

Joe Gustafson
Washington County Traffic Engineer



Minnesota County Engineers Association | January 20, 2022

Mark Vizecky
State Aid Operations Engineer

Rich Sanders
Polk County Engineer

[Statewide speed limit vision \(YouTube\)](#)



STATEWIDE Speed Limit Vision PROJECT

VISION STATEMENT

Speeds limits are set with an emphasis on all users with key influences of **safety, engineering, and surrounding land use.**

Core Values

Speed limits are:

- 1 Affected by community context, land use, and road design.
- 2 Governed by voluntary compliance through education and accepted social norms.
- 3 Established through consistent technical evaluation and applied equitably across all communities.

In Minnesota, we believe that:

safety culture

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•A vision for speed limits should recognize the different functions roadways provide.

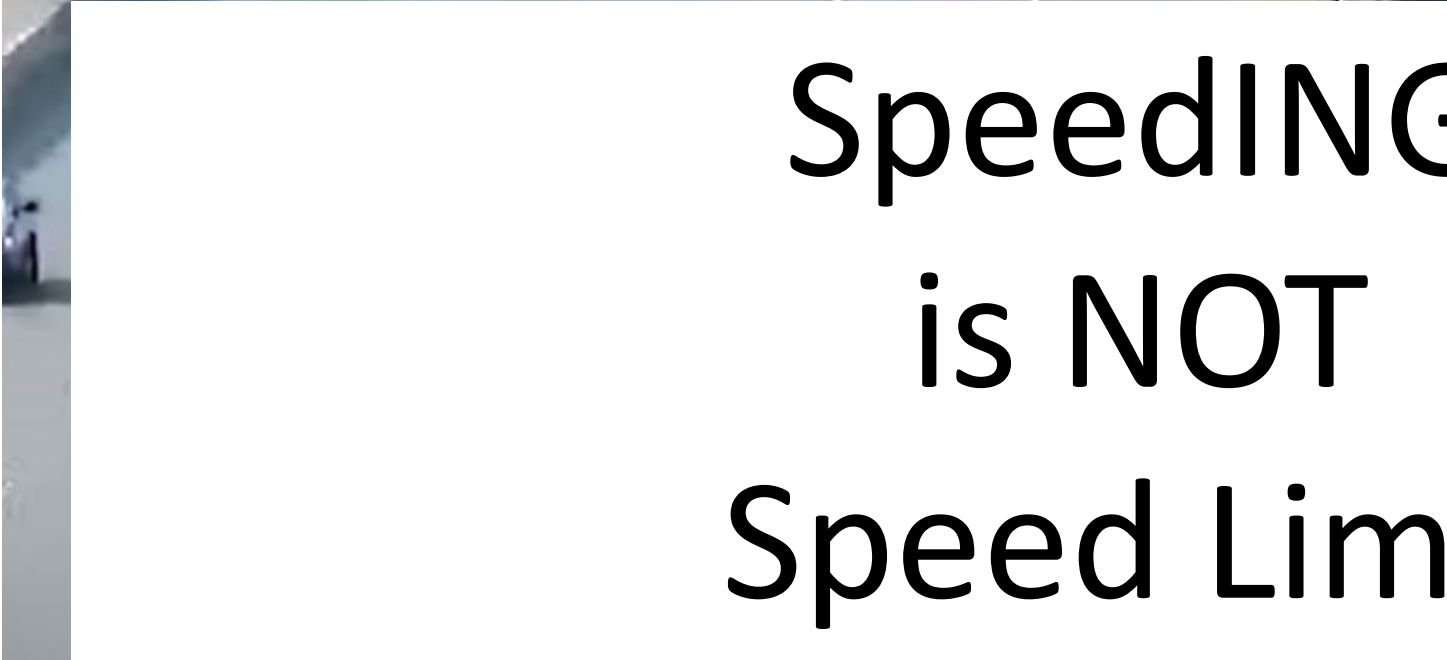
Toward Zero Deaths

Speed is one element of our traffic safety culture. To be effective we need to consider all elements.

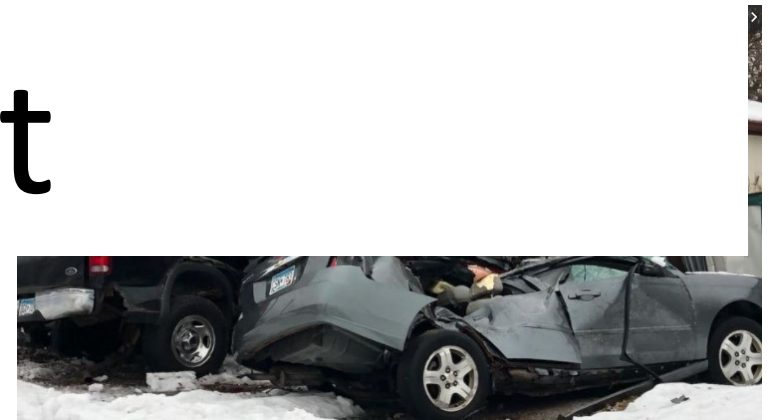




Police: Woman Leads Officers On 100MPH Chase In Eagan



SpeedING
is NOT
Speed Limit

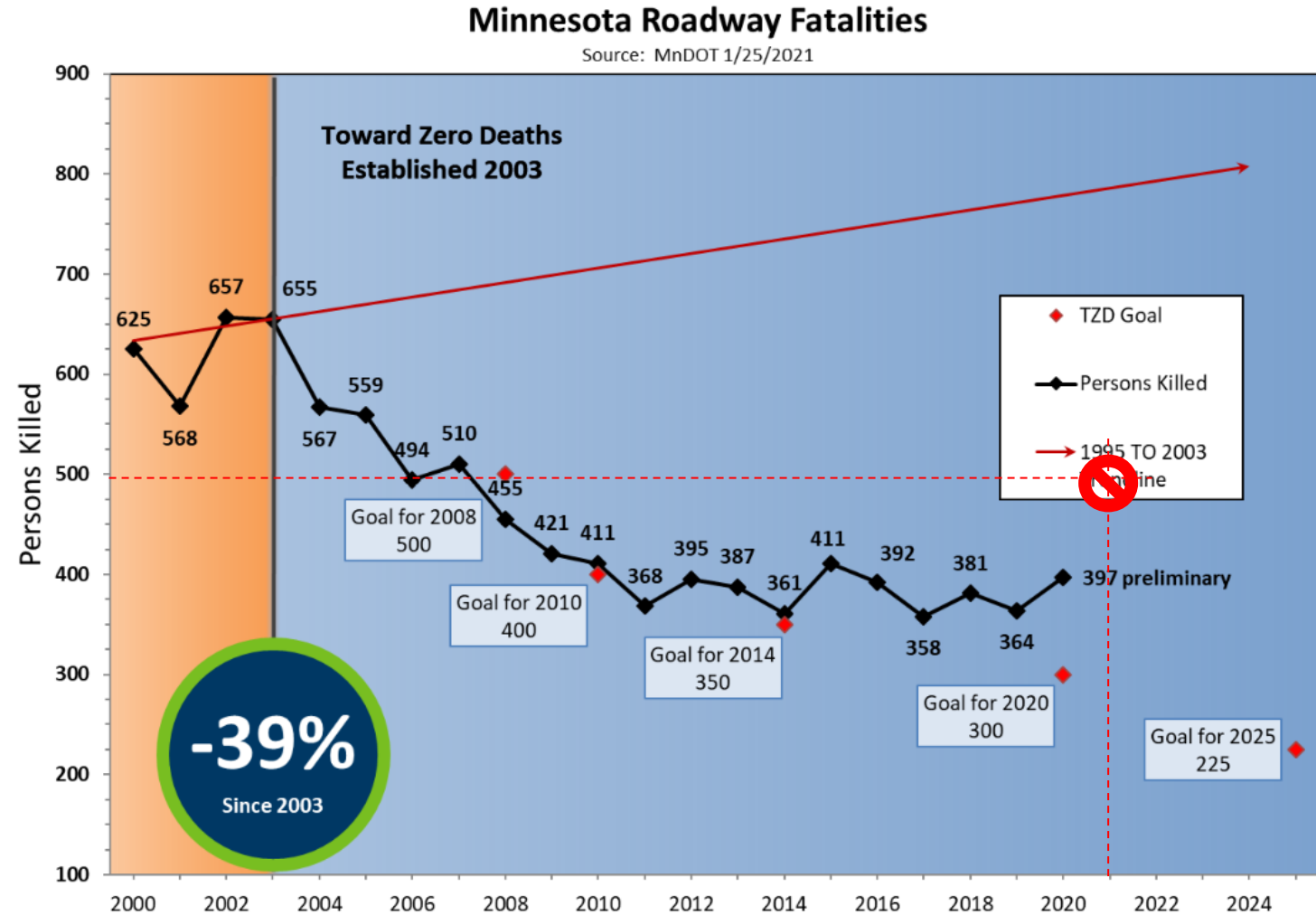


Long History

Minnesota has a long history in addressing safety on their roads

TZD established in 2003

2014 saw lowest number of fatalities since 1944



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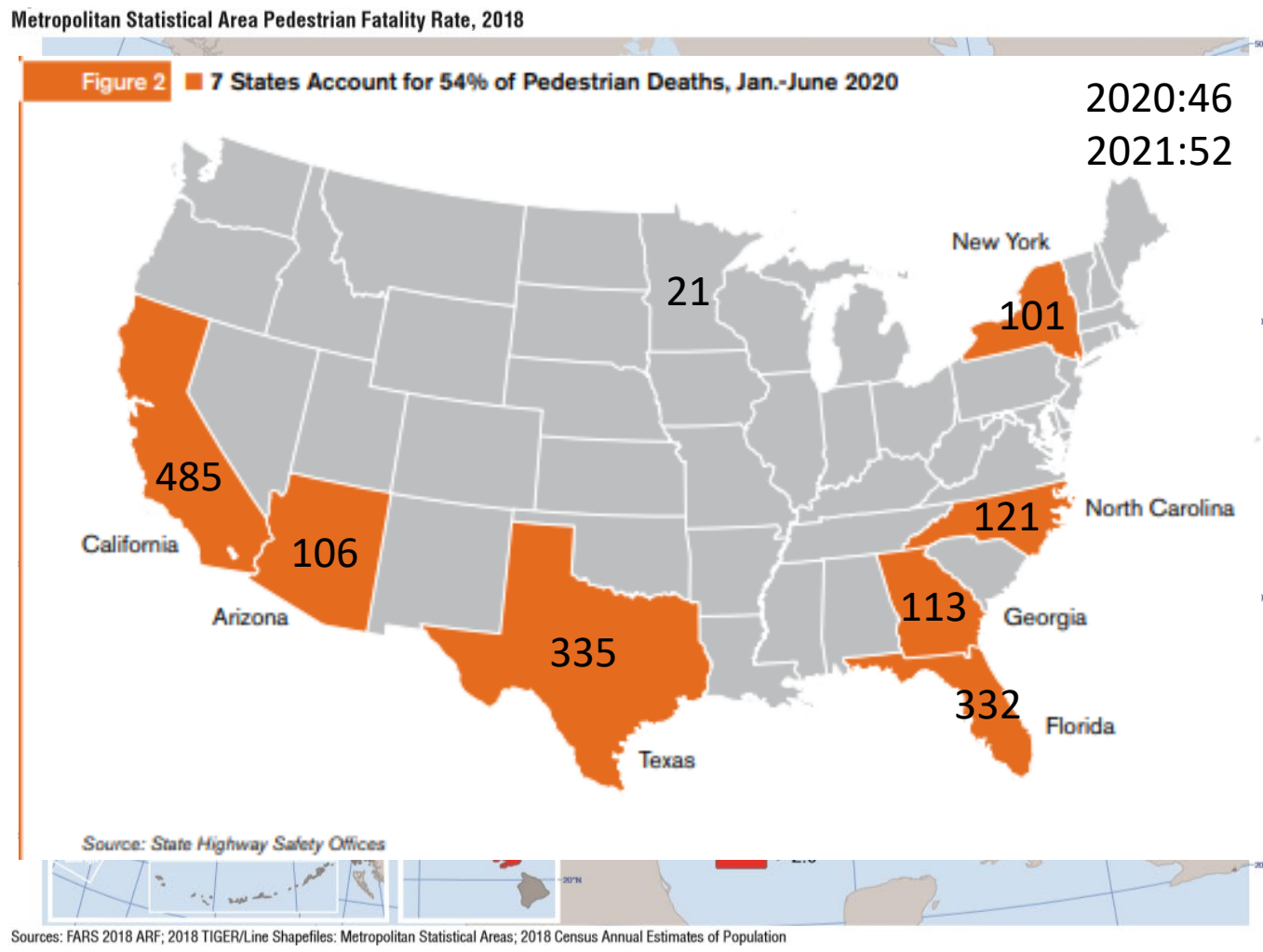
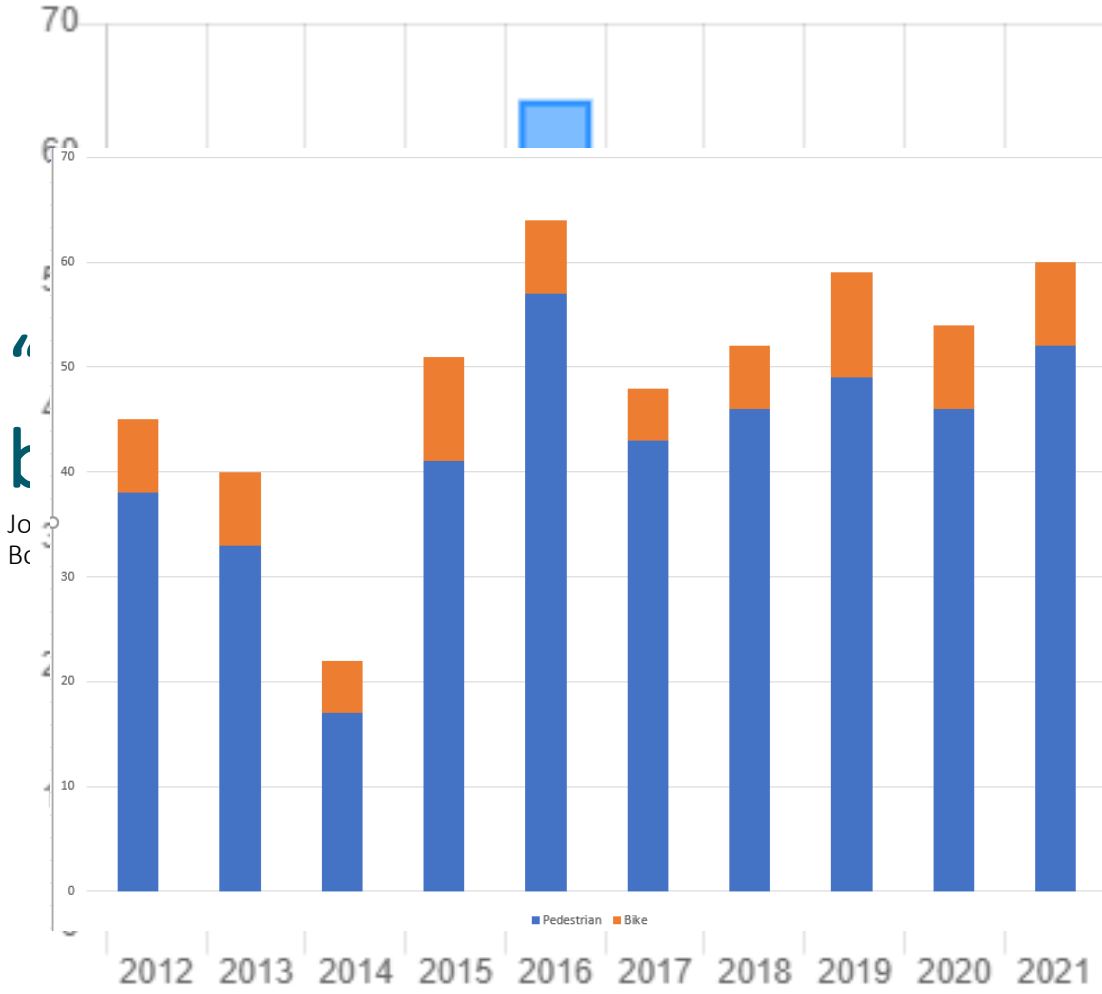
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MN Fatal Bike and Ped Crashes



State Aid for Local Transportation

MnCMAT2

Home Administration Programs CSAH MSAS Traffic Safety CAV Project Delivery Pavement Construction Training Contact Us

Minnesota Crash Mapping Analysis Tool (MnCMAT2)

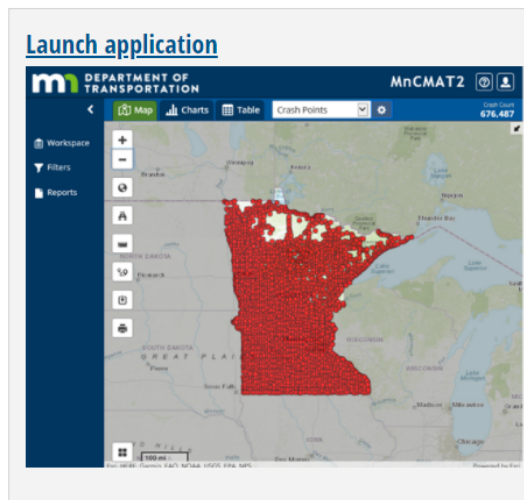
The (MnCMAT2) software enables the user to analyze crashes based on a large number of crash attributes, including: county, city, township, measure, intersection, and date ranges. The tool also enables the user to produce charts or maps to graphically view crash data and crash locations. Charts can be created by various crash attributes, including: crashes by county, month, day of the week, crash severity, manner of collision, surface conditions, and type of roadway. The software can produce a color map with plotted crashes and a series of charts or reports based on selected crash attributes.

MnCMAT2 contains a **rolling 10 year** dataset plus current year crash data as reported to Department of Public Safety.

Current data from **1/1/2011-9/30/2021**. **Crash data last updated on 9/30/2021**

The tool is to be used by traffic safety professionals only.

Data issue resolved: There was a data error for crashes prior to 2016 in the following counties: Mahnomen, Marshall, Martin and McLeod. This error is corrected. Please contact Loren Hill with any questions at loren.hill@state.mn.us



Click here to check whether you qualify for MnCMAT access

Resources

- [MnCMAT2 New User Registration Process \(PDF\)](#)
- [User manual \(PDF\)](#)
- [Quick start guide \(PDF\)](#)
- [MnCMAT2 training presentation \(PowerPoint\)](#)
- [Case studies \(PowerPoint\)](#)
- [MnCMAT2 data dictionary \(Excel\)](#)
- [Training videos and tutorials](#)
- [July 2020 enhancements \(PowerPoint and Video \(YouTube\)\)](#)
- [MnDOT Traffic Safety Data Sources \(PDF\)](#)
- [Crash Data Requests - Requestor role selection](#)

Contact

- mncmat.dot@state.mn.us

Interactive BaseMap

- [Enterprise MnDOT Mapping Application \(EMMA\)](#)

Speed Limit History

The More Things
Change, The More They
Remain The Same.

*Jean-Baptiste Alphonse Karr
French critic, journalist, and novelist (1808-1890)*

MINNESOTA SPEED LIMIT HISTORY

For an understanding of where the State of Minnesota has been regarding speed limits, a history of Minnesota speed laws from 1881 to the present is provided in the following list. This list is updated from information provided in the *2008 MnDOT Study and Report on Speed Limits* research.

See the table below or download a copy of [Minnesota Speed Limit History](#) (PDF).

Show entries

Search:

Year	Description
1881	Streetcars in the City of Duluth restricted to 6 mph.
1885	Incorporated villages or boroughs are authorized to regulate the rate of speed of engine-powered vehicles.
1911	<p>Rate of speed —Sec. 16.</p> <p>No person shall drive a motor vehicle upon any public highway "of this state at a speed greater than is reasonable and proper, having regard to the traffic and use of the highway, or so as to endanger the life or limb or injure the property of any person. If the rate of speed of any motor vehicle, operated on any public highway in this state, where the same passes through the closely built up portions of any incorporated city, town or village, or where the traffic is more or less congested, exceeds ten (10) miles an hour for a distance of one eighth of a mile, or if the rate of speed of any motor-vehicle, operated on any public highway of this state, where the same passes through the residence portions of any city, town or village, exceeds fifteen (15) miles an hour for a distance of one-eighth of a mile, or of the rate of speed of any motor-vehicle operated on any public highway in this state, outside the closely built up business portions, and the residence portions of any incorporated city, town or village, exceeds twenty-five (25) miles an hour for a distance of one-quarter of a mile, such rates of speed shall be prima facie evidence that the person operating such motor-vehicle is running at a rate of speed greater than is reasonable and proper, having regard to the traffic and use of the way, or so as to endanger the life or limb or injure the</p>

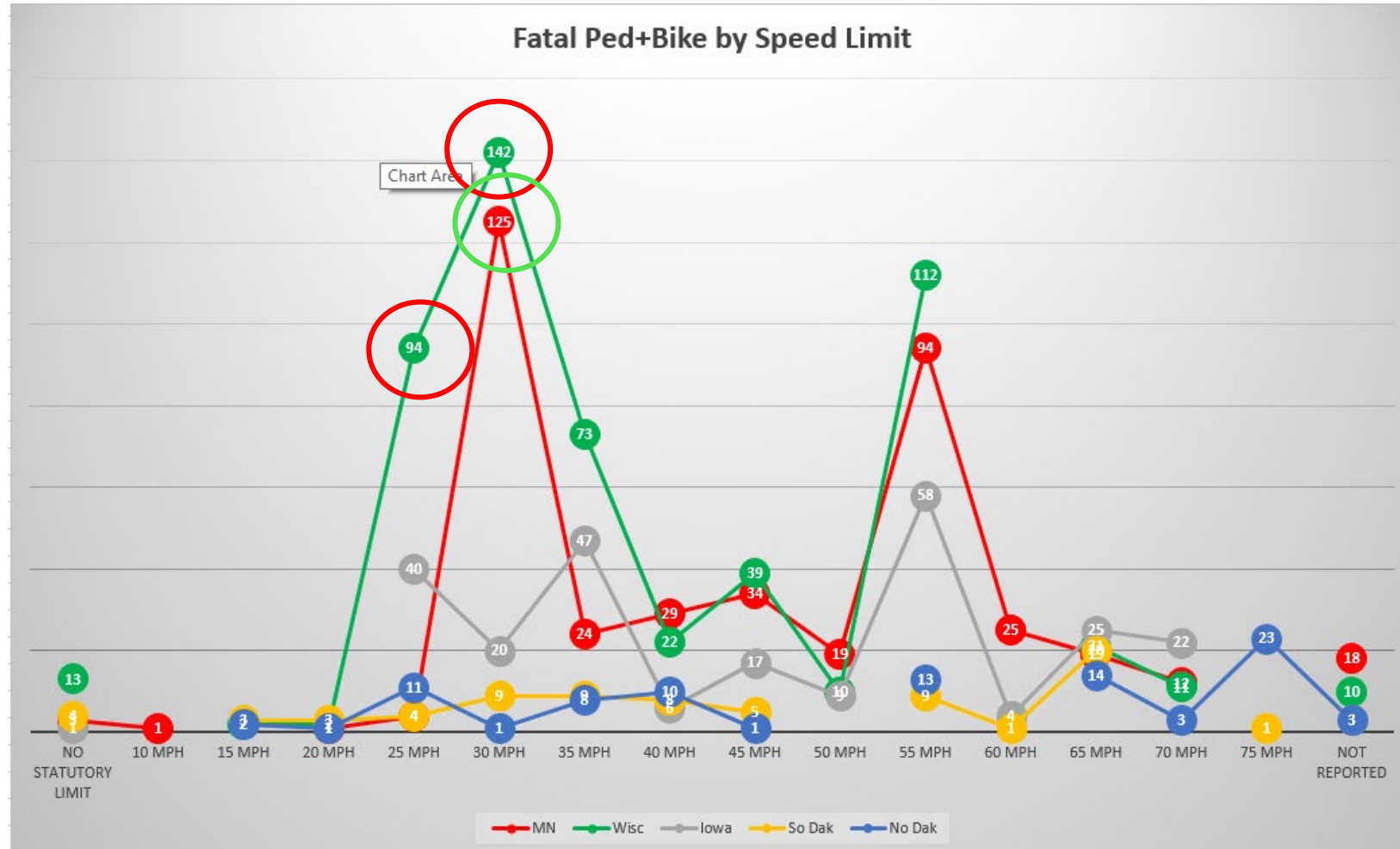
Current Practice in Minnesota

In Minnesota

- Statuary Urban Speeds
 - Minnesota – 30 mph
 - All neighboring states – 25 mph
- MnMUTCD (2019)
 - Engineering Approach
 - Should be within 5 mph of the 85th percentile speed of free-flowing traffic
 - May consider other factors

- **Operational Speed**
- **The Pace Speed**
- **Crash History**
- **Roadside Environment**
- **Road Characteristics**
 - Shoulder - Alignment
 - Grade - Sight Dist.
- **Parking Practices**
- **Non-Motorized Activity**

Data, Data Everywhere



Insurance Institute for Highway Safety Speed Study - Boston Ma

Speed	Before 30 MPH Limit	After 25 MPH Limit	Change
50th percentile	24.8	24.8	0
85th percentile	31.0	31.0	0
+25 MPH	47.9%	46.9%	-2%
+30 MPH	18.2%	18.1%	-0.5%

Speed Profile on Local Streets Wisconsin Vs. Minnesota

Roadway Width	Average 85% percentile Speed (MPH)	
	River Falls, WI	Woodbury, MN
30 Feet	32	32
32 Feet	33	32
36 Feet	31	34
40 Feet	34	34
42 Feet	34	36

Injury minimization/Safe system philosophy

Figure 4.5: Difference in deformation striking a solid object at 60 km/h and 100 km/h



in configurations

$$E_k = \frac{1}{2} m v^2$$

where

E_k = kinetic energy (Joules)

m = mass (kg)

v = velocity (m/s)

A Safe Road Transport System

Safe Speed

Road

Safe Road User

Biomechanical limits that the road user can tolerate without sustaining severe injury

"In road injury epidemiology, kinetic energy is the pathogen", LS Robertson – Epidemiologist.

Source: ANCAP

Source: Jurewicz, Sobhani et al. (2015) and based on Wrangborg (2003)

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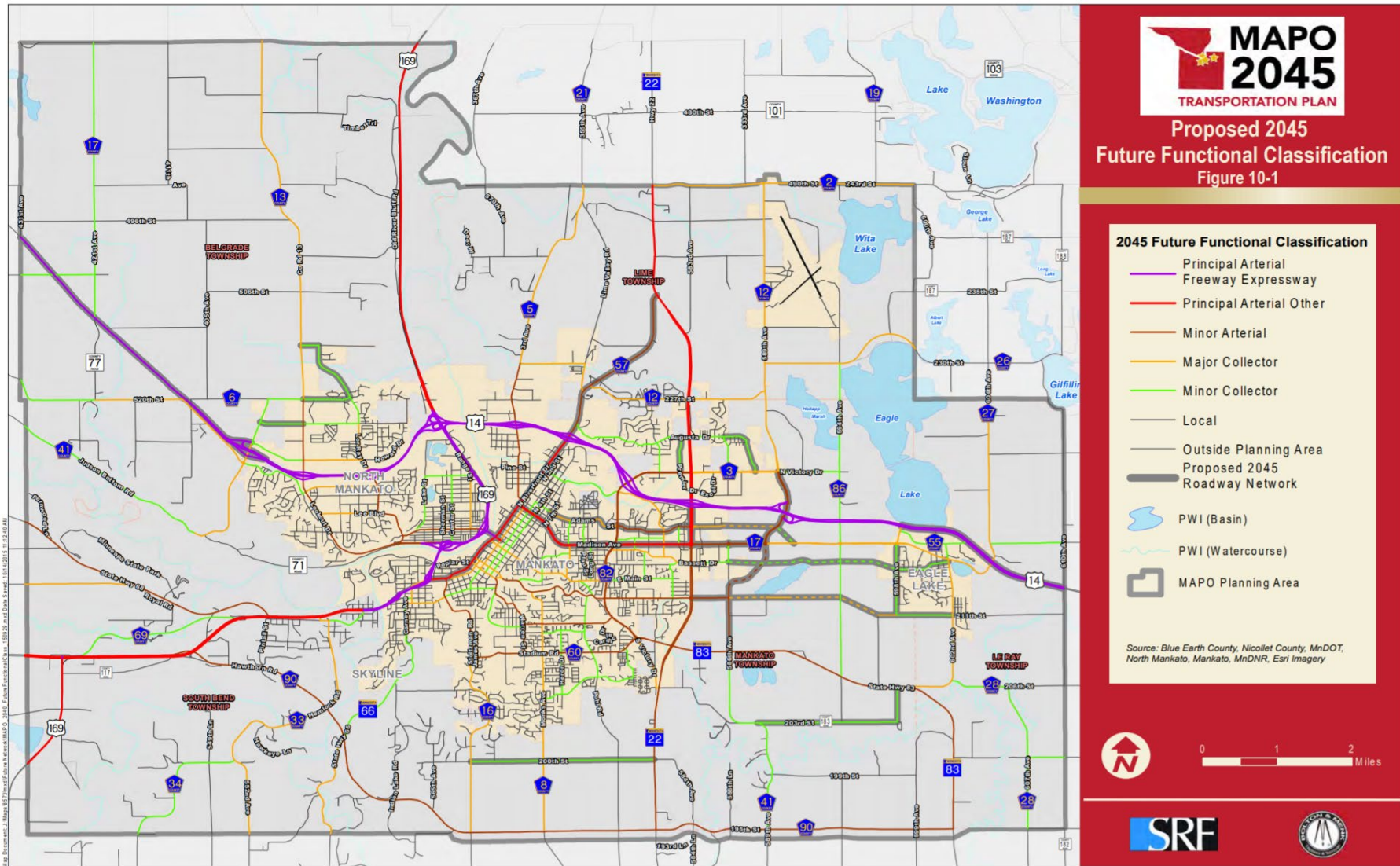
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- surrounding land use ucation and users when

•A vision for speed limits should recognize the different functions roadways provide.

Use and Function of Roadway Classification

Mobility	Arterials <i>Higher mobility, low degree of access</i>
	Collectors <i>Balance between mobility and access</i>
Land Access	Locals <i>Lower mobility, high degree of access</i>

Establishes level of roadway based on **fit and function**



Sample Functional Classification Map

So, What Are We Doing About It?

MnDOT

- Work Zone Speed Management Study
- Implementing Process Improvements

TZD Action Teams

- Speed Action Team
- Automated Speed Enforcement
- Urban and Rural Roadway Design
- The Choice of Speeding: Consumer Research

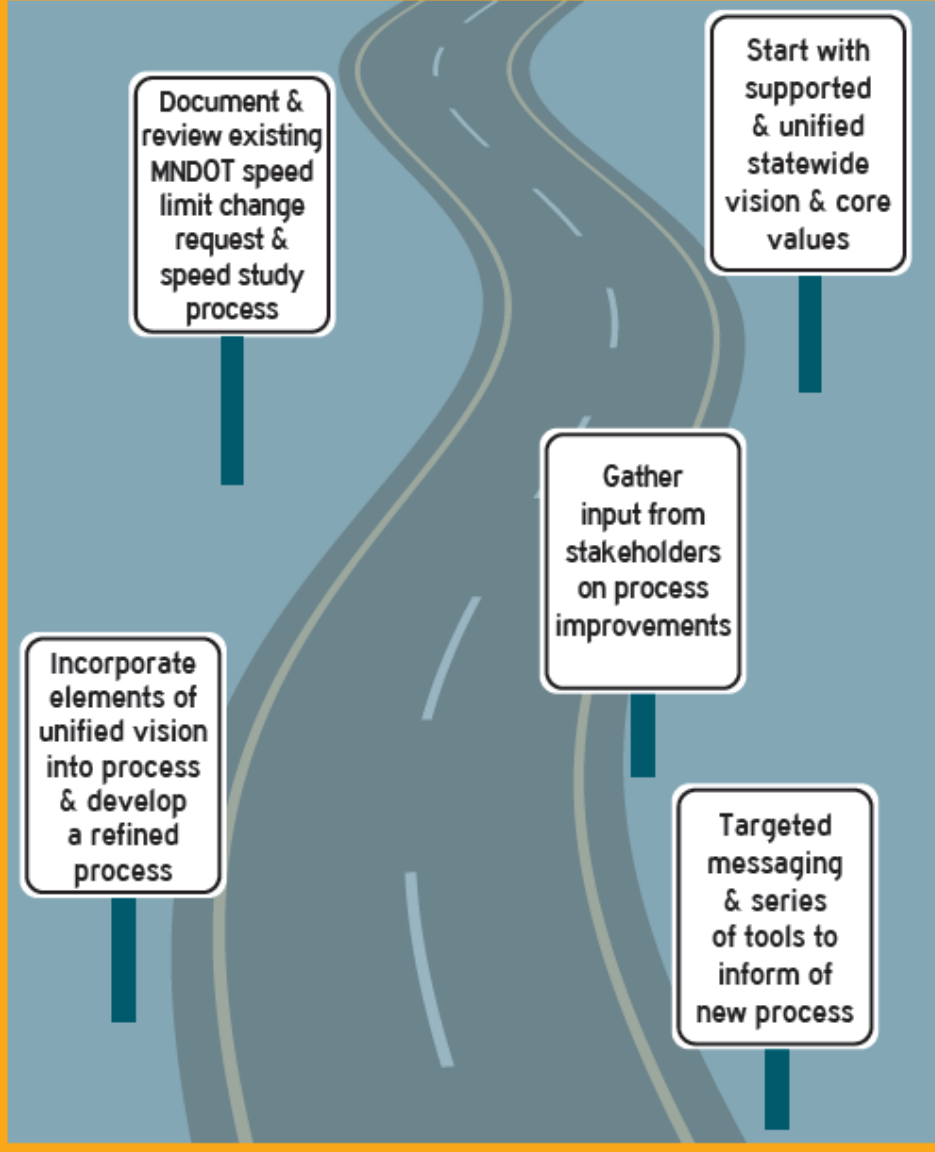
Local Road Research Board

- Impact of Speed Limit Changes on Urban Streets
- Guidelines for Determining Speed Limits on Municipal Roadways

Minnesota Safety Council

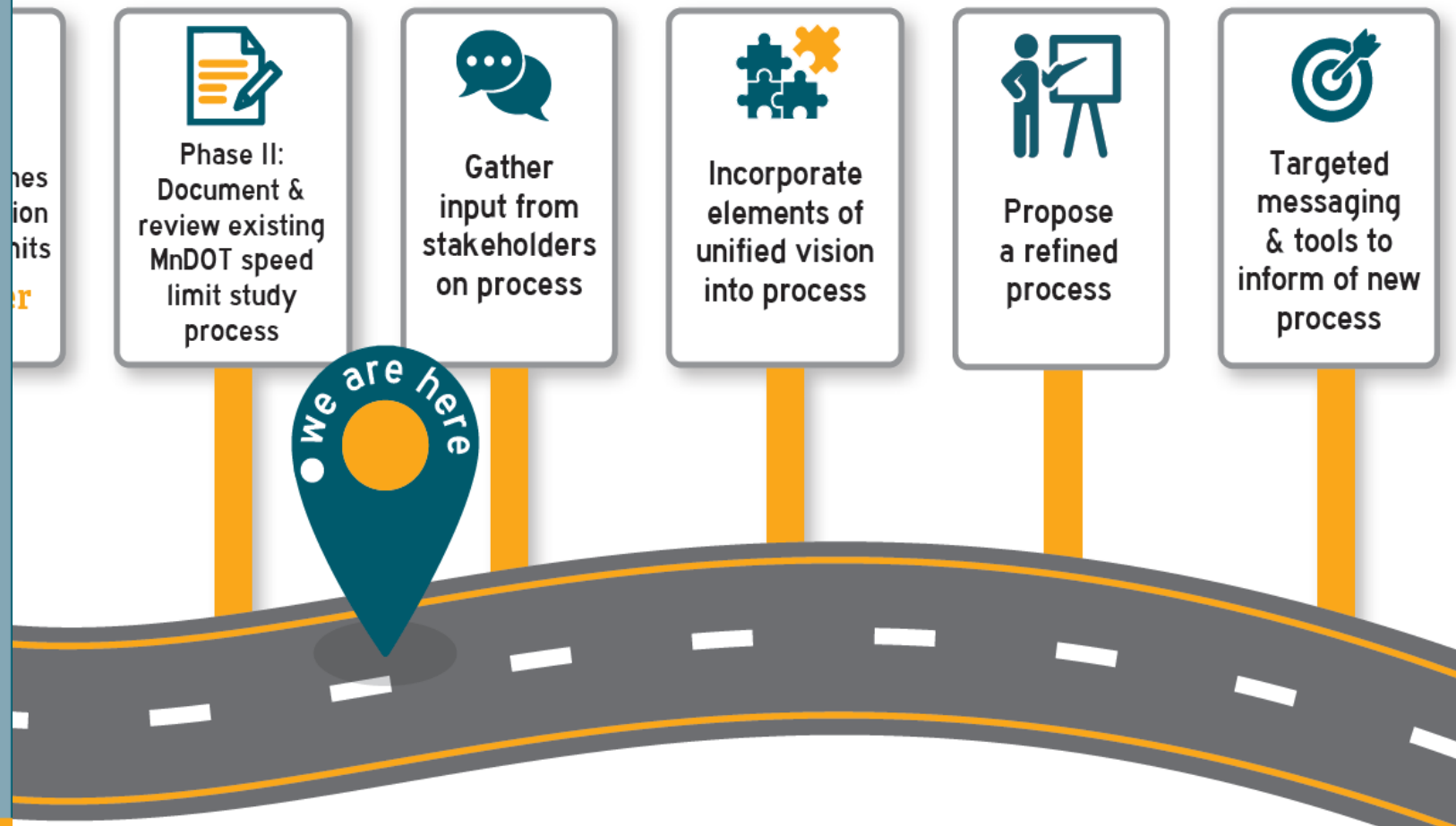
- Dynamic Speed Feedback Sign: Grant projects
- Speed Counts: Employer Campaign

Project Scope



STATEWIDE Speed Limit Vision PROJECT - Phase II

DRAFT Timeline



Task 2: Process Review and Refinement

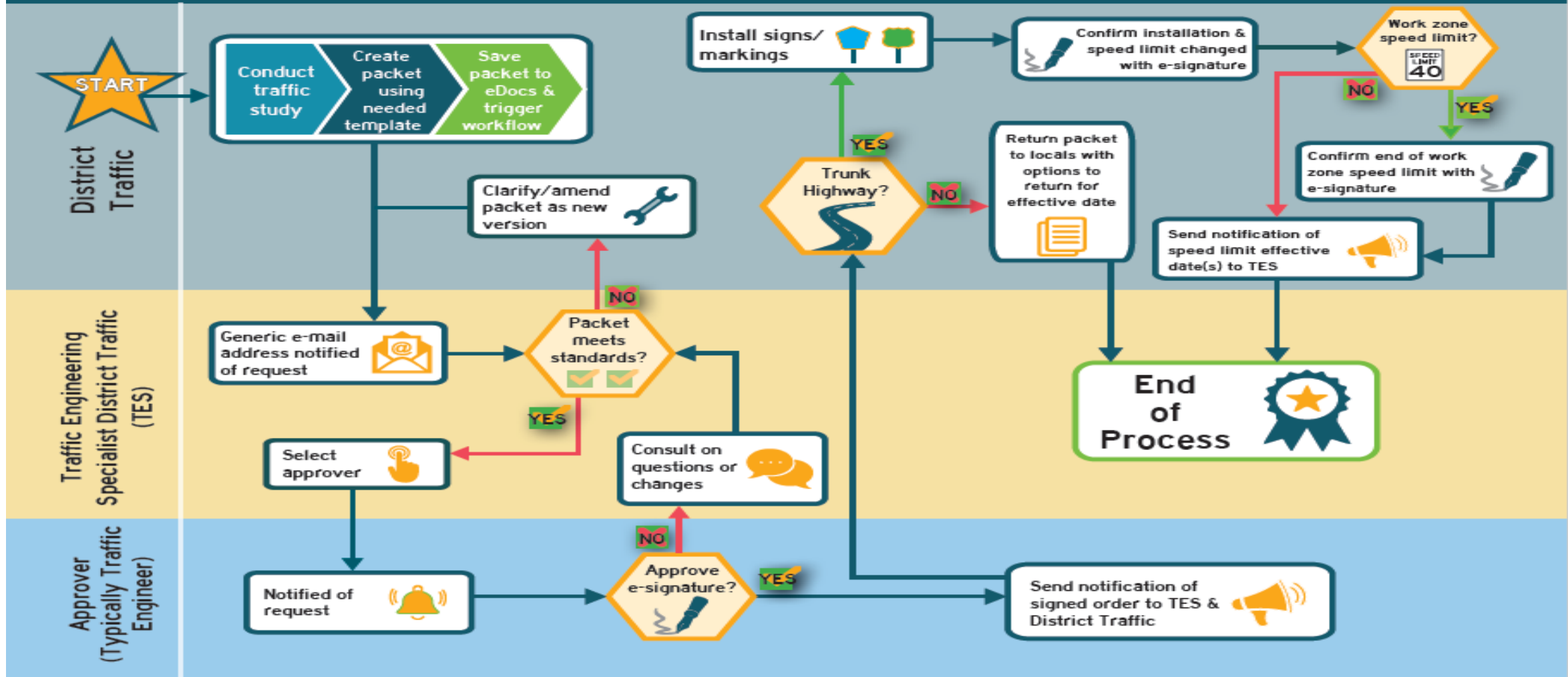
The outcome of this task will be documentation of the existing State engineering and traffic investigation process, and suggested refinements to improve the process and create greater transparency. Under this task, Contractor will:

1. Review the existing State speed limit request and speed study process with State staff. Examine the steps and timeline involved.
2. Review the existing process for areas of potential refinement to include:
 - a. Review process for completion of a speed study on newly reconstructed roadways
 - b. Discuss the process for re-establishing statutory speed limits
 - c. Develop a uniform submission package and process for requesting a speed study
 - d. Review data collection and data needs
 - e. Sample resolutions
 - f. Review and recommend way to decrease lag times, increase the number of speed studies that can be completed, provide a fixed time to completed deadline.
 - g. Consider adding a step: Provide a preliminary review of analysis and recommendations prior to speed limit authorization. (From requestor to District and District to Central Office)
 - h. Adding input from stakeholders (Cities and Townships) within and along the roadway corridor so that they feel they have been heard.
 - i. How to handle other factors, in addition to the 85th-percentile speed, that have a role in setting speed limits. Look at developing specific parameters.
 - j. Define how the elements and core values of the Minnesota Speed Limit Vision are incorporated into the final posted speed limit recommendation.
 - k. Discuss changes to the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD) and National Cooperative Highway Research Program (NCHRP) 966 research, report, and tools and how they could be used in the State process.
 - l. Lead discussion with State staff. Can State set speed limits outside the current boundaries? Will State set limits outside of the current boundaries? For example, speeds from 55 to 60 MPH.
 - m. Discuss process for revocation of an existing speed study to statute-based limits
 - n. How to handle special cases and places such as near schools, parks, downtowns.
 - o. How to address emotionally charged requests
 - p. Discuss the situations (provide examples) where a speed limit review is typically needed



STATEWIDE Speed Limit Vision PROJECT

PROCESS: Future State PHASE II DRAFT





Pilot Project I Speed Study Data Collection and DRAFT Recommendations

Rich Sanders
Polk County Engineer

Polk County CSAH 11

- [Interactive Map](#)

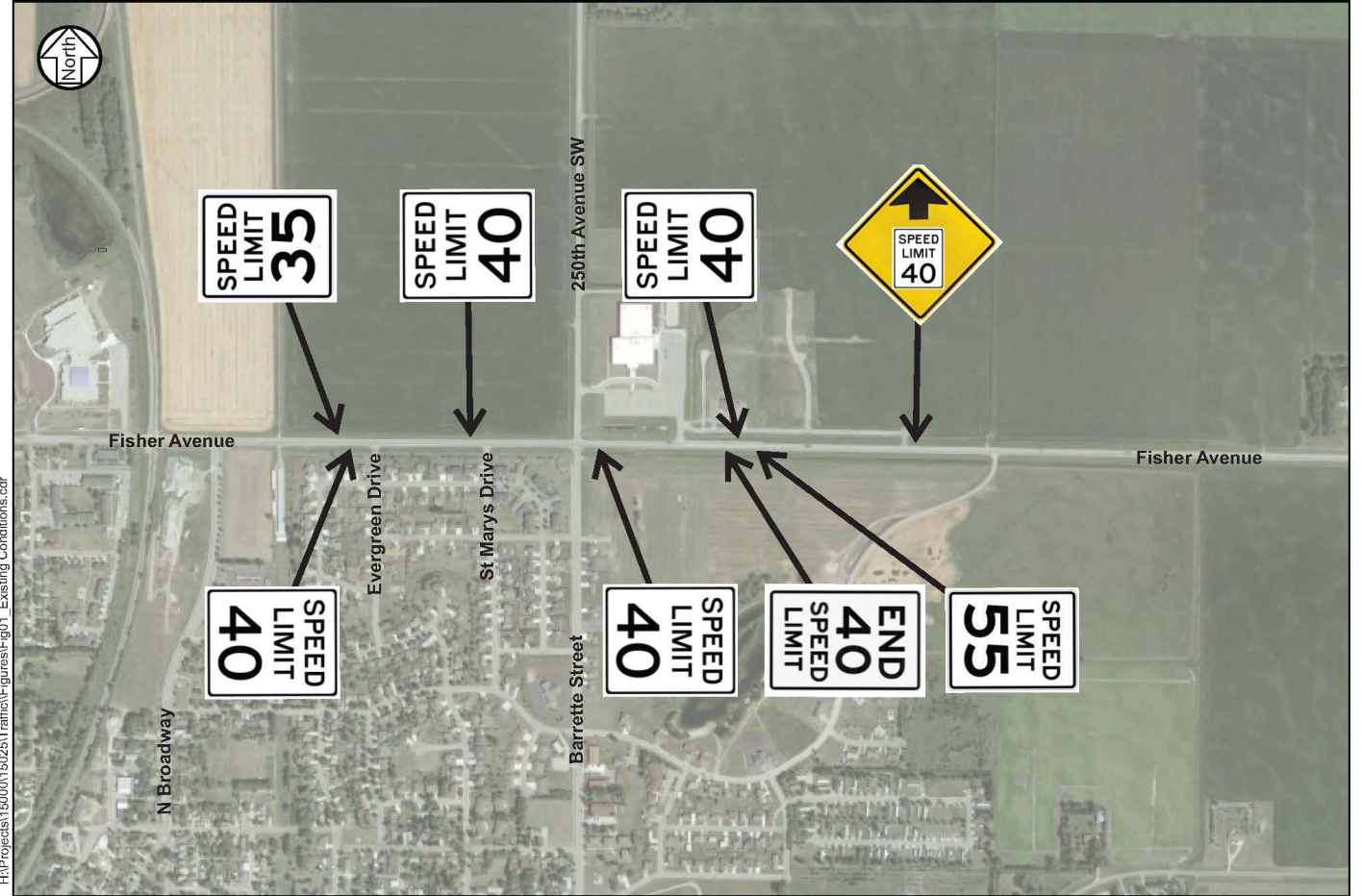
Finding a Consultant

- Not all consultants can perform the work needed to conduct a speed zone study and have it approved by MnDOT
- MnDOT has a list of approved consultants that they have vetted for such type work
- List can be found at: [Pre-qualification Program \(state.mn.us\)](https://www.state.mn.us/pre-qualification-program)
- Work Type Definition and Submittal Requirements 14.7 Traffic Engineering Special Studies

Polk Counties Selection

- Because we already had a contract for Widseth/SRF to help with the design of a roundabout at TH 75/CSAH 21 intersection we were able to amend our contract and add on the required services to do the speed zone study
- Widseth Crookston set up and tore down the counters. Provided the data to Widseth Alexandria and SRF
- Cost for services:
 - SRF - \$4,000
 - Widseth \$1,000

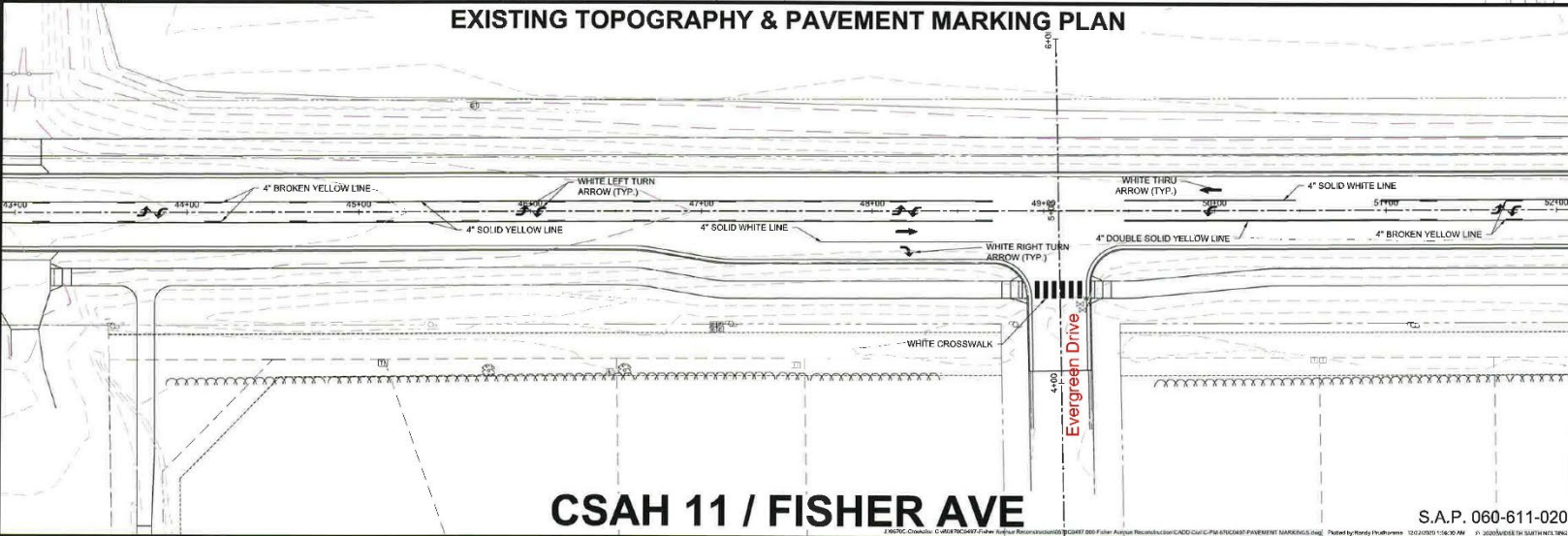
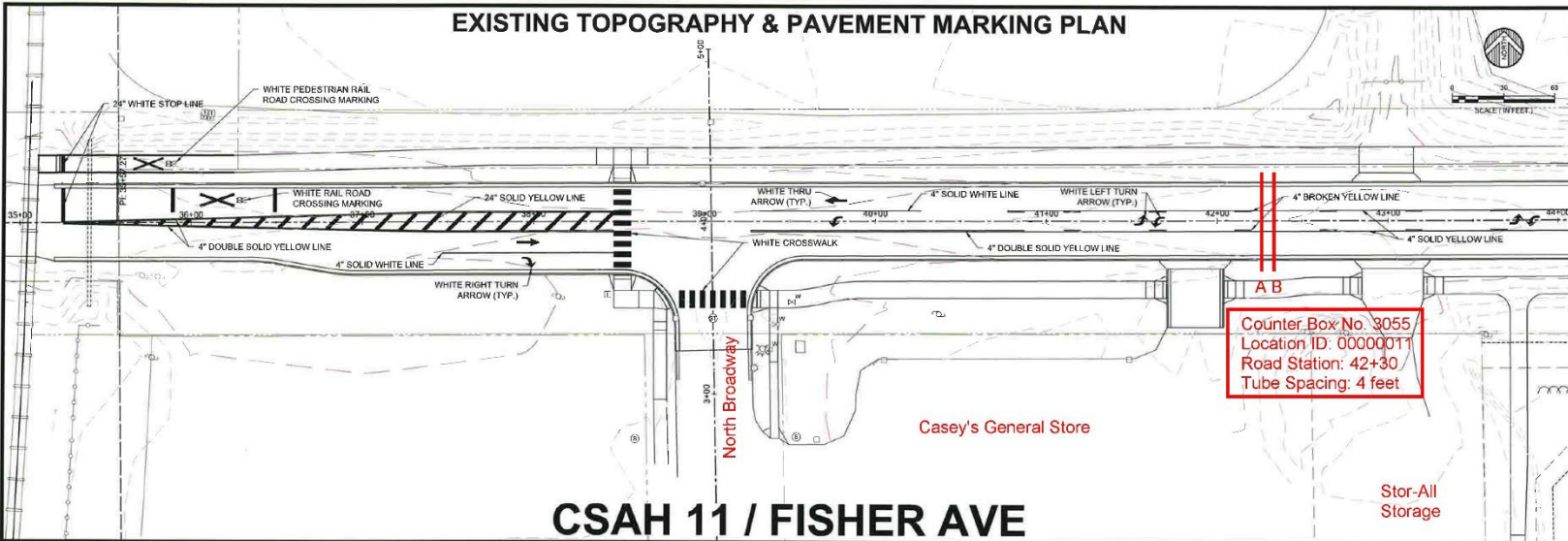
Current Speed Limit



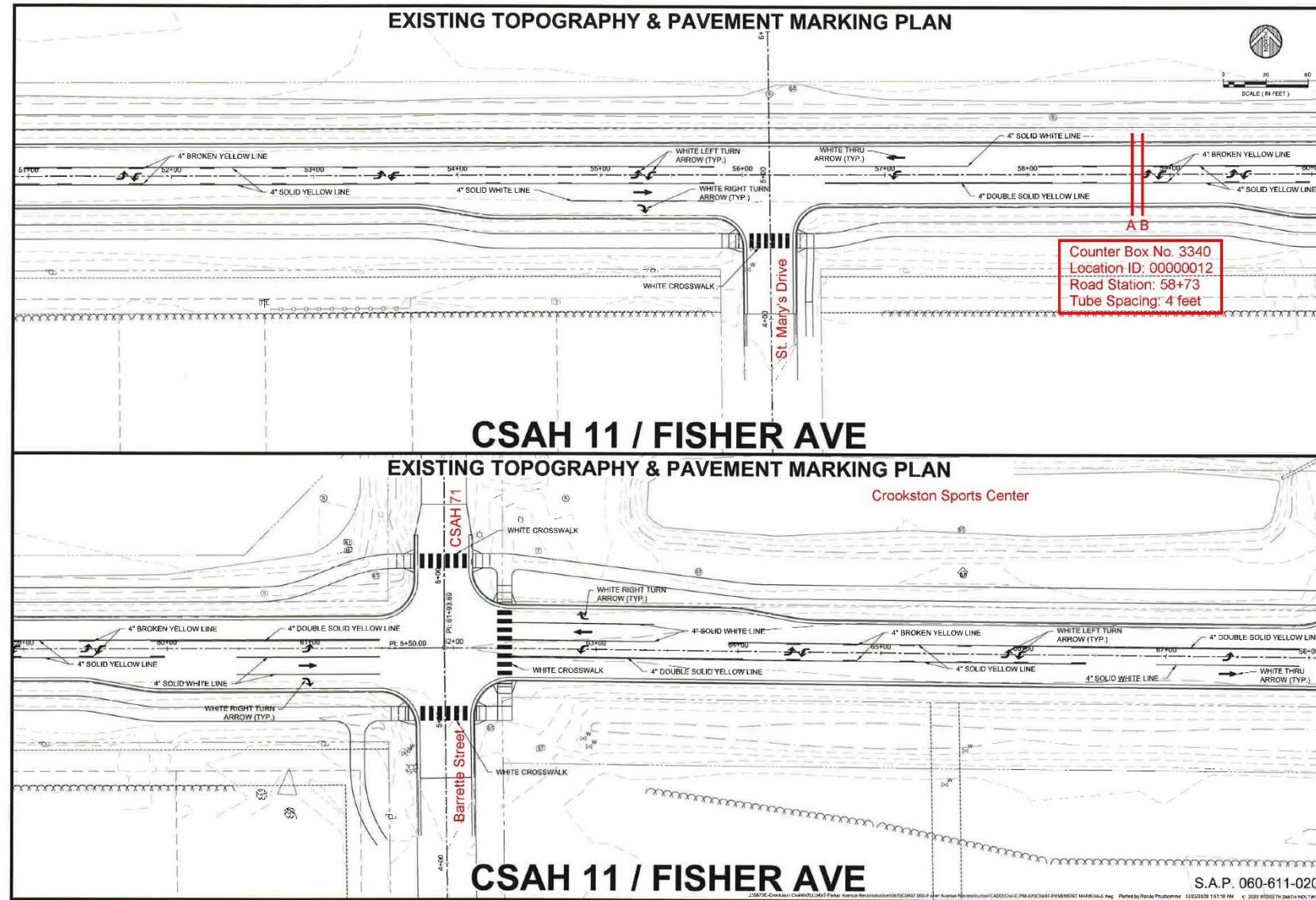
SRF Existing Conditions
CSAH 11 Speed Study
Polk County
02115025
December 2021

Figure 1

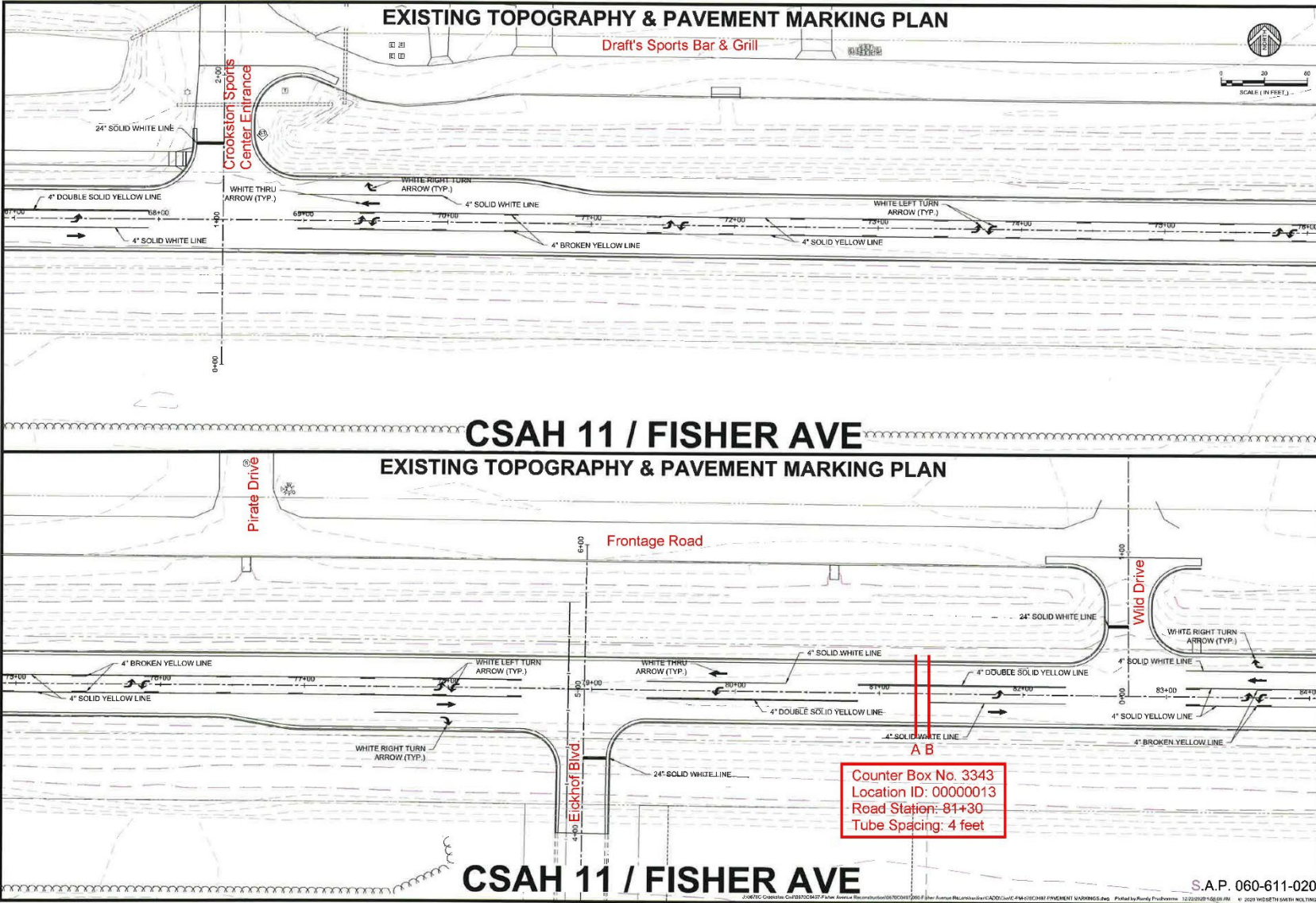
Counter Locations



Counter Locations



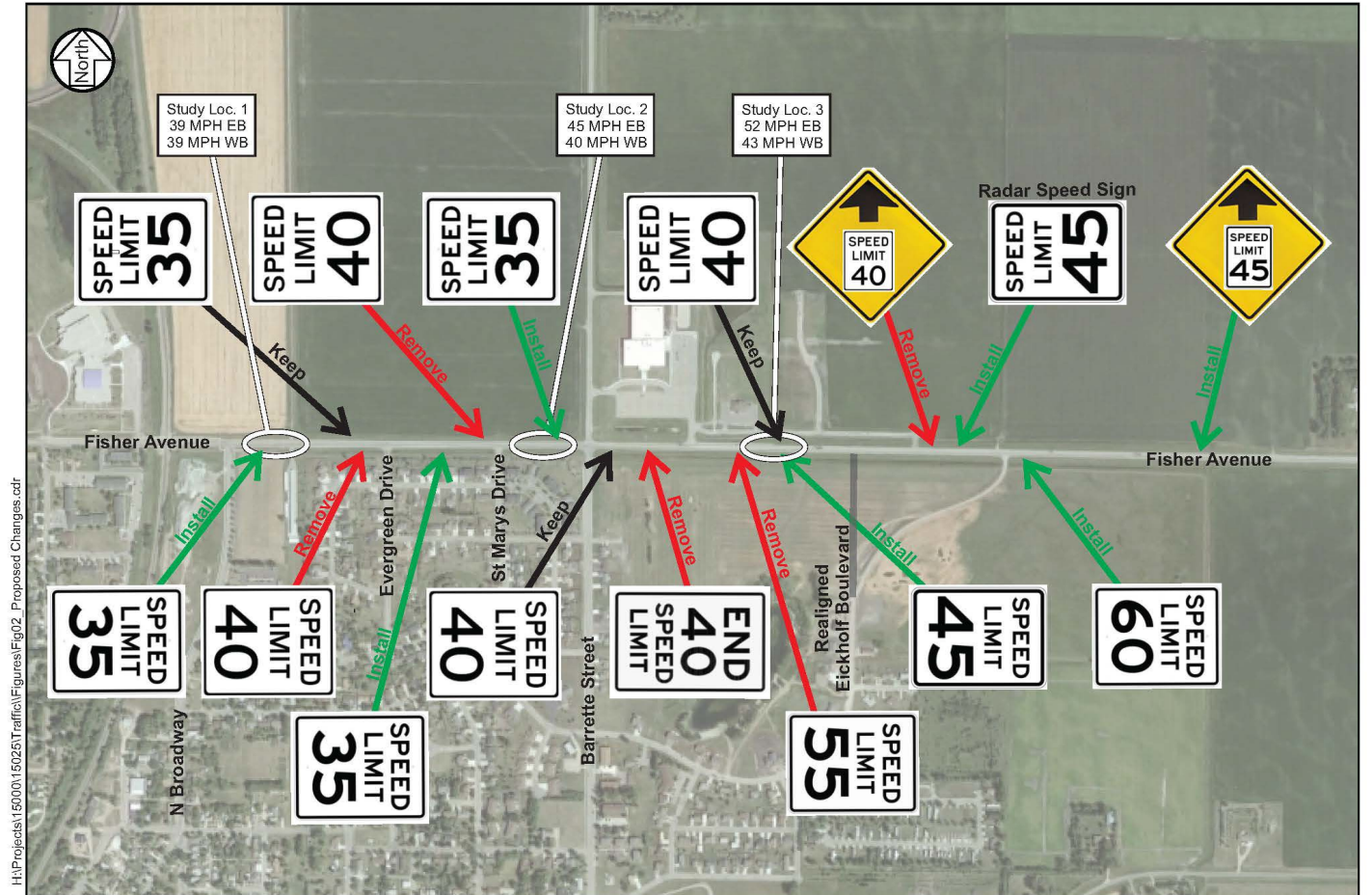
Counter Locations



Time Frame

- Widseth set up the counters on October 5th at 2pm.
- After collecting data for 2 days sent counters back to MNDOT for them to retrieve the data.
- Sent to SRF on October 25th for analysis
- OOOOPs had counters set up for 1 way traffic instead of 2 way so have to recount.
- Set up counters on November 8th for recount
- Sent data to SRF on December 2nd
- SRF had preliminary results on December 14th, Final Report submitted to MNDOT on January 10th

Proposed Outcome



H:\Projects\15000\15025\Traffic\Figures\Fig02_Proposed Changes.cdr

SRF Proposed Changes
CSAH 11 Speed Study
Polk County
02115025
December 2021

Figure 2

Joe Gustafson
Washington County Traffic Engineer

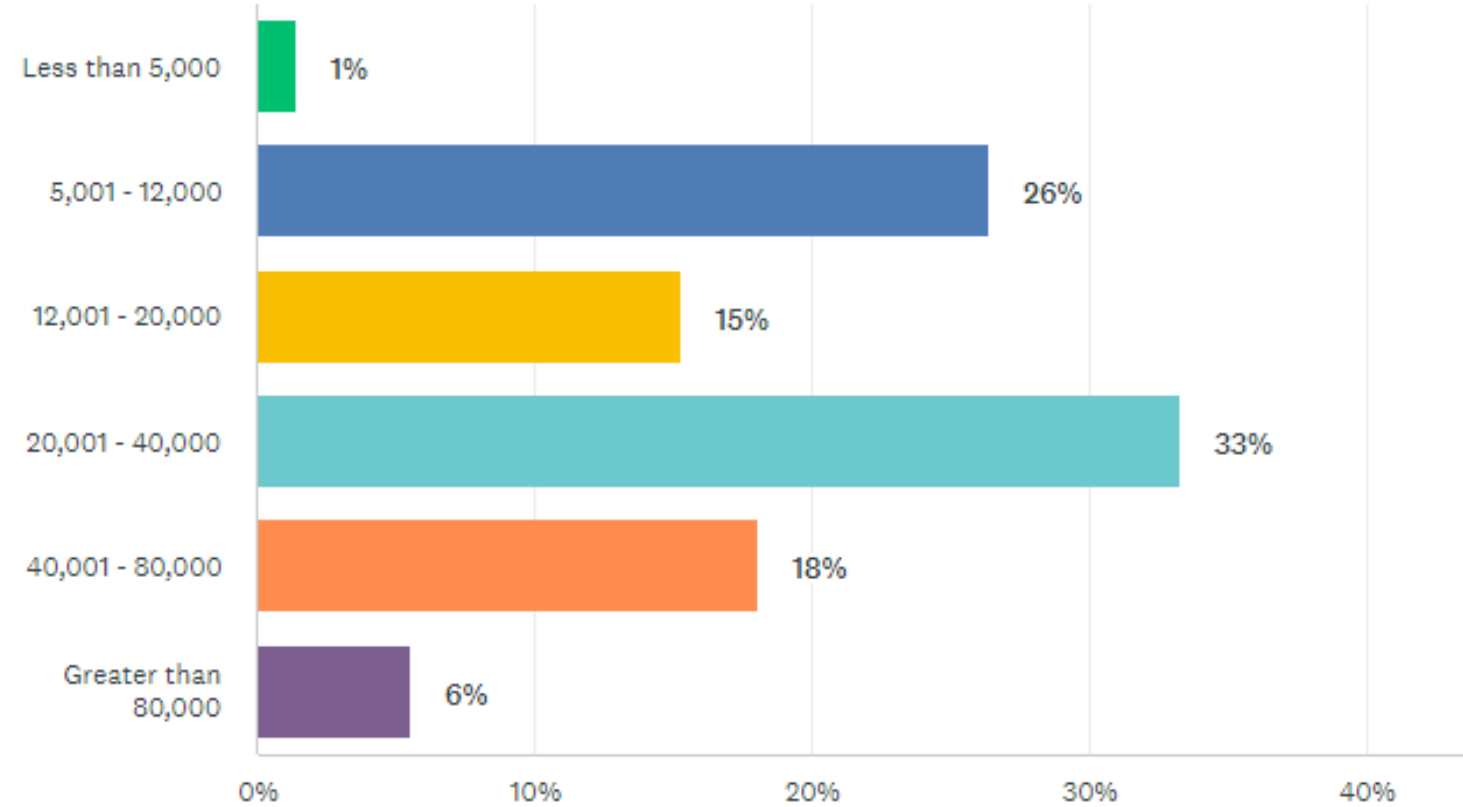


I Some County Perspectives

Speed Limit: City Questionnaire

What is the population of your city?

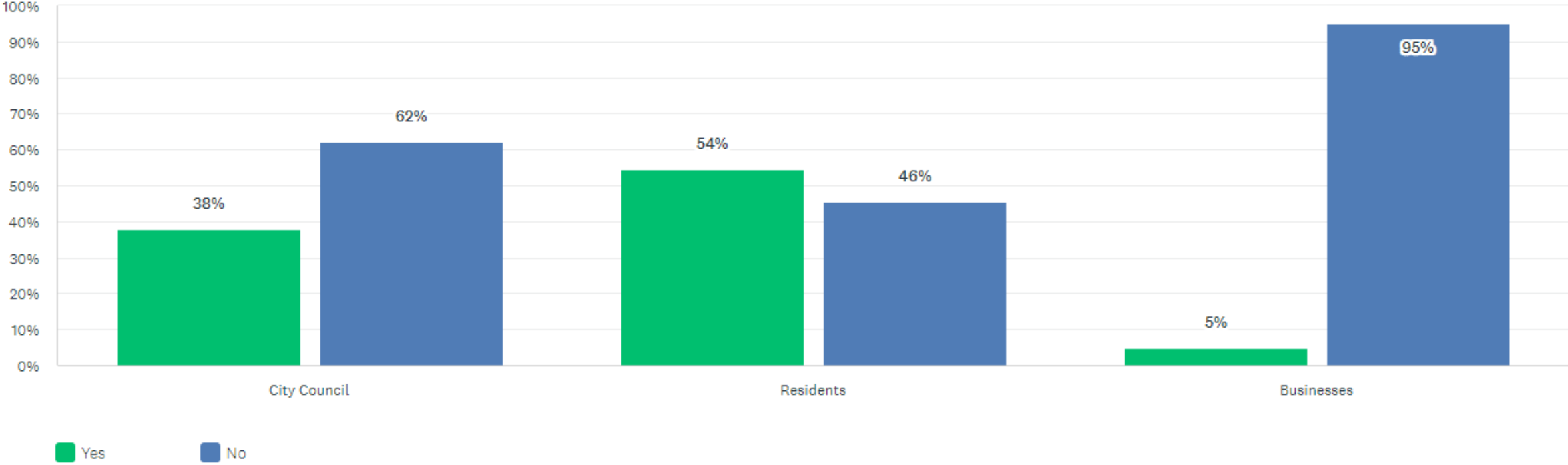
Answered: 72 Skipped: 3



Speed Limit: City Questionnaire

Has anyone shown interest in changing speed limits because of the law?

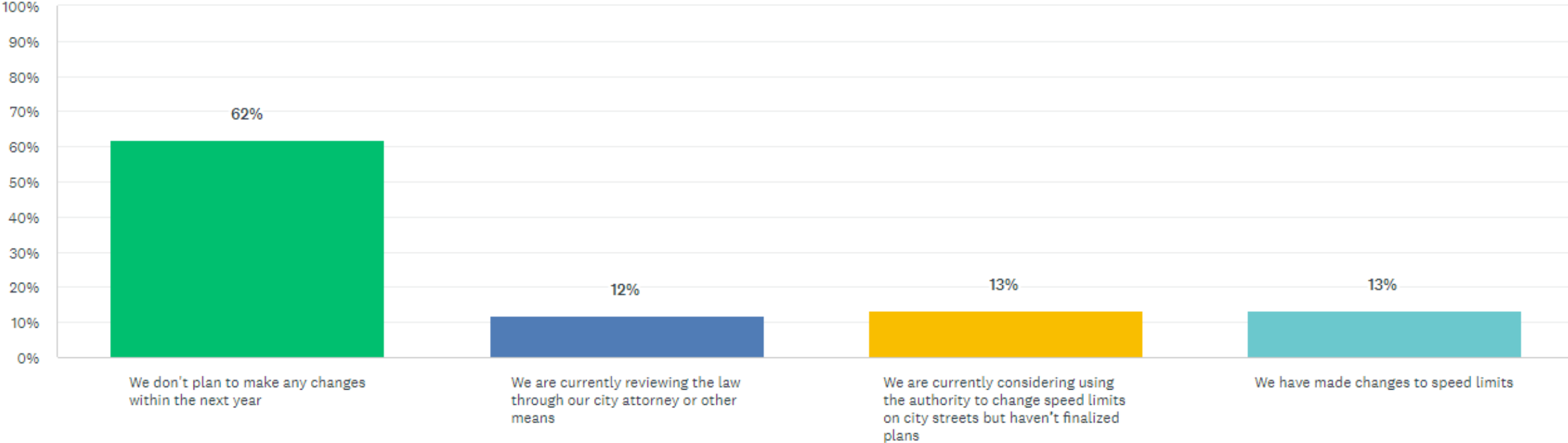
Answered: 68 Skipped: 7



Speed Limit: City Questionnaire

Regarding the authority to set speed limits on city streets, please choose the answer that best describes your city's status:

Answered: 68 Skipped: 7

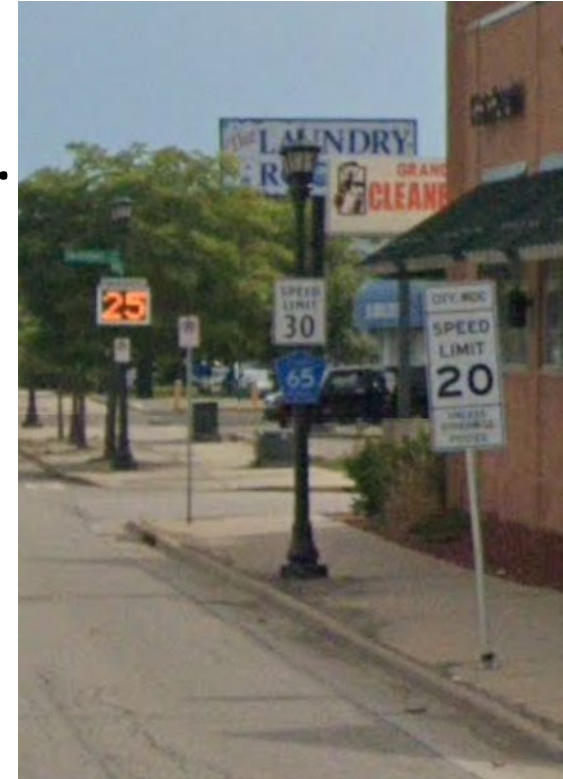


New Speed Limit Law

- Enacted during 2019 special session, in force August 1, 2019
- Allows cities to set speed limits on city roadways
- Does not apply to county roads or trunk highways
- Does not apply to townships
- Minneapolis and St. Paul – Implemented fall 2020 – Mostly 20 mph

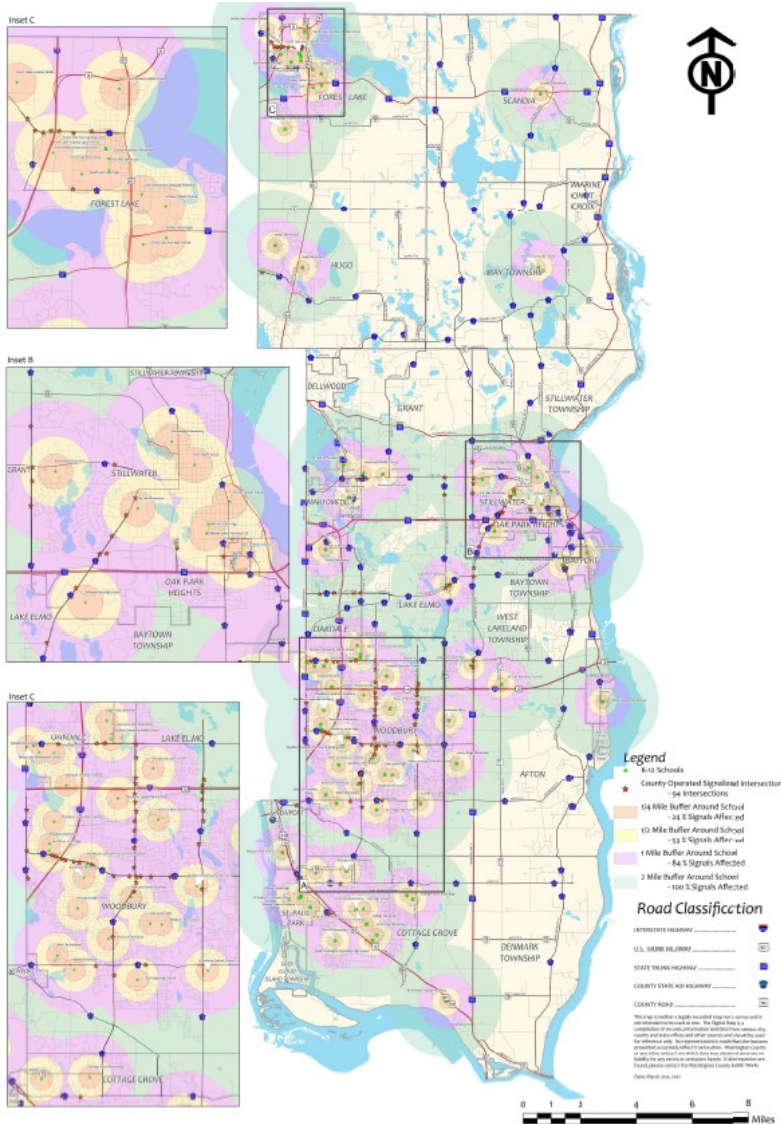
Within Washington County

- Some prior under-30 postings remain in place.
- Not aware of any cities enacting new city-wide limit (yet).
- Significant interest in at least one city
 - City inquired about “city-wide” speed limit signs on CR, CSAHs
 - “City-wide speed limit XX Unless Otherwise Posted”
 - County rejected request
 - County concerned about confusing messaging on county roads
 - Conflicts with county road signage
 - Roadways along municipal boundaries
 - City would need to replace in place signs on city streets





















Likely next steps

- Expect continued pressure for city control over county & state roads.
- Was marketed as a tool for ped safety and livability
 - Reality – Pedestrian crashes are more survivable at lower speeds
 - Reality – County & state roads are where ped crashes tend to occur
 - Also reality – Posting lower speed limits doesn't affect speeds
 - ALSO reality – Less traffic enforcement = higher speeds
- March 2021 Proposal (HF 1566): Give cities control over county and TH speed limits if within 2 miles of a school...

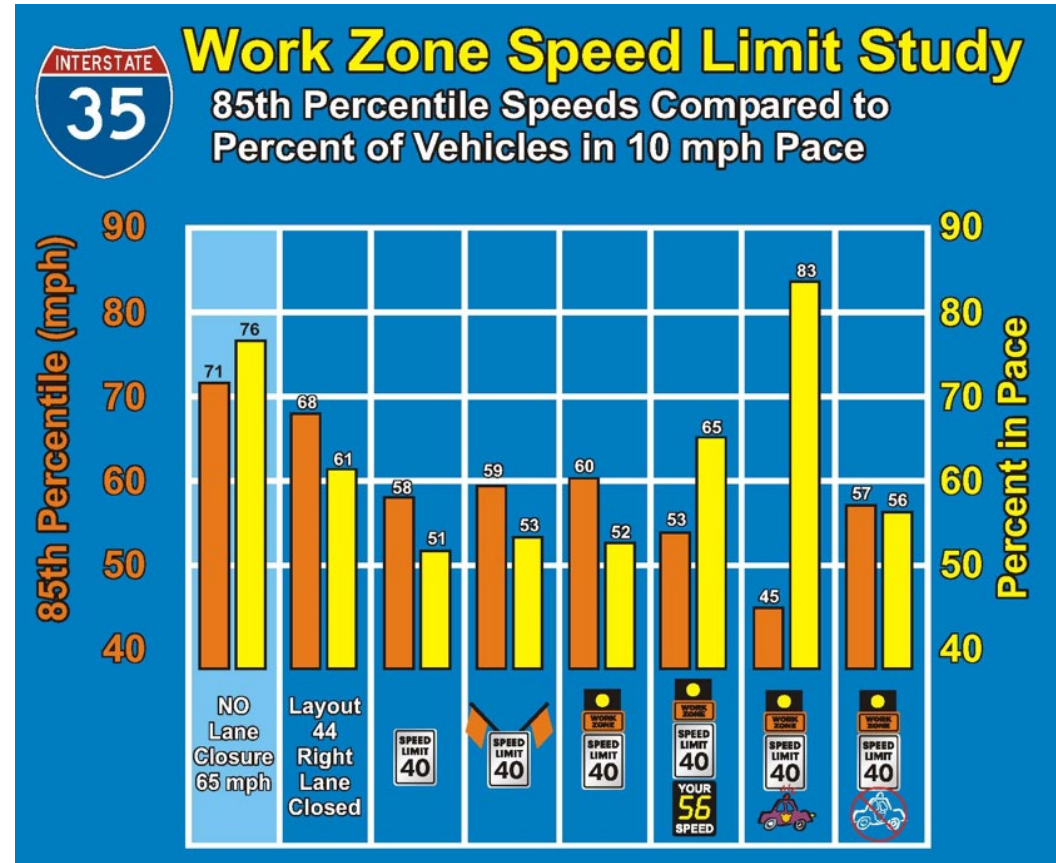


- 2021 Proposal (HF 1566) – 2 mile radius
- What sounded like a limited proposal would have affected majority of Washington County
- Proposal did not become law, but could come back

Posted Speed vs. Actual Speed

Speed Zoning Studies					
Study Location	Before	After	Sign Change +/- MPH	85% Before After	Change MPH
T.H. 65			-10	34 34	0
T.H. 65			-10	44 45	+1
Anoka CSAH 1			-5	48 50	+2
Anoka CSAH 24			+15	49 50	+1
Anoka CSAH 51			+5	45 46	+1
Hennepin CSAH 4			-10	52 51	-1
Noble Ave			+5	37 40	+3
62nd Ave N			-5	37 37	0
Miss. St			+5	39 40	+1

Source: MN Traffic Safety Fundamentals Handbook, MnDOT Data



Source: MnDOT – Dan Brannan

Continuing Challenges

- Speed **is** a safety problem – and a growing one
- Increasing distractions within the car
- Greater variability in speed limits
- “Fast” doesn’t feel as fast as it once did, *at least to drivers*
- Shifting social attitudes about individuality, police, equity, and more
- “Grade inflation” of enforcement – 5 over, 10 over, 15 over...
- Are 85% of drivers still driving at a “reasonable” speed?
- Increasing technology – Automated enforcement? Automated vehicles?

Some opinions

- Posting lower limits may influence law-abiding drivers, enable ticketing
- Odds of being stopped for speeding remain low
- Speeds will creep up until odds of a citation become noticeably greater
- Automated enforcement could mean:
 - Fewer roadside police interactions (good or bad?)
 - More citations, more court interactions, more unpaid fines, more consequences
 - More public pushback against unreasonably low speed limits?

Speed Limit Vision: Next Steps

Education, Education, Education!

Sharing the Vision

Process improvement related to speed study materials, documents.

Develop additional tools and resources.

Questions?

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