TOWARD ZERO DEATHS

Because your life counts

Welcome

Southeast Minnesota Toward Zero Deaths Workshop

May 7, 2015

Mission

To move southeastern Minnesota toward zero deaths on our roads using education, enforcement, engineering and emergency medical & trauma services.

TZD Cornerstone

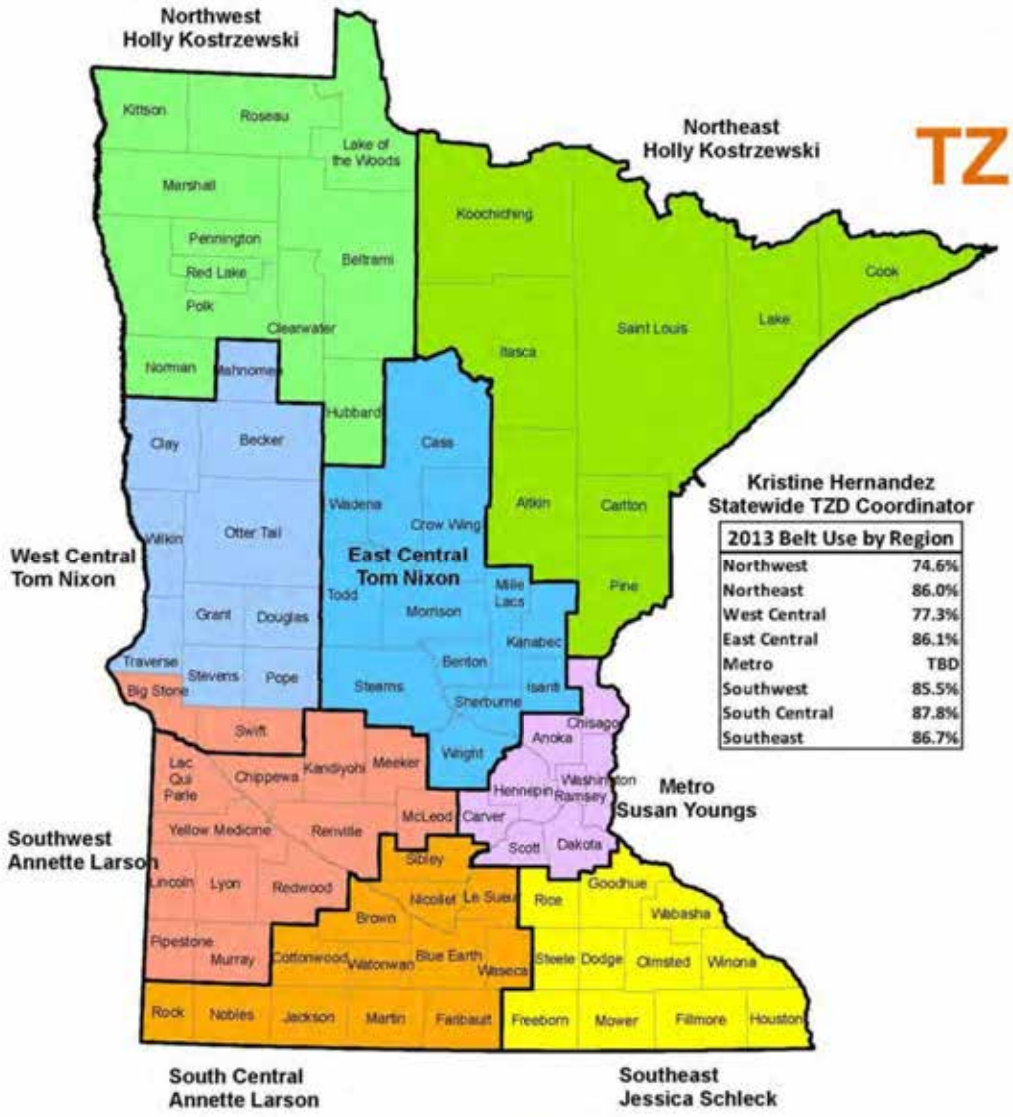
- ~~Four~~ *Five* “E” approach:
- Enforcement
- Engineering
- Education & Outreach
- Emergency Medical & Trauma Services
- **Everyone Else!**

Year-to-Date Traffic-Related Deaths

As of May 6, 2015, there were 106 traffic-related deaths on Minnesota roads, compared to 96 deaths at this time last year.

TOWARD ZERO DEATHS

TZD Regions

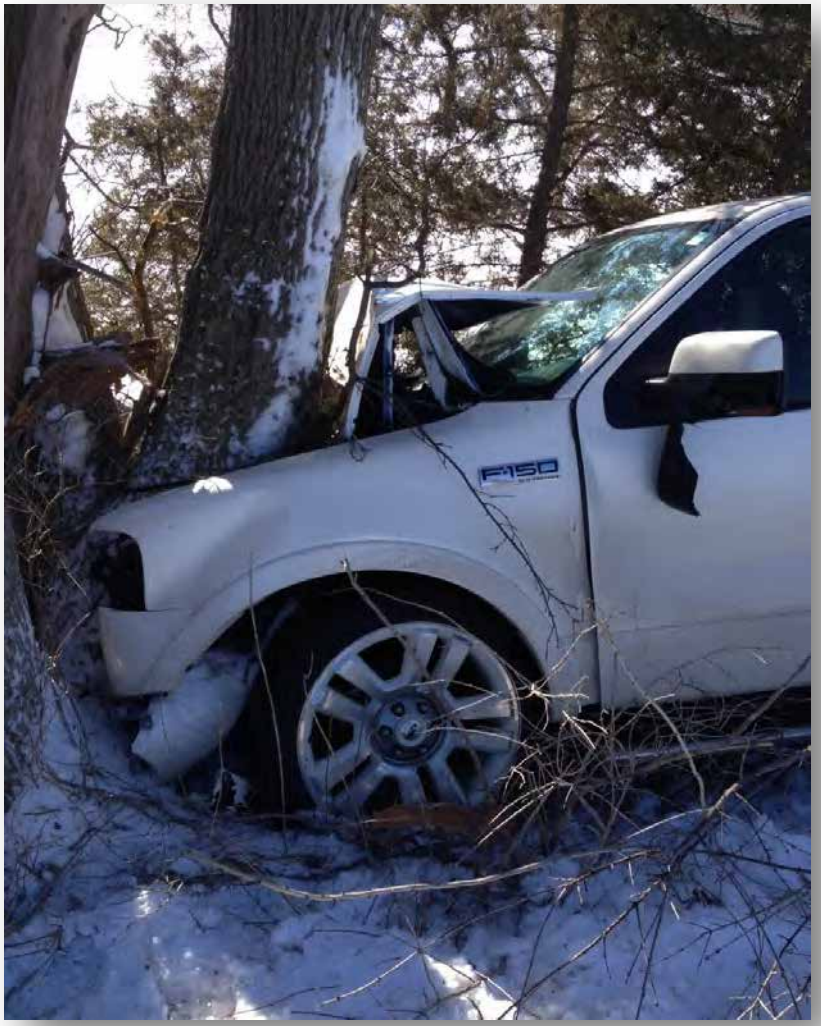


Kristine Hernandez
Statewide TZD Coordinator

2013 Belt Use by Region	
Northwest	74.6%
Northeast	86.0%
West Central	77.3%
East Central	86.1%
Metro	TBD
Southwest	85.5%
South Central	87.8%
Southeast	86.7%

What Has Been Done Regionally?

Jessica Schleck,
Southeast Minnesota
Toward Zero Deaths
Regional Coordinator



2014-2015 Southeast Minnesota TZD Safe Roads Coalitions

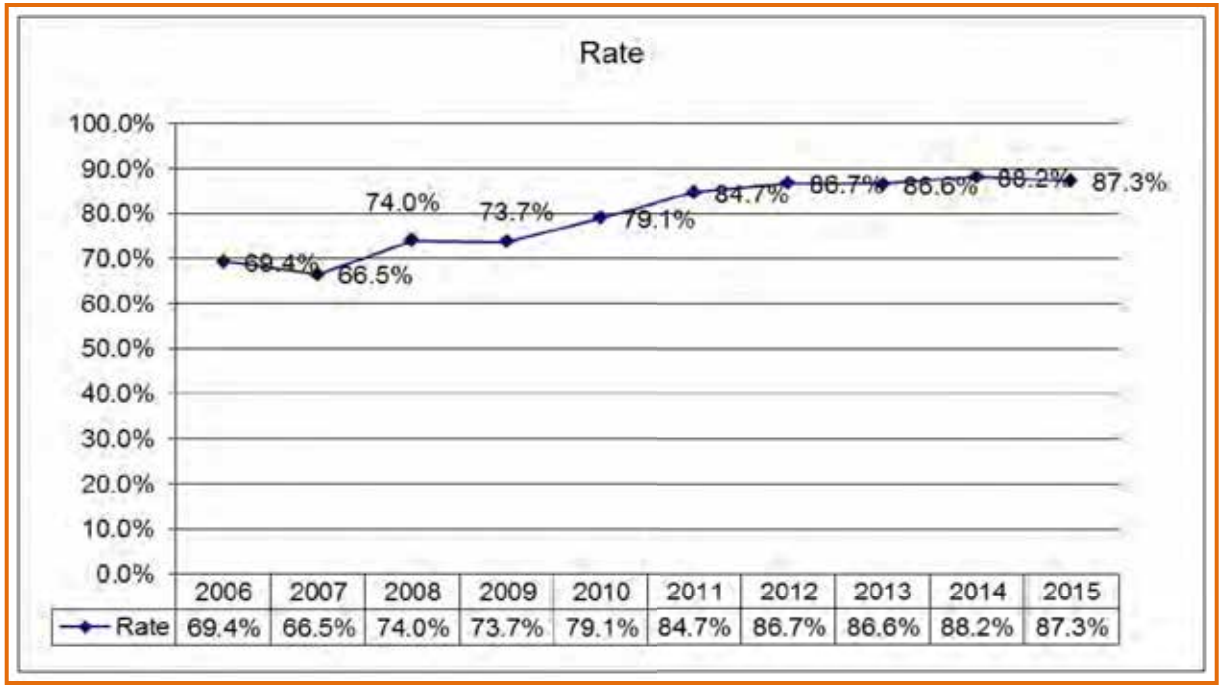
- Dodge
- Fillmore
- Goodhue
- Houston
- Mower
- Rice
- Steele
- Wabasha
- Winona

May Mobilization Regional News Conference, Photo Shoot & Poster

Owatonna – 2007
Rochester – 2008
Winona – 2009
Red Wing – 2010
Lanesboro – 2011
Northfield – 2012
Kasson – 2013
Wabasha – 2014
Albert Lea – 2015

Southeast Regional Seat Belt Use (2006-2015)

In 2015, the regional seat belt compliance rate decreased slightly from 88.2% in 2014 to 87.3%.



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Rate	69.4%	66.5%	74.0%	73.7%	79.1%	84.7%	86.7%	86.6%	88.2%	87.3%

Ted Foss Move Over Law

TOWARD ZERO DEATHS

Saved by the Ticket

DWI Kick Off

RCTC Distracted Driving Kick Off

Goal: Zero Deaths

Minnesota's Traffic Safety Culture

Kristine Hernandez, Minnesota Toward Zero Deaths Program Coordinator

TOWARD ZERO DEATHS

TOWARD ZERO DEATHS

Because your life counts

Exploring Minnesota's Traffic Safety Culture

Kristine Hernandez

Minnesota Toward Zero Deaths Program Coordinator

May 1, 2015

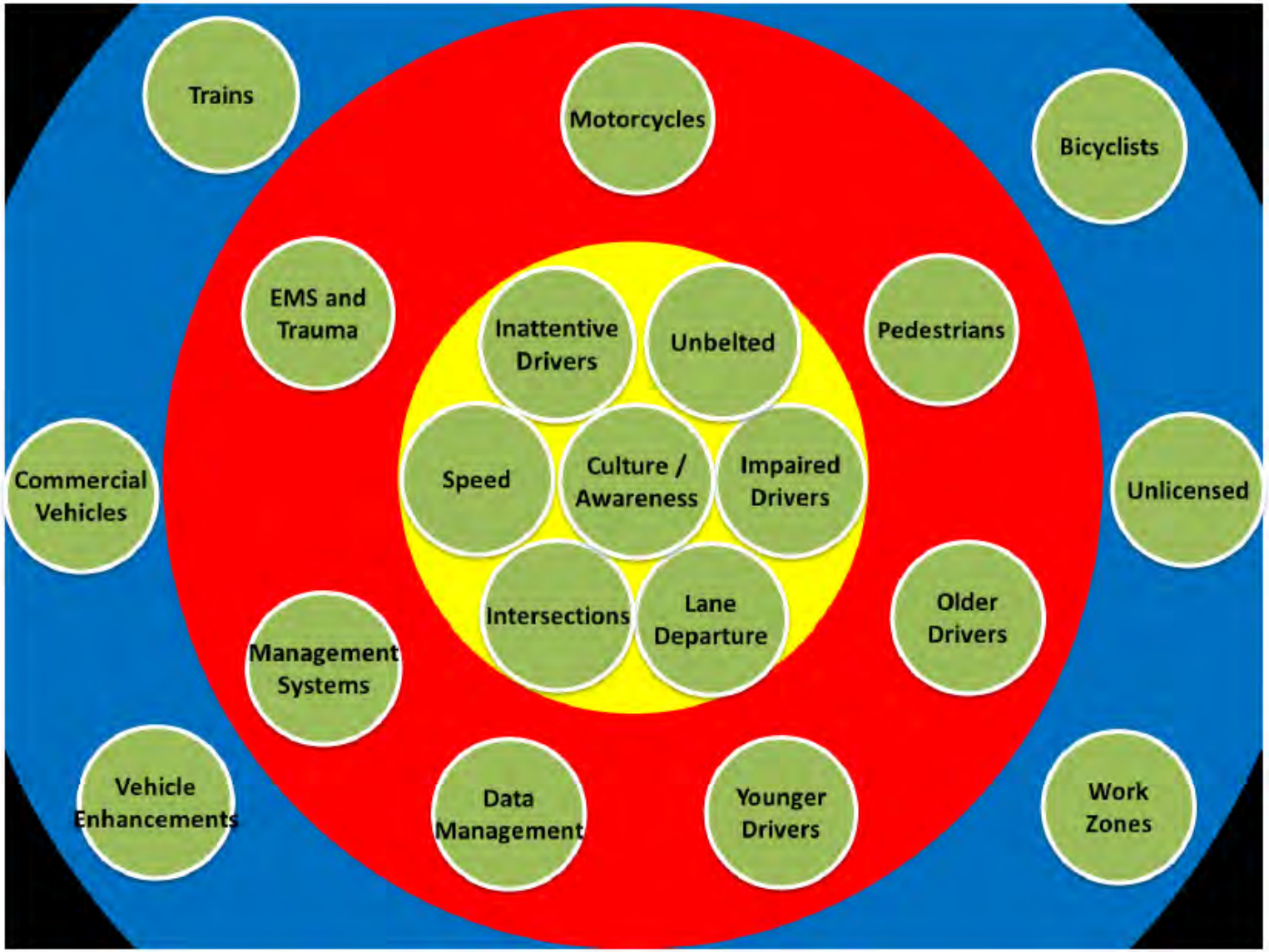
What is *Traffic Safety Culture?*

Shared:

- Values
- Beliefs
- Norms
- Attitudes

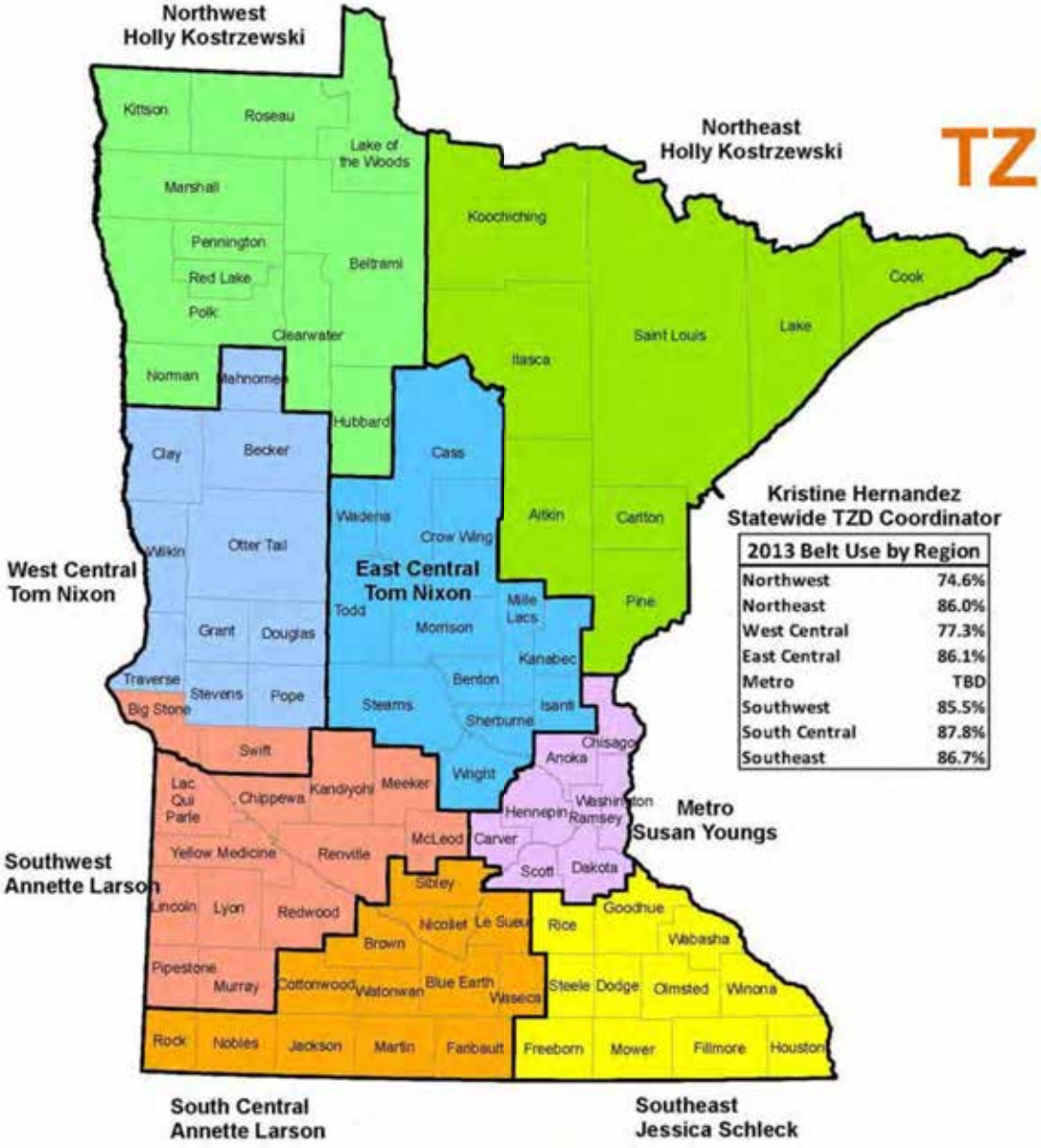
TOWARD ZERO DEATHS

Emphasis Area Priorities



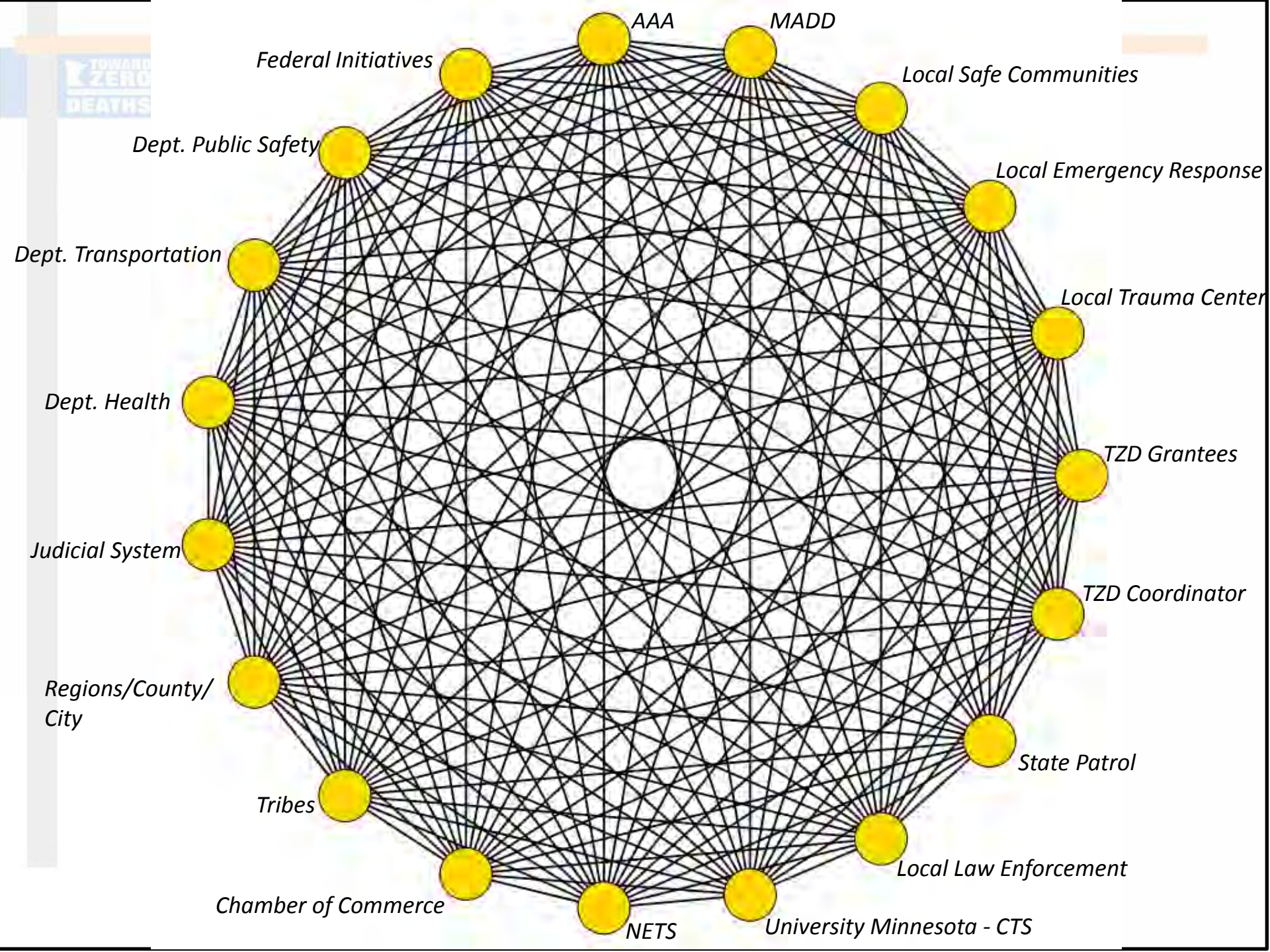
TOWARD ZERO DEATHS

TZD Regions



Kristine Hernandez
Statewide TZD Coordinator

2013 Belt Use by Region	
Northwest	74.6%
Northeast	86.0%
West Central	77.3%
East Central	86.1%
Metro	TBD
Southwest	85.5%
South Central	87.8%
Southeast	86.7%


AAA
MADD
Federal Initiatives
Local Safe Communities
Dept. Public Safety
Local Emergency Response
Dept. Transportation
Local Trauma Center
Dept. Health
TZD Grantees
Judicial System
TZD Coordinator
Regions/County/
City
State Patrol
Tribes
Local Law Enforcement
Chamber of Commerce
NETS
University Minnesota - CTS

2015 TZD Regional Workshops

May 1:
Southwest – Morton
May 7:
Southeast – Rochester
May 12:
West Central – Fergus Falls
May 13:
Northwest – Bemidji
May 27:
Northeast – Duluth
May 29:
South Central – Fairmont
June 2:
East Central – Baxter
June 5:
Metro – Oakdale

MnDOT Work zone Safety Campaign 2014

Speak Up:
Texting + Driving = Illegal

https://www.youtube.com/watch?v=fr9x1OPh4XU

https://www.youtube.com/watch?feature=player_detailpage&v=fr9x1OPh4XU

Legislative Gains

2005

- .08 Blood Alcohol Content (BAC)
- Statewide Trauma System

2006

- Cell Phone Ban for Provisional/ Novice Drivers

2008

- Graduated Driver's License
- No Electronic Communications (text, e-mail, web access)

2009

- Booster Seat
- Primary Seat Belt

2010

- DWI Administrative Sanctions/Ignition Interlock

2014

- Parent Component for driver education

TZD Program Growth

	2003	2014
Seatbelt Use	**82%**	**95%**
Cable Median Barrier	**0 miles**	**450 miles**
% Treated @ Designated Trauma Hospital	**67%**	**99%**
TZD Safe Road Coalitions (funded & unfunded)	**< 10**	**52**
TZD Enforcement Grant Agencies	**104 (41 grants)**	**283 (55 grants)**
County Safety Plans and District Safety Plans	**0**	**95**
Ignition Interlock Participants	**0**	**8,633**
TZD Regions with MnDOT & MPS Leadership	**0**	**8**
Participants in Annual TZD Conference	**110**	**961**
DWI Courts	**0**	**16**

Traffic Safety Culture

www.towardzerodeaths.org

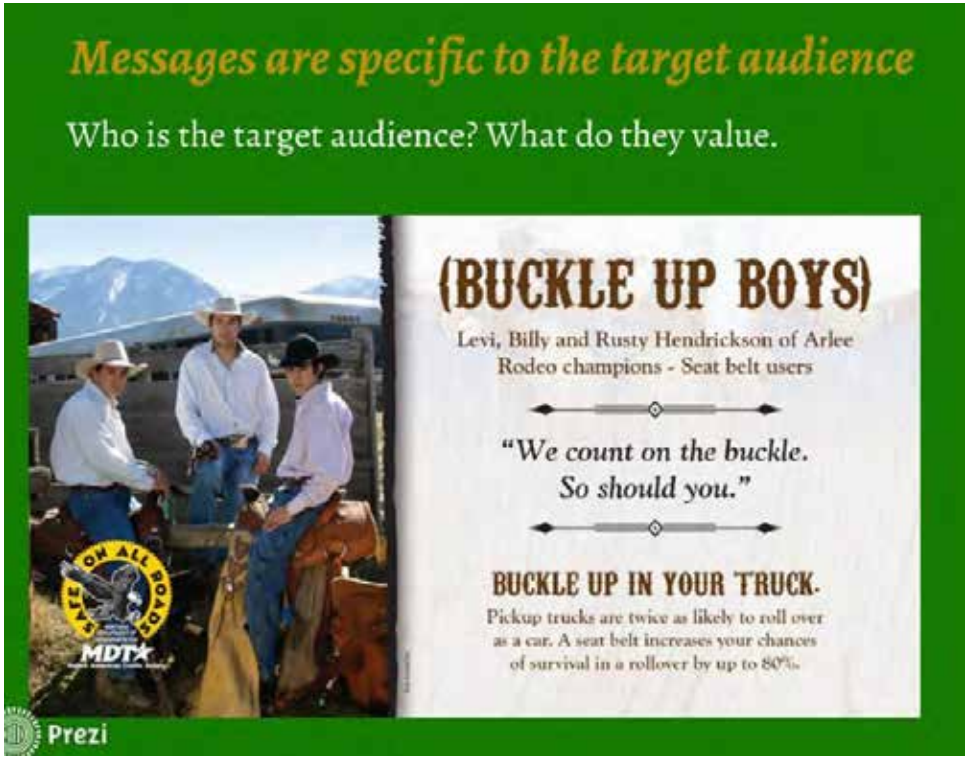
TOWARD ZERO DEATHS

BUCKLE UP MONTANA

a safety movement from the Montana Department of Transportation

clips

OUR PARTNERS



http://plan2live.mt.gov/plan_your_ride.shtml

This New Zealand Road Safety Ad Features Older, Unsung Heroes

Subtly-Scripted Ad Focuses on the Witnesses, Not the Drunk Drivers

http://creativity-online.com/work/new-zealand-transport-agency-local-legends/38106

Looking Forward

Toward Zero Deaths Goal

2020 Targets

- Less than **300 fatalities**
- Less than **850 serious injuries**

Goal: Zero Deaths

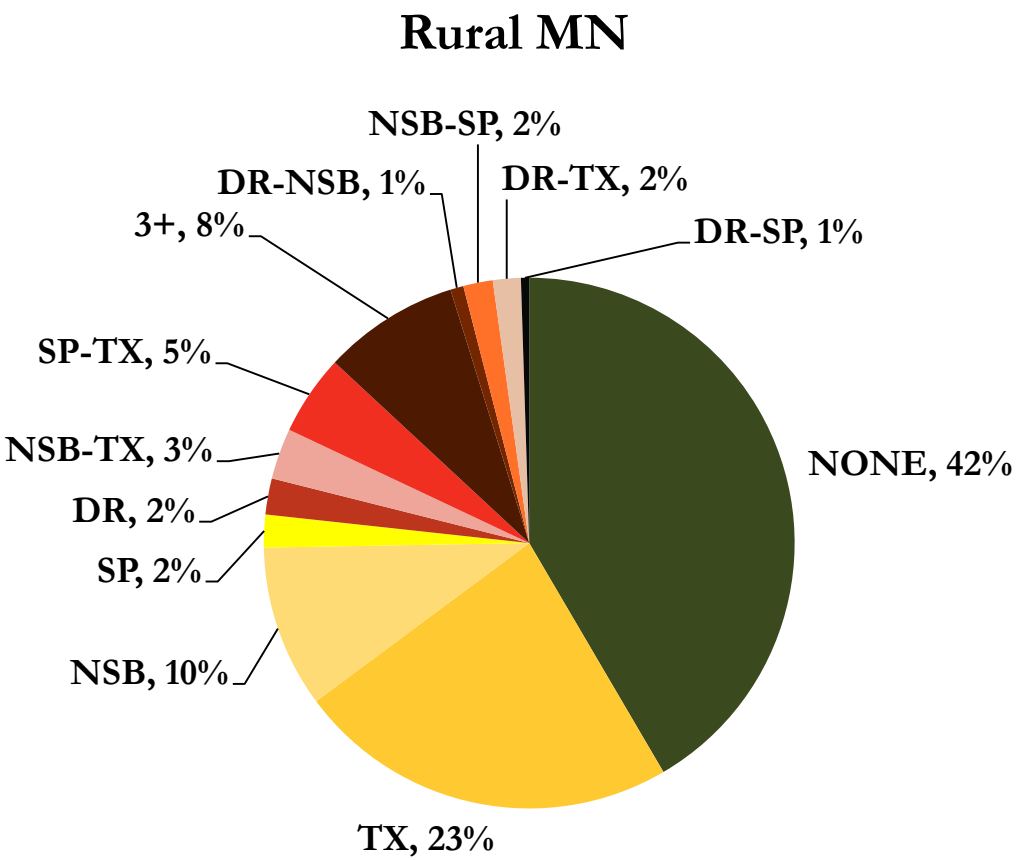
How do we get there?

Answer: *Reduce deaths by **one per month** each month for the next 5 years*
(60 less in 60 months….Is that attainable?)

TOWARD ZERO DEATHS

As in previous years, this *Traffic Safety Culture Index* finds that Americans do value safe travel and desire a greater level of safety than they now experience. They perceive unsafe driver behaviors such as speeding and impaired driving as serious threats to their personal safety and generally support laws that would improve traffic safety by restricting driver behavior, even when such laws would restrict behaviors they admit to engaging in themselves.

High-Risk Drivers Disproportionately Involved in Crashes



Percent of Drivers/Crashes

High Risk
14%/23%

Moderate Risk
27%/35%

Low Risk
59%/42%

High-Risk Driving Requires Rationalization

Skewing of Social Norms

- Perceptions of risky behaviors are common among all groups
- Those who themselves exhibited a particular behavior had an even higher perception of how common that behavior really is.

Engineering 201: Not Just for Engineers!

Mark Vizecky,
MnDOT State Aid Traffic Safety Engineer

and

Nancy Klema,
MnDOT District 6 Traffic Senior Engineer

TOWARD ZERO DEATHS

Break

PART II

Traffic Safety Resources for Everyone on the Engineering “E”

Towards Zero Deaths
SE Region Conference
May 7, 2015

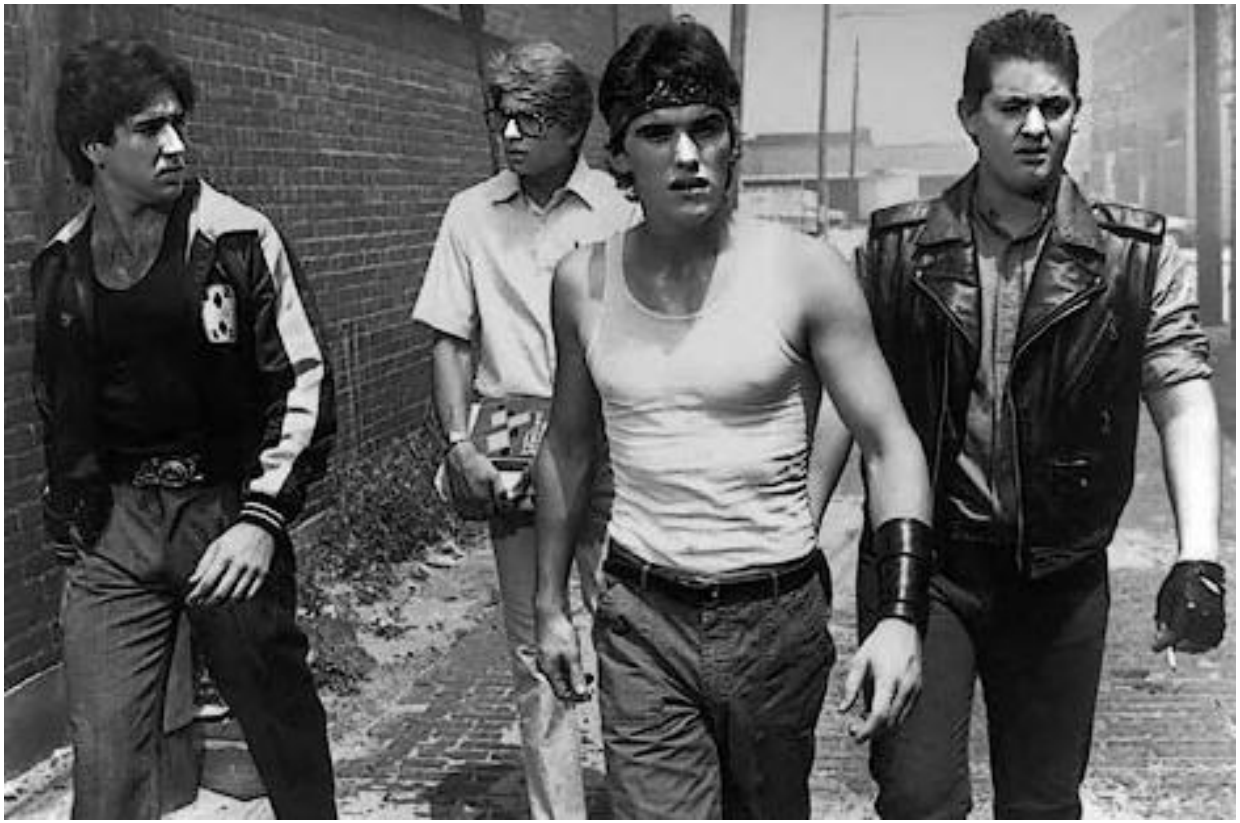
Nancy Klema
District Traffic Operation Engineer
MnDOT District Six

Mark Vizecky
State Aid Traffic Safety Engineer
MnDOT State Aid Division

Trending Topics

- **Rumble and Mumbles Strips**
- **High-intensity Activated crossWalK (HAWK) Signal**
- **Zipper Merge**
- **Dynamic Work Zone Traffic Control**
- **Alternate Interchanges**
  - Quadrant Interchange
  - Diverging Diamond Interchange

Rumbles



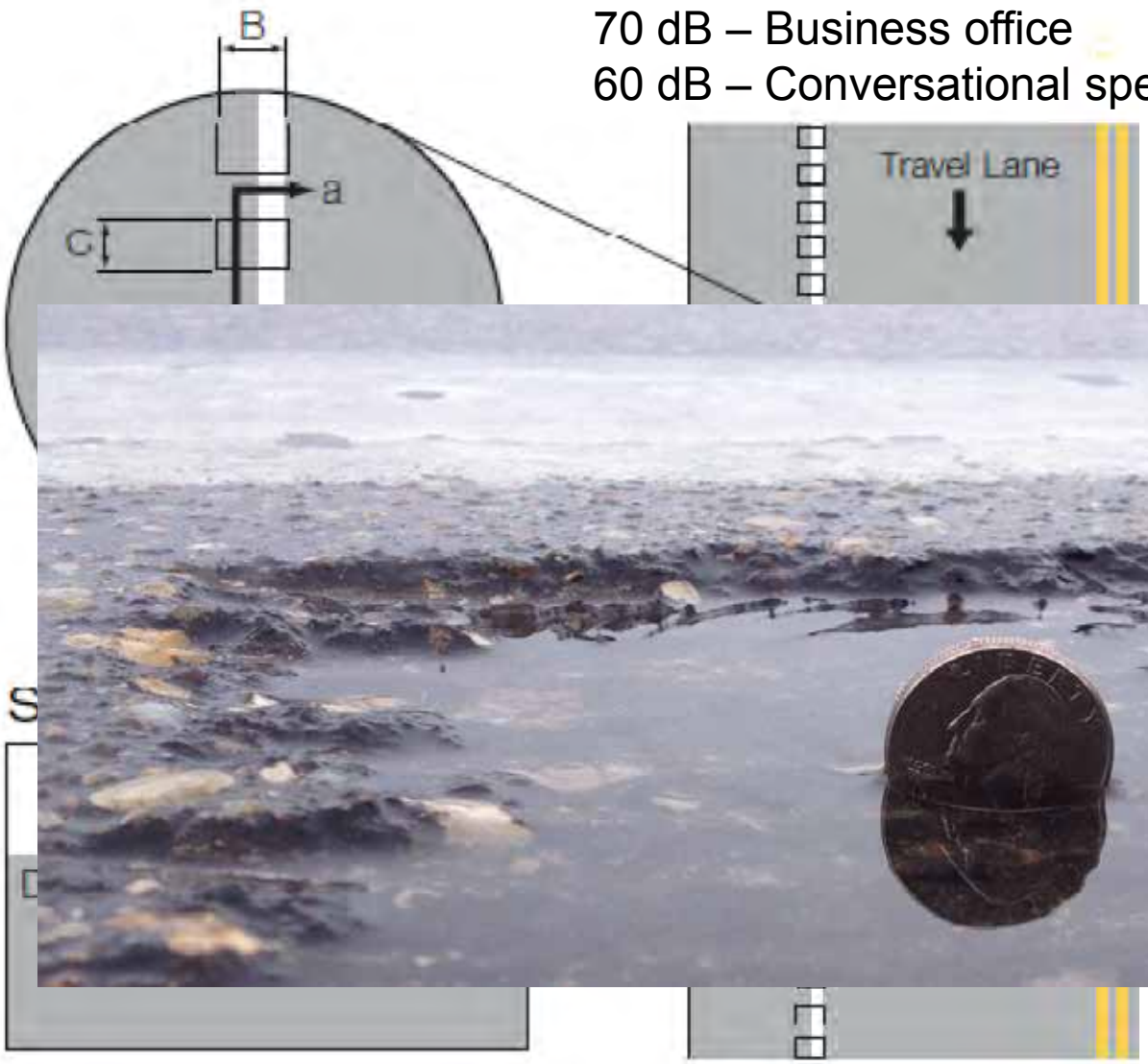
Rumble Strips and Stripes

Bench Mark

80 dB – Heavy truck traffic
70 dB – Business office
60 dB – Conversational speech

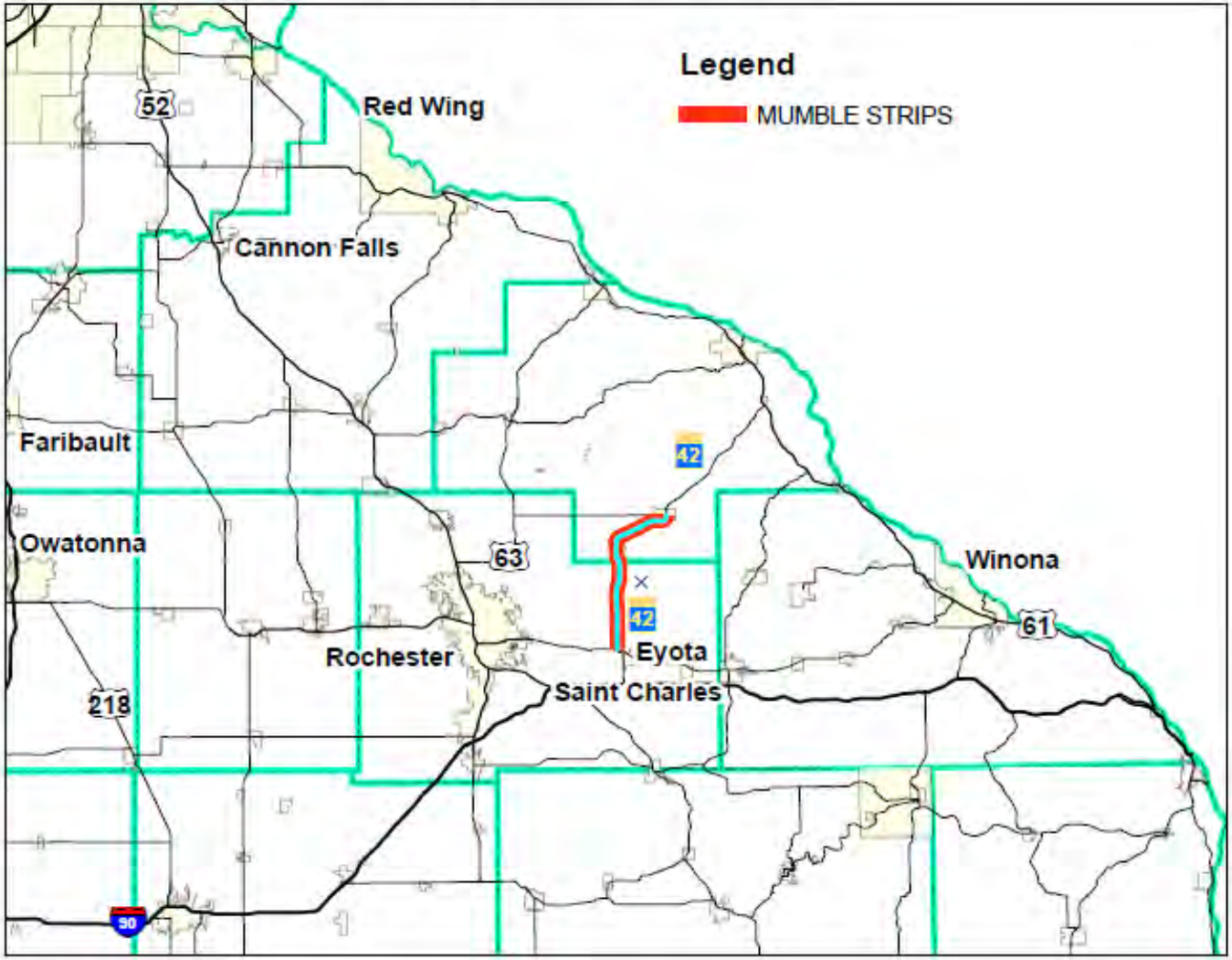
MnDOT Noise Evaluation

50’ away 82 dB
100’ away 75 dB
200’ away 67 dB
300’ away 62 dB



SNAG_Program-0003.mp4

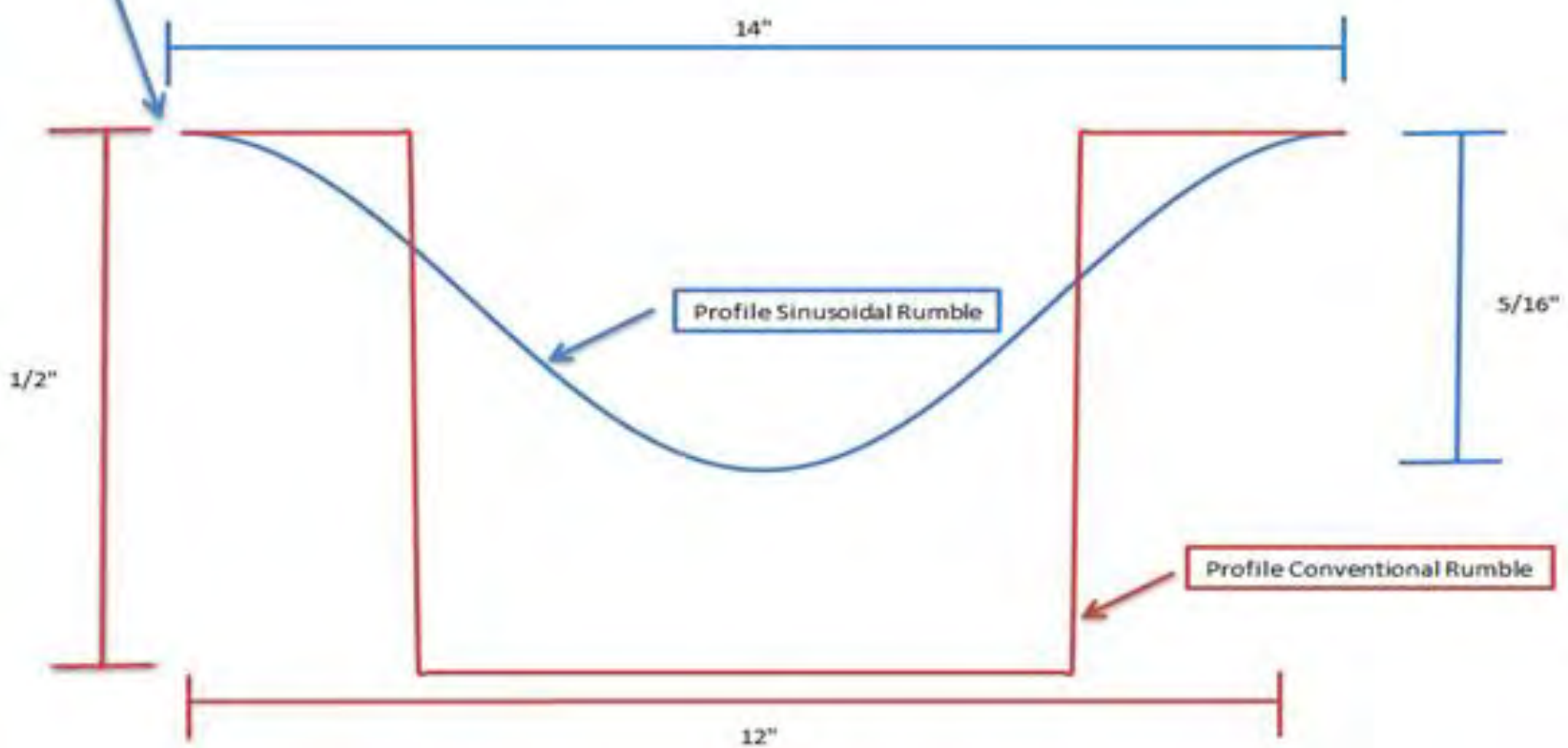
MUMBLE STRIPS PROJECT LOCATION

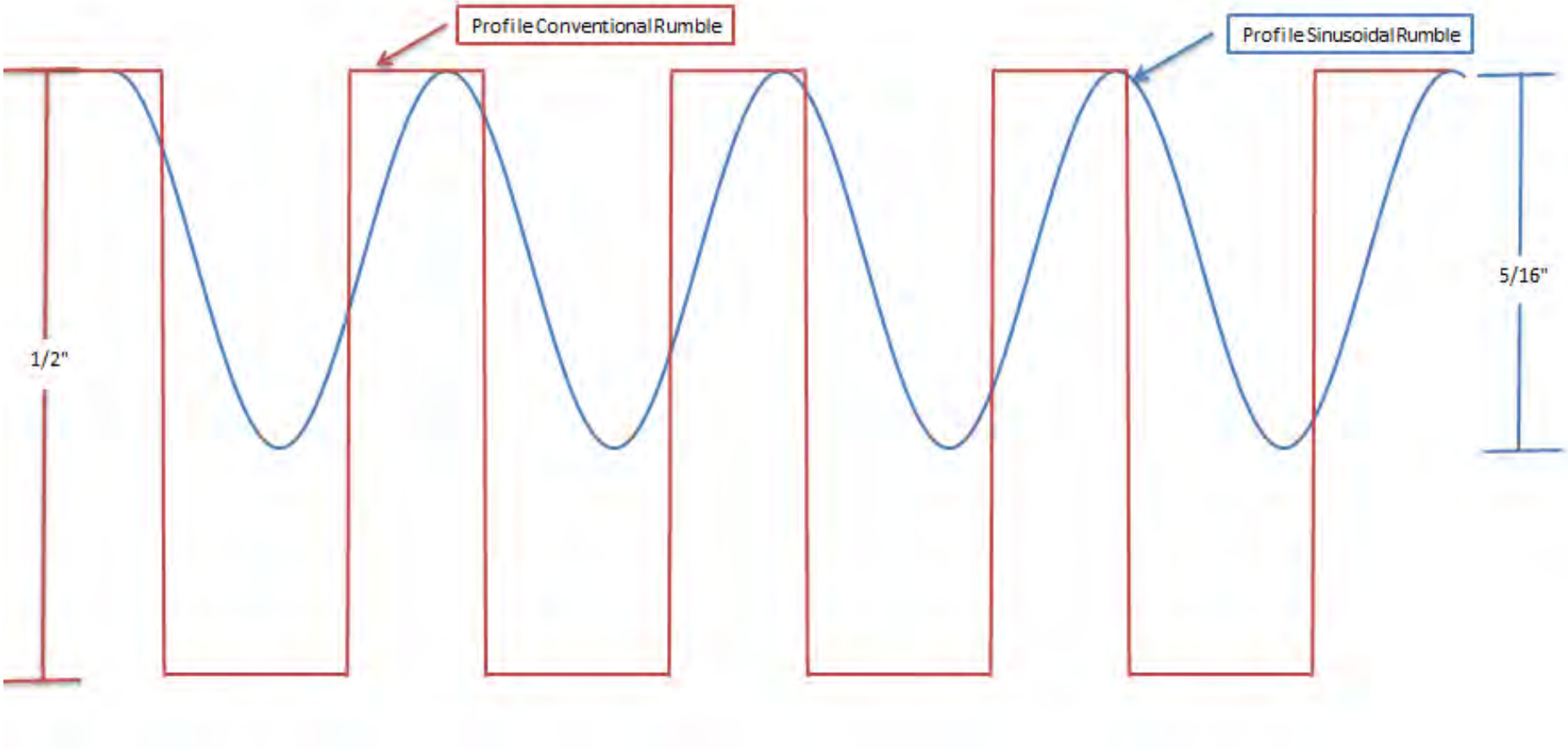


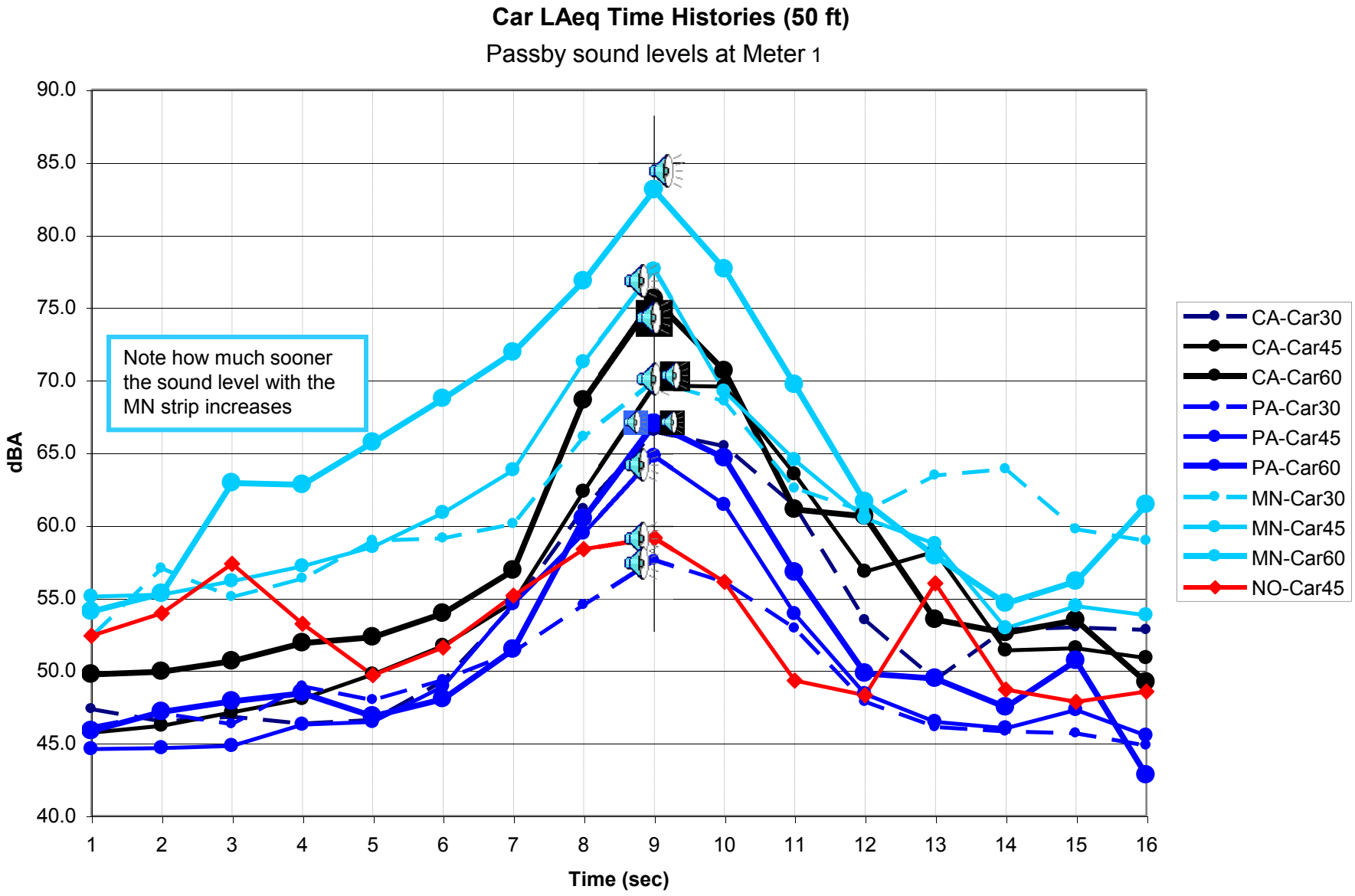
Highway 42 from Eyota to Plainview on centerline

Designs


Edgeline
8"
High Point


14"
1/2"
Profile Sinusoidal Rumble
5/16"
Profile Conventional Rumble
12"


Profile Conventional Rumble
Profile Sinusoidal Rumble
1/2"
5/16"


Car LAeq Time Histories (50 ft)
Passby sound levels at Meter 1
Note how much sooner the sound level with the MN strip increases
dBA
Time (sec)
90.0
85.0
80.0
75.0
70.0
65.0
60.0
55.0
50.0
45.0
40.0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
CA-Car30
CA-Car45
CA-Car60
PA-Car30
PA-Car45
PA-Car60
MN-Car30
MN-Car45
MN-Car60
NO-Car45

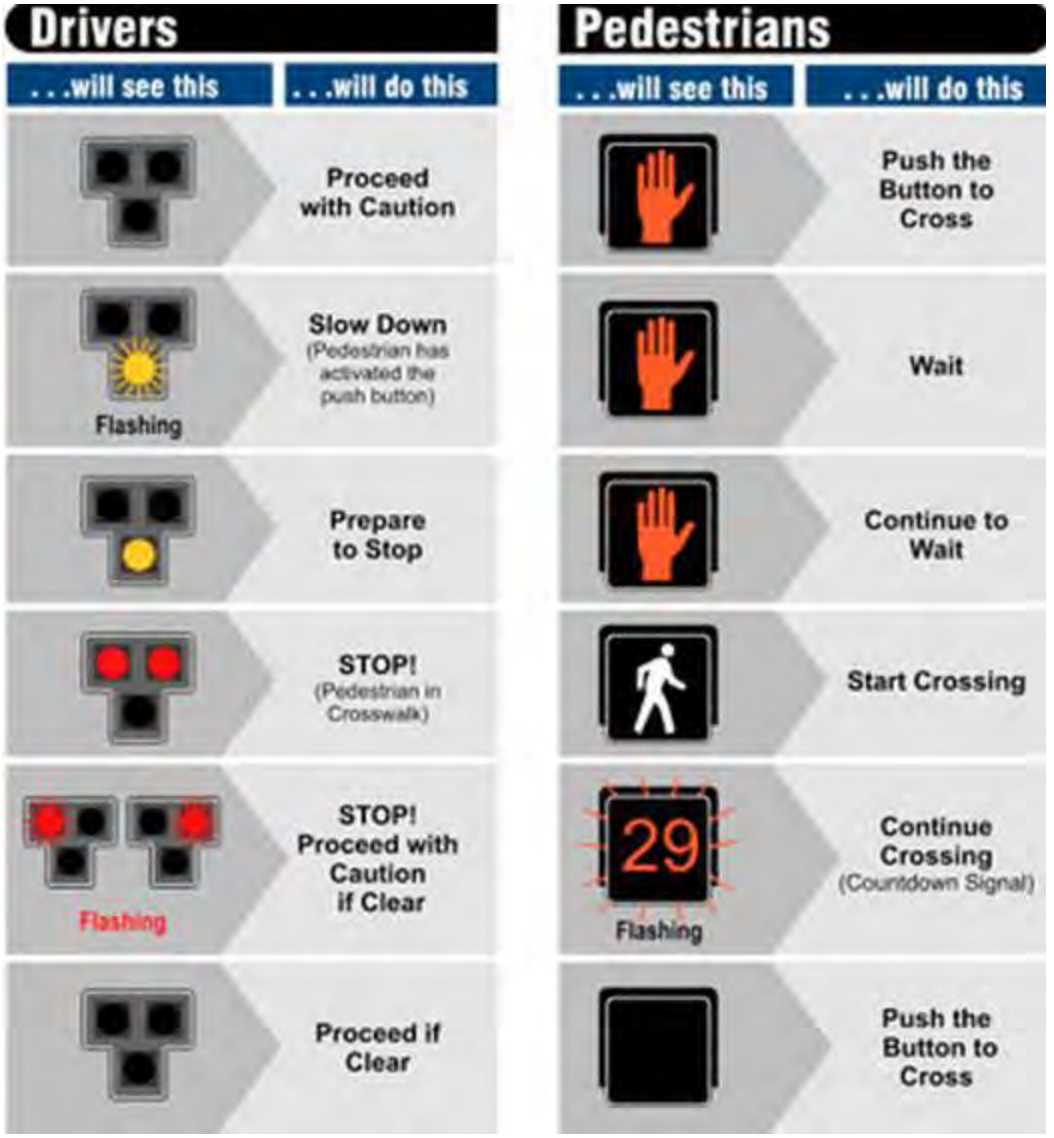
HAWK Signal

High-intensity Activated crossWalK (HAWK) Beacon

Pedestrian Hybrid Beacon

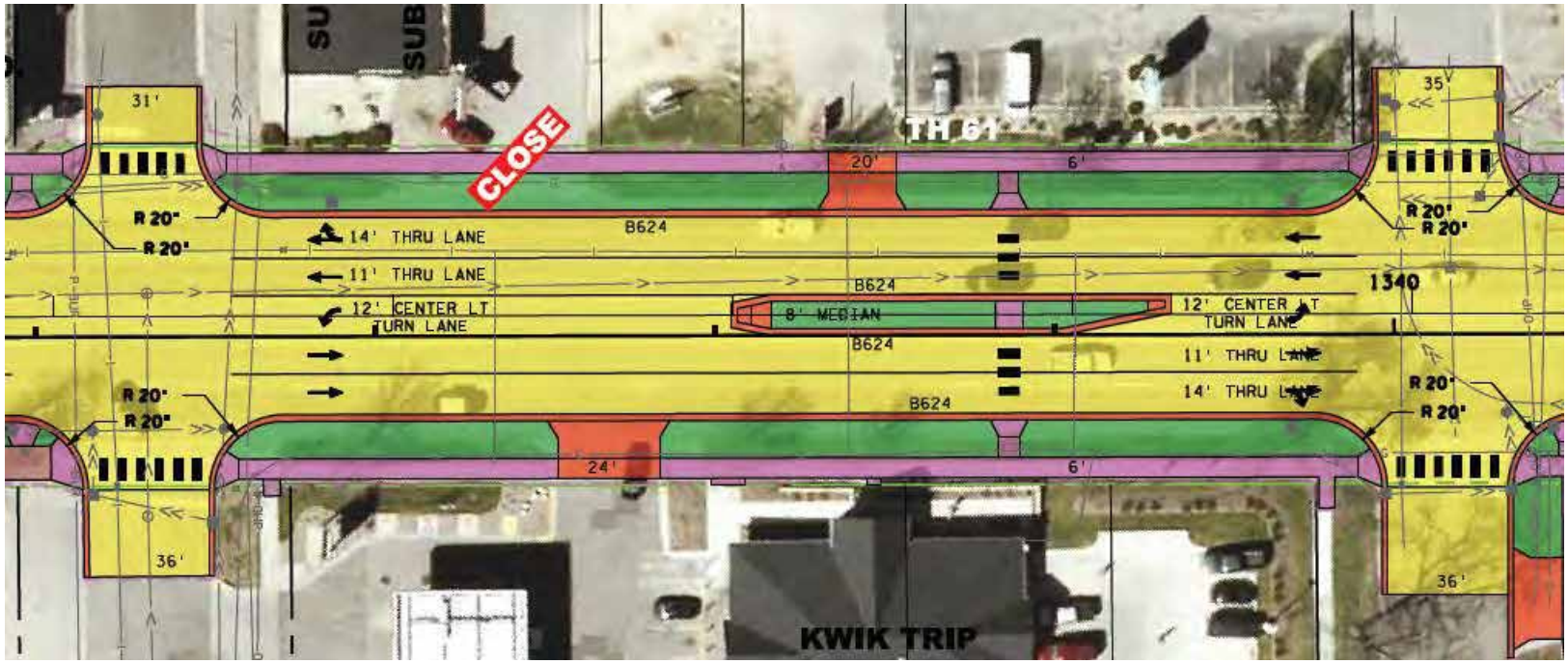
Information provided by St. Cloud Traffic Systems Manager Blake Redfield

Pedestrian Hybrid Beacon



SNAG_Program-0005.mp4

Red Wing Location

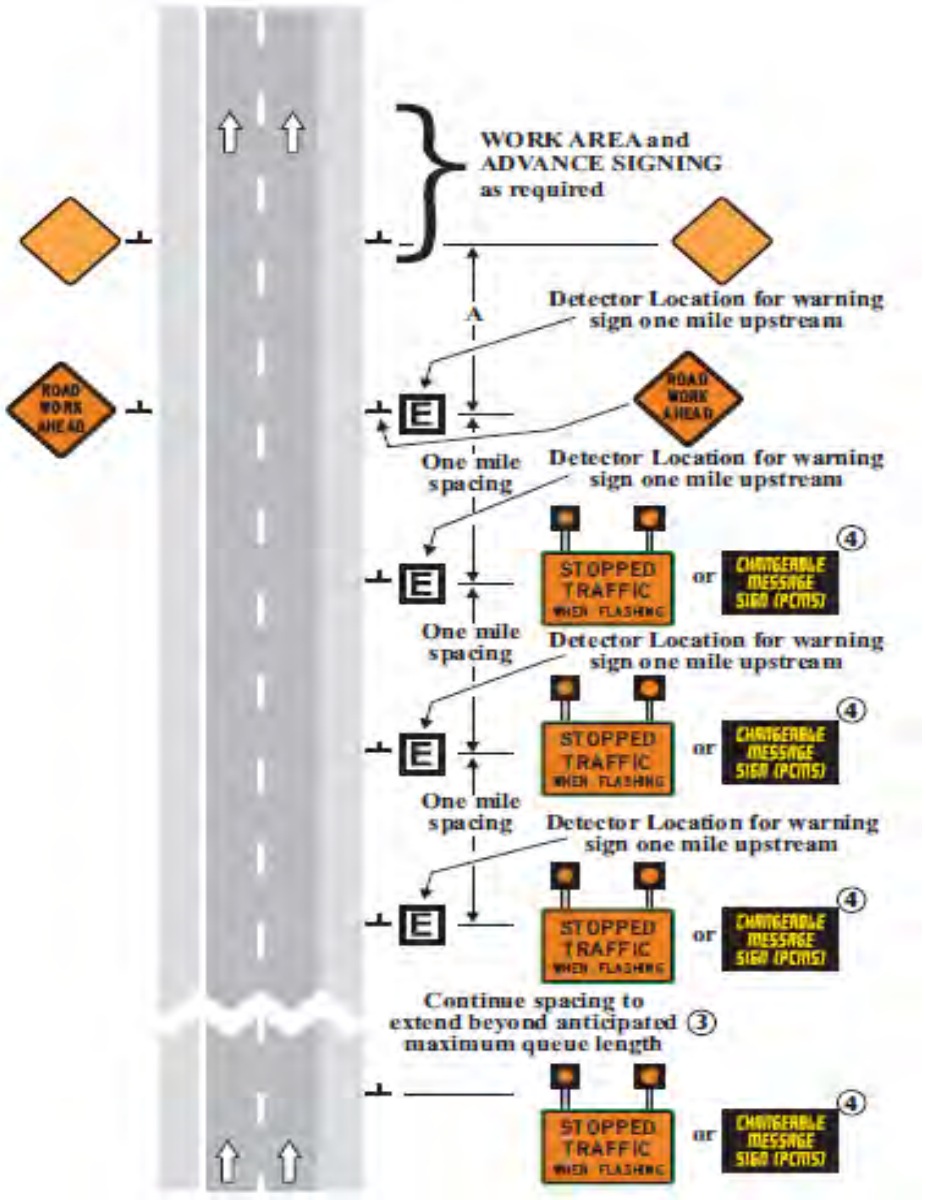


- Between Hill and Franklin Streets (Kwik Trip)
- Between Old West Main and Broad St. signals
- ADT 22,000 vpd on Highway 61
- Five lanes wide (70 feet)

Red Wing Statistics

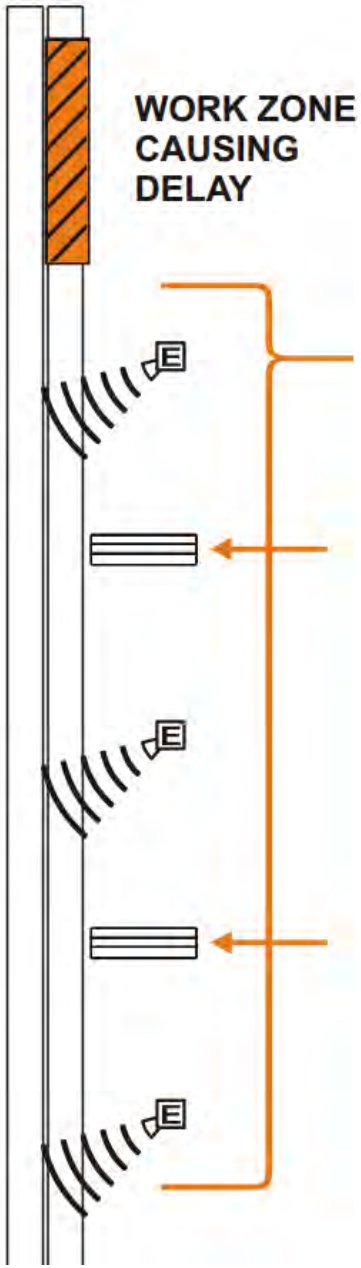
- Estimated Cost $70,000
- City will own and maintain
- Motorist yield rate is 97%

Stopped Traffic Ahead Warning System



How does it work?

- The flashing beacons above the signs activate when the downstream detector senses a drop in average traffic speeds
- The signs deactivate when speeds recover



Where will I see it?

- I-35 in Owatonna
- I-35 from I-90 to Highway 30

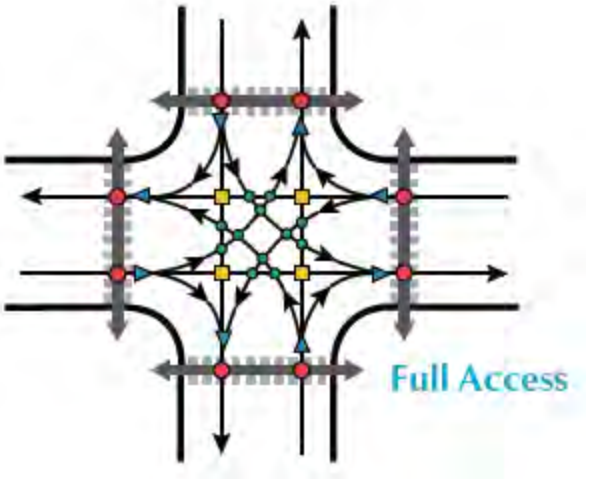
Zipper Merge

Zipper Merge

SNAG_Program-0008.mp4

SNAG_Program-0007.mp4

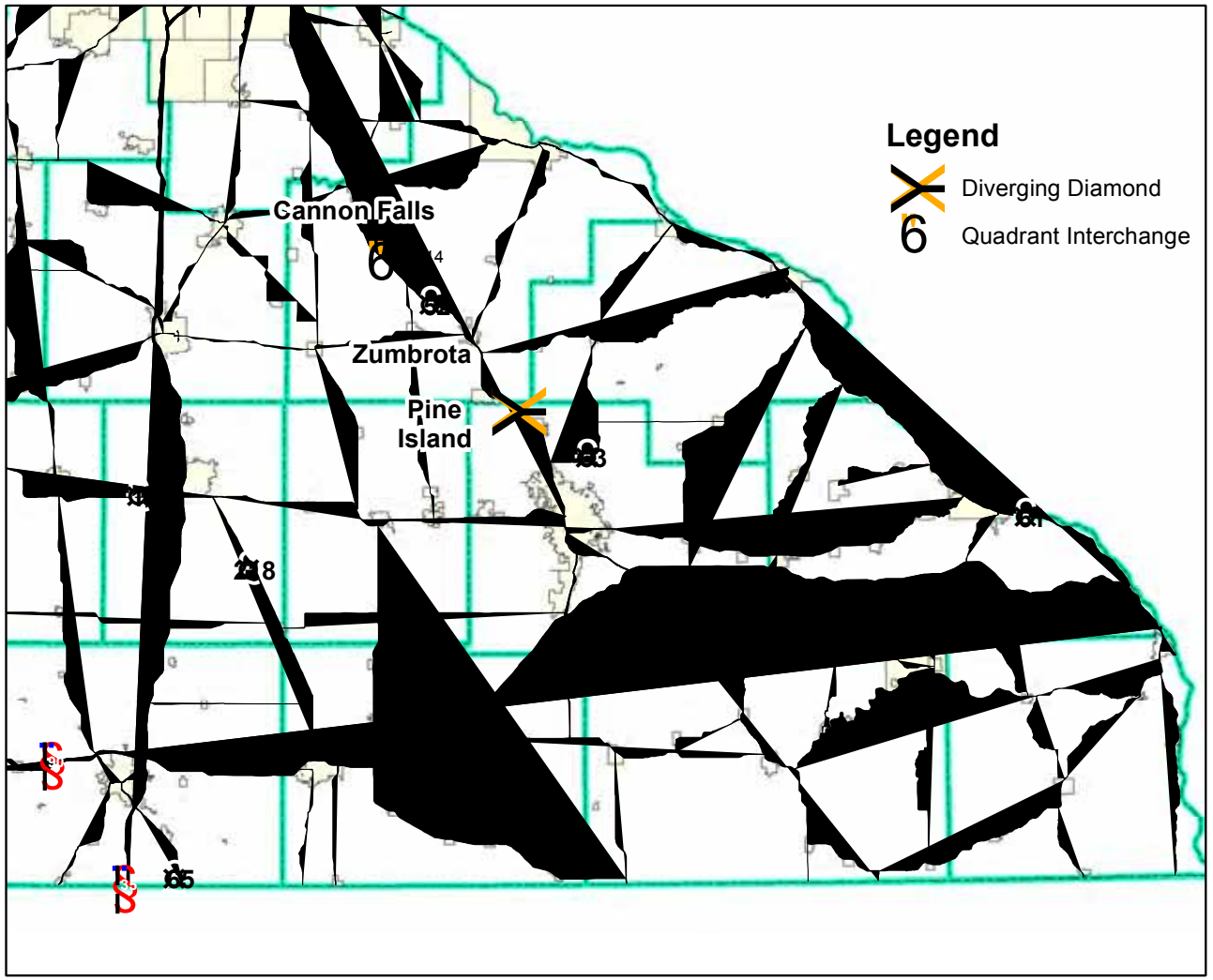
Alternate Interchanges



Partial T-Interchange

Photo provided by TKDA

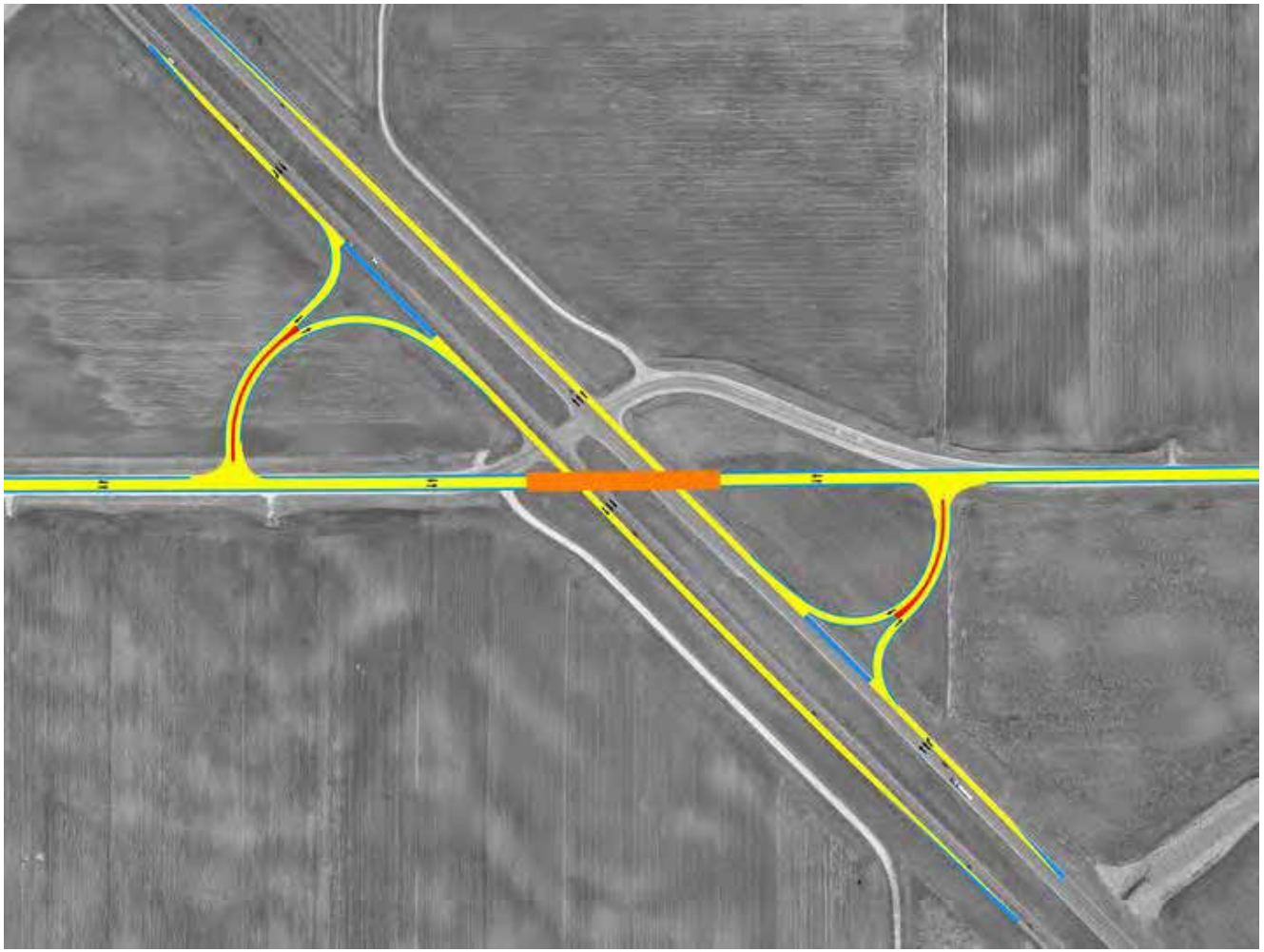
Alternate Interchanges



Quadrant Interchange

How does it work?

Provides a grade separated through-movement crossing between the mainline and the minor roadway.



Benefits

Environmental friendly (requires less land to construct)

- Reduced Hwy52/CR9 farmland and wetland impacts by over a third compared to a diamond interchange

Flexibility for Future Planning

- Allows for phasing in of a full interchange as traffic levels or safety needs dictate
- Additional toolbox option for access control

Hwy 52/CR 9

Project Completed

- November 21, 2014

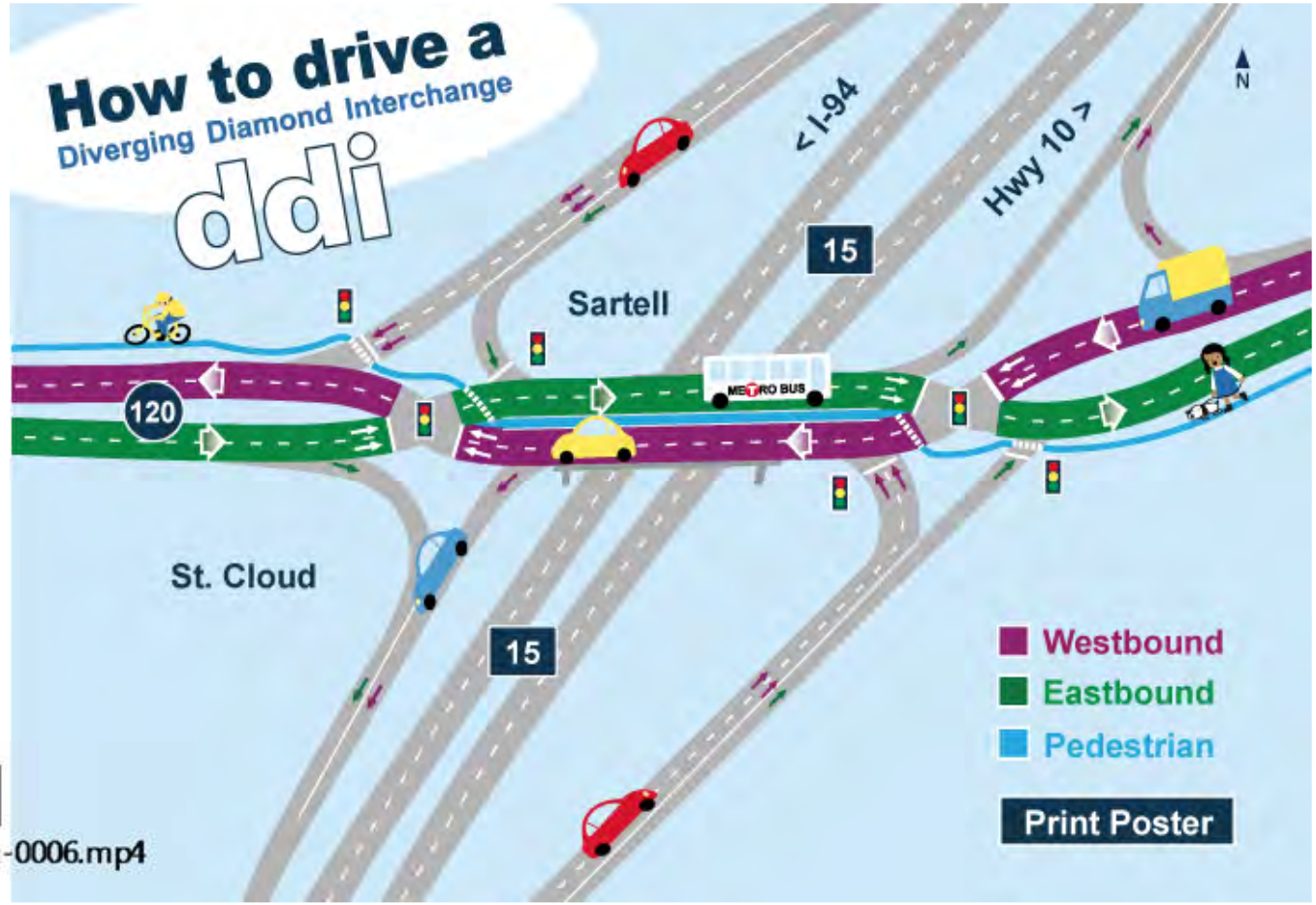
Crashes since opening (1.5 years)

- Six total
  - Two at each exit ramp, each single vehicle
  - Two at east ramp on CR 9
- All ice surface related
- No serious injuries

Diverging Diamond Interchange (DDI)

How does it work?

- Traffic crisscrosses at each end of the bridge
- Eliminates hard left turns



SNAG_Program-0006.mp4

Benefits

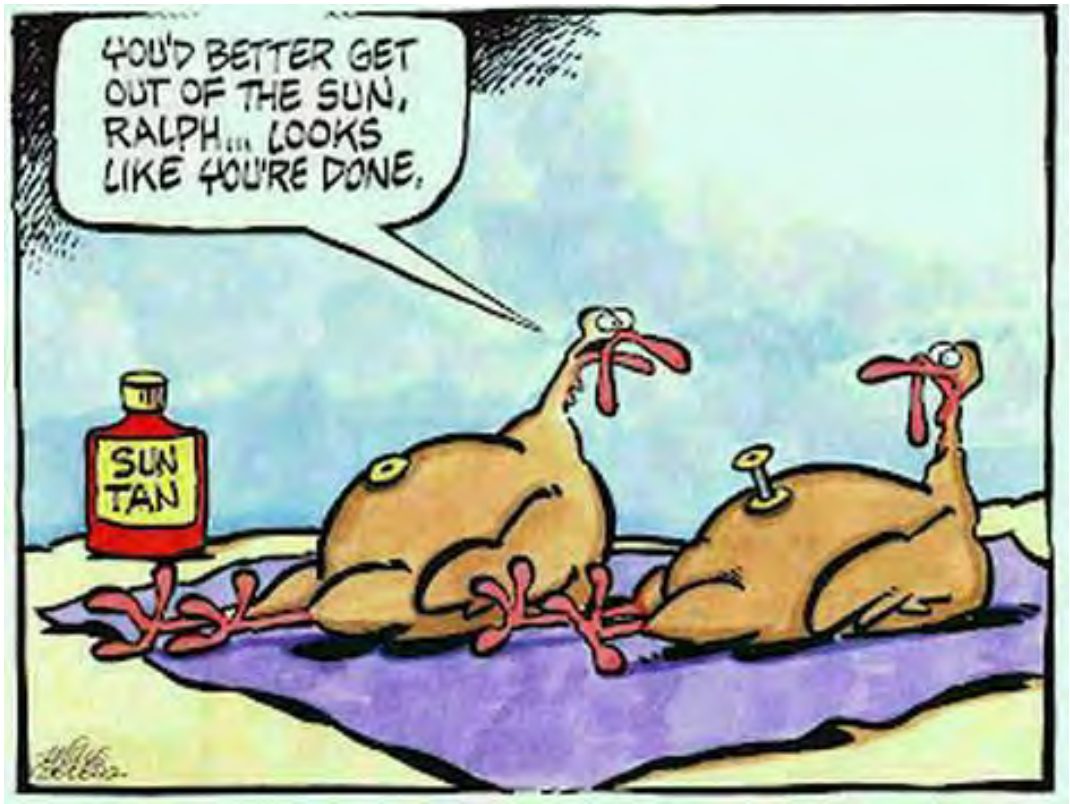
Safety

- Free flowing turns when entering or exiting the roadway
- Eliminates left turns against oncoming traffic
- Fewer crashes due to fewer conflict points
- Better sight distance

Benefits

Capacity

- Moves high volumes of traffic through intersection without adding lanes
- Reduces the number of traffic signal phases


YOU'D BETTER GET OUT OF THE SUN, RALPH... LOOKS LIKE YOU'RE DONE.
SUN TAN

TOWARD ZERO DEATHS

Break

Southeast Minnesota Crash Facts

Sgt. Troy Christianson, Minnesota State Patrol and
Southeast Minnesota TZD Steering Committee member

TOWARD ZERO DEATHS

TOWARD ZERO DEATHS

Because your life counts

Southeast Minnesota Regional Crash Data

May 7, 2015

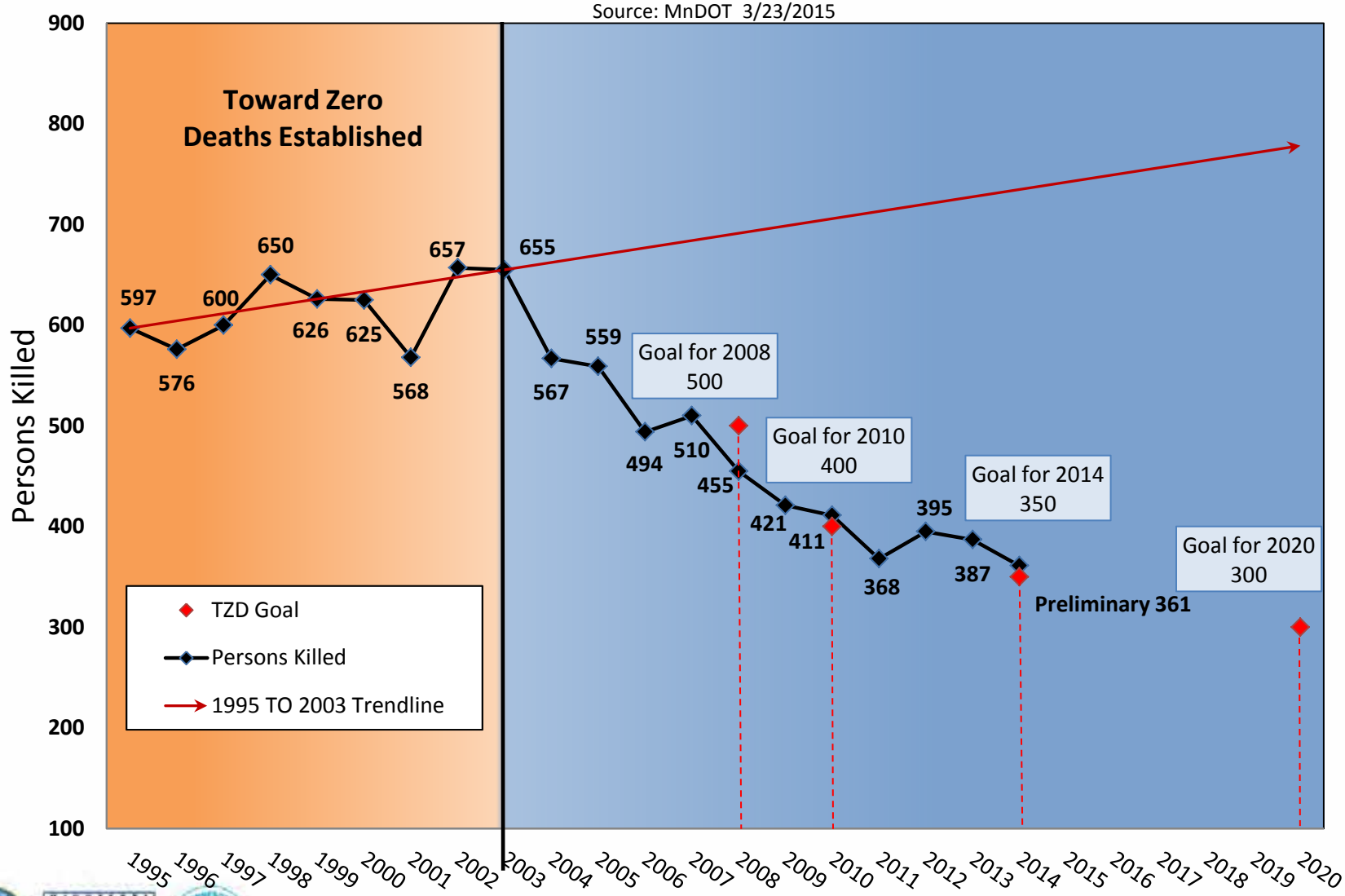
TOWARD ZERO DEATHS

MINNESOTA MDH DEPARTMENT OF HEALTH

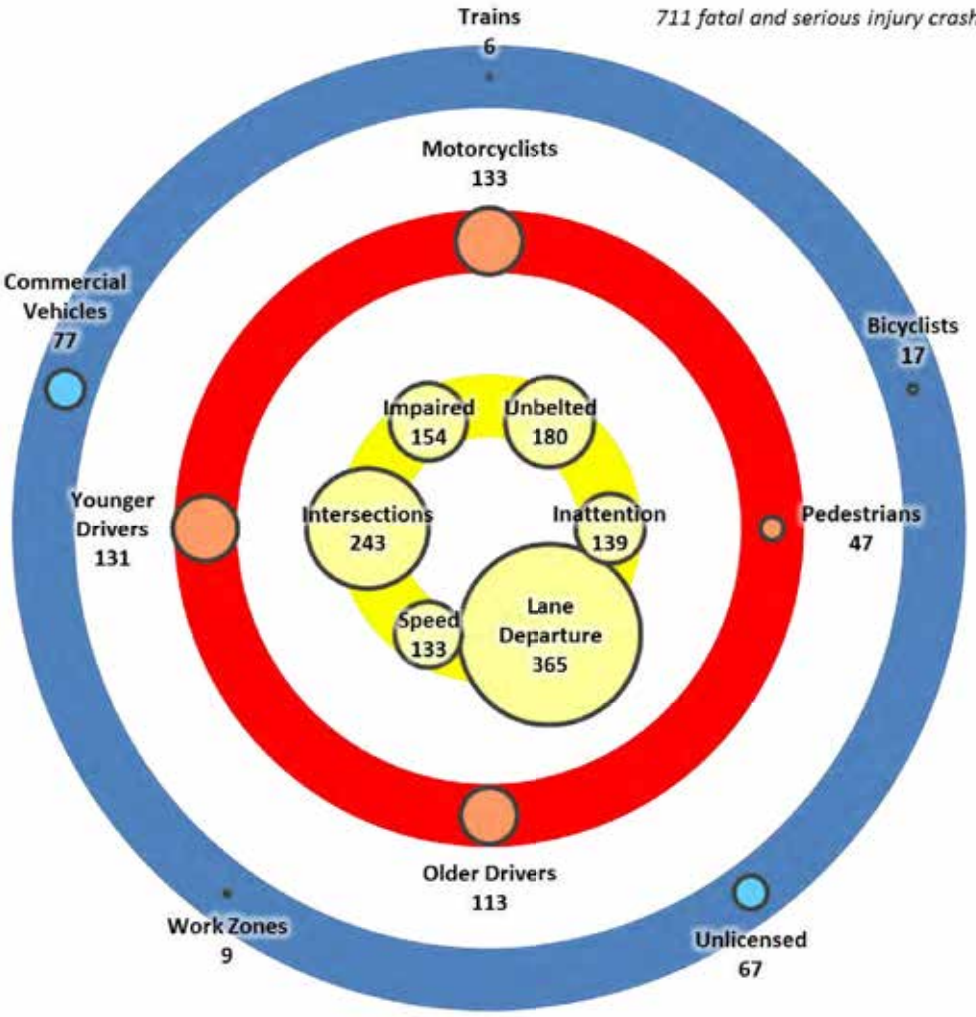
TOWARD ZERO DEATHS

Minnesota Roadway Fatalities

Source: MnDOT 3/23/2015

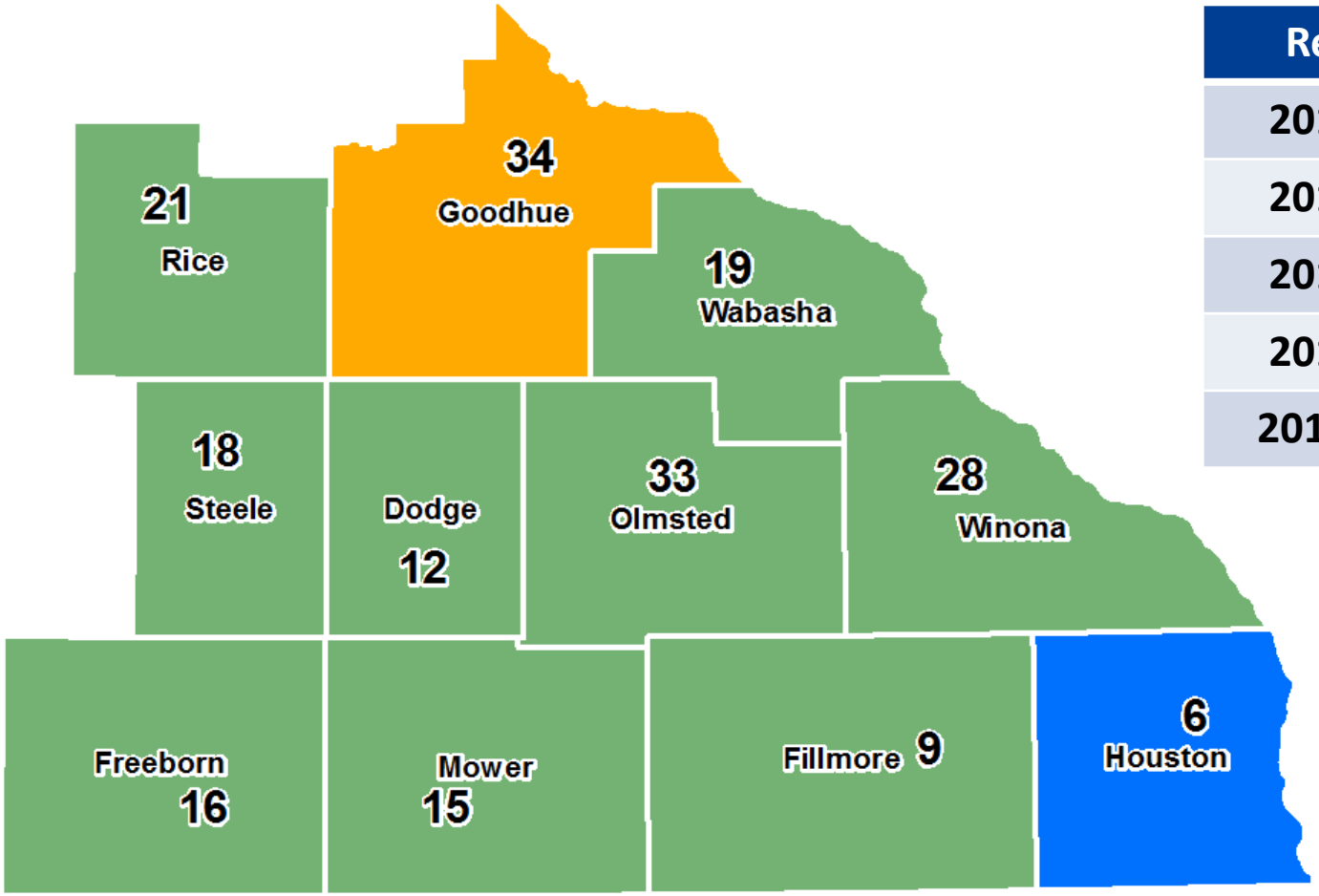


Southeast Region Focus Areas



*2014 data are preliminary

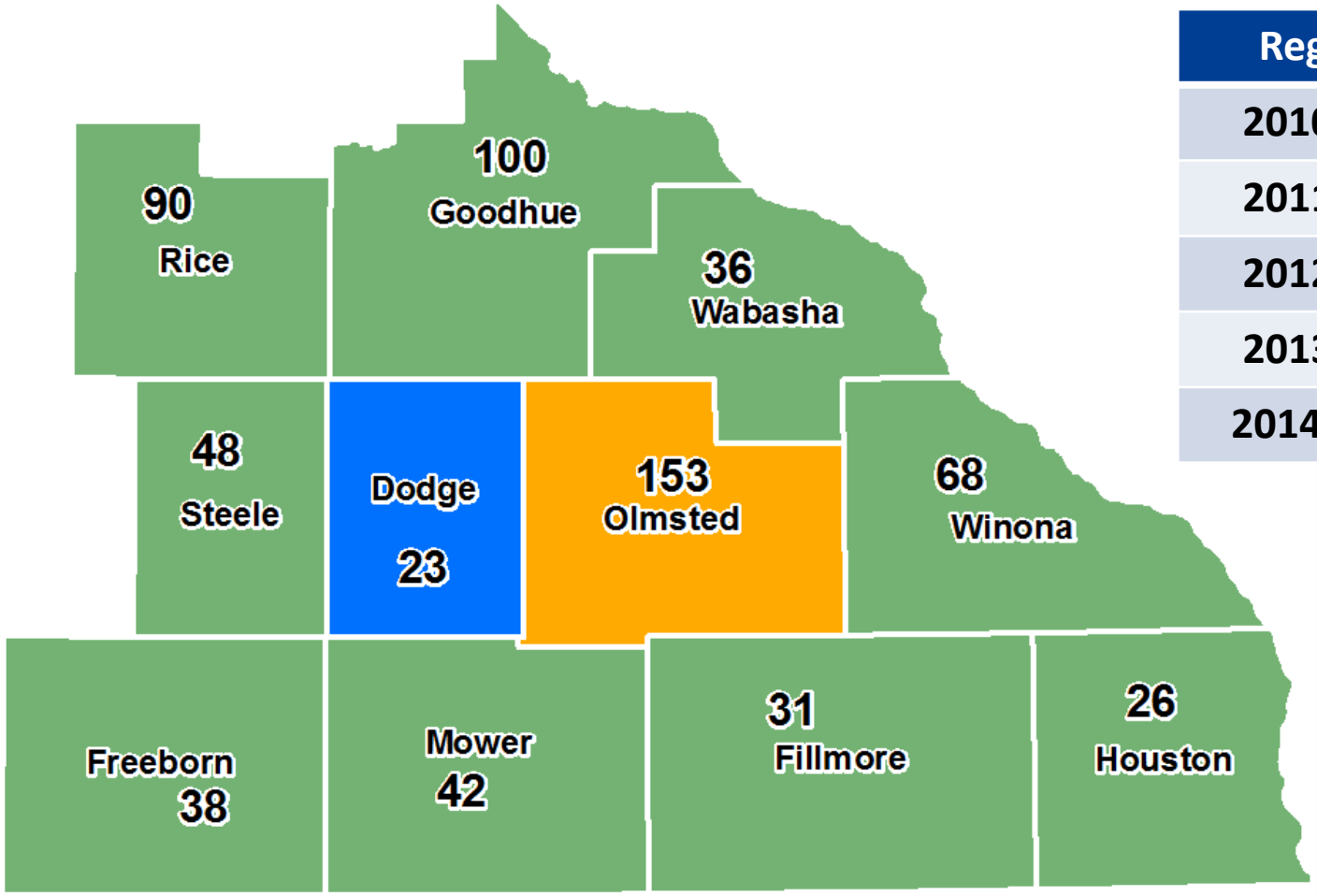
2010-2014 Fatalities



Region Totals	
2010	43
2011	41
2012	39
2013	39
2014*	49

*2014 data are preliminary

2010-2014 Serious Injuries

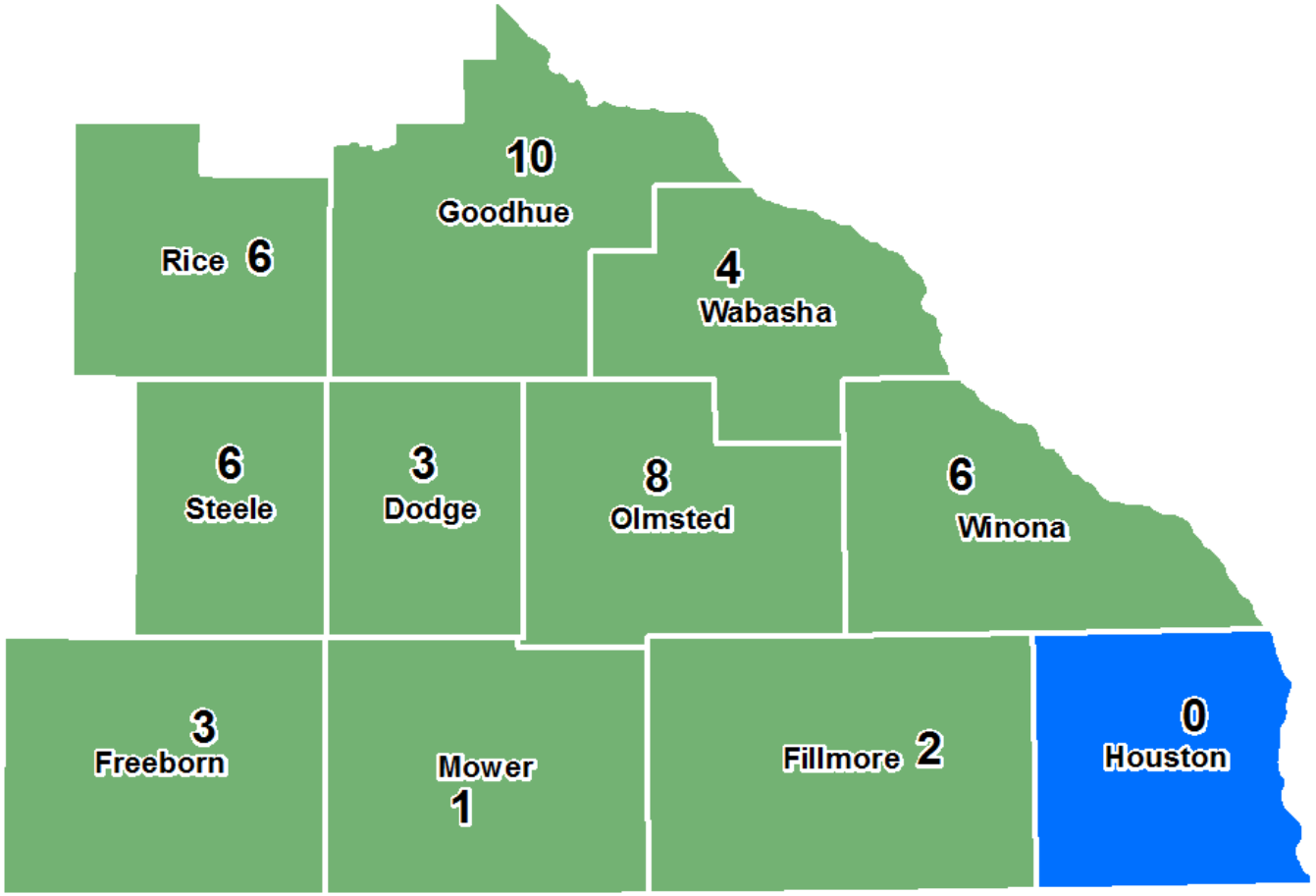


Region Totals	
2010	156
2011	129
2012	139
2013	125
2014*	106

*2014 data are preliminary

TOWARD ZERO DEATHS

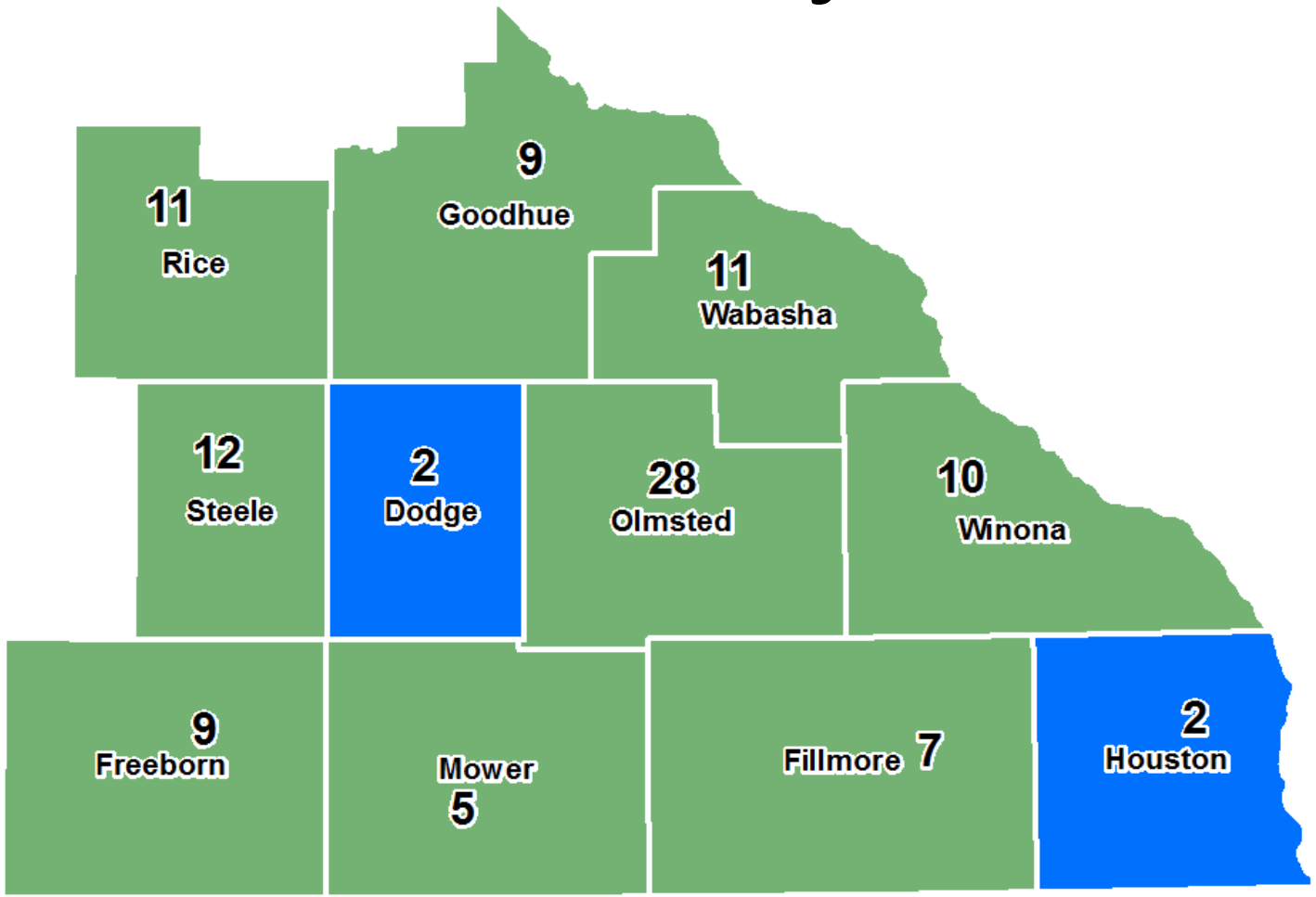
2014 Fatalities*



*2014 data are preliminary

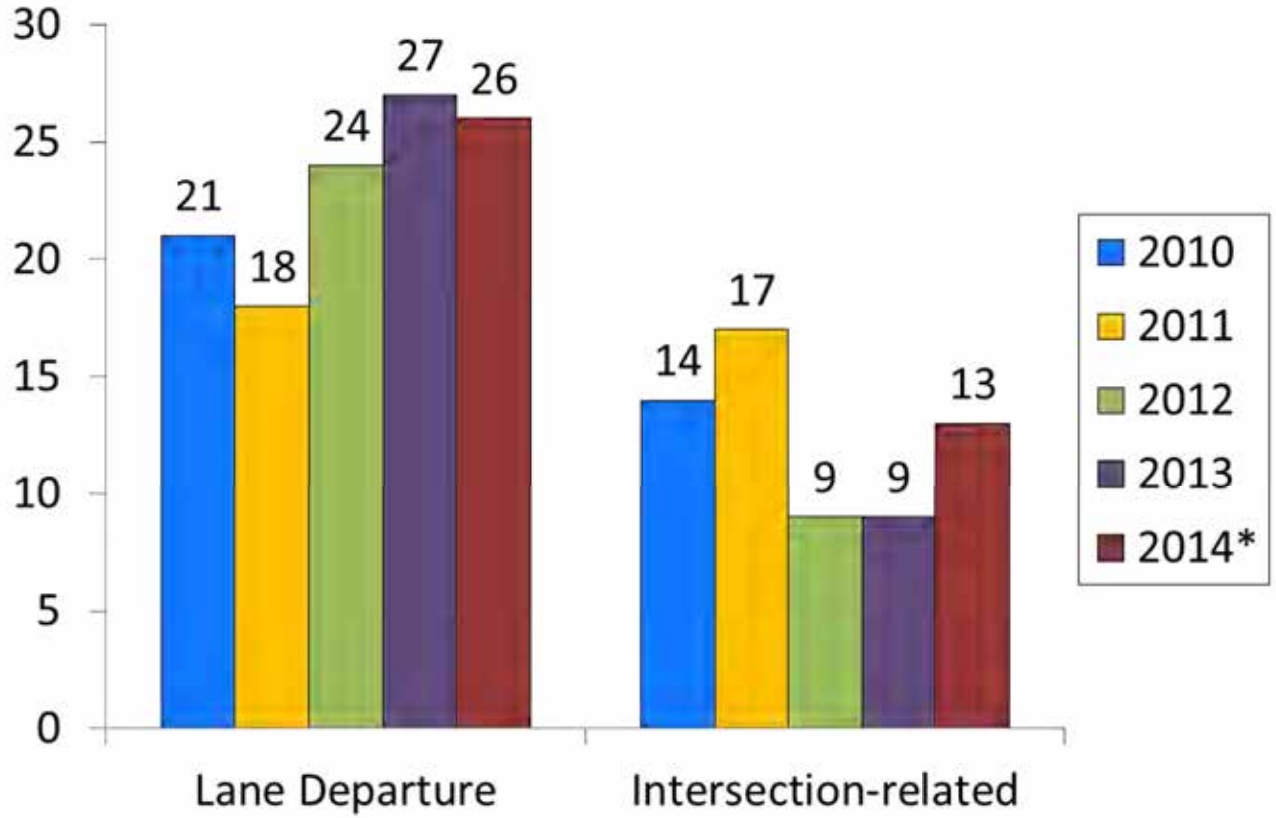
TOWARD ZERO DEATHS

2014 Serious Injuries*



*2014 data are preliminary

5-year Progress in Fatalities



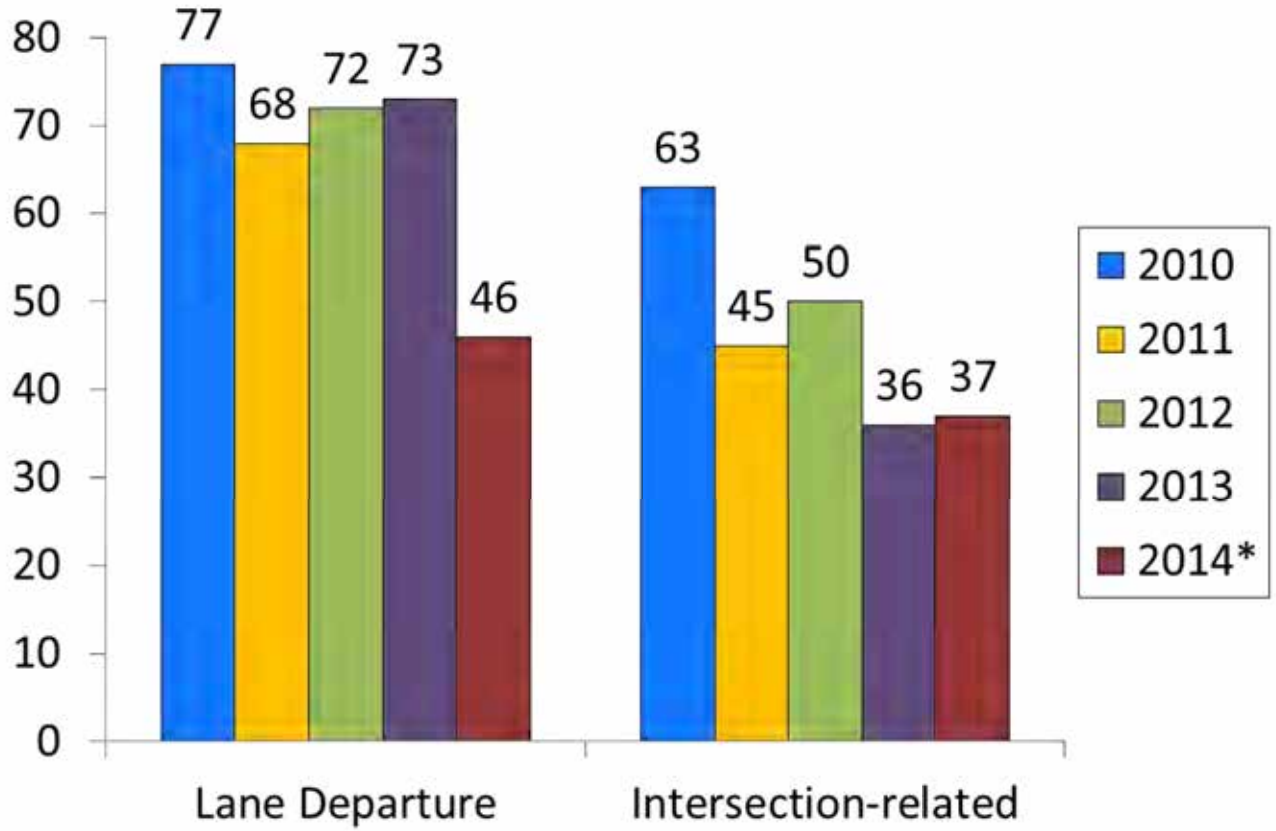
*2014 data are preliminary

TOWARD ZERO DEATHS

MINNESOTA MDH DEPARTMENT OF HEALTH

TOWARD ZERO DEATHS

5-year Progress in Serious Injuries



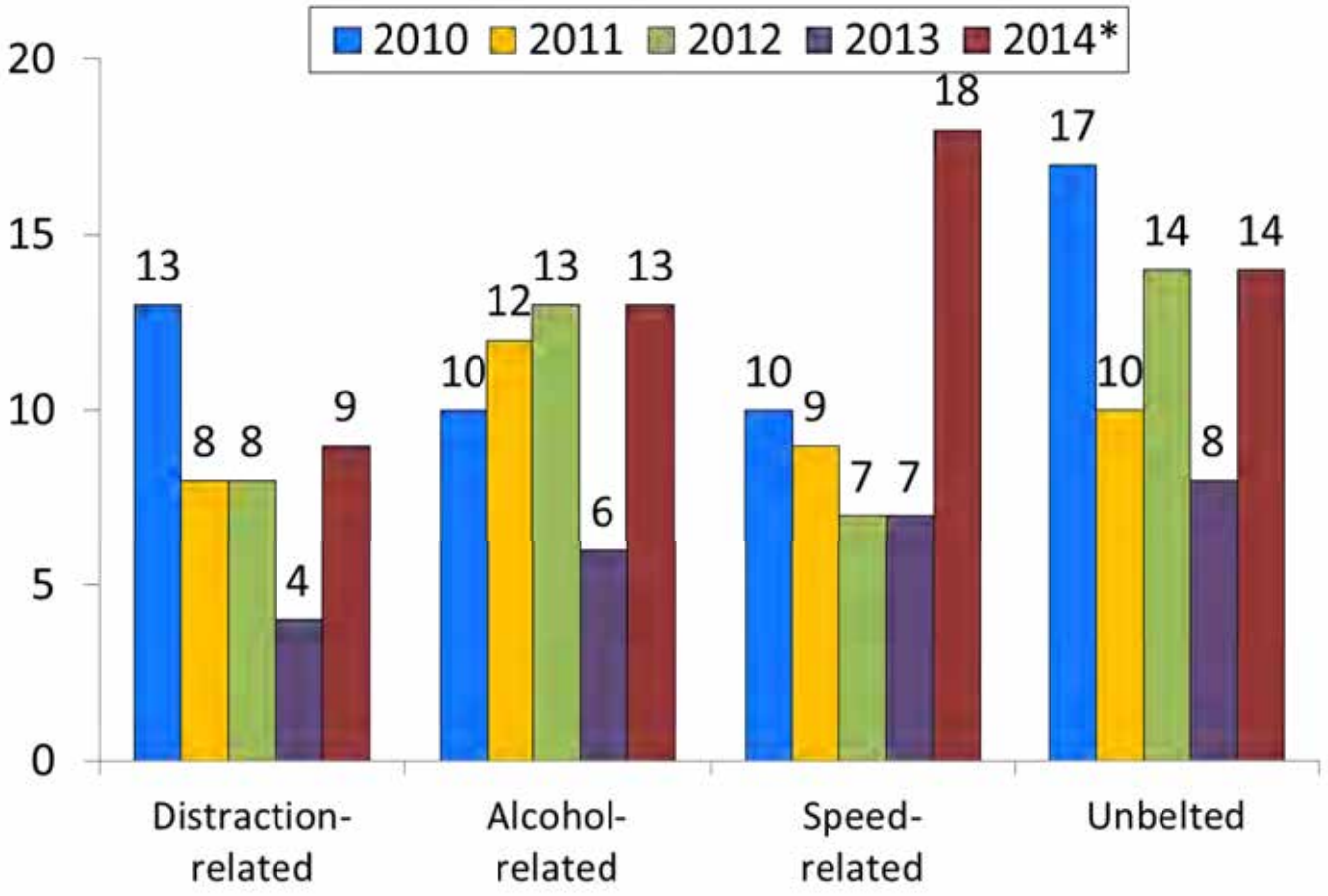
*2014 data are preliminary

TOWARD ZERO DEATHS

MINNESOTA MDH DEPARTMENT OF HEALTH

TOWARD ZERO DEATHS

5-year Progress in Fatalities



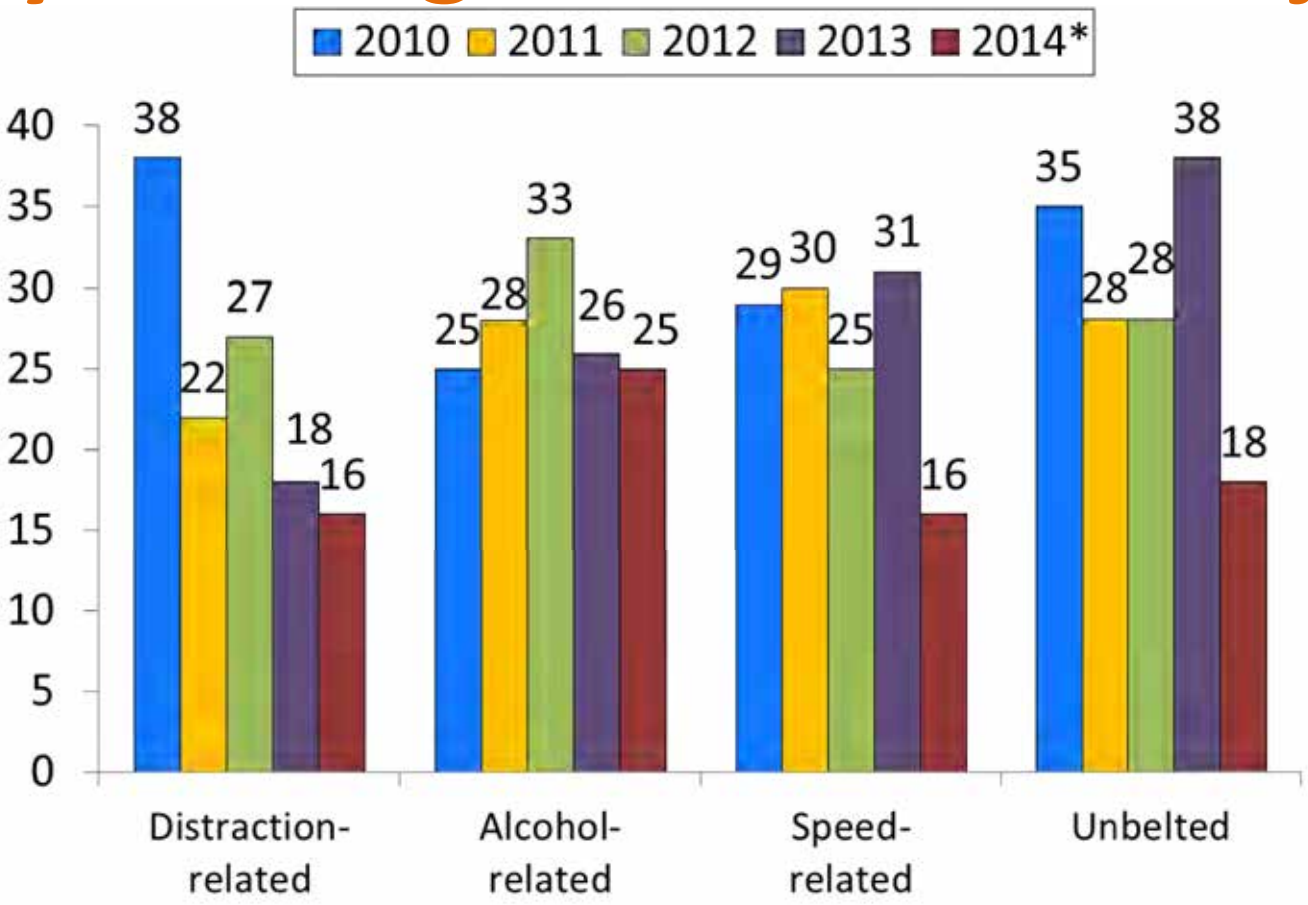
*2014 data are preliminary

TOWARD ZERO DEATHS

MINNESOTA MDH DEPARTMENT OF HEALTH

TOWARD ZERO DEATHS

5-year Progress in Serious Injuries



*2014 data are preliminary

TOWARD ZERO DEATHS

MINNESOTA MDH DEPARTMENT OF HEALTH

Key Findings for 2014*

Southeast Region

- Males ages 16-25 are overrepresented in serious injury and fatal crashes.
- 4.1 fatalities per month
- 8.8 serious injuries per month
- Unbelted and distracted-related crashes are decreasing

**2014 data are preliminary*

Key Findings for 2014*

- Successes!
  - One County with ZERO fatalities
  - Two Counties with only TWO serious injuries

- Challenges
  - Speed and alcohol remain a challenge

*2014 data are preliminary

How Many Were Fatal Crashes?

a) 6

b) 3

c) 1

d) 0

TOWARD ZERO DEATHS

MINNESOTA MDH DEPARTMENT OF HEALTH

Resources

Minnesota Toward Zero Deaths

- http://www.MinnesotaTZD.org

Strategic Highway Safety Plan

- http://www.dot.state.mn.us/TrafficEng/Safety/SHSP

Minnesota Crash Facts

- https://dps.mn.gov/Divisions/OTS

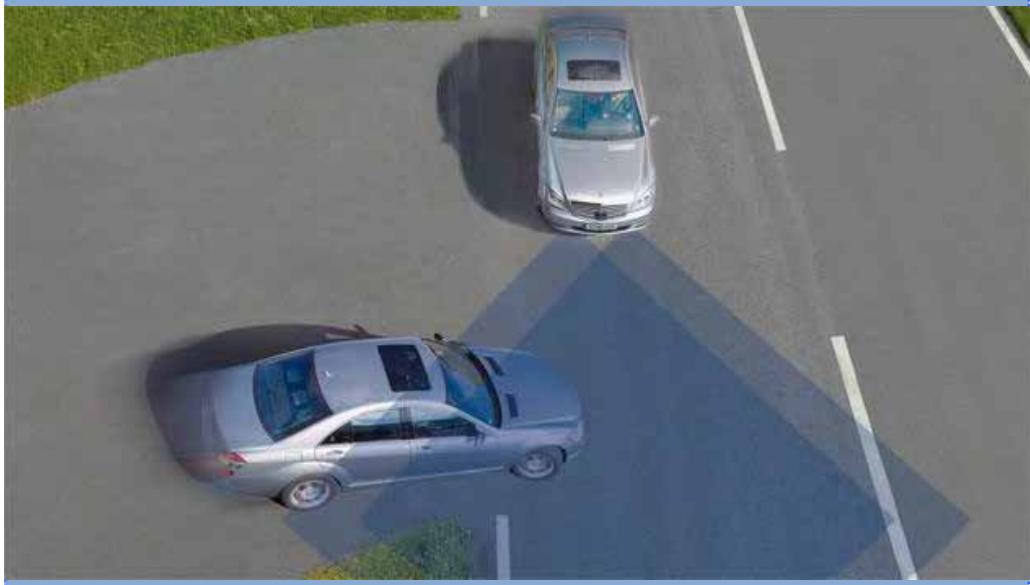
Crash Avoidance Technology and Their Shortcomings

Mark Peterson

Public Affairs

Minnesota/Iowa AAA

Automobile Crash Avoidance Systems: Not all they're cracked up to be



Mark Peterson
Public Affairs AAA

EXPECT SOMETHING MORE

AAA Foundation Research Overview

- **Background**
  - New and used car buyers being offered a range of technologies
  - Many of these systems are optional add-ons costing more money
  - Very little consumer friendly information available
- **Partners and systems**
  - MIT AgeLab and 7 existing technologies
  - Automotive Club of Southern California and one existing technology

Existing Technologies Assessed

- Electronic Stability Control
- Back-Up Cameras
- Adaptive Headlights
- Lane Departure Warning Systems
- Adaptive Cruise Control
- Forward Collison Warning Systems
- Forward Collision Mitigation Systems
- Blind Spot Monitoring Systems

Electronic Stability Control

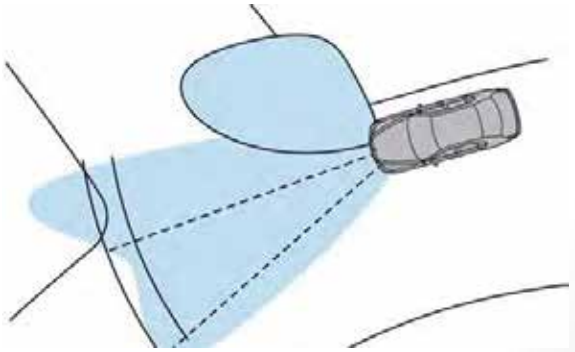
- **What is it?**
  - Federally mandated technology to maintain control of the vehicle in inclement weather and sharp turns
  - It reduces engine power, applies brakes independently and corrects tire suspension quicker than a driver can respond
- **Why use it?**
  - Most effective crash avoidance technology available
  - Reduces rollovers by 64-72%
  - Reduces crash involvement by 33-34%
- **System limitations**
  - Some vehicles allow ESC to be turned off in situations such as when stuck in snow or mud
  - Some drivers have indicated an inclination to drive more aggressively

Back-Up Cameras

- **What is it?**
  - Allows drivers to see area behind rear bumper
  - Different versions- some provide a view from the rear of the vehicle, some are paired with an audio sensor to warn of an obstruction and some even automatically brake the vehicle
- **Why use it?**
  - Reduces back-up crashes by up to 46%
  - Reduces bodily injuries by 46%
  - Most likely to positively affect vulnerable persons (little kids)
- **System limitations**
  - Many systems shut off at 6mph
  - Not all systems are alike

Adaptive Headlights

- **What is it?**
  - Headlights adjust their intensity in response to drivers steering to provide additional light in curves, turns, hills or potential hazards
- **Why use it?**
  - Reduces fatalities by up to 8%
  - Reduces potential of nighttime crashes on curves up to 90%
- **System limitations**
  - Do not warn driver about obstacles
  - Do not make it safer to speed
  - Not all systems are alike



Lane Departure Warning Systems

- **What is it?**
  - Alerts drivers to whenever they unintentionally drift too close to edges of the lane
- **Why use it?**
  - Lane departure crashes are one of the most common types of crashes
  - 1.6 million road crashes a year
- **System limitations**
  - Warning type varies by manufacturers- some use an alarm, some cause steering wheel or seat to vibrate
  - System is less accurate when lane markings are faded or in poor condition, also less accurate at night and in poor weather conditions

Adaptive Cruise Control

- **What is it?**
  - Senses when a vehicle in front decreases it's speed and adjusts the vehicle accordingly
- **Why use it?**
  - Reduces potential highway crashes by up to 17% or 13,000 crashes
  - Maximizes gas mileage
- **System limitations**
  - Does not respond to stationary or small objects
  - Can be affected by time of day and weather
  - Not all systems are alike- some are camera based and some are radar based

Forward Collision Warning System

- **What is it?**
  - Alerts the driver when vehicle is about to collide with another vehicle some distance ahead which should encourage the driver to take a corrective action

- **Why use it?**
  - Reduces rear-end collision by 10-12%

- **System limitations**
  - Systems are not all alike- some use a flashing light, others an alarm sound or vibration
  - Warns, but does not take action
  - Can be affected by time of day (glare) and weather
  - May not respond to stationary or slow moving objects

Forward Collision Mitigation Systems

- **What is it?**
  - Detects how far and fast a vehicle ahead is moving and automatically applies the brakes if the driver does not respond
- **Why use it?**
  - Reduces front to rear crashes up to 80% of the time
  - Most effective in stop and go traffic, congested urban areas
- **System limitations**
  - Camera based systems are less affective than radar based
  - Can be affected by time of day and weather
  - Can be blinded by sunrise or sunset glare
  - May not respond to stationary or slow moving objects

Blind Spot Monitoring Systems

- **What is it?**
  - Uses radar sensors in rear bumper
  - A small icon appears in the side mirror or windshield
  - When driver activates a turn signal, the icon will flash or provide an auditory warning
- **Why use it?**
  - To detect a vehicle in the side, rear area which may be difficult to detect with mirrors
- **System limitations**
  - Detection of smaller objects, such as motorcycles, and vehicles traveling at large speed differentials are less likely to occur
  - Assistance with freeway merging is limited as well

Conclusions

- Systems can be confusing- how each performs (lights, auditory warnings, vibrations)
- Systems are different depending upon manufacturer
- Systems effectiveness varies (warning systems versus action systems)
- The most effective system (ESC) and the easiest to use system (back-up cameras) are already federally mandated
- Systems are additional add-ons which can be expensive
- Unintended consequences can result- imagine switching cars with a spouse or renting a car on vacation

Rochester Police Department

Sgt. Eric Strop,

Forensic Mapping and

Crime Scene Unit Supervisor

1400 Block 12 St SE Crash

Roadway - Divided Hwy 14, (Also known as 12 St SE or the “Beltline”) occurred in E/B lanes

Conditions

- Temperature - 59 Degrees
- Wind - NNW 6.9 MPH
- Visibility - approximately 10 miles
- Pavement - straight, flat, mostly dry, wet in places it had rained earlier

- September 20, 2014
- 20:12 (8:12 p.m.)

Dispatch Received

- Law Enforcement receives five 911 calls
- One witness reported seeing a older white male by the Jeep asking for a light

Vehicles/Occupants

- Mercury Mountaineer – 2 front seat Occupants – Side curtain airbag deployment
- Jeep Liberty – 1 driver – Front airbags deployed
- Kia Spectra – 1 driver, 2 rear seat occupants – Driver airbag deployed


PARKING


POLICE


KIA
Minnesota
524 EUC


89
88
Jeep


EXPLORER
LIBERTY


LIBERTY

- 22:47 (10:47 p.m.)
- 3600 Block of N. Broadway
- “One In Custody”

Personal Impact Statement

“William Never Forget”
“Jeramiya Stay Strong”

- *Amber Bishop, parent and aunt*

TOWARD ZERO DEATHS

Lunch & Exhibits

TOWARD ZERO DEATHS

Legalization of Medical Marijuana and the Impact on Road Safety

Lt. Don Marose, Standardized Field Sobriety Testing and Drug Recognition Expert Coordinator, Minnesota State Patrol

Lieutenant Don Marose
Minnesota State Patrol
don.marose@state.mn.us
651-297-7132

2012 NATIONAL SURVEY DRUG USE AND HEALTH (NSDUH)

- 22.6 million people (8.9%) have used illicit drugs in the past month
- 17.4 million consider themselves current marijuana users
- 60% only use marijuana
- 77% use marijuana in combination with other illicit drugs

TYPES OF DRUGS COMMONLY USED

Cocaine	2.3 million
Hallucinogens	1.0 million
Psychotherapeutics	6.3 million
Tranquilizers	1.8 million
Sedatives	0.3 million
Pain Relievers	4.7 million
Stimulants	1.2 million

WASHINGTON STATE (2006)

12% of 370 fatally injured drivers had marijuana in their systems at the time of the crash.


Castrol

PERCENT OF HIGH SCHOOL SENIORS REPORTING LIFETIME USE

70% alcohol (51% drunk)

45% marijuana

22% any Rx drug

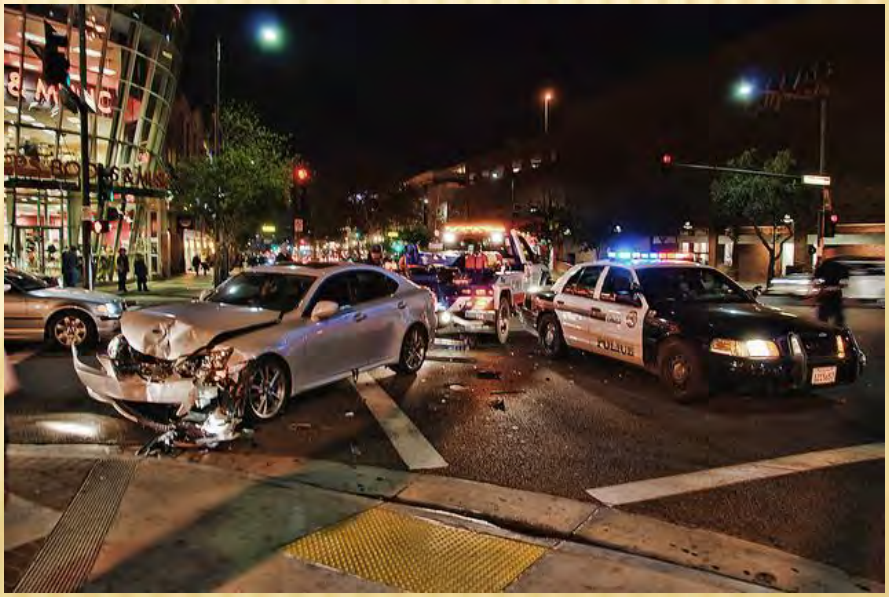
13% narcotics other than heroin

5% cocaine 2% meth 1.5% heroin

SOURCE: Monitoring the Future Survey, 2011. University of Michigan.
N= 50,000 students at 420 U.S. public and private high schools and middle schools.

SADD

More than 19% of high school seniors admitted driving under the influence of marijuana in 2010



U.S. STATISTICS

- 19.5 Million illicit drug users (12 years old and up)
- 56,000 12-17 year old dependent on inhalants
- 3.3 Million Americans used an ADHD substance last year

U.S. STATISTICS

- 1.5 Million Emergency Room visits were associated with drug use/abuse (SAMHSA)
- 56% of those were due to illicit drug use/abuse
- 600,000 were due to non-medical use prescription or over-the-counter medications

U.S. STATISTICS

- 21% of 16-20 year olds reported driving under the influence in the last 12 months
- 15.1 million abuse prescription drugs (up from 7.8 million in last decade)
- 3% of 12-17 year olds reported current abuse of prescription drugs (2nd to marijuana and ahead of cocaine, meth, ecstasy, and heroin)

SAMHSA NATIONAL HOUSEHOLD SURVEY ON DRUG ABUSE

- Marijuana is the most commonly used illicit drug, with 14.6 million users
- 7 million people (12 years and older) were users of psycho-therapeutic drugs taken non-medically

PARTNERSHIP FOR A DRUG-FREE AMERICA

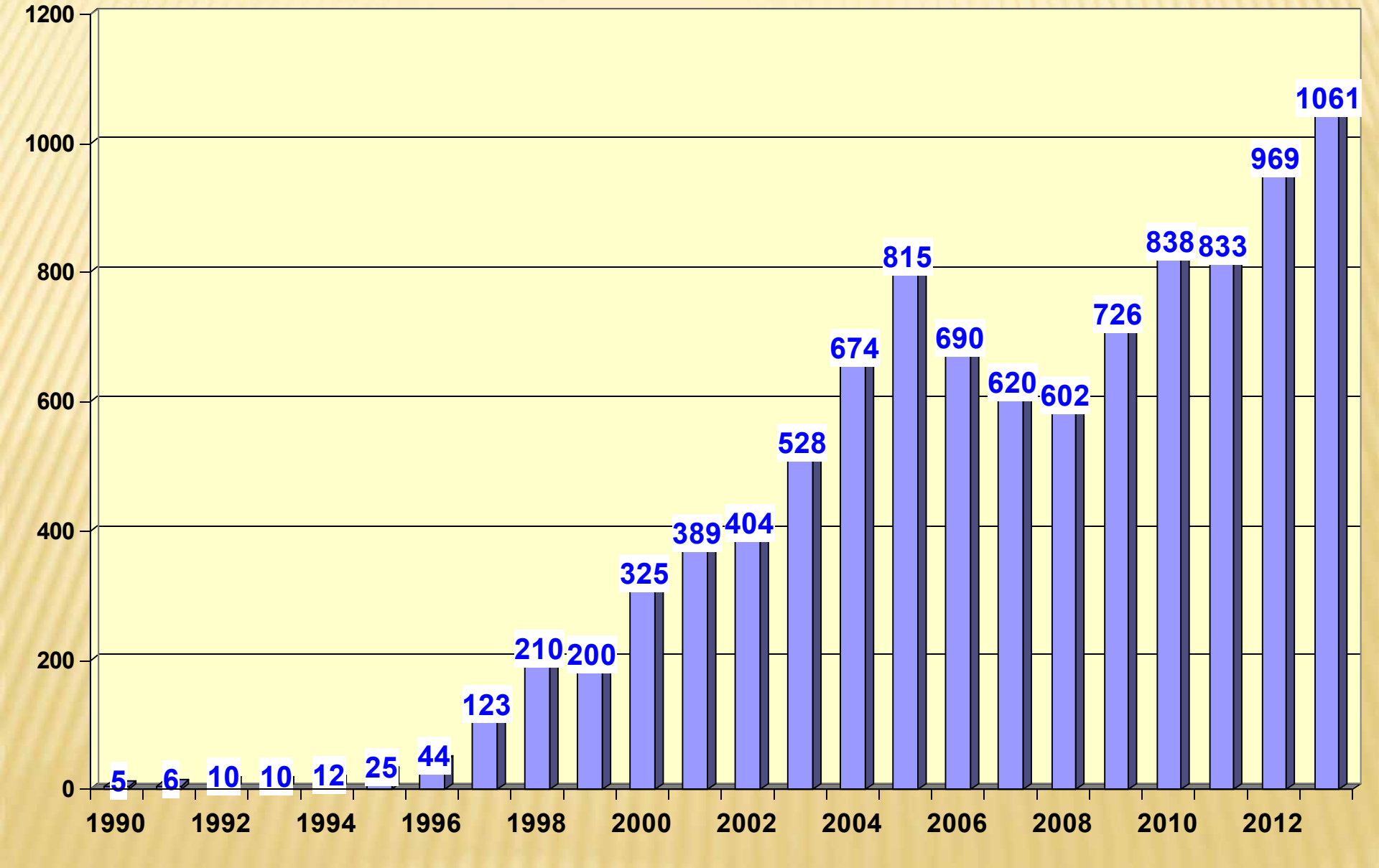
- 20% of teenagers has abused a prescription painkiller to get high
- 10% of teenagers has abused an OTC product (cough medicine)

MN STATISTICS

- Minnesota ranks 8th for incidents of driving under the influence of illicit drugs at 5.7%
- 1 in 6 high school seniors reported driving after using alcohol or drugs

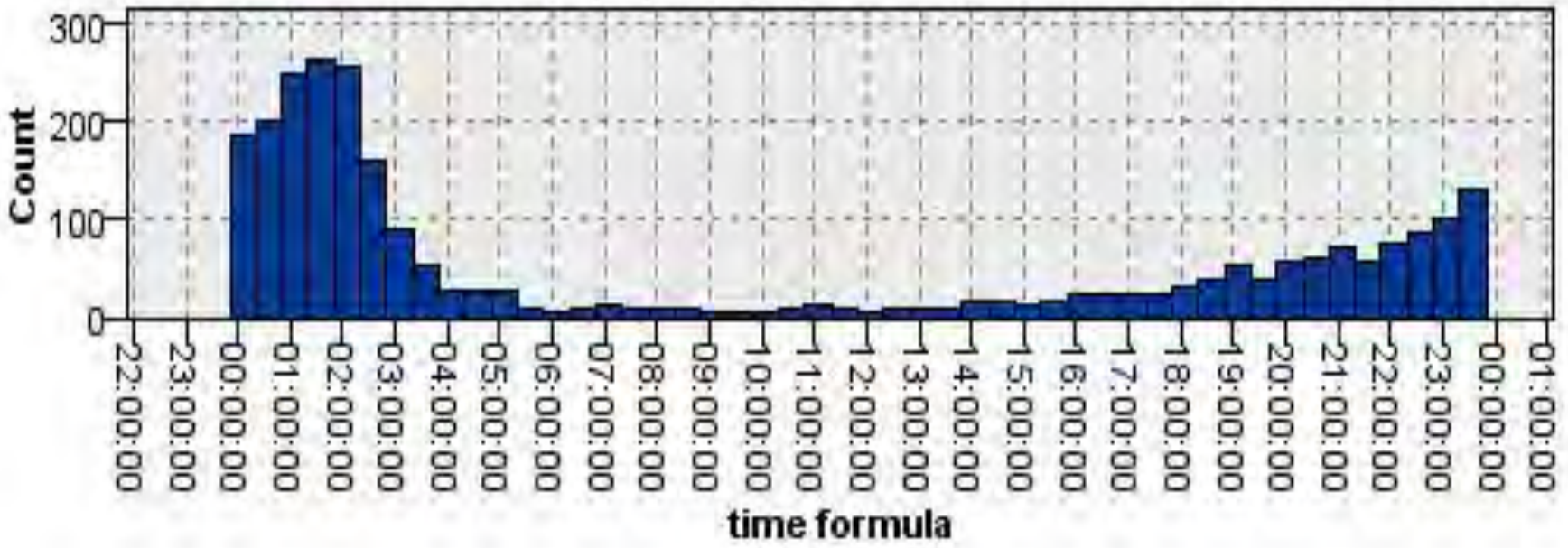
(Minnesota Student Survey)

DWI-CONTROLLED SUBSTANCE ON DRIVER'S RECORD



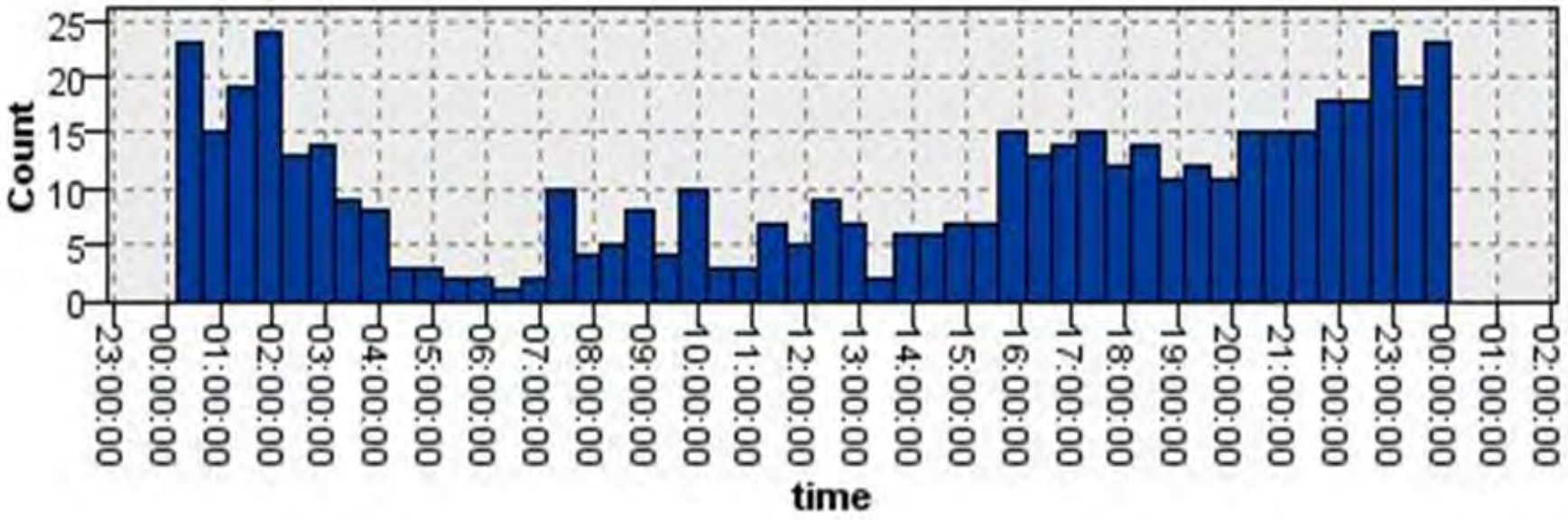
DWI ARRESTS BY TIME OF DAY

Alcohol



DWI ARRESTS BY TIME OF DAY

Schedule I and II Controlled Substances



WHAT IS A "DRUG"?

DEFINITION

Any substance which, when taken into the human body, can impair the ability of the person to perform designated tasks safely.

SOBRIETY TEST

Look at the photo above -
if it looks right to you ...
You're Drunk

MSS 169A.20 DWI

SUBDIVISION 1: DRIVE, OPERATE, OR PHYSICAL CONTROL WHILE……..

1) Influence of alcohol
2) Influence of controlled substance
3) Knowingly under the influence of a hazardous substance
4) Combination of (1) and/or (2) and/or (3)
5) Alcohol concentration .08 or more at time of incident or w/in 2 hours
6) Alcohol concentration over .04 while in commercial vehicle
7) Body contains any amount of controlled substance or its metabolite listed in Schedule I or II (other than marijuana)

CENTRAL NERVOUS SYSTEM DEPRESSANTS

Alcohol
Barbiturates
GHB
Anti-anxiety Tranquilizers
Anti-Depressants
Paxil
Many Others

CENTRAL NERVOUS SYSTEM DEPRESSANTS

- HGN and VGN present
- Eyelids droopy
- Eyes bloodshot and watery
- Drowsiness
- Thick, slurred speech
- Uncoordinated
- Fumbling
- Slow, sluggish reactions

CENTRAL NERVOUS SYSTEM STIMULANTS

Cocaine

Ritalin

Amphetamines

Khat

Methamphetamine

Adderall

CENTRAL NERVOUS SYSTEM STIMULANTS

- Divided attention impairment
- Starts test too soon
- Accelerated internal clock
- Completes test too quickly
- Rapid and jerky movements
- Talkativeness
- Body tremors
- Exaggerated reflexes

CENTRAL NERVOUS SYSTEM STIMULANTS

- Restlessness
- Anxiety
- Euphoria
- Excitation
- Bruxism
- Loss of appetite
- Pupils dilated

HALLUCINOGENS

- Peyote
- Psilocybin
- LSD
- MDMA (Ecstasy)
- Bufotenine
- ‘Plant Food’/’Bath Salts’
- Salvia Divinorum
- NBOMe

HALLUCINOGENS

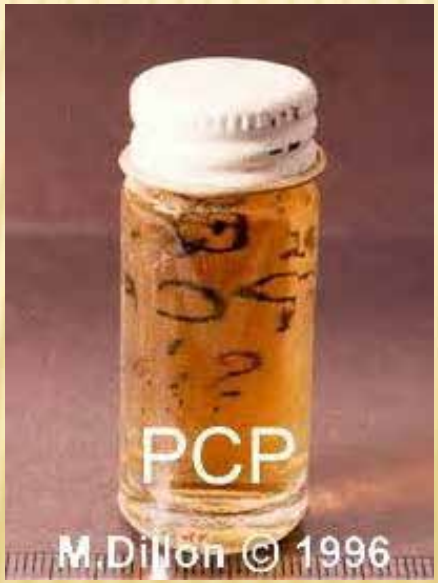
- Uncoordinated
- Severe divided attention impairment
- Poor perception of time and distance
- Poor balance
- Distorted internal clock
- Disoriented
- Nausea

HALLUCINOGENS

- Dazed appearance
- Body tremors
- Perspiring
- Paranoia
- Difficulty with speech
- Piloerection
- Statements suggesting hallucinations

DISSOCIATIVE ANESTHETICS

- PCP (Phencyclidine) and its analogs
- Ketamine
- Dextromethorphan
- Ketaject
- Vetalar
- Xyrem



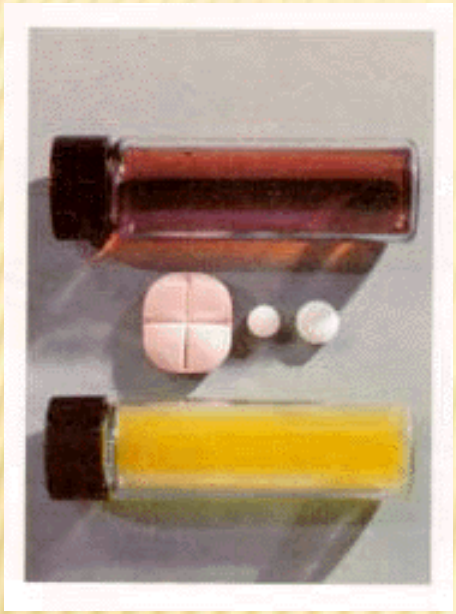
DISSOCIATIVE ANESTHETICS

- HGN and VGN
- Blank stare
- Loss of memory
- Perspiring heavily
- Warm to touch
- Cyclic behavior
- Incomplete, slurred verbal responses

DISSOCIATIVE ANESTHETICS

- Cyclic behavior
- Agitated
- Rigid muscle tone/'Moon Walking'
- Disoriented
- Nonresponsive
- Chemical odor
- Slowed internal clock

NARCOTIC ANALGESICS



Heroin
Oxycontin
Morphine
Codeine
Vicodin
Demerol
Methadone
Darvon
Buprenorphine
Suboxone

14% of U.S. residents report nonmedical use of Rx pain relievers

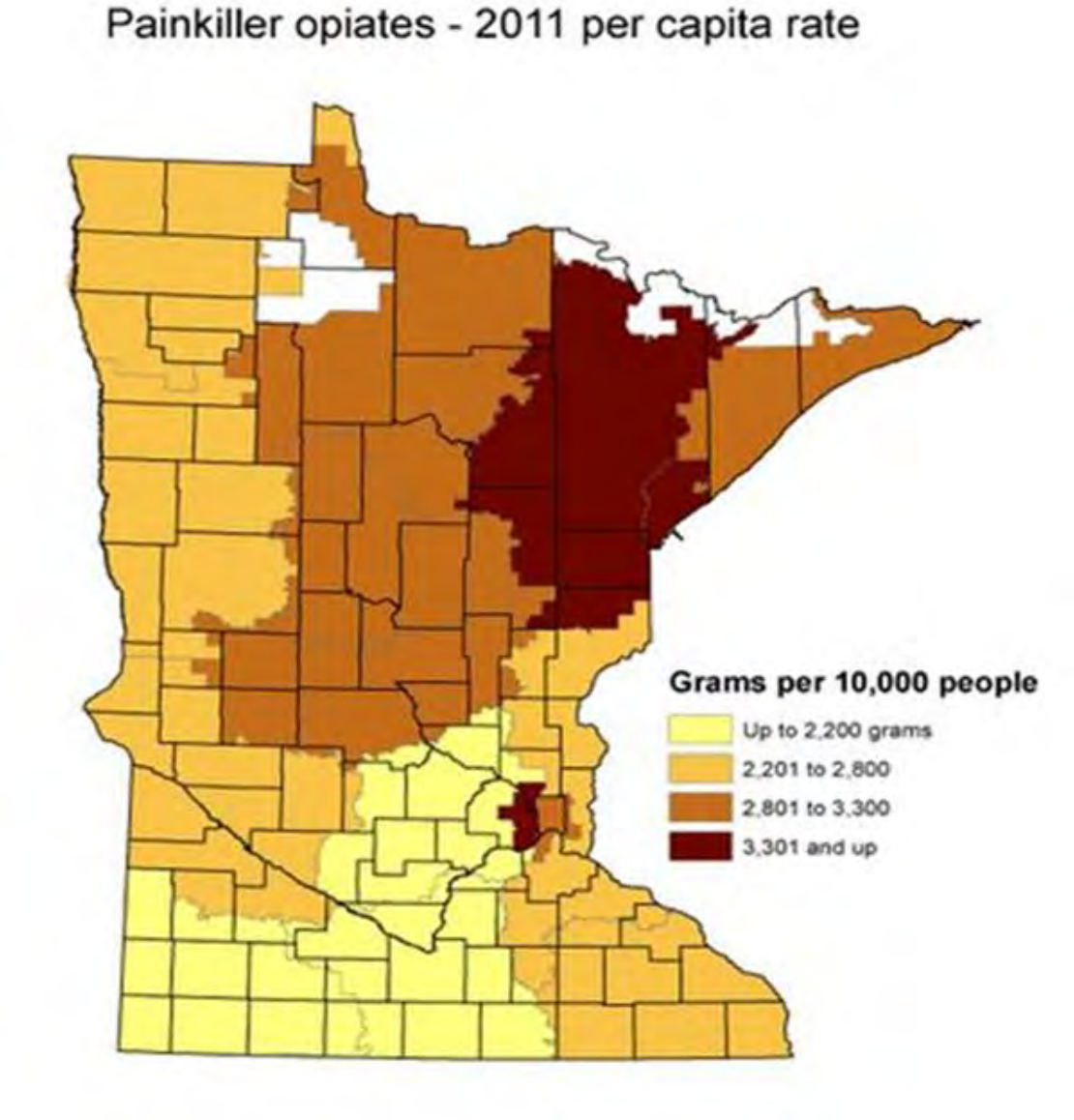
U.S. consumes 80% of opioids worldwide

SOURCE: 2009 National Survey on Drug Use and Health (NSDUH). SAMHSA and the Division of Pharmacologic Therapy, Center for Substance Abuse Treatment, SAMHSA,

ONDCP

"From 1997 to 2007, the milligram-per-person use of prescription opioids in the U.S. increased from 74 milligrams to 369 milligrams, an increase of 402%."

Prescription painkillers sold in Minnesota - 2011



SOURCE: Automation of Reports and Consolidated Orders System (ARCOS), U.S. Drug Enforcement Administration, 2012. Prescription opiate analgesics (painkillers) include: codeine, morphine, fentanyl (brand names: Sublimaze, Actiq, etc.), hydrocodone (brand names: Vicodin, Lortab), hydromorphone (brand names: Dilaudid, Palladone), meperidine, pethidine (brand name: Demerol), and oxycodone (brand names: OxyContin, Percodan, Percocet).

NARCOTIC ANALGESICS

- “Track marks”
- “On the nod”
- Slowed reflexes
- Facial itching
- Dry mouth
- Euphoria
- Flaccid muscle tone
- Low, slow, raspy speech
- Pupils visibly and obviously constricted

NARCOTIC ANALGESICS

- Pupil size constricted
- Eyelids will be droopy
- Divided attention impairment
- Poor coordination and balance
- Slowed internal clock

INHALANTS

Gasoline

Glues

Paint (Toluene)

Hair Spray

Anesthetic Gases

INHALANTS

- HGN and VGN
- Odor of the inhaled substance
- Dizziness, numbness
- Traces of substance around the face and nose
- Bloodshot, watery eyes
- Distorted perception of time and distance
- Light headedness

INHALANTS

- Flushed face, possible sweating
- Intense headaches
- Slow, thick, slurred speech
- Nausea
- Non communicative
- Floating sensation

CANNABIS

Marijuana

Hashish

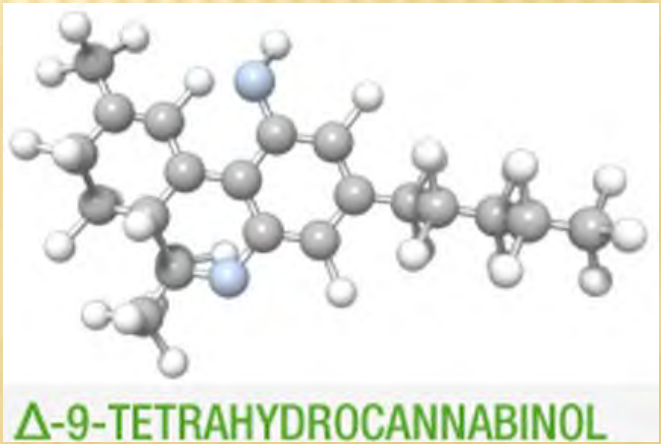
Hashish Oil

Marinol

Synthetic Cannabinoids

CANNABIS

- Derived primarily from various species of Cannabis plants
- Primary psychoactive ingredient is Delta-9 Tetrahydrocannabinol (THC)



CANNABIS

- Effects depend on the strength of the THC in the dose consumed
  - THC concentrations decades ago, peaked at relatively low levels (3-6 %)
  - Current levels are being reported at more than 30%

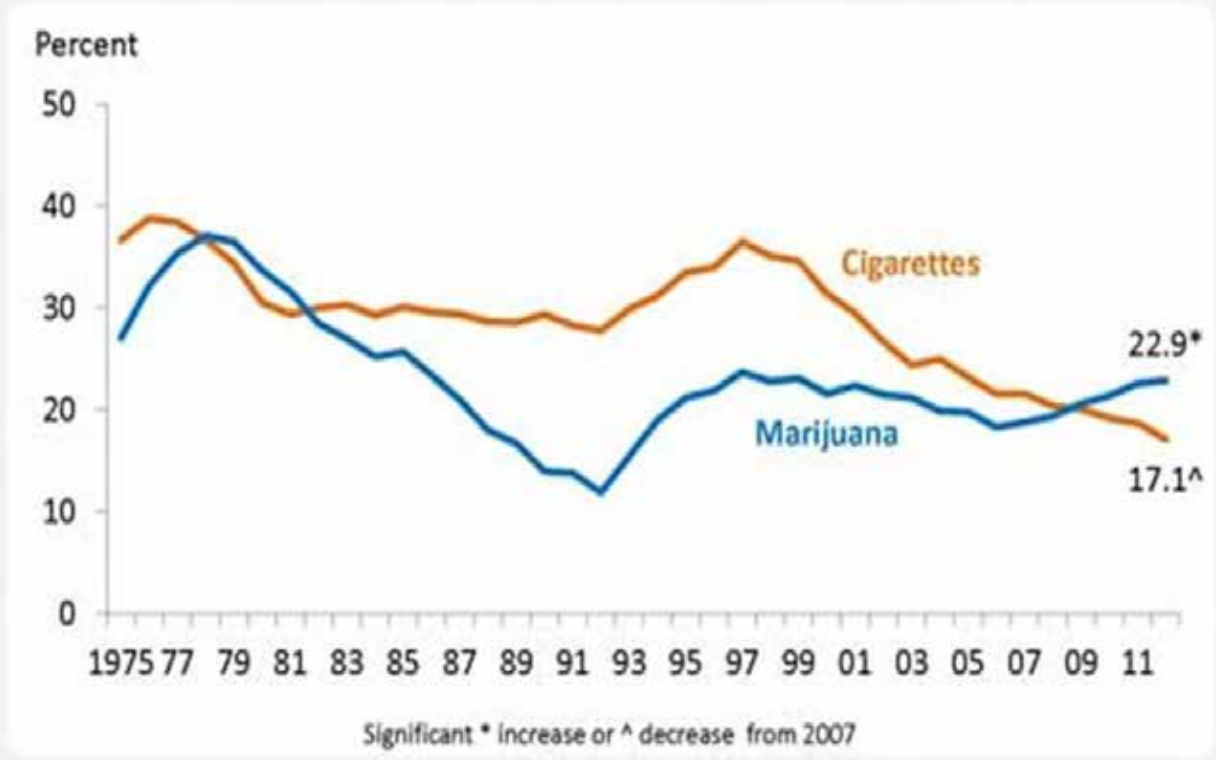
CANNABIS

Corrupts neurochemical endocannabinoids that play key roles in memory formation, learning, decision-making…

…and is Addictive.

SOURCE Ruben Baler, a neuroscientist with the National Institute on Drug Abuse (NIDA). Quoted in USA Today, 12/7/2012.

MORE KIDS SMOKE MARIJUANA THAN CIGARETTES



22.9%

17.1%

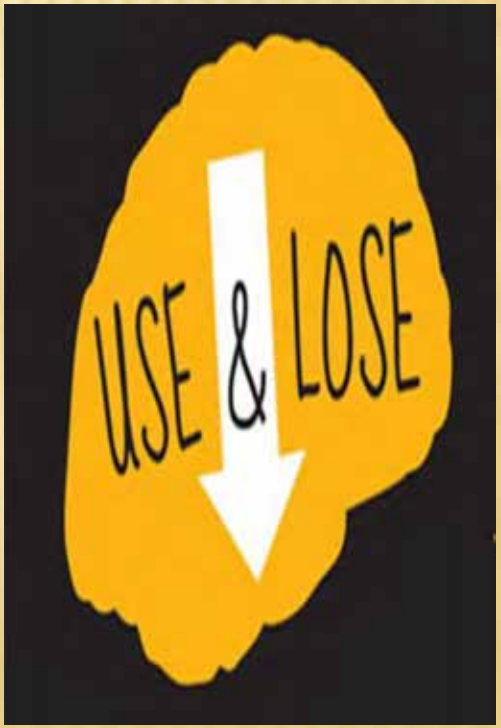
MARIJUANA

Over 29 million Americans used marijuana in 2010

NIDA

People who used marijuana heavily through their teens and into adulthood showed a significant drop in I.Q. (an average of 8 points) between the ages of 13 and 38

Those who never used showed no drop in IQ



FACT

1 joint reduces driving skills by 41%

(2 joints = 63%)

-NHTSA

CANNABIS

Odor of marijuana

Impaired perception of time and distance

Marked reddening of whites of eyes

Problems with divided attention tasks

Body tremors

Disorientation

Impairs attention

Relaxed inhibitions

Johnny smoked
a rock of crack.

And almost had
a heart attack!

Billy smoked
a bunch of pot.

A little hungry
is all he got!

REMEMBER KIDS...

POT IS SAFER THAN CRACK.

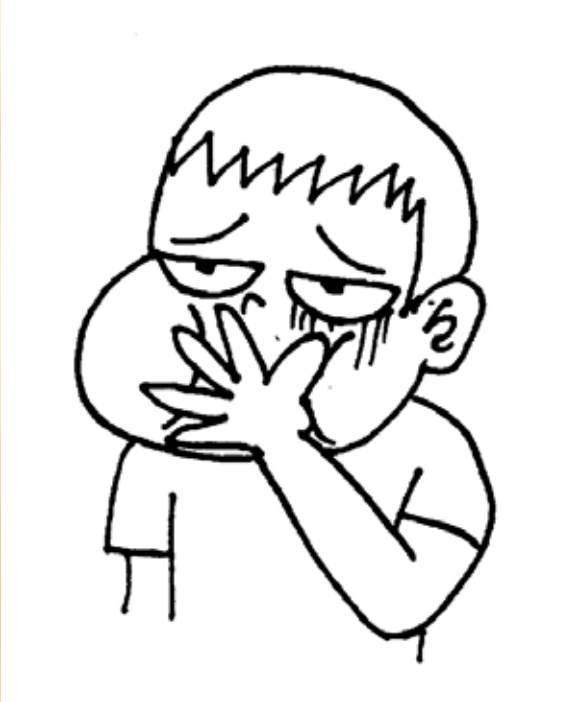
CANNABIS APPLICATIONS

- Lowers intraocular pressure
- Suppresses nausea
- Helps inhibit seizures
- Appetite enhancer
- A muscle relaxant
- A tumor growth retardant

MARINOL APPLICATIONS

- Legitimate medicinal use as an anti-vomiting agent, commonly associated with cancer chemotherapy

- Other uses include treatment of glaucoma or as an appetite enhancer for anorexia disorders

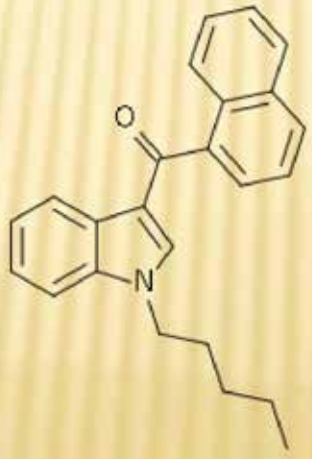


SYNTHETIC CANNABINOID PRODUCTS

JWH-018 1-PENTYL-3-(1 NAPTHTOYL)INDOLE

Created in 1995 for experimental purposes in animal and cell cultures, not humans, by

Dr. John Huffman, PhD at Clemson University



JWH-018 1-PENTYL-3-(1-NAPTHTOYL)INDOLE

- Not structurally related to THC, but has longer duration of action.
- Sold commercially since 2002 as “SPICE” and as it’s parent compound

SYNTHETIC CANNABINOID PRODUCTS

Typically include:

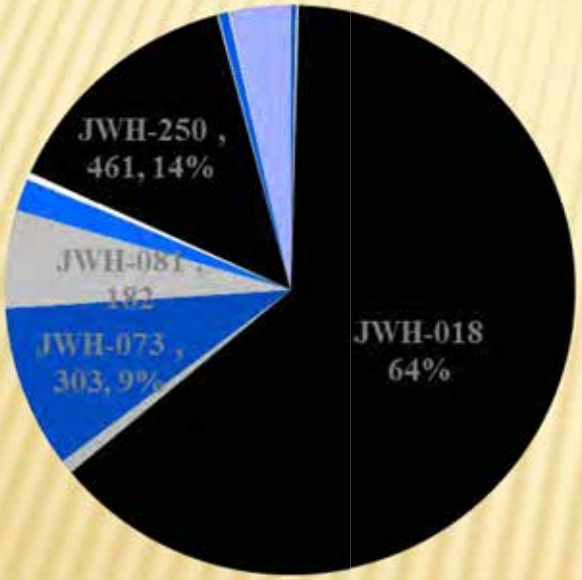
- Olive colored herbs
- Combination of herbs
- Plant materials

All enhanced with a THC synthetic analog

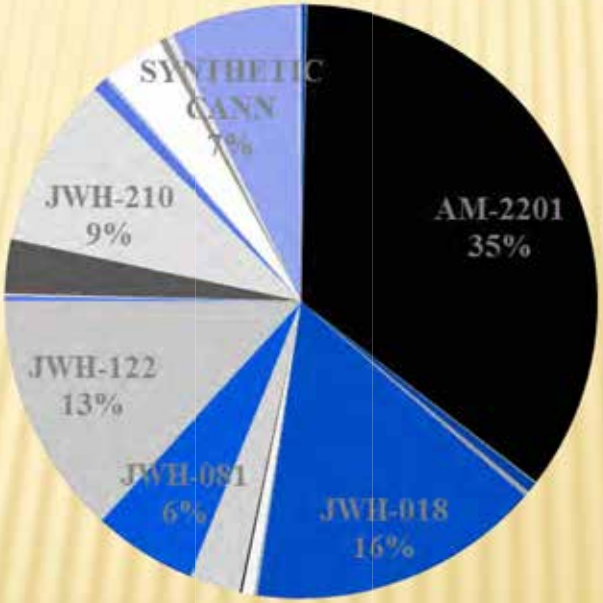
When smoked, synthetic cannabinoid products mimic the hallucinogenic effects of marijuana

CANNABINOID VARIETIES IDENTIFIED IN U.S. NFLIS TOXICOLOGY LABS

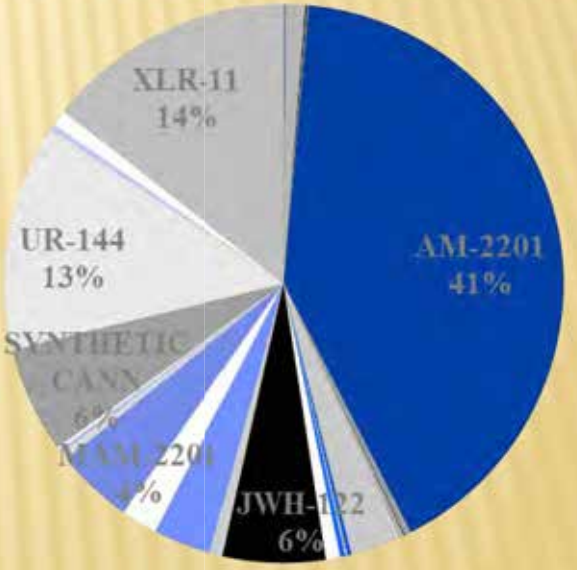
19 variations reported in 2010



44 variations reported in 2011



55 variations reported in 2012



SYNTHETIC CANNABINOID EFFECTS

- Very similar to cannabis but is considerably more potent than similar amounts of cannabis.
- Users may experience far more intense effects compared to smoking cannabis
- Has been shown to cause profound changes in CB1 receptor density, causing desensitization to its effects more rapidly than related cannabinoids

SYNTHETIC CANNABINOID EFFECTS

- Panic attacks
- Agitation
- Tachycardia (range of 110 to 150 BPM)
- Elevated blood pressure
- Anxiety
- Pallor
- Numbness and tingling
- Seizures
- Convulsions

SYNTHETIC CANNABINOID EFFECTS

- Visual changes
- Color enhancement
- Uncontrollable laughter
- Euphoria
- Talkativeness
- Sexual stimulation
- Time impairment
- Sedation
- Sleep aid
- Analgesia
- Anti-depressant

CHAPTER 4770, MEDICAL CANNABIS

Who Qualifies?

1. Cancer, with severe or chronic pain, nausea, or vomiting
2. Glaucoma
3. HIV/AIDS
4. Tourette's Syndrome
5. Amyotrophic Lateral Sclerosis (ALS)
6. Seizures, including those characteristic of epilepsy
7. Severe and persistent muscle spasms, including M.S.
8. Crohn's Disease
9. Terminal Illness with life-expectancy < 1 year, with severe or chronic pain, or nausea/vomiting, or cachexia

Chronic pain on its own is presently NOT a qualifying condition

CHAPTER 4770, MEDICAL CANNABIS

NO smokeable or plant-form is permitted

Only liquids and oils in capsule, tincture or vaporized form are allowed.

Program promotes continuous learning

Patient Registry requires reporting on effectiveness, side effects, etc.

Patient registration and reporting process through MDH

Upon certification, patients must register with the State of Minnesota and submit an application fee before visiting a patient center. System will enable medical cannabis providers, MDH and health professionals to actively monitor usage and impacts

CHAPTER 4770, MEDICAL CANNABIS

Patients must be Minnesota residents

No reciprocity with other state-based medical cannabis programs.

Only two manufacturers are permitted

Each manufacturer will have four patient centers operational by July 1, 2016

The cost of medical cannabis is all out-of-pocket

Insurance currently does not cover a patient's visit to a patient center and/or the medicine itself.

CHAPTER 4770, MEDICAL CANNABIS

MDH will oversee an extensive testing program

Testing will monitor for medicine content, contamination, metals, pesticides, microbials, residual solvents, and consistency and stability.

Packaging parameters are well-defined

All medicine packaging must be: plain (minimize appeal to children), tamper evident, child-resistant, and include medicine names that reflect medical cannabis' nature (no crazy names).

Labels must include: chemical composition, dosage/directions, date of manufacture/batch number, patient name/DOB/address, and caregiver name (if any).

CHAPTER 4770, MEDICAL CANNABIS

Prohibitions:

Nothing in the sections of Minnesota's law permits any person to engage in and does not prevent the imposition of any civil, criminal, or other penalties for…

1. Undertaking any task under the influence ….. that would constitute negligence or professional malpractice

2. Possessing or engaging in the use of medical cannabis:
   (i) On a school bus or van
   (ii) On grounds of any preschool, primary or secondary school
   (iii) In any correctional facility
   (iv) On the grounds of any child care facility or home daycare

CHAPTER 4770, MEDICAL CANNABIS

Prohibitions:

3.Vaporizing medical cannabis

(i) On any form of public transportation

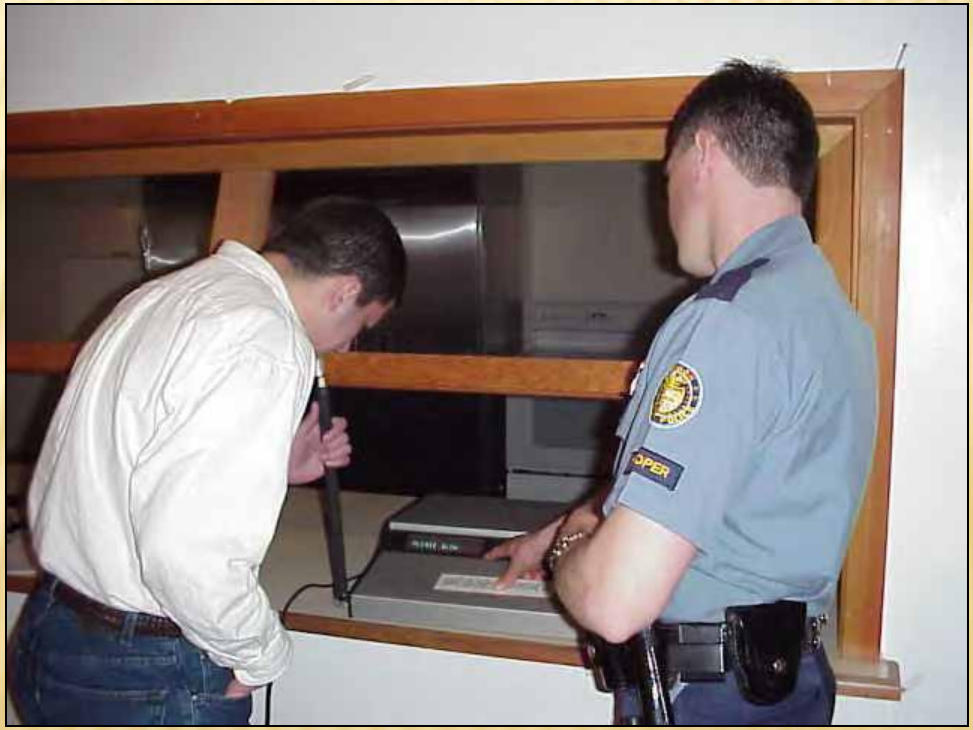
(ii) Where vapor would be inhaled by a non-patient minor/child

(iii) In any public place, including any indoor or outdoor area used by or open to the general public or a place of employment

4.Operating, navigating, or being in actual physical control of any motor vehicle, aircraft, train, or motorboat, or working on transportation property, equipment, or facilities while under the influence of medical cannabis.

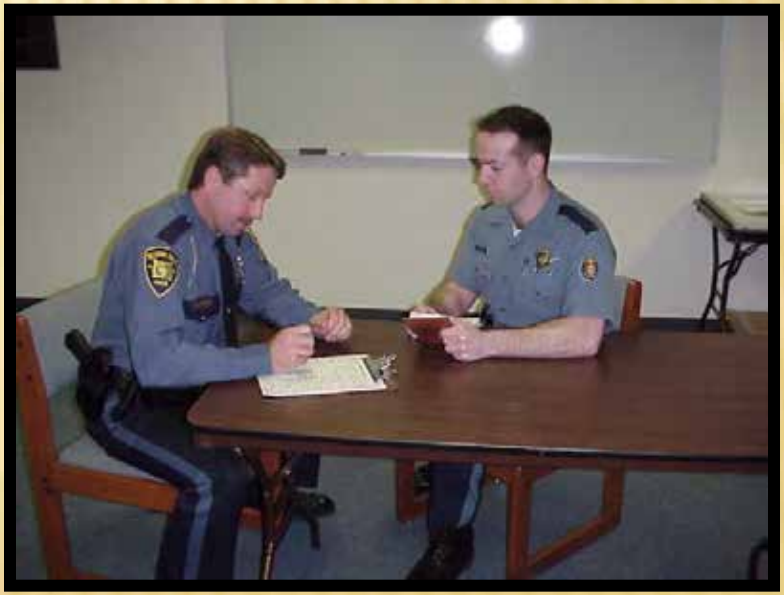
Step 1: Alcohol Concentration

DRE or Arresting Officer determines if alcohol is involved



Step 2: Interview of Arresting Officer

- DRE determines the reason for the arrest
- Driving observed
- SFST results
- Statements made
- Other relevant matters



Step 3: Preliminary Evaluation

- “Fork-in-the-Road” for the DRE
- DRE determines if there is sufficient reason to suspect drug impairment
- Determines if impairment may be medically related

Step 4: Eye Examinations

DRE tests for:

- Horizontal Gaze Nystagmus (HGN)
- Vertical Nystagmus (VGN)
- Lack of Convergence

Step 5: Divided Attention Tests

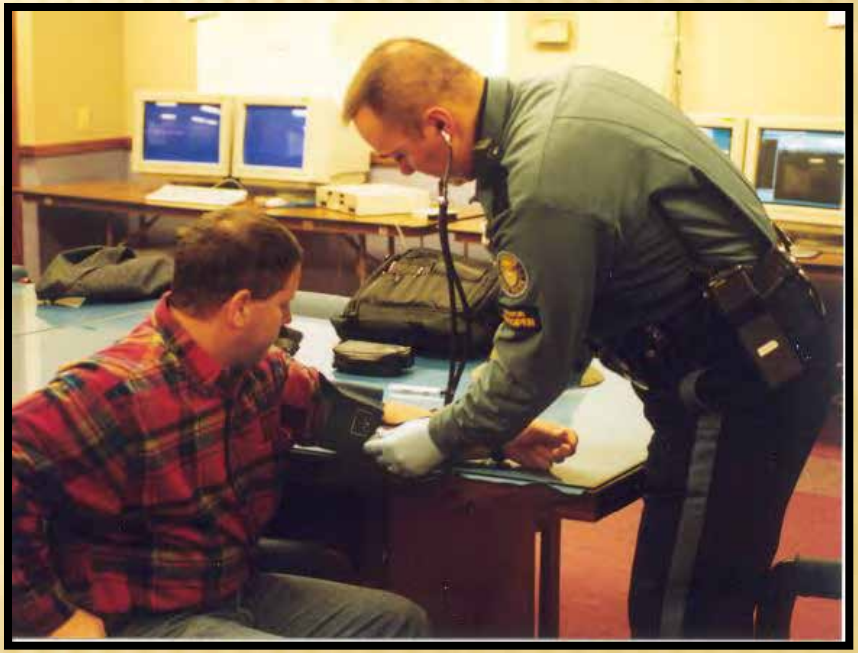
DRE administers divided attention tests:

- Modified Romberg Balance
- Walk and Turn
- One-Leg Stand
- Finger-To-Nose

Step 6: Vital Signs Examinations

DRE conducts three vital signs examinations

- Pulse rate (3 times)
- Blood pressure
- Body temperature



Step 7: Dark Room Examinations

DRE examines suspect's pupils

- Pupilometer used to estimate the suspect's pupil sizes in three different light levels.
- Includes examination of nasal and oral cavities.

Step 8: Muscle Tone

DRE examines arrestee's arms for muscle tone; flaccid, rigid, or normal

Step 9: Examination for Injection Sites

DRE examines for injection sites

Frequently used areas include:

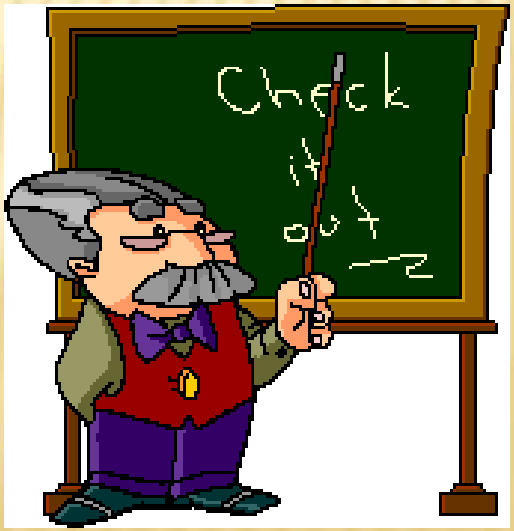
Arms Neck Ankles

Step 10: Statements and Interview

- DRE conducts a structured interview
- Miranda warnings given if not previously done
- Suspect questioned about drug use based upon the results of the evaluation
- DRE records admissions

Step 11: Opinion of the DRE

- DRE forms an opinion as to the drug influence and the drug category(s)
- DRE makes an “informed opinion” based upon totality of evaluation and evidence
- DRE Symptomology Matrix used to form final opinion



Step 12: Toxicology

- Implied Consent Advisory invoked
- A urine or blood sample is requested for analysis

QUESTIONS?

THANK YOU.

Lieutenant Don Marose
Minnesota State Patrol
don.marose@state.mn.us

Breakout Sessions

Solving the Mysteries of Ignition Interlock

Jim Beauregard
Ignition Interlock Vendor Oversight Liaison
Minnesota Department of Public Safety
2015 TDZ Workshops

TOWARD ZERO DEATHS

Ignition Interlock Programs

- All 50 states have an Ignition Interlock Program
  - Administrative
  - Court based
  - Hybrid

- NHTSA model specifications released in May 2013
- NHTSA program guideline released November 2013

TOWARD ZERO DEATHS

Ignition Interlock Devices

Ignition Interlocks are designed to protect the public by incapacitating drunk drivers

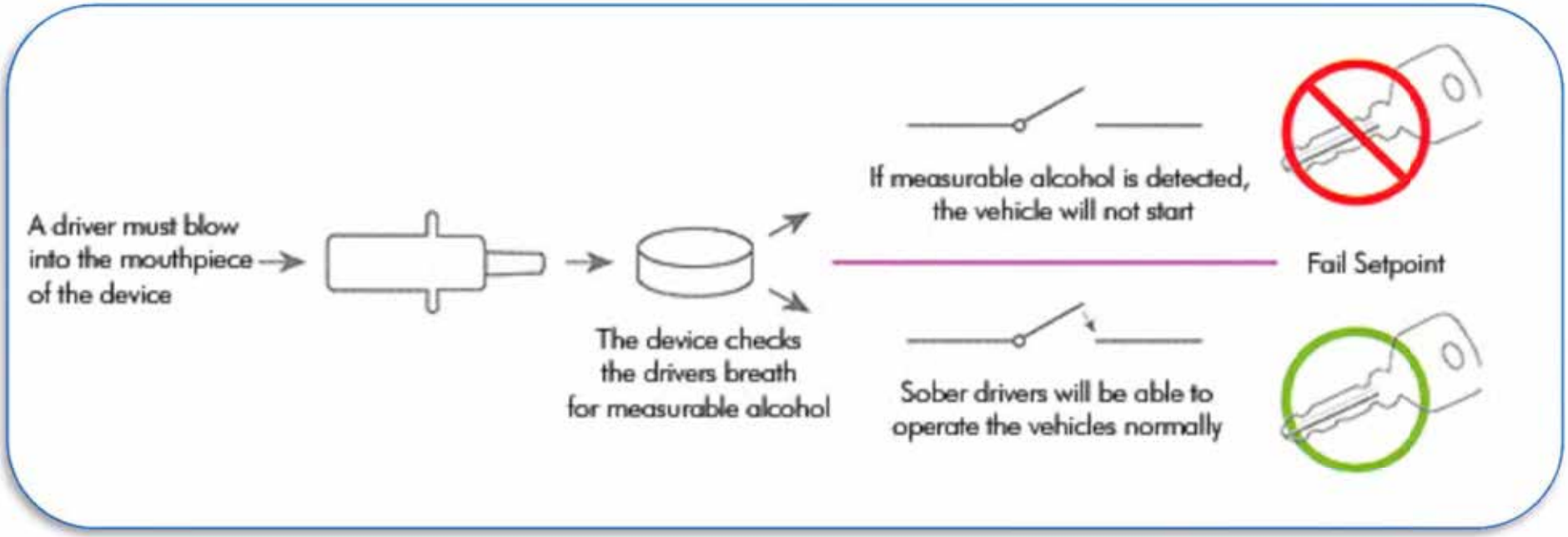
TOWARD ZERO DEATHS

What is an Ignition Interlock?

- An ignition interlock is a breath-testing device attached to a car's starter
- It prevents the car from being started when a pre-set level of alcohol is detected in the breath sample provided by the driver of the vehicle

TOWARD ZERO DEATHS

Ignition Interlock Operation



.020 BrAC

TOWARD ZERO DEATHS

Breath Sample

- Breath sample consists of 1.5 liters of breath
  - The same sample size as most evidential breathalyzers
- To assist in preventing non-human breath samples, devices employ the following types of sample acceptance
  - Hum Tone
    - Humming and blowing at the same time
  - Blow and Suck Back
    - Blowing for 3-5 seconds and then sucking back for 2-3 seconds, then blow again for 1-2 seconds

TOWARD ZERO DEATHS

MN Ignition Interlock Devices

- Initial sample – MN Fail Point .020 BrAC
- Second sample (rolling re-test) in 5-7 minutes
- Random re-test every 15-45 minutes
- Photos are captured with each sample
- Driver is given 10 minutes to provide a re-test
  - Warning lights
  - Audible tone
  - Worded text

TOWARD ZERO DEATHS

MN Ignition Interlock Devices

- Device must be downloaded and calibrated every 30- 60 days or the device will go into "lock out" in 5-7 days
  - Lock Out does not allow the operator to start the vehicle until the device has been serviced
- Early recall "lock out in 5 days" occurs when certain violations are recorded

Benefits and Limitations

- Benefits
  - More than 10 significant evaluations of interlock programs have demonstrated reductions in recidivism ranging from 35-90%; an average reduction of 64% (Willis et al. 2005)
  - Reduces the economic impact of impaired driving by $3 - $7 for every $1 spent
  - Provides a pathway for legal driving (70% will drive illegally)
- Limitations
  - **ALONE** long term effect on reducing DWI re-offense is low 25%
  - Should be coupled with effective behavior changing program
    - Drug and alcohol courts
    - Treatment

Participation rates - 20,000+ eligible - 8,000+ participants

TOWARD ZERO DEATHS

Good Ignition Interlock Programs

- View ignition interlocks as a core component in any drunk driving strategy
- Prohibit semiconductor sensors
- Utilize a certification and approval process for devices and vendors
- Emphasis on education for lead practitioners and for public
- Note interlock restriction on driver license
- Service in rural areas

TOWARD ZERO DEATHS

Good Ignition Interlock Programs

- Vendor Oversight program
- Indigent funding available and rely on multiple criteria for determination
- Automated standardized reporting
- Inclusion of screening/assessment and treatment for long-term risk reduction
- View the Law Enforcement community as a partner

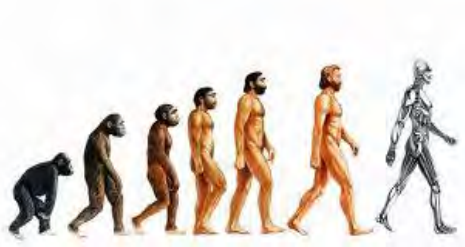
TOWARD ZERO DEATHS

Good Ignition Interlock Programs

- Increased emphasis on education:
  - For all program/agency staff
  - Public education is essential to clarify goals and shape perceptions of program.
  - Offenders and family
  - UK study, offenders agreed device:
    - stopped them from driving drunk;
    - reduced their drinking and helped change drinking habits;
    - invoked serious thought about drinking habits;
  - Investment in training and informational materials.

II Evolution and Growth

- Increase growth in installations
- Ongoing advances in research, technology



- Increasingly become a core component in any drunk driving strategy
- Program expansion to include more drivers
- Increased program ownership and attention to operational practices by authorities across the board
- Increased educational efforts
- Establishment of vendor oversight programs

TOWARD ZERO DEATHS

Minnesota Program History

- Minnesota starts an administrative pilot program in 2007
- Legislative directive in 2011
- Minnesota court involvement continues to increase
- 8000+ participants

TOWARD ZERO DEATHS

Minnesota Department of Public Safety Ignition Interlock Vendor Oversight Program

Jim Beauregard
Vendor Oversight Liaison

What is Vendor Oversight?

Vendor Oversight is the assurance of quality control on many levels.

TOWARD ZERO DEATHS

Vendor Oversight Includes

- Review of best practices from other states
- NHTSA and state standards for interlock devices
- Vendor/service centers
- Calibration/testing
- Circumvention Investigations
- Field testing
- Education

Device Certification Standards

- **Device overview**
  - Calibration
  - Operating parameters
  - Anti-circumvention standards

- **Independent testing**
  - NHTSA 2013 standards
  - MN standards – independent certification report is required

TOWARD ZERO DEATHS

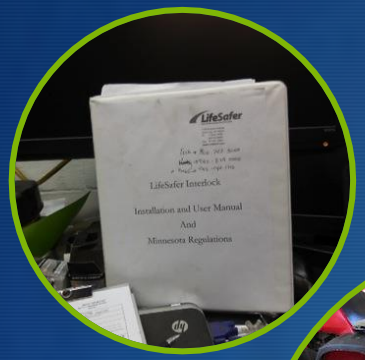
Vendor Visits

- MN standards/rules review
- Service center technician training materials
- Background checks
- Lockout code usage - who has codes?
- Mobile service
- Calibration
- Device version/firmware/software

Service Center Inspection

- Record retention
- Client education
- Materials storage

TOWARD ZERO DEATHS



Service Center Inspection

Installation/calibration/technician standards

- Installation manuals
- Tools
- Work area
- Labels/shrink-wrap
- Wiring (connections)
- Dry gas/Wet bath
- Technician standards
  - Knowledge
  - Communications

TOWARD ZERO DEATHS

Calibration of Ignition Interlock

- Calibration is a process by which a tester uses an alcohol reference sample to determine if a interlock device accurately measures the BrAC of a user
  - Calibration interval. The maximum time period that an alcohol interlock may be used without a calibration check
  - Calibration stability. The ability of an alcohol interlock to hold its correct calibration over a defined time period
  - Service interval. The maximum time period that an alcohol interlock may be used without maintenance or data download

TOWARD ZERO DEATHS

Calibration of Ignition Interlock

- Who is calibrating the interlock?
- How were they trained?
- Do they understand the importance of calibration?
  - Two common methods used to calibrate interlock devices
    - Dry Gas
    - Wet Bath

TOWARD ZERO DEATHS

Dry Gas Calibration

- Introduction of a pressurized dry standard gas of a specified concentration of alcohol into the interlock device and compares the resulting BrAC reading with the alcohol percentage in the dry gas mix.

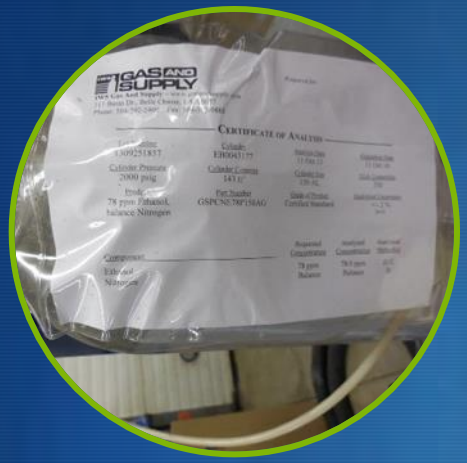
Dry gas calibration

Many gas manufacturers will provide chart for pressure adjustment due to altitude.

Breath alcohol concentration (BAC) adjusted for altitude

Altitude (ft)	Pressure (mmHg)	.030 g/210L	.050 g/210L	.080 g/210L	.100 g/210L
0	760	0.030	0.050	0.080	0.100
250	753	0.029	0.049	0.079	0.099
500	747	0.029	0.049	0.078	0.098
750	740	0.029	0.048	0.077	0.097
1000	734	0.028	0.048	0.077	0.096
1250	728	0.028	0.047	0.076	0.095
1500	722	0.028	0.047	0.076	0.095
1750	716	0.028	0.047	0.075	0.094
2000	709	0.027	0.046	0.074	0.093
2500	697	0.027	0.045	0.073	0.091
3000	685	0.027	0.045	0.072	0.090
3500	673	0.026	0.044	0.070	0.088
4000	662	0.026	0.043	0.069	0.087
4500	650	0.025	0.042	0.068	0.085
5000	639	0.025	0.042	0.067	0.084
5500	628	0.024	0.041	0.066	0.082
6000	617	0.024	0.040	0.064	0.081
6500	606	0.023	0.039	0.063	0.079
7000	595	0.023	0.039	0.062	0.078
7500	584	0.023	0.038	0.061	0.076
8000	574	0.022	0.037	0.060	0.075
8500	564	0.022	0.037	0.059	0.074
9000	554	0.021	0.036	0.058	0.072
9500	544	0.021	0.035	0.057	0.071
10000	534	0.021	0.035	0.056	0.070
10500	524	0.020	0.034	0.055	0.068
11000	514	0.020	0.033	0.054	0.067
11500	505	0.019	0.033	0.053	0.066
12000	496	0.019	0.032	0.052	0.065

TOWARD ZERO DEATHS



Dry Gas Calibration Inspection

Dry Gas

- Records
- Storage
- Pressure
- Hoses
- Testing
- Altitude

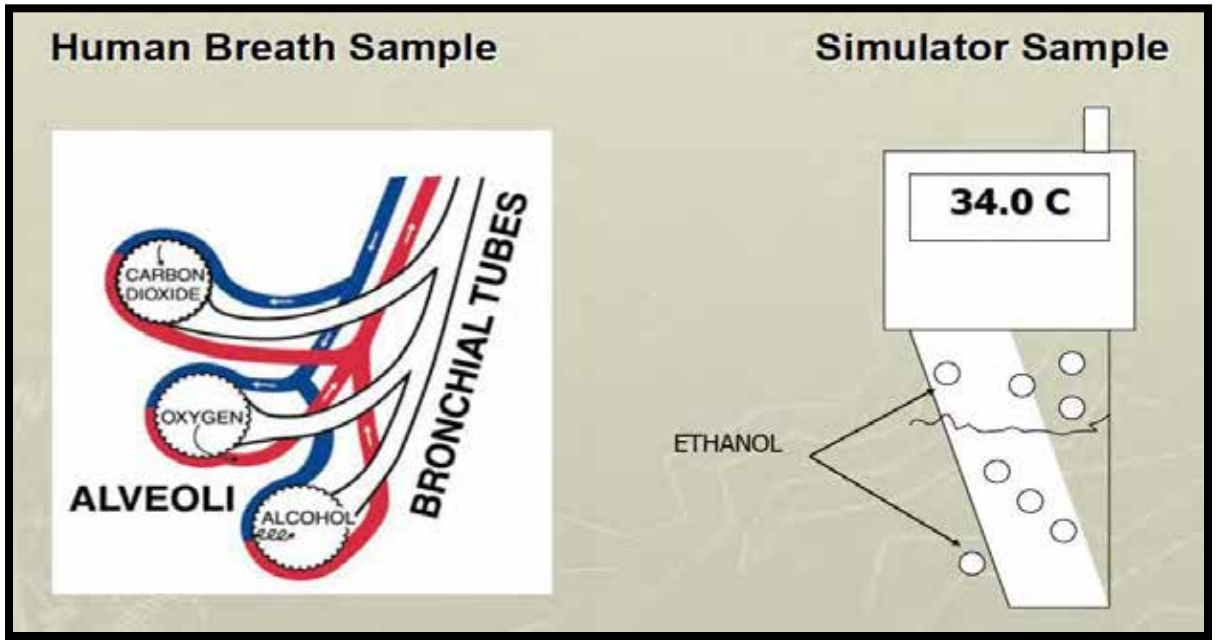
TOWARD ZERO DEATHS

Wet Bath Calibration

An electronically temperature controlled instrument that when used with an Alcohol Reference Solution, will provide precise and accurate calibration standards for use with alcohol breath test instruments.

Why We Use Simulators

- Provide a sample that closely resembles a human breath sample
- Ensure that the Breath Alcohol instrument you are using is working/calibrated correctly



TOWARD ZERO DEATHS

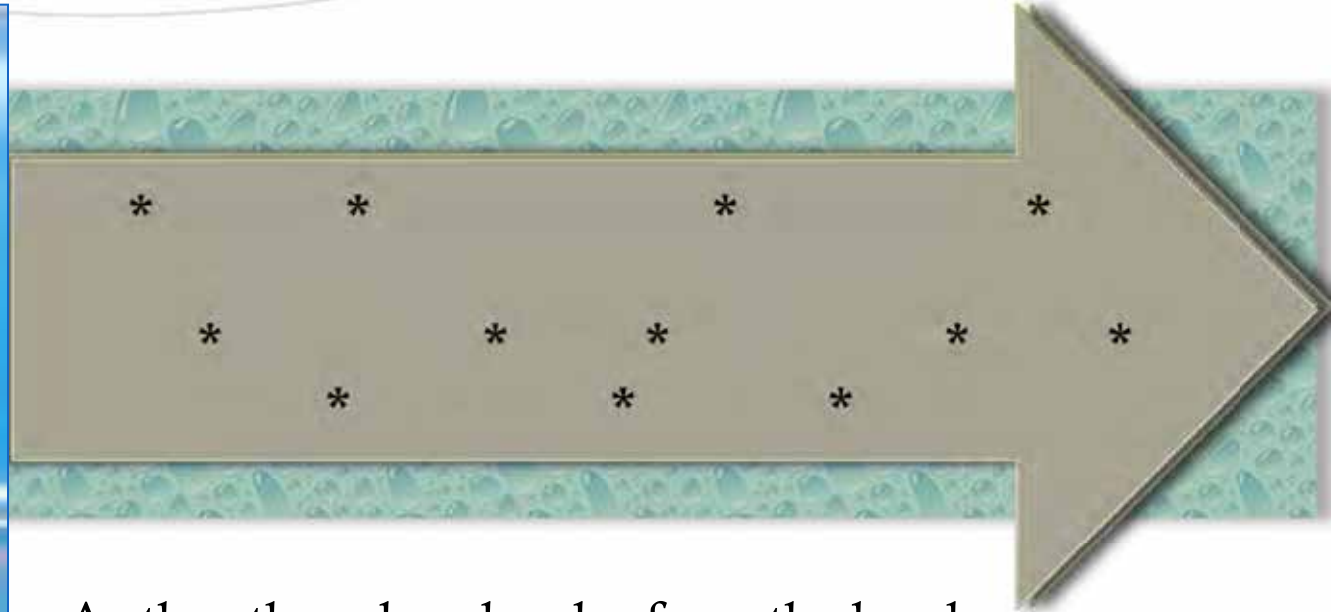
Wet Bath Calibration Inspection

Wet Bath Simulator

- Solution standards/records
- Hoses
- Secure connections
- Temperature
- Device calibration
- Cleanliness
- Storage
- Condensation

TOWARD ZERO DEATHS

Condensation In Simulator Tubing



As the ethanol molecules from the headspace pass through the tubing filled with moisture, less molecules enter the device, therefore calibration may not be accurate.

TOWARD ZERO DEATHS

Device Calibration Inspection

Wet bath simulators

- Temperature issues
- Calibration dates

TOWARD ZERO DEATHS

INSPECTION REPORT
Ignition Interlock Service Center

Inspector	Inspection Date	Vendor
Service Center Name		Phone Number
Service Center Physical Address		
Document/Records Review Location .		
Technician(s) Present Yes No		

Simulator Manufacturer and Model	Serial Number	Temperature _____ ˚C _____ ˚C Measured Displayed	Seal Pressure Test Good Leaks	Calibration date

Reference Solution/Gas Manufacturer	Storage	Tank Pressure psi	Lot Number	Expiration Date	Predicted Value	PBT Result		

Documentation on file?	Verified YES NO N/A			

Corrective action(s) will be noted below each section.

		Description
Device		
	Problems	
	Firmware Version	
	Corrective Action:_____	
Installation Standards and Specifications		
	Equipment	
	Tech support	
	Vendor support	
	Labels/Shrink	
	Problems	
	Corrective Action:_____	
Camera Standards		
	Mounts	
	Software	
	Corrective Action:_____	
Maintenance and Calibration		
	Clients	
	Downloads	
	Calibration	
	Problems	
	Circumvention	

Corrective Action:_____

TOWARD ZERO DEATHS

INSPECTION REPORT
Ignition Interlock Service Center

Client Education		
	Handouts	
	Videos	
	Separate Area	
	Training	
	Corrective Action:	
Service Center		
	Cleanliness	
	Fee Sheet	
	Corrective Action:	
Technician		
	Training	
	Corrective Action:	

NOTICE AND ORDER OF ADMINISTRATIVE ACTION

I have received a copy of the inspection report. If deficiencies were noted, this report constitutes a written warning. I understand that failure to make any correction(s) noted above may result in enforcement action by the MN Department of Public Safety.

Received By:

PURSUANT TO SECTION _____

THE BASIS FOR THIS ACTION IS AS FOLLOWS:

Technician Name:_____

Address:_____City:___State:_____Zip:_____ Email Address: _____Phone #:_____Fax #:_____

Comments:_____

The effective date of this action is_____. I hereby acknowledge receipt:

Service Center Representative or Technician Signature

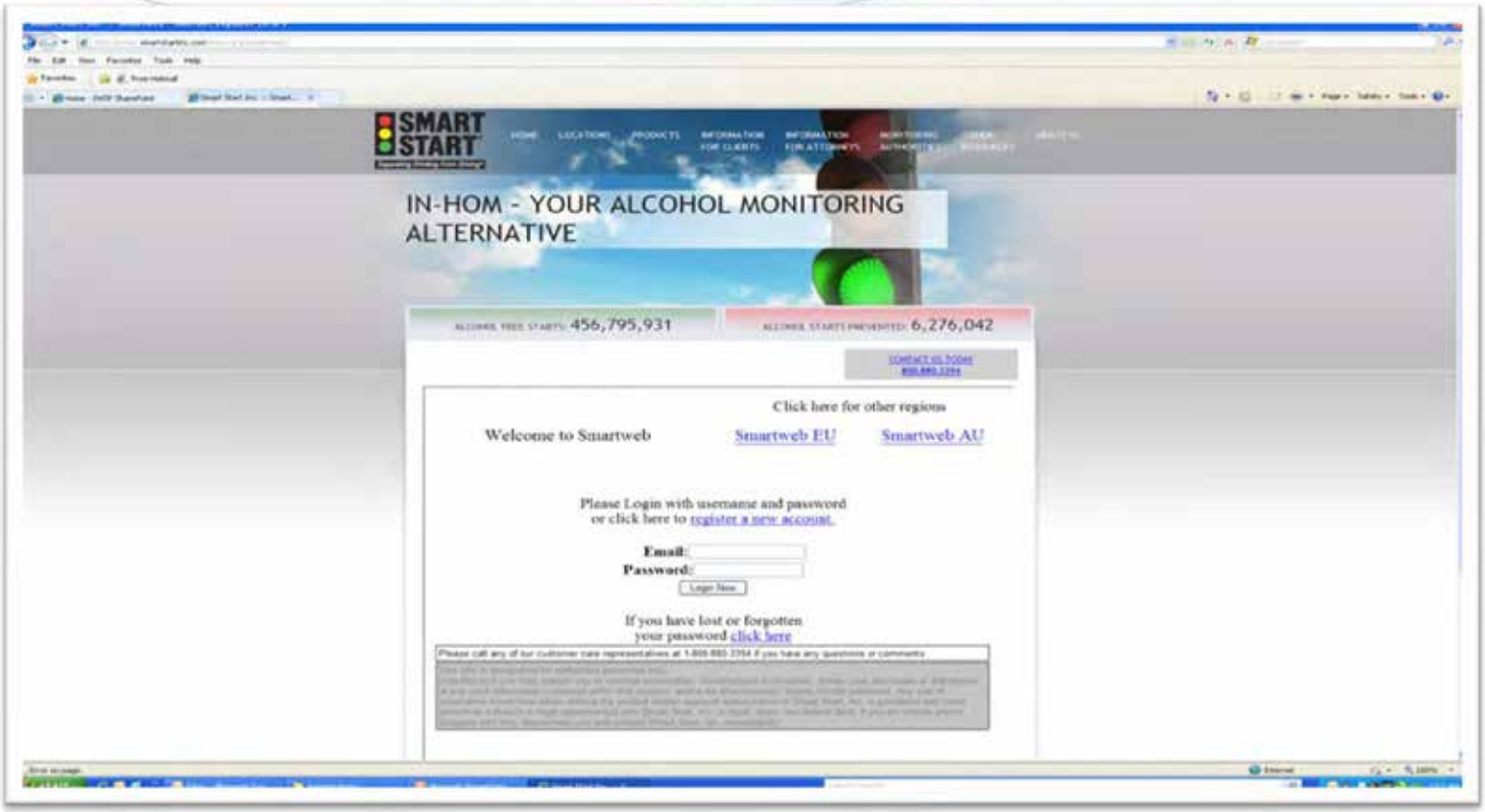
Inspector's Signature

TOWARD ZERO DEATHS

Circumvention Investigation

- **All devices record the following information**
  - Any efforts to disable the device
  - Date/time of vehicle use
  - Pass/fail records
  - BrAC Levels
  - Start and stopping of vehicle engine
  - Service reminders "Lock Out Mode"
  - Date service performed
  - Photos
  - Calibration data

Database Access



DEPARTMENT OF PUBLIC SAFETY STATE OF MINNESOTA

TOWARD ZERO DEATHS

Circumvention Investigations

02/22/2014 09:53:38	Initial Test-Violation	0.044
02/22/2014 09:53:39	Temporary Lockout Start	
02/22/2014 09:54:13	Disconnected Head	
02/22/2014 09:54:42	Engine Start	13.053v
02/22/2014 09:58:42	Circumvention	
02/22/2014 10:02:42	Circumvention	
02/22/2014 10:06:42	Circumvention	
02/22/2014 10:10:42	Circumvention	
02/22/2014 10:14:42	Circumvention	
02/22/2014 10:18:38	Connected Head	
02/22/2014 10:18:44	Connected Head	
02/22/2014 10:18:45	Violation Grace Period Start	7200 minutes remaining
02/22/2014 10:19:12	Rolling Retest Requested	
02/22/2014 10:19:15	Picture Requested	Test Started
02/22/2014 10:19:35	Rolling Retest-Violation	0.031
02/22/2014 10:20:09	Disconnected Head	
02/22/2014 10:22:41	Circumvention	
02/22/2014 10:23:19	High Battery Voltage	13.798v
02/22/2014 10:23:19	Engine Stop	13.798v
02/22/2014 11:15:00	Engine Start	14.474v
02/22/2014 11:18:59	Circumvention	
02/22/2014 11:22:59	Circumvention	
02/22/2014 11:26:59	Circumvention	
02/22/2014 11:30:59	Circumvention	
02/22/2014 11:34:59	Circumvention	
02/22/2014 11:38:59	Circumvention	
02/22/2014 11:42:59	Circumvention	
02/22/2014 11:46:59	Circumvention	
02/22/2014 11:50:43	Connected Head	
02/22/2014 11:50:49	Connected Head	
02/22/2014 11:50:50	Violation Grace Period Start	7108 minutes remaining
02/22/2014 11:50:50	Circumvention	Circumvention
02/22/2014 11:51:03	PC Connected	

Circumvention Investigations

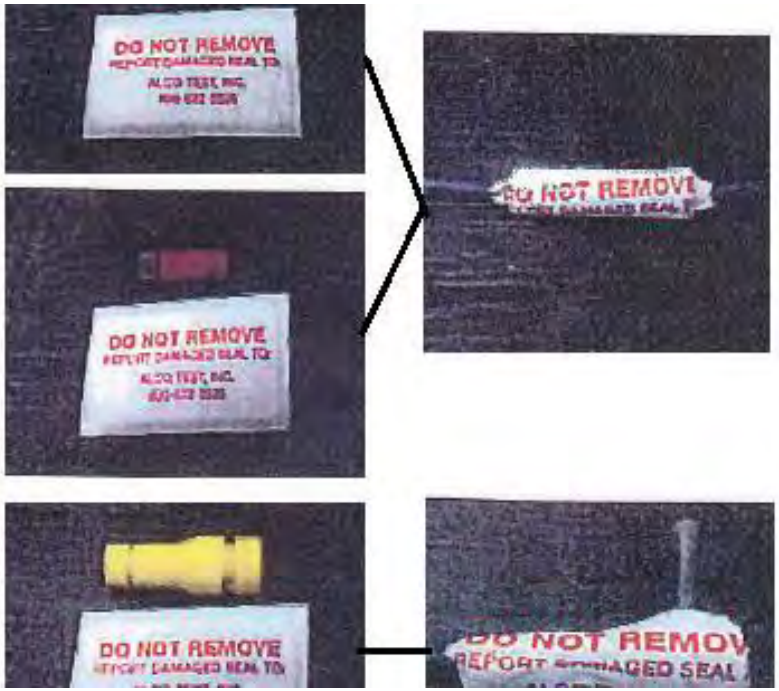
73 Smartlog Events

Timestamp	Type	Details
02/22/2014 11:54:45	PC Disconnected	
02/22/2014 11:54:48	Power On	
02/22/2014 11:54:50	Engine Start	14.477v
02/22/2014 11:55:55	Connected Head	
02/22/2014 11:55:56	PC Connected	
02/22/2014 11:56:43	Connected Head	
02/22/2014 11:57:13	Rolling Retest Requested	
02/22/2014 11:57:16	Picture Requested	Test Started
02/22/2014 11:57:36	Rolling Retest-Violation	0.221
02/22/2014 11:58:09	Disconnected Head	
02/22/2014 12:00:38	Circumvention	
02/22/2014 12:04:38	Circumvention	
02/22/2014 12:08:38	Circumvention	
02/22/2014 12:12:38	Circumvention	
02/22/2014 12:16:38	Circumvention	
02/22/2014 12:20:38	Circumvention	
02/22/2014 12:24:38	Circumvention	
02/22/2014 12:27:23	Engine Stop	13.758v
03/20/2014 20:02:11	Connected Head	
03/20/2014 20:02:11	Violation Grace Period Start	7200 minutes remaining
03/20/2014 20:02:35	Picture Requested	Test Started
03/20/2014 20:02:43	Initial Test-Pass	0.000
03/20/2014 20:03:02	Engine Start	14.291v
03/20/2014 20:03:03	Picture Requested	Vehicle Started
03/20/2014 20:04:26	High Battery Voltage	13.476v
03/20/2014 20:04:26	Engine Stop	13.476v
03/20/2014 20:04:53	Connected Head	
03/20/2014 20:04:53	Violation Grace Period Start	7197 minutes remaining
03/20/2014 20:05:17	Picture Requested	Test Started
03/20/2014 20:05:25	Initial Test-Pass	0.000

DEPARTMENT OF PUBLIC SAFETY STATE OF MINNESOTA

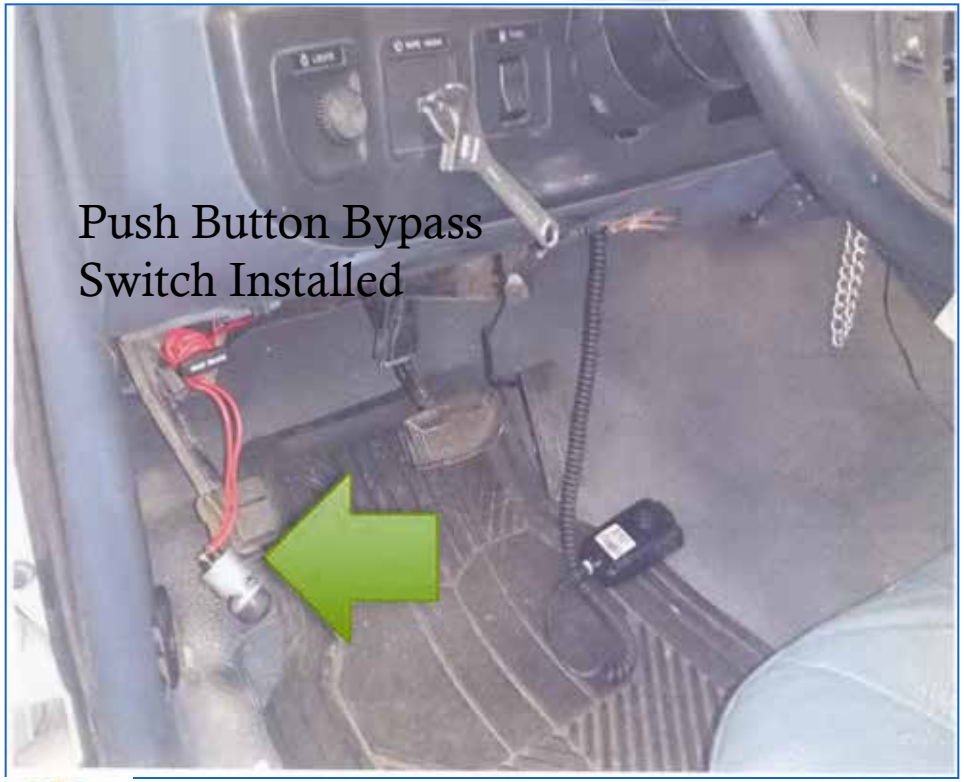
TOWARD ZERO DEATHS

Circumvention Prevention



TOWARD ZERO DEATHS

Circumvention Investigations



A Bypass Switch interrupted the ground and hot wires prior to reaching the BAIID

When the switch was turned on: it closed the ignition circuit, allowed the vehicle to start

The BAIID did not recognize the vehicle was on

TOWARD ZERO DEATHS

Circumvention Investigations

Circumvention Investigations

Circumvention Investigations

- Tamperproof seal removed
- Sewing pins inserted through the ground and hot wires
- When pressed together the circuit was closed and the vehicle was able to start without a breath sample

Circumvention Investigations

- Altered Breath Sample: Stored Air
- Utilized an Air Mattress pump to supply the exhaled breath sample
- When the inhale portion was necessary, the air nasal was removed and the individual supplied the inhale portion
- The vehicle was able to start with the individual altering the submitted breath sample

Field Testing

- The purpose of a field test is to confirm that devices respond to events in accordance with administrative rule or statue
  - Warm up time
  - Breath volume
  - Etc.
- To test for possible interference issues
  - Mouthwash
  - Hand sanitizer
  - Non-human air samples
  - Etc.

Violation for Driving a Vehicle without Ignition Interlock

- Misdemeanor

Minn. Stat. § 171.09, subd. 1(g).

- "drive, operate, or be in physical control of any motor vehicle that is not equipped with a functioning ignition interlock device."

The ignition interlock restriction is denoted on the back of the drivers license

TOWARD ZERO DEATHS

Employment Variance

- Allows a person to drive a company owned vehicle during employment without ignition interlock
  - Not self employed
  - Not a rental car
- Employer will work with Driver and Vehicle Services to obtain variance

Minn. Stat. § 171.306, subd. 4(b).

TOWARD ZERO DEATHS

Education

Education for:

- Law Enforcement
- Probation
- Courts
- Legislators
- Media

- How Ignition Interlock Works
- Law Enforcement Roll Call

DEPARTMENT OF PUBLIC SAFETY STATE OF MINNESOTA

TOWARD ZERO DEATHS

Questions?

Jim Beauregard
Vendor Oversight Liaison
beaurejim@gmail.com

TOWARD ZERO DEATHS

Wrap Up

Jeff Vlaminck,
Minnesota
Department
of Transportation,
District Engineer
District 6

TZD Success Factors

- Commitment to change American culture regarding traffic safety
- Collaboration with other traffic-safety advocates
- Promote best practices and lessons learned

How can you be involved in TZD?

- Stakeholder breakfasts in person or online
- Annual statewide conference and/or regional workshops
- Regional TZD Steering Committee meetings, news conferences & special events
- TZD mailing list(s)
- Be a TZD Ambassador!

TZD Statewide Conference

October 29-30, 2015
St. Cloud

www.minnesotatzd.org

Follow us on Twitter and Facebook!

- Follow us on Twitter: @MNTZD

- Like us on Facebook: MNTZD

TOWARD ZERO DEATHS

Door Prizes!

TOWARD ZERO DEATHS

Goal: Zero Deaths