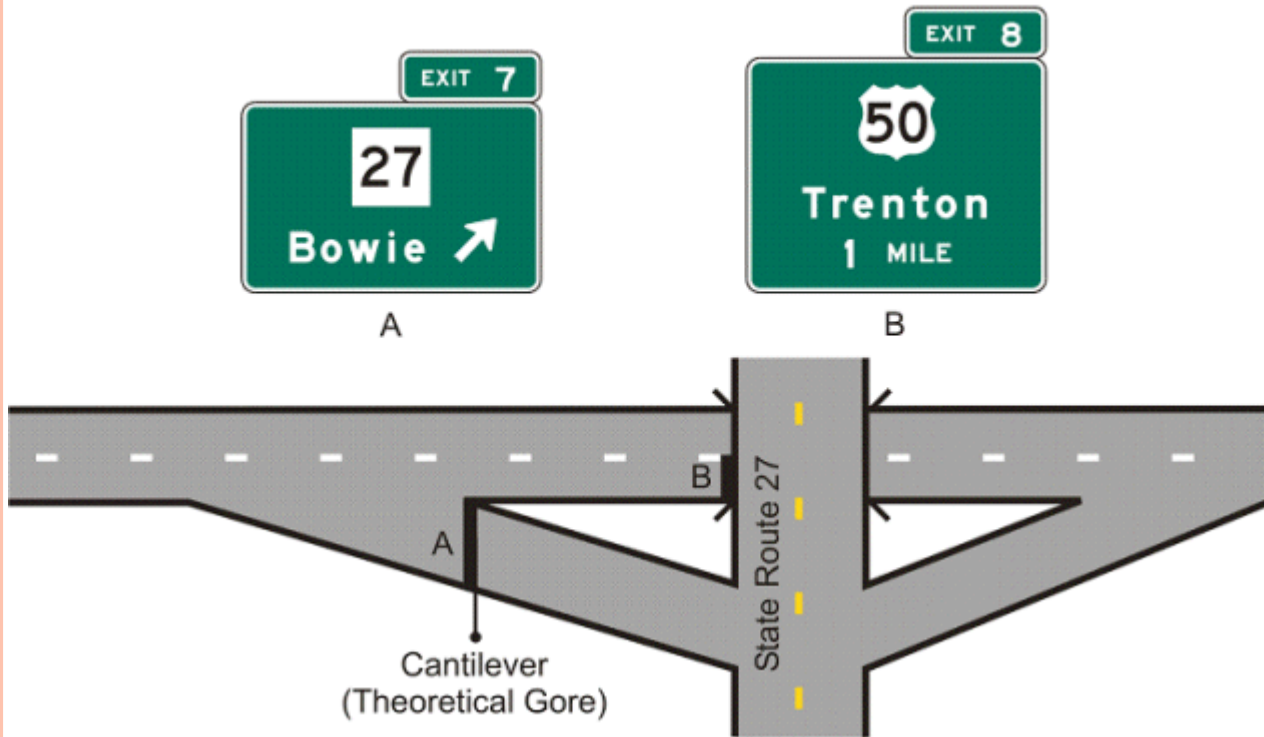
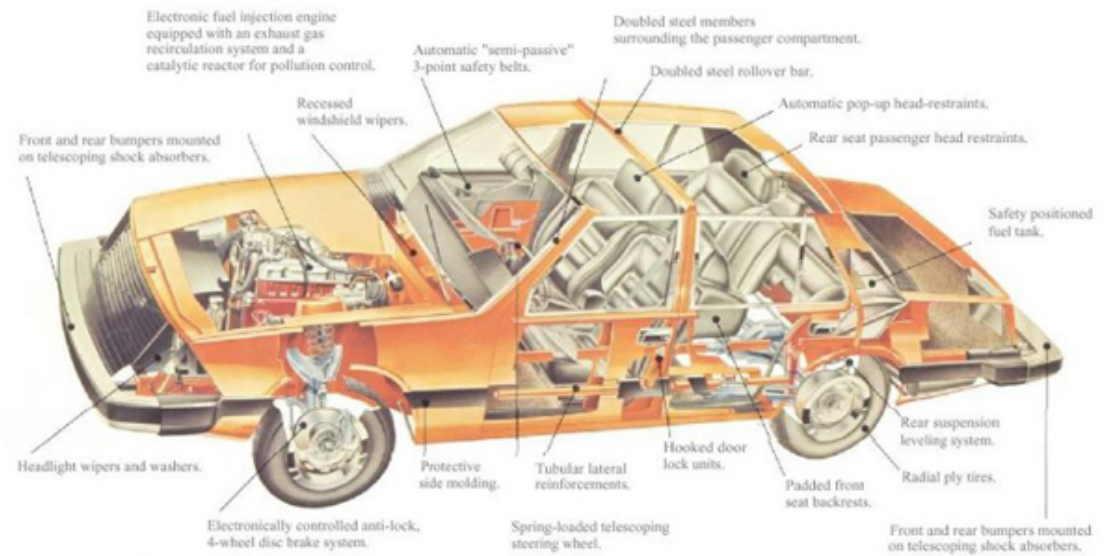


Example of Guide Sign Spreading





VOLVO Experimental Safety Car



Volvo Experimental Safety Car Specifications
 Length 205.7" Track, front 58.3"
 Width 71.7" Track, rear 57.7"
 Height 55.9" Weight 3200 lbst
 Wheelbase 106.4"

WHO??

What??



Where?

When?

WHY??

TRAFFIC SAFETY AND HUMAN FACTORS

- Tribal safety issues
- School transportation safety issues
- Women's issues
- Animal-vehicle collisions
- Pedestrians
- Motorcycles/mopeds
- Medical advisory board/licensing
- Young drivers
- Older drivers
- Impaired drivers (drugs/alcohol/medication)
- Commercial drivers
- Digital billboards
- Work zone safety issues
- Public transportation safety issues
- Child passenger protection/seat placement
- Speed
- Distracted driving
- Drowsy driving
- Rollover crashes
- Following distance
- Rural issues
- Urban issues
- Marketing traffic safety
- Traffic safety education
- Community programming



1 man dies in rollover crash in Renville County

MOHALL, N.D. — One man has died and six passengers injured in a single-vehicle rollover crash in Renville County in northern North Dakota.

By: **Associated Press**, INFORUM

MOHALL, N.D. — One man has died and six passengers injured in a single-vehicle rollover crash in Renville County in northern North Dakota.

The North Dakota Highway Patrol says the 19-year-old Bowbells man was driving eastbound along Highway 5 near Mohall around 2 a.m. Saturday morning when he lost control of the car and it left the roadway, entering a nearby ditch and flipping. The man was killed. Officials have not released his name.

Four female and two male passengers were injured. The passengers, all from North Dakota, ranged in age from 14 to 20. Only a 20-year-old female was wearing a seatbelt.

Tags: [news](#), [accidents](#), [mohall](#), [updates](#)

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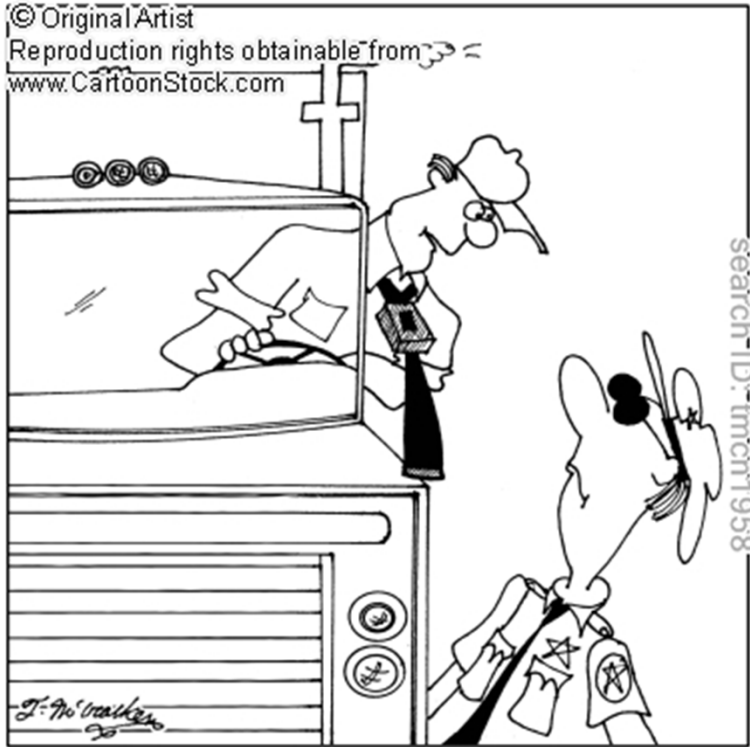




OCCUPANT PROTECTION IN NORTH DAKOTA

Andrea Huseth

**Rural Transportation Safety and Security Center
Upper Great Plains Transportation Institute
North Dakota State University**



“But, officer, I AM wearing a seat belt.”

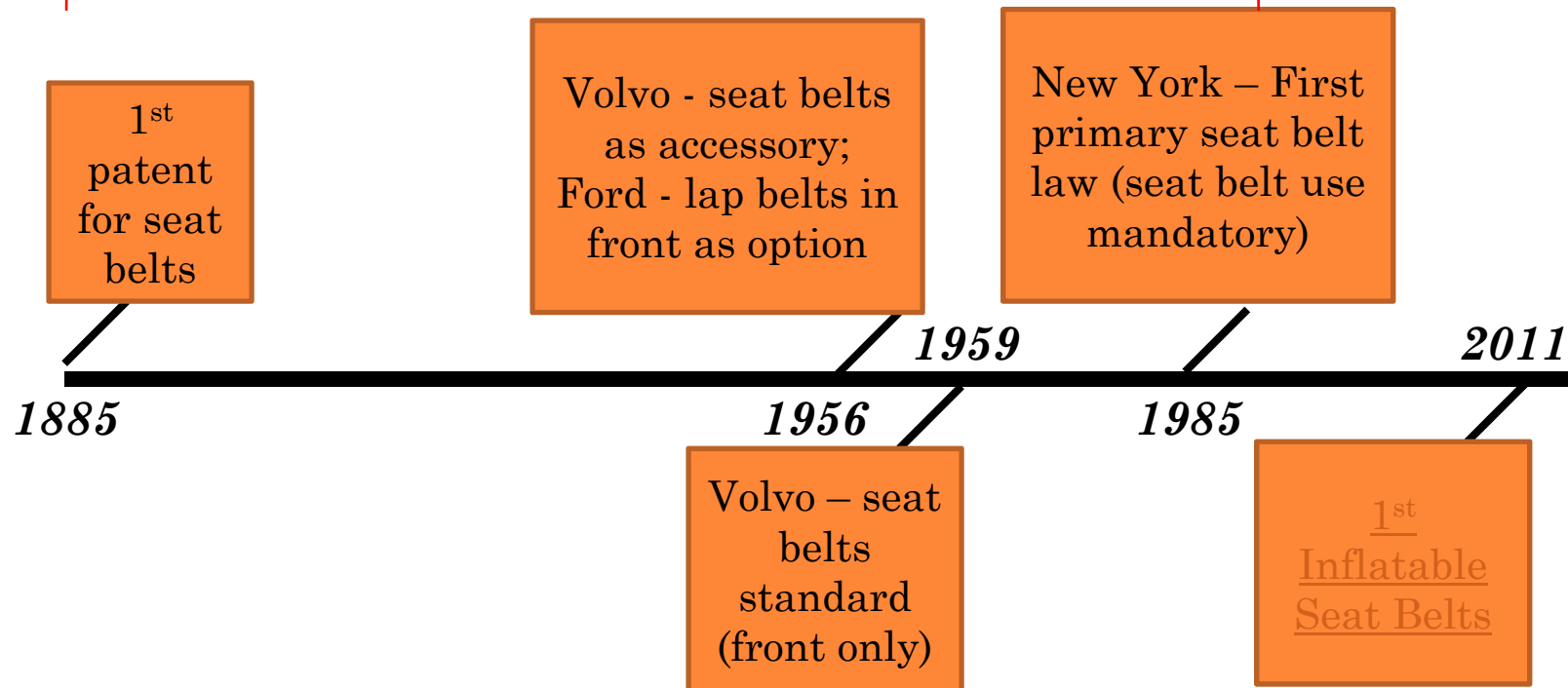


WHAT SHOULD WE TALK ABOUT?

- A little history
- A little on stats related to seat belt use/fatalities
- Seat belt laws by state, use by state
- Some new research on seat belt use and demographics (very interesting)
- Seat belt use in North Dakota



100 years between 1st patent and 1st law
requiring seat belt use



HISTORY, ANYONE?



ARE SEAT BELTS EFFECTIVE?



Guy asleep – no seat belt:

<http://www.youtube.com/watch?NR=1&v=CqQy4xT2AVQ>

Volvo test – rollover – no seat belt:

<http://www.youtube.com/watch?v=rww9oFNoNi8>

Result of not wearing seat belt - a bit graphic:

<http://www.youtube.com/watch?v=lfaFAfoJwGo>



COMMONS REASONS FOR NON-USE OR...

“WHY I DON’T WANT TO TAKE THE TIME TO SAVE MY LIFE...”

- “I don’t need a seat belt when I’m traveling at low speeds or going on a short trip.”
- “It’s uncomfortable.”
- “It’ll wrinkle my clothes.”
- “I’m a goooooood driver.”
- “I’ll be safer by being thrown clear of the vehicle.”
- “I don’t want to be trapped if I’m trapped in a burning or submerged car.”
- “It takes too much time.”
- I’m too embarrassed to wear my seat belt or to ask my friends to wear their seat belt.”



HOW EFFECTIVE ARE SEAT BELTS AT PREVENTING INJURY/FATALITY?

- Reduce risk fatal injury front-seat occupants by 45% to 60%
- Reduce the risk of ejections – the most injurious event in a crash.
 - 2009 – 77% of those ejected from vehicle were killed
 - Who were most likely to be ejected?
 - 1% restrained vs 31% unrestrained



If you're more likely to be ejected if unrestrained, consider this:

Passenger Vehicle Occupants in Fatal Crashes, by Injury Severity and Ejection Status

Injury Severity		Ejection Status						Total
		Ejected		Not Ejected		Unknown		
		#	Col %	#	Col %	#	Col %	
Fatalities	Fatalities	42,137	77.3	112,515	33.0	707	29.7	155,359
Injuries	Incapacitating (A)	8,220	15.1	51,096	15.0	574	24.1	59,890
	Nonincapacitating (B)	3,132	5.7	56,475	16.5	504	21.2	60,111
	Possible Injury (C)	743	1.4	35,471	10.4	142	6.0	36,356
	Other	97	0.2	901	0.3	85	3.6	1,083
	Total Injuries		12,192	22.4	143,943	42.2	1,305	54.8
No Injury	No Injury	150	0.3	83,345	24.4	156	6.6	83,651
Unknown	Unknown	26	0.0	1,585	0.5	213	8.9	1,824
Total		54,505	100	341,388	100	2,381	100	398,274

Source: NHTSA, NCSA, FARS 2003-2007

Source: NHTSA, *Factors Related to the Likelihood of a Passenger Vehicle Occupant Being Ejected in a Fatal Crash*, 2009, <http://www-nrd.nhtsa.dot.gov/Pubs/811209.pdf>



- Effective?
These people
are alive.

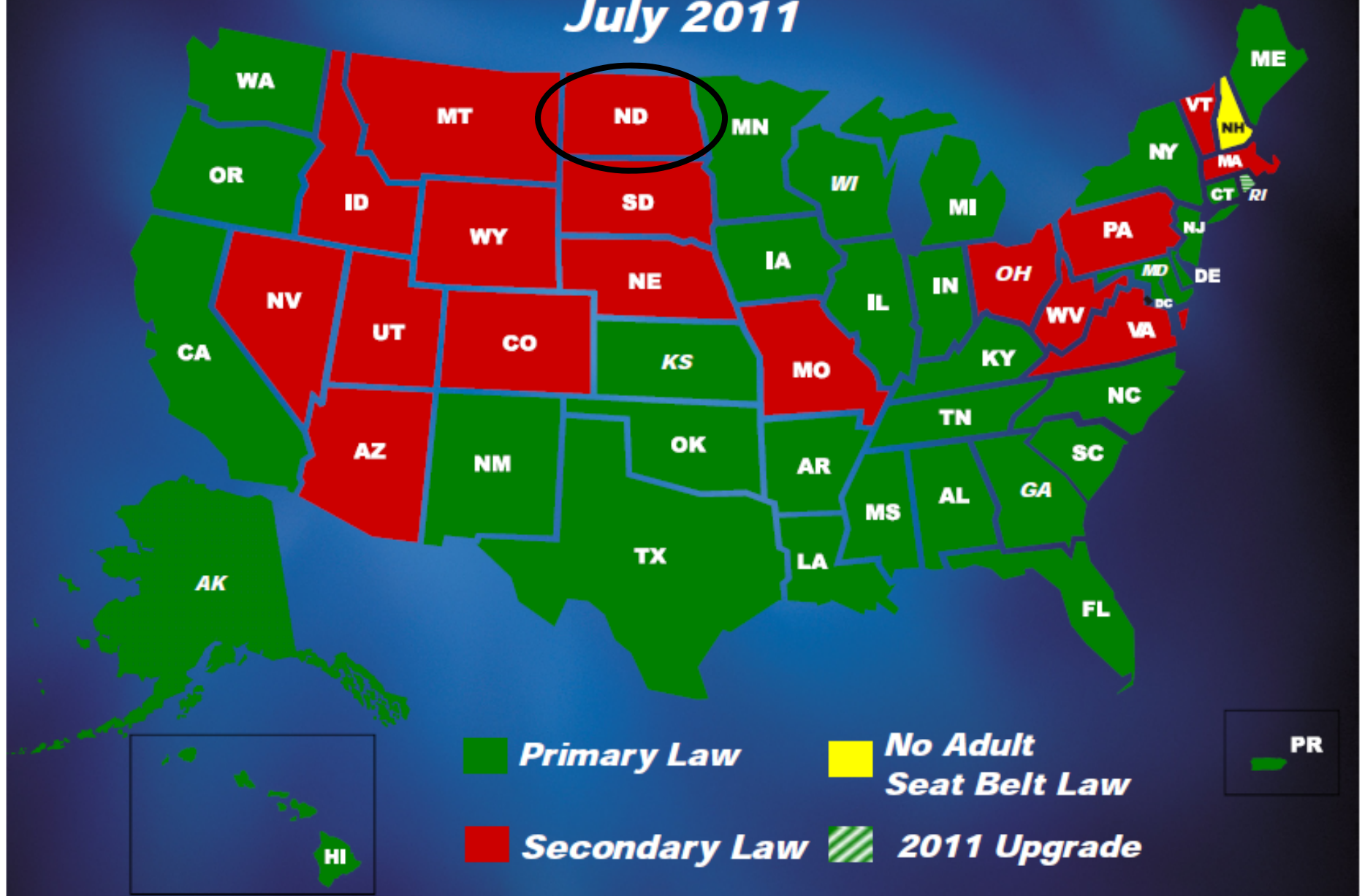


SEAT BELT USE IN THE UNITED STATES

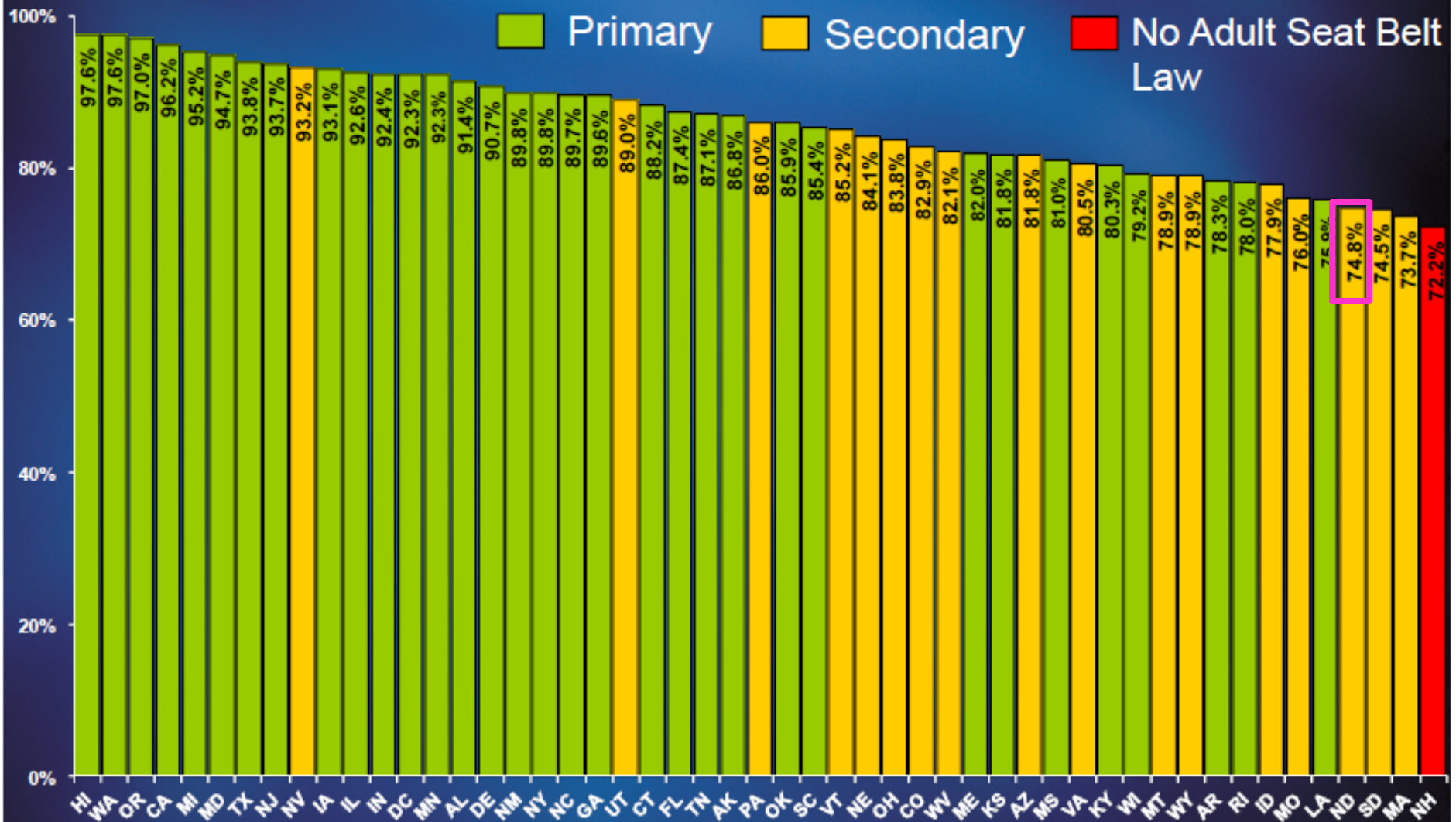


State Seat Belt Laws

July 2011



2010 Seat Belt Use Rates By Law Type and State

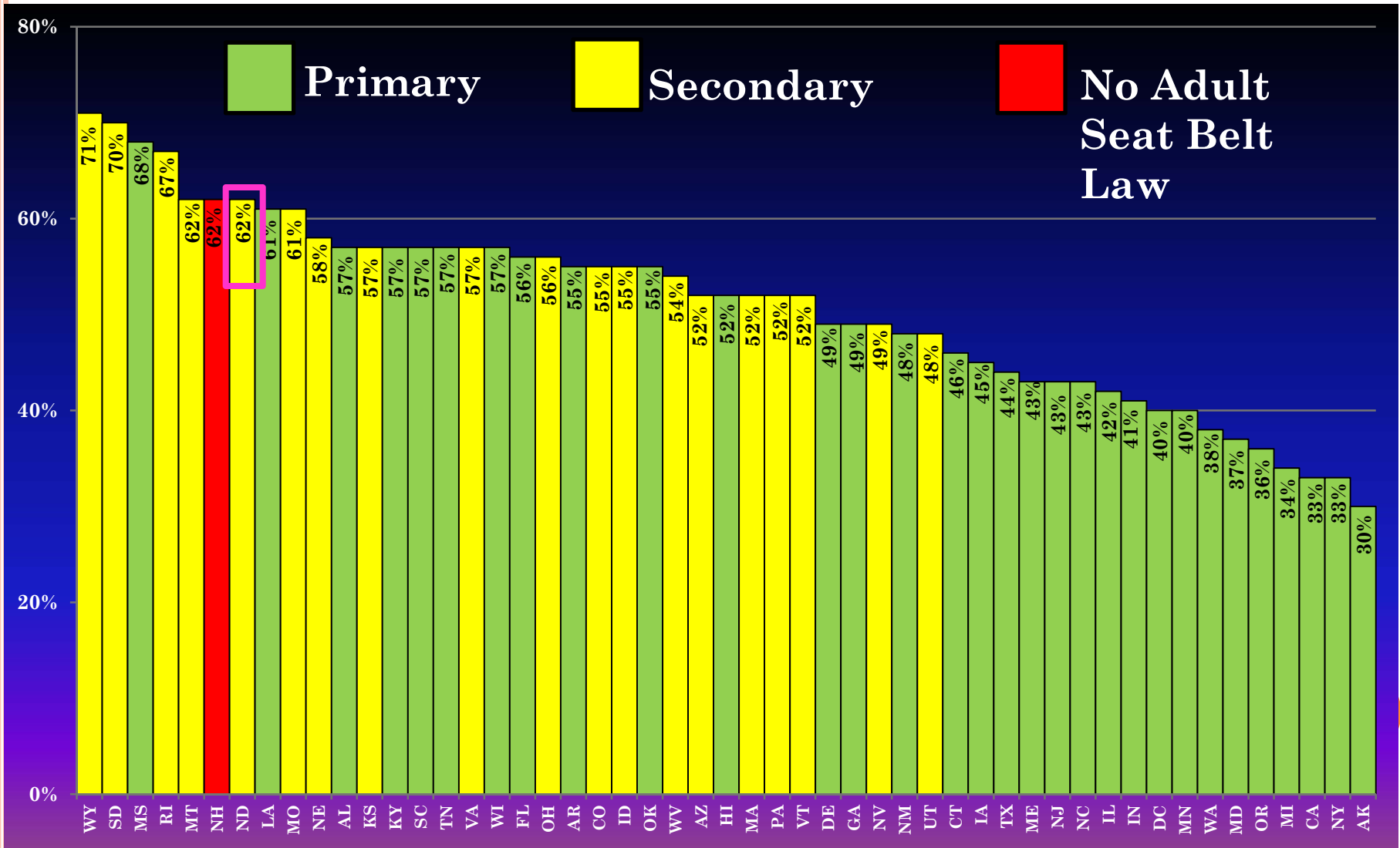


State surveys conducted in accordance with Section 157, Title 23, U.S. Code

Primary Laws were recently passed in AK, KY, MS (2006); ME (2007); AR, FL, MN, WI (2009); KS (2010); RI (2011)

UNRESTRAINED FATALITIES BY LAW TYPE AND STATE (2009 LAW TYPE)

Source: NHTSA. (2010). *Traffic Safety Facts, 2009 Data – Occupant Protection*. <http://www-nrd.nhtsa.dot.gov/Pubs/811390.pdf>.



EXPLAINING STATE-TO-STATE DIFFERENCES IN SEAT BELT USE: AN ANALYSIS OF SOCIO- DEMOGRAPHIC VARIABLES

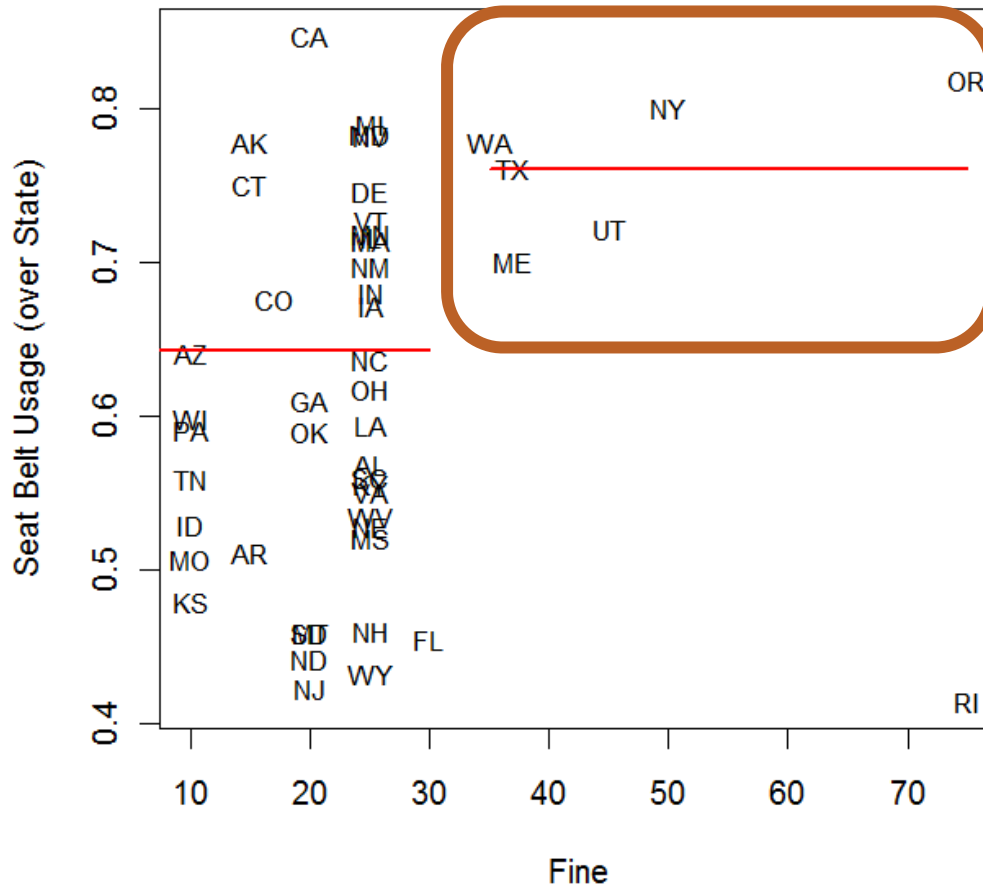
February 2011

By: Yang Yang, Kohinoor Dasgupta, David Eby, Lisa Molnar,
Vijayan Nair, and Stephen Pollock

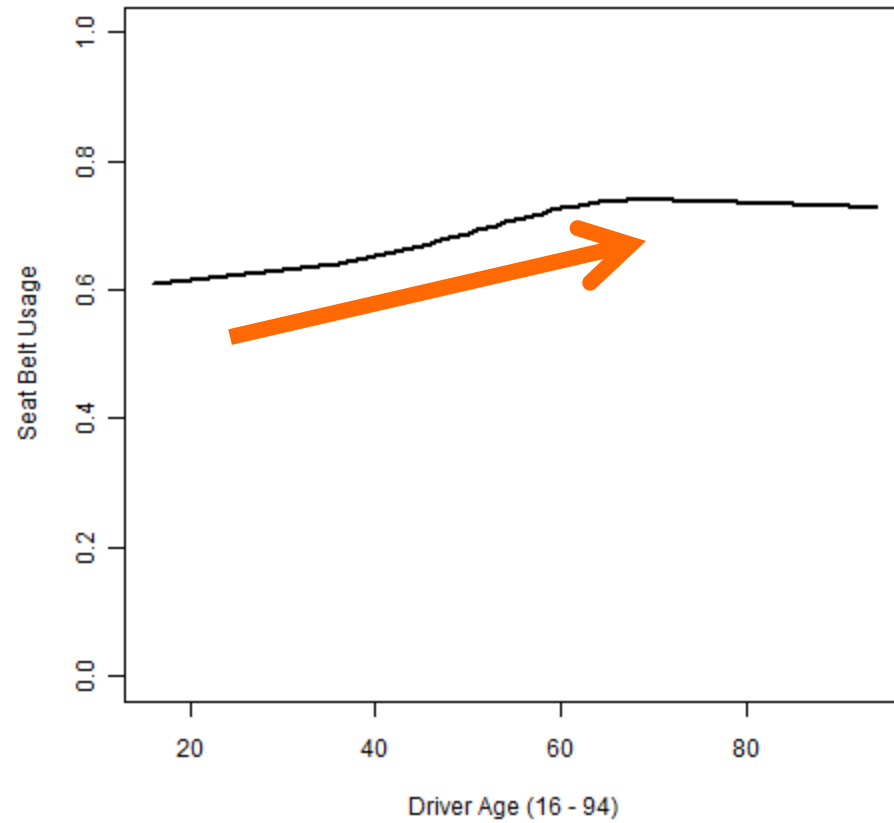
<http://deepblue.lib.umich.edu/bitstream/2027.42/85176/1/102754.pdf>



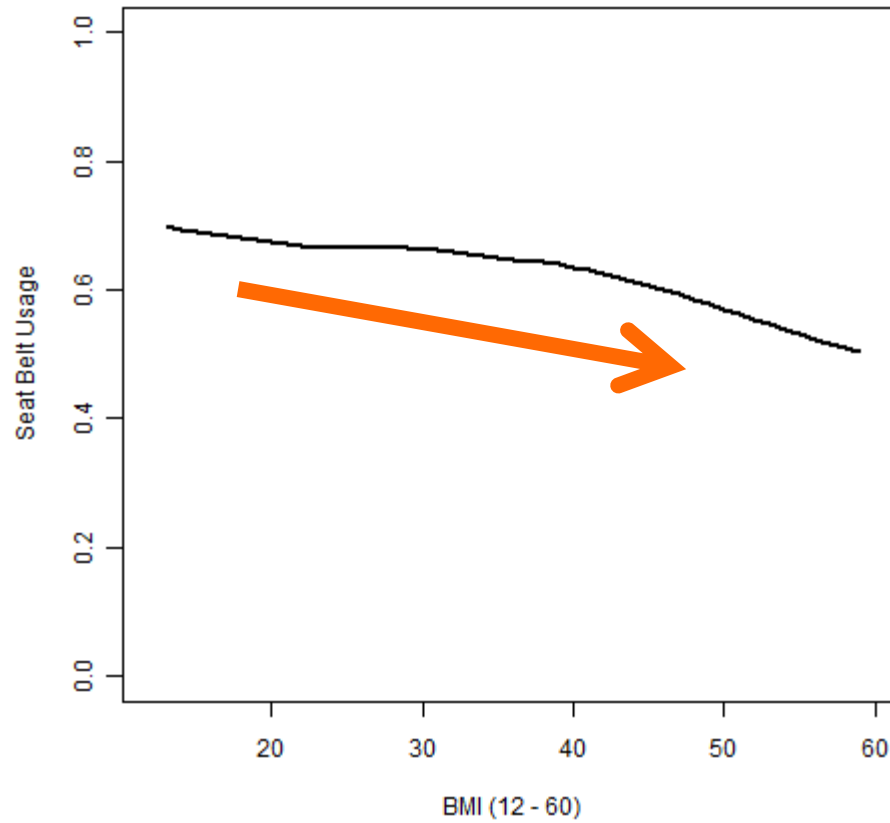
STATEWIDE SEAT BELT USE BY FINES FOR VIOLATING SEAT BELT USE LAW



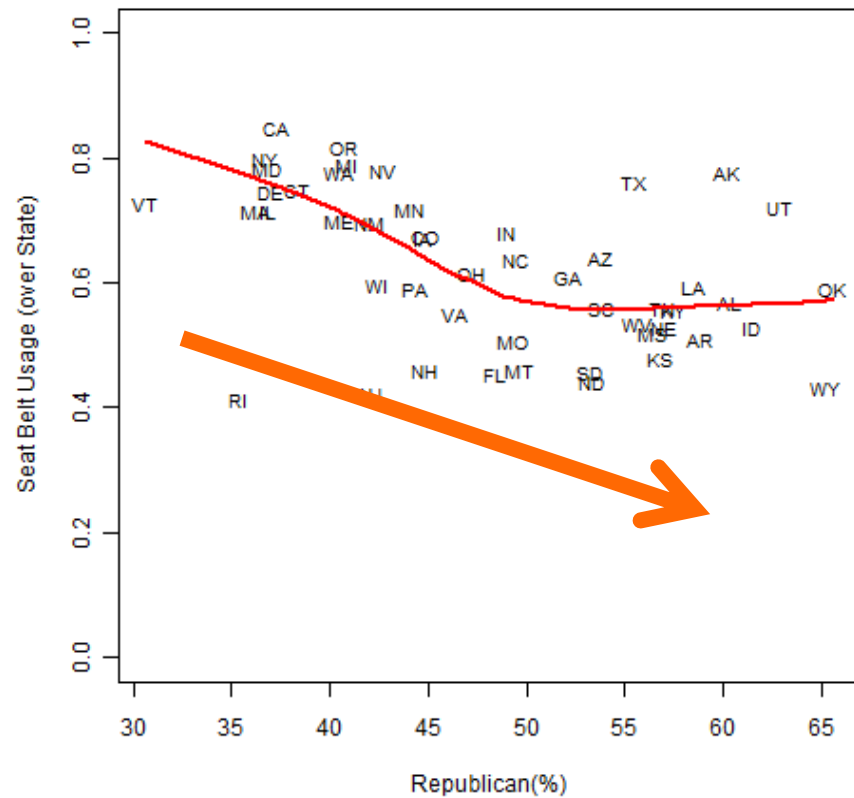
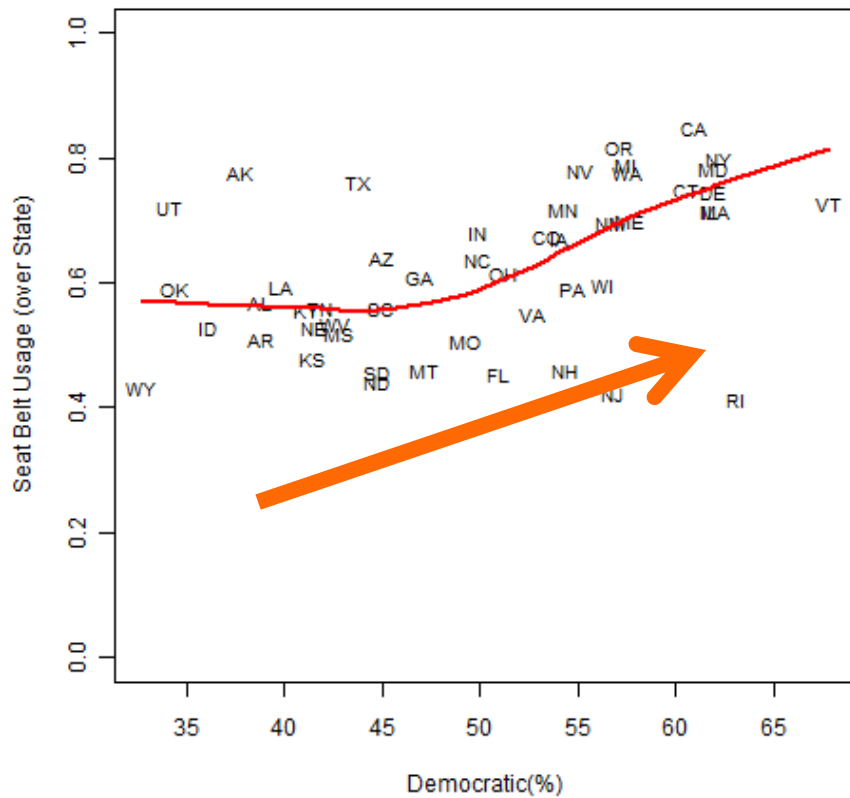
STATEWIDE SEAT BELT USE BY DRIVER AGE



STATEWIDE SEAT BELT USE BY DRIVER BMI

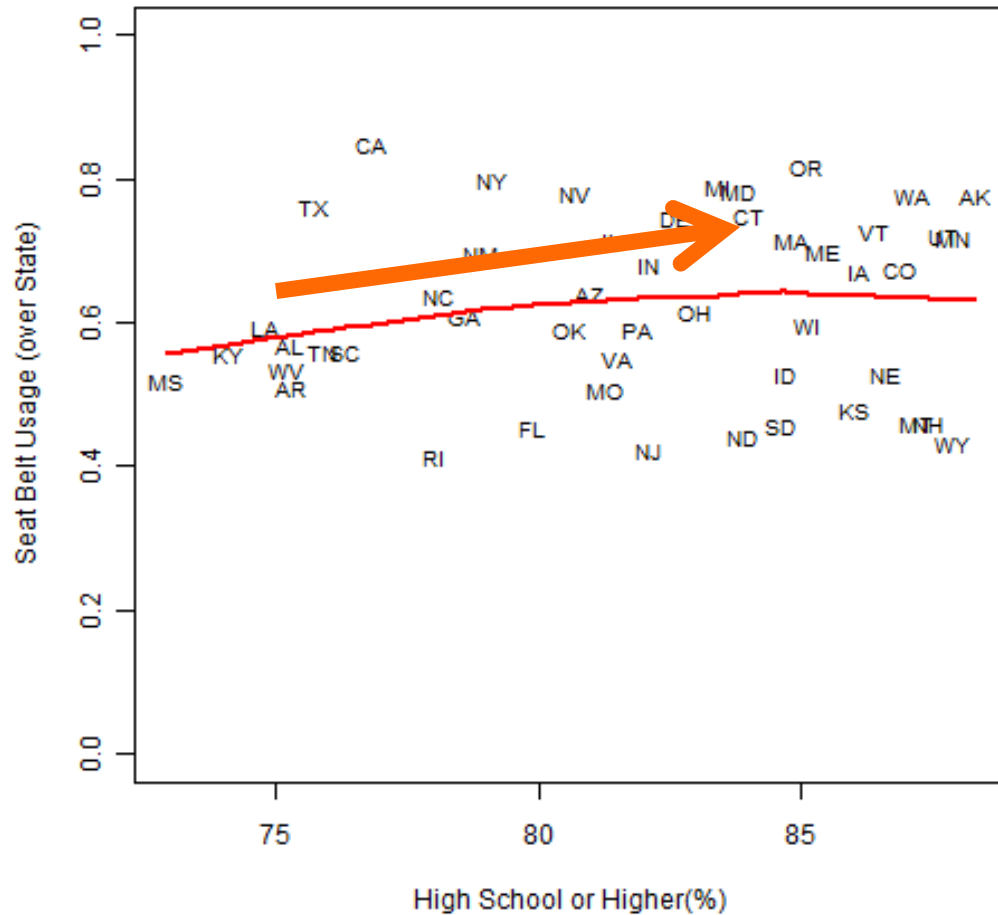


STATEWIDE SEAT BELT USE BY PERCENT DEMOCRATS AND REPUBLICANS

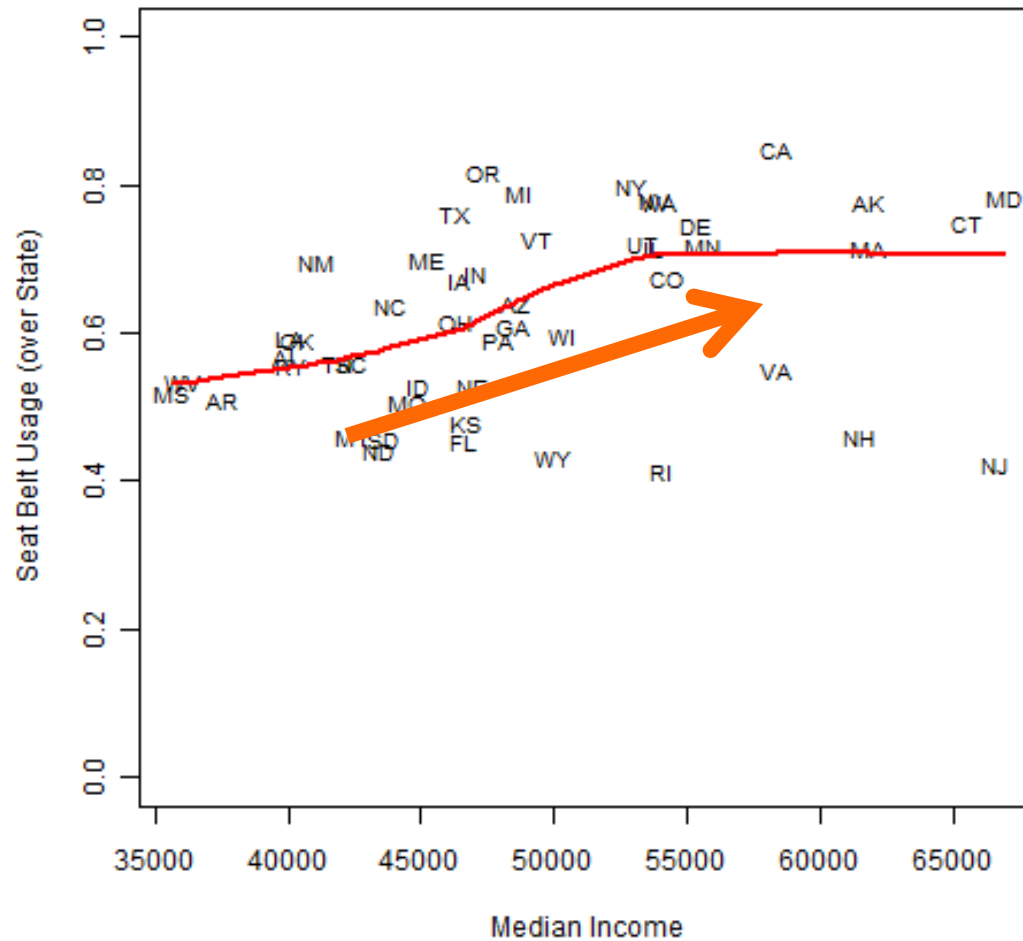


Percentage of people who voted for the Democratic Party Candidate in the 2008 national election.

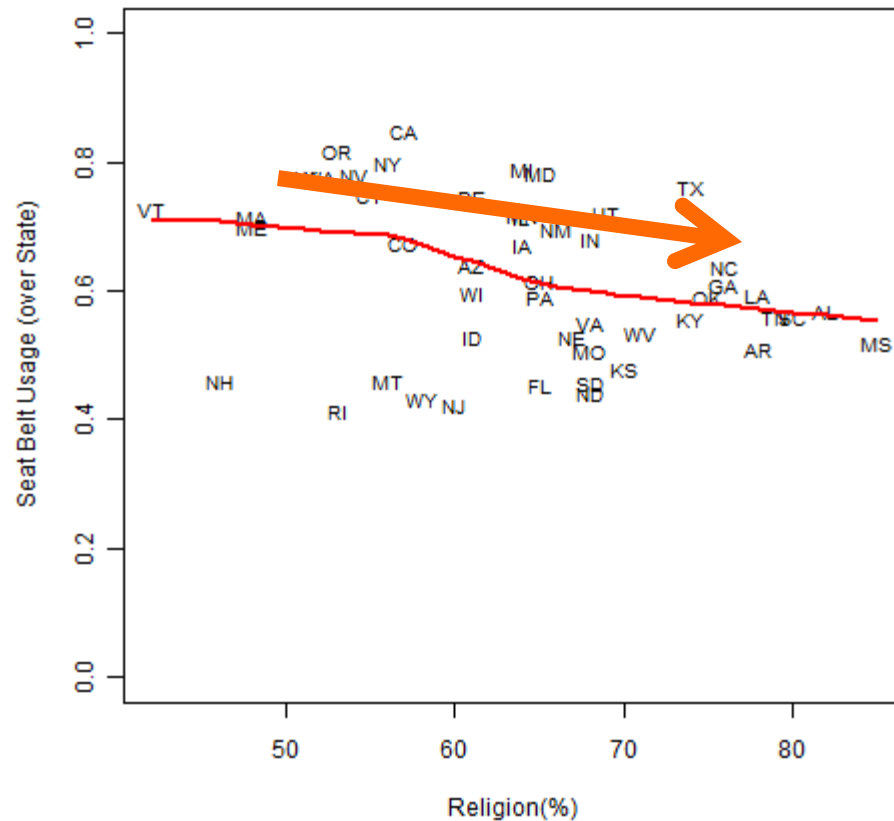
STATEWIDE SEAT BELT USE BY EDUCATION



STATEWIDE SEAT BELT USE BY MEDIAN INCOME



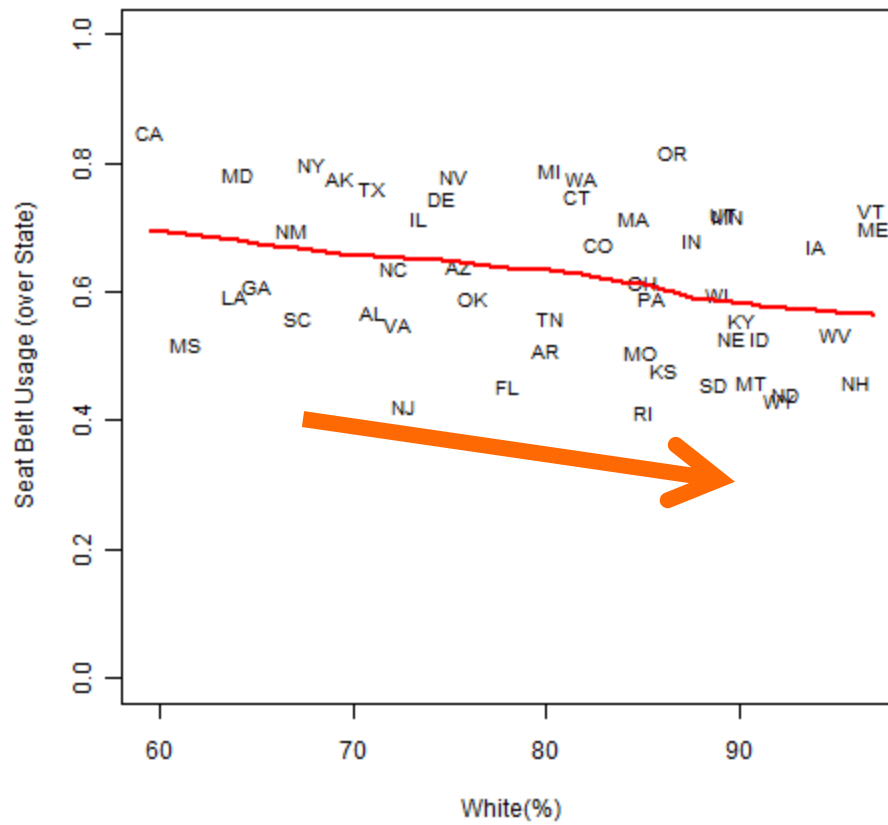
STATEWIDE SEAT BELT USE BY RELIGIOSITY



Percentage of people in the state who responded “yes” to a straightforward Question that asks “Is religion an important part of your daily life?” – 2008 Gallup poll.



STATEWIDE SEAT BELT USE BY RACE



SEAT BELT USE CONTINUES TO BE CONSISTENTLY LOWER FOR:

- Males
- Younger occupants
- Rural occupants
- Pick-up truck occupants



SEAT BELT USE IN NORTH DAKOTA



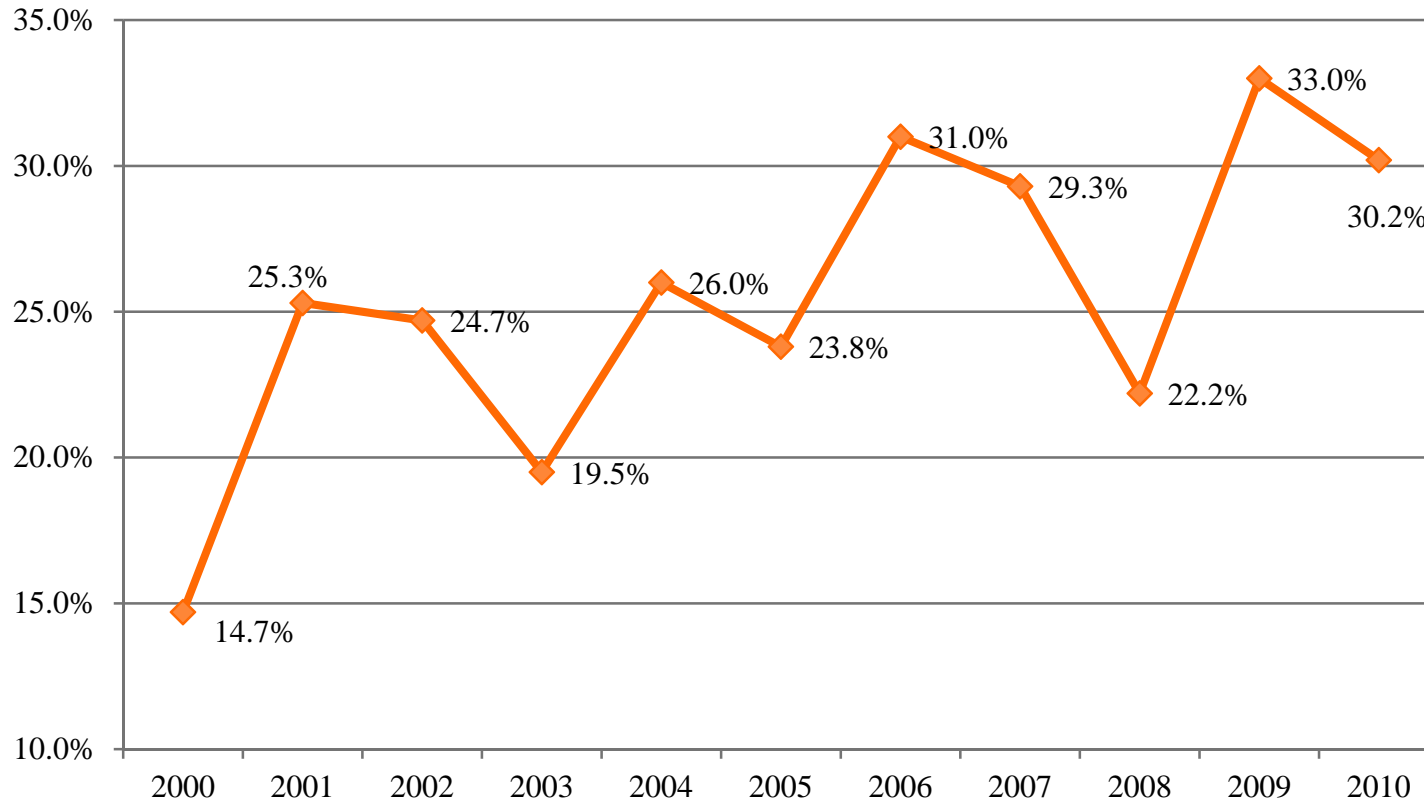
- 11/1/2011 1 mile west of Rolla on 100th Street NE (Rolette County)
Passenger car – rollover
2 fatalities: 32 year-old female driver
33 year-old male passenger
Safety belt not worn by either, both ejected from vehicle
Speed
- 10/29/2011 3rd Street and 24th Avenue SE, Mandan (Morton County)
Fixed Object – head-on into a tree
3 fatalities: 21 year-old male front-seat passenger
22 year-old male back-seat passenger
21 year-old male back seat passenger
Safety belt: 21 year-old front-seat passenger, Yes
22 year-old back-seat passenger, None
21 year-old back-seat passenger, None
Speed, Alcohol
- 10-07-2011 Highway 200, 3.5 miles east of Carrington (Foster County)
Angle: Pickup struck by Semi-Tractor and Trailer
1 fatality – 49 year old male driver; hometown – Carrington, ND
Safety belt: Not used
Improper Left Turn into oncoming traffic



- 10/20/2011 10 miles south of Arnegard, ND, 16th St NW (McKenzie County)
Truck Tractor – rollover
1 fatality – 59 year-old male driver, Sioux Falls, SD
Safety belt: None used; partially ejected
Left of center, attention distracted
- 10/21/2011 US 81, mile post 202 – 10 miles north of Grafton (Pembina County)
Head on: Passenger vehicle & John Deere tractor with harvester
1 fatality – 32 year-old male driver, Rio Grande, TX
Safety belt: None Used
Alcohol; Left of center; Speed
- 10/19/2011 BIA 20, 2 miles north of Twin Buttes (Dunn County)
Pickup – Rollover
1 fatality – 48 year-old male driver, Twin Buttes, ND
Safety belt: None used, ejected
Lost control of vehicle while negotiating a curve
- 10-07-2011 Highway 200, 3.5 miles east of Carrington (Foster County)
Angle: Pickup struck by Semi-Tractor and Trailer
1 fatality – 49 year old male driver; hometown – Carrington, ND
Safety belt: Not used
Improper Left Turn into oncoming traffic



ND MV FATALITY RESTRAINT USE: 2000-2010



Source: 2010 ND Crash Summary, ND Department of Transportation

Of the 894 MV fatalities from 2000 to 2010 in ND, 231 were properly restrained.

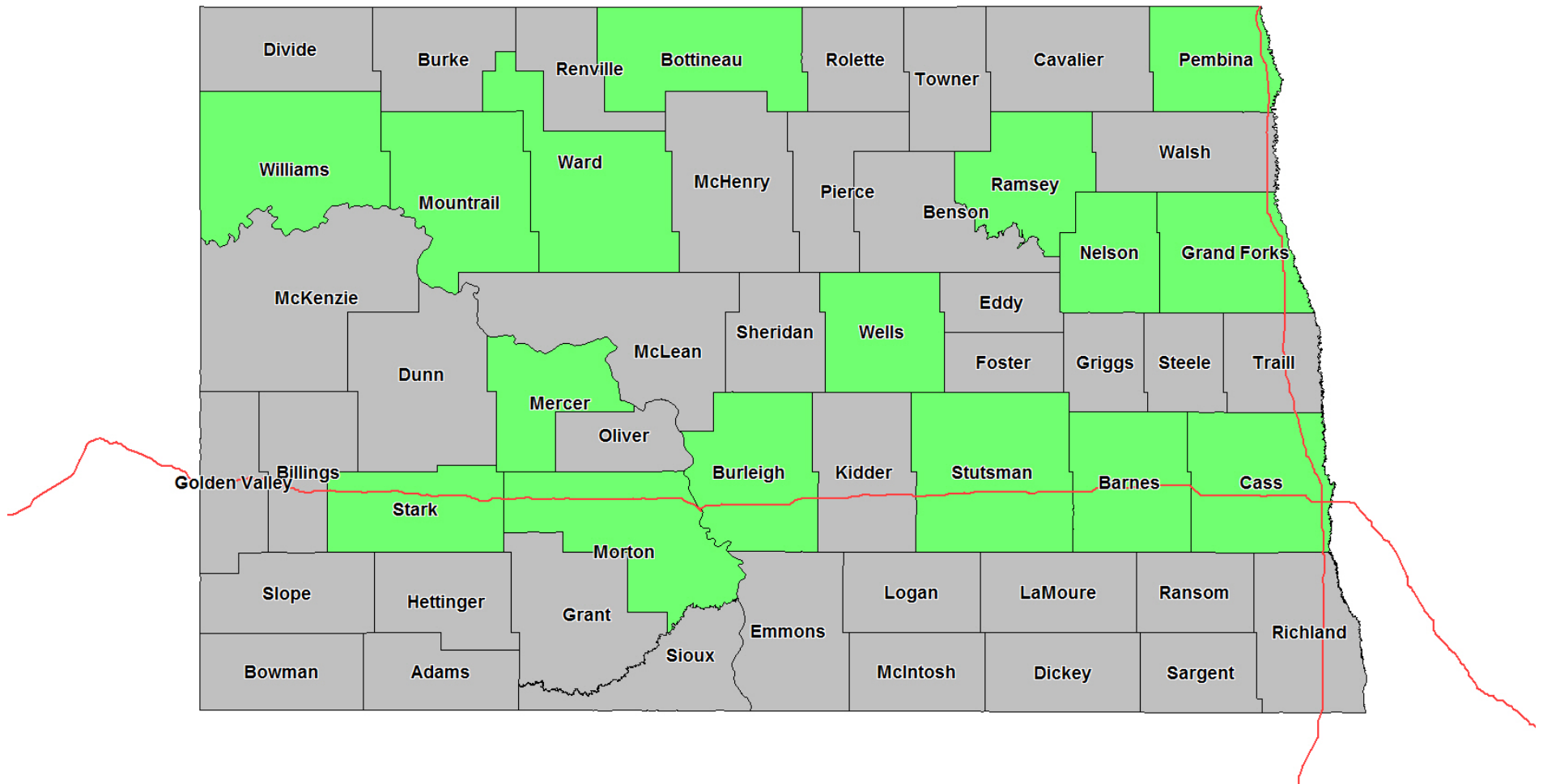


CURRENT STATEWIDE SEAT BELT SURVEY METHODOLOGY (NOPUS)

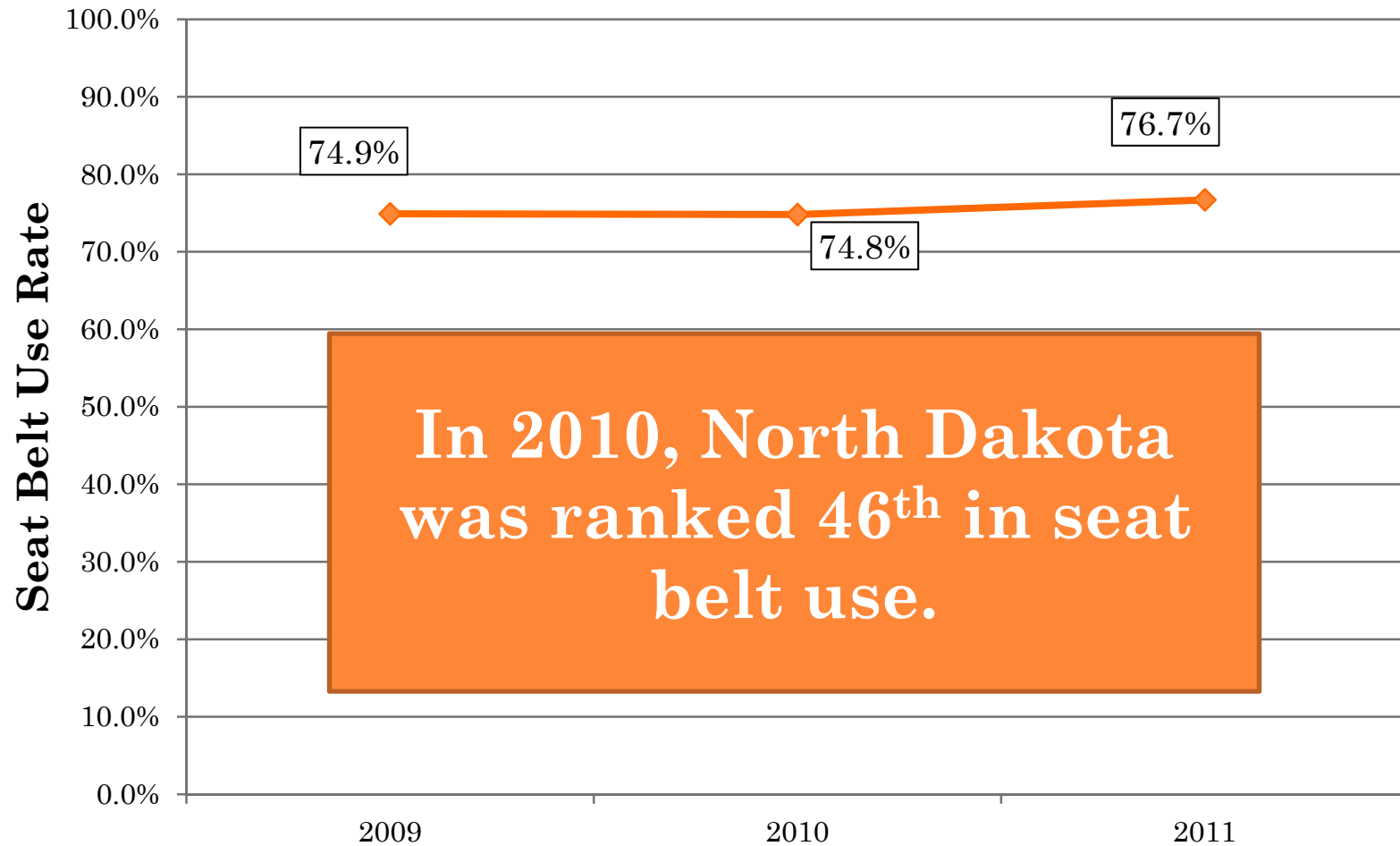
- National Occupant Protection Use Survey (NOPUS) effort is supported by NHTSA – which approved the sample design and survey method for each state
- Surveys roads which track vehicle miles traveled only (state roads only)
- County population stratified by population and quadrant.
 - Highest population counties and random sample of lower population counties included in the survey.
 - VMT data used for site selection within sample counties.
- NOTE – this methodology is being modified



COUNTIES INCLUDED IN 2011 STATEWIDE SEAT BELT SURVEY



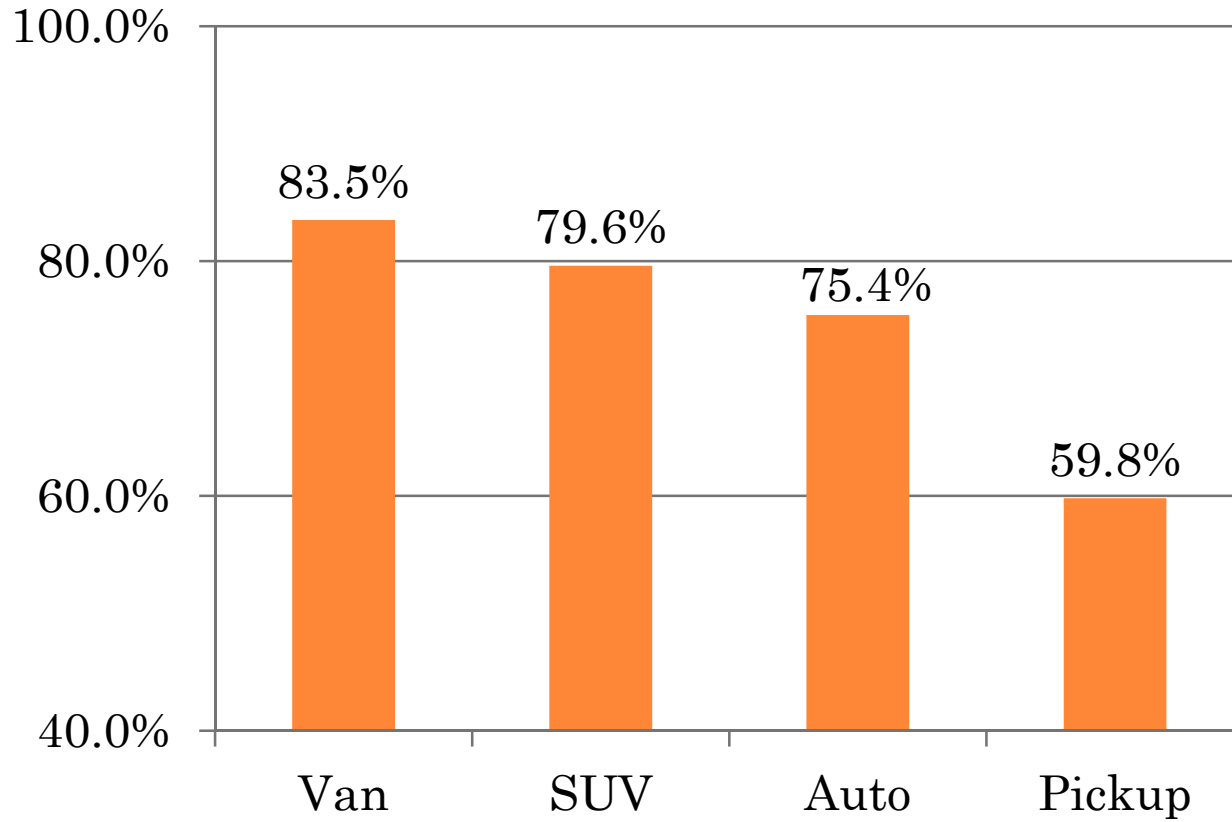
OVERALL SEAT BELT USE IN NORTH DAKOTA



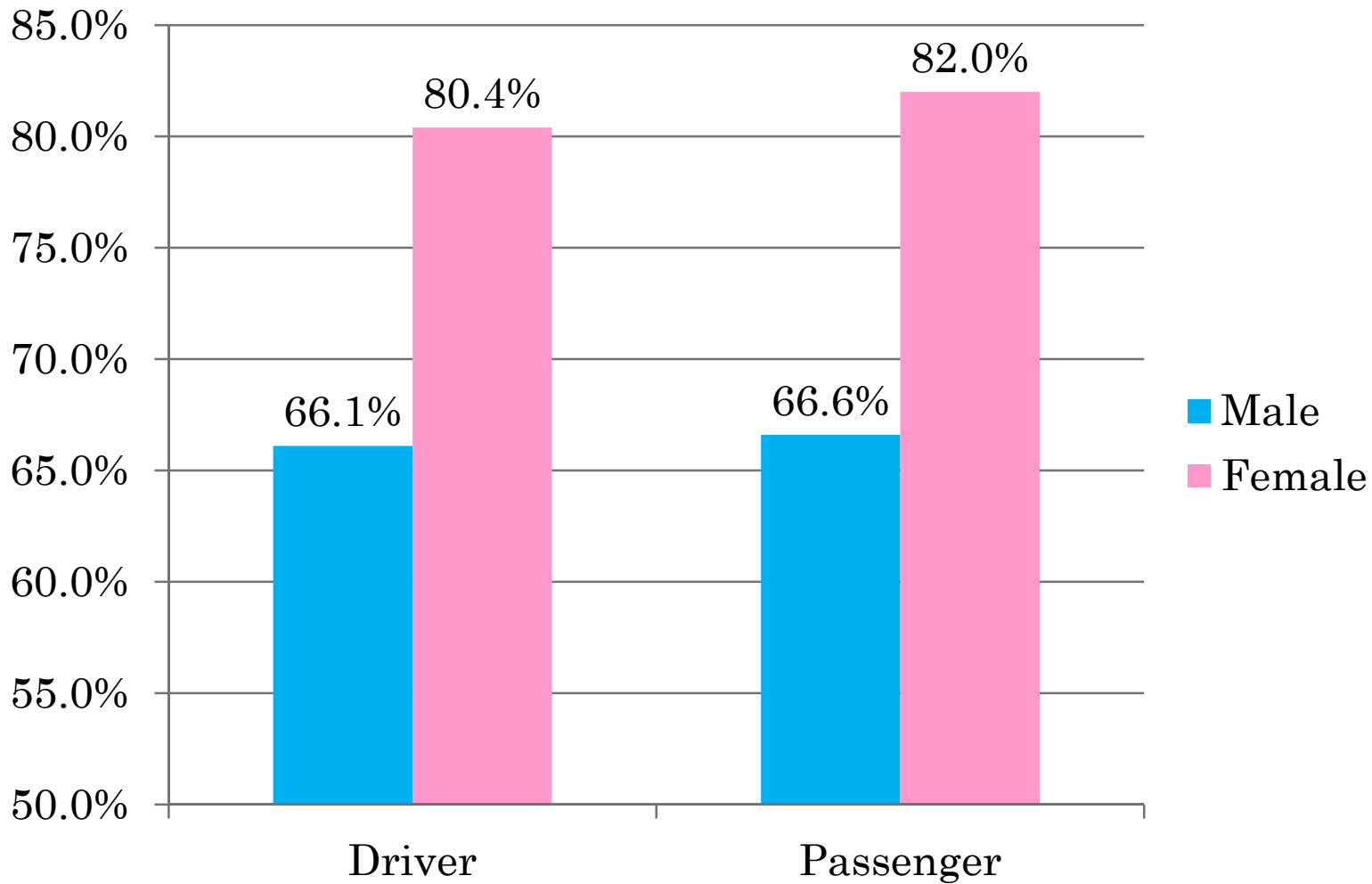
Source: *Seat Belt Use in North Dakota, June 2011*



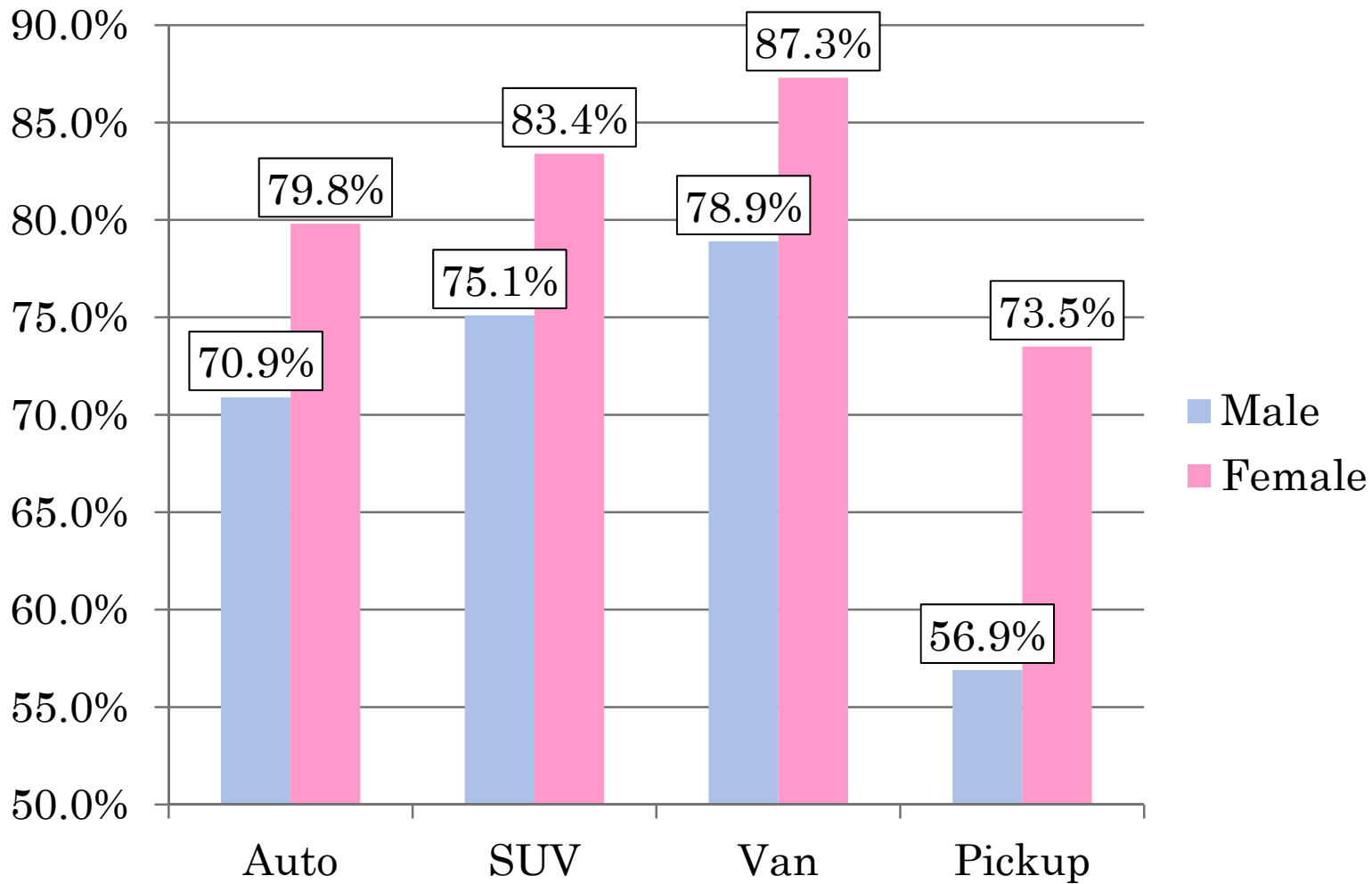
ND SEAT BELT USE BY VEHICLE TYPE: 2011



ND SEAT BELT USE BY GENDER: 2011



ND SEAT BELT USE BY GENDER AND VEHICLE TYPE: 2011



SEAT BELT USE ON ND RURAL ROADS



WHAT'S UP WITH RURAL ROADS?

- In the United States, about one-third of travel takes place on rural roads (FHWA 2009), but more than half (57%) of all traffic deaths occurred on rural roads between 2005 and 2009 (NHTSA 2011)
- In ND - from 2006 to 2010 89% of serious injuries (fatal and disabling injuries) resulting from motor vehicle crashes, occurred on rural roads (NDDOT 2011)
- ND had the lowest reported seat belt use rate of all states in fatal crashes on rural roads from 2002-2007
 - 36% in ND compared to 60% average among the 48 contiguous states

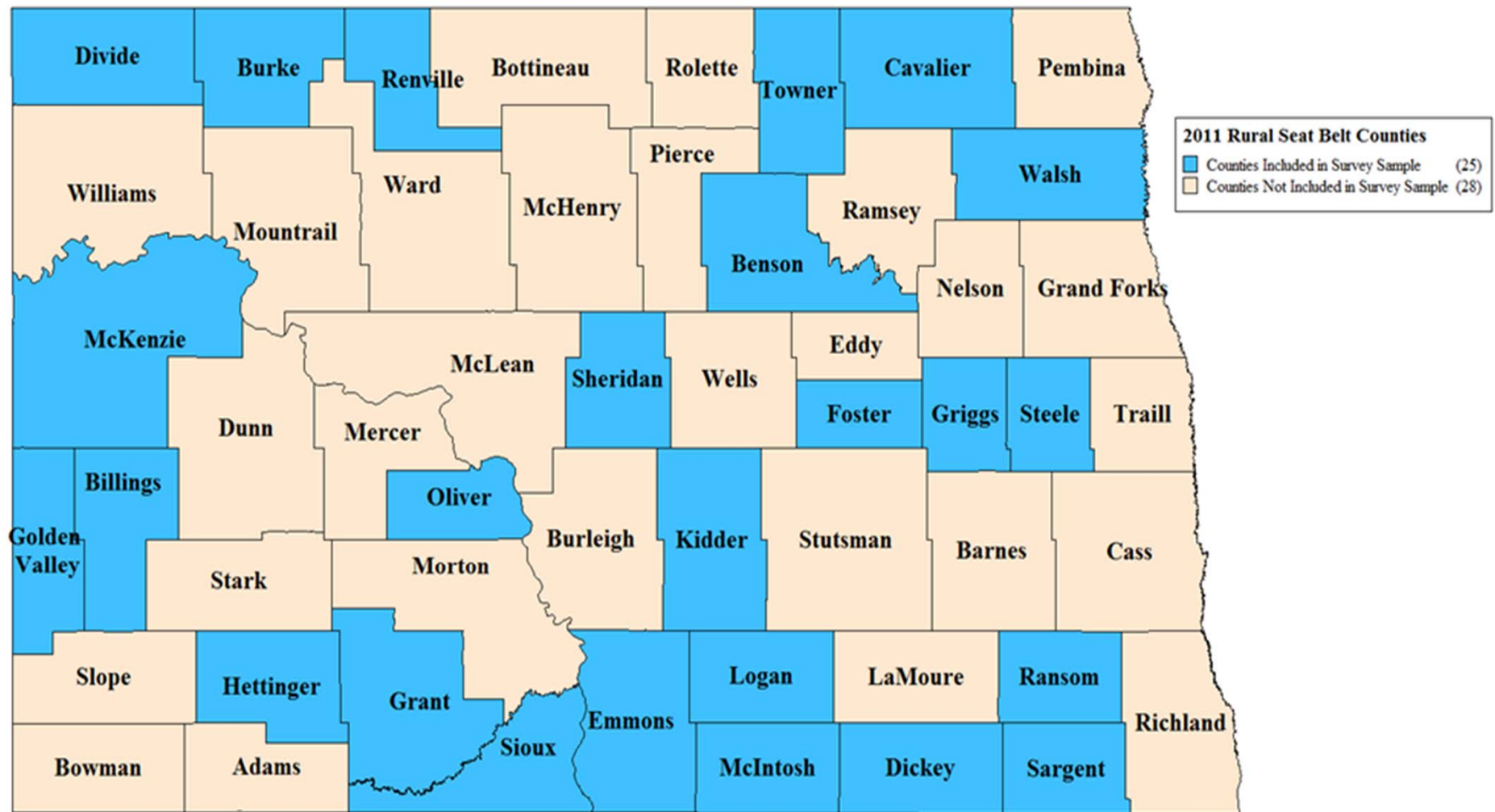


RURAL SEAT BELT SURVEY

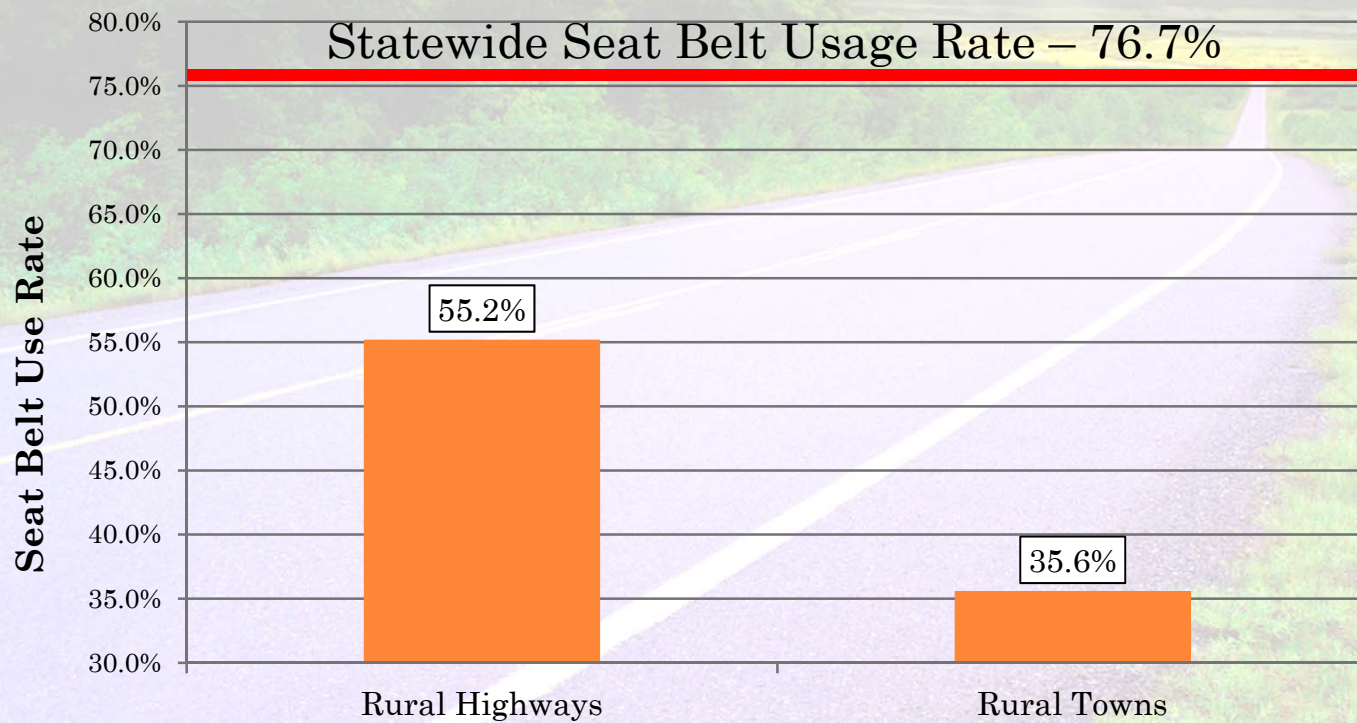
- To specifically calculate seat belt use on rural roads
- Observation sites had to be a minimum of 20 miles from interstate



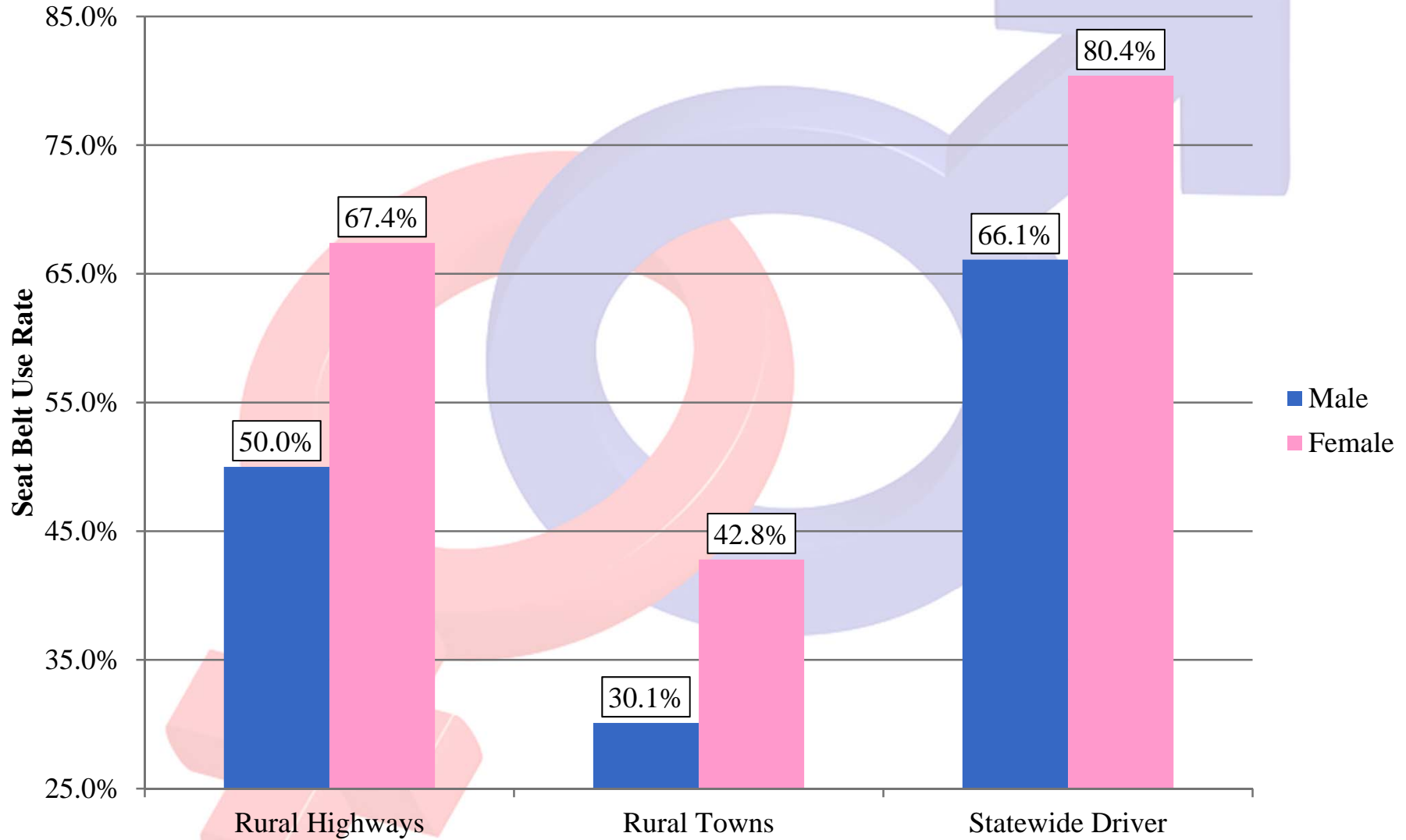
COUNTIES INCLUDED IN 2011 RURAL SEAT BELT SURVEY



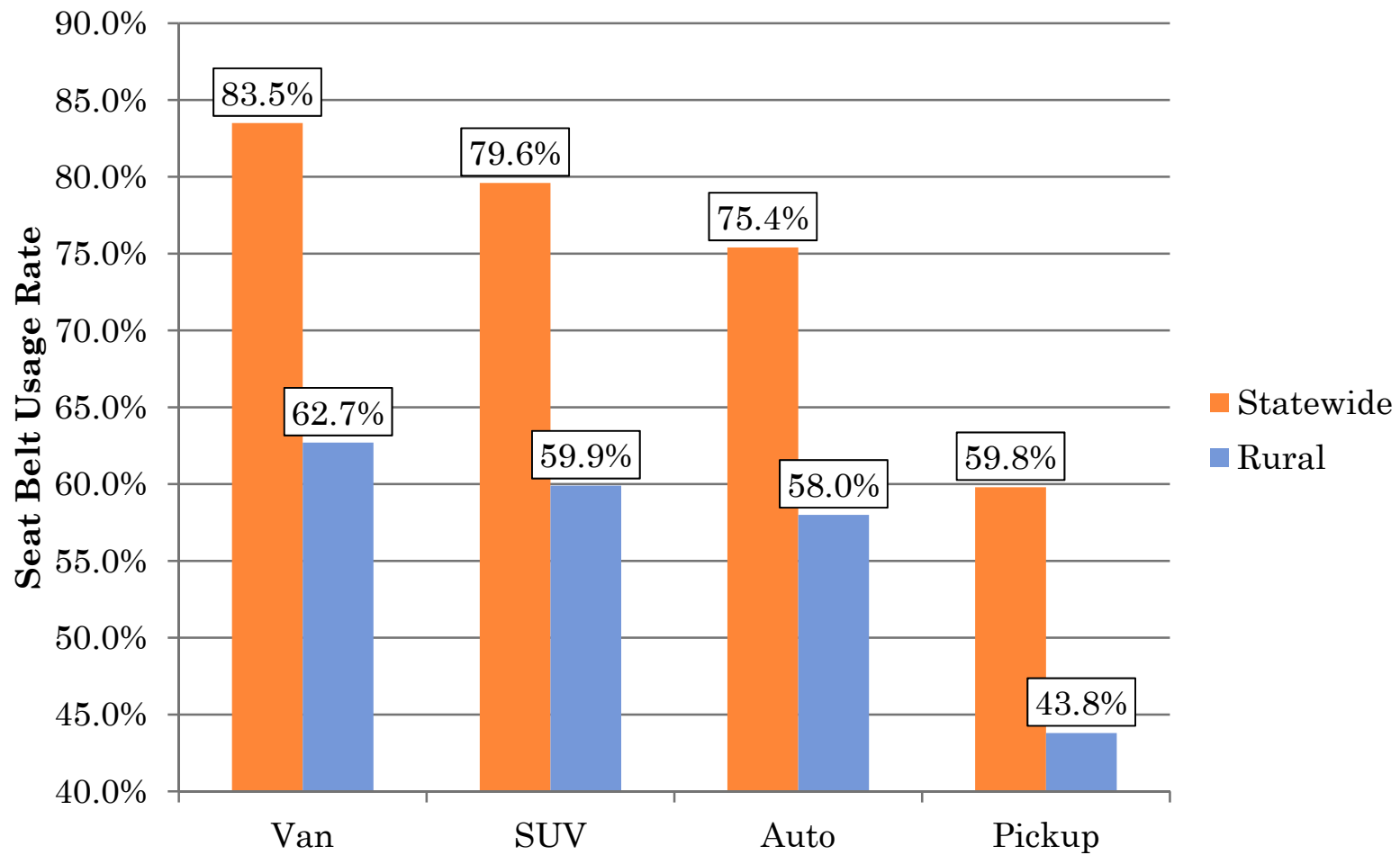
SEAT BELT USE BY ROAD TYPE: 2011



SEAT BELT USE BY DRIVER GENDER: 2011



DRIVER SEAT BELT USE BY VEHICLE TYPE: 2011



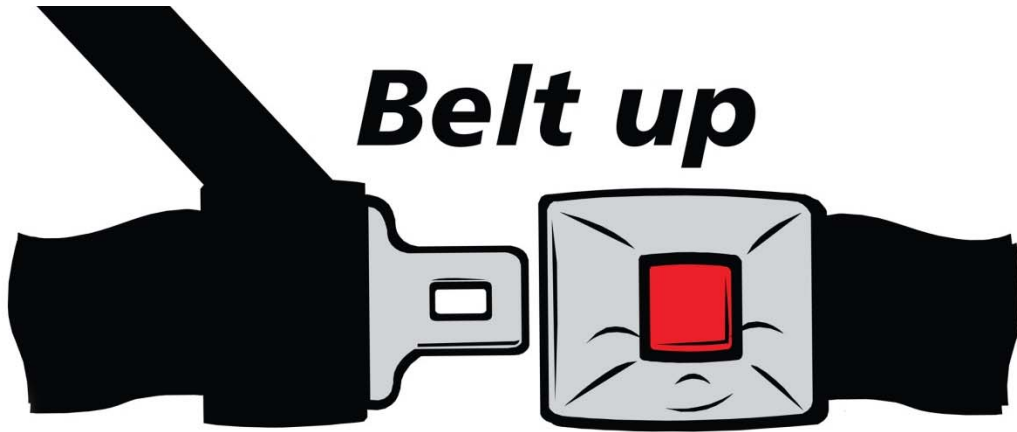
IN SUMMARY.....

- Seat belts are effective at reducing serious and fatal injuries in motor vehicle crashes
- States with primary seat belt laws have higher overall seat belt use rates and lower rates of unrestrained MV fatalities
- It is possible to predict seat belt use (gender, age, vehicle type, etc.)
- ND's current seat belt use leaves a little room for improvement
- Vast difference exist between seat belt use in rural vs urban areas



<http://www.youtube.com/watch?v=h-8PBx7isoM>





Belt up

For Life

Thank you!

