



Pennington County

County Roadway Safety Plan

MOVING TOWARD **ZERO DEATHS** | **MAY 2025**

Table of Contents

| | |
|---------------------------------------------------------------|---|
| 1. Introduction | 1 |
| 2. The Problem: County Roadways are at Higher Risk | 1 |
| Focus on High-Severity Crash Risk | 1 |
| 3. The CRSP Process: Proactive Safety Planning..... | 2 |
| Safe System Approach..... | 2 |
| 4. Pennington County Summary | 3 |
| Crash Focus Areas | 3 |
| Crash Types and Locations | 3 |
| County Roadway Risk Assessment..... | 4 |
| 5. Solutions: Safety Strategies and Recommended Projects..... | 4 |
| 6. Making it Happen: Funding for Safety Projects | 5 |
| 7. For More Information..... | 5 |

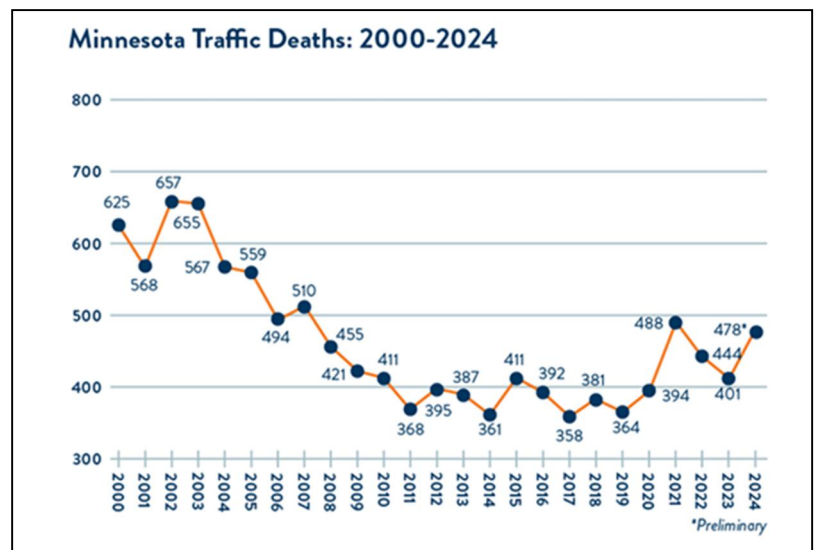
1. Introduction

This summary report describes the 2025 Pennington County Comprehensive Safety Action Plan (CSAP) and explains why it is important and how it is used to improve roadway safety in the county. The CSAP meets all the requirements for the federal Safe Streets and Roads for All (SS4A) planning requirements.

This CSAP identifies safety concerns on county roads and suggests improvements that the county can implement. The Minnesota Department of Transportation (MnDOT), in partnership with county engineers around the state and the Federal Highway Administration (FHWA), has been continuously updating County Roadway Safety Plans (CRSPs) since the first plans were completed for each of Minnesota's 87 counties in 2014.

The goal of this plan is to support the statewide initiative of moving Minnesota Toward Zero Deaths through continued reduction of fatal and serious injury crashes – together called “severe” crashes –on county roadways. This involves identifying safety problems and solutions and funding to get them implemented.

Over the years, the CRSPs have resulted in millions of road safety improvements around that state. However, crashes on county roadways are still a problem. In fact, since the COVID-19 pandemic in 2020, roadway fatalities statewide have remained at elevated levels, with 478 fatalities in 2024, significantly more than the 2011 low of 368.



2. The Problem: County Roadways are at Higher Risk

The commitment to create CRSPs for each of Minnesota's 87 counties was based on the higher crash risk on county roadways compared to elsewhere:

Roadways operated by Minnesota's counties have the most severe crashes of any jurisdiction type.

Approximately 60% of severe crashes – those involving a fatality or serious injury – occur on local roadways.

Local agencies – cities, counties, and townships – are responsible for more than 90% of the state's roadway miles

FOCUS ON HIGH-SEVERITY CRASH RISK

National research consistently shows that not all crashes pose equal risk. Fatal and serious injury crashes, though less frequent than more minor crashes, have far greater human and economic impacts. Therefore, the safety plan prioritizes these high-severity crashes over minor incidents.

LOCAL ROAD CRASH FACTS

- Nearly 50% of severe crashes involve lane departure
 - 42% of these crashes occurred along a curve
 - 37% of these involve hitting a fixed object
- Over 40% of severe crashes are intersection-related
 - 43% of these are angle crashes

3. The CRSP Process: Proactive Safety Planning

With CRSP, Minnesota pioneered a new approach, proactive approach to traffic safety that has become common around the country. Instead of just reacting to crashes after they occur, CRSP seeks to prevent the most serious crashes by identifying high-risk locations where roadway characteristics indicate a greater likelihood of those types of crashes occurring.

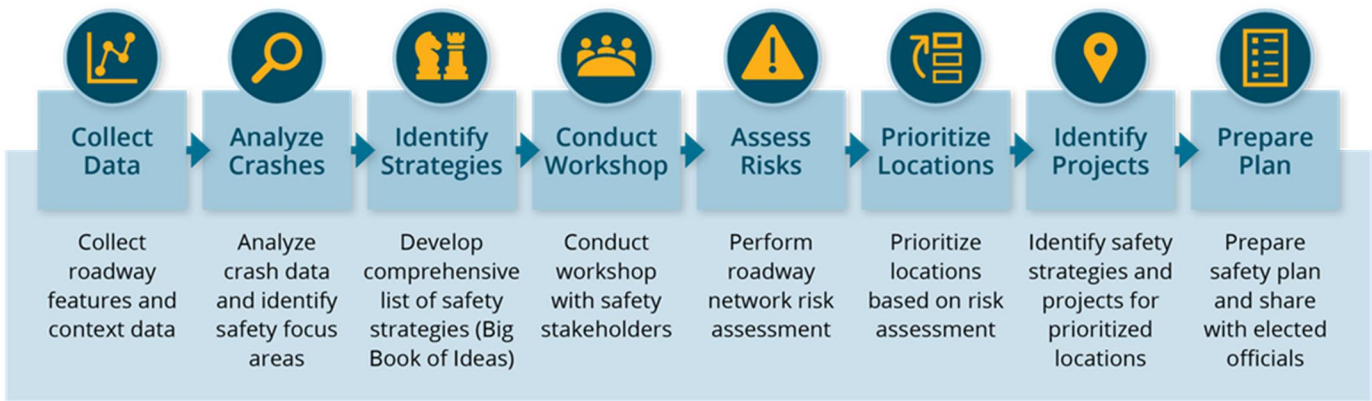
The CRSP approach views the presence of a crash as complementary to the risk analysis, rather than the sole influencer. This combination helps increase the potential impact of roadway improvements on the county system.

The CRSP process involves the steps shown below. Although the CRSP relies heavily on data, individualized engagement with local safety stakeholder helps ensure the plan reflects unique county needs.



Pennington County Safety Workshop (August 2024)

CRSP Process



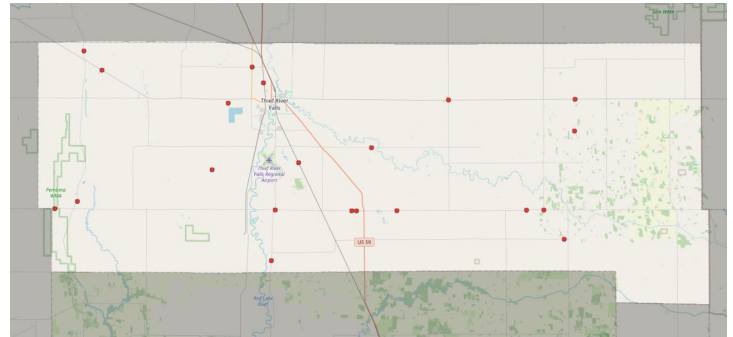
SAFE SYSTEM APPROACH

Aligned with FHWA's Safe System Approach principles, the CRSP analysis targets risk reduction through a holistic framework. By focusing on fatal and serious injury crashes, the strategy directs resources where they can save the most lives—supporting a proactive, system-level safety culture.



4. Pennington County Summary

The data-driven safety planning process includes a detailed analysis of where crashes have happened in the past to help understand what types of locations might be at risk in the future. The analysis points to crash types and roadway environments where improvements are most likely to help reduce fatal and serious injury crashes.



In the last 10 years, 22 fatal and serious injury crashes occurred on roads owned by Pennington County.

CRASH FOCUS AREAS

Minnesota records and analyzes traffic crashes according to the most frequent contributing factors, called “focus areas.” Tracking crashes by focus area helps reveal patterns in crash types and locations that can lead to targeted strategies to address them.

Based on analysis of crash data, the percent of crashes on the Pennington County system exceeds the statewide or district average in all the focus areas listed below. In other words, each of these categories has a disproportionately high percentage of crashes in the county.

- Lane Departure
 - Run-off-Road
- Impaired
- Speed
- Unbelted
- Younger Driver
- Commercial Vehicles
- Unlicensed

Of those focus areas that are above average, Lane Departure, Unbelted, and Younger Driver are the most elevated. Lane departure crashes are the most prevalent in the county, representing 78% of all severe crashes on the county system. Unbelted driving crashes also were elevated, with 4% of all severe crashes on the county system associated with this factor.

CRASH TYPES AND LOCATIONS

Further analysis shows the following crash types or locations are priorities for Pennington County:

- Rural roadways
- Lane departure crashes along segments, specifically single-vehicle run-off-road
- Lane departure crashes in curves

COUNTY ROADWAY RISK ASSESSMENT

The Pennington County CRSP assessed the complete county roadway system for crash risk, analyzing all 649 miles of roads by pavement type. The initial analysis revealed that, consistent with statewide trends, a significantly higher proportion of fatal and serious injury crashes occurred on paved roads compared to unpaved roads. Based on this finding, the crash risk analysis was refined to focus specifically on the paved roadway network, where the majority of severe crashes are concentrated.

A more detailed assessment of the paved roads was then conducted, incorporating roadway features such as segments, curves, and intersections. This phase of the analysis allowed for the identification and prioritization of specific high-risk locations based on crash history and roadway characteristics. These high-risk areas were then used to identify location-specific traffic safety countermeasures, with the goal of reducing severe crashes and improving overall roadway safety in the county.

5. Solutions: Safety Strategies and Recommended Projects

The CRSP approach often leads to recommendations for low-cost but high-impact safety projects like shoulder improvements, enhanced pavement markings, rumble strips, rural segment striping, chevrons on curves, upgraded traffic signs and intersection markings at intersections, rural intersection lighting, and other proven countermeasures. The result is the ability to address more at-risk locations throughout the county system, maximizing the impact of limited Highway Safety Improvement Program (HSIP) and other funds.

Pennington County's updated CRSP includes a catalogue of safety strategies – called “The Big Book of Ideas” – that was customized to the County's needs and preferences during the planning process. Combining the at-risk locations with appropriate strategies results in a prioritized list of safety projects for the county to implement.



*Example Proven Safety Strategy:
Chevron Curve Warning*

PENNINGTON COUNTY SAFETY PROJECTS: 2025 CRSP UPDATE

76 total projects with an estimated cost of \$9.5 million, including:

65 rural safety projects at a cost of \$8.4 million

11 urban safety projects at an estimated cost of \$1.1 million

The table below provides a more detailed look at the type, number, and estimated cost of the recommended roadway safety improvements.

Summary of Pennington County Recommended Safety Projects

| Project Type Category | Number of Projects | Estimated Cost |
|--------------------------|--------------------|----------------------|
| RURAL | | |
| Segments | 31 | \$2,984,679 |
| Curves | 4 | \$40,000 |
| Intersections | 30 | \$5,360,000 |
| Total Rural | 65 | \$8.4 million |
| URBAN | | |
| Segments | 3 | \$752,571 |
| Intersections (Vehicle) | 3 | \$15,000 |
| Intersections (Ped/Bike) | 5 | \$375,000 |
| Total Urban | 11 | \$1.1 million |
| Total | 76 | \$9.5 million |

6. Making it Happen: Funding for Safety Projects

To date, nearly 97 percent of Minnesota counties have participated in the federal Highway Safety Improvement Program (HSIP), with more than \$173 million in safety improvements deployed across the county system.

Since the completion of Pennington County's initial safety plan, the county secured approximately \$1.51 million in HSIP funding to support implementation of 16 safety projects at roadway segments, curves, and intersections. These safety projects included shoulder improvements, striping, roundabouts, lighting, and chevrons.

The updated CRSP includes a Highway Safety Improvement Program (HSIP) submission form for every recommended safety project. Each form includes a location description, crash history, risk factor summary, alternative strategies considered, the recommended project, and estimated project cost. The sheets make it easy for counties to apply for HSIP funding.

The information in the HSIP forms also can be used to support funding applications for other state and federal grant programs, including Safe Routes to Schools, Active Transportation, and Local Partnership Program, among others.

Rural Segment on CSAH 17 (140th Ave NE)

Roadway Information

- Segment Start: CSAH 3 (Center St E)
- Segment End: CSAH 8 (150th St NE)
- Area Type: Rural
- County: Pennington
- Context Zone: Agricultural
- Route System: CSAH
- Route No: 17
- Facility Type: 2-Lane
- Segment Length (mi): 5.41
- AAOT (vpd): 930
- Lane Width (ft): 11
- Shoulder Type: Gravel
- Shoulder Width (ft): 4

Crash Data

| | Total | Severe | Total Lane Departure | Severe Lane Departure |
|----------------------------------|-------|--------|----------------------|-----------------------|
| 5-year Crash History (2019-2023) | | | | |
| Crash Frequency: | 1 | 0 | 1 | 0 |
| Density (per mile per yr): | 0.04 | 0 | 0.04 | 0 |
| Rate (per MVM): | 0.11 | 0 | 0.11 | 0 |

Systemic Safety Risk Factors

| | Value | Threshold | Star Assignment |
|-----------------------------------|-------|-----------------|-----------------|
| Speed Limit (mph): | 55 | xx ≥ 55 | ★ |
| AAOT-SS (Rural Single-Veh) (vpd): | 930 | xx ≥ 500 | ★ |
| AAOT-RM (Rural Multi-Veh) (vpd): | 930 | xx ≥ 500 | ★ |
| Curve Density (cur per mi): | 0.55 | 0.01 ≤ xx ≤ 1.3 | ★ |
| Access Density (access per mile): | 7.39 | xx ≥ 7 | ★ |
| Outside Edge Risk: | 1 | 25 or 3 | ★ |
| Total Stars | | | ★★★★★ |

Priority Located: [Dropdown]

List of Strategies Considered

| | Type | Unit Cost | Unit | Quantity | Total Cost |
|-------------------------------------|-----------|-----------|----------|----------|------------------|
| Buffer Between Opposing Lanes | Proactive | \$150,000 | per mile | | |
| Clear Zone Enhancements | Proactive | \$100,000 | per mile | | |
| Centerline Rumble Strip | Proactive | \$3,000 | per mile | 5.41 | \$16,229 |
| 6" Wet Reflective in Groove | Proactive | \$10,000 | per mile | | |
| Shoulder Paving/Safety Edge | Proactive | \$75,000 | per mile | 5.41 | \$405,735 |
| Shoulder Rumble Strip | Proactive | \$3,000 | per mile | | |
| Edge/Line Rumble Strip | Proactive | \$7,000 | per mile | | |
| Enhanced Edge/Line | Proactive | \$7,000 | per mile | | |
| Total Estimated Project Cost | | | | | \$423,964 |

Notes:
This segment is due for reconstruction in cooperation with outside agencies, because of upcoming airport runway renovations. County nominated centerline rumble strips to increase safety on the curves.

Date Printed: 5/13/2025 8:47 AM Segment ID: 5-174-17-002
County Roadway Safety Plan 2 Project Page #: 2

The CRSP includes an HSIP funding sheet for each identified project.

7. For More Information

For more information on the Pennington County Roadway Safety Plan, please contact Mike Flaagan at Pennington County (mlflaagan@penningtonmn.gov).