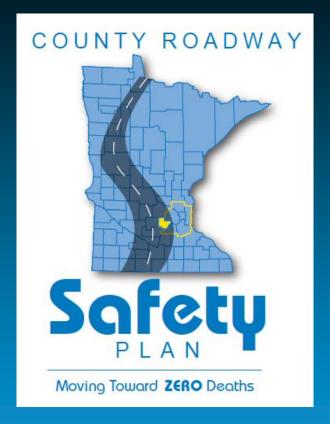
# **CARVER COUNTY**



# County Roadway Safety Plan 2022 Action Plan Amendment

Adopted September 6, 2022



Prepared by Carver County Public Works

An update to the Carver County – County Road Safety Plan has been prepared to renew and amend findings and recommendations of the original document approved in July 2013. Carver County has made a commitment to maintaining and improving public safety through the identification of crash issues, evaluation of crash factors, and determination of innovative improvement opportunities to reduce the severity and quantity of crashes. The county's original plan aligns with the Minnesota Strategic Highway Safety Plan (SHSP) which promotes a positive safety culture that "rejects roadway fatalities and life-changing injuries as a cost of doing business and values the life and well-being for all roadway users."

This document represents that 2022 Action Plan Amendment to the 2013 plan and intended to highlight recent activities and planning efforts completed to identify, program, study, and implement safety improvements across the county highway system. Carver County has made significant investments in planning, engineering, and construction practices to improve safety for all users of the system.

The safety of the transportation system relies on a shared responsibility by the transportation community of providers and users. This is exemplified by the Minnesota commitment to the Toward Zero Deaths approach to transportation safety which brings together the four Es:

- Engineering,
- Education,
- Enforcement, and
- Emergency Medical and Trauma Services.

The 4 Es work in conjunction to meet the county's goals of reducing all crashes and eliminating severe (fatal and incapacitating injury) crashes. These focus areas are used to react to and mitigate or eliminate different transportation safety issues.

Engineering: Safety engineering efforts includes modifying or restructuring the transportation environment. These physical changes can be used to modify the motorist driver behavior to make the roadway a safer environment. These physical changes also allow the motorist more time to assess and react to changing situations and decrease the severity of crashes that do occur on the transportation system.

Education: Safety education efforts involve altering the behavior of transportation users. These efforts primarily focus on drivers but also includes pedestrians and bicyclists. The intent is to not only help transportation users to understand the "rules of the road" but motivate the transportation users to change their habits.

Enforcement: Safety enforcement efforts ensure compliance with traffic laws. Compliance reduces unsafe driving practices by changing driver behavior.

Emergency Medical and Trauma Services: Safety emergency medical and trauma services reduce the severity of crashes by providing for fast, efficient, and coordinated emergency response when a crash occurs.

The county also subscribes to a fifth E:

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# • Everyone.

This is in recognition that all users of the transportation system have a responsibility to the safety of the transportation system by following the transportation laws, state statutes, and rules of the road.

The following outlines Carver County's commitment to implement change through planning and actionable activities to reduce the number of fatal and serious injury crashes across the County.

# Leadership Commitment and Goal Setting

A resolution of support was passed by the Carver County Board of Commissioners on September 6, 2022 for the approval of goals and initiatives identified within this document. Carver County is a strong advocate of the Minnesota Towards Zero Deaths program and is committed to meeting and exceeding the County's obligation in reducing the number of statewide deaths on Minnesota roadways to 225 by the year 2025 with an eventual goal of eliminating roadway fatalities and serious injury crashes across the county system.

Carver County is committed to reducing and eliminating the occurrence of fatal and serious injury crashes across all city, county, state, and US highways within the County. Crash data provided in **Table 1** shows fatal and serious injury crashes occurring within the County since 2017. Fatal and Serious injury crashes have increased over the years with a recent uptick observed in 2021 and 2022. It is the intent of the actions identified within this plan to reverse this trend through the identification and prioritization of improvements across the city, county, and state system that will have the greatest impact in reducing the likelihood and occurrence of fatal and serious injury crashes.

Table 1: Carver County System-Wide Fatal and Serious Injury Crashes

Crash Severity	2017	2018	2019	2020	2021	2022* (To-date)
K – Fatal	1	7	6	5	13	5
A – Serious Injury	18	21	19	22	24	14
Total (K+A) Crashes	19	28	25	27	37	19

<sup>\*</sup>Reported crashes were obtained from MnDOT MnCMAT2 Application. 2022 crashes are through June 31, 2022.

The approved resolution of support from the Carve County Board of Commissioners can be found in **Appendix A**.

# Planning Committee

Development of the Action Plan was led by a committee consisting of Carver County planning and engineering staff tasked with developing, implementing, and monitoring safety improvements through a variety of efforts ranging from detailed corridor studies to county-wide planning initiatives. Collectively this committee is responsible for carrying out the County's initiative to improve safety and reduce crashes across the network with a broad focus on the city, county, and state roadway systems. Committee members meet regularly as part of specific project teams and broader planning initiatives and also convened for multiple meetings in the planning and development of this Action Plan. Committee members are identified, below, along with a catalog of planning efforts performed in recent years that make up most of the content included in this document.

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#### **Action Plan Committee:**

- Lyndon Robjent, Public Works Director and County Engineer
- Darin Mielke, Assistant Public Works Director and Assistant County Engineer
- Angie Stenson, Senior Transportation Planner
- Carver County Board of Commissioners
- Consultant Engineers and Planners

# County Highway Safety Plan – Carver County, 2013; Update in 2018 and 2021/2022

*Key Participants:* 2013 - Robjent (Lead); Mielke; SRF Consulting 2019/2022 Updates – Robjent, Mielke, Stenson, SRF Consulting, Alliant

2019/2022 Updates – Robjent, Mielke, Stenson, SRF Consulting, Alliant Engineering

Project Description: This Safety Plan for Carver County (Plan) was prepared as part of the Minnesota statewide highway safety planning process. The Plan was data driven, with a goal to reduce severe crashes (defined as those involving fatalities and serious injuries) by documenting at-risk locations, identifying effective low-cost safety improvement strategies, and better positioning Carver County (County) to compete for available safety funds. The Plan includes a description of the connection to safety planning efforts at the national, State (through Minnesota's Strategic Highway Safety Plan and the Highway Safety Improvement Program), and regional (all counties in the Metro Area) levels. Link to Final Document: Link

In 2018, an effort began to update and expand upon the work completed with the 2013 Carver County Roadway Safety Plan. A workshop was held in November 2018 with the overarching intent to create a shared understanding of CRSP and Carver County's infrastructure roadway safety approach, solicit and share safety stakeholder perspectives to reduce severe crashes in Carver County, and collaboratively explore innovative infrastructure strategies for CRSP plan consideration. The US 212/CSAH 51 Intersection and CSAH 40 Corridor were both identified as critical safety areas and discussed at length as case studies with the group. Participants from Carver County, MnDOT Traffic, MnDOT Area Representatives, Impacted Cities, MN State Patrol, First Responders, Transit, and local interest groups all convened to contribute to the effort. Leading up to this meeting, several coordination meetings occurred between County staff and the project team to identify initiatives included with the plan update and develop an understanding of critical elements to be considered.

In 2021, the *Phase 2 County Roadway Safety Plans – Carver County Individual meeting* was held to re-initiate and continue the effort to expand upon the work included in the original County Road Safety Plan. Work complete to date includes finalizing the county roadway network map and geography, establishing a verified roadway and attribute database, updating the data collected in 2018-2019, reassigning updated AADTs and crashes to each location, completing additional quality checks for consistency, building tools to develop a prioritized list of locations and assign potential safety strategies to each segment, curve, and intersection, reviewing analysis processes, completing new analysis, and updating decision trees and risk factors to reflect changes since Phase 1. Meetings held to advance this work are outlined on Page 16.

# Carver County Safety Tool, 2019 (Ongoing)

Key Participants: Robjent (Lead); Mielke; Stenson; Dan McCormick, Traffic Engineer; Bolton & Menk

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*Project Description:* The crash tool is formulated to monitor conditions at all county intersections from major intersections on the county and state highway system to minor local roadway connections. The crash tool is also used on a segment and corridor basis.

This crash tool is an important feature of the crash analysis employed by Carver County. The county can use the data within the crash tool to understand current trends and develop an understanding of potential future concerns on a continual basis.

# 2040 Comprehensive Plan Update, 2020

*Key Participants:* Stenson (Lead); Robjent; Mielke; McCormick; City Staff; SRF Consulting; *Project Description:* Carver County's 2040 Comprehensive Plan is an important tool for guiding the growth of the County over the next 20 years. Countywide policies for land use, transportation, water resources, parks and trails are all included in the plan. The goal is to create a unified vision for Carver County from today through 2040. The Carver County Board adopted the 2040 Comprehensive Plan on February 4, 2020.

# Highway 40 Improvements Project, 2021 - Ongoing

*Key Participants:* Cory Spanier, Project Manager (Lead); Robjent; Mielke; Alliant Engineering *Project Description:* Highway 40 corridor has been identified in the County's Roadway Safety Plan as a "High Priority Segment" due to the high frequency of crashes, narrow substandard gravel shoulders, and abundant curvature. The goal of the project is to improve safety for all users and rehabilitate the pavement on the Highway 40 corridor between Highway 25 and Highway 52. Specific objectives of the project will include widening of the shoulders, flattening slopes, correcting drainage issues, implementing safety improvements, and rehabilitating the pavement surface.

# **US 212 Project – Benton Township**

Key Participants: Mielke (Lead); Robjent; McCormick; Stenson, SRF Consulting Project Description: Carver County, in partnership with Benton Township, the Cities of Norwood Young America and Cologne, and MnDOT, are working together to identify and implement transportation system improvements to Highway 212. The overall objective of the project includes approximately five miles of safety and capacity improvements along Highway 212 between Highway 34 on the east side of the City of Norwood Young America to Highway 36 on the west side of the City of Cologne. The project includes reconstruction and expansion of the highway from a two-lane undivided to a four-lane divided highway. On the both ends, the highway will connect to the existing four-lane divided highway segments, completing the last remaining 'gap' in the safety and mobility in the highway corridor from the City of Glencoe to the Twin Cities.

# **Arboretum Area Transportation Plan**

Key Participants: Stenson (Lead); Mielke; Robjent; McCormick; Bolton & Menk Project Description: The Arboretum Area Transportation Plan was developed from March 2019 through 2020 through study of the current and future transportation needs of major corridors near the Minnesota Landscape Arboretum. These corridors included Highway 5, West 82nd Street, Rolling Acres Road, Bavaria Road, and Highway 41. Project partners included Carver County, MnDOT, the Minnesota Landscape Arboretum, and the cities of Victoria, Chanhassen, and Chaska.

The Arboretum Area Transportation Plan identifies 20 improvement projects in total amongst the corridors. The implementation approach for the Plan prioritizes these projects based on multiple factors

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including recognition of already planned/ programmed projects, financial constraints, funding opportunities, contribution toward improving the transportation network, public support, and council priorities. The project priority/timing figure on the right represents the level of consideration that went into project sequencing. Link to Study Executive Summary: Link

# Highway 10 Corridor Study – Victoria to Chaska, 2019 - 2021

Key Participants: Stenson (Lead); Mielke; Robjent; McCormick; Bolton & Menk Project Description: Carver County, in collaboration with MnDOT, the cities of Chaska, Victoria, and Waconia, and Laketown Township, is working to identify transportation system improvements on Highway 10 from Highway 43 in western Laketown Township to Highway 61 in the City of Chaska. Highway 10 is an important roadway in Carver County providing connections to multiple communities and accommodating vehicle, pedestrian, bicycle, transit, and freight traffic alike. A study of the Highway 11 corridor from Highway 10 to Marsh Lake Road was also performed to establish a vision and identify infrastructure needs to accompany future City of Victoria planning initiatives.

The Highway 10 Corridor Study identifies 14 improvement projects in total amongst the corridors. The implementation approach for the Plan prioritizes these projects based on multiple factors including recognition of already planned/programmed projects, financial constraints, funding opportunities, contribution toward improving the transportation network, public support, and council priorities. Link to Study Executive Summary: Link.

# Safety Analysis

In 2017, Carver County embarked with its project partners to develop a comprehensive safety tool that leaned heavily on data driven tactics to review (reactive) and predict (proactive) safety concerns at all of its intersections and segments. The

primary transportation safety goals for the county are:

- Reduce all crashes
- Eliminate severe (fatal and incapacitating injury) crashes
- Identify safety improvements that can be implemented on a low cost/high benefit basis

# **Engineering Strategies**

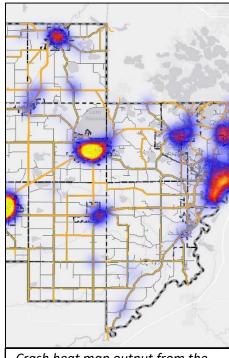
This plan identifies the engineering approach to addressing transportation safety concerns. The tactics employed by Carver County include:

- Data Driven Problem Identification
- Performance Based Approach
- Use of Cost Effective and Appropriate Strategies and Countermeasures

# **Tactics**

Data Driven Problem Identification
The county utilizes data from multiple sources when identifying historical, current and potential safety issues.

Public comments



Crash heat map output from the Carver County Safety Tool

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- Community priorities
- Crash records
- Location characteristics

Comments by the public are useful to identify specific areas where the public has difficulties in navigating the roadway environment and safety may be compromised.

Community priorities are useful to understand different safety priorities and initiatives.

Crash records are useful to identify where crashes occur and what types of crashes are occurring. This is taking a reactive approach to identify where safety may be compromised.

Location characteristics along with crash trends from the crash records are useful to take a proactive approach to identify locations that have a potential for crashes. This is also considered to be a systemic approach to crash mitigation. Location characteristics may include the features of the roadway and transportation environment but also includes traffic volumes and land use changes.

# Reactive Approach

Being reactive to the crashes on the transportation system requires a database of the crashes on the system. Crash records in the state of Minnesota are maintained by the Minnesota Department of Public Safety (MnDPS) and are provided for use by public agencies by the Minnesota Department of Transportation (MnDOT). Carver County has their own database analysis tool using the crash records from MnDOT. The tool provides a county-wide perspective on crashes, detailing the crash records and methods for identifying potentially hazardous locations.

#### Methods:

- Crash Frequency
- Crash Rate
- Fatal + Serious Injury Crash Rate
- Crash Index
- Crash Costs

The crash rate is a measure of the crash frequency as a function of exposure. The exposure is the number of vehicles entering an intersection or the vehicle miles of travel along a roadway segment. As the exposure increases, the number of crashes typically increases. The use of crash rates accounts for the variability and allows for comparison of locations with similar designs but different traffic volumes. The crash rate can be compared to the average crash rate for the type of facility.

The crash index compares the crash rate for individual intersections or segments as compared to the critical crash rate. The critical crash rate is the system-wide average rate based on the amount of exposure and a desired statistical level of confidence.

The crash costs are the total benefit if all crashes at the intersection are reduced to zero. A higher crash cost is indicative of either a high number of crashes or a high number of severe crashes. The costs are also a factor used in the selection of mitigation features.

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# Proactive Approach

The proactive approach to transportation safety uses trends in the crash data to identify other facilities with similar characteristics that may have concerns in the future. A specific feature of this approach is identifying traffic volume trends in relation to traffic safety concerns. The state of Minnesota has also identified specific systemic safety improvements through the County Road Safety Plans (CRSP).

Both the reactive and proactive approaches rely on the database of crash data and methods of evaluation. Data drives our understanding of where and why crashes occur. The crash data is an important tool to determine what factors contribute to the crashes. Outputs from the safety tool aid the county in developing top proactive Highway Safety Improvement Program (HSIP) candidate locations, identify future problematic intersections through intersection risk factor reports, and perform an investment analysis for possible improvement projects to be pursued by the County. The goal is to identify problematic safety locations prior to issues being identified

through reactive means of crash reporting.

# Carver County Crash Tool

The crash tool is formulated specifically for Carver County for the major intersections on the county and state highway system. The crash tool is also used on a segment and corridor basis. This crash tool is an important feature of the crash analysis employed by Carver County. The tool is used to catalogue where crashes are occurring, the types of crashes, and the severity of crashes. The analysis features of the tool provide a summary of the crashes and crash history as compared to other similar intersections or corridors. The county is able to use the data within the crash tool to understand current trends and develop an understanding of potential future concerns on a continual basis.

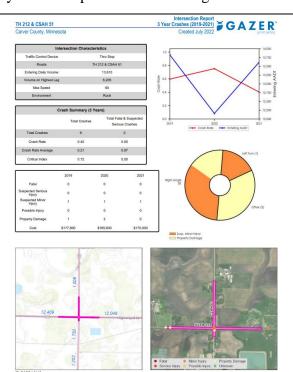


A performance-based approach to traffic safety

involves tracking performance metrics and using the results to identify the improvements or investments that increase the safety of the transportation system in a cost-effective way. The

crash tool incorporates methods to evaluate the system, determine safety improvement strategies, and track progress. The federal government is employing this approach through transportation legislation which sets the course for highway investments. A cornerstone of this program is a transition to a performance and outcome-based program. It provides for more efficient investment of Federal transportation funds by focusing on national transportation goals, of which safety is one of the goals. The safety goal looks to achieve a significant reduction in traffic fatalities and serious injuries on all public roads. While Carver County is not required to track projects in this way, any Carver County projects with federal funding would be. Overall, Carver County follows this

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methodology to understand how their projects meet their safety goals. One of the methods to determine safety improvement needs and track progress is through a scoring system.

# Intersection Scoring

Each major intersection on the county and state highway system in Carver County is provided with two different scores. These scores are used to understand how projects meet the safety goals.

# Crash Score

The crash score is a comparative analysis to other intersections county-wide. It is used to identify the intersections with the highest need for safety review.

# Safety Score

The safety score is a direct analysis of a specific intersection, corridor, or the highway system. It is used to identify how safe the facility is and is used to understand how safety improvements have affected the facility and overall safety of the transportation system. The goal is to improve this score over time with safety improvements even as traffic volumes increase.

# Cost Effective and Appropriate Strategies and Countermeasures

The crash tool includes a feature to determine how some common safety improvement strategies could mitigate the crashes that occur at locations. The crash reduction for the strategies are based on Crash Modification Factors (CMF) located within the Crash Modification Factor Clearinghouse.

Each location throughout the county is unique and the strategies employed at each location will be specific to the location based on the site characteristics, the safety issues, and types of crashes. The evaluation of a location may not indicate a systemic issue that can be rectified through engineering measures. In such cases, education strategies, enforcement strategies, risk management strategies or additional monitoring of the location may be implemented.

Some crash types are more common than others on the transportation system. These crash types are tied to specific safety issues that can then generally be mitigated or reduced through established engineering mitigation strategies.

- 1. Nighttime crashes
- 2. Right angle crashes at unsignalized intersections
- 3. Left turn crashes at unsignalized intersections
- 4. Rear-end, head-on, and sideswipe crashes at unsignalized intersections
- 5. Left turn crashes at signalized intersections
- 6. Rear end crashes at signalized intersections
- 7. Right angle crashes at signalized intersections
- 8. Sideswipe and head-on crashes at signalized intersections
- 9. Pedestrian and bicycle crashes
- 10. Run off road crashes on corridors
- 11. Head-on and sideswipe crashes on corridors
- 12. Left turn crashes on corridors
- 13. Head-on and run off road crashes on curves

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- 14. Younger driver crashes focus on education versus engineering strategies
- 15. Older driver crashes focus on education versus engineering strategies

# Cost Effective Safety Improvements

The projected benefit based on the crash reduction is identified at each intersection or segment to develop a benefit to cost ratio. The exact costs for each type of countermeasure should be developed based on the characteristics of each location. A higher benefit to cost ratio is obtained for countermeasures that are cost effective, providing a high crash reduction benefit with lower cost improvements.

# Safety Analysis Overview

The influence of the Carver County Safety Tool can be found across all planning documents developed or updated in recent years as well as in the recommendations of corridor and intersection-specific studies across the county. Identified safety improvement needs assist the county in prioritizing improvements and dedicating transportation funds to critical efforts:

On a broader planning level,

- Carver County 2040 Comprehensive Plan Transportation
- 20-Year Transportation Tax Implementation Projects
- Capital Improvement Plan Highway and trail construction projects

On a project-specific level,

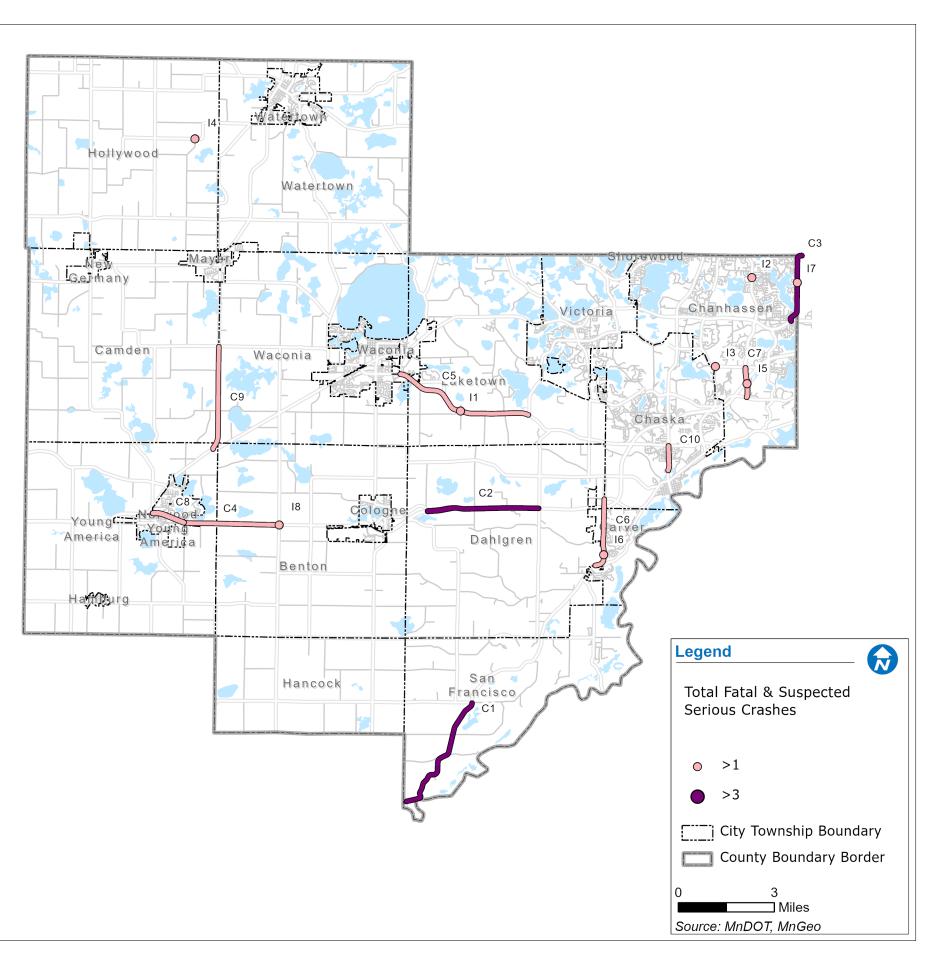
- Highway 40 Improvements, Carver County
- US 212 Improvements Project Benton Township, Carver County, MnDOT
- Arboretum Area Transportation Plan Carver County, MnDOT, Cities of Chaska and Victoria, Laketown Township
- Highway 10 Study: Victoria/Chaska Area Carver County, MnDOT, Cities of Chaska and Victoria, Laketown Township
- Others (Cologne Area Transportation Plan, Jonathan Carver Parkway (CSAH 11) Corridor Study, and many others)

On a policy planning level,

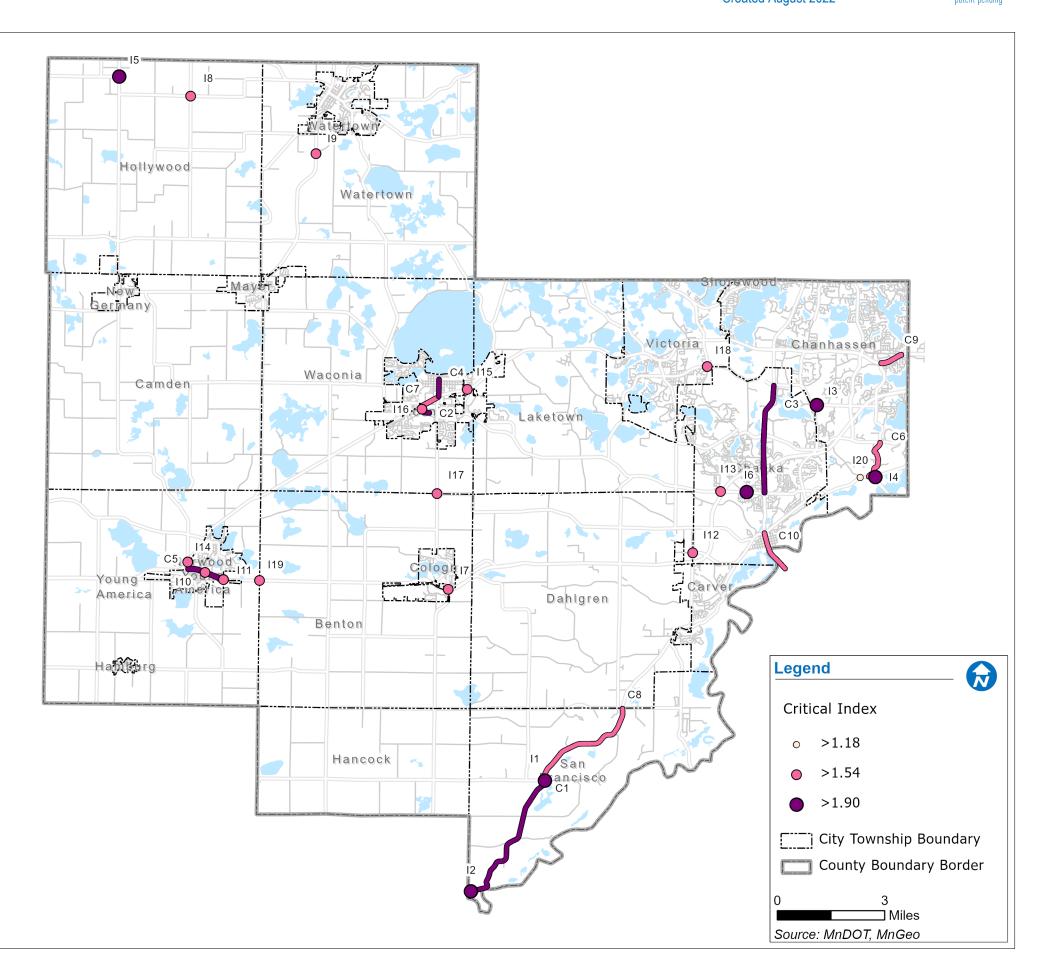
- Pedestrian Crossing Policy
- County-wide Rural Lighting Improvements
- Pavement Marking Policy
- Left-Turn Lane Policy

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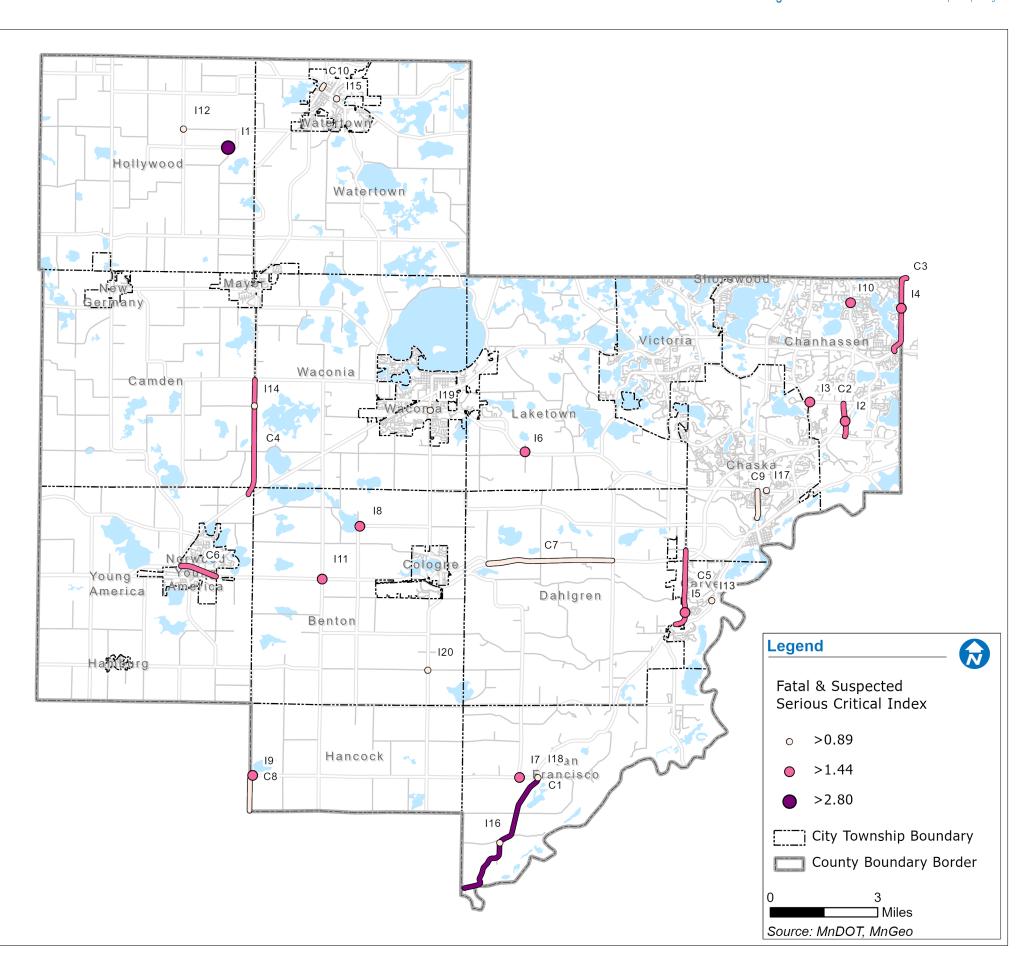
	Label	ID	Roads	Total Fatal & Suspected Serious Crashes	Total Crashes
	I1	CACO-I-0907	CSAH 10 & 102ND STREET	2	8
	12	CACO-I-1358	CSAH 17 & CARVER BEACH ROAD	2	3
s	13	CACO-I-1333	CSAH 15 & CSAH 18	2	49
ction	14	CACO-I-0952	CR 122 & STONE AVENUE	2	2
Intersections	15	CACO-I-1381	CSAH 17 & RAMP	2	11
=	16	CACO-I-1241	CSAH 11 & 4TH STREET WEST	2	6
	17	CACO-I-2426	TH 101 & CHOCTAW CIRCLE	2	6
	18	CACO-I-3112	TH 212 & CSAH 51	2	13
	C1	CACO-C-226	CR 40	8	44
	C2	CACO-C-010	US 212	4	47
	C3	CACO-C-015	CR 101/CHANHASSEN RD/W 192ND AVE	4	55
	C4	CACO-C-003	US 212	3	53
Corridors	C5	CACO-C-083	CR 10	3	56
Corri	C6	CACO-C-105	JONATHAN CARVER PKWY	3	47
	C7	<u>CACO-C-154</u>	POWERS BLVD	3	29
	C8	CACO-C-008	US 212	2	39
	C9	CACO-C-023	MN 25	2	11
	C10	CACO-C-044	N CHESTNUT ST	2	35



	Label	ID	Roads	Critica Index
	I1	CACO-I-1097	CSAH 40 & CSAH 52 & 174TH STREET	2.77
	I2	CACO-I-2465	TH 25 & CSAH 40	2.70
	13	CACO-I-1333	CSAH 15 & CSAH 18	2.20
	14	CACO-I-3197	CSAH 101 & CSAH 61 & RAMP	2.15
	15	CACO-I-1395	CSAH 20 & CSAH 33	2.13
	16	CACO-I-1211	CSAH 10 & BAVARIA ROAD	2.06
	17	CACO-I-3127	TH 212 & TH 284 & CSAH 53 & RAMP	1.87
	18	CACO-I-1011	CSAH 20 & CSAH 21	1.77
60	19	CACO-I-2455	TH 25 & 32ND STREET	1.76
Intersections	110	CACO-I-3128	TH 212 & FAXON ROAD NORTH	1.75
terse	l11	CACO-I-3113	TH 212 & CSAH 34 & TACOMA AVENUE	1.68
드	112	CACO-I-1251	CSAH 11 & CSAH 61 & LEVI GRIFFIN ROAD	1.65
	l13	CACO-I-1215	CSAH 10 & RAMP	1.62
	114	CACO-I-2464	TH 5 & CSAH 33	1.61
	l15	CACO-I-2578	TH 5 & CSAH 59 & MAIN STREET EAST	1.60
	I16	CACO-I-1231	CSAH 10 & 10TH STREET WEST & MARKETPLACE DRIVE	1.58
	l17	CACO-I-2508	TH 284 & CR 140 & 110TH STREET	1.55
	l18	CACO-I-1300	CSAH 13 & CSAH 18 & 82ND STREET WEST & BAVARIA ROAD	1.54
	l19	CACO-I-3133	TH 212 & SALEM AVENUE	1.54
	120	CACO-I-3196	CSAH 61 & BLUFF CREEK DRIVE & RAMP	1.51
	C1	CACO-C-226	CR 40	2.94
	C2	CACO-C-087	W 13TH ST	2.93
	СЗ	CACO-C-047	HAZELTINE BLVD/N CHESTNUT ST	2.23
	C4	CACO-C-264	OLIVE ST S	2.12
dors	C5	CACO-C-008	US 212	1.96
Corridors	C6	CACO-C-016	CR 101/GREAT PLAINS BLVD	1.84
	C7	CACO-C-052	MN 5	1.81
	C8	CACO-C-227	CR 40	1.75
	C9	CACO-C-055	ARBORETUM BLVD	1.65
	C10	CACO-C-042	CHESTNUT BLVD/N CHESTNUT ST/S CHESTNUT ST	1.62



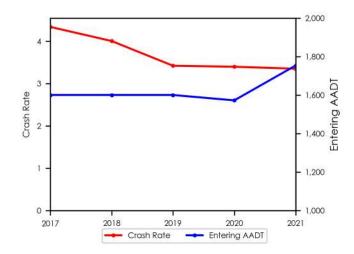
	Label	ID	Roads	Fatal & Suspected Serious Critica Index
	I1	CACO-I-0952	CR 122 & STONE AVENUE	3.13
	12	CACO-I-1381	CSAH 17 & RAMP	2.08
	13	CACO-I-1333	CSAH 15 & CSAH 18	2.06
	14	CACO-I-2426	TH 101 & CHOCTAW CIRCLE	1.77
	15	CACO-I-1241	CSAH 11 & 4TH STREET WEST	1.75
	16	CACO-I-0907	CSAH 10 & 102ND STREET	1.65
	17	CACO-I-1107	CSAH 41 & CSAH 52	1.64
	18	CACO-I-1000	CR 153 & KNAUER LANE	1.59
s	19	CACO-I-1479	CSAH 33 & CSAH 52	1.59
ction	l10	CACO-I-1358	CSAH 17 & CARVER BEACH ROAD	1.57
Intersections	l11	CACO-I-3112	TH 212 & CSAH 51	1.49
=	l12	CACO-I-1029	CSAH 21 & 30TH STREET	1.35
	l13	CACO-I-1510	CSAH 40 & HICKORY STREET	1.34
	l14	CACO-I-2460	TH 25 & 92ND STREET	1.33
	l15	CACO-I-3218	CSAH 10 & CSAH 20 & RAMP	1.29
	I16	CACO-I-1095	CSAH 40 & 188TH STREET	1.27
	117	CACO-I-0933	CSAH 10 & PARK RIDGE DRIVE & SKYVIEW DRIVE	1.26
	I18	CACO-I-1097	CSAH 40 & CSAH 52 & 174TH STREET	1.26
	l19	CACO-I-3205	TH 284 & CSAH 10	1.24
	120	CACO-I-1160	CSAH 53 & 150TH STREET	1.22
	C1	CACO-C-226	CR 40	4.79
	C2	CACO-C-154	POWERS BLVD	2.35
	C3	CACO-C-015	CR 101/CHANHASSEN RD/W 192ND AVE	2.01
	C4	CACO-C-023	MN 25	1.51
Corridors	C5	CACO-C-105	JONATHAN CARVER PKWY	1.51
Corri	C6	CACO-C-008	US 212	1.45
	C7	CACO-C-010	US 212	1.43
	C8	CACO-C-216	CR 33/SALEM AVE	1.43
	C9	CACO-C-044	N CHESTNUT ST	1.36
	C10	CACO-C-030	JEFFERSON AVE NW	1.28

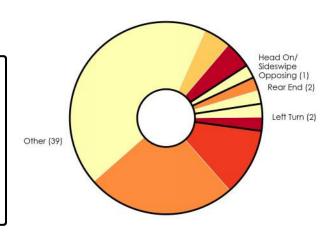


Segment Characteristics				
Length (miles)	4.10			
AADT Volume	1,753			
Divided/Undivided	Undivided			
Max Speed	55			
Environment	Rural			

Crash Summary (5 Years)						
	Total Crashes	Total Fatal & Suspected Serious Crashes				
Total Crashes	44	8				
Crash Rate	3.35	60.94				
Crash Rate Average	0.57	2.90				
Critical Index	2.94	4.79				

	2017	2018	2019	2020	2021
Fatal	0	0	0	1	2
Suspected Serious Injury	1	0	1	1	2
Suspected Minor Injury	2	1	3	3	3
Possible Injury	0	0	0	1	1
Property Damage	8	1	4	2	7
Cost (in thousands)	\$992.4	\$177.8	\$1,131.2	\$2,382.6	\$4,191.6





Susp. Minor Injury Property Damage





Susp. Serious Injury Possible Injury

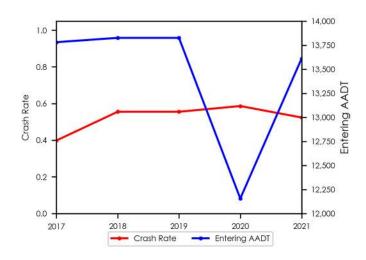
ID: CACO-C-226

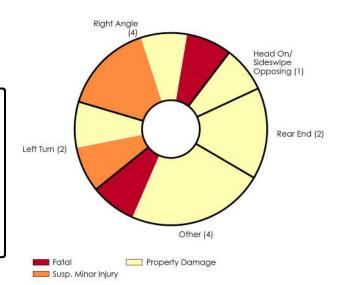


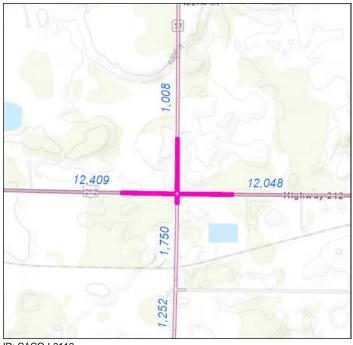
Intersection Characteristics				
Traffic Control Device	Thru Stop			
Roads	TH 212 & CSAH 51			
Entering Daily Volume	13,610			
Volume on Highest Leg	6,205			
Max Speed	60			
Environment	Rural			

Crash Summary (5 Years)						
	Total Crashes	Total Fatal & Suspected Serious Crashes				
Total Crashes	13	2				
Crash Rate	0.52	8.05				
Crash Rate Average	0.22	0.92				
Critical Index	1.07	1.49				

	2017	2018	2019	2020	2021
Fatal	0	2	0	0	0
Suspected Serious Injury	0	0	0	0	0
Suspected Minor Injury	0	0	1	1	1
Possible Injury	0	0	0	0	0
Property Damage	2	3	1	2	0
Cost (in thousands)	\$15.6	\$2,383.4	\$177.8	\$185.6	\$170.0









ID: CACO-I-3112

# **Engagement and Collaboration**

Carver County understands that engagement and collaboration are critical components to an inclusive planning process that represents the views and opinions of the general public, relevant project stakeholders, underserved populations, and participating agencies. The findings and recommendations outlined within this Action Plan represent the culmination of planning and engagement efforts performed as part of several planning projects and initiatives in recent years. An overview of these engagement activities is provided, below:

County Highway Safety Plan – Carver County, 2013 | Updates performed in 2018 | 2021-Ongoing *Participating Agencies:* Carver County, MnDOT Traffic, MnDOT Area Representatives, CH2M Hill, Cities within Carver County, MN State Patrol, First Responders, Transit, and local interest groups all convened to contribute to the effort.

Engagement Activities: Dedicated engagement opportunities and activities were performed in conjunction with the 2013, 2018, and 2021-current County Highway Safety Plan efforts. A summary of these activities is provided, below:

- Phase I (2012/2013): Multiple coordination meetings were held with the project team to establish priorities and develop a plan for evaluating and implementing systemic change across the county and region. The culmination of these efforts was a Safety Strategies Workshop held on August 1, 2012, involving representatives from Carver County Public Works, Carver County Commissioners, area cities, Carver County Sherrif's office, MnDOT Traffic, MnDOT OTST, State Patrol, T2D Regional Planning, and others. An attendee list from this meeting is provided in Appendix C.
- Phase II (2018): Multiple meetings were held with the project team (County, MnDOT, and Consultants) in preparation of the Phase II update workshop. A workshop and County Board presentation was held on 11/27/2018 with key members from Carver County, MnDOT Traffic, MnDOT Area Representatives, Impacted Cities, MN State Patrol, First Responders, Transit, and local interest groups. A summary of this meeting is provided in Appendix C.
- Phase II (2021-Current): Multiple meetings have been held with the project team (County, MnDOT, and Consultants) to continue planning efforts to update the County Road Safety Plan. Meetings are planned for Fall/Winter 2022 to review work completed to-date and advance progress to complete the Carver County Highway Safety Plan update in 2023.

# **Carver County Safety Tool, 2019 (Ongoing)**

Participating Agencies: Carver County, MnDOT

Engagement Activities: The Carver County Safety Tool is continuously updated to react and respond to the latest available crash information available for the County. Outputs and reports from the tool are regularly referenced by County staff and shared with city, township, and state staff/officials, industry professionals, and residents to discuss safety concerns. Updates to the tool are regularly completed to review different corridor/intersection attributes and best identify issues and needs on the roadway system.

# 2040 Comprehensive Plan Update, 2020

Participating Agencies: Carver County, MnDOT

*Engagement Activities:* Extensive stakeholder and community engagement was completed as part of the 2040 Comprehensive Planning Process. The following groups and activities were utilized during the planning process:

• Stakeholder Groups: Citizen and Landowners, County Board and Advisory Commissions,

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Township Boards, County Divisions and Departments, City Partners, Other Partners (Regional, State, and Federal), local offices and community leaders

• *Communication and Engagement:* 2040 Plan Website, Online Questionnaire, Social Pinpoint, Several Public Meetings, Several Pop-Up Meetings, Four Open House Meetings.

# **County-Led Corridor Studies**

Carver County has led and contributed to over a dozen corridor studies in recent years to identify, plan for, and implement change throughout the transportation system. A listing of the most prominent of these efforts is provided below:

# • Highway 40 Improvements Project, 2021 – Ongoing

Participating Agencies: Carver County, Dahlgren Township Engagement Activities: The project is currently ongoing. Opportunities have been made available for public input including two open houses and online surveys. Information related to the most recent project open house can be found here: Link

# • US 212 Project – Benton Township

Participating Agencies: Carver County, MnDOT, Benton Township, Cities of Norwood Young America, City of Cologne

Engagement Activities: The project is currently ongoing. A survey was completed in 2020 with over 430 respondents. Multiple public open houses have been held and the project incorporates safety improvements to address resident concerns. Opportunities have been made available for public input. Information related to the most recent project open house can be found here: Link

# • Arboretum Area Transportation Plan

Participating Agencies: Carver County, MnDOT, City of Victoria, City of Chaska, City of Chanhassen, University of Minnesota Landscape Arboretum Engagement Activities: A summary of all engagement activities is provided in **Appendix C** and on Page 9 of the Executive Summary here: Link

# • Highway 10 Corridor Study – Victoria to Chaska Area

Participating Agencies: Carver County, MnDOT, City of Victoria, City of Chaska, Laketown Township

*Engagement Activities:* A summary of all engagement activities is provided in **Appendix C** and on Page 9 of the Executive Summary here: Link

Contents of this action plan are available to the public on the county website and shared at the County board of commissioners meeting on September 6, 2022. This is a representative list of engagement activities performed by the County in conjunction with planning efforts supporting the completion of the Action Plan. It is not an all-inclusive list.

# Equity Considerations

Carver County understands that consideration of equitable planning and design is a critical component to an inclusive process that represents the views and opinions of all populations including underserved and underrepresented populations. The findings and recommendations outlined within this Action Plan represent the culmination of planning and engagement efforts performed as part of several planning projects and initiatives in recent years. An overview of these equitable engagement activities is provided, below:

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# 2040 Comprehensive Plan Update, 2020

*Equitable Emphasis:* The planning process included several opportunities for disadvantaged populations to engage and provide input. One example highlighting this emphasis includes hosting of an open house with interpreters present to help reach Somali and Hispanic populations.

# **County-Led Corridor Studies**

Carver County deploys tactics on all corridor studies to ensure that the needs and desires of all populations are acknowledged and considered during the planning process. Carver County recently completed a Title VI Non-Discrimination Implementation Plan that guides our interaction and communication with the public. A link to the complete document is provided here: Link. Activities regularly used by the county to emphasize the importance of equitable decision-making are as follows:

- Provide translators at in-person engagement events
- Provide alternate languages on project website and for virtual engagement events
- Provide engagement activities nearby and in the same timeframe as regular events held for the elderly
- Consider area demographics in conjunction with all corridor studies to understand the make-up of the impacted populations and identify methodology to best engage common corridor users
- Develop and distribute surveys through direct mail and online to target populations not typically involved in transportation projects, such as residents under age 18, disabled, and low-income

# **Additional Activities**

In addition to the engagement activities outlined above, the County also participates in regular safety-oriented planning activities through established organizations and coordination with safety professionals operating within the County. Examples include:

- Metro Minnesota Toward Zero Deaths Workshops County staff attends the annual
  workshop held to help facilitate Minnesota TZD's goal of creating a collaborative,
  comprehensive, and regional approach to reducing traffic deaths and severe injuries. Staff
  is active throughout the year in engaging with the program and ensure advancements
  developed by the TZD program are implemented throughout the county transportation
  system.
- Carver County Sherrif's Office Public works staff regularly coordinates with law enforcement personnel tasked with maintaining and enforcing safe practices on all county roadways. Staff understands the importance of coordination and collaboration between the Engineering and Enforcement components of the 4Es. Initiatives related to speed reduction, crash reports/analysis, citizen concerns, and other items are regularly discussed to identify mitigation strategies and effectively improve safety on county roadways.

# Policy and Process Changes

Carver County has made immense strides in recent years to prioritize transportation safety through comprehensive planning activities outlined within the Safety Analysis section and in efforts completed in the areas of broader planning, project-specific analysis and design, and through the adoption of county-wide policies. An overview of these activities is provided, below.

On a broader planning level,

- Carver County County Roadway Safety Plan (Link)
- Carver County 2040 Comprehensive Plan Transportation (Link)

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- 20-Year Transportation Tax Implementation Projects (Link)
- Capital Improvement Plan Highway and trail construction projects (Link)
- Carver County Safety Tool Needs Assessment and Project Lists

# On a project-specific level,

- Highway 40 Improvements, Carver County (Link)
- US 212 Improvements Project Benton Township, Carver County, MnDOT (Link)
- Arboretum Area Transportation Plan Carver County, MnDOT, Cities of Chaska and Victoria, Laketown Township (Interactive Story Map – Link)
- Highway 10 Study: Victoria/Chaska Area Carver County, MnDOT, Cities of Chaska and Victoria, Laketown Township (Executive Summary Link)
- Others (Cologne Area Transportation Plan, Jonathan Carver Parkway (CSAH 11) Corridor Study, and many others)

# On a policy planning level,

- Pedestrian Crossing Policy The purpose of this policy is to provide guidelines and permissible locations for pedestrian crosswalk treatments at uncontrolled pedestrian crossing locations on highways under the jurisdiction of Carver County. Document Link: Link
- County-wide Rural Lighting Improvements Identify and implement system-wide improvements with consideration of the needs of all communities within the County to reduce the number of nighttime crashes. A comprehensive GIS-based safety evaluation was performed to identify warrants for the installation of rural intersection lighting based upon crash history, traffic volumes, and complex intersections. The County has received funding through the Highway Safety Improvement Program (HSIP) solicitation to implement these improvements in recent years.
- Pavement Marking Policy Carver County developed a pavement marking policy to evaluate roadway and corridor characteristics including remaining pavement life, AADT, functional roadway classification, available pavement marking product types, and others to establish consistency in application and maximize available county funding. The County has received funding through the Highway Safety Improvement Program (HSIP) solicitation to implement these improvements on County roadways with a focus on reducing run-off-road and head-on crashes in recent years.
- Left-Turn Lane Policy Carver County developed a policy to establish consistency in the
  implementation of turn lanes at public streets and private accesses throughout the county.
  The intent of the policy is to ensure that turn lanes are provide where crash history, traffic
  volumes, or complex intersections dictate the need for turn lanes to maintain a high level
  of safety of roadway users.

The culmination of these efforts is a comprehensive list of transportation network needs on city streets, county roads, and state highways. Identified improvements range from small spot safety improvements such as adding lighting to a rural intersection all the way up to implementing corridor and network-wide improvements that reshape the County system and have costs in excess of \$100 million. It is the responsibility of County staff to assess the list of needs and identified improvements, available funding and funding solicitations, existing pavement condition, recent safety data, local community initiatives, and an infinite number of other

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County Roadway Safety Plan 2022 Action Plan Amendment

considerations to develop an annual program of corridor improvements and identify the near, mid-, and long-term improvements to be pursued within the County.

To assist in overall project selection and prioritization, Carver County developed a Prioritization Score and associated methodology to effectively rank planned improvements for all highways (county and state) throughout the county system. Scoring was assigned based upon criteria in the areas of Safety, presence in County Safety Plan or Metro District Highway Safety Plan, volume/capacity ratio, overall system relief (new roads), system significance (functional classification), regional/county significance, multimodal connections, roadway condition, freight needs, heavy commercial %, geometric deficiencies, infrastructure age, structural capacity, funding availability, project readiness, and agency/community support. The output of this process was a robust and comprehensive consideration of all performance targets and relevant influences to establish projects included in and prioritized within the developed planning documents.

This exercise is critical to meet regional guidelines and promote a wide-range of modern, responsive, safe, and cost-effective transportation resources to support the County's rural and urban economies and growing population. In general, the flowchart below outlines process and considerations observed to generate plans for the County's transportation-related facilities, including principal and minor arterial highways; transit services and facilities; bicycling and walking facilities; aviation facilities; and the County's freight related systems.

# **County Project Selection and Prioritization**

Facilities Assessment

- Public Engagement and Input
- •Transportation Planning Studies
- Existing Facilities Condition Analysis

erformance

- System Alignment (Meeting CSAH Standards, ADA Compliance, Shoulder Widths)
- Mobility (V/C Analysis, Level of Service Evaluation, VMT on CSAH and CR System)
- Safety (# of Fatal and Serious Vehicle Crashes by year, # of Fatal and Serious Bike/Ped Crashes by Year)
- Operations and Maintenance (Facilities Condition Assessment, Roadbed Age, Intersection Lighting, etc.)
- Bridge and Drainage Systems (Brige Ratings, Culvert Condition, Age, MS4 Compliance)

Project Selection

- County Highway Prioritization Tool
- Capital Improvement Plan Development and Coordination
- •Carver County Planning, Engineering, Operations, and Maintenance Staff Coordination

Planning

- County Highway Preservation Plan
- •Capital Improvement Plan
- County Roadway Systems Plan
- •Carver County Transportation Tax Plan

Projects identified in the County Highway Preservation Plan, Capital Improvement Plan, County Roadway Systems Plan, and Carver County Transportation Tax Plan makeup the totality of

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identified near-, mid-, and long-term improvements currently planned for the next 20-years. Near-term improvements are revisited on an annual basis with adoption of the 5-year Capital Improvement Program (CIP) of highway and trail construction projects. Mid- and long-term improvements are inserted in the 5-year plan as priorities and funding align. In addition to planned construction projects, Carver County continually programs and completes intersection, corridor, and system-wide studies to identify areas of need and prioritize critical improvements across the county system. These activities paired with obtaining competitive and allocated county, state, and federal funding influence the overall program and often move planned projects from mid-term to short-term prioritization.

# Strategy and Project Selections

Per the Safe Streets and Roads for All (SS4A) discretionary grant program announcement, the primary goal of the SS4A grants is to improve roadway safety by supporting communities in developing comprehensive safety action plans based on a Safe System Approach, and implementing projects and strategies that significantly reduce or eliminate transportation-related fatalities and serious injuries involving pedestrians; bicyclists; public transportation, personal conveyance, and micromobility users, commercial vehicle operators; and motorists.

As outlined in the previous sections of the Action Plan, Carver County has completed an exhaustive process to assemble a list of priority projects that improve safety and advance both development and mobility in an equitable manner for all communities within the County. These efforts have led to the development of an extensive list of near-, mid-, and long-term priorities for the County to pursue to improve the system for all users. These projects and priorities can be found in the projects highlighted on the maps shown on pages 10-14 of this document and within **Appendix B**.

Carver County has also programed and completed several system-wide improvements to remedy documented safety issues at rural intersections and segments through the strategic implementation of rural intersection lighting and enhanced pavement markings. Rural intersection lighting improvements were prioritized through a system-wide evaluation considering crash history, complex intersection geometry, and traffic volumes. Additional lighting has been provided at 20+ intersections through this program and more intersections are planned in upcoming years. Programming of enhanced pavement markings for priority segments was established through the review of crash data (run off road, injury, wet road, and nighttime crashes), pavement condition, planned improvements to maximize the benefits of county investments today and well into the future. The implementation of these rural intersection lighting and enhanced pavement marking improvements on county rural roadways is expected to have long-standing benefits in crash reduction for the county system.

It is the intent of this Action Plan and program to highlight and advance those projects with the greatest need and greatest urgency to implement improvements to reduce or eliminate transportation-related fatalities and serious injuries on the city, county, and state systems with Carver County from the projects highlighted on the maps shown on pages 10-14 of this document and within **Appendix B**.

Projects included in the 2022 - 2027 Capital Improvement Plan (<u>Link</u>) make up the best catalog of planned near-term improvement projects scheduled for city, county, and state roadways and trails throughout the County. The overlap in project lists observed when comparing those

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identified in the CIP with those included in the *Top Fatal and Suspected Serious Crash Locations*, *Top Critical Index Locations*, and *Top Fatal & Suspected Serious Critical Index Locations* maps represent the list of near-term improvements planned to make the greatest potential to impact documented safety concerns. The information provided in these maps paired projects identified within other noted planning initiatives, corridor studies, and policies generate the list of mid- and long-term improvements to target beyond the near-term period.

It was the responsibility of the Planning Committee to prioritize projects identified through the policy and process exercise that best meet the needs of the SS4A Program and have the greatest immediate impact for improving safety at all levels throughout the County. An overview of the proposed improvements along with supporting justification for the selection by the planning committee is provided, below.

# Highway 40 Improvements Project, 2021 - Ongoing

# Improvement Overview:

Highway 40 corridor has been identified in the County's Roadway Safety Plan as a "High Priority Segment" due to the high frequency of crashes, narrow substandard gravel shoulders, and abundant curvature. This project is reviewing short-term improvements for Highway 40 north of the Minnesota River at the Highway 25 intersection, heading northeast for approximately 4.1 miles to the southern intersection of Highway 52. The project will widen shoulders, flatten slopes, correct drainage issues, implement safety improvements, and rehabilitate the pavement surface. Planned near- and long-term projects are plan to complete construction of the segment of Highway 40 from Highway 52 to Highway 50 and Highway 50 to Highway 11.

# Selection Criteria:

- Crash Stats (2017-2021): 8 Fatal & Serious Injury Crashes (2X of any other corridor)
- Crash Stats (2017-2021): CSAH 40 & TH 25 #3 Top Critical Crash Index (Intersection)
- Crash Stats (2017-2021): CSAH 40 & 188<sup>th</sup> St #16 Top Critical Crash Index (Intersection)
- Crash Stats (2017-2021): CSAH 40 & CSAH 52 #19 Top Critical Crash Index (Intersection)
- Crash Stats (2017-2021): CSAH 40 from TH 25 to CSAH 52 #1 Top Critical Crash Index (Segment)
- Crash Stats (2017-2021): CSAH 40 from CSAH 52 to CSAH 50 #10 Top Critical Crash Index (Segment)
- Crash Stats (2017-2021): CSAH 40 & 188<sup>th</sup> St #16 Top Fatal & Serious Injury Critical Crash Index (Intersection)
- Crash Stats (2017-2021): CSAH 40 & CSAH 52 #18 Top Fatal & Serious Injury Critical Crash Index (Intersection)
- Crash Stats (2017-2021): CSAH 40 from CR 122 to Stone Ave #1 Top Fatal & Serious Injury Critical Crash Index (Segment)
- CRSP CSAH 40 to East Union limits: #6 Rural Segment Prioritization Road Departure
- CRSP East Union Limits to CSAH 11 S: #9 Rural Segment Prioritization Road Departure
- CRSP CSAH 40 and TH 25: #5 Rural Intersection Prioritization
- CRSP CSAH 40 and CSAH 50: #18 Rural Intersection Prioritization
- CRSP CSAH 40 and CSAH 52: #24 Rural Intersection Prioritization
- Tax Implementation Project CSAH 40 from TH 25 to CSAH 52 (Priority A)
- Tax Implementation Project CSAH 40 from CSAH 52 to CSAH 11 (Priority B)

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• Carver County Road Systems Plan – Identified as Transportation Policy Plan Improvement \*CRSP data is from the County Road Safety Plan approved in 2013.

# US 212 and CSAH 51 Improvements Project in Benton Township

Improvement Overview:

The proposed interchange project is part of a larger conversion study that is proposing to expand the existing 2-Lane Hwy 212 roadway to a divided 4-Lane roadway. As part of the expansion project a variety of alternatives have been developed and tested to identify the correct intersection/interchange design at this location. As part of the analysis process, the interchange alternative was determined to be the best option for addressing the safety and mobility needs at this location.

The proposed project is to convert the existing side street stop-controlled intersection to a grade separated facility serviced with right-on/right-off access points at the existing intersection and an overpass roadway crossing Hwy 212 east of the existing intersection. This interchange design is similar to a quadrant style interchange. The proposed design with include right turn lanes in both directions to facilitate exiting traffic and an auxiliary lane to be used as an acceleration lane in both direction for entering vehicles.

#### Corridor Statistics:

- Crash Stats (2017-2021): 1 of 8 Intersections with 2+ Fatal & Serious Injuries
- Crash Stats (2017-2021): 1 of 10 Corridors with 2+ Fatal & Serious Injuries US 212 from Cologne to Norwood Young America
- Crash Stats (2017-2021): US 212 & CSAH 51 #11 Top Fatal & Serious Injury Critical Crash Index (Intersection)
- CRSP US 212 and CSAH 51: #15 Rural Intersection Prioritization
- Tax Implementation Project US 212 from Cologne to Norwood Young America (Priority C)
- Carver County Road Systems Plan Identified as Transportation Policy Plan Improvement \*CRSP data is from the County Road Safety Plan approved in 2013.

# **Arboretum Area Transportation Plan**

*Improvement Overview:* 

Carver County is planning for a broader corridor improvement to TH 5 from west CSAH 11 W in the City of Victoria to east of TH 41 in the City of Chanhassen. A near term improvement from this project is an expansion of Highway 5 to a 4-lane divided urban highway from 0.25 mile west of Kochia Lane to 0.4 mile east of Minnewashta Parkway, and Highway 13 from 78th Street to Fribourg Court. *Corridor Statistics*:

- CRSP TH 5 at CSAH 13: #14 Ranked Urban Right Angle Intersection Prioritization
- CRSP TH 5 at CSAH 13: #12 Ranked Urban Ped/Bike Intersection Prioritization
- CRSP TH 5 at CSAH 11: #30 Ranked Urban Right Angle Intersection Prioritization
- CRSP TH 5 at CSAH 11: #5 Ranked Urban Ped/Bike Intersection Prioritization
- Tax Implementation Project TH 5/Rolling Acres Road Intersection (Priority A)
- Tax Implementation Project TH 7/Rolling Acres Road Intersection (Priority B)
- Tax Implementation Project TH 5 from TH 41 to Rolling Acres Road (Priority B)
- Tax Implementation Project TH 5 from Rolling Acres Road to Victoria Drive (Priority D)
- Carver County Road Systems Plan Identified as Transportation Policy Plan Improvement \*CRSP data is from the County Road Safety Plan approved in 2013.

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# Highway 41-10 Improvements Projects in Chaska

*Improvement Overview:* Carver County is planning to reconstruct approximately three quarters of a mile of County State Aid Highway 10 (CSAH 10), from the intersection of Bavaria Road to Park Ridge Drive located in the city of Chaska. The project includes a variety of improvements focused on both safety and mobility with the construction of two roundabouts, a traffic signal to serve both pedestrians and motorists, two pedestrian underpasses, enhanced pedestrian crossings, additional trail connections, and expansion from a two-lane suburban to a 4-lane divided section.

#### Corridor Statistics:

- County Crash Stats (2017-2021): 1 of 10 Corridors with 2+ Fatal & Serious Injuries TH 41 from Walnut Drive to CSAH 10
- County Crash Stats (2017-2021): CSAH 10 & Bavaria Road #6 Top Critical Crash Index (Intersection)
- County Crash Stats (2017-2021): TH 41 from CSAH 10 to 82<sup>nd</sup> Street #3 Top Critical Crash Index (Segment)
- CRSP TH 41 at CSAH 10: #4 Ranked Urban Right Angle Intersection Prioritization
- CRSP TH 41 at CSAH 10: #6 Ranked Urban Ped/Bike Intersection Prioritization
- CRSP Chaska Limits to TH 41: County Road Safety Plan #28 Ranked Urban Segment
- CRSP CSAH 10 from TH 41 to CSAH 61: County Road Safety Plan #33 Ranked Urban Segment
- Tax Implementation Project CSAH 10 from TH 41 to TH 212 (Priority B)
- Tax Implementation Project CSAH 10 from TH 41 to CSAH 61 (Priority B)
- Tax Implementation Project TH 41/CSAH 10 (Engler Blvd) Intersection (Priority B)
- Carver County Road Systems Plan Identified as Transportation Policy Plan Improvement \*CRSP data is from the County Road Safety Plan approved in 2013.

# Progress and Transparency

Carver County is committed to advancing initiatives to identify, program, study, and implement safety improvements that reduce the likelihood of fatal and serious injury crashes across the county highway system. This ongoing commitment will ensure that the tools and processes currently in place are actively monitored and continue to evolve to meet the everchanging needs of both local communities as well as the greater transportation network. The following activities will be carried forward to continue the initiative to reduce and eliminate fatal and serious injury crashes:

- Carver County Safety Tool
  - O Summary Reports: The County Safety Tool will be regularly updated to incorporate and review the latest available crash data as reported to the Department of Public Safety on a quarterly basis. County staff will produce summary reports outlining top crash locations, top critical rate locations, fatal and serious injury crash locations, etc. to monitor issues and proactively program improvements to remedy safety concerns.
- Towards Zero Deaths Program: Carver County will continue to act as a strong advocate
  for the Minnesota Towards Zero Deaths program. It will continue its commitment to
  meeting and exceeding the County's obligation to reducing the number of statewide
  deaths on Minnesota roadways to 225 by the year 2025. Involvement in TZD activities
  and coordination with the County Sherrif office will continue and is planned to increase
  in the coming years.

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Carver County will ensure transparency is maintained with residents and relevant stakeholders through the following activities:

- SS4A Action Plan Carver County has made this plan available via a public posting on the county website at the following location:

  County Highway Safety Plan | Carver County, MN.
- Annual Reporting Carver County is committed to providing updates to this Action Plan via annual reports. Annual public and accessible reporting on progress toward reducing roadway fatalities and serious injuries will be provided.
  - o County staff will utilize the GovDelivery system to notify interested parties of updated results as they become available.
  - o *Project Tracking:* We will complete a follow-up analysis three years following implementation of the safety improvements to review the progress toward reducing and eliminating fatal and serious injury crashes.

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# **Appendix A:** Resolution of Support

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# BOARD OF COUNTY COMMISSIONERS CARVER COUNTY, MINNESOTA

Date: September 6, 2022		Resolution No:	70-22	
Motion by Commissioner: _	Udermann	Seconded by Commi	issioner:	Workman

# Resolution to Adopt the County Roadway Safety Plan 2022 Action Plan Amendment

- WHEREAS, Carver County is responsible for the planning and development of a safe and functional multimodal transportation system within County jurisdictional boundaries; and
- WHEREAS, the comprehensive County Roadway Safety Plan was last prepared in July 2013;
- WHEREAS, the County has made significant investments in planning, engineering, and construction practices to improve safety for all users of the transportation system; and
- WHEREAS, the County maintains and improves public safety through the identification of crash issues, evaluation of crash factors, and determination of innovative improvement opportunities to reduce the severity and quantity of crashes; and
- WHEREAS, the 2022 Action Plan Amendment updates and amends the findings and recommendations of the original document by highlighting recent activities and planning efforts completed to identify, program, study, and implement safety improvements across the county highway system; and
- WHEREAS, the 2022 Action Plan Amendment identifies how roadway safety analysis is incorporated in a comprehensive manner into corridor level plans, on the project-specific level, and through specific safety oriented policies; and
- WHEREAS, the County commits to progress and transparency to advancing initiatives to identify, program, study, and implement safety improvements that reduce the likelihood of fatal and serious injury crashes across the county highway system; and
- WHEREAS, furthermore, the County is committed to reducing and eliminating the occurrence of fatal and serious injury crashes across all roadways within the County and commits to meet and exceed the County's obligation in reducing the number of statewide deaths on Minnesota roadways with an eventual goal of eliminating roadway fatalities and serious injury crashes across the county system; and

the County.			,
Yes	No	Absent	
Degler			
Fahey			
Lynch			
Udermann		-	<del></del>
Workman			
STATE OF MINNESOTA			
COUNTY OF CARVER			
	nd qualified County Administrator of		3
certify that I have compared the foregoing Commissioners, Carver County, Minnesota			
Administration office, and have found the s			2022, now on the in the
Dated this6 day of Septemb	ner 2022		
day of <u>Beptemo</u>	, 2022.		
	Bail	Honze	
	Dave Hemze (s	Sep 7, 20 15:19 CDT)  [emze C	ounty Administrator

NOW THEREFORE, BE IT RESOLVED that Carver County hereby adopts the comprehensive County Road Safety Plan 2022 Action Plan Amendment to guide transportation safety planning, policy, and investment towards reducing and eliminating the occurrence of fatal and serious injury crashes across all roadways within

# **Appendix B:**

Supporting Documentation

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# Carver County

# COUNTY ROADWAY



Moving Toward **ZERO** Deaths

**July 2013** 



Prepared by: CH2M HILL SRF Consulting Group, Inc.



# Carver County Urban Right Angle Intersection Prioritization Analysis Years: 2007 - 2011

Rank	Int#	Sys	#	Street Name	Intersection Description	Major ADT	Configur ation	Major Speed Limit	Severe Right Angle Crash	Priority	Crash Co
1		CSAH	101	Market Blvd	CSAH 101 AND MNTH-5	*	*	*			\$ 1,569,0
2		CSAH	17	Powers Blvd	CSAH 17 AND ARBORETUM BLVD MNTH-5 EB	*	*	*			\$ 800,0
3	15.06	CSAH	15	Galpin Blvd	CSAH 15 AND ARBORETUM BLVD MNTH-5; CR-117	*	*	*		***	
4	10.22	CSAH	10	Engler Blvd	CSAH 10 AND MNTH-41	*	*			**	\$ <mark>1,766,0</mark>
5	10.12	CSAH	10	Waconia Pkwy S	CSAH 10 AND MNTH-5		*	*		**	\$ 1,494,0
6	14.06	CSAH	14	Pioneer Tr	CSAH 14 AND MNTH-41 CHESTNUT ST		*	*		**	\$ 1,477,0
7	17.01	CSAH	17	Powers Blvd	CSAH 17 AND LYMAN BLVD CSAH-18		*	*		**	\$ 1,452,0
8	14.07	CSAH	14	Pioneer Tr	CSAH 14 AND HUNDERTMARK RD; MSAS-108		*	*		**	\$1,186,0
9	61.11	CSAH	61	Flying Cloud Dr	CSAH 61 AND CSAH-101	*		*		**	\$ 822,0
10	33.03	CSAH	33	Reform St	CSAH 33 AND USTH-212 EBL; NORWOOD YOUNG AMERICA CL		*	*		**	\$ 680,0
11	59.03	CSAH	59	Main St	CSAH 59 AND MNTH-5 WBL		*	*		**	\$ 581,0
12	15.01	CSAH	15	Audubon Rd	CSAH 15 AND CHASKA BLVD CSAH-61; AUDUBON RD MSAS-116		*	*		**	\$ 478,0
13	13.04	CSAH	13	Rolling Acres Rd	CSAH 13 AND MNTH-7; SMITHTOWN RD MSAS-111	*		*		**	\$ 441,0
14	13.03	CSAH	13	Bavaria Rd	CSAH 13 AND ARBORETUM BLVD MNTH-5	*		*		**	\$ 333,0
15	15.04	CSAH	15	Galpin Blvd	CSAH 15 AND LYMAN BLVD CSAH-18 EBL (NORTH)		*	*		**	\$ 299,0
16	10.15	CSAH	10	13th Street	CSAH 10 AND MAIN ST E CSAH-59 SBL; MSAS-117 SBL		*	*		**	\$ -
17	18.02	CSAH	18	Lyman Blvd	CSAH 18 AND MNTHH-41			*		*	\$ 984,0
18	61.04	CSAH	61	Chaska Blvd	CSAH 61 AND MNTH-41	*				*	\$ 956.0
19	15.03	CSAH	15	Audubon Rd	CSAH 15 AND LYMAN BLVD CSAH-18 EBL (SOUTH)		*			*	\$ 862,0
20	17.05	CSAH	17	Powers Blvd	CSAH 17 AND 78TH ST W MSAS-113		*			*	\$ 635,0
21	11.04	CSAH	11	Jonathan Carver Pkwy	CSAH 11 AND CHASKA BLVD OLD USTH-212			*		*	\$ 436,0
22		CSAH	61	Flying Cloud Dr	CSAH 61 AND MNTH-101; OLD USTH-212			*		*	\$ 405,0
23	14.10	CSAH	14	Pioneer Tr	CSAH 14 AND GREAT PLAINS BLVD MNTH-101			*		*	\$ 378,0
24	14.08	CSAH	14	Pioneer Tr	CSAH 14 AND AUDOBON RD CSAH-15			*		*	
25	101.01	CSAH	101	Great Plains Blvd	CSAH 101 AND LYMAN BLVD; OLD MNTH-101; MSAS-112		*			*	
26		CSAH	10	Engler Blvd	CSAH 10 AND AUDOBON BLVD CSAH-15			*		*	\$ 36.0
27		CSAH	15	Audubon Rd	CSAH 15 AND BUTTERNUT DR M-312 BLUFF CRK DR EB MSAS-12	ŧ		*		*	\$ -
28		CSAH	57	Olive St	CSAH 57 AND MNTH-5; MNTH-284						\$ 838.0
29		CSAH	61	Chaska Blvd	CSAH 61 AND WALNUT ST M-34 MSAS-118						\$ 223,0
30		CSAH	11	Victoria Dr	CSAH 11 AND ARBORETUM DR MNTH-5 (EAST)						\$ 218,0
		Totals			Total Stars % That Gets Star		16 53%	22 73%	0 0%		

	Totals	i
	#	%
****	0	0%
***	3	10%
**	13	43%
*	11	37%
	3	10%
	30	100%

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If intersection has a major entering ADT >= 17,500 vpd

If intersection configuration is divided

If intersection major approach speed is 45 mph to 55 mph

If intersection has a severe right angle crash

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#### **Carver County**

#### **Urban Pedestrian/Bike Intersection Prioritization**

Analysis Year: 2007 - 2011

Rank	Int #	Sys	#	Street Name	Intersection Description	Major ADT	Configur ation	Major Speed Limit	Bus Stop	Ped Gen	Severe Ped/Bike Crash	Priority	Crash Cost
1	61.04	CSAH	61	Chaska Blvd	CSAH 61 AND MNTH-41	*	*	*		*		****	\$ 956,000
2	57.01	CSAH	57	Olive St	CSAH 57 AND MNTH-5; MNTH-284		*	*		*		***	\$ 838,000
3	17.05	CSAH	17	Powers Blvd	CSAH 17 AND 78TH ST W MSAS-113			*		*	*	***	\$ 635,000
4	61.05	CSAH	61	Chaska Blvd	CSAH 61 AND WALNUT ST M-34 MSAS-118		*	*		*		***	\$ 223,000
5	11.11	CSAH	11	Victoria Dr	CSAH 11 AND ARBORETUM DR MNTH-5 (EAST)		*	*		*		***	\$ 218,000
6	10.22	CSAH	10	Engler Blvd	CSAH 10 AND MNTH-41	*		*				**	\$1,766,000
7	18.02	CSAH	18	Lyman Blvd	CSAH 18 AND MNTHH-41		*			*		**	\$ 984,000
8	61.11	CSAH	61	Flying Cloud Dr	CSAH 61 AND CSAH-101	*	*					**	\$ 822,000
9	17.04	CSAH	17	Powers Blvd	CSAH 17 AND ARBORETUM BLVD MNTH-5 EB	*				*		**	\$ 800,000
10	13.04	CSAH	13	Rolling Acres Rd	CSAH 13 AND MNTH-7; SMITHTOWN RD MSAS-111	*	*					**	\$ 441,000
11	11.04	CSAH	11	Jonathan Carver Pkwy	CSAH 11 AND CHASKA BLVD OLD USTH-212		*			*		**	\$ 436,000
12	13.03	CSAH	13	Bavaria Rd	CSAH 13 AND ARBORETUM BLVD MNTH-5	*	*					**	\$ 333,000
13	101.01	CSAH	101	Great Plains Blvd	CSAH 101 AND LYMAN BLVD; OLD MNTH-101; MSAS-112			*		*		**	\$ 194,000
14	15.06	CSAH	15	Galpin Blvd	CSAH 15 AND ARBORETUM BLVD MNTH-5; CR-117	*				*		**	\$ 175,000
15	101.03	CSAH	101	Market Blvd	CSAH 101 AND MNTH-5	*						*	\$1,569,000
16	10.12	CSAH	10	Waconia Pkwy S	CSAH 10 AND MNTH-5					*		*	\$1,494,000
17	14.06	CSAH	14	Pioneer Tr	CSAH 14 AND MNTH-41 CHESTNUT ST					*		*	\$1,477,000
18	14.07	CSAH	14	Pioneer Tr	CSAH 14 AND HUNDERTMARK RD; MSAS-108					*		*	\$1,186,000
19	15.03	CSAH	15	Audubon Rd	CSAH 15 AND LYMAN BLVD CSAH-18 EBL (SOUTH)			*				*	\$ 862,000
20	33.03	CSAH	33	Reform St	CSAH 33 AND USTH-212 EBL; NORWOOD YOUNG AMERICA CL					*		*	\$ 680,000
21	59.03	CSAH	59	Main St	CSAH 59 AND MNTH-5 WBL					*		*	\$ 581,000
22	15.01	CSAH	15	Audubon Rd	CSAH 15 AND CHASKA BLVD CSAH-61; AUDUBON RD MSAS-116					*		*	\$ 478,000
23	61.10	CSAH	61	Flying Cloud Dr	CSAH 61 AND MNTH-101; OLD USTH-212		*					*	\$ 405,000
24	14.10	CSAH	14	Pioneer Tr	CSAH 14 AND GREAT PLAINS BLVD MNTH-101		*					*	\$ 378,000
25	14.08	CSAH	14	Pioneer Tr	CSAH 14 AND AUDOBON RD CSAH-15		*					*	\$ 374,000
26	10.23	CSAH	10	Engler Blvd	CSAH 10 AND AUDOBON BLVD CSAH-15		*					*	\$ 36,000
27	15.02	CSAH	15	Audubon Rd	CSAH 15 AND BUTTERNUT DR M-312 BLUFF CRK DR EB MSAS-1:		*					*	\$ -
28	17.01	CSAH	17	Powers Blvd	CSAH 17 AND LYMAN BLVD CSAH-18								\$1,452,000
29	15.04	CSAH	15	Galpin Blvd	CSAH 15 AND LYMAN BLVD CSAH-18 EBL (NORTH)								\$ 299,000
30		CSAH	10	13th Street	CSAH 10 AND MAIN ST E CSAH-59 SBL; MSAS-117 SBL								\$ -
					Total Stars	8	14	8	0	16	1		

	Totals	
	#	%
*****	0	0%
****	0	0%
****	1	3%
***	4	13%
**	9	30%
*	13	43%
	3	10%
	30	100%

#### Stars

% That Gets Star -- 27% 47%

If intersection has a major entering ADT greater than or equal to 17,500 vpd

0% 53%

3%

If intersection configuration is undivided

If intersection major approach speed is less than or equal to 40 mph

If intersection has a bus stop in a quadrant

If intersection has a pedestrian generator in a quadrant

If intersection has a severe pedestrian/bike crash

27%

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#### **Carver County Urban Segment Prioritization**

Analysis Years: 2007 - 2011

1   101.01   CSAH   101   101.00	MNTH-101
1   101.01   CSAH   101   101.00	Approach   Lanes   Density   Limit   Sideswipe or Head on Crash   Priority   Crash Cost
2	NTH-5
18.03 CSAH 18	MNTH-101
3	NDS, HENN CO
4         10.03         CSAH         10         Waconia Rd         MNTH-25 (SOUTH)         WATERTOWN           5         59.01         CSAH         59         Main St         CSAH-57         CSAH           6         14,01         CSAH         14         Pioneer Tr         CSAH-11         MNTH-7           7         15.01         CSAH         15         CR 15         CSAH-61         CSAH-18 (CSAH-18)           8         57.01         CSAH         57         Olive St         MNTH-5         CSAH           9         31.03         CSAH         31         Elm St         USTH-212         CSAH           10         61.01         CSAH         61         Chaska Blvd         CSAH-11         MNTH-11           11         33.03         CSAH         33         CR 33         NORWOOD/YOUNG AMER CL         USTH-12           12         117.01         CNTY         117         Galpin Blvd         MNTH-5         CR-117 ENDS           13         34.02         CSAH         34         CR 34         MNTH-5         CR-117 ENDS           13         34.02         CSAH         34         CR 34         MNTH-5         CR-117 ENDS           14 <td< td=""><td>VN CORP LIMIT</td></td<>	VN CORP LIMIT
5         59.01         CSAH         59         Main St         CSAH-57         CSAH           6         14.01         CSAH         14         Pioneer Tr         CSAH-61         MNTH           7         15.01         CSAH         15         CR 15         CSAH-61         CSAH-18 (CSAH-16)           8         57.01         CSAH         57         Olive St         MNTH-5         CSAH           9         31.03         CSAH         31         Elm St         USTH-212         CSAH           10         61.01         CSAH         61         Chaska Blvd         CSAH-11         MNTH           11         33.03         CSAH         33         CR 33         NORWOOD/YOUNG AMER CL         USTH-11           12         117.01         CNTY         117         Galpin Blvd         MNTH-25         USTH-11           13         34.02         CSAH         34         CR 34         MNTH-25         USTH-11           14         15.02         CSAH         36         Lake St         USTH-212         COLOGNE C           17         10.07         CSAH         36         Lake St         USTH-212         COLOGNE C           17         10.07	AH-10
6         14.01         CSAH         14         Pioneer Tr         CSAH-11         MNTH-15           7         15.01         CSAH         15         CR 15         CSAH-61         CSAH-18 (CSAH-18 (CSAH-11 (	iTH-41     *     *     *     \$2,950,00       8 (SOUTH)     *     *     *     \$2,487,00       AH-59     *     *     *     *     \$1,204,00       AAH-33     *     *     *     *     \$1,114,00       ITH-41     *     *     *     \$977,00       TH-212     *     *     *     \$975,00       DS, HENN CO     *     *     \$716,00
7         15.01         CSAH         15         CR 15         CSAH-61         CSAH-18 (CSAH-18 (CSAH-18 (CSAH-17))           8         57.01         CSAH 57         Olive St         MNTH-5         CSAH           9         31.03         CSAH 31         EIm St         USTH-212         CSAH           10         61.01         CSAH 61         Chaska Blvd         CSAH-11         MNTH           11         33.03         CSAH 33         CR 33         NORWOOD/YOUNG AMER CL         USTH-17           12         117.01         CNTY         117         Galpin Blvd         MNTH-5         CR-117 ENDS           13         34.02         CSAH 34         CSAH-34         CSAH-18 (NORTH)         MNTH-15         USTH-17 ENDS           14         15.02         CSAH 15         Galpin Blvd         CSAH-18 (NORTH)         MNTH-15         USTH-17 ENDS           14         15.02         CSAH 15         Galpin Blvd         CSAH-18 (NORTH)         MNTH-15         CSAH-18 (NORTH)         MNTH-125         USTH-17 ENDS         USTH-17 ENDS         USTH-17 ENDS         CSAH-31         USTH-212         COLOGNE C         CSAH-31 (NORTH)         MNTH-125         USTH-212         COLOGNE C         CSAH-31         USTH-212         COLOGNE C         C	8 (SOUTH)
8         57.01         CSAH         57         Olive St         MNTH-5         CSAH           9         31.03         CSAH         31         Elm St         USTH-212         CSAH           10         61.01         CSAH         61         Chaska Blvd         CSAH-11         MNTH-1           11         33.03         CSAH         33         NORWOOD/YOUNG AMER CL         USTH-12           12         117.01         CNTY         117         Galpin Blvd         MNTH-5         CR-117 ENDS           13         34.02         CSAH         34         CR 34         MNTH-5         CSAH-18 (NORTH)         MNTH-14           14         15.02         CSAH         15         Galpin Blvd         CSAH-18 (NORTH)         MNTH-16         GSAH-34         CR 34         USTH-212         COLOGNE C         CSAH-18 (NORTH)         MNTH-17-12         COLOGNE C         CSAH-18 (NORTH)         MNTH-15         CSAH         SAH         MNTH-5         CSAH-30         SAH         MNTH-5         CSAH-30         SAH         MNTH-5         CSAH-30         SAH         MNTH-5         CSAH-30         CSAH-30         CSAH-30         MAYER CORP LIMIT         MNTH-25 (MNTH)         MSTH-25 (MNTH)         MNTH-25 (MNTH)         MNTH-25 (MNTH)	** * * * * * * * * * * * * * * * * * *
9 31.03 CSAH 31 EIm St USTH-212 CSAH 10 61.01 CSAH 61 Chaska Blvd CSAH-11 MNTH 11 33.03 CSAH 33 CR 33 NORWOOD/YOUNG AMER CL USTH- 12 117.01 CNTY 117 Galpin Blvd MNTH-5 CR-117 ENDS 13 34.02 CSAH 34 CR 34 MNTH-25 USTH- 14 15.02 CSAH 15 Galpin Blvd CSAH-18 (NORTH) MNTH 16 36.01 CSAH 36 Lake St USTH-212 COLOGNE C 17 10.07 CSAH 10 E 13th St MNTH-5 CSAH 18 30.02 CSAH 30 Broadway St CSAH-33 (NORTH) NEW GERMANY 19 27.01 CSAH 27 White Ave CSAH-10 WATERTOWN 20 10.02 CSAH 10 Jefferson Ave WATERTOWN CORP LIMIT MNTH-25 ( 21 30.04 CSAH 30 CR 30 MAYER CORP LIMIT MNTH-25 ( 22 50.02 CSAH 30 CR 30 MAYER CORP LIMIT MNTH-25 ( 23 33.04 CSAH 33 CR 33 USTH-212 MNTH 24 50.05 CSAH 50 Park Ave HAMBURG CORP LIMIT HAMBURG C 23 33.04 CSAH 33 State Ave NEW GERMANY CL NEW GER 24 50.05 CSAH 40 CR 40 EAST UNION EAST U 27 23.01 CSAH 23 Bluejay Ave CSAH-30 S8th 2 28 10.09 CSAH 10 Engler Blvd CHASKA CORP LIMIT MNTH-45 ( 29 14.02 CSAH 40 EAST UNION EAST U 27 23.01 CSAH 23 Bluejay Ave CSAH-30 S8th 2 28 10.09 CSAH 10 Engler Blvd CHASKA CORP LIMIT MNTH-45 ( 29 14.02 CSAH 14 Pioneer Tr MNTH-41 CSAH-14 ENDS 29 14.02 CSAH 14 Pioneer Tr MNTH-41 CSAH-14 ENDS 20 14.02 CSAH 14 Pioneer Tr MNTH-41 CSAH-14 ENDS 20 14.02 CSAH 11 CSAH-14 ENDS 21 11.06 CSAH 11 CR 11 CSAH-14 MNTH-5	AH-33       *       *       *       \$1,114,00         ITH-41       *       *       *       \$977,00         TH-212       *       *       *       \$955,00         IDS, HENN CO       *       *       *       \$716,00
10	ITH-41     * *     * *     \$977,00       TH-212     * *     * \$955,00       DS, HENN CO     * *     * \$716,00
11         33.03         CSAH         33         CR 33         NORWOOD/YOUNG AMER CL         USTH-12           12         117.01         CNTY         117         Galpin Blvd         MNTH-5         CR-117 ENDS           13         34.02         CSAH         34         CR 34         MNTH-25         USTH-14           14         15.02         CSAH         15         Galpin Blvd         CSAH-18 (NORTH)         MNTH-16           16         36.01         CSAH         36         Lake St         USTH-212         COLOGNE C           17         10.07         CSAH         10         E 13th St         MNTH-5         CSAH-30           18         30.02         CSAH         30         Broadway St         CSAH-33 (NORTH)         NEW GERMANY           19         27.01         CSAH         27         White Ave         CSAH-30 (NORTH)         NEW GERMANY           20         10.02         CSAH         10         Jefferson Ave         WATERTOWN CORP LIMIT         MNTH-25 (           21         30.04         CSAH         30         CR 30         MAYER CORP LIMIT         HAMBURG C           22         50.02         CSAH         30         CR 33         USTH-212         MNTH	TH-212
12         117.01         CNTY         117         Galpin Blvd         MNTH-5         CR-117 ENDS           13         34.02         CSAH         34         CR 34         MNTH-25         USTH-           14         15.02         CSAH         15         Galpin Blvd         CSAH-18 (NORTH)         MNTH-           16         36.01         CSAH         36         Lake St         USTH-212         COLOGNE C           17         10.07         CSAH         10         E 13th St         MNTH-5         CSAH-           18         30.02         CSAH         30         Broadway St         CSAH-33 (NORTH)         NEW GERMANY           19         27.01         CSAH 27         White Ave         CSAH-10         WATERTOWN           20         10.02         CSAH 10         Jefferson Ave         WATERTOWN CORP LIMIT         MNTH-25 (           21         30.04         CSAH 30         CR 30         MAYER CORP LIMIT         MNTH-25 (           22         50.02         CSAH 50         Park Ave         HAMBURG CORP LIMIT         HAMBURG C           23         33.04         CSAH 33         CR 33         USTH-212         MNTH           24         50.05         CSAH 50	DS, HENN CO
13         34.02         CSAH         34         CR 34         MNTH-25         USTH-14         15.02         CSAH         15         Galpin Blvd         CSAH-18 (NORTH)         MNTH-16         36.01         CSAH         36         Lake St         USTH-212         COLOGNE CC         CSAH         17         10.07         CSAH         10         E 13th St         MNTH-5         CSAH         18         30.02         CSAH         30         Broadway St         CSAH-33 (NORTH)         NEW GERMANY         19         27.01         CSAH         27         White Ave         CSAH-10         WATERTOWN         WATERTOWN CORP LIMIT         MNTH-25 (CSAH-10)         MAYER CORP LIMIT         MNTH-25 (CSAH-10)         CR 30         MAYER CORP LIMIT         MNTH-25 (CSAH-10)         MAYER CORP LIMIT         MNTH-25 (CSAH-12)         MNTH-25 (CSAH-14)         MNTH-25 (CS	
14         15.02         CSAH         15         Galpin Blvd         CSAH-18 (NORTH)         MNTH           16         36.01         CSAH         36         Lake St         USTH-212         COLOGNE C           17         10.07         CSAH         10         E 13th St         MNTH-5         CSAH           18         30.02         CSAH         30         Broadway St         CSAH-33 (NORTH)         NEW GERMANY           19         27.01         CSAH         27         White Ave         CSAH-10         WATERTOWN           20         10.02         CSAH         10         Jefferson Ave         WATERTOWN CORP LIMIT         MNTH-25 (           21         30.04         CSAH         30         CR 30         MAYER CORP LIMIT         MNTH-25 (           22         50.02         CSAH         50         Park Ave         HAMBURG CORP LIMIT         MNTH         LAC SCAH         40         EAST UNION <td< td=""><td></td></td<>	
16         36.01         CSAH         36         Lake St         USTH-212         COLOGNE	TH-212 ★ ★ \$517,00
17         10.07 CSAH         10         E 13th St         MNTH-5         CSAH           18         30.02 CSAH         30         Broadway St         CSAH-33 (NORTH)         NEW GERMANY           19         27.01 CSAH         27         White Ave         CSAH-10         WATERTOWN           20         10.02 CSAH         10         Jefferson Ave         WATERTOWN CORP LIMIT         MNTH-25 (           21         30.04 CSAH         30         CR 30         MAYER CORP LIMIT         HAMBURG CORP LIMIT         HAMBURG C           22         50.02 CSAH         50         Park Ave         HAMBURG CORP LIMIT         HAMBURG C           23         33.04 CSAH         33         CR 33         USTH-212         MNTH           24         50.05 CSAH         50         CR 50         EAST UNION         EAST U           25         33.06 CSAH         33         State Ave         NEW GERMANY CL         NEW GERM           26         40.02 CSAH         40         CR 40         EAST UNION         EAST U           27         23.01 CSAH         23         Bluejay Ave         CSAH-30         58th           28         10.09 CSAH         10         Engler Bivd         CHASKA CORP LIMIT         MNTH	NTH-5 ★ ★ \$462,00
18         30.02         CSAH         30         Broadway St         CSAH-33 (NORTH)         NEW GERMANY           19         27.01         CSAH         27         White Ave         CSAH-10         WATERTOWN           20         10.02         CSAH         10         Jefferson Ave         WATERTOWN CORP LIMIT         MNTH-25 (MAYER CORP LIMIT         MNTH-25 (MAYER CORP LIMIT         MNTH-25 (MAYER CORP LIMIT         MNTH-25 (MAYER CORP LIMIT         HAMBURG CORP LIMIT         MNTH           24         50.05         CSAH         33         CR 33         USTH-212         MNTH           24         50.05         CSAH         50         CR 50         EAST UNION	E CORP LIMIT ★ ★ \$380,00
19         27.01         CSAH         27         White Ave         CSAH-10         WATERTOWN           20         10.02         CSAH         10         Jefferson Ave         WATERTOWN CORP LIMIT         MNTH-25 (           21         30.04         CSAH         30         CR 30         MAYER CORP LIMIT         MNTH-25 (           22         50.02         CSAH         50         Park Ave         HAMBURG CORP LIMIT         HAMBURG CORP LIMIT           23         33.04         CSAH         33         USTH-212         MNTH           24         50.05         CSAH         33         USTH-212         MNTH           25         33.06         CSAH         33         State Ave         NEW GERMANY CL         NEW GERM           26         40.02         CSAH         40         EAST UNION         EAST U           27         23.01         CSAH         23         Bluejay Ave         CSAH-30         58th           28         10.09         CSAH         10         Engler Blvd         CHASKA CORP LIMIT         MNTH-21           29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14         MNTH-5	AH-59 ★ ★ \$242,00
20         10.02         CSAH         10         Jefferson Ave         WATERTOWN CORP LIMIT         MNTH-25 (           21         30.04         CSAH         30         CR 30         MAYER CORP LIMIT         MNTH-25 (           22         50.02         CSAH         50         Park Ave         HAMBURG CORP LIMIT         HAMBURG C           23         33.04         CSAH         33         USTH-212         MNTH-212           24         50.05         CSAH         50         CR 33         USTH-212         MNTH-212           25         33.06         CSAH         33         State Ave         NEW GERMANY CL         NEW	NY CORP LIMIT ★ ★ \$227,00
21         30.04         CSAH         30         CR 30         MAYER CORP LIMIT         MNTH-25 (           22         50.02         CSAH         50         Park Ave         HAMBURG CORP LIMIT         HAMBURG C           23         33.04         CSAH         33         CR 33         USTH-212         MNTH           24         50.05         CSAH         50         CR 30         EAST UNION         EAST U           25         33.06         CSAH         33         State Ave         NEW GERMANY CL         NEW GERM           26         40.02         CSAH         40         CR 40         EAST UNION         EAST U           27         23.01         CSAH         23         Bluejay Ave         CSAH-30         58th           28         10.09         CSAH         10         Engler Blvd         CHASKA CORP LIMIT         MNTH-21           29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14 ENDS           30         11.06         CSAH         11         CR 11         CSAH-14         MNTH-5 (	VN CORP LIMIT ★ ★ \$160,00
22         50.02         CSAH         50         Park Ave         HAMBURG CORP LIMIT         MNTH           24         50.05         CSAH         50         CSAT UNION         EAST U	± \$139,00 ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ± ±
23         33.04         CSAH         33         CR 33         USTH-212         MNTH           24         50.05         CSAH         50         CR 50         EAST UNION         EAST U           25         33.06         CSAH         33         State Ave         NEW GERMANY CL         NEW GERMANY CL           26         40.02         CSAH         40         CR 40         EAST UNION         EAST U           27         23.01         CSAH         23         Bluejay Ave         CSAH-30         58th           28         10.09         CSAH         10         Engler Blvd         CHASKA CORP LIMIT         MNTH-4           29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14         CSAH-14         MNTH-5 (CSAH-14           30         11.06         CSAH         11         CR 11         CSAH-14         MNTH-5 (CSAH-14	± \$139,00 ± ± ± \$139,00
24         50.05         CSAH         50         CR 50         EAST UNION         EAST U           25         33.06         CSAH         33         State Ave         NEW GERMANY CL         NEW	G CORP LIMIT ★ ★ \$12,00
25         33.06         CSAH         33         State Ave         NEW GERMANY CL         NEW GERMANY CL           26         40.02         CSAH         40         CR 40         EAST UNION         EAST U           27         23.01         CSAH         23         Bluejay Ave         CSAH-30         58th           28         10.09         CSAH         10         Engler Blvd         CHASKA CORP LIMIT         MNTH-2           29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14 ENDI           30         11.06         CSAH         11         CR 11         CSAH-14         MNTH-5 (	ITH-25 ★ ★ \$12,00
26         40.02         CSAH         40         CR 40         EAST UNION         EAST U           27         23.01         CSAH         23         Bluejay Ave         CSAH-30         58th           28         10.09         CSAH         10         Engler Blvd         CHASKA CORP LIMIT         MNTH-2           29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14 ENDS           30         11.06         CSAH         11         CR 11         CSAH-14         MNTH-5 (	ΓUNION ★ ★ \$
27         23.01         CSAH         23         Bluejay Ave         CSAH-30         58th           28         10.09         CSAH         10         Engler Blvd         CHASKA CORP LIMIT         MNTH           29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14 ENDS           30         11.06         CSAH         11         CR 11         CSAH-14         MNTH-5 (	ERMANY CL
28         10.09         CSAH         10         Engler Blvd         CHASKA CORP LIMIT         MNTH           29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14 ENDS           30         11.06         CSAH         11         CR 11         CSAH-14         MNTH-5 (	ΓUNION ★ ★ \$
29         14.02         CSAH         14         Pioneer Tr         MNTH-41         CSAH-14 ENDS           30         11.06         CSAH         11         CR 11         CSAH-14         MNTH-5 (	8th ST
30 11.06 CSAH 11 CR 11 CSAH-14 MNTH-5 (	ITH-41 ★ \$6.315.00
	NDS, HENN CO ★ \$4,399,00
31 17.01 CSAH 17 Powers Blvd CSAH-14 MNTh	-5 (EAST) ★ \$3,552,00
	NTH-5
32 13.01 CSAH 13 Rolling Acres Rd CSAH-18 MNTH	NTH-7 ★ \$1,877,00
33 10.10 CSAH 10 Engler Blvd MNTH-41 CSAH	
34 18.01 CSAH 18 CR 18 CSAH-11 CSAH	AH-13 ★ \$720,00
35 50.07 CSAH 50 CR 50 SAN FRANCISCO TWSP CSAH	AH-11 ★ \$548,00
36 43.03 CSAH 43 Church Lake Blvd TELLERS RD CSAH	AH-11 ★ \$448,00
37 111.01 CNTY 111 Shady Oak Dr CSAH-14 CSAH	AH-11 ★ \$160,00
	TH-25 ★ \$103,00
39 140.03 CNTY 140 CR 140 CHASKA CORP LIMIT CSAH	
40 61.02 CSAH 61 Flying Cloud Blvd MNTH-41 CSAH-61 END:	
41 40.05 CSAH 40 Main St CSAH-11 (NORTH) CHASKA BLV	
42 24.01 CSAH 24 CR 24 CSAH-10 DREAM	1 31./U1.00
43 20.03 CSAH 20 CR 20 CSAH-10 WATERTOWN	
<u> </u>	AM LANE \$354,00

	lotais	
	#	%
*****	0	0%
****	0	0%
****	0	0%
***	5	12%
**	21	50%
*	12	29%
	4	10%
	42	100%

17% Stars

% That Gets Star -- 2%

If segment has a major entering ADT greater than or equal to 10000 vpd.

If segment has lanes greater than or equal to 4.

If segment has an access density between 15 60.

71% 62%

12%

Tiebreakers

7/18/2013 2 of 2

If segment has a speed less than or equal to 40 mph.

If segment has at least 1 severe rear end or sideswipe or head on crash.

														Tiebrea	akers
											Curve			riebies	akers
#								ADT	Lane	۸					
#	Corridor	Route	#	Start	End	Length	ADT	ADT	Departure	Access	Critical	Edge Risk	Totals	Edge Risk	ADT
						. 5		Range	Density	Density	Radius	. 3		. 3	
									Donoity		Density				
1	11.03	CSAH	11	SAN FRA	CSAH-40 (SOUTH)	0.9	2,150		*	*	*	*	****	3	2150
2	33.02	CSAH	33	CSAH-50	NORWOOD/YOUNG AME	2.5	600		*	*	*	*	****	3	600
3	24.02	CSAH	24	DREAM L	CSAH-15	2.7	2,800		*	*	*	*	****	2	2800
4	10.06	CSAH	10	66TH ST	MNTH-5	4.0	6,290	*	*	*	*		****	1	6290
5	20.02	CSAH	20	CSAH-33	MNTH-25	5.2	1,025		*	*		*	***	3	1025
6	40.01	CSAH	40		EAST UNION	7.2	983		*		*	*	***	3	983
7	10.05	CSAH	10		66TH ST	1.6	4,500	*	*			*	***	2	4500
8	11.07	CSAH	11		(MNTH-7, HENNEPIN CO	2.8	2,250		*		*	*	***	2	2250
9	40.03	CSAH	40		CSAH-11 (SOUTH)	2.1	1,550			*	*	*	***	2	1550
10	30.01	CSAH	30		CSAH-33 (SOUTH)	1.9	1,050			*	*	*	***	2	1050
												*	***		
11	36.02	CSAH	36		USTH-212	1.3	870		*		*			2	870
12	43.02	CSAH	43		TELLERS RD	1.7	783			*	*	*	***	2	783
13	123.01	CNTY	123	MNTH-7		3.7	245			*	*	*	***	2	245
14	135.01	CNTY	135		CSAH-32	3.7	244			*	*	*	***	2	244
15	11.04	CSAH	11		CSAH-61	2.8	5,803	*	*		*		***	1	5803
16	92.01	CSAH	92	MNTH-5	CSAH-92 ENDS, HENN C	2.5	5,530	*	*		*		***	1	5530
17	10.04	CSAH	10	WATERT	(MNTH-7	3.4	3,850	*	*		*		***	1	3850
18	20.04	CSAH	20	WATERT	(CSAH-20 ENDS, HENN C	2.9	3,350	*	*	*			***	1	3350
19	43.01	CSAH	43		CSAH-10 (EAST)	6.6	1,310		*	*	*		***	1	1310
20	30.05	CSAH	30		CSAH-10	3.9	2,450		*			*	**	3	2450
21	11.05	CSAH	11		CSAH-14	3.6	2,170			*		*	**	3	2170
22	53.01	CSAH	53		USTH-212	6.5	1,770		*			*	**	3	1770
23	133.01	CNTY	133		CR-133 ENDS, WRIGHT (	0.5	180			*		*	**	3	180
24	30.03	CSAH	30		FMAYER CORP LIMIT	2.2	1,705		*			*	**	2	1705
									*						
25	10.01	CSAH	10		WATERTOWN CORP LIM	0.4	1,400			*		*	**	2	1400
26	50.06	CSAH	50		I SAN FRANCISCO TWSP	0.7	1,400			*		*	**	2	1400
27	32.02	CSAH	32		CSAH-10	3.4	1,375			*		*	**	2	1375
28	140.01	CNTY	140		CSAH-11 (WEST)	7.2	748			*		*	**	2	748
29	151.02	CNTY	151		CSAH-32	2.1	665			*		*	**	2	665
30	127.01	CNTY	127		CSAH-20	1.7	275			*		*	**	2	275
31	155.01	CNTY	155	CSAH-92	MNTH-7	2.8	233				*	*	**	2	233
32	131.01	CNTY	131	USTH-21	2CSAH-34	1.7	185			*		*	**	2	185
33	10.08	CSAH	10	CSAH-59	CHASKA CORP LIMIT	7.1	6,570	*	*				**	1	6570
34	11.02	CSAH	11	SAN FRA	SAN FRANCISCO TWSP	2.9	2,643		*		*		**	1	2643
35	27.02	CSAH	27	WATERT	(CSAH-27 ENDS, WRIGHT	1.1	1,815		*		*		**	1	1815
36	33.05	CSAH	33		NEW GERMANY CL	8.2	1,388		*		*		**	1	1388
37	50.01	CSAH	50		HAMBURG CORP LIMIT	1.9	466					*	*	2	466
38	153.01	CNTY	153		MNTH-284	7.0	201					*	*	2	201
39	151.01	CNTY	151		3 CSAH-52	1.0	150					*	*	2	150
40	122.01	CNTY	122	CSAH-33		5.9	963			*			*	1	963
41	50.04	CSAH	50		SEAST UNION	8.0	653			*			*	1	653
42	32.01	CSAH	32		MNTH-25	5.5	647			*			*	1	647
43		CSAH								<del>×</del>				1	
	23.02		23	58TH ST		0.5	630						*	1	630
44	33.01	CSAH	33		CSAH-50 (EAST)	1.0	390			*					390
45	52.01	CSAH	52		CSAH-40	8.0	323			*			*	1	323
46	41.01	CSAH	41		CSAH-36	7.3	220				*		*	1	220
47	34.01	CSAH	34		MNTH-25	4.7	528			*			*	0	528
48	33.07	CSAH	33		FCSAH-33 ENDS; WRIGHT	6.0	2,013							1	2013
49	20.01	CSAH	20		CSAH-33 (NORTH)	2.0	1,000							1	1000
50	31.02	CSAH	31	CSAH-50	CSAH-31	2.5	940					·		1	940
51	51.01	CSAH	51	CSAH-52	MNTH-5	9.0	734							1	734
52	50.03	CSAH	50	HAMBUR	N JCT CSAH-51	5.2	727							1	727
53	21.01	CSAH	21		CSAH-21 ENDS, WRIGHT	5.0	720							1	720
54	31.01	CSAH	31		CSAH-50 (EAST)	1.0	310							1	310
55	152.01	CNTY	152		CSAH-53	3.0	194							1	194
	.02.01							al Stars	7	21	28	21	29	· ·	
							100	a. olaio	•	41	20	41	20		

	#	%	Mileage	%
****	0	0%	0.0	0%
****	4	7%	10.1	5%
***	15	27%	49.4	25%
**	17	31%	56.0	28%
*	11	20%	50.8	25%
	8	15%	33.7	17%
	55	100%	200.0	100%

Stars

ADT Range - If segment has an ADT in the range of most at risk ADT based on ATP totals. (> 3000)

Lane Departure Density If segment has higher road departure density than the county average (0.43).

Access Density If segment has access density greater than the county average (11.4).

Curve Critical Radius Density - If segment has higher density of curves with critical radius than the county average (0.42).

Edge Risk Assessment - Edge risk of 2 or 3, based on assessment of roadway edge and clear zone.

53%

% That Gets Star -- 13%

# CSAH 40 from EAST UNION to CSAH-11 (SOUTH) Project

**Agency: Carver County** 

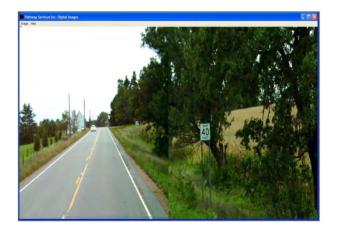
# Roadway Data

Type: CSAH Number: 40

<u>Verbal</u>

Start: EAST UNION End: CSAH-11 (SOUTH)

City/Rural: Rural
County: Carver
ATP: Metro
ADT: 1550
Facility Type: 2-Lane
Lane Width: 12
Speed Limit: 55
Shoulder Width: 3'
Shoulder Type: paved
Length (miles): 2.1



#### Crash Data

2007-2011 MnCMAT Crash Data

Rumble Installed: no

5 years

	Total	Lane Dept	K+A
Crashes	7	4	0
Density (per mile per year)	0.67	0.38	0.00
Rate (per MVM)	1.18	0.67	0.00

# Ranking Criteria

	Value	Critical	Road Departure Risk Ranking
ADT Range	1,550	> 3,000	
Lane Departure Density	0.32	0.43	
Access Density	15.2	11.40	*
Curve Critical Radius Density	0.48	0.42	*
Edge Risk	2	2 or 3	*
_			***

# Short List of Strategies Considered

Description	Туре	Cost per mi	Mileage	Cost	Notes - County preference
2' Shoulder Pave+RS+Safety Wedge	Proactive	\$40,000	0.0	\$0	to use 2' shoulder paving
Rumble Strip	Proactive	\$3,000	2.1	\$6,300	and rumble strips instead of
Rumble StripE	Proactive	\$3,500	0.0	\$0	rumble stripEs. Since
6" Edge Lines	Proactive	\$650	0.0	\$0	shoulder is already paved,
Ground In Wet-Reflective Markings	Proactive	\$8,500	0.0	\$0	rumble strips selected as
Center Line Rumble Strip	Proactive	\$3,000	0.0	\$0	project.
4' Buffer w/Centerline Rumble Strips	Proactive	\$150,000	0.0	\$0	
12' Painted Median w/Left Turn Lanes	Proactive	\$500,000	0.0	\$0	

# Implementation Cost

Federal Funds \$5,670
Local Match (10% of Total project cost) \$630

Total Project Cost \$6,300

Page: 9 Segment ID: 40.03 Date: 7/18/2013

# Curves on CSAH 40 from CSAH-40 BEGINS, SIBLEY CO to EAST UNION

#### **Agency: Carver County**

# Curve Data

													Advance	
								Proximity or	High Priority	Sign		Shoulder	Horizontal	
					Intersection	Visual	Risk	Existing	Segment +	Improvement	Shoulder Paving	Rumble Strip	Alignment	Advisory
Curve ID	K	Α	Radius (ft)	ADT	on Curve	Trap	Ranking	Chevrons	Critical Radius	Project	Project	Project	Warning Sign	Speed Plaque
40A	1	1	296	960	no	no	**	Х	-	Chevron	Outside	Inside/Outside	Х	Inspect Curve
40B	0	1	481	960	no	no	**	x	-	Chevron	Outside	Inside/Outside	x	35
40C	0	0	817	960	no	no	**	-	X	Chevron	Outside	Inside/Outside	X	45
40D	0	0	680	960	no	no	**	-	X	Chevron	Inside/Outside	Inside/Outside	X	40
40E	0	0	487	960	no	no	*	x	-	Chevron	Inside/Outside	Inside/Outside	x	35
40F	0	0	698	960	no	no	**	x	х	Chevron	Inside/Outside	Inside/Outside	x	40
40G	0	0	737	960	yes	no	***	х	х	Chevron	Outside	Inside/Outside	x	45
40H	0	0	800	1000	yes	no	***	x	x	Chevron	Outside	Inside/Outside	X	45
401	1	0	955	1000	no	no	***	-	x	Chevron	Outside	Inside/Outside	X	50
40J	0	1	1365	1000	no	no	**	-	-	-	-	-	-	-
40K	0	0	735	1000	no	no	**	-	x	Chevron	Outside	Inside/Outside	X	45
40L	0	0	1311	990	no	no	*	-	-	-	-	-	-	-
40M	0	0	1572	990	no	no	*	-	-	-	-	-	-	-
40N	0	1	1598	990	no	no	**	-	-	-	-	-	-	-
400	0	0	1757	990	no	no	*	-	-	-	-	-	-	-
40P	0	0	1050	990	no	no	**	-	x	Chevron	-	Inside/Outside	x	50
40Q	0	0	1021	990	no	no	**	-	х	Chevron	-	Inside/Outside	x	50
40R	0	0	734	990	yes	yes	****	x	x	Chevron	-	Inside/Outside	X	45
40S	0	0	1544	1200	no	no	*	-	-	-	-	-	-	-

\*Curve numbering not consecutive, as some curves may have been removed from further analysis because a large radius, located on a gravel road, etc
\*\*\*Curves with radius greater than 1,200 feet did not receive a new or replacement chevron project.

# Ranking Criteria

 Criteria

 Severe Crashes
 > 0

 Radius 500 to 1200
 ADT 600 to 1800

 ADT 600 to 1800
 Intersection on Curve
 Yes

 Visual Trap
 Yes

Curves are selected for project if:

- 3 or more ★s
- x in Proximity or Existing Chevron column
- x in High Priority Segment + Critical Radius column

#### Short List of Strategies Considered

Description	Type	Unit Cost	Quantity	Total cost
Chevrons	Proactive	\$3,300 per curve	13	\$42,900
Arrow Board Only	Proactive	\$500 per curve	0	\$0
Shoulder Paving	Proactive	\$37,000 per mile	.7 miles	\$26,755
Advance Warning Sign/Speed Advisory Plaque	Proactive	\$800 per curve	13	\$10,400
Rumble Strip	Proactive	\$3,000 per mile	1.6 miles	\$4,656
				\$84,712

### Implementation Cost

Federal Funds \$76,241
Local Match (10% of Total project cost) \$8,471

Total Project Cost \$84,712

2007-2011 MnCMAT Crash Data

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#### Curves on CSAH 40 from EAST UNION to CSAH-11 (SOUTH)

**Agency: Carver County** 

Curve Data

													Advance	
								Proximity or	High Priority	Sign		Shoulder	Horizontal	
					Intersection	Visual	Risk	Existing	Segment +	Improvement	Shoulder Paving	Rumble Strip	Alignment	Advisory
Curve ID	K	Α	Radius (ft)	ADT	on Curve	Trap	Ranking	Chevrons	Critical Radius	Project	Project	Project	Warning Sign	Speed Plaque
40V	0	0	1164	1550	no	no	**	-	Х	Chevron	-	Inside/Outside	-	-

\*Curve numbering not consecutive, as some curves may have been removed from further analysis because a large radius, located on a gravel road, etc
\*\*Curves with radius greater than 1,200 feet did not receive a new or replacement chevron project.

#### Ranking Criteria

 Criteria

 Severe Crashes
 > 0

 Radius
 500 to 1200

 ADT 600 to 1800

 Intersection on Curve
 Yes

 Visual Trap
 Yes

Curves are selected for project if:

- 3 or more ★s
- x in Proximity or Existing Chevron column
- x in High Priority Segment + Critical Radius column

#### Short List of Strategies Considered

Description	Type	Unit Cost	Quantity	Total cost
Chevrons	Proactive	\$3,300 per curve	1	\$3,300
Arrow Board Only	Proactive	\$500 per curve	0	\$0
Shoulder Paving	Proactive	\$37,000 per mile	.0 miles	\$0
Advance Warning Sign/Speed Advisory Plaque	Proactive	\$800 per curve	0	\$0
Rumble Strip	Proactive	\$3,000 per mile	.1 miles	\$300
<u></u>				\$3,600

#### Implementation Cost

Federal Funds \$3,240
Local Match (10% of Total project cost) \$360

Total Project Cost \$3,600

2007-2011 MnCMAT Crash Data

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2 33 3 34 4 20 5 44 6 22 7 31 8 41 9 51 11 2 0 13 33 14 42 15 51 16 43 17 11 18 40 17 11 18 20 21 10 22 33 22 33 22 34 24 44 25 52 28 33 29 13 30 20 21 22 33 30 20 31 22 33 35 12 36 21 37 14 38 50 39 15 40 11 41 38 50 39 15 45 50 46 31 47 31 48 10 49 22 50 41 55 50 55 55 55 55 55 55 55 55	33.05 34.03 34.03 33.02 31.05 51.04 11.13 33.00 13.01 13.01 13.01 13.01 13.01 13.01 13.01 13.01 13.01 13.01 13.02 11.07 13.02 13	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	11 20 30 33 43 51 43 40 10 36 10 36 40 52 50 92 23 41 131 20 20 34	CSAH 33 AND MNTH 7 CSAH 33 AND CSAH 34 CSAH 34 AND USTH 212 WBL CSAH 20 AND MNTH 25 CSAH 40 AND MNTH 25 CSAH 40 AND MNTH 25 CSAH 40 AND MNTH 25; T-340 CSAH 31 AND USTH 212 WBL CSAH 31 AND USTH 212 WBL CSAH 31 AND USTH 212 EBL CSAH 31 AND MNTH 5; CR 151 CSAH 31 AND MNTH 7; HENNEPIN CO LINE CSAH 20 AND CR 127 CSAH 30 AND CSAH 32 CSAH 33 AND 110TH ST T-181 CR 135 CSAH 33 AND 110TH ST T-181 CR 135 CSAH 34 AND USTH 212 CSAH 34 AND USTH 212 CSAH 34 AND USTH 212 CSAH 36 AND USTH 212 CSAH 37 AND USTH 212 CSAH 38 AND USTH 212 CSAH 39 AND USTH 212 CSAH 30 AND CSAH-50; NATHAN CR T-514 CSAH 36 AND USTH 212 WBL CSAH 36 AND USTH 212 EBL CSAH 36 AND USTH 212 EBL CSAH 36 AND MARKET AVE T-19 CSAH 41 CSAH 40 AND CSAH 53 CSAH 52 AND CSAH 53 CSAH 52 AND CSAH 53 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 34 AND CR 131 CSAH 35 AND SIBLEY CO CSAH 5 (EAST) CSAH 35 AND SIBLEY CO CSAH 5 (EAST) CSAH 21 AND MNTH 284 44 AND LST 1 478 CSAN 24 AND MNTH 284 AND MNTH	** * * * *	* * * * * * * * * * * * * * * * * * *	*	* * * * * *	* * * * * * * * * * * * * * * * * * *	\$ 218,00 \$ 1,551,00 \$ 254,00 \$ 1,451,00 \$ 738,00 \$ 175,00 \$ 354,00 \$ 175,00 \$ 24,00 \$ 175,00 \$ 24,00 \$ 1,199,00 \$ 1,199,00 \$ 136,00 \$ 160,00 \$ 160,00 \$ 136,00 \$ 136,00 \$ 136,00 \$ 136,00 \$ 136,00 \$ 140,00 \$ 150,00 \$ 150,
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15         51           16         43           17         11           18         44           19         11           20         36           21         11           22         33           24         40           25         56           26         50           27         92           28         34           30         20           31         20           34         92           35         12           36         21           38         50           39         15           40         11           41         32           42         32           43         20           44         15           45         50           44         15           50         41           50         41           51         56           52         50	51.03 13.02 11.07 10.18 36.04 10.19 36.01 166.03 36.00 252.03 350.06 32.01 34.02 32.02 32.02 32.02 32.02 32.02 32.03 34.01 35.04 36.04 36.04 36.04 36.04 36.04 36.04 36.05 36.06 37.06 38.06 39.07	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	51 43 11 40 10 36 10 36 40 52 50 92 34 120 20 34 52 92 122	CSAH 51 AND USTH 212 CSAH 13 AND USTH 212 CSAH 14 AND MARSH LAKE RD T-162 VICTORIC DR CSAH 14 CSAH 40 AND CSAH 50 CSAH 10 AND CSAH 43 (EAST) CSAH 36 AND USTH 212 WBL CSAH 10 AND GUERNSEY AVE CSAH 11 CSAH 36 AND USTH 212 EBL CSAH 36 AND WARKET AVE T-19 CSAH 41 CSAH 40 AND CSAH 52 174TH ST T-127 CSAH 40 AND CSAH 53 CSAH 50 AND CSAH 53 CSAH 50 AND CSAH 53 CSAH 92 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 34 AND MSH 212 EBL; MNTH 5 & 25 CSAH 34 AND CSAH 33 (SOUTH) CSAH 20 AND CSAH 31 CSAH 20 AND CR 131 CSAH 32 AND CR 155 CNTY 122 AND CR 155 CNTY 122 AND CR 153 CSAH 21 AND MNTH-7	*	* * * * * * * * * * * * * * * * * * * *	*	* * * * * * * *	**  **  **  **  **  **  **  **  **  **	\$1,920,00 \$1,199,00 \$1,199,00 \$263,00 \$227,00 \$160,00 \$160,00 \$160,00 \$136,00 \$136,00 \$103,00
16 43 17 11 18 46 18 46 18 46 19 10 20 36 21 10 20 22 23 36 24 42 25 52 26 56 27 92 28 34 29 13 30 20 31 22 36 21 37 14 38 50 39 15 40 11 41 32 42 32 42 32 42 32 44 33 20 44 33 20 44 34 45 55 45 50 46 31 47 31 48 10 49 22 50 41 55 55 55 55 55	13.02 11.07 40.03 10.18 36.04 10.19 36.01 86.03 40.02 52.03 30.06 34.02 31.01 20.07 34.01 52.02 22.01 21.01 40.01	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	43 11 40 10 36 10 36 40 52 50 92 34 131 20 20 34 52 92 122	CSAH 43 AND USTH 212 CSAH 11 AND MARSH LAKE RD T-162 VICTORIC DR CSAH 14 CSAH 40 AND CSAH 50 CSAH 10 AND CSAH 43 (EAST) CSAH 36 AND USTH 212 WBL CSAH 10 AND GUERNSEY AVE CSAH 11 CSAH 36 AND USTH 212 EBL CSAH 36 AND USTH 212 EBL CSAH 36 AND MARKET AVE T-19 CSAH 41 CSAH 40 AND CSAH 52 174TH ST T-127 CSAH 52 AND CSAH 53 CSAH 50 AND CSAH 53 CSAH 50 AND CSAH 53 CSAH 92 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * * * * * * * * * * * * * * * * * *	*	* * * * * * * *	** ** ** ** ** ** ** ** ** ** ** ** **	\$ 1,199,00 \$ 399,00 \$ 263,00 \$ 227,00 \$ 160,00 \$ 160,00 \$ 136,00 \$ 136,00 \$ 91,00 \$ 36,00 \$ 12,00 \$ \$ \$ \$ \$ \$ \$ \$
17	11.07 10.18 36.04 10.19 36.01 36.03 10.02 36.03 10.02 36.03 10.02 31.01 20.03 32.01 34.02 31.01 20.03 32.02 32.02 22.01 21.01 40.01 50.02	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	11 40 10 36 10 36 40 52 50 92 34 131 20 20 34 52 92 122 21	CSAH 11 AND MARSH LAKE RD T-162 VICTORIC DR CSAH 14 CSAH 40 AND CSAH 50 CSAH 10 AND CSAH 43 (EAST) CSAH 36 AND USTH 212 WBL CSAH 36 AND USTH 212 EBL CSAH 36 AND USTH 212 EBL CSAH 36 AND MSTH 52 T74TH ST T-127 CSAH 52 AND CSAH 53 CSAH 52 AND CSAH 53 CSAH 52 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CS 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * * * * * * *	*	* * * * * * * *	**     **     **     **     **     **     **     **     **     **     **     **     **     **     **	\$ 399,00 \$ 263,00 \$ 218,00 \$ 160,00 \$ 160,00 \$ 160,00 \$ 160,00 \$ 160,00 \$ 136,00 \$ 136,00 \$ 91,00 \$ 36,00 \$ 91,00 \$ 36,00 \$ 12,00 \$ 12
18         40           19         10           20         36           21         11           22         36           24         44           25         56           26         50           27         92           28         34           29         13           30         20           31         20           34         92           35         12           37         14           38         50           39         15           40         11           41         32           42         32           43         20           44         15           45         50           44         15           48         11           49         22           50         51           51         50           52         50	40.03 10.18 36.04 10.19 36.01 36.03 340.02 52.03 350.06 32.01 34.02 31.01 20.03 32.07 34.01 22.03 22.01 24.01 40.01	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	40 10 36 10 36 36 40 52 50 92 34 131 20 20 34 52 92 122	CSAH 40 AND CSAH 50 CSAH 10 AND CSAH 43 (EAST) CSAH 36 AND USTH 212 WBL CSAH 10 AND GUERNSEY AVE CSAH 11 CSAH 36 AND USTH 212 EBL CSAH 36 AND MARKET AVE T-19 CSAH 41 CSAH 40 AND CSAH 52 174TH ST T-127 CSAH 52 AND CSAH 53 CSAH 52 AND CSAH 53 CSAH 92 AND MNTH 5 CSAH 34 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 26 CSAH 34 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * * * * * * * * * * * * * * * * * * *		* * *	**     **     **     **     **     **     **     **     **     **     **     **     **     **     **     **	\$ 263,00 \$ 227,00 \$ 160,00 \$ 160,00 \$ 160,00 \$ 136,00 \$ 136,00 \$ 136,00 \$ 136,00 \$ 12,00 \$ 12,00 \$ \$ \$ \$ \$ \$ \$ \$
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22 33 36 22 25 55 26 50 27 92 28 34 92 33 35 12 37 14 38 55 34 40 15 45 50 44 15 50 44 14 15 50 44 14 15 50 44 15 50 51 55 55 55 55 55 55 55 55 55 55 55 55	36.01 36.03 40.02 52.03 50.06 92.01 34.02 31.01 20.03 20.07 34.01 52.02 92.02 22.01 40.01 50.02	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	36 36 40 52 50 92 34 131 20 20 34 52 92 122	CSAH 36 AND USTH 212 EBL CSAH 40 AND CSAH 52 174TH ST T-127 CSAH 40 AND CSAH 52 174TH ST T-127 CSAH 52 AND CSAH 53 CSAH 50 AND CSAH 53 CSAH 92 AND MNTH 5 CSAH 34 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 26 CSAH 34 AND CR 131 CSAH 20 AND CR 155 CNTY 122 AND CR 155 CNTY 122 AND CR 153 CSAH 21 AND MNTH-7	*	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *	* * * *	** ** ** ** ** ** ** ** ** ** **	\$ 160,00 \$ 160,00 \$ 136,00 \$ 136,00 \$ 103,00 \$ 91,00 \$ 36,00 \$ - \$ - \$ - \$ - \$ -
23 36 24 44 25 52 26 56 27 99 28 34 29 13 30 26 31 22 33 35 12 36 21 37 14 38 50 40 11 41 32 42 32 44 32 45 50 46 31 47 31 48 11 49 22 50 41 50 51 55 55 55 55	36.03 40.02 52.03 50.06 32.01 34.02 31.01 20.03 20.07 34.01 52.02 32.02 22.01 21.01 40.01 55.02	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	36 40 52 50 92 34 131 20 20 34 52 92 122	CSAH 36 AND MARKET AVE T-19 CSAH 41 CSAH 40 AND CSAH 52 174TH ST T-127 CSAH 52 AND CSAH 53 CSAH 50 AND CSAH 53 CSAH 92 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 26 CSAH 34 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * *	* * *	** ** ** ** ** ** ** ** **	\$ 160,00 \$ 136,00 \$ 136,00 \$ 103,00 \$ 91,00 \$ 36,00 \$ - \$ - \$ - \$ - \$ -
24         40           25         52           26         50           27         9           28         34           29         13           30         20           31         20           32         34           35         12           36         21           37         14           38         50           40         10           41         32           42         32           43         20           44         15           45         45           46         31           47         31           48         10           49         24           50         41           51         56           52         50	40.02 52.03 50.06 92.01 34.02 31.01 20.03 20.07 34.01 52.02 92.02 22.01 21.01 40.01 55.02	CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	40 52 50 92 34 131 20 20 34 52 92 122	CSAH 40 AND CSAH 52 174TH ST T-127 CSAH 52 AND CSAH 53 CSAH 50 AND CSAH 53 CSAH 92 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	*	* * * * * * * * * * * *	* * *	**     **     **     **     **     **     **     **     **	\$ 136,00 \$ 136,00 \$ 103,00 \$ 91,00 \$ 36,00 \$ 12,00 \$ - \$ - \$ - \$ -
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26 50 27 92 28 34 29 13 30 20 31 20 33 52 34 92 35 12 36 21 37 14 38 50 39 15 40 41 41 32 42 32 44 41 55 45 50 46 31 47 31 48 92 49 49 92 40 91 41 91 42 92 43 95 44 95 45 96 46 97 47 97 48 96 49 96 40 97 40	50.06 92.01 34.02 31.01 20.03 20.07 34.01 52.02 92.02 22.01 21.01 40.01 50.02	CSAH CSAH CNTY CSAH CSAH CSAH CSAH CSAH CSAH CSAH CSAH	50 92 34 131 20 20 34 52 92 122	CSAH 50 AND CSAH 53 CSAH 92 AND MNTH 5 CSAH 34 AND MNTH 25 CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 26 CSAH 34 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * * * * *	* * * *	* * *	** ** ** ** ** **	\$ 103,00 \$ 91,00 \$ 36,00 \$ 12,00 \$ - \$ - \$ - \$ - \$ -
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29 13 30 20 31 20 32 34 92 33 52 36 22 37 14 38 50 39 15 40 11 41 32 42 32 44 15 45 50 46 31 48 10 49 22 50 41 50 51 51 50	31.01 20.03 20.07 34.01 52.02 92.02 22.01 21.01 40.01 50.02	CNTY CSAH CSAH CSAH CSAH CNTY CSAH CNTY	131 20 20 34 52 92 122	CNTY 131 AND USTH 212 EBL; MNTH 5 & 25 CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 26 CSAH 34 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * *	*	*	** ** ** **	\$ 12,000 \$ - \$ - \$ - \$ - \$ -
30 20 31 20 32 34 33 55 12 36 21 37 14 38 50 39 15 40 41 41 32 42 32 44 41 45 50 46 31 47 31 48 20 49 20 40 40 41 55 45 50 46 55 50 41 55 50 55 50 55 50 55 50 55 50 55 50 55 50 56 50 57 50 58 50	20.03 20.07 34.01 52.02 92.02 22.01 21.01 40.01 50.02	CSAH CSAH CSAH CSAH CNTY CSAH CNTY	20 20 34 52 92 122	CSAH 20 AND CSAH 33 (SOUTH) CSAH 20 AND CR 26 CSAH 34 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * *	* * * *	*	** ** ** **	\$ - \$ - \$ - \$ - \$ -
31 20 32 34 33 52 34 92 35 12 36 21 37 14 38 50 40 10 41 32 42 32 42 32 44 15 45 45 50 46 31 47 31 48 10 49 24 50 41 55 51 56 55 55 55	20.07 34.01 52.02 92.02 22.01 21.01 40.01 50.02	CSAH CSAH CSAH CSAH CNTY	20 34 52 92 122 21	CSAH 20 AND CR 26 CSAH 34 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * *	* *	*	** ** **	\$ - \$ - \$ - \$ -
32 34 33 52 34 92 35 12 36 21 37 14 38 50 40 10 41 32 42 32 44 15 45 50 46 31 47 31 48 10 49 22 50 41 51 56 52 50	34.01 52.02 92.02 22.01 21.01 40.01 50.02	CSAH CSAH CNTY CSAH CNTY	34 52 92 122 21	CSAH 34 AND CR 131 CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	* * *	*		** **	\$ - \$ - \$ -
33 52 34 92 35 12 36 21 37 14 38 50 39 15 40 15 41 32 42 32 44 15 45 50 46 31 47 31 48 10 49 22 50 41 51 55 51 55 52 50 55 55	52.02 92.02 22.01 21.01 40.01 50.02	CSAH CSAH CNTY CSAH CNTY	52 92 122 21	CSAH 52 AND SIBLEY CO CSAH 5 (EAST) CSAH 92 AND CR 155 CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	* *	*	*		** **	\$ - \$ -
34 92 35 12 37 14 38 50 39 15 40 11 41 32 42 32 44 35 45 50 46 31 47 31 48 10 49 22 50 41 51 55 55 55	92.02 22.01 21.01 40.01 50.02	CSAH CNTY CSAH CNTY	122 21	CNTY 122 AND CR 123 CSAH 21 AND MNTH-7	*	*				
36 21 37 14 38 50 39 15 40 10 41 32 42 32 44 15 45 50 46 31 47 31 48 10 49 22 50 41 51 56 52 50	21.01 40.01 50.02	CSAH CNTY	21	CSAH 21 AND MNTH-7	*				**	\$ -
37 14 38 50 39 15 40 10 41 32 42 32 43 20 44 15 45 50 46 31 47 31 48 10 49 22 50 50 51 50 52 50	40.01 50.02	CNTY						*	_	
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39 15 40 10 41 32 42 32 43 20 44 15 45 50 46 31 47 31 48 10 49 24 50 41 51 50 52 50		. <b>SAH</b>	50	CNTY 140 AND MNTH-284; 110TH ST T-178 CSAH 50 AND MNTH-5			×		*	\$ 251,00 \$ 239,00
40 10 41 32 42 32 43 20 44 15 45 50 46 31 47 31 48 10 49 22 50 41 51 50 52 50	53.01			CNTY 153 AND USTH-212			*		*	\$ 239,00
42 32 43 20 44 15 45 50 46 31 47 31 48 10 49 24 50 41 51 50 52 50		CSAH	10	CSAH 10 AND CSAH-43 (WEST)		*			*	\$ 227,00
43 20 44 15 45 50 46 31 47 31 48 10 49 24 50 41 51 50 52 50		CSAH	32	CSAH 32 AND CR-135				*	*	\$ 227,00
44 15 45 50 46 31 47 31 48 10 49 2 <sup>2</sup> 50 41 51 50 52 50		CSAH	32	CSAH 32 AND MNTH-25; W LIM WACONIA TWP			*		*	\$ 218,00
45 50 46 31 47 31 48 10 49 24 50 41 51 50 52 50		CSAH	20	CSAH 20 AND CSAH-33 (NORTH)			*		*	\$ 194,00
46 31 47 31 48 10 49 24 50 41 51 50 52 50		CNTY CSAH	50	CNTY 155 AND MNTH-7 CSAH 50 AND S JCT CSAH-51; 158TH ST T-8	*			*	*	\$ 148,00 \$ 136,00
47 31 48 10 49 24 50 41 51 50 52 50		CSAH	31	CSAH 31 AND CSAH 50 (WEST); VERA AVE T-50				*	*	\$ 24,00
49 24 50 41 51 50 52 50		CSAH	31	CSAH 31 AND CSAH-50 (EAST); UPTON RD T-66				*	*	\$ 12,00
50 41 51 50 52 50	10.16	CSAH	10	CSAH 10 AND CR-141 (new CR)		*			*	\$ 12,00
51 50 52 50		CSAH		CSAH 24 AND CR-127		*			*	\$ 12,00
52 50		CSAH	41	CSAH 41 AND CSAH 40: ZERBA AVE T 27				*	*	\$ 12,00
		CSAH CSAH	50 50	CSAH 50 AND CSAH-10; ZEBRA AVE T-37 CSAH 50 AND N JCT CSAH-51; 150TH ST T-167				*	* *	\$ 12,00 \$ 12,00
		CSAH	21	CSAH 21 AND CR-122				*	,	\$ 12,00
		CSAH	32	CSAH 32 AND QUAAS AVE T-91 CR-151				*	*	\$ -
55 33	33.01	CSAH	33	CSAH 33 AND CSAH-50 (EAST)				*	*	\$ -
		CSAH	33	CSAH 33 AND CR-122			*		*	\$ -
		CSAH		CSAH 51 AND CSAH-52; CR-151 SEG #1			*		*	\$ -
		CSAH CSAH	52 53	CSAH 52 AND SIBLEY CO CSAH-5 (WEST) CSAH 53 AND CR-152 MAPLEWOOD RD T-173			*		* *	\$ - \$ -
				CNTY 151 AND SIBLEY CO T-158 & CSAH-60			••	*		\$ -
		CSAH	20	CSAH 20 AND CSAH-21						\$ 160,00
				CNTY 153 AND MN-284; 118TH ST T-177						\$ 103,00
		CSAH	11	CSAH 11 AND GUERNSEY AVE; CR-140						\$ 24,00
		CSAH	41	CSAH 41 AND CSAH 52						\$ 24,00
			20 31	CSAH 20 AND CR-133 CSAH 31 AND SIBLEY CO T-150 & CSAH 16						\$ 12,00 \$ -
	20.01	CSAH	50	CSAH 50 AND CR-153 PAUL AVE T-97						\$ -
	31.01		51	CSAH 51 AND 142ND ST T-172 CR-152						\$ -
69 15	31.01 50.05	CSAH	152	CNTY 152 AND CR-153						\$ -
	31.01 50.05 51.02	CSAH CNTY			11	20	35 1	5 24		
	31.01 50.05 51.02 52.01			Total Stars % That Gets Star		28 41%	51% 22			

	lotaio		70 That Gold Star 1070 4170 170 070 0170 2270 0070			
	#	%				
*****	0	0%	Stars			
*****	0	0%	Skew - If intersection is skewed at an angle of 15 degrees or greater.			
****	1	1%	On/Near Curve - If intersection is on or within 1,000 feet of curve.			
****	3	4%	Development - If intersection aerial shows a commercial development with access near intersection.			
***	10	14%	RR Xing - If intersection has a railroad crossing on any approach within 500 feet.			
**	21	30%	Previous STOP (>5 mi) - If vehicles approaching the stop control have not had a previous stop along the roadway within 5 mile-			
*	25	36%	Total Crashes - If intersection has at least 1 crash.			
-	9	13%	Ratio (Min/Maj) - If intersection has an ADT ratio in the range of 0.2 to 0.6.			
	69	100%				

7/18/2013 2 of 2

#### **CSAH 51 AND USTH 212**

**Agency: Carver County** 

#### Intersection Data

Configuration: X
Configuration (2): Undivided
True Mile: 0.00
Urban/Rural: Rural
County: Carver
ATP: Metro
Entering ADT: 12195
Traffic Control Device: THRU STOP

Street Lights: NO
Flashers: NO
Major ADT: 11100
Minor ADT: 1095



#### Crash Data

2007-2011 MnCMAT Crash Data 5 years

	Total	Angle	K+A
Crashes	12	2	2
Rate (per MVM)	0.5	0.1	0.1

#### Ranking Criteria

	Value	Critical	Risk Ranking
Skew	No	Yes	-
On/Near Curve	No	Yes	
Development	No	Yes	
Near RR Crossing	No	Yes	
Distance from previous STOP	Yes	Yes	*
Volume Ratio	0.10	0.2 - 0.6	
Total Crashes	2	>0	*
			**

#### Short List of Strategies Considered

Description		Unit Cost	Units	Cost	Notes - Turn lanes installed in 2010.
Roundabout	\$1,000,000	per intersection	0	\$0.00	Reevaluate in future and determine if
Directional Median	\$750,000	per intersection	1	\$750,000.00	additional countermeasures are
Mainline Dynamic Warning Sign	\$50,000	per intersection	0	\$0.00	needed. Intersection lighting is
Installing Street Lights	\$6,000	per street light	2	\$12,000.00	currently installed, but may be
Upgrade Stop Sign	\$350	per sign	2	\$700.00	inadequate. Carver County will
Upgrade Junction Sign	\$350	per sign	2	\$700.00	determine lighting needs by
Upgrade Stop Ahead Sign	\$450	per sign	2	\$900.00	intersection and provide
Upgrade Stop Ahead Marking	\$450	per marking	2	\$900.00	documentation for upgrade when
Upgrade Stop Bar	\$250	per marking	2	\$500.00	applying for funds.
Review Signs and CST	\$2,450	per intersection	0	\$0.00	_
				\$765,700.00	_

Signs and Markings and Street Light project costs vary by the number of minor legs associated with the intersection.

#### Implementation Cost

Federal Funds \$689,130

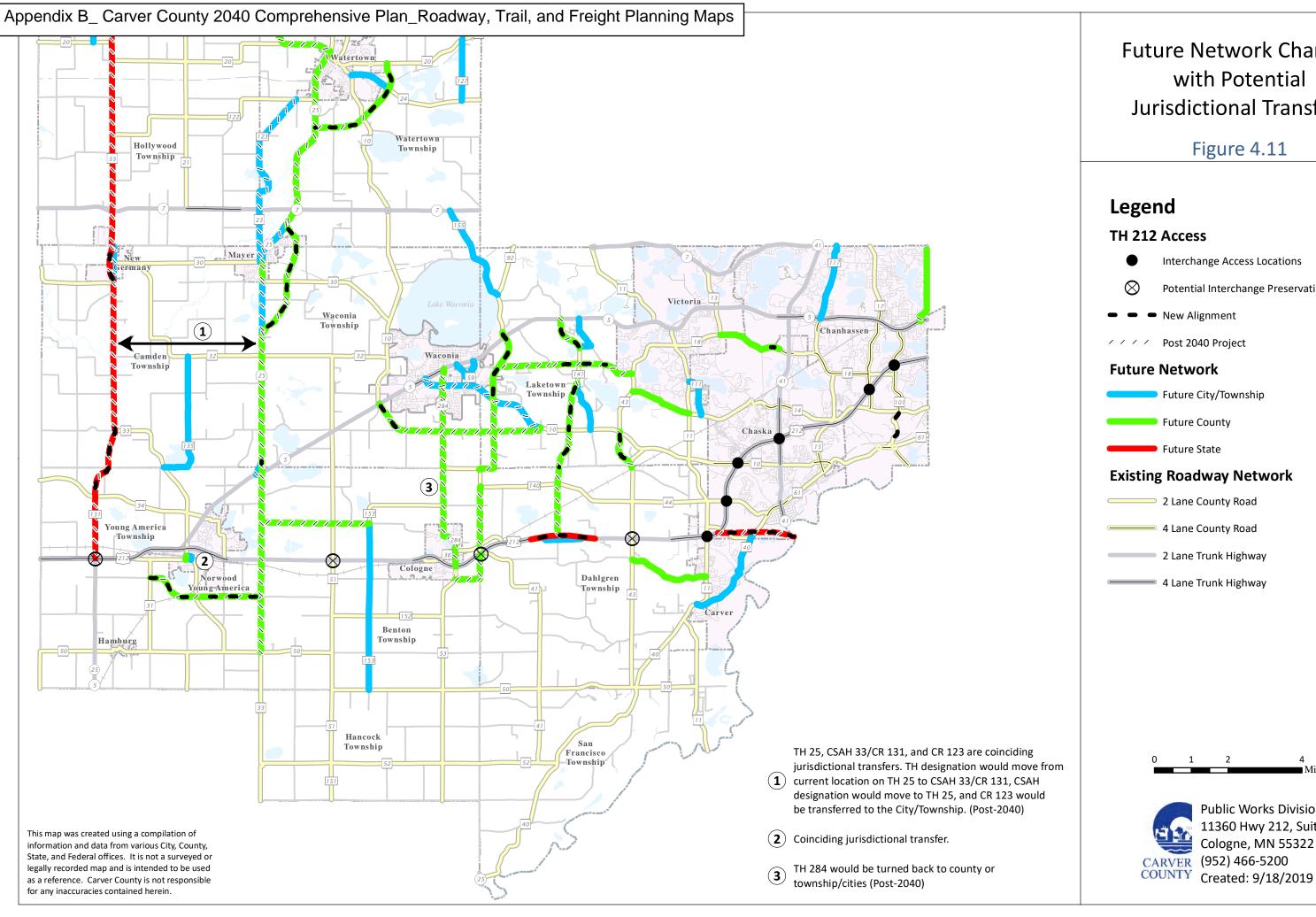
Local Match (10% of Total project cost) \$76,570

Total Project Cost \$765,700

Page: 15 Intersection ID: 51.03 Date: 7/18/2013

# Sofety PLAN Moving Toward ZERO Deaths





## **Future Network Changes** with Potential **Jurisdictional Transfers**

Figure 4.11

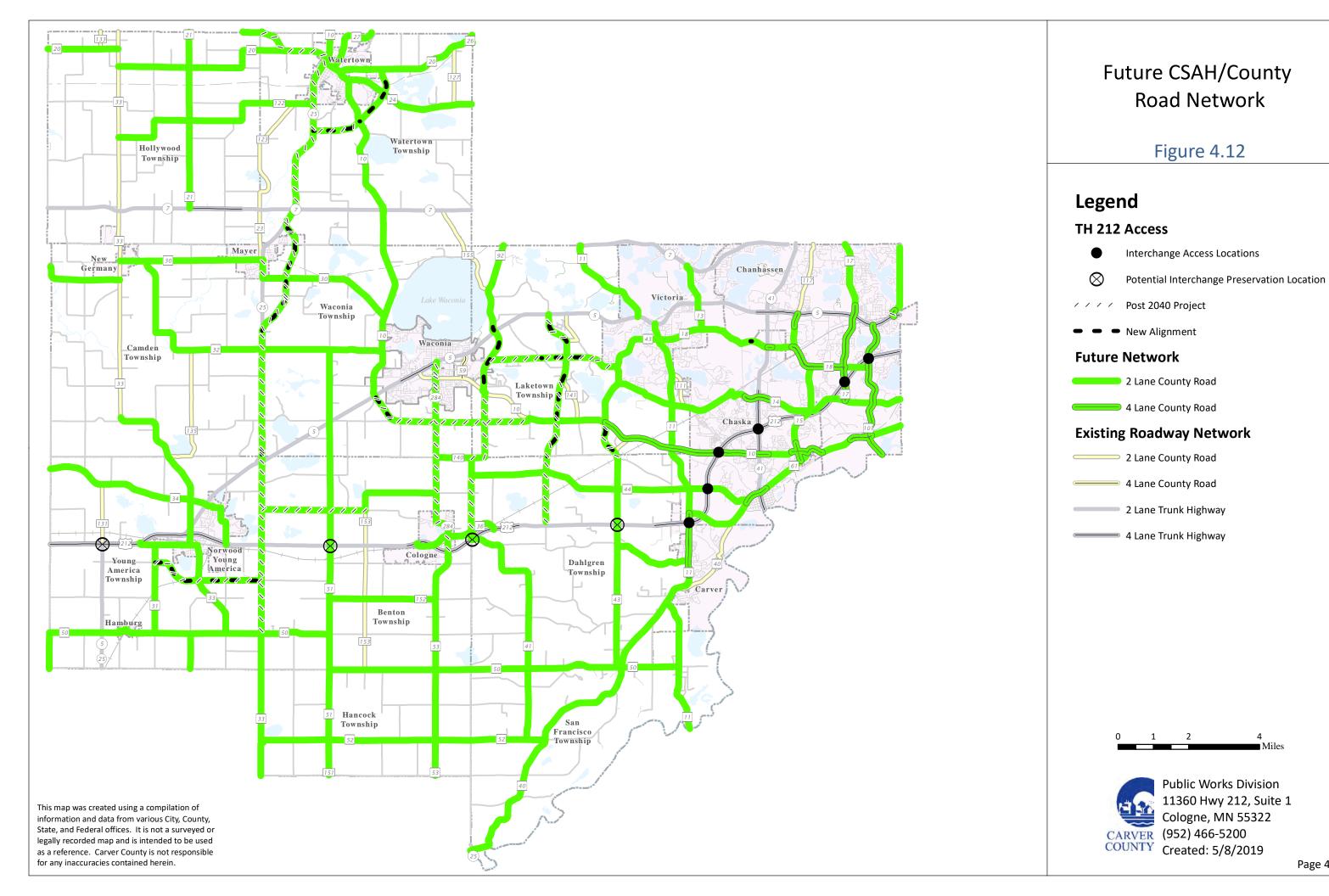
- Interchange Access Locations
- Potential Interchange Preservation Location
- New Alignment
- /// Post 2040 Project

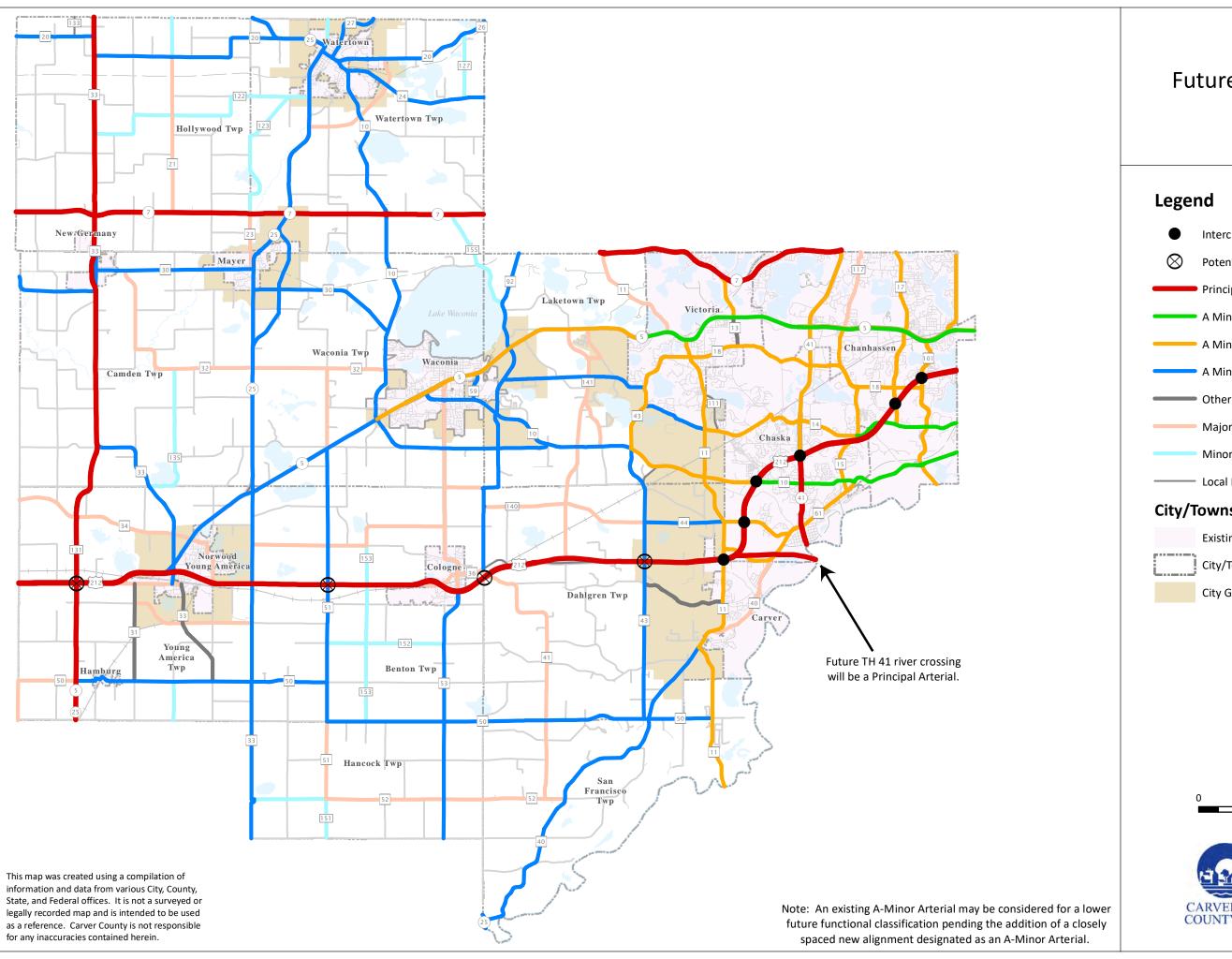
- Future City/Township
- Future County

#### **Existing Roadway Network**

- 2 Lane County Road
- 4 Lane County Road
- 2 Lane Trunk Highway
- 4 Lane Trunk Highway

**Public Works Division** 11360 Hwy 212, Suite 1 Cologne, MN 55322 CARVER (952) 466-5200





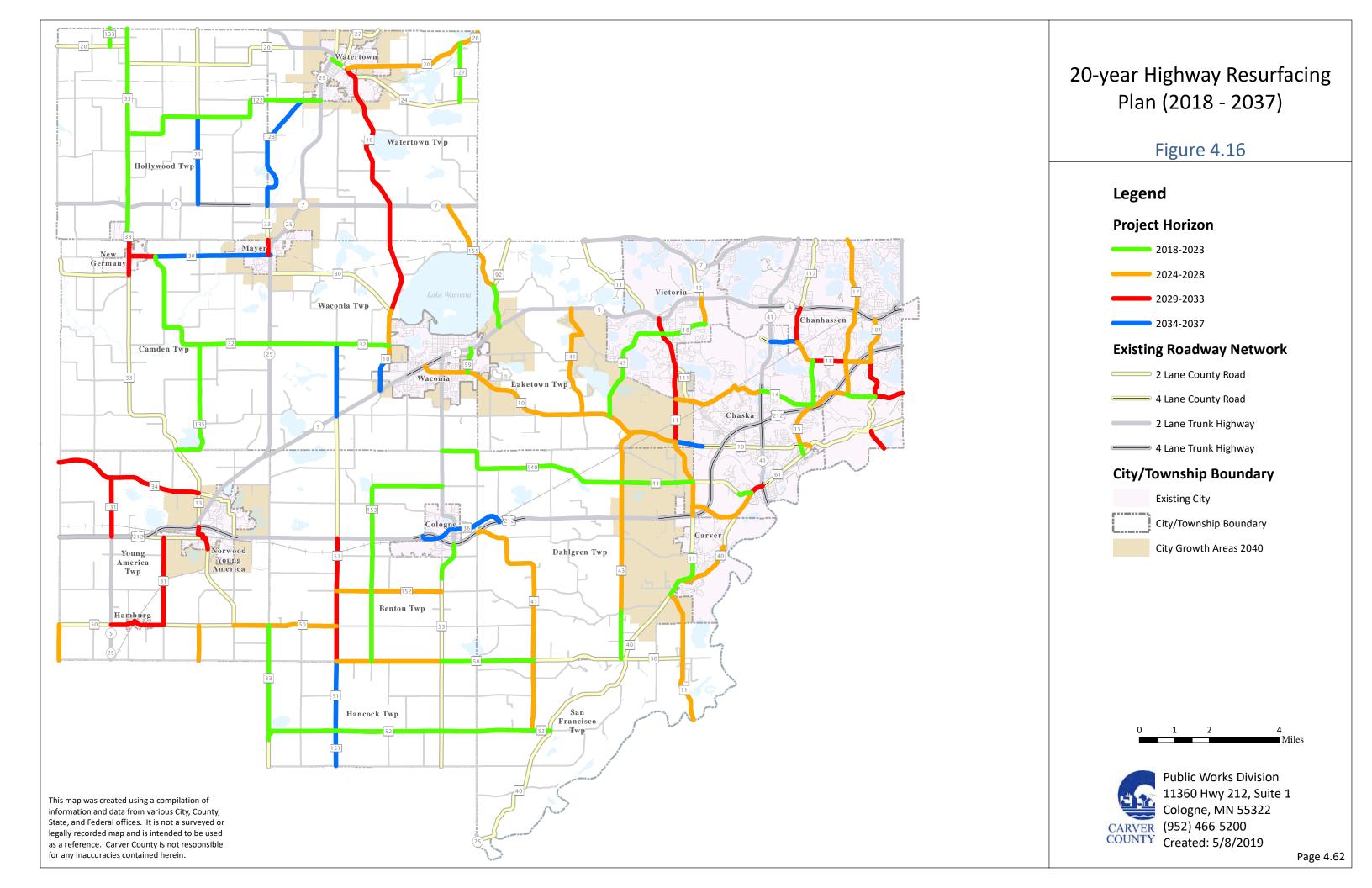
### **Future Functional Class**

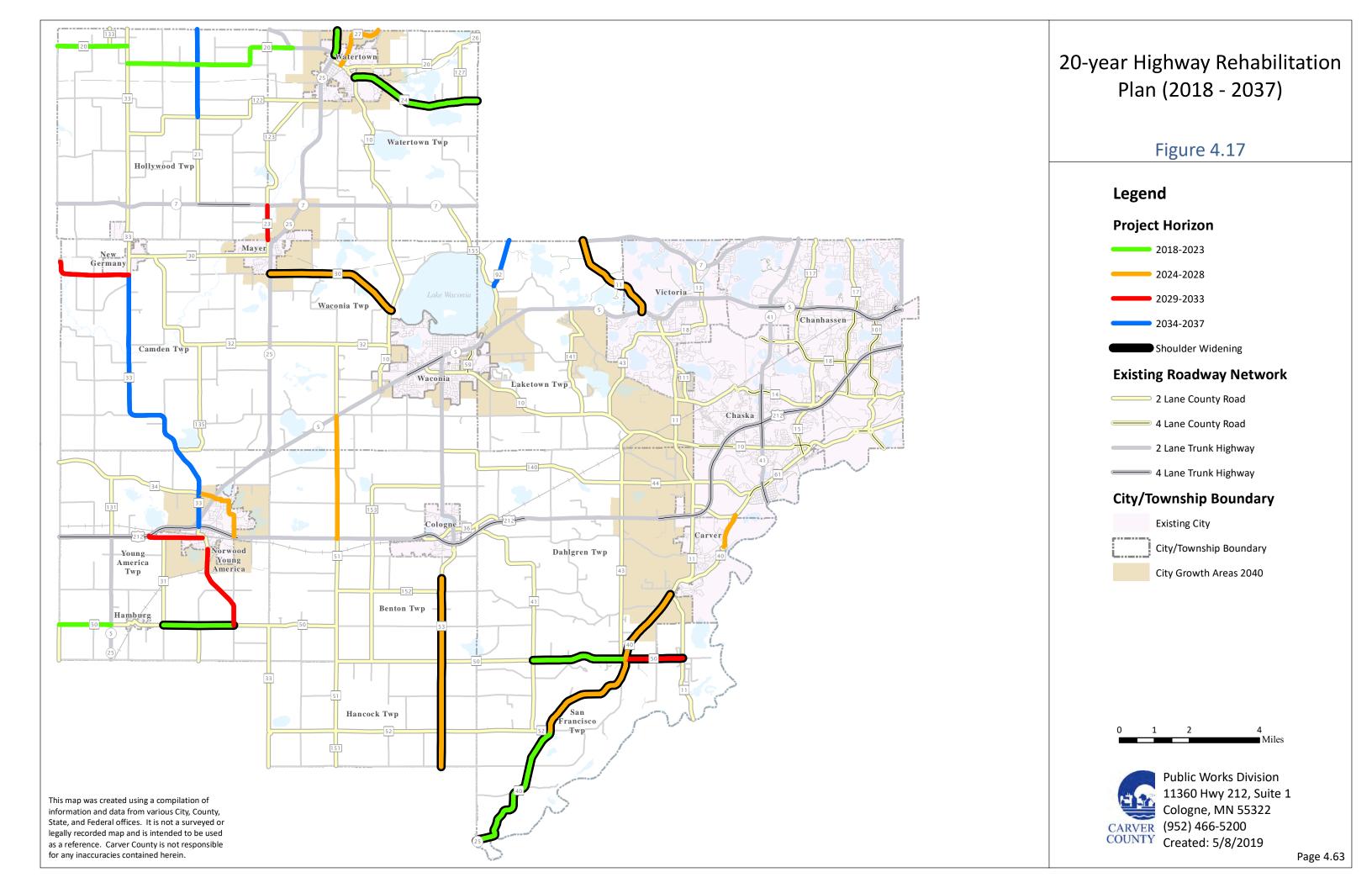


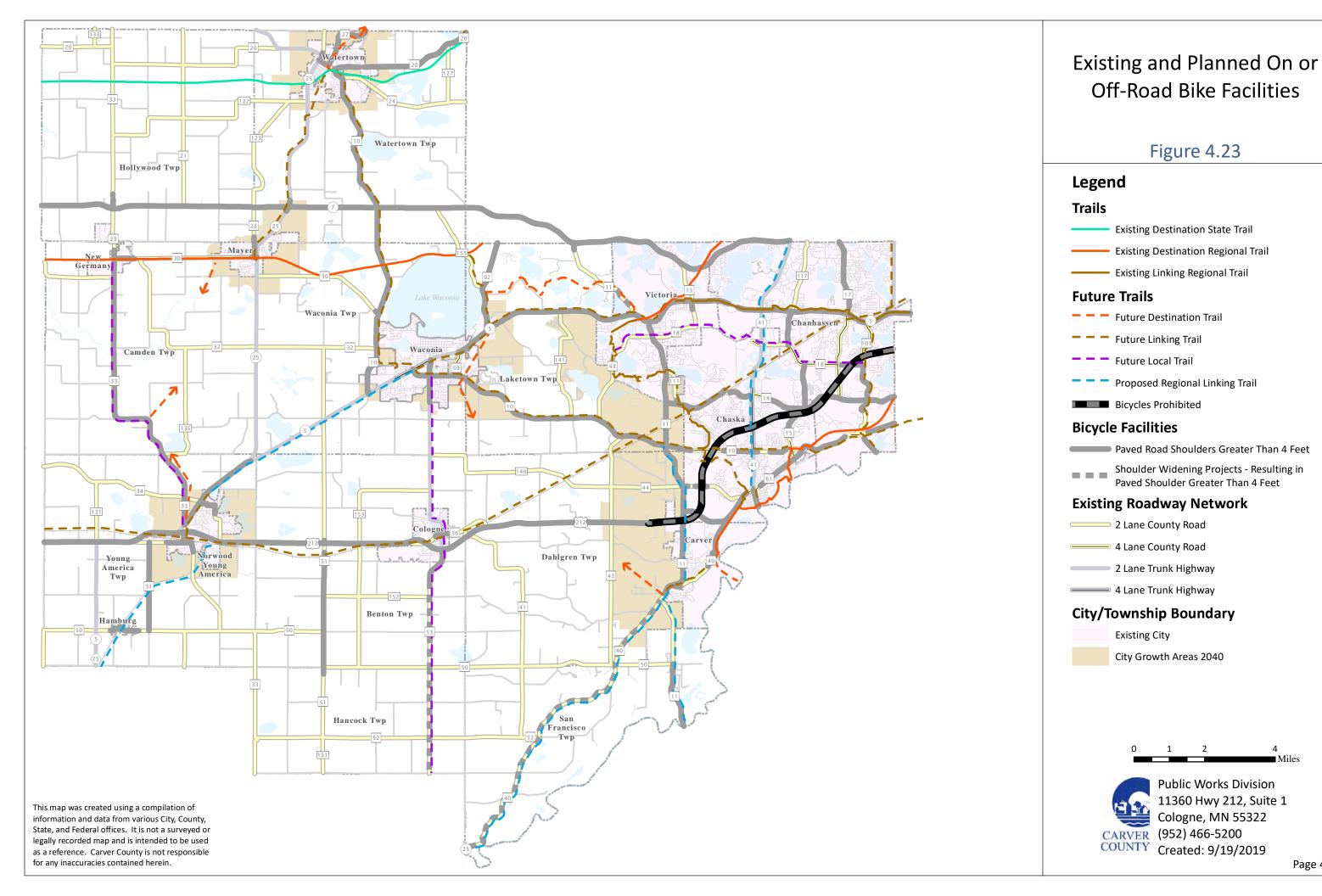


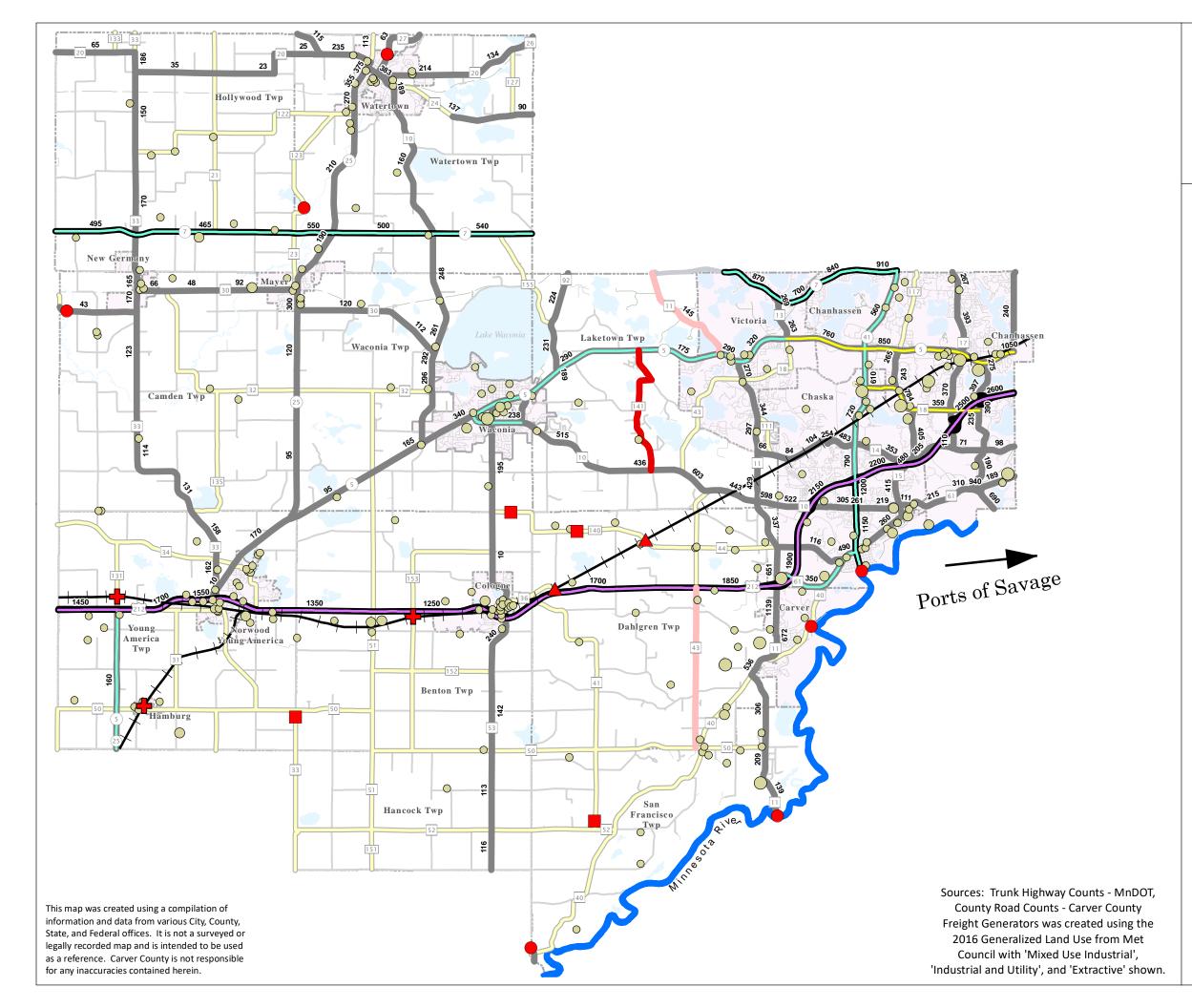


**Public Works Division** 11360 Hwy 212, Suite 1 Cologne, MN 55322 CARVER (952) 466-5200 COUNTY Created: 5/8/2019



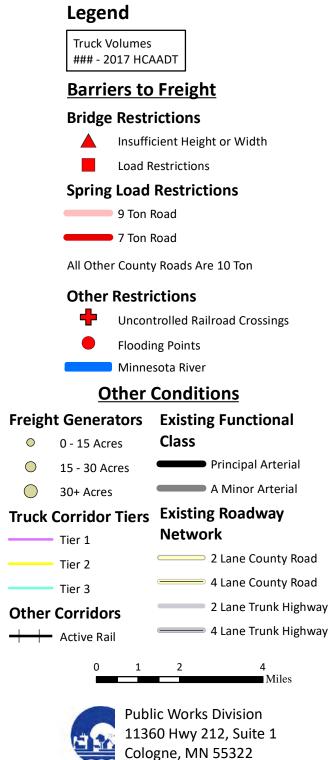






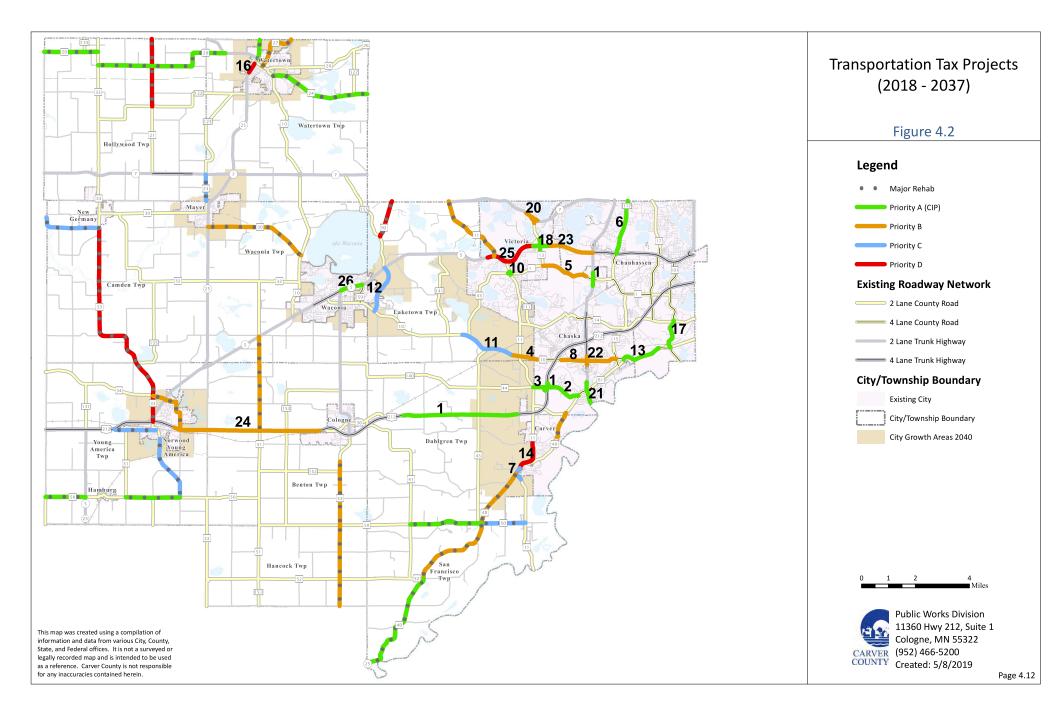
# Existing Freight Conditions and Multi-axle Truck Volumes

## Figure 4.24



CARVER (952) 466-5200

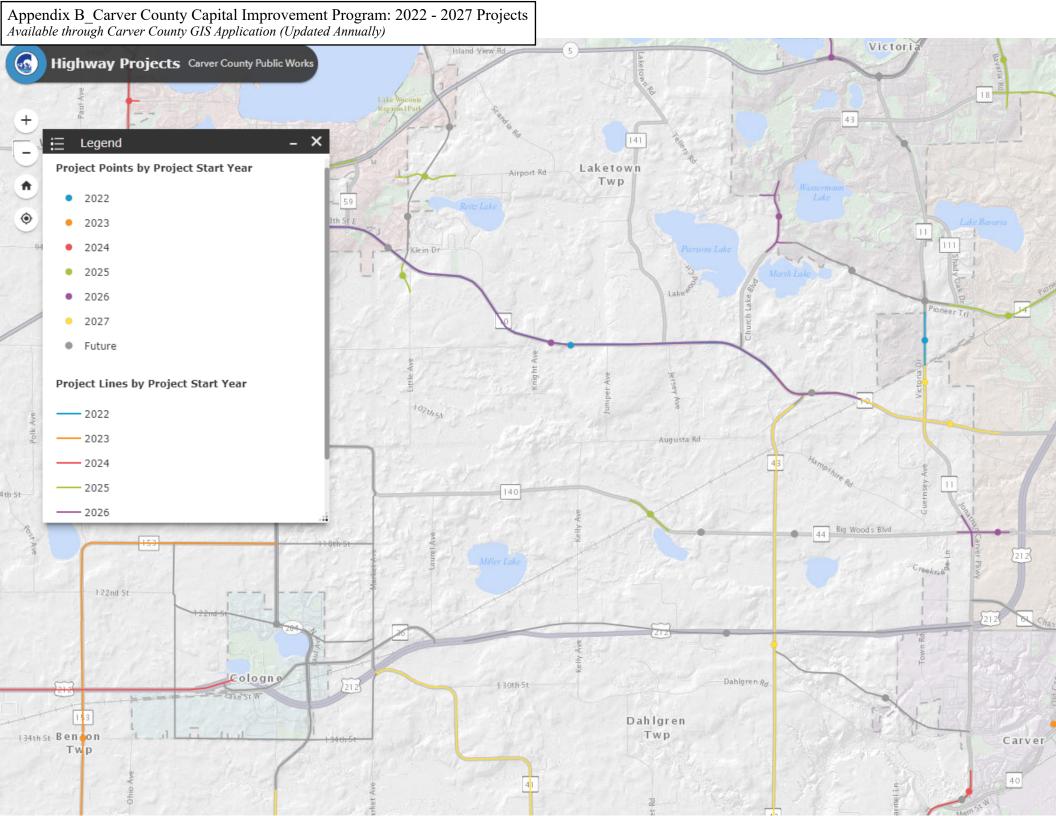
COUNTY Created: 5/8/2019



#### **♦ Table 4.2: 20-Year Transportation Tax Implementation Project Table**

Coun v	Road Pro	iects	State	Road	Projects	
Court	, Roda i io	Jeets	Juice	NOGG	1 1 Ojecto	

State Road Projects		
Project Description	CIP	Priority
CSAH 4 and US 212 Interchange	2018-2023	A (CIP)
CSAH 4 from west of CSAH 61 to US 212	2018-2023	A (CIP)
CSAH 4 from CSAH 11 to US 212	2018-2023	A (CIP)
CSAH 10 (Engler Blvd.) from Clover Ridge Dr. to CSAH 11	2018-2023	A (CIP)
CSAH 18 Extension (82nd St) from Bavaria Rd. to TH 41	2024-2028	В
CR 117 (Galpin Blvd.) from TH 5 to northern County line	2018-2023	A (CIP)
CSAH 11/CSAH 40 (S) Intersection	2024-2028	В
CSAH 10 (Engler Blvd.) from TH 41 to TH 212	2024-2028	В
CSAH 10 (Engler Blvd.) from TH 41 to CSAH 61	2024-2028	В
CSAH 11/CSAH 18/43 Intersection	2018-2023	A (CIP)
CSAH 10 from CSAH 11 to CSAH 43 (W)	2029-2033	С
Eas Waconia bypass from CSAH 10 to TH 5	2029-2033	С
CSAH 61 (Flying Cloud Dr.) from Engler Blvd. to Bluff Creek Dr.	2018-2023	A (CIP)
CSAH 11 (Johnathan Carver Pkwy.) from 6th St. to CSAH 40	2034-2037	D
TH 1/Lyman Blvd. Intersection	2018-2023	A (CIP)
TH 25 from High St. to White St.	2034-2037	D
TH 101 Bluff from Flying Cloud Dr. to Pioneer Trail	2018-2023	A (CIP)
TH 5/Rolling Acres Rd. Intersection	2018-2023	A (CIP)
US 212 from Carver to Cologne	2018-2023	A (CIP)
TH 7/Rolling Acres Rd Intersection	2024-2028	В
TH 41 from MN River to Walnut Ct. and CSAH 61 from TH 41 to E h	2018-2023	A (CIP)
TH 1/CSAH 10 (Engler Blvd.) Intersection	2024-2028	В
TH 5 from TH 41 to Rolling Acres Rd.	2024-2028	В
TH 212 from Cologne to Norwood Young America	2029-2033	С
TH 5 from Rolling Acres Rd. to Victoria Dr. (W)	2034-2037	D
TH 5 from Birch St to TH 284	2018-2023	A (CIP)
	Project Description  CSAH 4 and US 212 Interchange  CSAH 4 from west of CSAH 61 to US 212  CSAH 4 from CSAH 11 to US 212  CSAH 10 (Engler Blvd.) from Clover Ridge Dr. to CSAH 11  CSAH 18 Extension (82nd St) from Bavaria Rd. to TH 41  CR 117 (Galpin Blvd.) from TH 5 to northern County line  CSAH 11/CSAH 40 (S) Intersection  CSAH 10 (Engler Blvd.) from TH 41 to TH 212  CSAH 10 (Engler Blvd.) from TH 41 to CSAH 61  CSAH 11/CSAH 18/43 Intersection  CSAH 10 from CSAH 11 to CSAH 43 (W)  Eas Waconia bypass from CSAH 10 to TH 5  CSAH 61 (Flying Cloud Dr.) from Engler Blvd. to Bluff Creek Dr.  CSAH 11 (Johnathan Carver Pkwy.) from 6th St. to CSAH 40  TH 1/Lyman Blvd. Intersection  TH 25 from High St. to White St.  TH 101 Bluff from Flying Cloud Dr. to Pioneer Trail  TH 5/Rolling Acres Rd. Intersection  US 212 from Carver to Cologne  TH 7/Rolling Acres Rd Intersection  TH 41 from MN River to Walnut Ct. and CSAH 61 from TH 41 to E h  TH 1/CSAH 10 (Engler Blvd.) Intersection  TH 5 from TH 41 to Rolling Acres Rd.  TH 212 from Cologne to Norwood Young America  TH 5 from Rolling Acres Rd. to Victoria Dr. (W)	Project Description         CIP           CSAH 4 and US 212 Interchange         2018-2023           CSAH 4 from west of CSAH 61 to US 212         2018-2023           CSAH 4 from CSAH 11 to US 212         2018-2023           CSAH 10 (Engler Blvd.) from Clover Ridge Dr. to CSAH 11         2018-2023           CSAH 18 Extension (82nd St) from Bavaria Rd. to TH 41         2024-2028           CR 117 (Galpin Blvd.) from TH 5 to northern County line         2018-2023           CSAH 11/CSAH 40 (S) Intersection         2024-2028           CSAH 10 (Engler Blvd.) from TH 41 to TH 212         2024-2028           CSAH 10 (Engler Blvd.) from TH 41 to CSAH 61         2024-2028           CSAH 11/CSAH 18/43 Intersection         2018-2023           CSAH 10 from CSAH 11 to CSAH 43 (W)         2029-2033           Eas Waconia bypass from CSAH 10 to TH 5         2029-2033           CSAH 61 (Flying Cloud Dr.) from Engler Blvd. to Bluff Creek Dr.         2018-2023           CSAH 11 (Johnathan Carver Pkwy.) from 6th St. to CSAH 40         2034-2037           TH 1/Lyman Blvd. Intersection         2018-2023           TH 25 from High St. to White St.         2034-2037           TH 101 Bluff from Flying Cloud Dr. to Pioneer Trail         2018-2023           TH 5/Rolling Acres Rd. Intersection         2018-2023           TH 7/Rolling Acres Rd Intersection



**Appendix C:** Public Engagement Efforts

Carver County page 27 of 28



# **County Road Safety Plans - Phase IV Safety Strategies Workshop Attendees**

Attendees: 36

ATP: Metro August 1, 2012

Workshop Group: C (Carver, Scott, MnDOT & Others,) Location: MN Landscape Arboretum, Chaska, MN

	Name	County	Representing
1	Rich Revering	Scott County	Elko New Market
2	Angela Trutnam	Scott County	Shakopee Police
3	George Silvernis	Scott County	New Market TWP Supervisor
4	Mark NcNeill	Scott County	City of Shakopee
5	Mike Sehiltz	Scott County	City of Savage
6	Dean Opatz	Scott County	SCSO
7	Leslie Vermillion	Scott County	Scott County Comm
8	Craig Jenson	Scott County	Scott County
9	Marty Schoritz	Scott County	Scott County Planning Dept.
10	Lyndon Robjent	Carver County	Carver County
11	Gayle Degler	Carver County	Carver County
12	Sharon Sims	Carver County	Carver County
13	Luayn Murphy	Carver County	City of Mayer
14	Katy Boone	Carver County	Carver County
15	Eric Johnson	Carver County	Carver County
16	Crystal Paumen	Carver County	City of Watertown
17	Kate Miner	Carver County	Carver County
18	Marcee Shauchnessy	Carver County	Carver County
19	Kreg Schmidt	Carver County	Waconia, Norwood Young America, Cologne
20	Bill Weckman	Carver County	Carver County
21	Paul Oehme	Carver County	Chanhassen
22	Bill Monk	Carver County	Chaska
23	Ken Carlson	Carver County	Carver County
24	Dan Boyum	Carver County	Carver County
25	George Putahl	Carver County	Carver County Sheriff
26	Scott A. Sawah	Carver County	Carver County Eng.
27	Tom Workman	Carver County	Carver County
28	Randy Maluchnic	Carver County	Carver County Commissioner
29	Jim Olson	Carver County	Carver County Sheriff
30	Gina Mittero	MnDOT & Others	MnDOT Metro
31	David Sheen	MnDOT & Others	MnDOT Traffic
32	Gordy Pehrson	MnDOT & Others	MN DPS/OTS
33	Diane Langenbach	MnDOT & Others	MnDOT Metro
34	Peter Buchen	MnDOT & Others	MnDOT OTST
35	Tiffani Nielson	MnDOT & Others	State Patrol
36	Judy Jacobs	MnDOT & Others	T2D Regional Coordination

Page 1 of 1 Group C



#### Carver County Safety Workshop

WORKSHOP DATE: Tuesday, November 27, 2018

MEETING TIME: 11:30 – 3:00 PM Safety Workshop

LOCATION: Carver County Government Center – EOC Training Room

604 East 4<sup>th</sup> Street Chaska, MN 55318

#### Attendees

- Almin Ramic ,MnDOT Metro Traffic
- Amber Blanchard, MnDOT
- Angie Stenson, Carver County
- Bryan Nemeth, Bolton & Menk
- Captain Jason Bartell, MN State Patrol
- Chad Braun, Carver County Trans
- Dan McCormick, Carver County
- Darel Radde, Ridgeview Ambulance
- Darin Mielke, Carver County
- Dave Simoneau, First Transit
- Diane Langenbach, MnDOT
- Eric Kittelson, Lieutenant at Carver County Sherriff's Office
- George Pufahl, Carver County
- Jake Bongard, Bolton & Menk, Inc.
- John Wickenhauser, Carver County PW
- Kristine Hernandez, MnDOT TZD
- Lars Impola, MnDOT
- Lyndon Robjent, Carver County PW

- Patrick Stieg, Carver County Public Health
- Paul Oehme, City of Chanhassen
- Perry Clark, Carver County
- Randy Maluchnik, Carver County Commissioner
- Ronald Swartzer, MnDOT
- Tiffani Nielson, Minnesota State Patrol
- Tim Litfin, Tour de Tonka

#### **Project Team**

- Derek Leuer, MnDOT
- Girma Feyissa, MnDOT
- Howard Preston, Jacobs
- Cheri Marti, Jacobs
- Renae Kuehl, SRF

#### Workshop Goals

#### Welcome, Introductions, and Workshop Goals

- Create a shared understanding of CRSP and Carver County's infrastructure roadway safety approach.
- Solicit and share safety stakeholder perspectives to reduce severe crashes in Carver County.
- Collaboratively explore innovative infrastructure strategies for CRSP plan consideration.

### County Roadway Safety Plan (CRSP) Updates

- County Roadway Safety Plan (CRSP) Overview
- Discussion: What is important to advance road safety in the county?

- There has been a population growth in the county so there are more cars on the road.
   People that have lived here for awhile are not used to the traffic/congestion. Increased delay for left turning vehicles. Peak period traffic is getting worse.
- Driver behavior and distracted driving
- o Hard to see the edge of the road on TH212. TH5, etc. due to blowing snow. Maybe consider snow fences
- o Paving wider shoulders is helpful
- o Talking to legislation about a hands-free phone use. This would help law enforcement enforce the current no-texting law.
- There have been more "cell phone free vehicles" signs on consultant vehicles lately. This is likely a company/insurance-based initiative.
- o Educating young students is critical.
- o More funds should be put into driver behavior related education events young drivers get to test driving while texting, driving drunk, etc. while in a simulator. It is currently a grant through the "Ford Foundation" that has come to MN a few times.
- o There is a gap in the driver education approach, only required for kids under 18. A lot of kids are waiting until they are 18 to get their license to avoid taking driver education classes.
- o Parents need to set an example of safe driving and not using their phone.
- LIFE360 app good app to monitor youth driving behaviors.
- o Flashing lights on stop signs to draw awareness to the sign for distracted driving.
- o Larger pavement markings and arrows painted on the road.
- o Pedestrian/biking is very high in Carver county, very important to promote safety for multi users.
- o Road maintenance is needed to keep our road surface safe.

#### • MN Overview of Proactive Systemic Safety Approach

o All of Carver County roads are paved

#### • Implemented Safety Projects and Carver County Implementation Approach

- o Carver County has implemented various safety strategies over the past few years:
  - Pavement surface improvements
  - Shoulder widening
  - Roadside management of ditches
  - Clear objects in the clear zone
  - Rumble strips
  - Chevrons
  - Geometric improvements
  - Roundabouts
  - Street lighting installed. Now working to upgrade to LED and add a 2<sup>nd</sup> light at intersections.
  - Higher order markings on the roadway
  - Being more active with maintenance and plowing
  - Safety edge on all pavement edges
  - Signalized intersections with flashing yellow arrows
  - Added all red clearance interval at some signals
  - Speed advisory signs added

#### • Carver County Crash Data Overview and Focus Areas

o Howard reviewed carver county crash data

#### Infrastructure Safety Strategies "Big Book of Ideas" and Discussion of Key Strategies

- o Mumble strips MnDOT has installed 2,000 miles of mumbles. Most have been centerline.
- o Three-foot shoulder is not wide enough for bicyclists

#### • Priority Site Location Discussions

o Intersection: CR 51 and Hwy 212

- Existing Conditions
  - Hard to cross TH212 from CSAH 51
  - There have been two fatalities at this location, as well as other crashes
  - NB and SB traffic is side- street stop controlled
  - Hard to anticipate the speed of oncoming traffic on TH212
  - Looking to the east, the light poles cause an obstruction if you are stopped back from the intersection
  - You need to inch out into the traffic to get good sight lines to see oncoming traffic due to other signage in the corners, utility poles, street lights and right turn vehicles yielding next to you
  - Very hard to take a left turn from the side street. Have to wait a long time to get a gap.
  - Very similar concerns at the intersection for TH212/CSAH 43
  - Have seen a lot of near misses due to gap selection.
  - Will hear from FHWA if funding will be available to upgrade this to a 4-lane roadway. Would be projected for 2022 if funded.
- County Installed
  - Street lights have been installed
  - Turn lanes were installed on TH212
- Recommendations
  - Paint a stop bar closer to the intersection (not in line with the stop sign post).
     Important to educate those that are painting the stop bar on the proper location.
  - Should the NB and SB left turn lanes be offset to improve sightlines?
  - LED stop signs only if it's a "run the stop sign" issue. This does not help in locations where drivers are selecting a poor gap
  - RCUT Lars Impola has a drawing for this type of design to consider, will share with Carver County staff.
- o Segment: CR 40 (TH 25 to CSAH 50)
  - Existing Conditions
    - Recreational route
    - Motorcycle route for leisure driving
    - Would be interested to compare crash data on CSAH 6 in Sibley County (6 miles of eastern section) since this is a continuation of this section and a continuation of the motorcycle route. CSAH 6 has had widened shoulders. More truck traffic due to gravel pits in this area.
    - The last curve has a tighter radius and is too tight. Crashes occur here. Location is called "carter's corner"
  - Recommendations
    - Shoulder widening would be costly
    - Plastic delineators
    - Optical speed bars
    - Curve dynamic signs
    - Motorcycle Pilot safety study
    - Rumbles on edgeline
    - Wider-ground in edgeline



#### Carver County Board Presentation

DATE: Tuesday, November 27, 2018

MEETING TIME: 10:00 AM - 11:00 AM Board Member Presentation

LOCATION: County Board Meeting

Carver County Government Center

604 East 4<sup>th</sup> Street Chaska, MN 55318

#### Attendees

• Angie Stenson, Carver County

- Lyndon Robjent, County Engineer
- Darin Mielke, Carver County
- Dan McCormick, Carver County
- Chad Braun, Carver County
- Gayle Degler, County Commissioner
- Tom Workman, County Commissioner
- Randy Maluchnik, County Commissioner
- Tim Lynch, County Commissioner
- James Ische, County Commissioner

- David Hemze, Carver County Administrator
- Mark Metz, County Attorney

#### Project Team

- Derek Leuer, MnDOT
- Girma Feyissa, MnDOT
- Howard Preston, Jacobs
- Cheri Marti, Jacobs
- Renae Kuehl, SRF

#### Workshop Goals

#### Welcome, Introductions, and Workshop Goals

- Create a shared understanding of the County Road Safety Plan update process and its importance.
- Develop a more comprehensive understanding of featured infrastructure safety strategies to reduce severe crashes in Carver County.

#### County Roadway Safety Plan (CRSP) Updates

#### Overview of CRSP

o Derek gave an overview of the CRSP process and approach.

#### Overview of Proactive Systemic Safety Approach

o If you look at locations with high crashes, are they given priority first? Locations that have had a crash are ranked higher then those that don't, as part of the various risk factors that are reviewed at each location.

- o If a crash occurs at an intersection, is the crash cause always attributed to the intersection/roadway itself? No, law enforcement tracks the contributing factor for the crash and if it is behavior related (drunk driving, distracted driving, etc) it is noted. When conducting a crash review, the contributing factors are always reviewed.
- o If you have 90% of crashes that are due to behavior, how much of the safety money is spent on behavior related strategies? The MN Dept of Traffic Safety addresses behavioral related issues which is separate from the County Road Safety Plan approach which is engineering related.

#### Summary of Carver County Crash Data & Focus Areas

- o Howard gave an overview of Carver County Crash Data
- Infrastructure Safety Strategies "Big Book of Ideas" and Discussion of Key Strategies
  - o Rumble Strips
    - Lyndon gave an overview of the Carver County rumble strip policy. The county plans
      to review recent research on "mumble strips" (sinusoidal/wave shaped cut in
      rumbles) and update the policy accordingly.
    - MnDOT has installed 2,000 miles of "mumble strips" and have not received any complaints to date.
  - o Restricted Cross U-Turn (RCUT) Intersections
    - There was one installed in Cologne that the county board and engineer worked hard to educate the public and local businesses on. Since its been installed, there have been minimal complaints.
  - o Roundabouts
    - County has installed many roundabouts
    - County received a grant to install a roundabout at Hwy 5/CSAH 33

2 JACOBS/SRF

#### **Public Engagement for the Arboretum Area Transportation Plan**

#### **Stakeholder Advisory Committee Meetings**

June 19, 2019 November 6, 2019 March 11, 2020 November 10, 2020 (online)

#### **Public Open Houses**

July 16, 2019 December 17, 2019 July 20-August 7, 2020 (online) November 19-December 4, 2020 (online)

#### **Neighborhood Meetings**

#### **Rolling Acres Road**

June 27, 2019 November 20, 2019 March-April 2020 (online) June 17-July 12, 2020 (online)

#### **Downtown Victoria Businesses**

June 27, 2019 August 8, 2019 July 29, 2020 (online)

#### Highway 5 eastern subarea/West 82nd Street

June 25, 2019 December 4, 2019 May 13-May 28, 2020 (online)

#### Minnewashta Parkway

January 21, 2021 (online)

#### **Crimson Bay Road**

January 21, 2021 (online)

#### **Property Owner Meetings**

8 meetings with individuals/small groups

#### **Individual Points of Contact**

800+ online comments and survey responses 150+ calls and emails

#### **Digital Engagement**

#### **Online Comment Map**

June 29-July 15, 2019

#### **Online Surveys**

July 9-31, 2019 December 23, 2019-January 19, 2020 March 19-April 4, 2020

#### **E-bulletins**

29 project bulletins 762 subscribers

#### **City Council Updates**

#### **Victoria City Council**

October 28, 2019 March 23, 2020 September 14, 2020 November 9, 2020 February 8, 2021

#### **Chaska City Council**

June 1, 2020 February 1, 2021

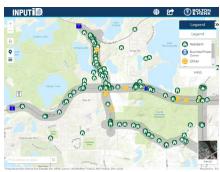
#### **Chanhassen City Council**

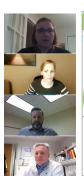
January 27, 2020 November 9, 2020 February 8, 2021

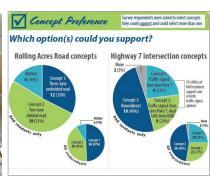
#### **Carver County Board Updates**

August 20, 2020 October 27, 2020 February 23, 2021









#### **Public Engagement for the Arboretum Area Transportation Plan**

#### **Stakeholder Advisory Committee Meetings**

June 19, 2019 November 6, 2019 March 11, 2020 November 10, 2020 (online)

#### **Public Open Houses**

July 16, 2019 December 17, 2019 July 20-August 7, 2020 (online) November 19-December 4, 2020 (online)

#### **Neighborhood Meetings**

#### **Rolling Acres Road**

June 27, 2019 November 20, 2019 March-April 2020 (online) June 17-July 12, 2020 (online)

#### **Downtown Victoria Businesses**

June 27, 2019 August 8, 2019 July 29, 2020 (online)

#### Highway 5 eastern subarea/West 82nd Street

June 25, 2019 December 4, 2019 May 13-May 28, 2020 (online)

#### Minnewashta Parkway

January 21, 2021 (online)

#### **Crimson Bay Road**

January 21, 2021 (online)

#### **Property Owner Meetings**

8 meetings with individuals/small groups

#### **Individual Points of Contact**

800+ online comments and survey responses 150+ calls and emails

#### **Digital Engagement**

#### **Online Comment Map**

June 29-July 15, 2019

#### **Online Surveys**

July 9-31, 2019 December 23, 2019-January 19, 2020 March 19-April 4, 2020

#### **E-bulletins**

29 project bulletins 762 subscribers

#### **City Council Updates**

#### **Victoria City Council**

October 28, 2019 March 23, 2020 September 14, 2020 November 9, 2020 February 8, 2021

#### **Chaska City Council**

June 1, 2020 February 1, 2021

#### **Chanhassen City Council**

January 27, 2020 November 9, 2020 February 8, 2021

#### **Carver County Board Updates**

August 20, 2020 October 27, 2020 February 23, 2021



