

# MN County Road Safety Plan Updates

TZD CONFERENCE

NOVEMBER 16, 2016




# CRSP History

- ▶ 2009-2013 – Developed CRSP's for all 87 counties in MN
- ▶ 2011-2015 – Funded construction of safety strategies
- ▶ 2016 – Starting 5 year project to update all 87 plans

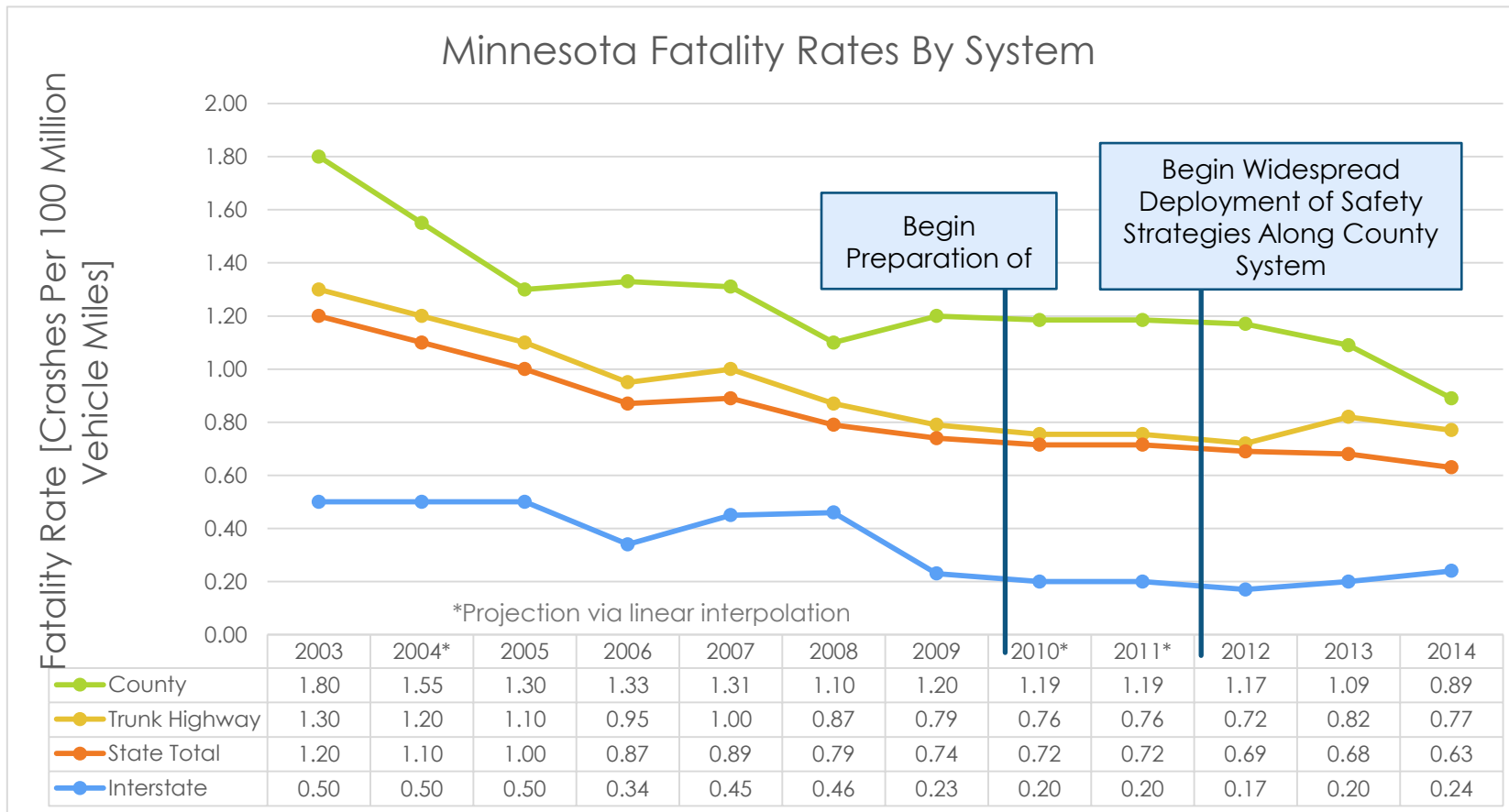


# CRSP History

- ▶ The entire county system was evaluated (almost 30,000 miles, 19,000 horizontal curves, and 16,000 intersections)
- ▶ Prioritized lists of county facilities were identified
- ▶ Over 17,000 safety projects (valued at almost \$250 million with an average cost less than \$15,000) were developed for the high-priority candidate locations
- ▶ County participation in HSIP significantly increased

Intersection on MN 27 at CSAH 8			
<b>Roadway Data</b>			
Description:	CSAH 8		
Route System:	MN		
Route No:	27		
District:	3		
Environment:	Rural		
Design Type:	Conventional		
Configuration:	X		
Intersection Geometry:	Traditional		
Traffic Control Device:	Thru-Stop		
Street Lights:	Present		
Flashers:	Sign Mounted		
Major ADT:	1,150		
Minor ADT:	810		
Total Entering ADT:	1,960		
<b>Crash Data</b>			
2009-2013 Crash History		5 Years	
		Total	Total Right Angle
Crash Frequency	7	3	1
Density (per int per yr)	1.400	0.600	0.200
Rate (per MEV)	1.957	0.839	0.280
<b>Systemic Safety Risk Factors</b>			
	Value	Threshold Value	Star Assignment
Skew	10	≥ 10°	*
On/Near Curve	Yes	Present	*
Adjacent Development	Yes	Present	*
Previous Stop >5 Miles	Yes	Present	*
Volume Cross Product	931,500	≥ 400,000	*
Severe RA Density	0.200	≥ 0.007	*
		Total Stars	*****
<b>Short List of Strategies Considered</b>			
	Type	Unit Cost	Unit
Upgrade Signs & Markings	Proactive	\$ 3,000	2
All-Way STOP Conversion	Proactive	\$ 1,000	0
Street Lights	Proactive	\$ 6,000	0
Left & Right Turn Lanes	Proactive	\$ 150,000	0
Mainline Dynamic Warning Sign	Proactive	\$ 75,000	0
All Approach RICWS	Proactive	\$ 150,000	1
Roundabout	Proactive	\$ 2,000,000	0
		Total Estimated Project Cost	\$156,000
Page: 1			
Segment ID: 3.027.030			
Date: 1/22/2016			

# CRSP Fatality Rates



# CRSP Update Goals

- ▶ Produce Updated County Road Safety Plans:
  - ▶ Customized approach
  - ▶ Updated crash data
  - ▶ Individual outreach and engagement plans
  - ▶ Additional safety practices
- ▶ Provide technical support for county implementation of HSIP-funded safety projects
- ▶ Focus on reducing Fatal and Incapacitating Injury crashes – build on prior results and continue to bend the trendline



# Counties included in Phase 1

Beltrami – Bruce Hasbargen

Carlton – Mike Tardy

Chisago – Joe Triplett

Crow Wing – Tim Bray and Rob Hall

Freeborn – Sue Miller

Goodhue – Greg Isakson

Hennepin – Carla Stueve and Jason Pieper

McLeod – John Brunkhorst

Meeker – Ron Mortensen

Morrison – Steve Backowski

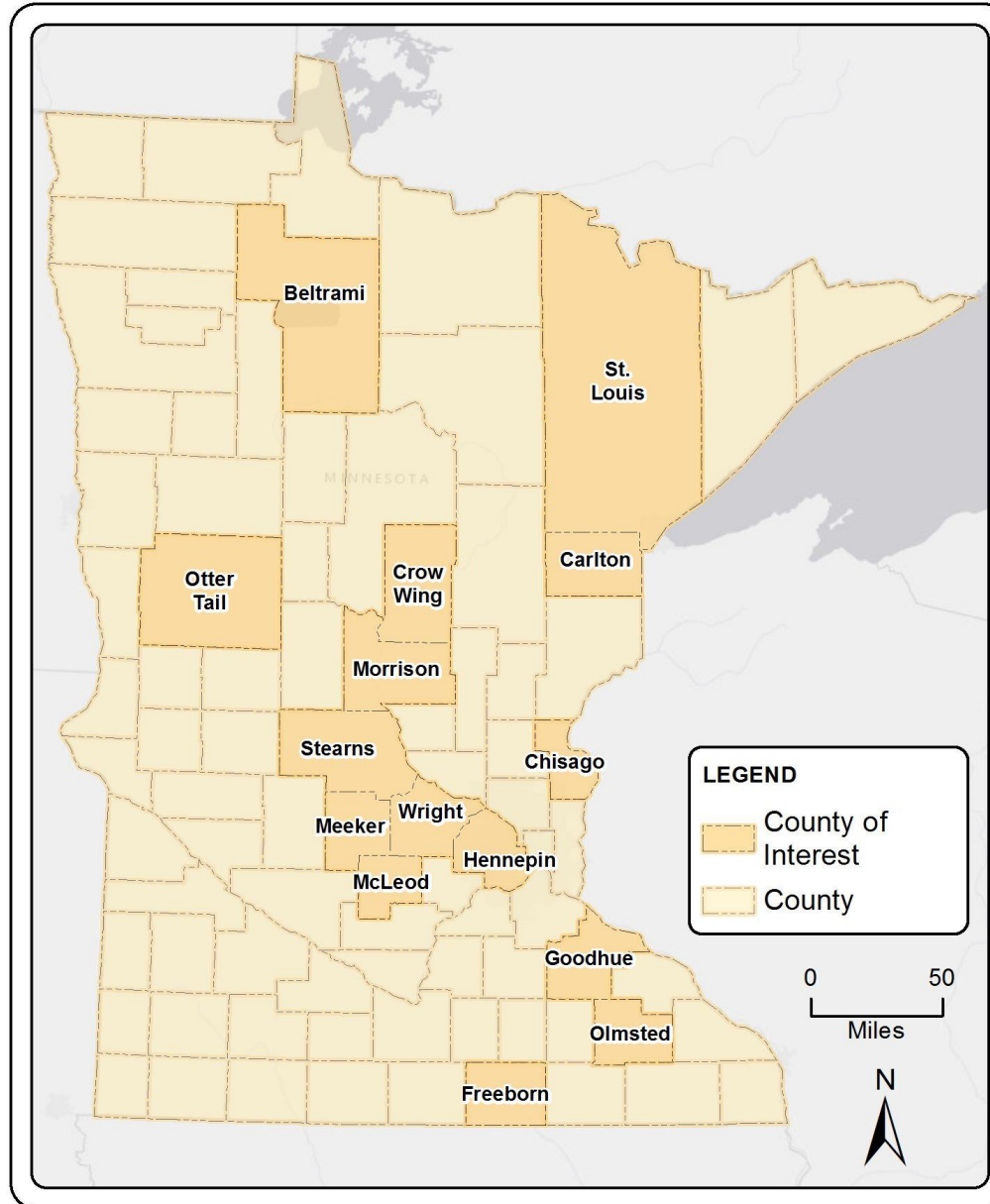
Olmsted – Kaye Bieniek

Otter Tail – Rick West

St. Louis – Vic Lund

Stearns – Jodi Teich

Wright – Chad Hausmann and Jeremy Carlson



# New This Time

- ▶ Customized plans based on County's needs
- ▶ Individual outreach/engagement plans: individual meetings, group meetings, county specific workshop
- ▶ Expanded list of safety strategies: additional strategies, medium and higher cost countermeasures, maintain focus on effectiveness (crash reduction)
- ▶ Added emphasis on electronic deliverables: map showing all K + A crashes in each county (all systems), maps documenting location/type of prior implementation, .kmz maps of all suggested safety projects
- ▶ Long timeframe for each Phase (18 months versus 9 months in original effort)
- ▶ Comprehensive analytical approach: High Crash + High Risk (Systemic)
- ▶ Preparation of a comprehensive database
- ▶ Research One-Pagers

# Google Earth Maps

KMZ Maps of Roadway Facilities and Crashes with Popup Information

**6.058.002**

Intersection ID	6.058.002
RouteSystem	MNTH
RouteSys_1	MN
RouteNo_Sh	58
RouteName	MN58
ReferenceP	001+00.313
Intersec_1	CSAH 6 LT/GOODHUE CO
Interchang	
DistrictMN	6
RouteNo_Lo	058
TIS_Code	0300000058
TruMile	1.4
GeneralEnv	Urban
Segment_ID	6.058.002
CityName	
District2	6
District	6
DateModified	1/21/2016
IntersectionID	6.058.002
SegmentID	6.058.002
RouteSystem	MN
RouteNo	58
MajorTISCodeNumber	0300000058
MinorTISCodeNumber	
IntersectionDescription	CSAH 6 LT/GOODHUE CO
TruMile	1.4
District1	6
ControlSectionMajorNumber1	
ControlSectionMajorNumber2	
ControlSectionMinorNumber1	
ControlSectionMinorNumber2	
City	
Config	T
DesignType	Traditional
TrafficControl	Thru-Stop
StreetLights	Yes
RampTerminal	No
MajorApproachSpeedLimit	40
Notes	
MajorApproach_Leg1ApproachLanes	TB
MajorApproach_Leg2ApproachLanes	TR
MajorApproach_Leg1Median	Undivided
MajorApproach_Leg2Median	Undivided
MajorApproach_Leg1LeftTurnLaneType	Bypass
MajorApproach_Leg2LeftTurnLaneType	None
MajorApproach_Leg1ApproachSignalPhase	None
MajorApproach_Leg2ApproachSignalPhase	None

Imagery Date: 4/26/2015 44°18'03.51" N 92°40'06.42" W elev 0 ft eye alt 1175 ft

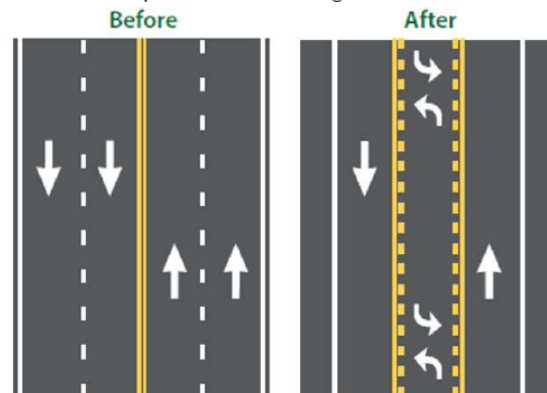


# Research One-Pagers

## Topic: *Road Diet*

### What is a Road Diet?

A road diet is an infrastructure strategy which converts a traditional 4-lane undivided configuration to a 3-lane undivided comprised of one through lane in each direction and a center two-way left-turn lane (TWLTL). The center TWLTL ultimately reduces the number of conflict points by removing left turning vehicles from the mainline. Road diets can also take the form of a converted 6-lane undivided cross section to a 5-lane cross section comprised of two through lanes in each direction and a center TWLTL. Conversion to a 5-lane configuration occurs less frequently and consequently the benefits of the conversion are not nearly as well documented as the 3-lane conversion. A 4- to 3-lane conversion also commonly provides the option to install bicycle facilities on one or both sides of the thru lanes. The bicycle enhancements coupled with a reduced number of conflict points along a corridor results in a safer and more complete environment for drivers as well as pedestrians.



Source: FHWA, *Road Diet Informational Guide*. 2014 (FHWA-SA-14-028)

### How effective is a Road Diet?

### Key Points

- In MN, 3-lane crash rate = 2.0 vs. 4-lane crash rate = 5.7 (per MEV)
- Fewer conflict points than 4-lane undivided roads
- Low cost solution to reduce rear-end crashes

## Topic: Transverse Rumble Strips

### What are Transverse Rumble Strips?

Transverse rumble strips or in-lane rumble strips are raised or depressed panels or sections on the pavement that provide audible and tactile warnings to drivers when approaching a decision point. Typical designs of transverse rumble strips are either across the entire lane or exclusively in the main wheel path of the lane. The most common applications of this warning device include placement on an approach to stop-controlled intersections along high-speed rural corridors and temporary use in construction zones. The purpose of any rumble strip is to attract the attention of the driver; the noise and vibration produced by the in-lane rumble strips when vehicles travel over them alert drivers to be aware of potential changes in traffic conditions ahead. The goal of installing transverse rumble strips in advance of rural intersections is to reduce the frequency of the unintentional running of STOP signs. The purpose of installing transverse rumble strips in advance of work zones is to alert drivers of flaggers/workers and some type of lane adjustments, transitions, splits, drops, etc. The primary difference between these two applications is that construction zone rumble strips are generally temporary and are removed after the construction has been completed.

### Key Points

- Intended to reduce the unintentional run-the-stop intersection crashes through audible and tactile warning
- Effectively reduces approach speeds to rural intersections
- Increases stopping compliance



Source: Minnesota Department of Transportation (MnDOT)

# Schedule

Task	2016			2017												2018		
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
Kickoff Meeting	◆																	
Task 1: Research & Literature Review		◆					◆											
Task 2: Review Existing Safety Plans			*															
Task 3: Comprehensive of County System Review				*														
Task 4: Crash Analysis											◆							
Task 5: Safety Strategies									*									
Task 6: Safety Workshops										●	*							
Task 7: Safety Plans													*		◆		*	
Task 8: Outreach/Engagement																		
Task 9: Project Management																		

\* Individual Meetings w/ Each County

◆ Webinar

● Workshops

# Outreach and Engagement

Goal: To further reduce K+A's by fostering stronger collaboration through a more individualized approach with each county.

## Meetings:

- ▶ Kick off + four meetings with all counties (purple)
- ▶ Five individual meetings with each county (yellow)
- ▶ Two optional County Board Presentations per county (yellow)
- ▶ Customized safety workshop for each county (orange)

# Questions?

## Contact info:

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