

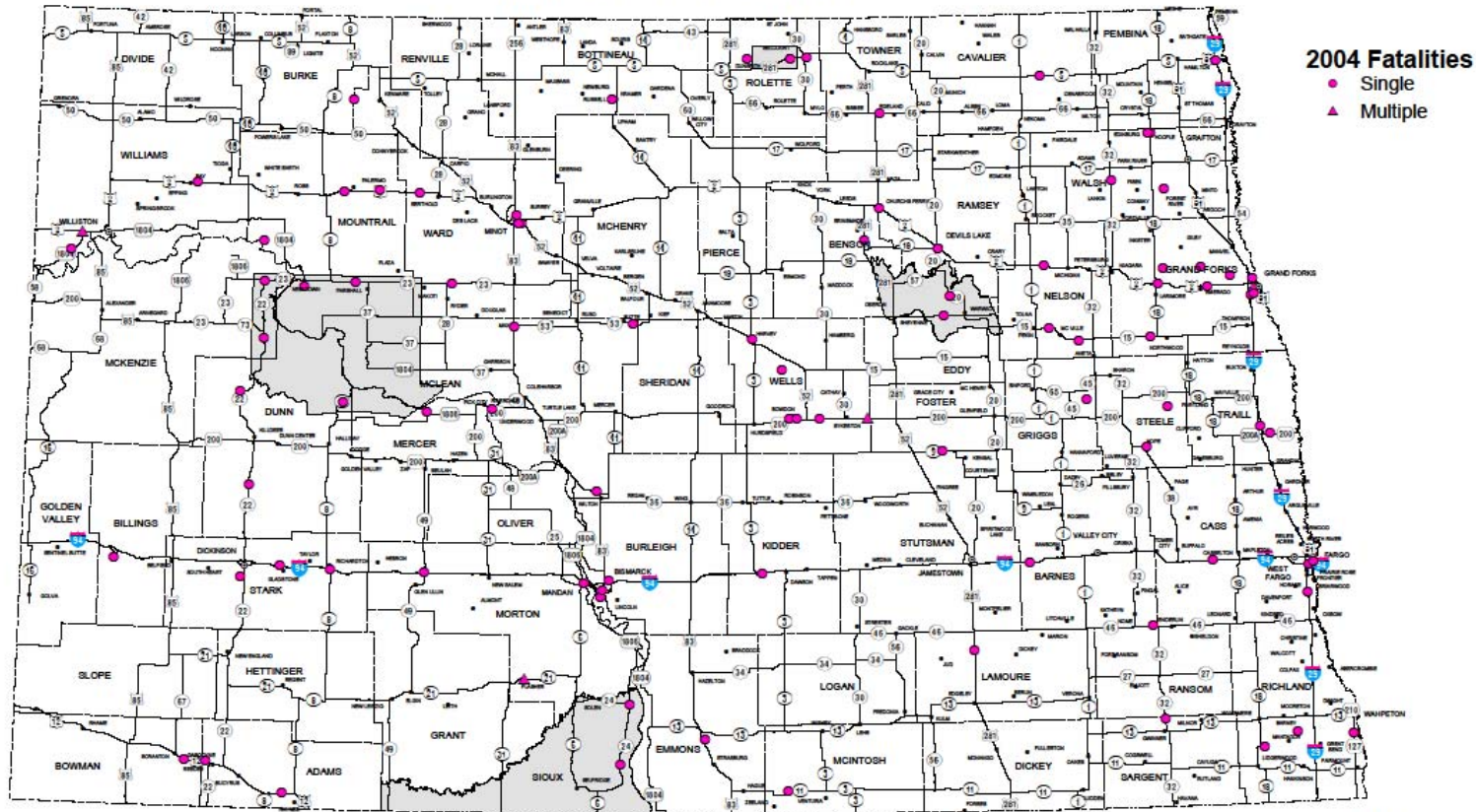
# Introducing the System-Wide Perspective to Highway Safety Planning

Scott D. Zainhofsky, PE (North Dakota)  
NDDOT – Planning & Programming Engineer  
May 20, 2009

# What is the “System-Wide” Perspective to Highway Safety Planning?

- A ridiculous and extreme example:
  - To eliminate work-zone crashes eliminate work zones

# FATAL CRASHES 2004

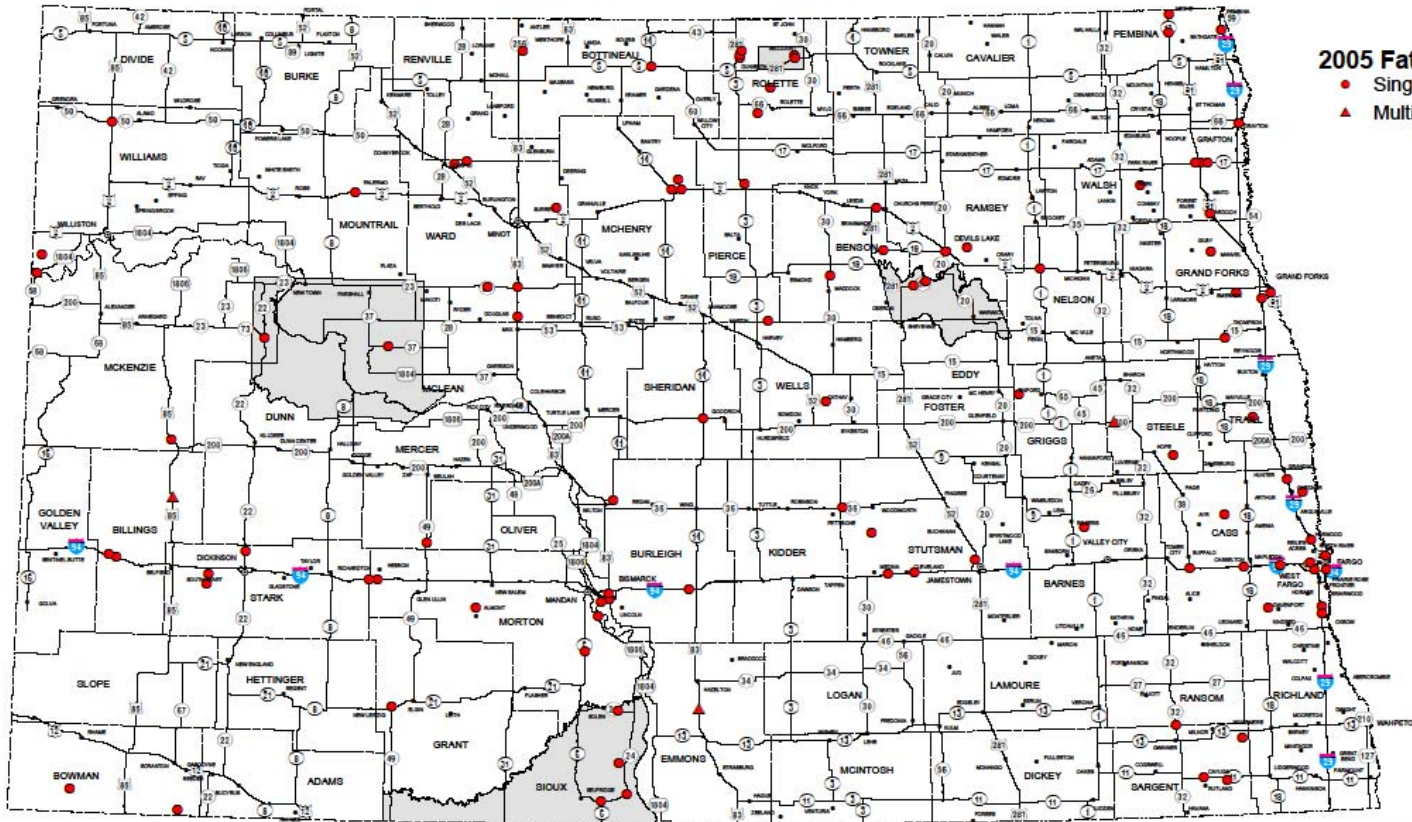


STATE OF  
NORTH DAKOTA

PREPARED BY THE  
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
PLANNING & PROGRAMMING DIVISION  
820 DEPARTMENT AVENUE  
SOUTH DAKOTA CITY, SD 57009  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
02/13/2009

F:\PLANNING\GIS\Chad\Fatality Crash Maps

# FATAL CRASHES 2005



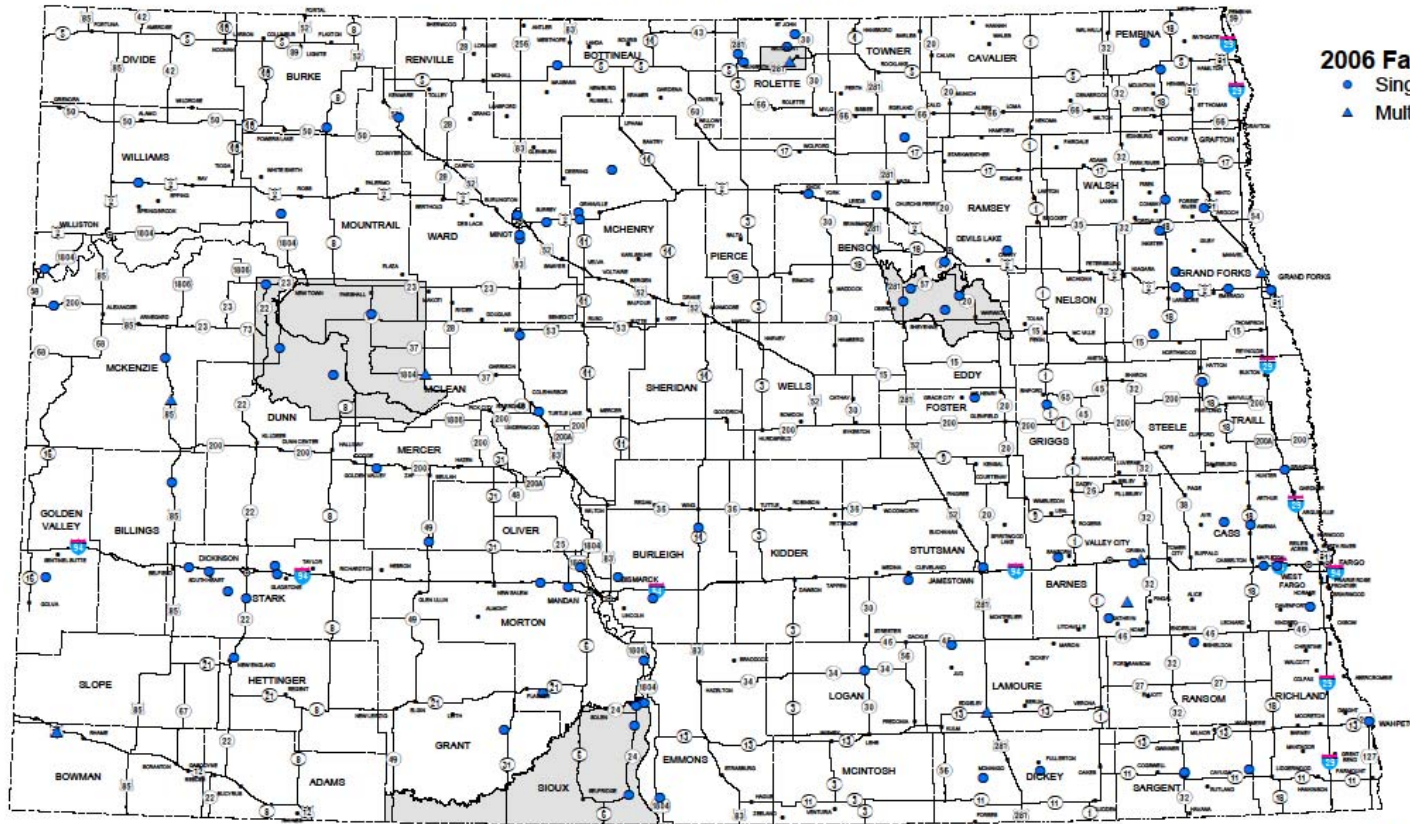
**2005 Fatalities**  
 ● Single  
 ▲ Multiple

STATE OF  
**NORTH DAKOTA**  
 PREPARED BY THE  
 NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
 PLANNING & PROGRAMMING DIVISION  
 IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 02/13/2009

F:\PLANNING\GIS\Chas\Fatality Crash Maps



# FATAL CRASHES 2006



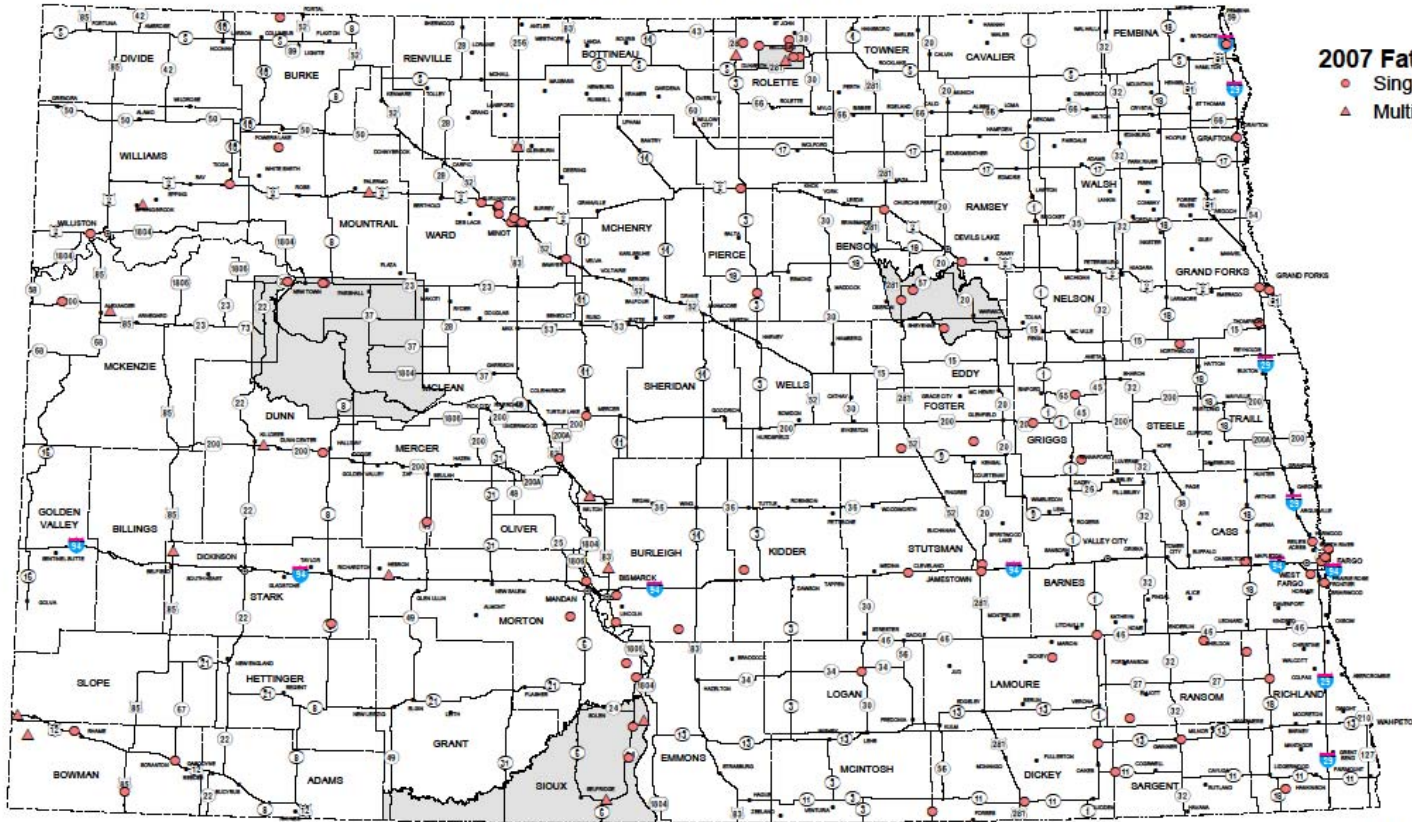
**2006 Fatalities**  
 ● Single  
 ▲ Multiple

STATE OF  
 NORTH DAKOTA

PREPARED BY THE  
 NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
 PLANNING & PROGRAMMING DIVISION  
 IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 02/13/2009

F:\PLANNING\GIS\Crash\FatalCrash Maps

# FATAL CRASHES 2007



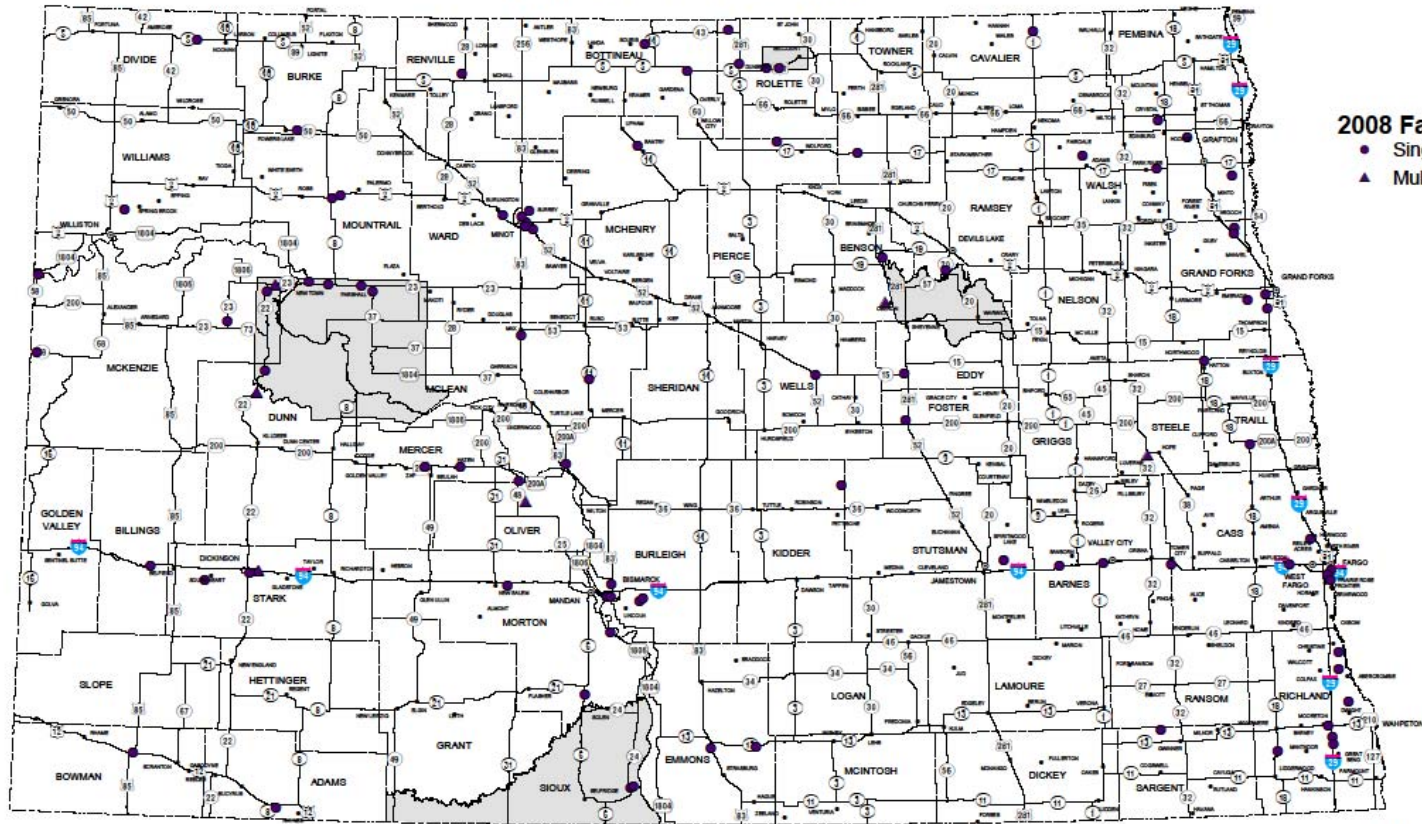
**2007 Fatalities**  
 ● Single  
 ▲ Multiple

STATE OF  
**NORTH DAKOTA**  
 PREPARED BY THE  
 NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
 PLANNING & PROGRAMMING DIVISION  
 IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 02/13/2009

F:\PLANNING\GIS\Chad\Fatality Crash Maps



# FATAL CRASHES 2008



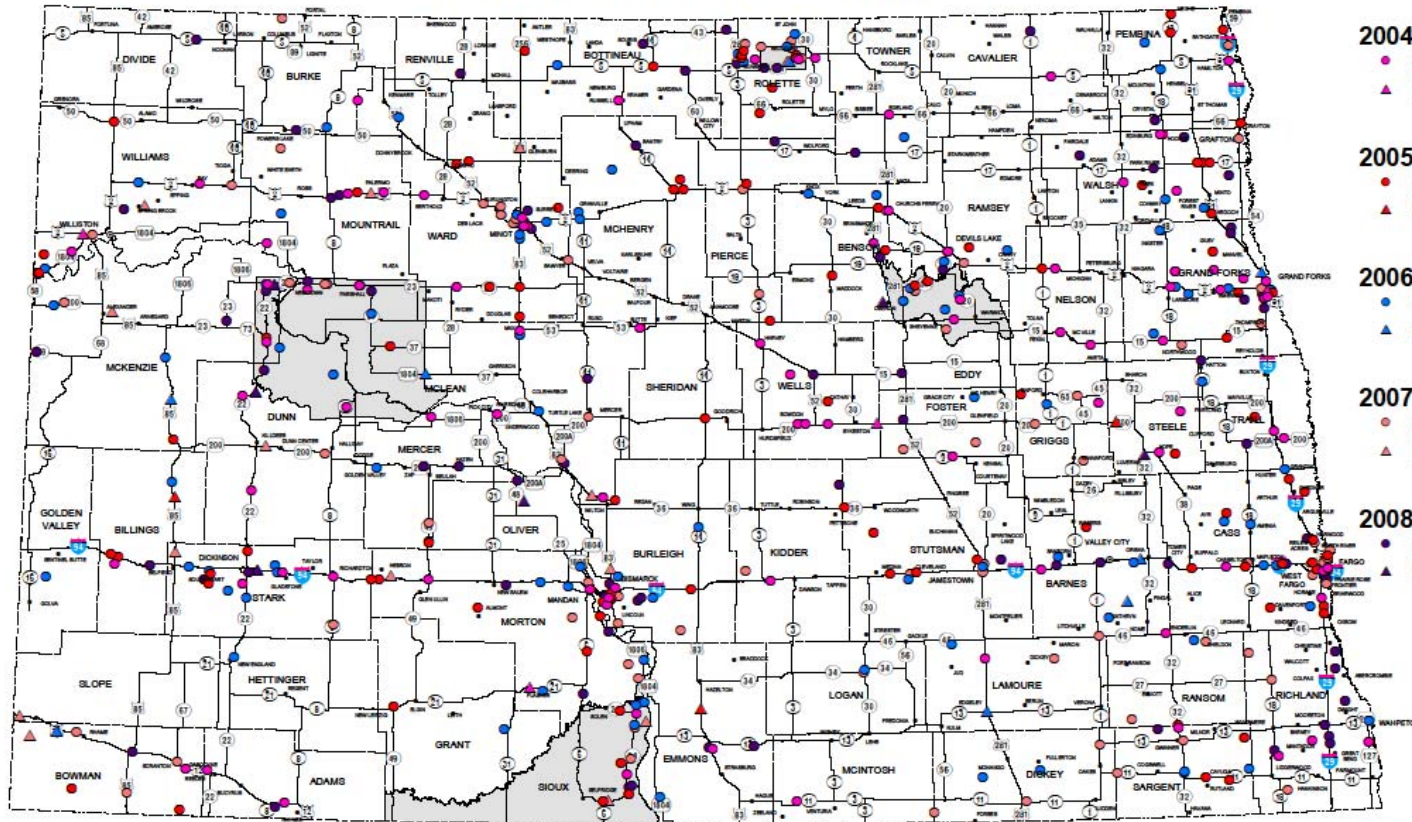
**2008 Fatalities**  
 ● Single  
 ▲ Multiple

STATE OF  
 NORTH DAKOTA

MEMBER OF THE  
 NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
 PLANNING & PROGRAMMING DIVISION  
 IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 02/13/2009

F:\PLANNING\GIS\Crash\Fatality Crash Maps

# FATAL CRASHES 2004 - 2008



**2004 Fatalities**  
 ● Single  
 ▲ Multiple

**2005 Fatalities**  
 ● Single  
 ▲ Multiple

**2006 Fatalities**  
 ● Single  
 ▲ Multiple

**2007 Fatalities**  
 ● Single  
 ▲ Multiple

**2008 Fatalities**  
 ● Single  
 ▲ Multiple

STATE OF  
 NORTH DAKOTA

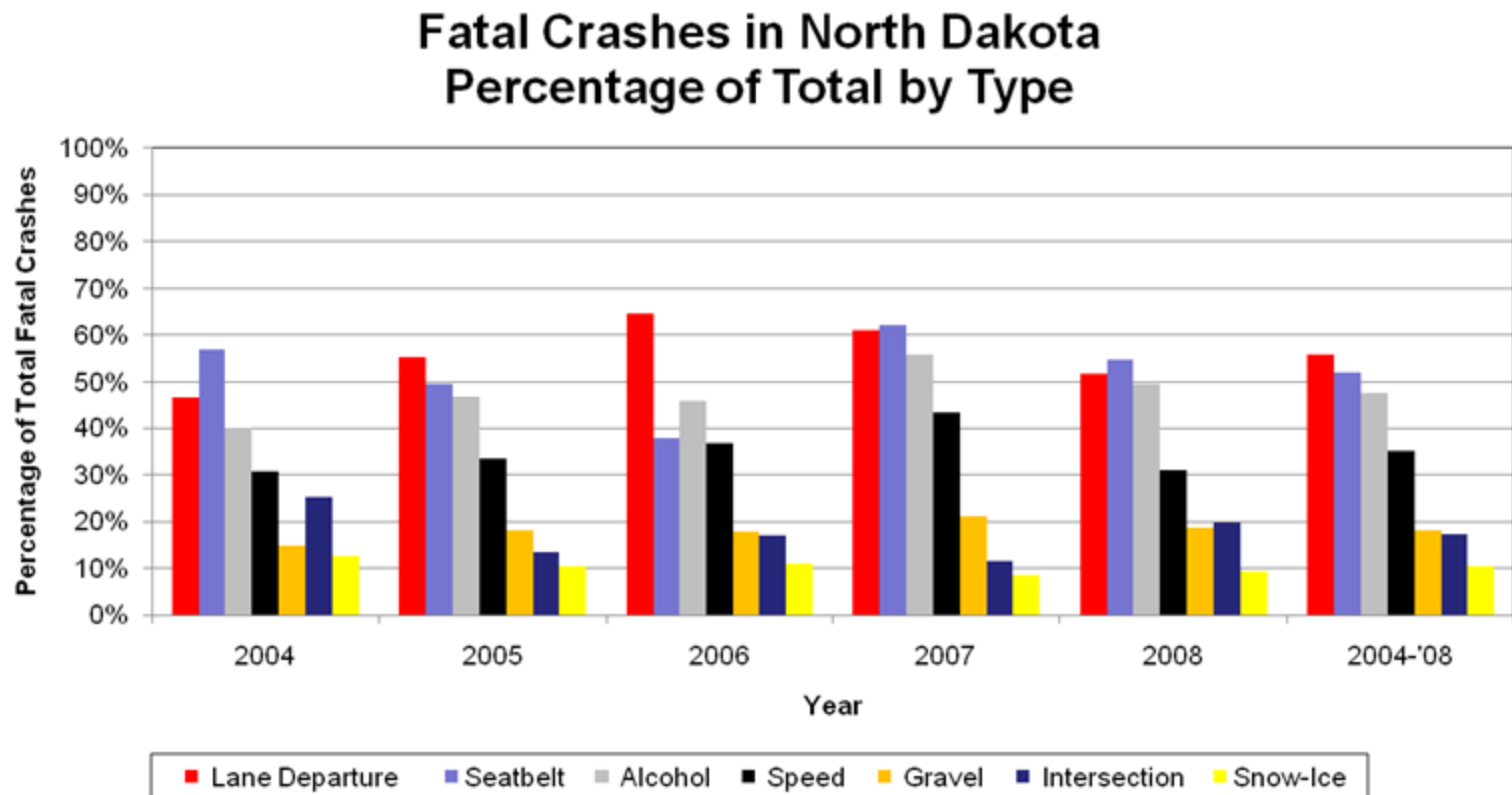
MEMBER OF THE  
 NORTH DAKOTA DEPARTMENT OF TRANSPORTATION  
 PLANNING & PROGRAMMING DIVISION  
 IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 02/13/2009

F:\PLANNING\GIS\Crash\Fatality Crash Maps



# What is the “System-Wide” Perspective?

Think beyond location to crash type



# What is the “System-Wide” Perspective?

- Utopian essence of this perspective
  - Apply countermeasures everywhere a crash type may occur
- Practical application
  - Apply countermeasures everywhere feasible

# Possible Practical Utopia.?.

- Rumble Stripes (line painted over rumble)
  - National research = centerline w/edgeline rumbles typ. reduce fatal crashes 15-25%
  - Applied to one highway corridor in ND
  - 62.5 miles; total cost = \$113,000 or \$1800/mi
  - If applied to the entire 2-lane state/federal system in ND cost ~ \$13M, excluding inflation

# ND Process To Introduce System-Wide

- Team developed proposed Statewide Safety Program policy
- Director signed a foundational SSP policy
  - 7 main elements

# ND Process To Introduce System-Wide

- Foundational SSP policy
  - Critical-crash corridor locations
  - Rural & urban high crash locations
  - Animal-crash countermeasures reviewed
  - Public comments
  - System-wide countermeasures
  - Flex spending HSIP \$'s to behavior
  - Fatal-crash review team to review each fatal crash in detail

# The Key

- Largest results will not come from location
- System-wide perspective will generate largest results

# System-Wide Perspective Is Crash

TYPE

TYPE

TYPE