

2023 East Central Seat Belt Survey

The 2023 observed seat belt usage in the East Central Region was lower than in 2022. The recent survey added 23 sites and observed over 2.5 times more occupants resulting in a more precise estimate (i.e., a lower overall relative error).

Table 1: Observed Seat Belt Use across East Central TZD Region

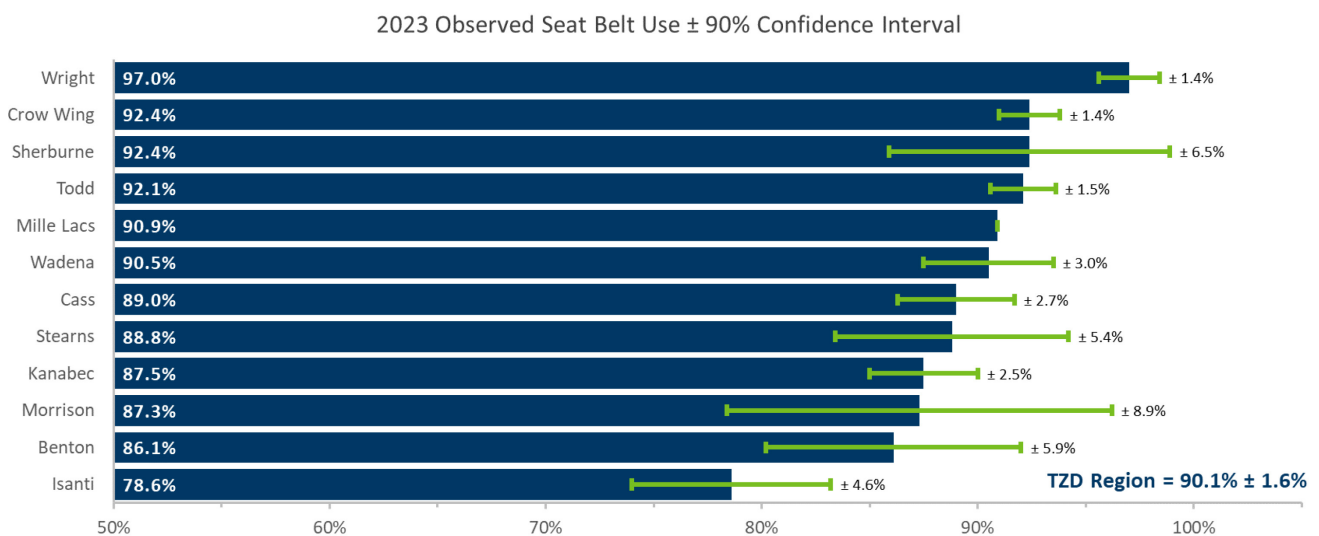
Year	Seat Belt Use Rate, %	Relative Error, %	Weighted Occupants
2023 Survey (n = 45)	90.1 ± 1.6	1.1	5,405
2022 Survey (n = 22)	90.6 ± 2.9	2.0	2,069

NOTE: Seat belt use reported with a 90% confidence band.

Results by County

Based on observed seat belt use and crash outcomes, eight counties have the highest potential for additional seat belt programming: Benton, Cass, Isanti, Kanabec, Mille Lacs, and Wadena.

Figure 1: Observed Seat Belt Use by County



Variation is key to understanding any survey. Seat belt usage varies by community characteristics, consistency within the area, and observed traffic volumes. By adding observation sites, the survey reduced the confidence bounds to within 5.0% for 7 of the 12 counties.

Figure 2: Trend in Regional Observed Seat Belt Use, 2012 to 2023

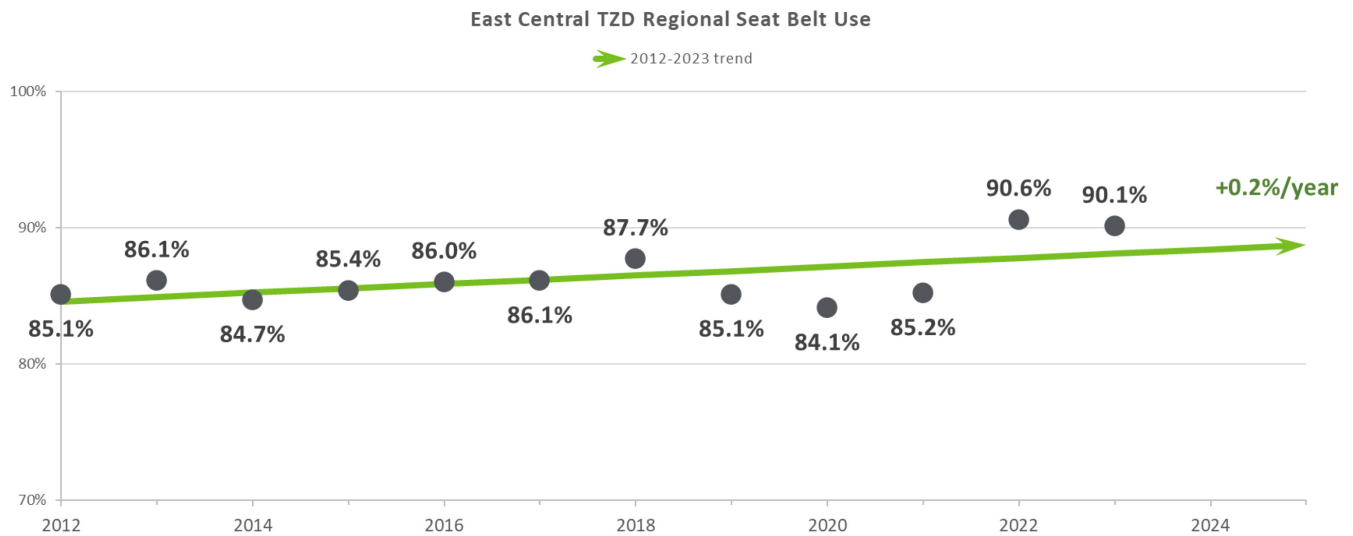


Table 2: 2023 Observed Seat Belt Use by County

County Name	Seat Belt Use Rate, %	Relative Error, %	Weighted Occupants
Benton	86.1 ± 5.9	4.2	360
Cass	89.0 ± 2.7	1.9	878
Crow Wing	92.4 ± 1.4	0.9	640
Isanti	78.6 ± 4.6	3.6	200
Kanabec	87.5 ± 2.5	1.7	640
Mille Lacs	90.9 ± N/A	N/A	186
Morrison	87.3 ± 8.9	6.2	220
Sherburne	92.4 ± 6.5	4.3	748
Stearns	88.8 ± 5.4	3.7	426
Todd	92.1 ± 1.5	1.0	200
Wadena	90.5 ± 3.0	2.0	337

County Name	Seat Belt Use Rate, %	Relative Error, %	Weighted Occupants
Wright	97.0 ± 1.4	0.9	570
TZD Regional Total	90.1 ± 1.6	1.6	5,405

NOTE: Seat belt use reported with a 90% confidence band.

Unbelted Crash Outcomes

Seat belt use is a core focus area in Minnesota’s Strategic Highway Safety Plan (SHSP). A standard definition is published in the plan to translate codes from the crash report into a flag for an occupant improperly belted in a vehicle equipped with safety equipment.

Table 3: Unbelted Fatalities and Serious Injuries, 2018-2022

County Name	Fatalities	Fatalities and Serious Injuries	VMT (millions)
Cass	18 (21%)	40 (16%)	432.4 (5%)
Wright	12 (14%)	36 (14%)	1,532.8 (19%)
Stearns	15 (17%)	28 (11%)	1,835.0 (23%)
Crow Wing	11 (13%)	24 (10%)	856.1 (11%)
Mille Lacs	8 (9%)	19 (8%)	431.5 (5%)
Sherburne	4 (5%)	19 (8%)	917.9 (11%)
Benton	3 (3%)	17 (7%)	486.8 (6%)
Morrison	6 (7%)	15 (6%)	504.9 (6%)
Isanti	4 (5%)	14 (6%)	397.5 (5%)
Kanabec	3 (3%)	14 (6%)	175.3 (2%)
Todd	1 (1%)	13 (5%)	309.6 (4%)
Wadena	2 (2%)	11 (4%)	162.0 (2%)
TZD Regional Total	87 (100%)	250 (100%)	8,042.1 (100%)

NOTE: 2022 crashes preliminary as of 04/14/2023. VMT is 2019-2021 average based on data availability. Parenthesis is percent of regional total.

Definitions

Confidence Band:

This report uses a 90% confidence band which can be interpreted as “If this survey was conducted again, nine times out of ten the observed seat belt use rate would be within this range.” Thus an observed seat belt use rate of 75.0 ± 2.5 would imply nine times out of ten, the seat belt use rate would be between 72.5 and 77.5 percent.

Relative Error:

The standard deviation of the sample divided by the observed seat belt use rate. Thus a relative error of 5.0 with an observed seat belt use rate of 80.0 would imply an error of ± 4 percent. (e.g., $80.0 \times 5.0 \div 100 = 4.0$)

Seat Belt Use Rate:

The observed seat belt use rate. Each use rate is reported with a 90% confidence band as a measurement of variation or consistency.

Weighted Occupants:

The number of observed occupants scaled by pre- and post-survey counts. If the number of vehicles observed during the 50-minute survey is less than 5 times the pre- and post-survey counts (i.e., the number of vehicles observed over 10 minutes), it is scaled up by that multiple.

Analysis Notes

All sites observed between 04/17/2023 and 05/03/2023.

Three sites in Mille Lacs County were excluded due to inconsistencies in pre-/post-survey counts (i.e., expected vehicle weighting resulted in unreasonably large relative error).