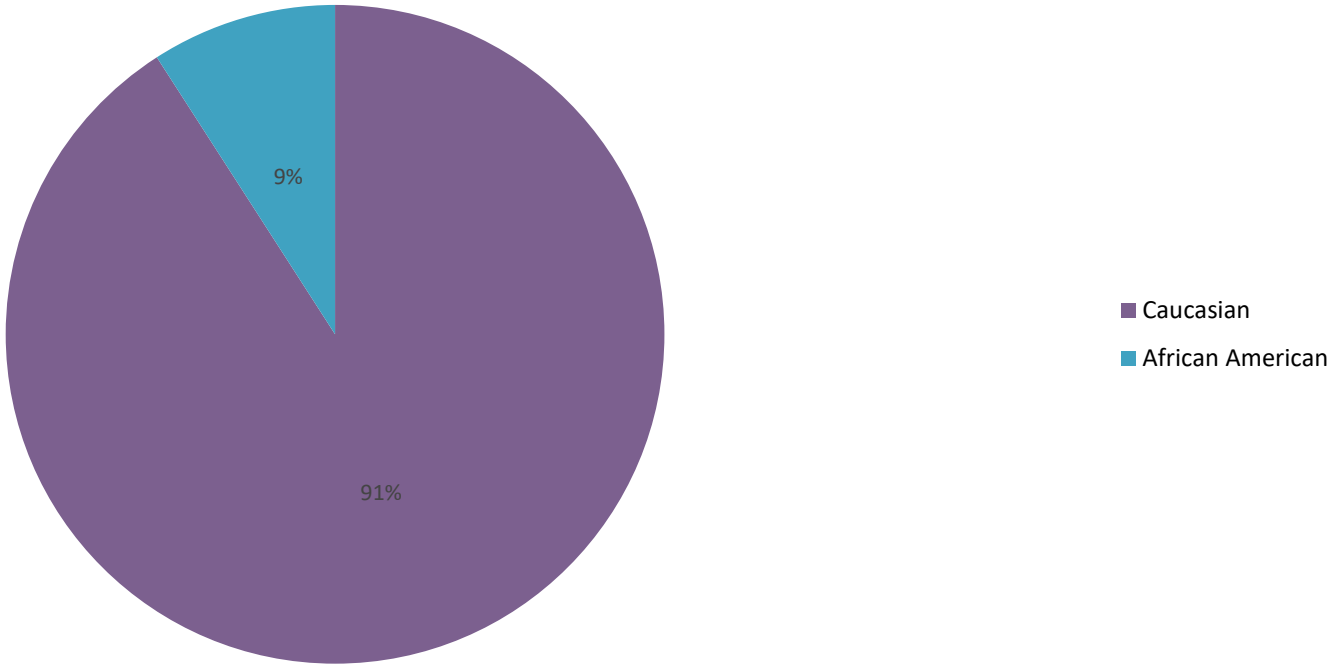
17.Age



17.Age

Value		Percent	Count
16-30 years old		9.1%	1
31-45 years old		72.7%	8
46-60 years old		18.2%	2
Totals			11

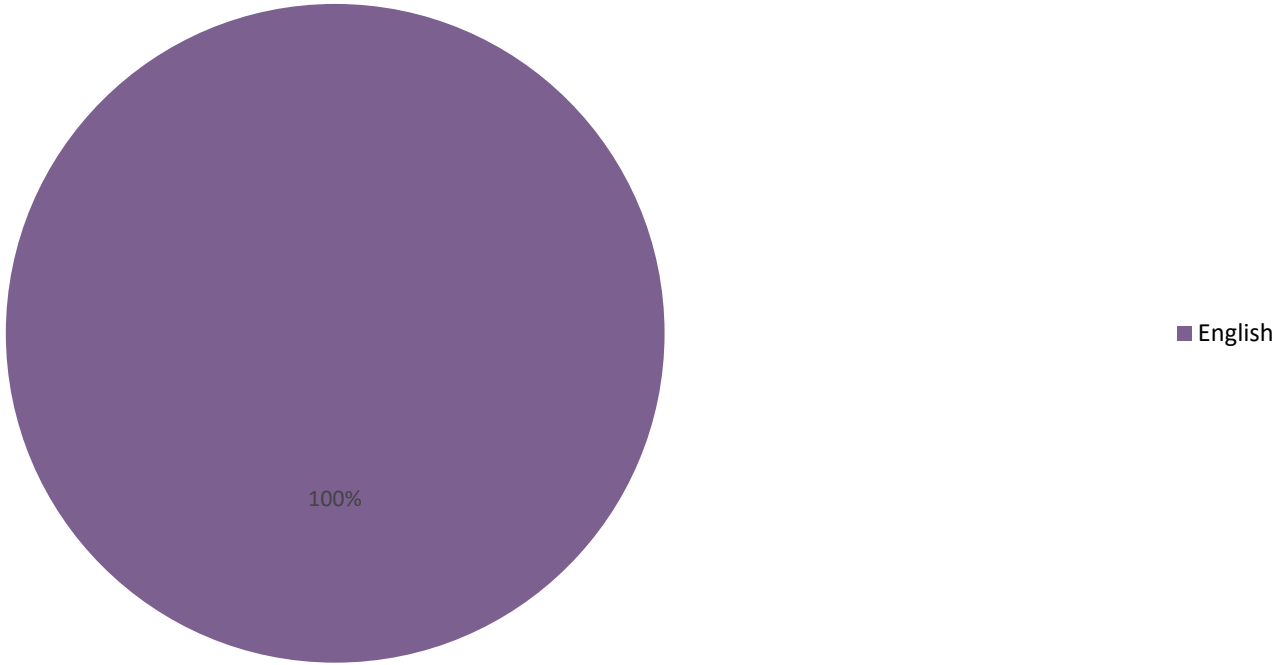
18.Ethnicity



18.Ethnicity

Value		Percent	Count
Caucasian		90.9%	10
African American		9.1%	1
Totals			11

19.Language most frequently spoken in your home:

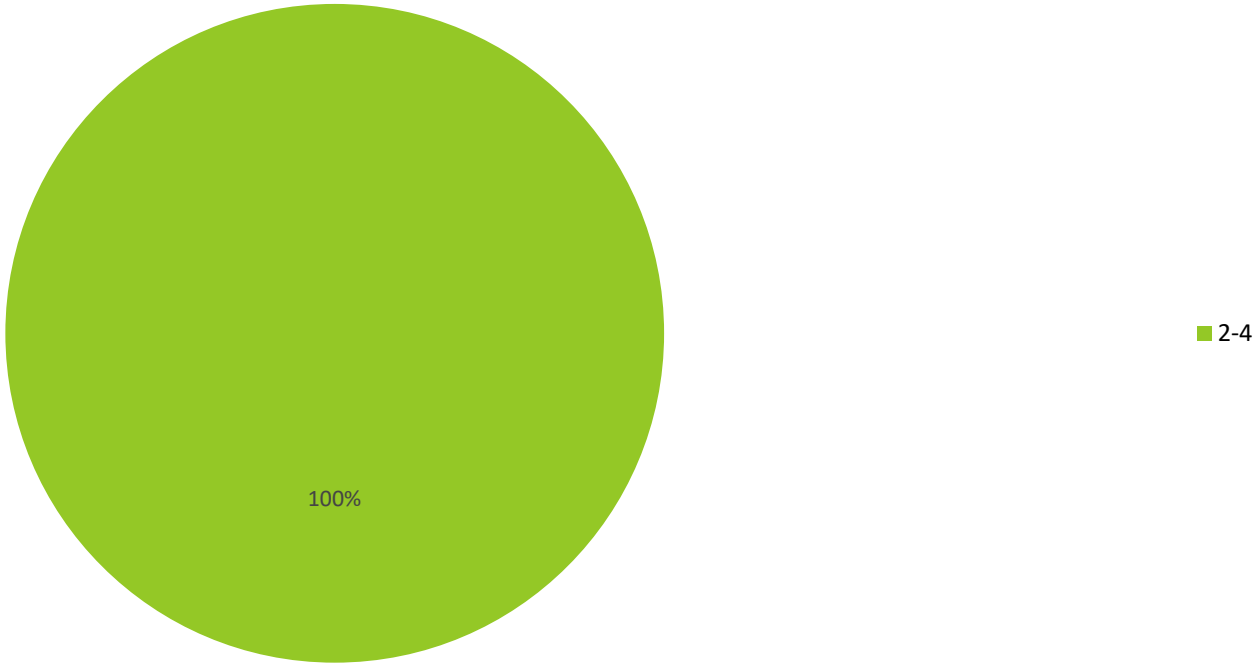


19.Language most frequently spoken in your home:

Value		Percent	Count
English		100.0%	11
Totals			11

Other - Write In	Count
Totals	0

20.Family and dependents – How many children or dependents do you have?



20.Family and dependents – How many children or dependents do you have?

Value		Percent	Count
2-4		100.0%	11
Totals			11

Appendix B: Existing Conditions Analysis

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111 Washington Avenue S
Suite 650
Minneapolis, MN 55401

Ph: (612) 416-0220
Fax: (612) 416-0222
Bolton-Menk.com

EXISTING CONDITIONS MEMORANDUM

Date: Thursday, December 8, 2022

To: Christopher Talamantez

From: Cody Christianson, PE, ENV SP

Subject: South Bend Township – South Bend Safe Routes to Multimodal Study

Mankato/North Mankato Area Planning Organization

BMI Project No.: OT4.126950

I. Introduction

The Mankato/North Mankato Area Planning Organization (MAPO) is examining portions of CSAH 33 (Hemlock Road) and CSAH 69 (South Bend Avenue) in South Bend Township to consider options for safe, multimodal options that provide more travel opportunities for people living and working in the area. These roads connect residential areas abutting a variety of commercial and industrial uses to both US 169 and the City of Mankato. CSAH 33 and CSAH 69 do not current have any dedicated facilities for people walking or bicycling.

This report will summarize the plans, policies, and planned projects that will contribute to the development of roads surrounding the study area and in the community of South Bend Township. Next this report will examine local demographics using data from the United States Census Bureau and the United States Environmental Protection Agency to pre-emptively identify any potential environmental justice concerns that could arise. Finally, it will look at historical crash data from the study area to determine where safety issues can be addressed as a part of any future project.

The study boundaries and some potential barriers to multimodal facilities are identified in the project issue map (Figure 1). This report and the issues map are not intended to fully cover the entirety of all possible barriers to developing increase multimodal connectivity within the study area. Rather, it will provide areas to focus on during alternatives evaluation in addition to highlighting potential areas of focus during community engagement efforts.

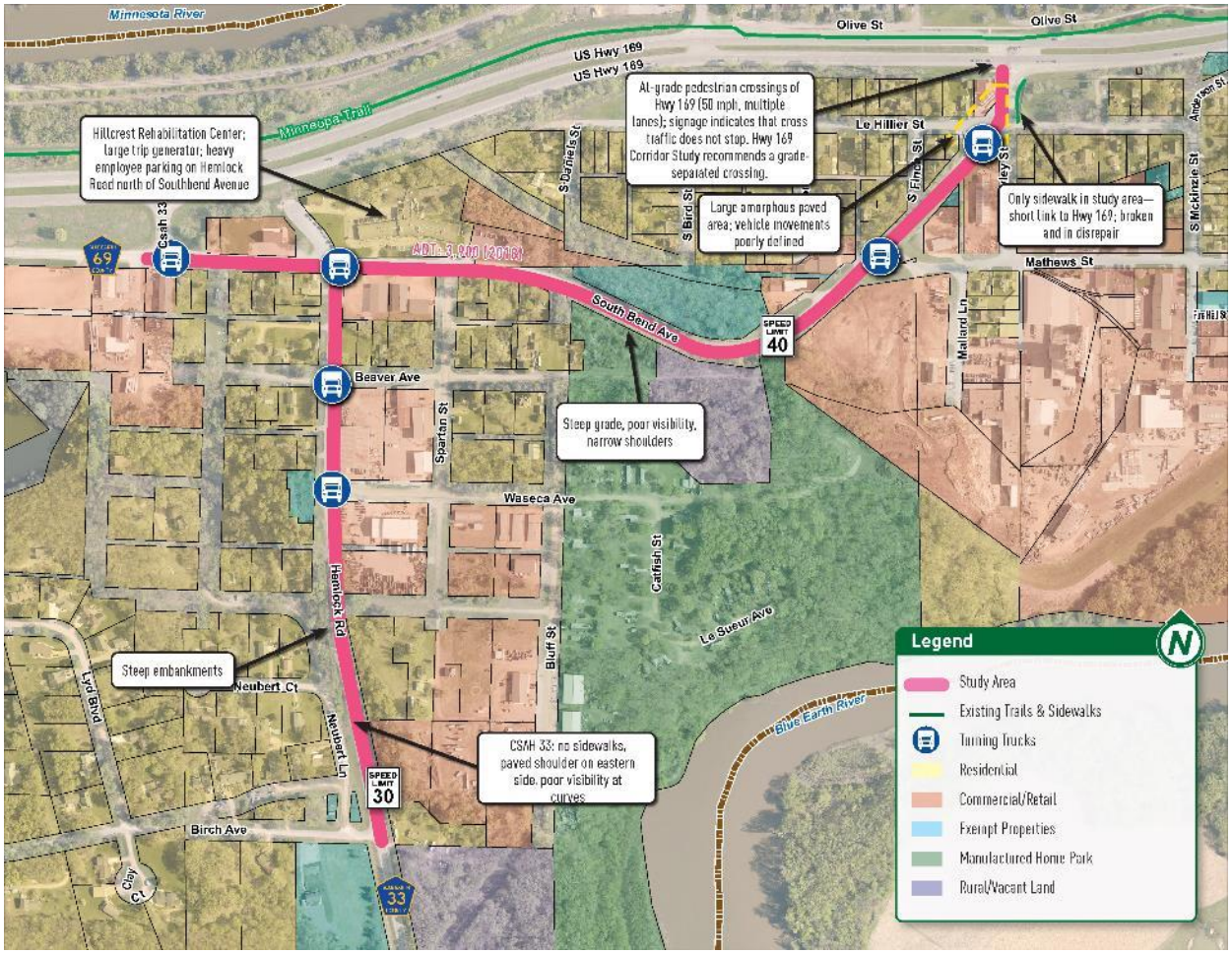


Figure 1. South Bend Township Study Area and Issues Map

A. General Comments

South Bend Township (South Bend) is a suburban community located southwest of Mankato. South Bend has limited retail uses within the community but has a significant number of commercial and industrial land uses along both CSAH 33 and CSAH 69. South Bend Township was organized in the 19th century and follows typical development patterns typical of rural and suburban development of the late 19th and 20th centuries. The conditions along CSAH 33 and CSAH 69 function as barriers to biking and walking trips: The roadways community collectors with narrow shoulders and no dedicated facilities for bicyclists or pedestrians. Road segments in the study area see an average of 2,000 to 3,000+ vehicles per day (vpd). There is limited connectivity between neighborhoods afforded to bicyclists and pedestrians, owing to a street network comprised of branching curvilinear streets terminating in cul-de-sacs, not conducive to short, direct biking and walking trips. Finally, US 169 is a substantial regional barrier to biking and walking.

There are no marked bicycle lanes within the South Bend study area, and there are no sidewalks identified in the study area. The nearest shared use paths are the Minneopa Trail north of US 169, and the South Route Trail that runs parallel to CSAH 90 (Hawthorn Road), approximately one mile south of the intersection of Birch Avenue and CSAH 33. Bicyclists are permitted to ride on public

roads as per Minnesota Statues, Chapter 169. Per the same statute, cyclists may ride on sidewalks if they yield right-of-way to pedestrians and give audible warning when passing. The South Bend Township Code does not explicitly dictate how cyclists should operate on the public right-of-way, and the Blue Earth County Code only regulates the operation of bicycles in parks.

There are significant gaps in the South Bend sidewalk network. The Blue Earth County ADA transition plan did not identify any sidewalks, pedestrian ramps, crosswalks or traffic signals within South Bend inventory, indicating the complete lack of facilities.

CSAH 33 serves as a connection for both the residential, commercial, and industrial development between CSAH 69 and CSAH 90. It is the sole point of access to the public road network for the River Center Manufactured Home Park, as well as several industrial uses on the eastern side of CSAH 33. The residential development to the west of CSAH 33 is predominately single-family development with access to both CSAH 33 and CSAH 69.

B. Specific Concerns

In addition to the general concerns noted above, several specific issues were repeatedly noted across resources examined when creating this report.

- US 169 is a barrier to multimodal connectivity between the study area and the Minneopa Trail, the nearest crossing for the Blue Earth River. There are no marked crossings of US 169 in the study area, with the crossing at the intersection of US 169 and CSAH 69 having been removed owing to safety concern. The Highway 169 Corridor Study recommended a pedestrian overpass at the intersection, due to the high speeds and volumes of traffic.
- Horizontal and vertical curves along CSAH 33 and CSAH 69 present safety issues for all road users in the study area.
- The narrow right-of-way (ROW), steep embankments, and utilities along the ROW present design issues when adding a multiuse trail along either roadway.
- The volume of traffic along both CSAHs is projected to increase significantly by 2045.

II. Existing Plans and Studies Summary

This Existing Literature Summary focuses previous planning effort conducted by the agencies responsible for maintaining both the project corridor as well as the rights of way that feed into it, including comprehensive planning documents from MAPO and Blue Earth County.

A. Greater Mankato River Valley Trail Master Plan (2021)

The Greater Mankato River Trail Master Plan was created to establish a framework for the development and improvement of the trail system that runs throughout the Mankato area, The Greater Mankato River Valley Trail segments include the Red Jacket Trail Segment, South Route Trail Segment, Minneopa Trail Segment, North Minnesota River Trail Segment, and West Mankato Trail Segment. The plan is intended to guide investment in such a way that improvements to the trails and connectivity will enhance the region's recreational and multimodal transportation system by providing new connections between parks, cultural sites, historic downtown areas, state parks, and the state trail system.

- Plan does not provide recommendations for addressing trail gaps.

- Trail investments along CSAH 33 and CSAH 69 could be used to connect the Minneopa Trail segment north of Highway 169 to the South Route Trail segment that runs along the northern side of Hawthorn Road (CSAH 90).
- The Greater Mankato River Valley Trail Master plan should be monitored for any update that would identify CSAH 33 or CSAH 69 as alignments for trail connections.

B. **Minnesota GO Statewide Pedestrian System Plan (2021**)

As part of the MnGO Family of Plans, the Statewide Pedestrian System Plan guides MnDOT's investments in pedestrian infrastructure while centering equity and responding to the challenges posed by climate change, especially for the most vulnerable Minnesotans. MnDOT's pedestrian planning has historically focused on improvements for ADA compliance, but with the latest update have shifted to include a focus on walking as part of quality-of-life, with calls for new funding priorities to match. Aspects of the plan that could impact developments in South Bend include:

- Provides specific goals and recommended performance measure for pedestrian infrastructure projects, focused on walking as a universal need, enabling healthy and equitable communities, supporting pedestrian safety, and using pedestrian infrastructure investments to enhance quality of life.
- Sets impetus for future updates to the Minnesota State Highway Investment Plan (MnSHIP) to expand the amount invested in accessible pedestrian infrastructure and increase funding for standalone walking improvements.
- The plan includes policies and practices for investment priorities, maintenance, project scoping, and needs identification.

C. **Mankato Area Public Schools Safe Routes to School Plan (2020)**

Safe Routes to School (SRTS) is a national program that promotes biking and walking to school. The Minnesota Department of Transportation (MnDOT) awarded the Mankato Area Public Schools (MAPS) a SRTS Planning Grant in the spring of 2019 to create a SRTS Plan for the Mankato Area Public Schools. The SRTS plan provided recommendations for improving walking and biking rates for seven Mankato-area elementary and middle schools. MAPS provides transportation services for public and non-public students in grades K-5 who reside 1 mile or more from their school of attendance and students in grades 6-12 who reside 2 miles or more from their school of attendance. Students living in South Bend are eligible for bus transportation services.

- The MAPS SRTS plan did not provide recommendations that pertained to the study area due to its distance from Mankato area schools.

D. **Highway 169 Corridor Study (2020)**

The Highway 169 Corridor Study reviewed a segment of US Highway 169 (US 169) through the Mankato/North Mankato area. The study examined the US 169 corridor between the State Highway 60 and Lake Street Northwest. The Highway 169 Corridor Study analyzed intersection operations for CSAH 33 and US 169 as well as the intersection of CSAH 69 and US 169, two principal intersections in the South Bend Safe Route to Multimodal study area. Findings and recommendations from the Highway 169 Corridor Study included the caveat that the implementation of any recommendations would not occur for several years, as

there is no scheduled construction in the project area at the time of the study being published.

Additional design, study, and public input will be needed to develop a locally recommended corridor vision for this area. The design details and implementation timing will be further discussed by MnDOT and its partners when project funding is secured and construction becomes more imminent.

Findings from the Highway 169 Corridor Study pertinent to the study area include:

- Study produced a recommendation for a pedestrian bridge at CSAH 69 and US 169 (Figure 2).
- An existing traffic operations analysis determined that the intersection of CSAH 33 and Highway 169 operates at level of service (LOS) F during the a.m. and p.m. peaks.
- The 2040 No Build Traffic Operations Analysis projected increased delays at the intersection of CSAH 33 and Highway 169 for all movements.

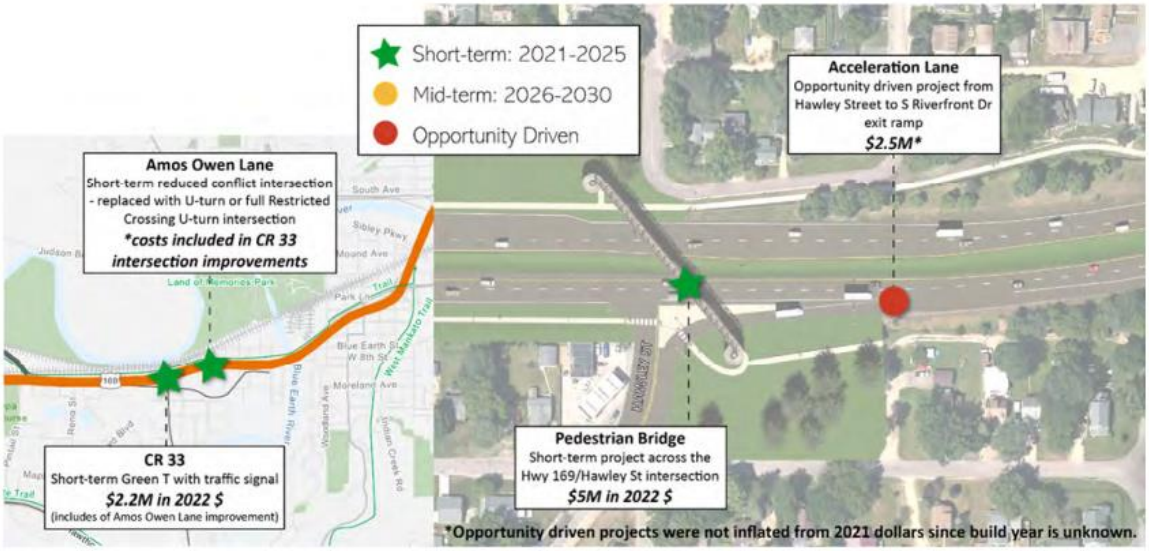


Figure 2. Highway 169 Corridor Study Locally Recommended Vision and Implementation Plan for Southern Subarea

E. 2045 Long Range Transportation Plan Update (2020)

The Mankato/North Mankato Area Planning Organization's (MAPO) Long Range Transportation Plan (LRTP), guided by MAPO's Technical Advisory Committee (TAC) and Policy Board was published in 2015 and last updated in 2020. The plan provides guidance for long-range and short-range transportation planning strategies and actions that contribute to the development of a safe, efficient, and integrated multimodal transportation system. The geographic extent of the plan included Blue Earth and Nicollet counties; the cities of Mankato, North Mankato, Eagle Lake, and Skyline; and the townships of Belgrade, Lime, South Bend, LeRay and Mankato. All member jurisdictions were included in the development of the plan. The following is a summary of findings pertinent to this study:

- Illustrative projects near the study area could have impacts on multimodal connectivity, including a proposed bike/ped trail and bridge from Sibley Park to Land of Memories

Park/Minneopa Trail, and a reconstruction project along CSAH 33 from US 169 to the MAPO boundary.

- Traffic forecasting along the project corridor projected growth in the volume of traffic. CSAH 69 between CSAH 33 and US 169 is projected to see the largest increases in traffic volume (Figure 3).

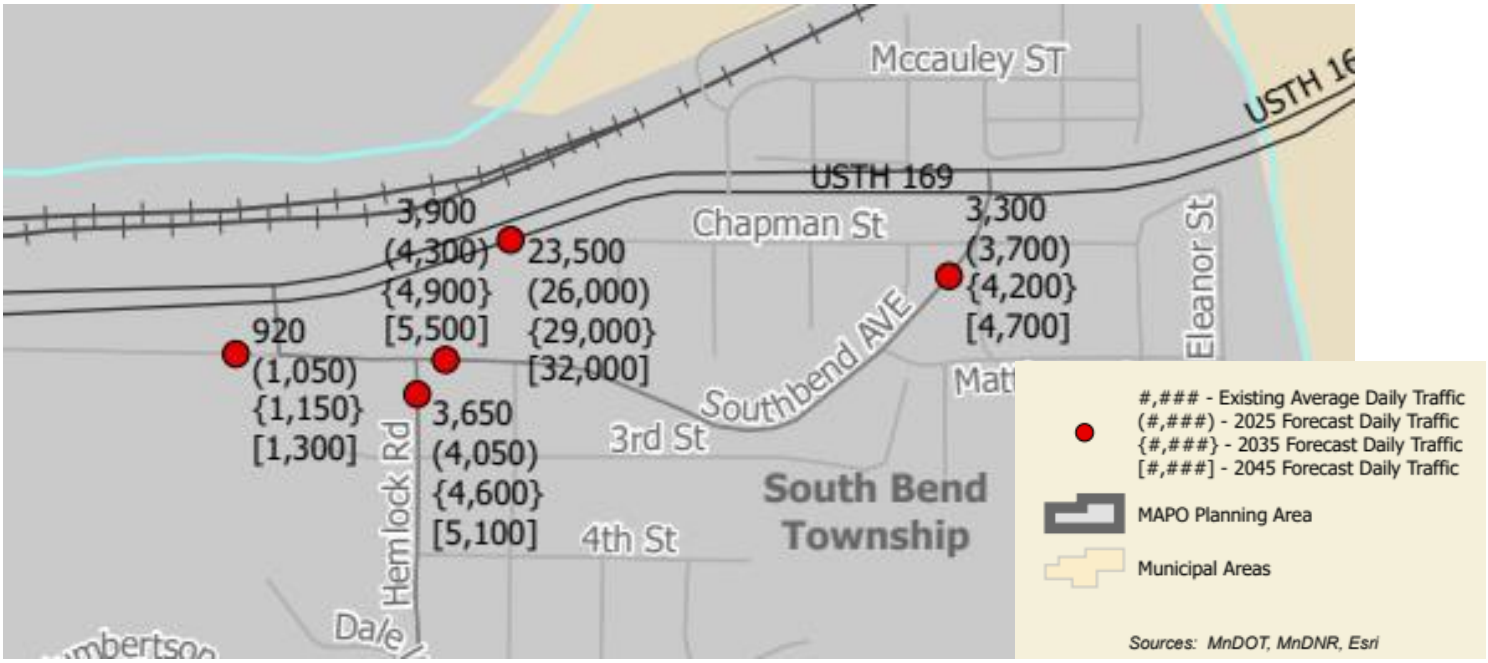


Figure 3. 2045 Travel Demand Forecast for South Bend Township

F. Mankato Area Planning Organization ADA Transition Plan (2019)

The MAPO ADA Transition Plan & Inventory for Public Right-of-Way was published in May 2019 as part of requirements laid out in the Americans with Disabilities Act (ADA). The ADA requires MAPO and partner agencies to conduct self-evaluations of facilities within public rights-of-way and develop a transition plan detailing how the agency will ensure all facilities are accessible to all individuals. The study includes evaluations of MAPO member jurisdictions including Blue Earth and Nicollet counties and the cities of Mankato, North Mankato, Eagle Lake, and Skyline. Plan implementation was separated into three priority levels based on adjacent land use and nearby facilities. This prioritization process was used to form a tentative schedule of improvements.

Implementation of the ADA plan is addressed in two ways. First, through scheduled street and utility improvement projects, in which all impacted pedestrian facilities are recommended to be upgraded to current ADA accessibility standards. Second is the stand-alone sidewalk and ADA accessibility improvement project, which are prioritized based on their proximity to specific land uses consistent with higher levels of pedestrian traffic, the receipt of public comments, as well as areas exhibiting high levels of non-compliance. These ADA improvements were recommended to be incorporated into the Capital Improvement Program (CIP) on a case-by-case basis as determined by agency staff. Findings from the ADA Transition plan as they relate to this study include:

- There are no ADA compliant facilities in the study area, with the nearest ADA compliant facility being the Minneopa Trail, located between US 169 and Olive Street, directly north of the study area (Figure 4).
- The plan did not include any recommendations for standalone sidewalk or ADA accessibility improvements for the study area.

Figure 4. South Bend Township ADA Inventory

G. Blue Earth County Land Use Plan (2018)

South Bend Township is in MAPO's urbanized boundary and urban fringe overlay district, but outside Mankato city boundary. Land use planning for the study area is managed by Blue Earth County. Future development plans will be determined based on pre-existing orderly annexation agreements and Blue Earth County land use planning.

- Study area is mostly developed with limited redevelopment potential. The median year for housing unit construction in South Bend Township is 1952, with 125 housing units built since 1990.

H. City of Mankato Transit Development Plan (2018)

The Greater Mankato Transit System (GMTS) serves 24 square miles in Mankato and North Mankato. In May 2018, GMTS operated 19 fixed route bus line and paratransit service. South Bend Township, and the project study area by extension, are not currently served by GMTS. The planning process identified three service recommendation scenarios. The scenarios give GMTS flexibility to begin addressing deficiencies in the existing system as funding becomes available.

- Public engagement identified the need for expanded transit service to the South Bend Township

III. Planned Projects

There are currently no planned or programmed projects within and/or around the study area. This lack of programing means that future multimodal improvement will either be developed as standalone projects to be implemented when fiscally viable, or improvements can be deferred until reconstruction projects are scheduled in the area.

A. Mankato/North Mankato Area Planning Organization Draft 2023-2026 Transportation Improvement Program (TIP) (2022)

MAPO's current draft TIP for 2023-2026 does not include any projects within the study area.

B. Blue Earth County Transportation 2022-2026 TIP

The current Blue Earth County TIP does not have any scheduled projects within the study area.

C. Minnesota Department of Transportation 2022-2031 10-year Capital Highway Improvement Plan (CHIP)

The current MnDOT CHIP does not have any scheduled improvements in the study area.

IV. Existing Policy Summary

A. Blue Earth County Policies for Ice and Snow Control

The Blue Earth County code has no specific policy for snow removal that applies to sidewalks or paths within the county, and defaults to the municipalities requirements for snow and ice removal from pedestrian facilities. Blue Earth County encourages timely removal of snow and other barricades for continuity purposes. Owing to their use for winter recreational activities, Blue Earth County does not plow recreational trails in the winter with the exception of the Red Jacket Trail from Weagel Park to the City of Mankato limits. Blue Earth County's code and policies contain no language regarding clearing ice and snow on pedestrian infrastructure in the public right of way within a specific time period.

B. South Bend Township Policies for Ice and Snow Control

South Bend Township maintains its own ordinances to regulate aspects of civil life within the township boundaries. Ordinance 13 regulates snow emergency parking on public streets and was passed in 1997. This ordinance states that a snow emergency may be declared during any weather event that results in two or more inches of accumulation that creates or is likely to create hazardous road conditions. During such an emergency, no vehicles may be left unattended on any township road or street until the accumulation has been fully cleared from one edge of the traveled portion of the roadway to the other.

The South Bend Township ordinances do not include any provisions for the removal of snow or ice from sidewalks or other pedestrian paths within the township boundaries.

C. Routine Maintenance Agreements with Cities in Blue Earth County (2018)

This agreement states that local governments in Blue Earth County will perform routine maintenance duties to the satisfaction of the Blue Earth County Public Works Director. All materials used in the performance of said routine maintenance must comply with the State of Minnesota's current "Standard Specifications for Construction". The reports outline cost

sharing responsibilities between the County and cities regarding vehicle and pedestrian infrastructure. Costs are shared for pedestrian crosswalk markings and major signal maintenance. Cities are responsible for maintaining highways and adjacent sidewalks and/or trails to keep them smooth and in good repair for the passage of vehicular and pedestrian traffic and free from all obstructions and impediments to traffic. Cities are responsible for the disposal of snow.

V. General Land Use Pattern & Considerations

Land use within the study area is varied, with a mixture of residential, commercial/retail, and industrial land uses. Land use is detailed in the project issues map (Figure 1). Land use along CSAH 33 is a mix of residential and commercial use, with a manufactured home development to the southeast of the intersection of CSAH 33 and CSAH 69 (River Center Manufactured Home Park). Land use between CSAH 69 and US 169 is residential and commercial development. Hillcrest Rehabilitation Center, a nursing home which generates a significant number of daily trips and requires special consideration owing to the vulnerable populations who reside there, is located north of the intersection of CSAH 33 and CSAH 69.

Housing stock within the area is almost entirely comprised of single-family housing. There are some institutional group-quarters located at the intersection of CSAH 33 and CSAH 69, in addition to the manufactured home development south of CSAH 69. The study area is nearly fully developed, with potential for more housing developments to the southeast of the study area boundary along CSAH 33. The existing manufactured home park and other housing stock represent some latent demand for bicycle and pedestrian activity owing to potential for higher rates of households without automobiles.

Other considerations for bicycle and pedestrian trips are as follows:

A. CSAH 33 (Hemlock Road)

CSAH 33 is a major collector managed by Blue Earth County. Pavement condition data from the 2045 LRTP Update reported that pavement quality for the entirety of CSAH 33 between Birch Avenue and CSAH 69 was satisfactory. A two-lane rural reconstruction with safety improvements was identified as an illustrative project in the same plan.

Future traffic forecasting from the 2045 LRTP projected an increase in traffic along the CSAH 33 corridor up to the intersection with CSAH 69. Along with the projected increases of traffic along CSAH 69, this could impact the intersection level of service. The Highway 169 Corridor Study conducted an existing traffic operations analysis for the intersection of CSAH 33 and US 169. The intersection operates at LOS F during the a.m. and p.m. peaks, with northbound turns from CSAH 33 having a per vehicle delay surpassing 400 seconds during the p.m. peak, and queues surpassing 800 feet, long enough to reach the intersection of CSAH 33 and CSAH 69 to the east.

B. CSAH 69 (South Bend Avenue)

CSAH 69 is a minor collector managed by Blue Earth County. Pavement condition data from the 2045 LRTP Update reported that pavement quality for CSAH 69 between the intersection with CSAH 33 and US 169 was rated as “poor”. A two-lane rural reconstruction with safety improvements was identified as an illustrative project in the same plan, meeting the criteria for

safety and preservation performance goals.

Future traffic forecasting from the 2045 LRTP projected a significant increase in traffic along the CSAH 69 corridor. The corridor already experiences significant delays at the US 169 intersection. The projected increases of traffic along CSAH 69 could impact the intersection level of service, potentially disrupting segment level of service if queues of vehicles waiting to access US 169 spill into other intersections and impact other operations. Increased traffic along both roads reduces safe crossing opportunities for any potential bicyclists and pedestrians.

The Highway 169 Corridor Study conducted an existing traffic operations analysis for the intersection of CSAH 69 (Hawley Street) and US 169. The intersection operates at LOS D during the a.m. peak, with westbound turns from CSAH 33 having a per vehicle delay averaging around 30 seconds during the a.m. peak, and queues backing up beyond 300 feet.

C. Existing Bicycle and Pedestrian Connections

Minneopa Trail is a regional trail that provides bicycle and pedestrian connections between Mankato and South Bend Township along the north side of US 169, but access is limited due to the lack of grade-separated crossings along US 169 in the study area.

The South Route Trail, a shared bicycle and pedestrian facility, runs south of the study area parallel to the CSAH 90 (Hawthorn Road) alignment. There are no dedicated bicycle or pedestrian facilities connecting the study area to the South Route Trail.

D. Transit Service

There is no fixed route transit service in the study area. Transit service for the study area is provided by Kato Flex, a curb-to-curb micromobility transit service offered by Mankato Transit Services. Trips must be reserved a day in advance. The service offers connections between any two points in the South Bend flex zone, which is roughly bounded by the Blue Earth River and Division Street east to west, and US 169 and Maplewood Drive to the north and south. Riders may also be dropped off anywhere Mankato fixed route bus service is provided. All vehicles used for Kato Flex are ADA accessible and equipped with bike racks.

VI. Existing Trails and Sidewalks

Trails and sidewalks within the study area were mapped out as part of the Mankato Area Planning Organization ADA transition plan. As previously mentioned, the study area does not have sidewalks on either side of CSAH 33 or CSAH 69, outside of a very limited stretch of CSAH 69 (Hawley Street) near its intersection with US 169. The Minneopa Trail is opposite the intersection of CSAH 69 and US 169, but there is not a marked crossing at this location.

There are no plans to incrementally address this deficiency of bicycle and pedestrian infrastructure. The ADA Transition Plan states that Blue Earth County's goal is to continue to provide accessible pedestrian design features as a part of street construction and reconstruction projects, and that the county will reference ADA design standards and procedures when appropriate. The ADA plan does not specify that all reconstruction projects will include pedestrian facilities, but rather states that any reconstructed pedestrian facilities will meet ADA standards.

VII. Crash and Safety Analysis

Crash data from 2017 – 2021 was analyzed at all key intersections and along segments. Crash data was taken from MnCMAT2. A more in-depth crash analysis following the methodology used by the Minnesota Department of Transportation (MnDOT), in which a comparison of the crash rate and the critical rate are used to determine if there is a safety issue at an intersection, was conducted as part of the final project alternatives development and final project report.

The key results of the preliminary crash analysis include:

- Seven intersection related crashes on CSAH 33
- Six intersection related crashes on CSAH 69
- Four segment crashes on CSAH 33
- Seven segment crashes on CSAH 69
- One serious injury crash on CSAH 69. No serious injury crashes reported on CSAH 33
- No bicycle and/or pedestrian crashes (2012-2021)
- The most common crash type was single vehicle run off the road event for both corridor

VIII. Pedestrian Origin and Destination Analysis

StreetLight Insights data pairs from September, October, and November 2019 as well as April, May, and June of 2020 were used to model potential pedestrian origin-destination (O/D) trip demand within the study area. StreetLight metrics rely heavily on data points sampled from smartphone applications and GPS devices, which can be subject to sample bias and coverage issues.

The O/D analysis estimates the number of trips either starting or ending in quarter-mile analysis zones bordering the study corridor. The analysis projected that nearly a quarter of all trips begin and end within the same sub-area located at the eastern end of the study area, where Matthew Street intersects with CSAH 69. This subarea contains a 24-hour convenience store and service station. This service station is the only food source and retail destination within the study area.

The same model estimates that approximately one third of trips originated in the subareas directly north and south of the intersection of CSAH 33 and CSAH 69. These subareas contain an assisted living facility for seniors as well as the River Center Manufactured Home Park. The model shows a small number of trips originating north of Highway 169. The destination model shows that nearly one third of all trips originating along the corridor end at the subarea with the 24-hour convenience store discussed previously.

IX. Conclusion

Under existing conditions, the study area has no dedicated bicycle and/or pedestrian facilities. Both CSAH 33 and CSAH 69 could provide efficient connections to other active transportation resources in the area, such as the Minneopa Trail and South Route Trail. Any future bicycle and pedestrian investments should be considered as part of a holistic investment strategy of projects to safely connect residents between area destinations and to support future improvements for US 169 in South Bend Township.

The analysis of crash data shows a lack of bicycle and pedestrian crashes in the area, but this is likely indicative of how corridor conditions are not conducive to biking or walking. Crashes along the corridor are the result of driver error, horizontal and vertical curves, and intersection performance (i.e., long delays and angle crashes). Bicycle and pedestrian improvements could be used to reduce the need for short trips between regional destinations, and be used to enrich the community with greater access to physical activity and recreational opportunities.

Appendix C: Environmental Justice Analysis

BOLTON & MENK
Real People. Real Solutions.

1960 Premier Drive
Mankato, MN 56001-5900

Ph: (507) 625-4171
Fax: (507) 625-4177
Bolton-Menk.com

ENVIRONMENTAL JUSTICE MEMORANDUM

Date: Tuesday, October 25, 2022

To: Christopher Talamantez

From: Cody Christianson, PE, ENV SP

Subject: South Bend Township – South Bend Safe Routes to Multimodal Study
Mankato/North Mankato Area Planning Organization
BMI Project No.: OT4.126950

I. Introduction

The Mankato/North Mankato Area Planning Organization (MAPO), in partnership with Blue Earth County and South Bend Township, is conducting a feasibility study for bicycle and pedestrian improvements along CSAH 33 (Hemlock Road) between Birch Avenue and CSAH 69, as well as CSAH 69 (South Bend Avenue and Hawley Street) from US 169 to the intersection with CSAH 33. Approximately 21.3 percent of the township's population is younger than 18 years old; 23.6 percent is older than 65—both the youth and senior population cohorts are larger than those for Blue Earth County as a whole. The median household income is slightly lower than Blue Earth County, but only marginally, while people living in poverty comprise 7.5 percent of the population in South Bend Township versus 17.6 percent for the county. Median rents in the township are considerably lower than for the county. This initial analysis looks at the entirety of the township, and does not focus on the population living directly adjacent to the project corridors.

In the event that federal funding will be used to contribute to the completion of any project that is derived from this feasibility study, this study will follow the environmental review process and guidelines established by the National Environmental Policy Act (NEPA). The NEPA process consists of an evaluation of the environmental effects of a particular project and its alternatives. Further consultation with the Federal Highway Administration (FHWA) and the Minnesota State Department of Transportation (MnDOT) will confirm the level of environmental review, which is expected to be authorized as a Documented Categorical Exclusion (DCE). As the Environmental Justice (EJ) evaluation in this analysis indicates, EJ populations are not present in the project's study area, temporary impacts will be experienced, but minimization and outreach will help to offset the impacts.

Definition of Environmental Justice

As per the 2020 update of MnDOT's Environmental Justice guidance, minority populations are defined as any readily identifiable group of minority persons who live in a geographical area. Minority populations are defined in the MnDOT Order on Environmental Justice (Order 5610.2(a)) as including:

- Black or African American (a person having origins in any of the black racial groups of Africa);

- Asian/Pacific Islander (a person having origins in the Far East, Southeast Asia, or the Indian subcontinent);
- Pacific Islander (a person having origins in any of the Pacific Islands);
- American Indian or Alaskan Native (any of the original peoples of North America, and who maintains cultural identification through tribal affiliation or community recognition);
- Hispanic (a person with roots from Mexican, Puerto Rican, Cuban, Central or South American, or the Spanish culture or origin, regardless of race).
- Geographically dispersed/transient persons (such as migrant farm workers or Native Americans)

Low-income population is defined in the same DOT Order as meaning "any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity. (MnDOT, 2020)

The FHWA uses criteria similar to the Department of Justice guidelines to evaluate projects that may affect "Limited English Proficient" (LEP) persons. These guidelines require public outreach efforts, including translation, for "each eligible LEP language group that constitutes five percent or 1,000 people (whichever is less) that will likely be affected by a project" (U.S. Department of Justice 2009).

II. Applicable Statues and Guidance

Civil Rights Act of 1964

Title VI (Sec. 601) of the Civil Rights Act of 1964 is a federal law that protects individuals from discrimination on the basis of their race, color, or national origin in programs that receive federal financial assistance. It is illegal for MAPO, Blue Earth County, South Bend Township, or any other contractor/sub-recipient affiliated with MAPO to withhold or refuse benefits, services, or funding based on race, color, or national origin. Therefore, the potential for Title VI impacts were also reviewed under this screening memo. MAPO will comply with Title VI responsibilities.

Executive Order 12898

Executive Order 12898 requires federal agencies to identify and avoid "disproportionately high and adverse" effects on minority or low-income populations for federal programs that affect human health or the environment. The EJ evaluation for this project study follows guidance and methods developed by the Federal Highway Administration (FHWA) and MnDOT. Such guidance defines a "disproportionately high and adverse" effect on minority and low-income populations as an effect that:

- Is predominantly borne by a minority and/or low-income population; or
- Will be suffered by the minority and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the nonminority population and/or non-low-income population (FHWA Order 6640.23A, 2012).

EJ considerations must also be incorporated throughout the transportation planning and decision-making processes to comply with NEPA. The principles of environmental justice are reflected in Title VI of the 1964 Civil Rights Act, the Uniform Relocation Assistance and Real Property

Acquisition Policies Act of 1970 as amended (42 U.S.C. 4601 et seq.), the Transportation Equity Act of the 21st Century (TEA-21) and other U.S. Department of Transportation (DOT) statutes, relocation regulations, and guidance that affect social, economic, and environmental elements; public health; and public involvement.

III. Project Description

MAPO is conducting a feasibility study to improve pedestrian and bicycle access to and circulation along the CSAH 33 and CSAH 69 corridors in South Bend Township, west of Mankato. These roads connect residential areas abutting a variety of commercial and industrial uses to US 169 and the City of Mankato, but they lack facilities for people walking or bicycling. This study will look critically at both roads to develop implementable concepts that can serve the multimodal needs of these neighborhoods and roads. This bicycle and pedestrian feasibility study will determine the type and alignment for future infrastructure such as a sidewalk or shared use path in the project area, as well as possible crossing locations.

IV. Environmental Justice Summary

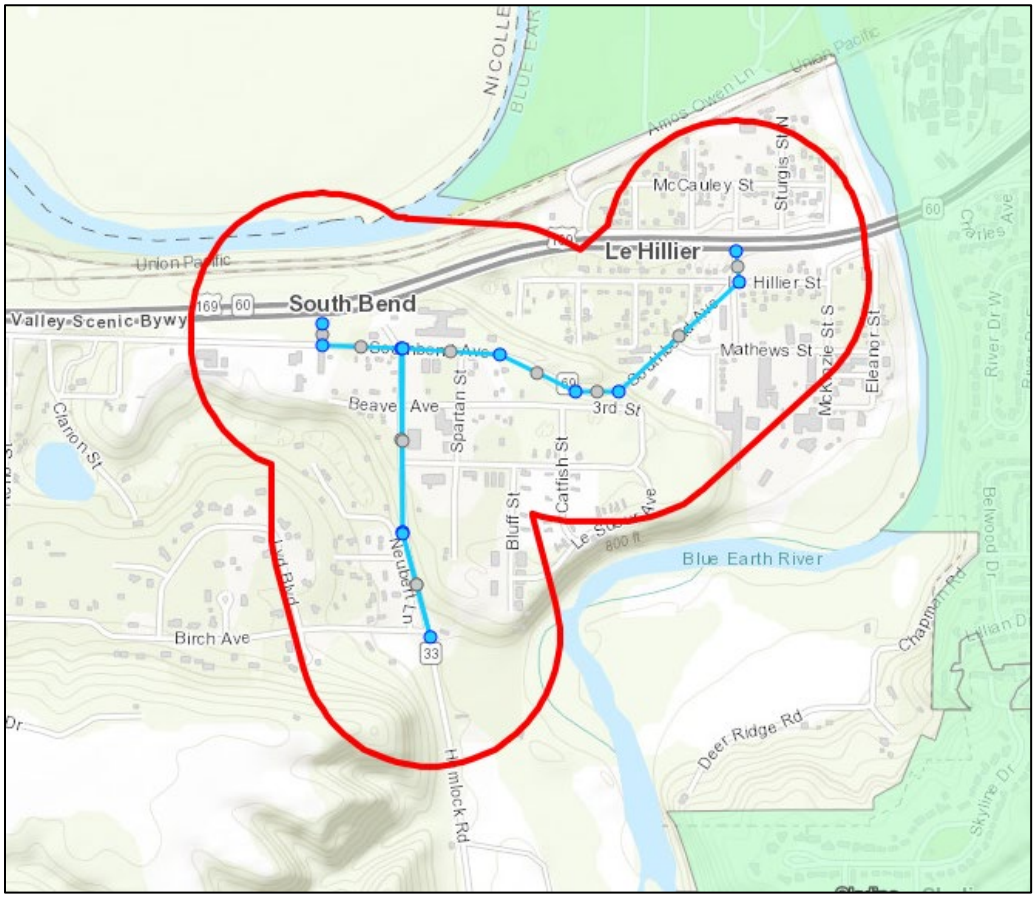
The purpose of this analysis is to identify minority, limited English proficiency (LEP), and low-income populations, also known as "environmental justice (EJ) populations" within the project vicinity. This analysis considers 2016-2020 American Community Survey data, 2020 U.S. Census data, and local school data to identify affected populations. These data were used to identify potential EJ populations and will be used in this memorandum to discuss any disproportionately high and adverse effects that would be predominately borne by these populations.

This analysis, using U.S. Census and school data, indicates that the study area includes low-income, minority, and Spanish-speaking populations. None of these groups are large enough to warrant specific mitigation measures or outreach for EJ populations. However, the proximity to affordable housing should be considered in future public outreach efforts, as these sites may contain clusters of EJ populations not immediately obvious through the EJ screening process. Future analysis will identify potential impacts of the project area.

V. Study Area

The study area for this EJ analysis is defined as approximately a half-mile buffer extending from the project area. This is assumed to capture the extent of potential effects from the project on EJ populations. For data analysis, census block group boundaries were used to define the study area. All census block groups that overlapped with the study area or were within half a mile of the study area were included in the analysis. Owing to the low-population density within the study area, the census block groups cover large and varied geographic areas, which introduces some difficulties in determining if the project will have potential EJ populations. Future engagement work should use the analysis below to direct engagement efforts to determine if there are EJ populations within the study area, and if so, how any recommended alternatives might impact these groups.

Figure 1 - Project Vicinity Map



The study area and census block groups (Figure 1) includes a large portion of South Bend Township and covers most of the social and environmental effects that could be incurred by any potential project, such as temporary noise, air, traffic and access effects from construction. These impacts would be explored in greater detail after project alternatives have been identified.

A. Land Uses in Project and Study Area

The focus of the feasibility study and future project location is along CSAH 33 and CSAH 69 in South Bend Township, Minnesota, between US 169 and Birch Avenue. To assesses potential impacts from construction along the study area, this report examined the populations living near the project area. This analysis used a mixture of United States Census Bureau data along with data from the United States Environmental Protection Agency (EPA) Environmental Justice Screening Tool (EJ Screen).

South Bend Township is a growing suburban community with potential to expand both to the west and south. The study corridor is a segment of CSAH 33, as well as a connecting segment of CSAH 69. These link the township's population center in the northeast quadrant of the area to Mankato and other destinations beyond the Blue Earth River. Land use in the area is a mix of single-family residential, manufactured home park residential, commercial and retail use, and some rural/vacant land. An initial analysis from the EPA's EJ Screen identified one Superfund site in the study area (the Lehiller/Mankato site), as well as

scattered hazardous waste sites associated with industrial and commercial land uses in the area.

VI. Methodology

This report describes the existing minority, low-income, and language characteristics of the populations in the study area. Multiple data sources were utilized to assess for potentially impacted EJ groups. These data sources include:

- United States Census Bureau 2020 decennial census and American Community Survey 2015-2019 5-year survey data;
- US Environmental Protection Agency's Environmental Justice Screening Tool (EJ Screen)

The study area was compared to regional demographic statistics to determine if these EJ populations were over-represented in the project area. This was done by using comparable census statistics for Mankato – North Mankato metropolitan statistical area (MSA), which is anchored by the cities of Mankato and North Mankato and includes the study area.

VII. Demographics

This section provides an overview of past and projected demographics in the study area. These data will be used for future elements of the Safe Routes to Multimodal Study.

A. Populations and Households

The Mankato/North Mankato area has experienced steady and rapid growth since 2000. The MAPO 2045 LRTP update (2020) conducted a demographic's analysis, which included projections for 2030 and 2045 growth. In 2020, the Mankato/North Mankato area had an estimated population of 62,578 in 2012 and 65,175 in 2020, a 4 percent increase. The MAPO projects that the area population will grow to approximately 73,200 by 2045, a 12 percent growth from 2020 estimates. Table 1 details population, households and employment trends for the MAPO area from 2010 to 2045. This rapid growth has significant implications on transportation system planning. Population growth is accompanied with increased demand for roadway capacity and lead to greater density to support increased transit or bicycle/pedestrian facilities. In addition, the study area corridors are also influenced by their travel sheds which go beyond the immediate study area.

Land directly south and southwest of the study area is either currently under development, or owned by developers for future growth. These will likely be single family homes, which will generate more automobile trips along these corridors. Providing multimodal trip options can help reduce automobile dependency, and improve quality of life for EJ communities.

These estimates do not accommodate for the changes to projections as a result of the ongoing COVID19 pandemic, the pandemic recession, and its impacts. The Minnesota Department of Employment and Economic Development (DEED) provide county and regional profiles and projections, which includes employment. Their analysis shows that the county lost over 1,300 jobs between 2015-2020, a 3.4 percent decline.

Table 1. Mankato Area Demographics and Projections

Category	2012	2020	2030	2045
Population[1]	62,578	62,175	68,400	73,200
Households[1]	24,235	26,800	30,300	34,300
Employment[2]	34,257	37,200	40,800	46,300
[1] Extrapolated using year 2020 projections developed in the Mankato Area Housing Study Update [2] Extrapolated to correspond with MATAPS 2035 employment projections from a 2010 base year Source: MAPO 2045 Long Range Transportation Plan (LRTP) Update				

B. Employment

The Minnesota DEED estimated that average monthly employment for the Mankato-North Mankato area was 59,200 nonfarm jobs in 2020, prior to the start of the COVID 19 pandemic and subsequent recession. Regional employment suffered a sudden decline between March and April, dropping to an estimated 50,400 jobs in April 2020. Regional employment has since steadily grown but has not returned to pre-pandemic levels as of April 2022, where the monthly employment is estimated at 56,700 jobs (Source: MnDEED, Seasonally Adjusted Monthly Employment by Industry). Median and mean income for the Mankato-North Mankato MSA, the South-Central Economic Development Region (EDR 9 – South Central), and the state of Minnesota. The largest employers by industry sector are manufacturing, health care and social assistance, and retail trade (Source: United States Bureau of Labor Statistics, Occupational Employment and Wages in Mankato-North Mankato, May 2020).

Employees within South Bend are more likely to commute by driving when compared to the rest of the Mankato area and are more likely to drive alone (Table 2). This heightened reliance on single-occupancy vehicle trips could mean a greater number of automobile trips as the population in South Bend increases, placing a greater demand on the existing infrastructure. Commuters in the South Bend area generally do not use transit, likely due to the lack of transit within the area, as well as the lack of any multimodal infrastructure to make connections to transit.

Table 2. Means of Transportation to Work, 2016-2020

Mode	South Bend Township	Nicollet & Blue Earth Counties
Drive Alone	85.8%	78.0%
Carpool (two or more people per car)	6.6%	7.9%
Public Transit (excluding taxicab)	0.4%	1.3%
Bike	0%	0%
Walk	2.5%	2.8%
Other (worked from home, taxicab, other modes of transportation)	4.8%	9.5%
Source: 2016-2020 ACS 5-Year Estimates, Table B08301 – Means of Transportation to Work		

C. Minority, Low-Income, and other Vulnerable Populations

The following section is a summary of the findings from the Environmental Justice Analysis included as part of the Safe Routes to Multimodal Study. The study corridor is located in Blue Earth County in Minnesota.The EJ analysis used population data for Nicollet and Blue

Earth Counties. As such, this analysis includes several smaller communities not considered a part of the MAPO jurisdiction, but provides a useful context not only for the people within the study area but also the people most likely to travel along the corridor. The corridor study area consists of the census block groups that either fall significantly within 0.5 miles of the CSAH 33 and CSAH 69 project corridors or is a key location just outside of the 0.5-mile radius. A demographic comparison between the study area and the populations of Nicollet and Blue Earth counties was conducted to determine if there is a high concentration of any environmental justice communities who might be impacted by potential projects (Table 3).

Table 3. Demographics Comparison of the Mankato MSA and Study Area

Population	Nicollet & Blue Earth Counties, MN		South Bend Study Area	
	Number of Persons	Percent of Population	Number of Persons	Percent of Population
Total Population	**103,566**	**100%**	**794**	**100.0%**
White	87,949	84.9%	758	95.5%
Black	5,677	5.5%	16	2.0%
American Indian or Alaska Native	470	0.5%	3	0.4%
Asian	2,403	2.3%	2	0.3%
Native Hawaiian or Pacific Islander	48	0.0%	0	0.0%
Other	1,970	1.9%	0	0.0%
Two or more races	5,049	4.9%	15	1.9%
Hispanic or Latino	5,021	4.8%	7	0.9%
Not Hispanic or Latino	98,545	95.2%	787	99.1%
Sources: IPUMS NHGIS, University of Minnesota, www.nhgis.org, Table P1 & Table P2, U.S. Census Bureau, American Community Survey (ACS) 2015-2019				

Most of the population in the project area reported as White, but the study area is also home to some minority populations. The study area generally has a lower percentage share of minorities when compared to the populations of Nicollet and Blue Earth counties.

D. Hispanic and Latino Population

ACS five-year estimates from 2015-2019 reported that less than 1 percent of the study population identified as Hispanic, significantly lower than the share of Hispanic populations in the greater Mankato area, where the group comprises nearly 5 percent of the population.

E. Limited English Proficiency (LEP)

Outreach to minority populations sometimes includes the need to provide communication and project materials in non-English languages. The guidelines adopted by the FHWA require public outreach efforts, including translation services, if five percent or 1,000 people (whichever is less) of the population impacted by the project are an eligible LEP language group. Outreach efforts can include but are not limited to project materials, meetings, advertisements for project meetings, in addition to providing interpreters for one-on-one and/or public meetings. U.S. Census data from the 2015-2019 ACS five-year estimate was used to determine if there is potentially a LEP population that would require translation services in the study area.

An initial analysis using the EPA's Environmental Justice Screening web utility reported that there are approximately ten LEP households in the study area, and no linguistically isolated households within the study area. This initial analysis suggests that there would be no need to provide communication and project materials in languages outside of English.

VIII. Potential Temporary Impacts

Construction-related activities may produce temporary impacts on access to nearby residential developments, increased congestion, as well as increased noise and emissions from construction-related activities normally associated with roadway construction. Notably, all vehicular access to River Center Properties Manufactured Home Park is limited to locations along CSAH 69 (Spartan Street) and CSAH 33 (Beaver Avenue and Waseca Avenue). The potential impacts will be assessed in greater detail after alternatives are developed. Avoidance, minimization, mitigation, and enhancement strategies will also be developed as part of this process.

IX. Long-term Impacts

A future project will likely include provisions of walking or bicycling accommodation and street crossings along CSAH 33 and CSAH 69. This would likely have a beneficial effect of improved safety and diversity of transportation choices for residents and visitors to the area, including for possible EJ populations. Long-term, negative impacts to EJ populations are unlikely. Potential long-term impacts will be assessed in greater detail after alternatives have been developed. Avoidance, minimization, mitigation, and enhancement strategies will also be developed as part of this process

X. Conclusion

U.S. Census and school data indicate that the study area includes low-income, minority, and Spanish-speaking populations, but does not trigger any thresholds to warrant specific mitigation for EJ populations. However, the close proximity to the manufactured housing development in the area, in addition to some adjacent land uses such as the Hillcrest Rehabilitation Center and Monarch Healthcare Management should be considered in future public outreach efforts, as these sites may contain clusters of EJ populations not immediately obvious through the EJ screening process. As a means of addressing potential EJ concerns, study documents and engagement materials should be made be available in languages other than English upon request.

Appendix D: Purpose and Need Framework

BOLTON & MENK
Real People. Real Solutions.

1960 Premier Drive
Mankato, MN 56001-5900

Ph: (507) 625-4171
Fax: (507) 625-4177
Bolton-Menk.com

PURPOSE AND NEED MEMORANDUM

Date: Monday, October 10, 2022

To: Shawn Schloesser

From: Cody Christianson, PE, ENV SP

Subject: South Bend Township – South Bend Safe Routes to Multimodal Study
Mankato/North Mankato Area Planning Organization
BMI Project No.: OT.4126950

I. Purpose and Need

The Mankato/North Mankato Area Planning Organization (MAPO), in partnership with Blue Earth County and South Bend Township, is conducting a feasibility study for bicycle and pedestrian improvements along CSAH 33 (Hemlock Road) between Birch Avenue and CSAH 69, as well as CSAH 69 (South Bend Avenue and Hawley Street) from US 169 to the intersection with CSAH 33. These new facilities would connect several edge neighborhoods to the Minneopa Trail north of US 169.

Investments in a multi-use path along CSAH 33 would also support any future housing development south or southwest of the project study area, in addition to expanding safe pedestrian and bicycle access to the community, increasing commuting options, and providing non-driving options to access retail, commercial, recreational, and institutional destinations.

This feasibility study is needed to:

- Consider a range of alternatives to provide bicycle and pedestrian accommodations along and across CSAH 33 and CSAH 69 in the study area;
- Develop a locally-preferred alternative for walking and bicycling facilities along CSAH 33 between Birch Avenue and CSAH 69, as well as along CSAH 69 between US 169 and CSAH 33. This might include crossing opportunities to and from housing developments and commercial uses along each of the study area corridors;
- Maximize safety for users walking and bicycling along CSAH 33 and CSAH 69. These facilities will support connections between valued destinations in the South Bend Township, City of Mankato, and new and forthcoming housing developments;
- Avoid potential impact to private property; and
- Provide a planning level estimate of probable construction costs for the locally-preferred alternative to serve as a basis for the local stakeholders to apply for grant applications.

The need for future bicycle and pedestrian accommodations can be seen in:

- The recent and planned housing developments west of CSAH 33 and south of Birch Avenue

that have no connections to the trail system north of US 169;

- The limited locations where pedestrians and cyclists can safely cross CSAH 33 and CSAH 69 in the study area; and
- Projected increases in daily traffic volumes along the corridor and the proportional increase in crash exposure for vulnerable road users.

II. Goals and Objectives

The feasibility study will identify any barriers to construction and outline planning level costs for the locally-preferred alignment, allowing for the identification of any large lead-time items needed for construction. Additionally, the study will identify potential locations for connections from the preferred alignment to adjacent neighborhoods/amenities.

The objective of the study is to collect information regarding the preferred alignment of new pedestrian and bicycle accommodations along and across CSAH 33 and CSAH 69, completing a connection between residential and commercial destinations within South Bend Township, the Minneopa Trail north of US 169, and any future investments for a grade separated crossing of US 169. Study deliverables will meet this goal by conducting an analysis of existing conditions along the current CSAH 33 and CSAH 69 corridors. This process will identify potential barriers to the construction of alternative concepts as well any needs that might impact the alignment. Public and stakeholder feedback will be gathered and used to select a preferred project type and alignment.

III. Background

A. Study Area and Importance

The study area includes the CSAH 33 right-of-way at the center of the South Bend Township study area, in addition to CSAH 69, which functions as a northern boundary for the township. CSAH 33 is a 30 mile per hour, two-lane road that serves approximately 3,000 vehicles per day (vpd). The road is managed by Blue Earth County. CSAH 69 is a 40 mile per hour, two-lane road that serves between 2600-2800 vpd, with the eastern end having a slightly higher traffic volume.

CSAH 33 has some significant barriers to both the function and implementation of multimodal facilities. First, the corridor itself has a substantial grade on either side between Birch Avenue and CSAH 69. The western side of CSAH 33 abuts a steep grassy embankment that drops in elevation, and a shoulder that contains private utilities while also serving as a buffer between the road and the adjacent residential uses. The eastern side of CSAH 33 also has barriers to development. Hillside conditions to the east of CSAH 33 between Birch Avenue and Waseca Avenue are defined by steep grades and rocky outcroppings, in addition to ditch drainage and access to multiple commercial and residential developments. The most significant among these accesses are the Blue Earth County Recycling Center, and the River Center Manufactured Home Park.

The northern side of CSAH 69 fronts several residential and institutional group housing along its western end, and mostly residential housing along its eastern end. The southern side of CSAH 69 is a mix of commercial, industrial, and residential uses. **Figure 1** shows the approximate extent of the study area, in addition to land use and some potential project issues.

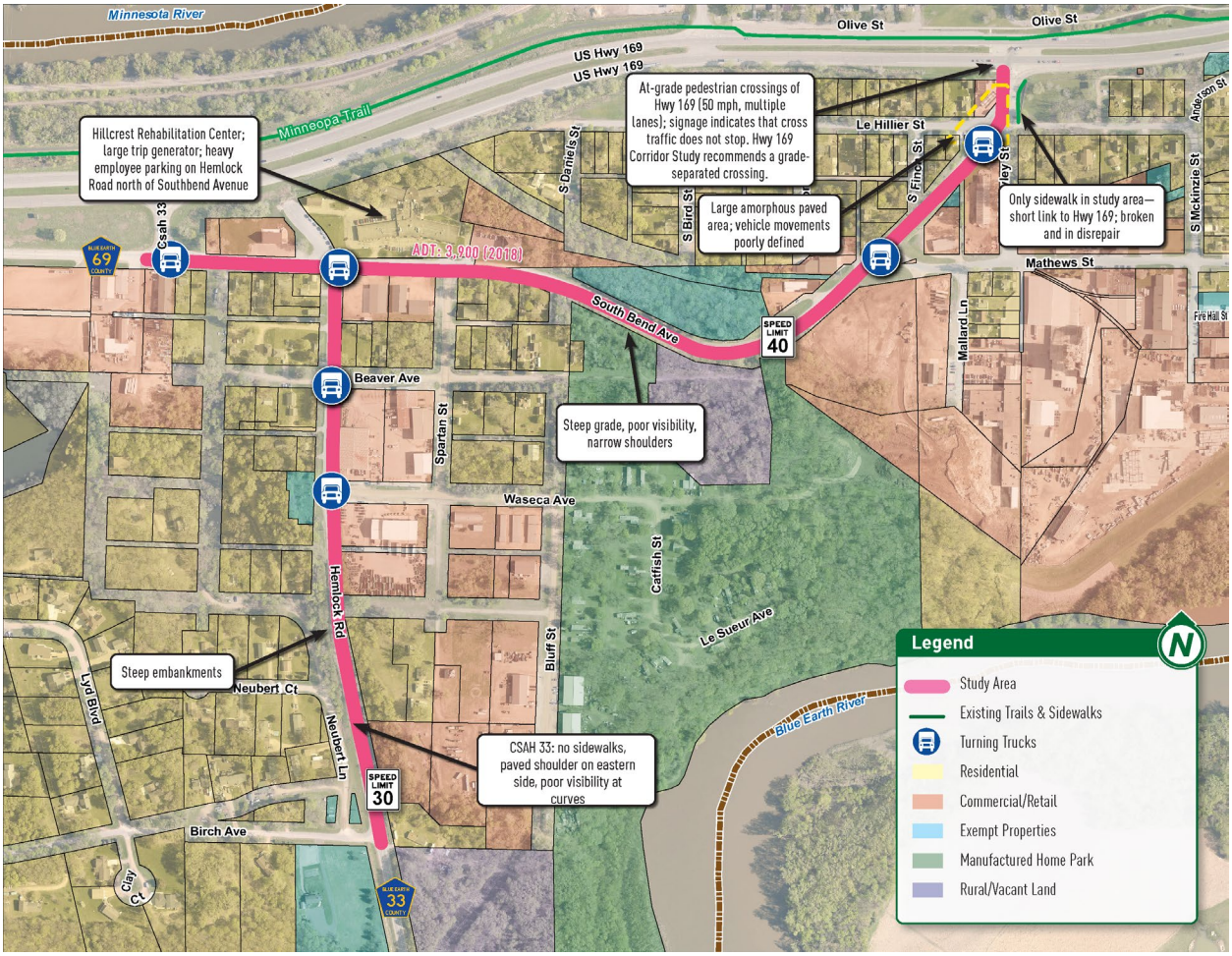


Figure 1. Study Area and Issues Map

Today, both corridors in the study area serve multiple transportation users, including automobiles, heavy commercial vehicles, pedestrians, and bicyclists, and is projected to greatly increase daily traffic volume by 2045. To maintain functionality of the corridor while supporting new development in the area surrounding the study area, MAPO, Blue Earth County, and South Bend Township are conducting this study to define a comprehensive vision for CSAH 33 and CSAH 69.

IV. Need for the Study

Study partners seek to address the following needs for CSAH 33 and CSAH 69 and their supporting roadway network.

A. Consistency with State and Local Plans

Previous planning efforts for the study area emphasized the importance of CSAH 33 and CSAH 69 and their surrounding streets for local transportation, and the need to make improvements to address existing deficiencies and prepare for reconstruction. These studies include:

- Blue Earth County Land Use Plan (2018)
- MAPO ADA Transition Plan (2019)
- Highway 169 Corridor Study (2020)
- MAPO 2045 Long Range Transportation Plan Update (2020)
- MAPO 4-year Transportation Improvement Program 2022-2025 (2021)
- Blue Earth County 5-year Transportation Improvement Program 2022-2026 Draft (2022)

Proposed improvements identified through these studies include roadway reconstruction, multimodal improvements and ADA infrastructure investment near or within the study area.

Previous planning efforts have also identified consistent population growth in the South Bend Township, which is anticipated to continue. As the community continues to grow, the area surrounding the study corridor will likely be further developed, increasing the number of trips along the corridor and with that the need for improved multimodal support

Key Finding: Previous planning efforts have identified corridor deficiencies and the need for corridor reconstruction. Recommended improvements need to accommodate multiple transportation modes, provide improved ADA facilities and address operation and safety concerns at intersections and along corridor segments.

B. Pedestrian and Bicycle

CSAH 33 is a two-lane rural road with no sidewalks, and a paved shoulder on the eastern side of the corridor between Birch Avenue and Waseca Avenue. Both sides of the corridor have steep grades and signage along the corridor warns drivers that there may be pedestrians and cyclists in the roadway, as there are no pedestrian facilities along the corridor to separate modes. Likewise, CSAH 69 has no dedicated pedestrian or bicycle facilities in the study area, save for a short, disconnected sidewalk segment that once connected to a now unmarked pedestrian crossing at CSAH 69 (Hawley Steet) and US 169. Pedestrians have been observed walking on the shoulder along CSAH 69. There are no designated pedestrian crossings in the study area.

Bicycle facilities don't exist on either corridor today. However, it has great potential to connect residents of the nearby residential developments to resources within South Bend Township and Mankato via the Minneopa Trail.

Key Finding: Improvements to pedestrian facilities and implementation of bicycle facilities need to be included in study recommendations. This may include closing sidewalk gaps,

providing safer/more frequent crossings, and providing safer/designated bicycle facilities.

C. Environmental Considerations

There is potential for Social, Economic, and Environmental (SEE) concerns in proximity to the study area that should be considered during study development. These include contaminated locations, Section 4(f) and 6(f) properties, and potential environmental justice populations. The environmental justice portion of the study will determine if these concerns warrant special considerations and mitigation.

Key Finding: Potential SEE resources including contaminated locations, parks and environmental justice populations that will need to be considered in improvement recommendations.

V. HOW THIS FRAMEWORK IS USED

Relevant portions of this text may be reported in the purpose and need section(s) of future NEPA and Minnesota Environmental Policy Act (MEPA) documentation potentially required for implementation of recommendations resulting from the South Bend Safe Routes to Multimodal study process. Based on MnDOT guidance which reflects FHWA requirements, need statements in NEPA documents are to focus on existing documented deficiencies.

Deficiencies clearly exist in the study area that need to be addressed. This planning study looks to the future to anticipate future network needs so that forward thinking and coordinated decisions may be made.

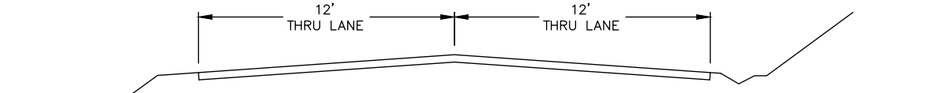
Appendix E: Concept Alternatives

Existing Typical Sections CSAH 33 & CSAH 69

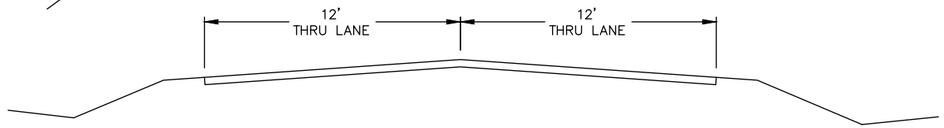
TYPICAL SECTIONS

EXISTING

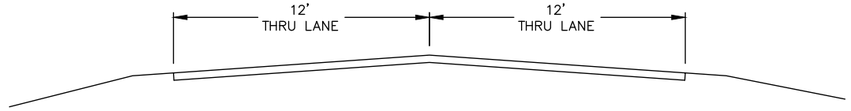
HEMLOCK RD (CSAH 33) SECTION A–A



HEMLOCK RD (CSAH 33) SECTION B–B



SOUTHBEND AVE(CSAH 69) SECTION C–C



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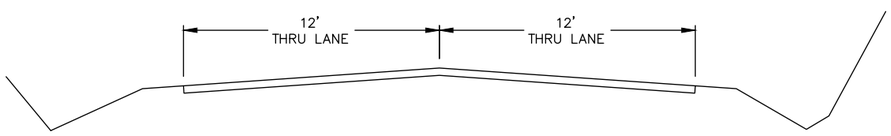

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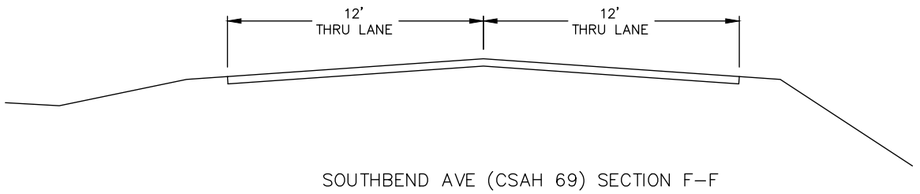

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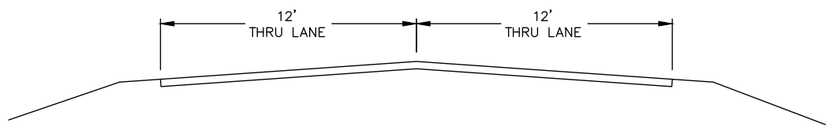

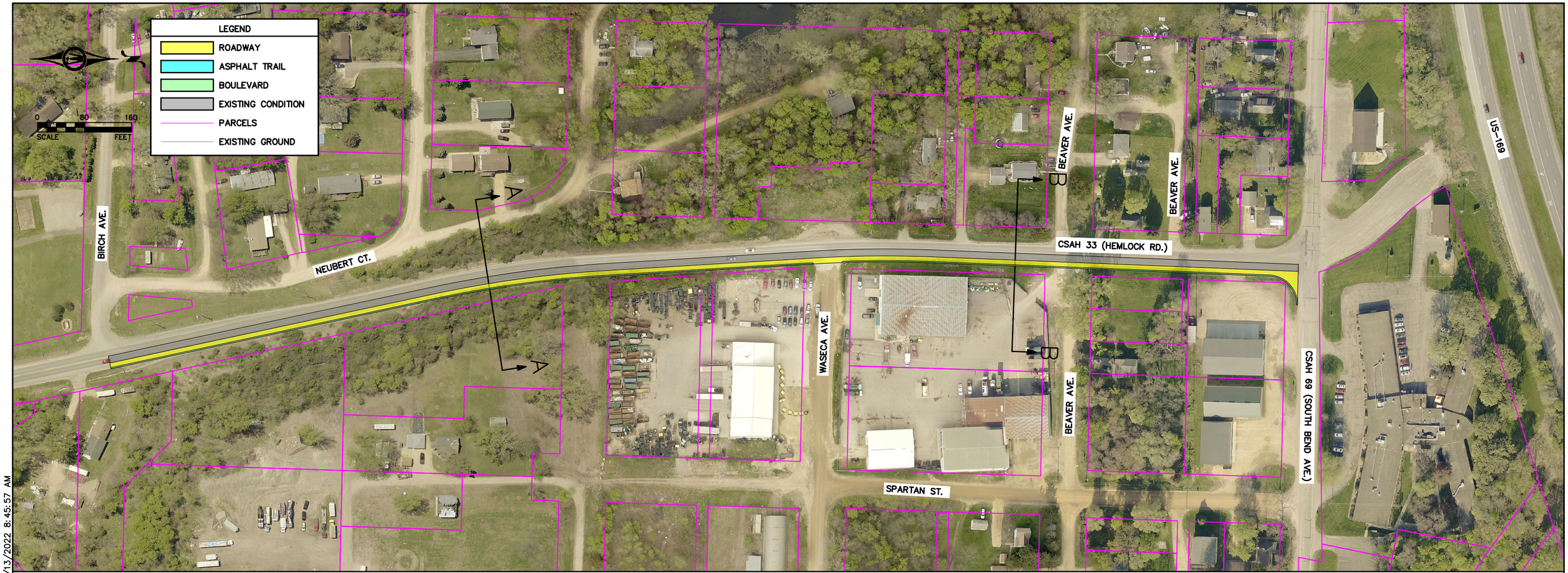

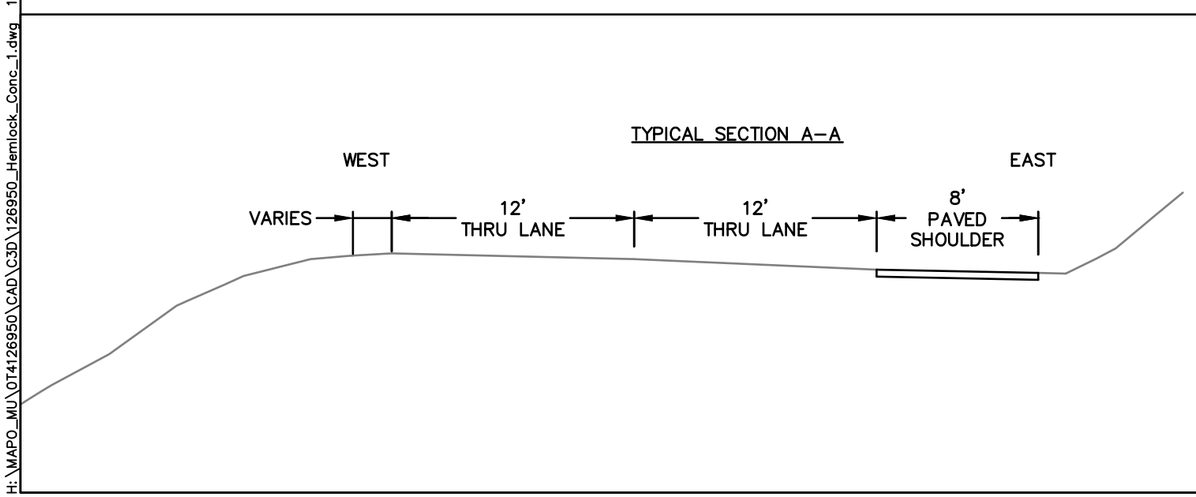

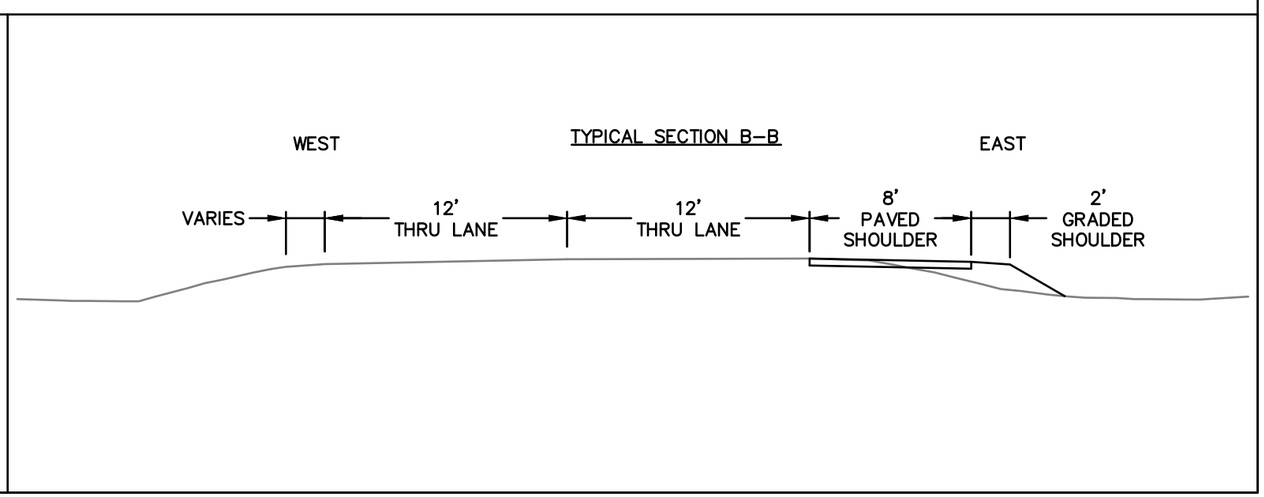

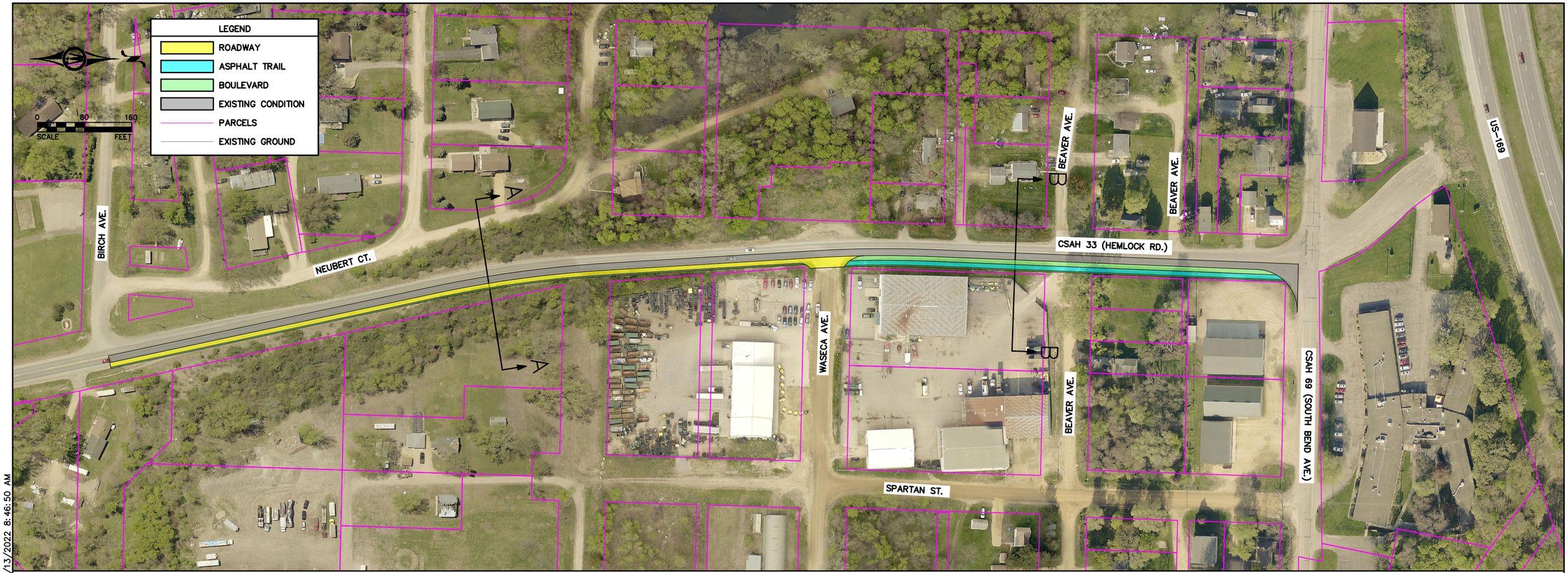

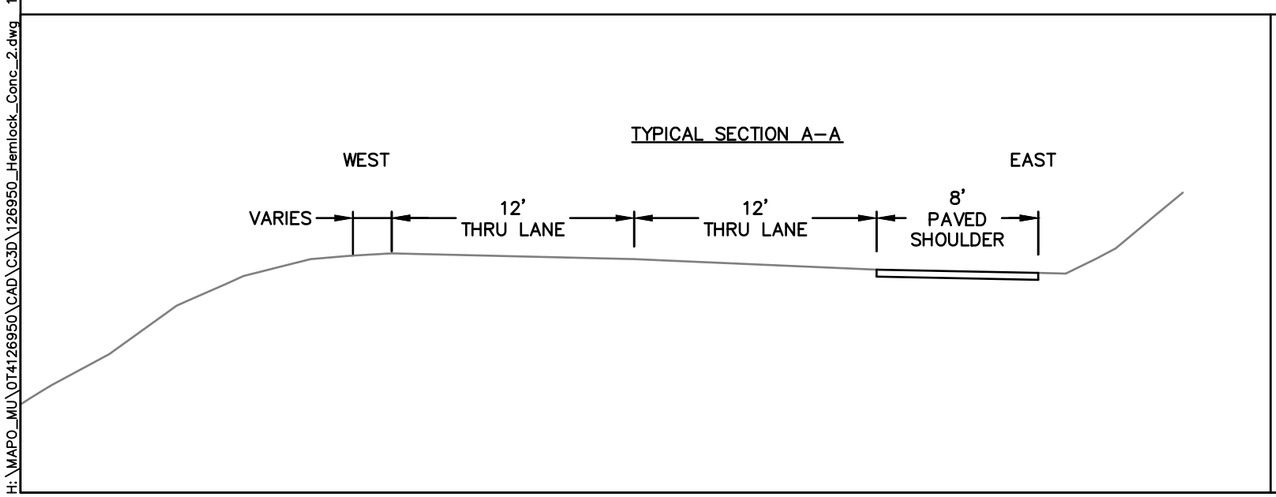

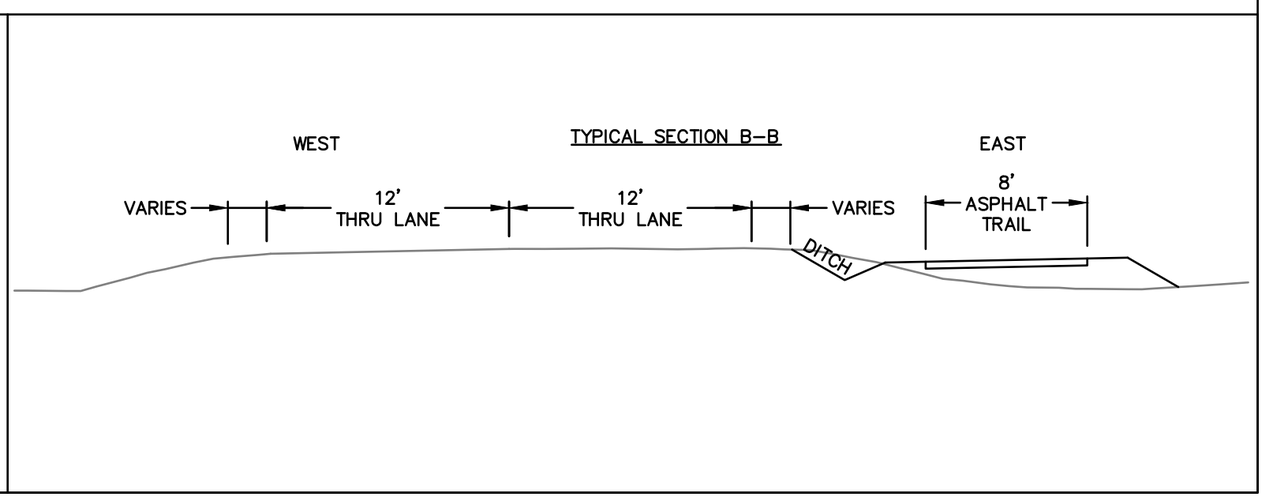

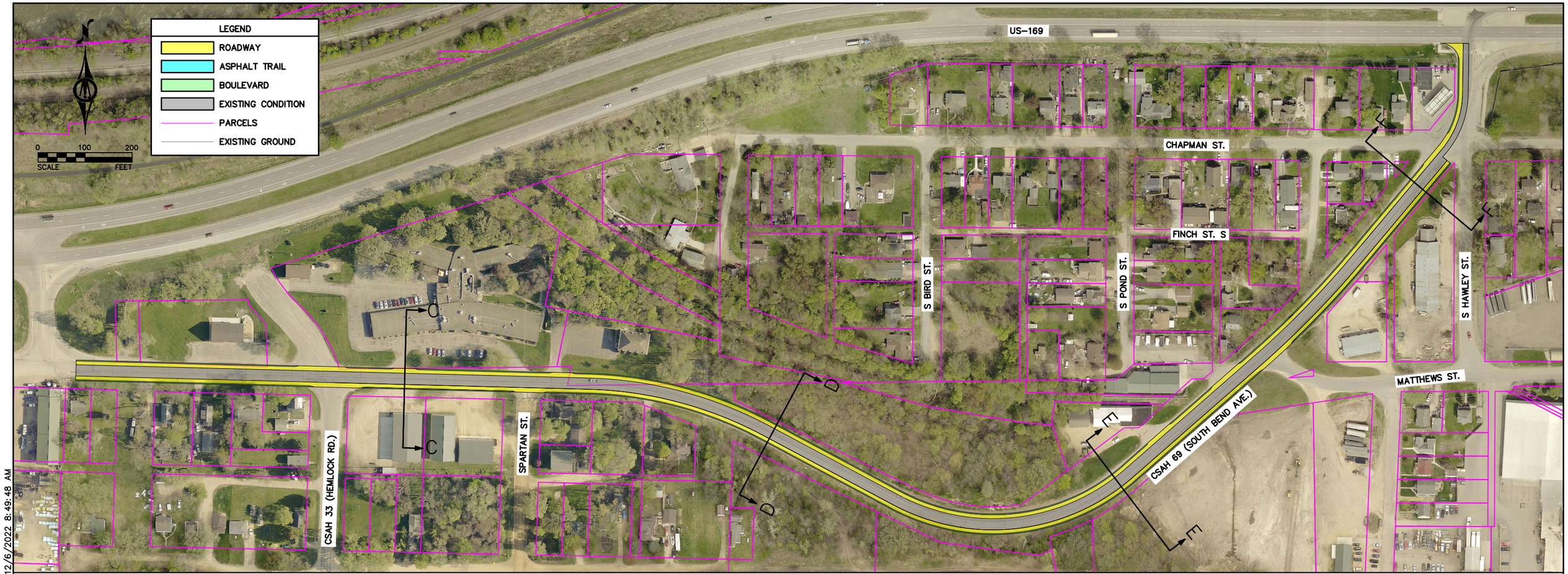

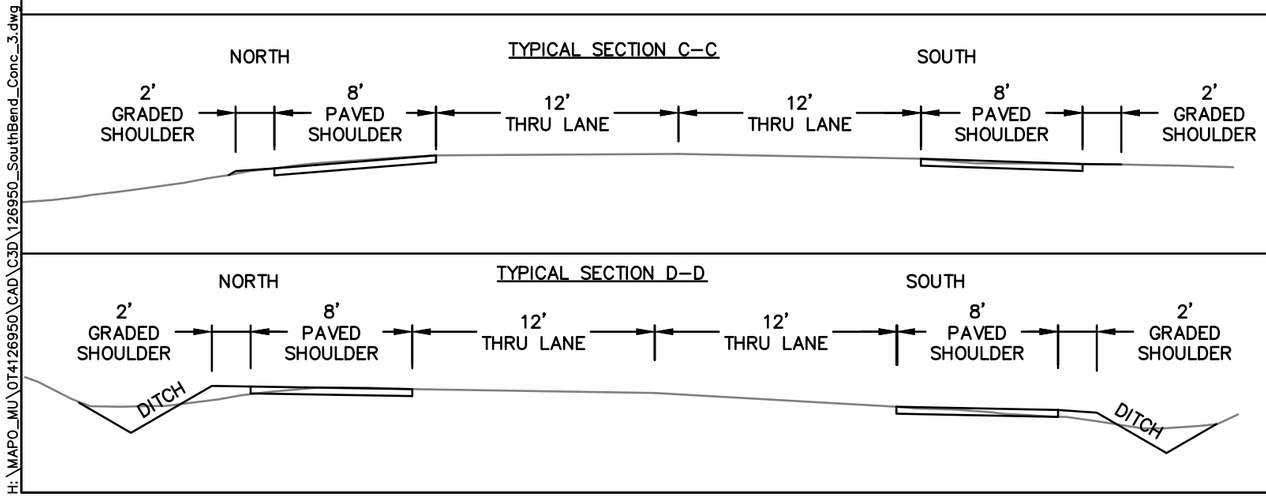

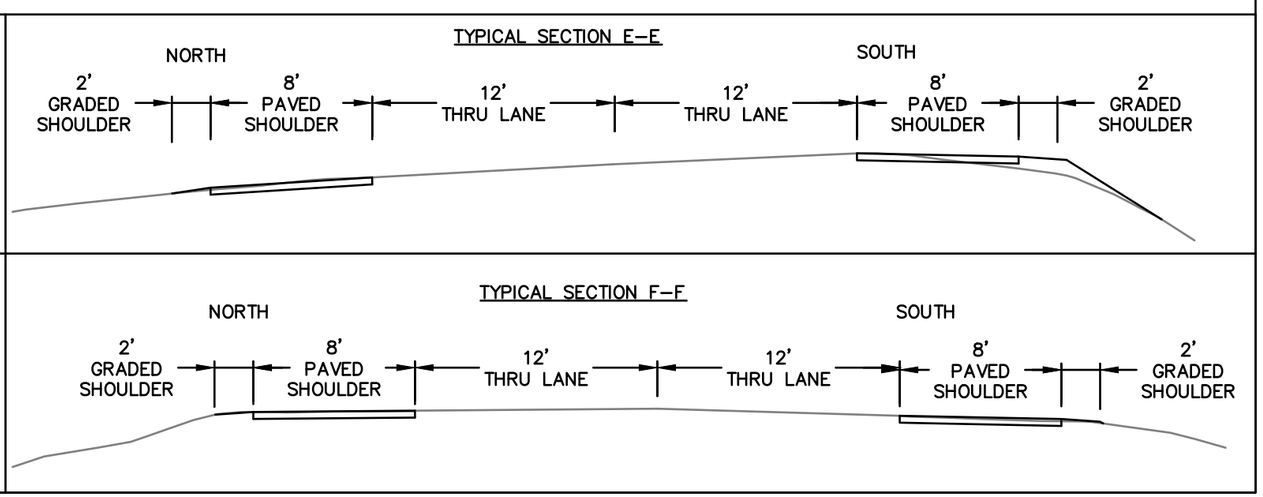

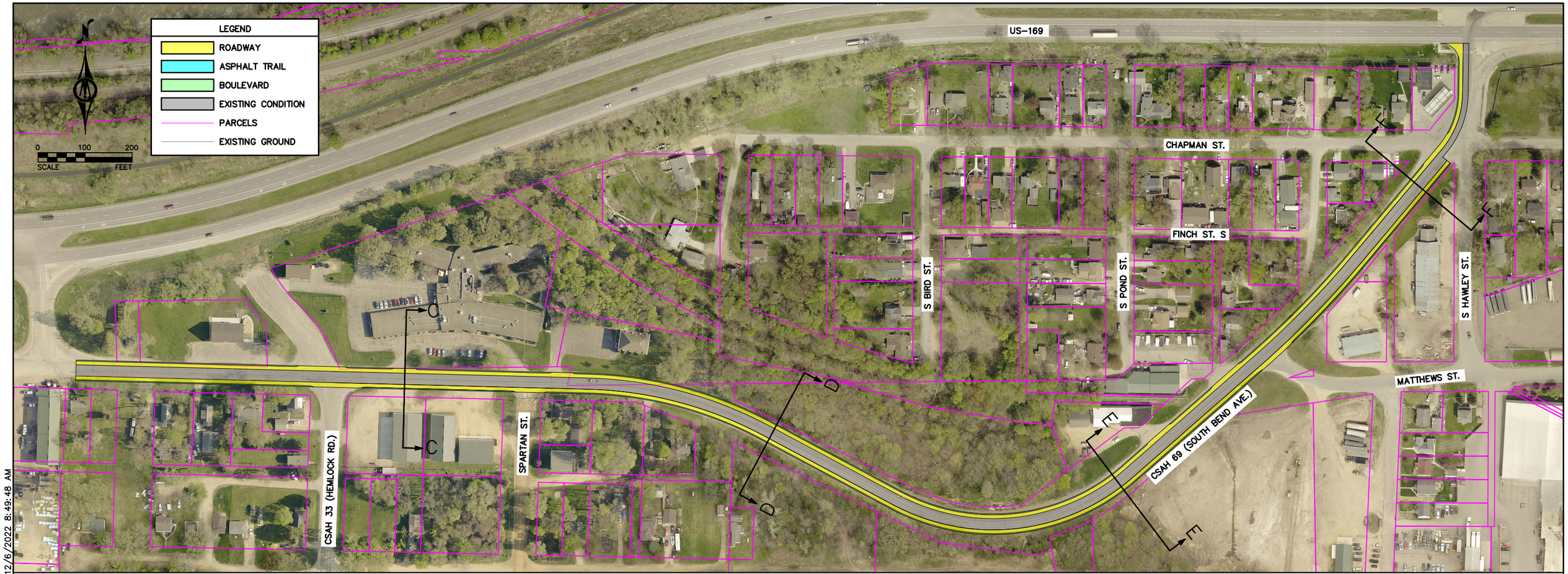

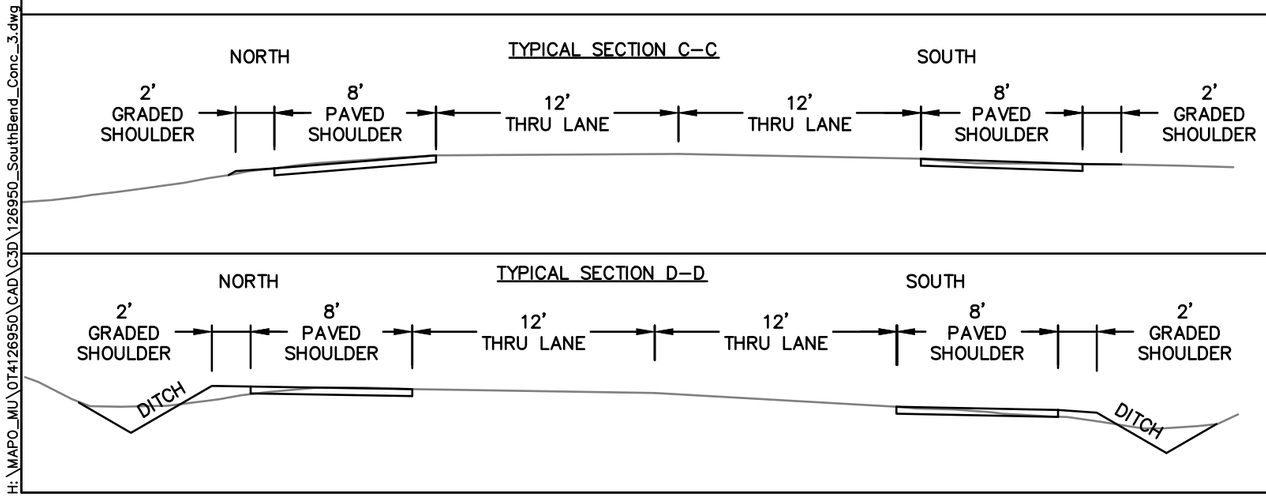

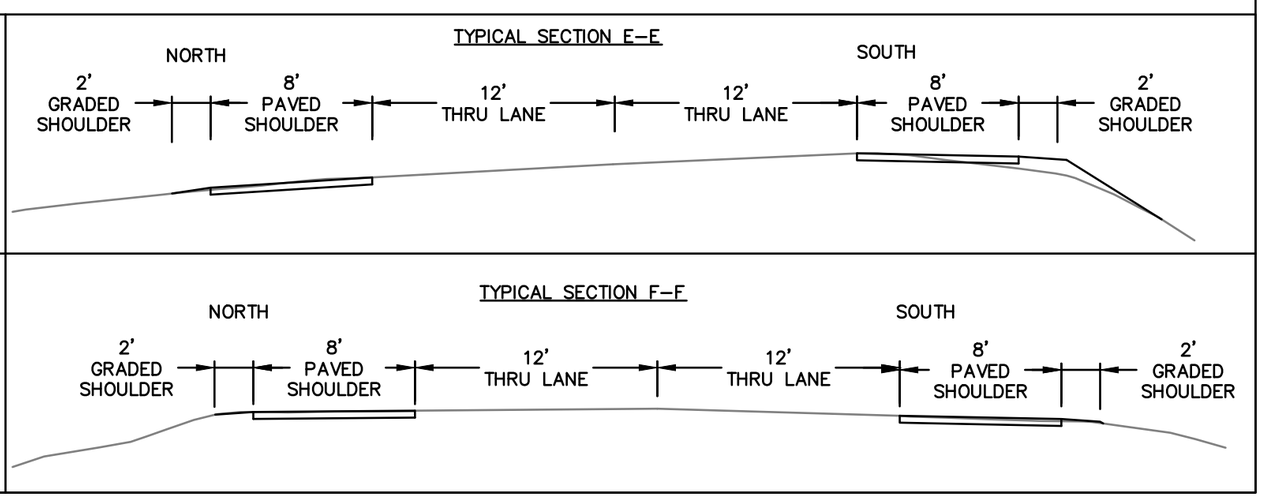

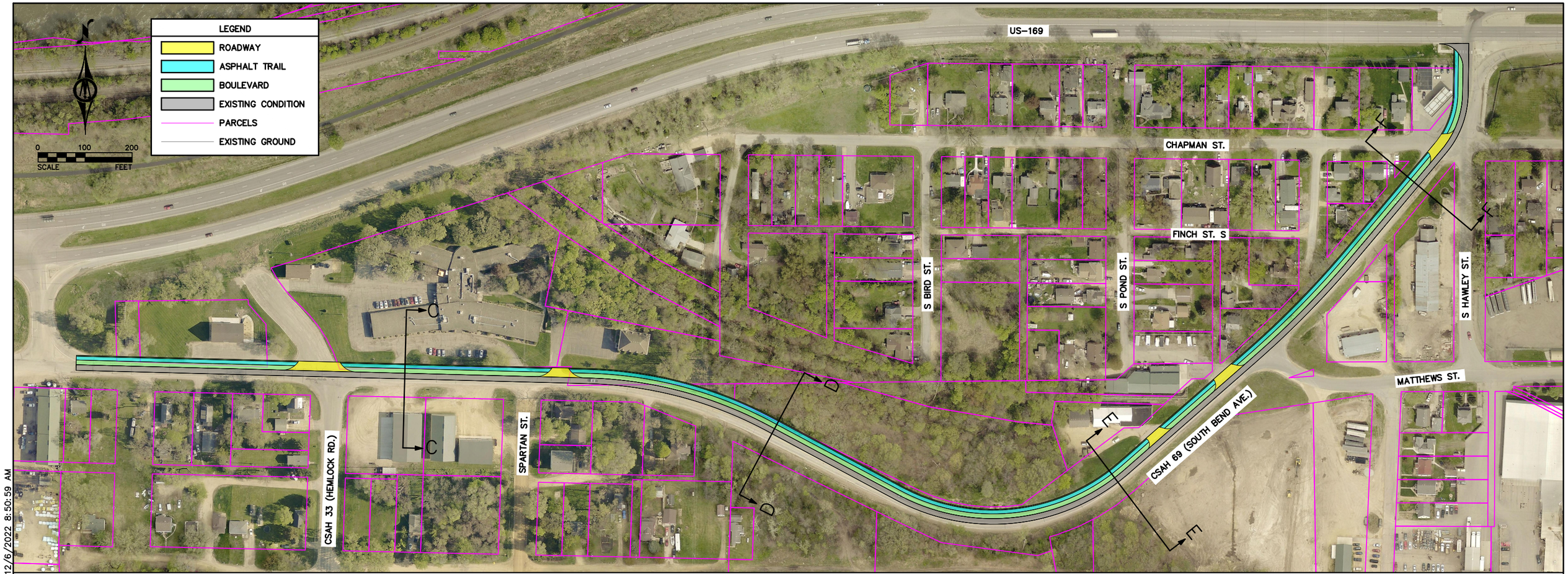

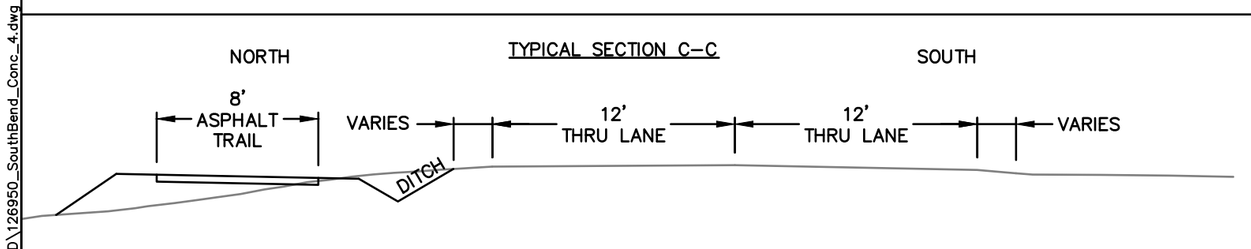

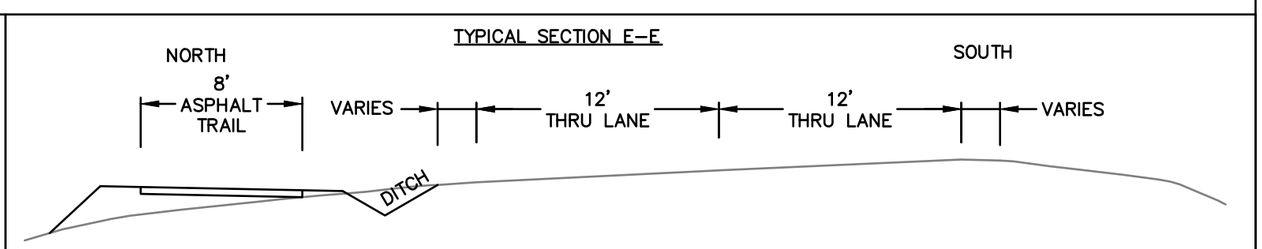

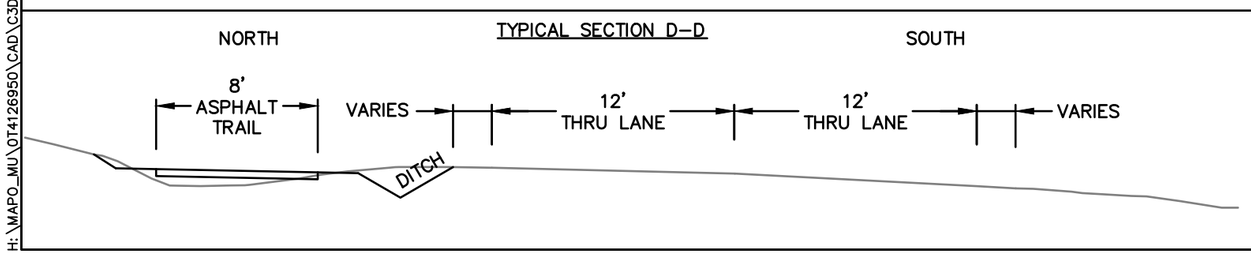

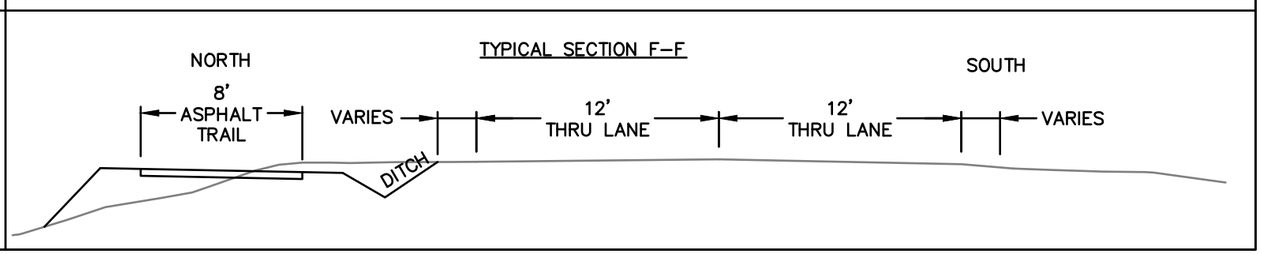

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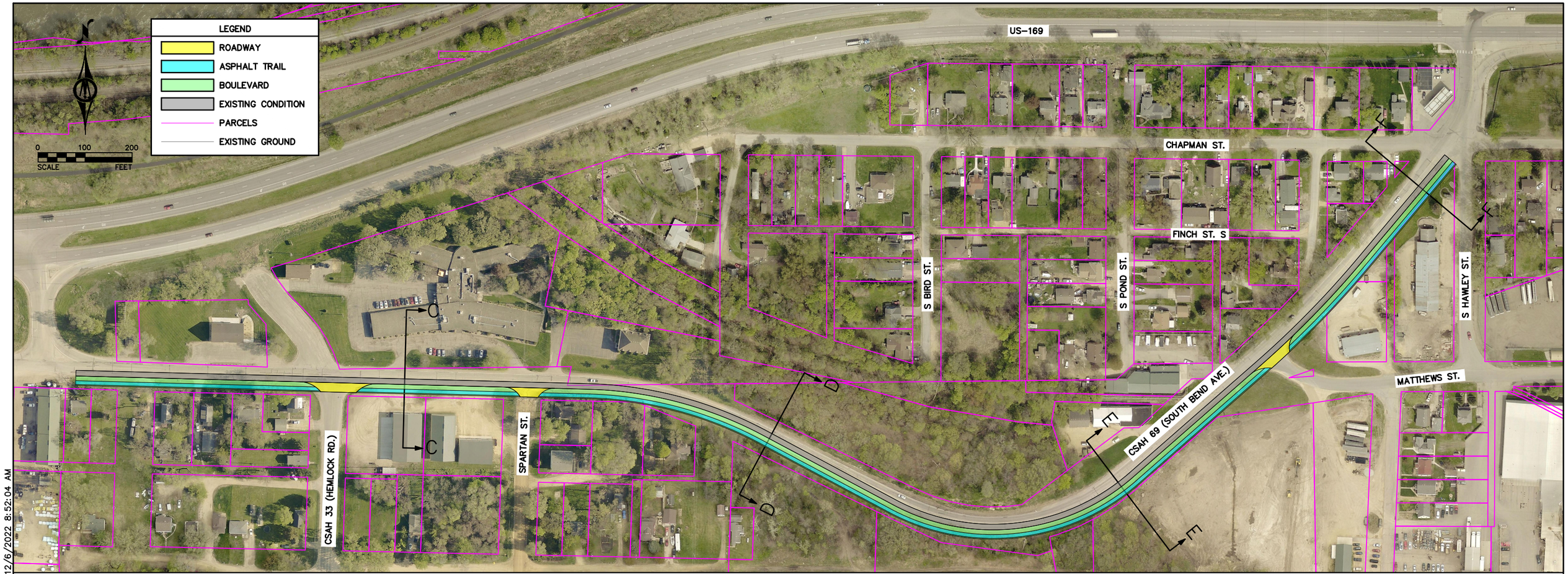

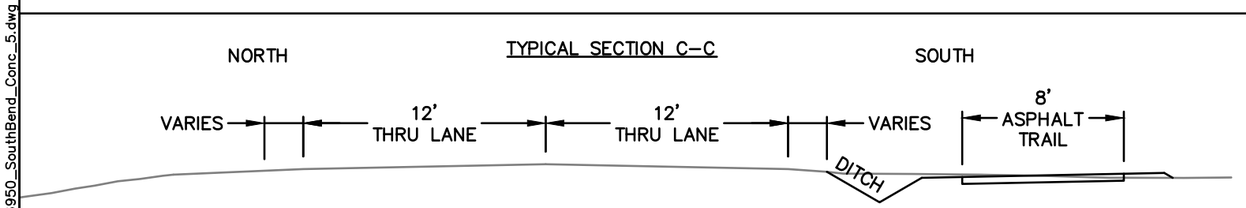

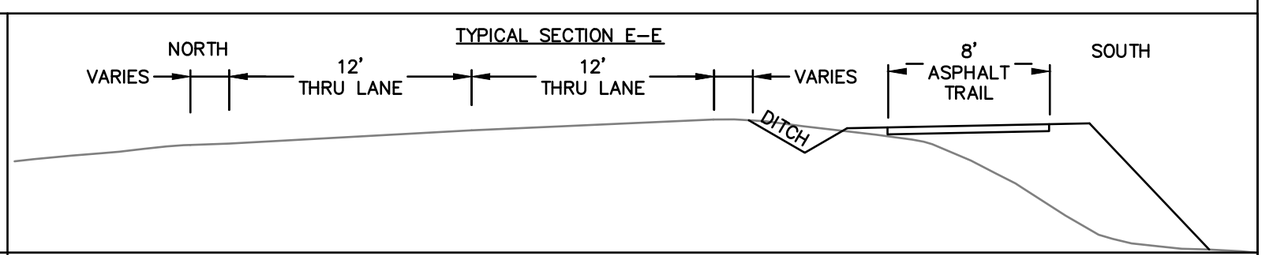

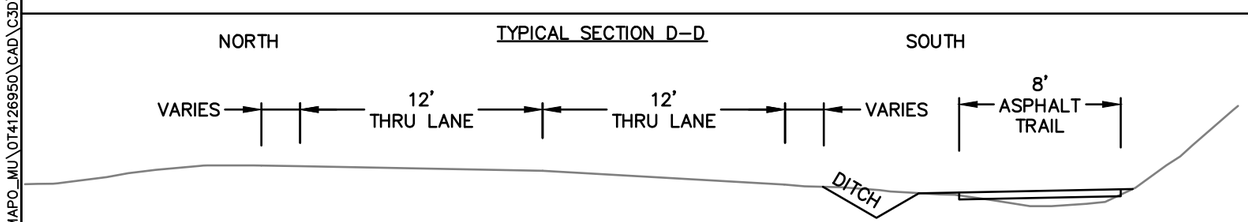

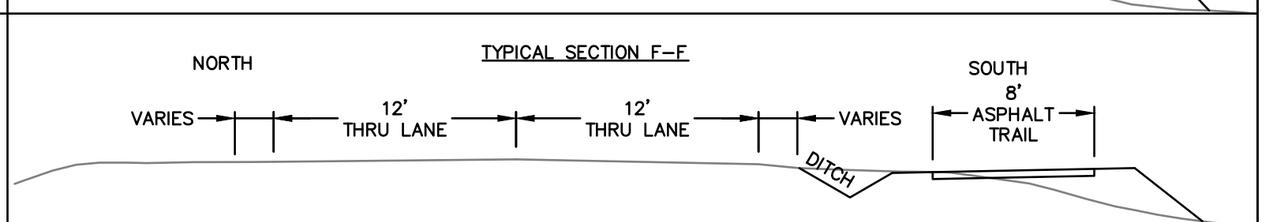

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Appendix F: Opinions of Probable Costs

Opinion of Probable Cost - Preliminary Cost Estimate

Hemlock Rd Concept 1 - Safe Routes to Multimodal Study

Mankato, MN

12/5/2022

BOLTON & MENK
Real People. Real Solutions.

	Item	Unit	Total Qty	Unit Price	Total Cost
MAJOR ROADWAY ITEMS (NOTES 1)					
	REMOVE BITUMINOUS PAVEMENT	SY	480	$ 8.00	$ 3,900
	EXCAVATION - COMMON	CY	670	$ 60.00	$ 40,200
	COMMON EMBANKMENT (CV)	CY	595	$ 20.00	$ 11,900
	AGGREGATE BASE (CV) CLASS 5	CY	440	$ 65.00	$ 28,600
	SELECT GRANULAR EMBANKMENT (CV)	CY	660	$ 30.00	$ 19,800
(1)	TYPE SP 12.5 WEARING COURSE MIX (4,F)	TONS	515	$ 95.00	$ 49,000
	Subtotal				$ 153,000
	All Roadway Construction Subtotal				**$ 153,000**
PRECENTAGE ITEMS					
	MOBILIZATION	5%		of all roadway	$ 7,700
	MISC REMOVALS (SIGNS, TREES, BUSHES, ETC.)	5%		of all roadway	$ 7,700
	SIGNING & PAVEMENT MARKINGS	3%		of all roadway	$ 4,600
	TURF ESTABLISHMENT AND EROSION CONTROL	10%		of all roadway	$ 15,300
	TRAFFIC CONTROL/STAGING	5%		of all roadway	$ 7,700
	CONTINGENCY FOR MISSING ITEMS	20%		of all roadway	$ 30,600
	Subtotal				$ 74,000
				Construction Cost (2024 Dollars)	$ 230,000
				Anticipated Right-of-Way (2024 Dollars)	$ -
				Engineering Cost (2024 Dollars)	$ 50,000
				Total Construction Cost (2024 Dollars)	**$ 280,000**

Notes:

1. Local road pavement section assumed is 6 inch bituminous pavement,8 inch aggregate base, and 12 inch sand.

Opinion of Probable Cost - Preliminary Cost Estimate

Hemlock Rd Concept 2 - Safe Routes to Multimodal Study

Mankato, MN

12/5/2022

BOLTON & MENK
Real People. Real Solutions.

	Item	Unit	Total Qty	Unit Price	Total Cost
MAJOR ROADWAY ITEMS (NOTES 1 & 2)					
	REMOVE BITUMINOUS PAVEMENT	SY	425	$ 8.00	$ 3,400
	EXCAVATION - COMMON	CY	875	$ 65.00	$ 56,900
	COMMON EMBANKMENT (CV)	CY	915	$ 20.00	$ 18,300
	AGGREGATE BASE (CV) CLASS 5	CY	400	$ 65.00	$ 26,000
	SELECT GRANULAR EMBANKMENT (CV)	CY	430	$ 30.00	$ 12,900
(2)	TYPE SP 9.5 WEARING COURSE MIX (4,F)	TONS	90	$ 95.00	$ 8,600
(1)	TYPE SP 12.5 WEARING COURSE MIX (4,F)	TONS	335	$ 95.00	$ 31,900
	Subtotal				$ 158,000
	All Roadway Construction Subtotal				**$ 158,000**
PRECENTAGE ITEMS					
	MOBILIZATION	5%		of all roadway	$ 7,900
	MISC REMOVALS (SIGNS, TREES, BUSHES, ETC.)	5%		of all roadway	$ 7,900
	SIGNING & PAVEMENT MARKINGS	3%		of all roadway	$ 4,800
	TURF ESTABLISHMENT AND EROSION CONTROL	10%		of all roadway	$ 15,800
	TRAFFIC CONTROL/STAGING	5%		of all roadway	$ 7,900
	CONTINGENCY FOR MISSING ITEMS	20%		of all roadway	$ 31,600
	Subtotal				$ 76,000
				Construction Cost (2024 Dollars)	$ 240,000
				Anticipated Right-of-Way (2024 Dollars)	$ -
				Engineering Cost (2024 Dollars)	$ 50,000
				Total Construction Cost (2024 Dollars)	**$ 290,000**

Notes:

1. Local road pavement section assumed is 6 inch bituminous pavement,8 inch aggregate base, and 12 inch sand.
2. Trail pavement section assumed is 3 inch bituminous pavement and 6 inch aggregate base

Opinion of Probable Cost - Preliminary Cost Estimate

South Bend Ave Concept 3 - Safe Routes to Multimodal Study

Mankato, MN

12/6/2022

BOLTON & MENK
Real People. Real Solutions.

	Item	Unit	Total Qty	Unit Price	Total Cost
MAJOR ROADWAY ITEMS (NOTES 1)					
	REMOVE BITUMINOUS PAVEMENT	SY	2,865	$ 8.00	$ 23,000
	EXCAVATION - COMMON	CY	1,205	$ 65.00	$ 78,400
	COMMON EMBANKMENT (CV)	CY	1,200	$ 20.00	$ 24,000
	AGGREGATE BASE (CV) CLASS 5	CY	1,460	$ 65.00	$ 94,900
	SELECT GRANULAR EMBANKMENT (CV)	CY	2,190	$ 30.00	$ 65,700
(1)	TYPE SP 12.5 WEARING COURSE MIX (4,F)	TONS	1,700	$ 95.00	$ 161,500
	Subtotal				$ 448,000
	All Roadway Construction Subtotal				**$ 448,000**
PRECENTAGE ITEMS					
	MOBILIZATION	5%		of all roadway	$ 22,400
	MISC REMOVALS (SIGNS, TREES, BUSHES, ETC.)	5%		of all roadway	$ 22,400
	SIGNING & PAVEMENT MARKINGS	3%		of all roadway	$ 13,500
	TURF ESTABLISHMENT AND EROSION CONTROL	10%		of all roadway	$ 44,800
	DRAINAGE	10%		of all roadway	$ 44,800
	TRAFFIC CONTROL/STAGING	5%		of all roadway	$ 22,400
	CONTINGENCY FOR MISSING ITEMS	20%		of all roadway	$ 89,600
	Subtotal				$ 260,000
				Construction Cost (2024 Dollars)	$ 710,000
				Anticipated Right-of-Way (2024 Dollars)	$ -
				Engineering Cost (2024 Dollars)	$ 150,000
				Total Construction Cost (2024 Dollars)	**$ 860,000**

Notes:

1. Local road pavement section assumed is 6 inch bituminous pavement,8 inch aggregate base, and 12 inch sand.

Opinion of Probable Cost - Preliminary Cost Estimate

South Bend Ave Concept 4 - Safe Routes to Multimodal Study

Mankato, MN

12/6/2022

BOLTON & MENK
Real People. Real Solutions.

	Item	Unit	Total Qty	Unit Price	Total Cost
MAJOR ROADWAY ITEMS (NOTES 1 & 2)					
	REMOVE BITUMINOUS PAVEMENT	SY	2,435	$ 8.00	$ 19,500
	EXCAVATION - COMMON	CY	2,560	$ 65.00	$ 166,400
	COMMON EMBANKMENT (CV)	CY	3,165	$ 20.00	$ 63,300
	AGGREGATE BASE (CV) CLASS 5	CY	670	$ 65.00	$ 43,600
	SELECT GRANULAR EMBANKMENT (CV)	CY	265	$ 30.00	$ 8,000
(2)	TYPE SP 9.5 WEARING COURSE MIX (4,F)	TONS	390	$ 95.00	$ 37,100
(1)	TYPE SP 12.5 WEARING COURSE MIX (4,F)	TONS	205	$ 95.00	$ 19,500
	Subtotal				$ 357,000
	All Roadway Construction Subtotal				**$ 357,000**
PRECENTAGE ITEMS					
	MOBILIZATION	5%		of all roadway	$ 17,900
	MISC REMOVALS (SIGNS, TREES, BUSHES, ETC.)	5%		of all roadway	$ 17,900
	SIGNING & PAVEMENT MARKINGS	3%		of all roadway	$ 10,800
	TURF ESTABLISHMENT AND EROSION CONTROL	20%		of all roadway	$ 71,400
	DRAINAGE	10%		of all roadway	$ 35,700
	TRAFFIC CONTROL/STAGING	5%		of all roadway	$ 17,900
	CONTINGENCY FOR MISSING ITEMS	20%		of all roadway	$ 71,400
	Subtotal				$ 243,000
				Construction Cost (2024 Dollars)	$ 600,000
				Anticipated Right-of-Way (2024 Dollars)	$ -
				Engineering Cost (2024 Dollars)	$ 120,000
				Total Construction Cost (2024 Dollars)	**$ 720,000**

Notes:

1. Local road pavement section assumed is 6 inch bituminous pavement,8 inch aggregate base, and 12 inch sand.
2. Trail pavement section assumed is 3 inch bituminous pavement and 6 inch aggregate base

Opinion of Probable Cost - Preliminary Cost Estimate

South Bend Ave Concept 5 - Safe Routes to Multimodal Study

Mankato, MN

12/6/2022

BOLTON & MENK
Real People. Real Solutions.

	Item	Unit	Total Qty	Unit Price	Total Cost
MAJOR ROADWAY ITEMS (NOTES 1 & 2)					
	REMOVE BITUMINOUS PAVEMENT	SY	1,130	$ 8.00	$ 9,100
	EXCAVATION - COMMON	CY	2,825	$ 65.00	$ 183,700
	COMMON EMBANKMENT (CV)	CY	6,130	$ 20.00	$ 122,600
	AGGREGATE BASE (CV) CLASS 5	CY	610	$ 65.00	$ 39,700
	SELECT GRANULAR EMBANKMENT (CV)	CY	185	$ 30.00	$ 5,600
(2)	TYPE SP 9.5 WEARING COURSE MIX (4,F)	TONS	380	$ 95.00	$ 36,100
(1)	TYPE SP 12.5 WEARING COURSE MIX (4,F)	TONS	145	$ 95.00	$ 13,800
	Subtotal				$ 411,000
	All Roadway Construction Subtotal				**$ 411,000**
PRECENTAGE ITEMS					
	MOBILIZATION	5%		of all roadway	$ 20,600
	MISC REMOVALS (SIGNS, TREES, BUSHES, ETC.)	5%		of all roadway	$ 20,600
	SIGNING & PAVEMENT MARKINGS	3%		of all roadway	$ 12,400
	TURF ESTABLISHMENT AND EROSION CONTROL	20%		of all roadway	$ 82,200
	DRAINAGE	10%		of all roadway	$ 41,100
	TRAFFIC CONTROL/STAGING	5%		of all roadway	$ 20,600
	CONTINGENCY FOR MISSING ITEMS	20%		of all roadway	$ 82,200
	Subtotal				$ 280,000
				Construction Cost (2024 Dollars)	$ 700,000
				Anticipated Right-of-Way (2024 Dollars)	$ -
				Engineering Cost (2024 Dollars)	$ 140,000
				Total Construction Cost (2024 Dollars)	**$ 840,000**

Notes:

1. Local road pavement section assumed is 6 inch bituminous pavement,8 inch aggregate base, and 12 inch sand.
2. Trail pavement section assumed is 3 inch bituminous pavement and 6 inch aggregate base

Appendix G: Evaluation Matrices

South Bend Safe Routes to Multimodal Study

Alternative Matrix

Concept Layout Overview

September 2022

Criteria		CSAH 33		CSAH 69			
		Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	
		Eastside Paved Shoulder	Eastside Paved Shoulder + Shared Use Path	Paved Shoulders	Northside Shared Use Path	Southside Shared Use Path	No Build
Evaluation Matrix Goals	Safely accommodate all system users	0	+	+	+	0	-
	Provide infrastructure improvements compatible with social, environmental and economic resources	+	0	+	0	0	+
	Develop a financially responsible plan	+	+	+	0	0	N/A
	Provide community connections	+	+	+	+	+	-

Legend			
-	0	+	++
Does Not Meet Measure	Minimally Meets Measure	Meets Measure	Exceeds Measure

Safe Routes to Multimodal Evaluation

Goals	Measures	CONCEPTS					
		Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	
		Eastside Paved Shoulder	Eastside Paved Shoulder + Shared Use Path	Paved Shoulders	Northside Shared Use Path	Southside Shared Use Path	No Build
Safety	Separation from vehicle traffic	0	+	0	+	+	-
	Limits roadway/driveway crossings	+	+	0	+	+	+
	Visibility of pedestrians to drivers	+	+	+	+	+	-
Goal #1 Summary		**0**	**+**	**+**	**+**	**+**	**-**
Environment	Limits impacts to green space	+	0	+	0	-	0
	Limits impacts to drainage infrastructure	+	0	+	0	0	+
Goal #2 Summary		**+**	**0**	**+**	**0**	**0**	**+**
Cost	Concept Level Construction Estimate	+	0	0	0	0	N/A
	Operations and Maintenance Cost	+	0	+	0	0	+
	Potential for ROW Impacts/acquisition	+	+	+	-	-	+
Goal #3 Summary		**+**	**+**	**+**	**0**	**0**	**0**
Community	Trail connectivity/consistency	+	+	+	0	0	-
	Community Support	+	+	+	+	+	-
Goal #4 Summary		**+**	**+**	**+**	**+**	**+**	**-**
	SCORE	+	+	+	+	0	0

Legend			
-	0	+	++
Does Not Meet Measure	Minimally Meets Measure	Meets Measure	Exceeds Measure

Appendix H: Recommended Alternative