



MINNESOTA TOWARD **ZERO** DEATHS

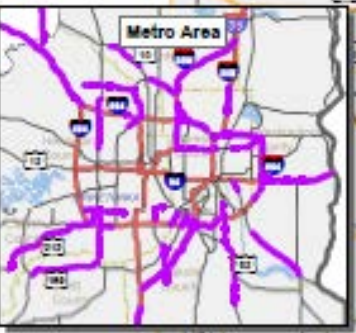
15 Years of Minnesota TZD: Major Accomplishments and What the Future Holds?

SE MINNESOTA TOWARD ZERO DEATHS WORKSHOP



May 2, 2018

High Tension Cable Median Barrier
Inplace as of December 2016



HTCMB miles inplace - 2003 to 2016						
District	2003	2004	2014	2015	2016	2016
Duluth	0	0	0	0	0	0
Bemidji	0	0	0	0	0	0
Redwood	91	91	91	91	102	102
Duluth Lakes	0	0	0	0	0	0
Woodruff	98	98	98	98	111	111
Mankato	7	7	29	29	29	40
Millers	7	7	7	7	7	7
Melroe	120	120	131	139	150	150
TOTAL	271	279	479	486	517	519

Legend

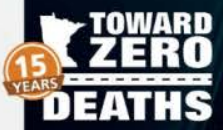
- HTCMB installed
- Statewide
- US Highway
- MN Highway

MDOT Office of Traffic, Safety & Technology February 2017

Minnesota High Tension Cable Median Barrier

95% Reduction in Fatal Head-on Crashes

District 6
2003: None
2018: 102 miles



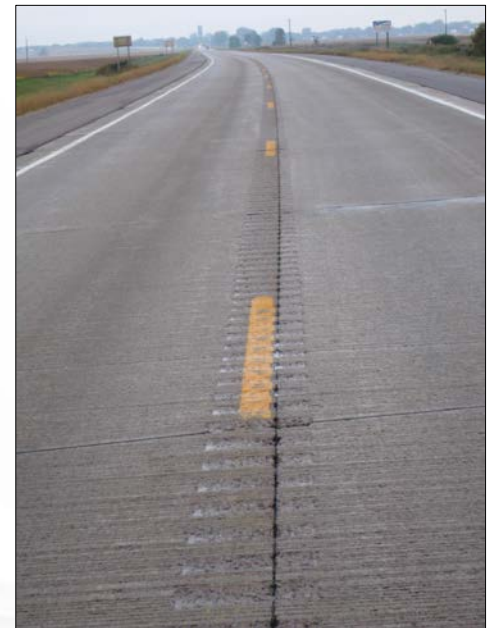
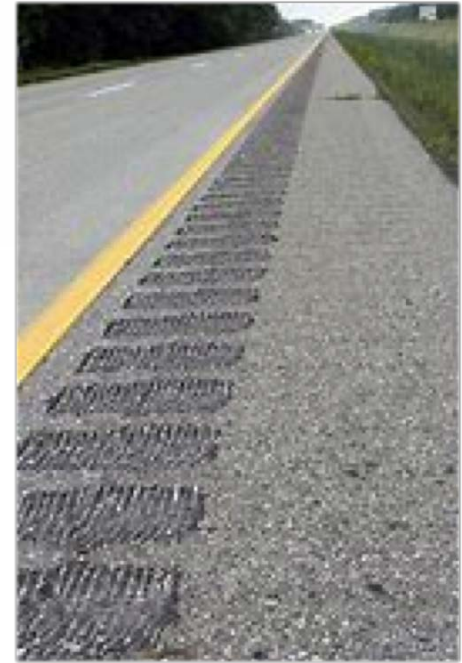
Roundabouts



- Removes Right Angle Crash potential (T-bone crashes)
- Reduces severe crashes by 80-90%
- Delay Reduction versus a 4-way Stop or Signalization

Description	Total Crashes	K	A	B	C	PDO
Before Crash Rate	0.442	0.0062	0.015	0.054	0.124	0.243
After Crash Rate	0.323	0.001	0.0025	0.022	0.054	0.244
Percent Increase/Decrease (By Rate)	-27.0%	-89.9%	-83.4%	-60.9%	-56.3%	+0.4%

Edgeline & Centerline Rumble Strips



Reduced Conflict Intersections



- **100%** Reduction in Fatal and Serious Injury Crashes
- 77% Reduction in Right Angle Crashes
- Many more sites planned, programmed, or in development

Rural Intersection Conflict Warning Systems



Other devices, methods?

Chevrons

Constrictors

HAWK -- **H**igh intensity **A**ctivated cross **W**alk

Highway markings