

Integrated Highway Safety Management

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WORLD HEALTH ORGANIZATION

1.2 million people
will die as a result of
road crashes this
year –

more than 3200
deaths each day

**ROAD SAFETY IS
NO ACCIDENT**

World Health Organization (WHO) Prediction:

Road crashes will be the
third highest cause of
disease and injury by 2020

- ❑ 1.18 million road crash deaths per year
- ❑ 20-50 million road crash injuries per year
- ❑ \$ 518 billion cost of road crashes per year (1997)
- ❑ 3rd among all causes of premature death or disability
(2020 estimate after ranking 9th in 1990)

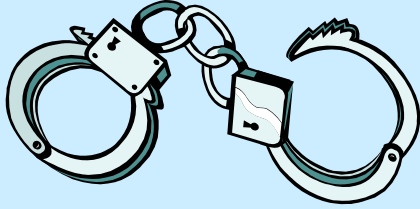
R A N K	Cause and Number of Deaths								
	Under 1	1-3	4-7	8-15	16-20	21-24	Other Adults		
							25-34	35-44	45-64
1	Perinatal Period	Congenital Anomalies	MV Traffic Crashes	MV Traffic Crashes	MV Traffic Crashes	MV Traffic Crashes	MV Traffic Crashes	Malignant Neoplasms	Malignant Neoplasms
2	Congenital Anomalies	MV Traffic Crashes	Malignant Neoplasms	Malignant Neoplasms	Homicide	Homicide	Homicide	Heart Disease	Malignant Neoplasms
3	Heart Disease	Accidental Drowning	Exposure to Smoke/Fire	Suicide	Suicide	Suicide	Suicide		
4	Homicide	Homicide	Congenital Anomalies	Homicide	Malignant Neoplasms	Accidental Poisoning			
5	Septicemia	Malignant Neoplasms	Accidental Drowning	Congenital Anomalies	Accidental Poisoning				
6	Influenza/Pneumonia	Heart Disease	Homicide	Accidental Drowning					
7	MV Traffic Crashes	Exposure to Smoke/Fire							
8	Nephritis/Nephrosis								

Crashes are No. 1 Cause of Deaths in U.S. in 2001 for ages 4 through 33

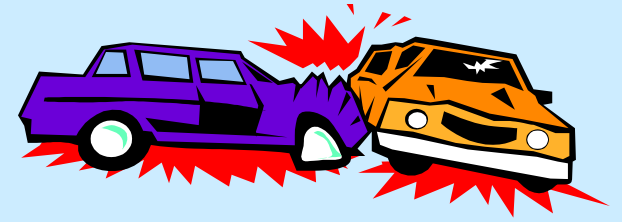
Battlefield and Highway Casualties

(Deaths and Major Injuries)

<u>War</u>	<u>Battle Casualties</u>	<u>Equiv Hwy Days</u>
Revolution	10,623	1 day, 5 hrs
1812	6,765	18 hrs
Mexican	5,885	16 hrs
Civil War	422,295	47 days, 20 hrs
Spanish-American	2,831	8 hrs
WW I	257,404	29 days, 4 hrs
WW II	962,403	109 days, 0 hrs
Korean	136,913	15 days, 12 hrs
Vietnam	200,685	22 days, 18 hrs
Persian Gulf (Part I)	606	2 hrs
Persian Gulf (Part II)	<u>1756</u>	<u>5 hrs</u>
Total	2,008,166	227 days, 12 hrs



Iowa Crime ↔ Crash Clock



2000

1 murder every
7.9 days

1 fatality every
19 hours

1 aggravated assault
every
87 minutes

1 injury every
15 minutes

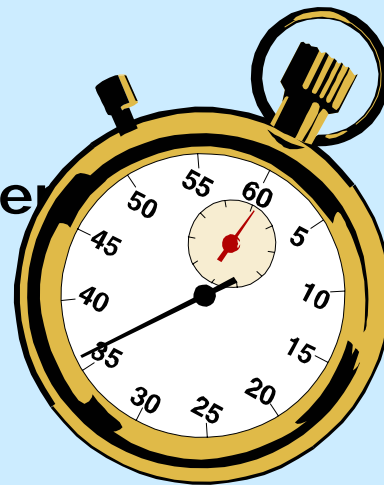
1 violent crime every
70 minutes

1 property crime every
6 minutes

1 property damage
every
10 minutes

1 crime every
5.5 minutes

1 crash every
8 minutes



The loss of one life is tragic.

As a physician who practiced in a trauma center for 20 years, I can tell you that every trip down the hall to the family room to talk to parents, to tell them their teenager is not going to come home, or a child that their dad or mom is not going to come home, is the most gut wrenching exercise you can go through, except to experience the loss yourself.



-
- This happens in the US over 42,000 times a year, and when you consider it happens 1.2 million times worldwide it is a tragedy that is almost beyond comprehension'.
 - 'We talk a lot about numbers, but really we are talking about lives. And those are just the fatalities that are relatively easy to count.

Mary Peters, FHWA Administrator:

“...it appears that we also have grown accustomed to more than 41,000 highway related fatalities and greater than 3 million highway related injuries each year—”



“Highway Safety – Everyone’s Responsibility”
Public Roads, January 3, 2003

Mary Peters, FHWA Administrator:

"This is a terrible toll and should *not* be viewed as the 'price we have to pay' for mobility. These statistics point to a national safety crisis."

"Highway Safety – Everyone's Responsibility"
Public Roads, January 3, 2003

Jerry Garcia (Grateful Dead) Speaking for All Baby Boomers...



"Somebody's gotta do somethin'; its just
incredibly pathetic its gotta be us!"

Epidemic Proportions

What would the public reaction be if
40,000 Americans died from the flu
in 2005?



American Public's Likely Reaction

- ❑ OUTRAGE
- ❑ Demands to prevent it from ever happening again
- ❑ Acceptance of a large increase in funding to address the problem

Government's Likely Reaction

Multi-Discipline Efforts:

- ☐ Increased research
- ☐ Increased vaccine production
- ☐ Improve inspection of foreign supplies
- ☐ Increase public education
- ☐ Develop alternative treatments

Mary Peters, FHWA Administrator:

“FHWA views improving safety as one of its most vital goals and has decided consciously to concentrate on saving lives.”

“Highway Safety – Everyone’s Responsibility”
Public Roads, January 3, 2003

Federal Highway Safety Goal

1.0 Fatalities
per 100M VMT by 2008
(33% Reduction)



U.S. Department
of Transportation
National Highway
Traffic Safety
Administration

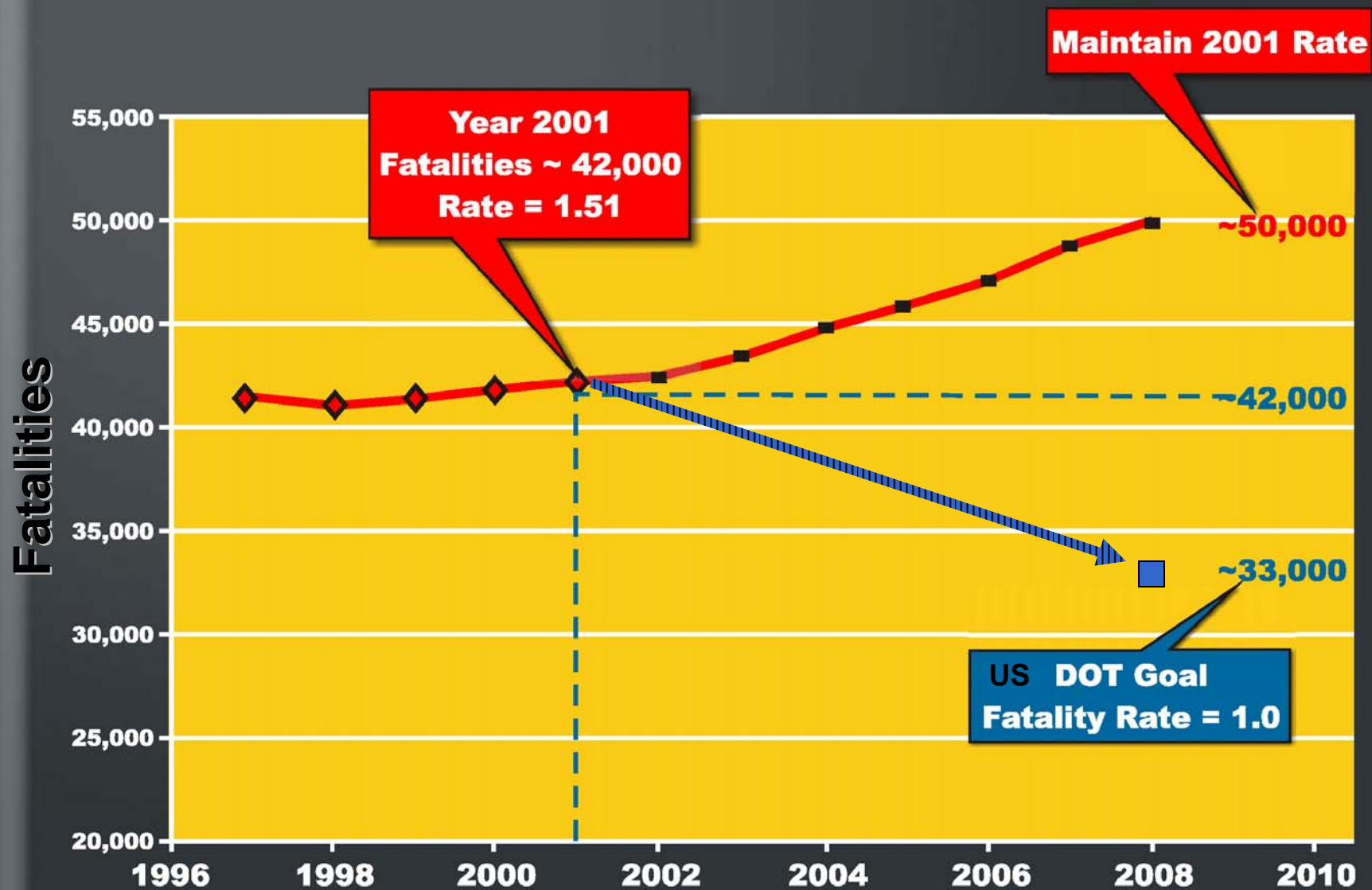


U.S. Department
of Transportation
Federal Highway
Administration



U.S. Department
of Transportation
Federal Motor
Carrier Safety
Administration

US DOT Goal of 1.0 Fatality Rate by 2008



Highway Safety is Complex

- ☐ Driver behavior
- ☐ Roadway
- ☐ Enforcement
- ☐ Emergency response
- ☐ Medical treatment
- ☐ Vehicle design
- ☐ Driver education

Highway Safety History

Working in silos

- ☐ Engineering
- ☐ Enforcement
- ☐ Education
- ☐ Emergency response services



Mandatory Collaboration

- ❑ The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) required each state to develop and implement a Safety Management System (SMS) by October 6, 1996.
- ❑ February 1995 the Iowa SMS organized
- ❑ The National Highway System Designation Act of 1995 removed the mandate for the states to implement the management systems. States could elect to adopt the systems in whole or in part.
- ❑ By 1997, the Iowa Management System Policy Committee determined that Iowa will continue to implement the management systems, including the SMS.

AASHTO

Strategic Highway Safety Plan

❑ Origin of the Highway Safety Plan

In the late 1990s significant gains in highway safety appeared stalled. Experts declared “the low hanging fruit” had been picked. More innovative strategies would be needed

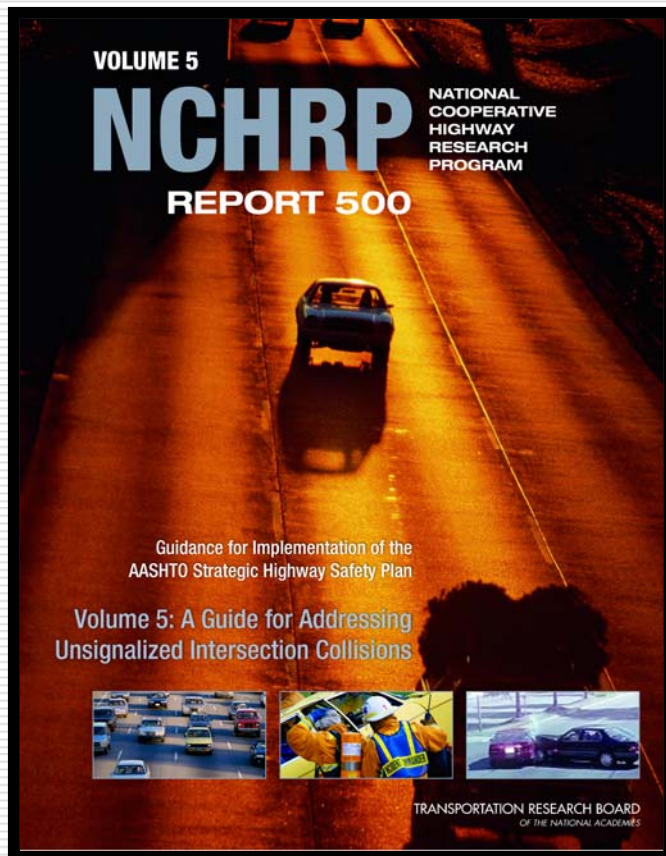
❑ Core Elements

The Plan is organized around six key elements, each encompassing multiple strategies for reducing fatalities, injuries, and related costs in a manner acceptable to a significant majority of the public.



NCHRP Guides

Implementation guides currently in print include:



- ☐ Run-Off-Road Collisions
- ☐ Head-On Collisions
- ☐ Collisions with Trees in Hazardous Locations
- ☐ Un-signalized Intersection Collisions
- ☐ Collisions Involving Unlicensed Drivers and Drivers with Suspended or Revoked Licenses
- ☐ Aggressive Driving Collisions
- ☐ Older Drivers
- ☐ Safety Belts
- ☐ Heavy Trucks
- ☐ Pedestrians
- ☐ Utility Poles
- ☐ Signalized Intersections
- ☐ Horizontal Curves

NCHRP Guides

To be produced in 2005

An advertisement for NCHRP's 'Tools for Life' program. It features a yellow toolbox with several NCHRP guidebooks fanned out. A yellow sign with a red border and a car icon reads 'MOVING DOWN ESSENTIALS TOOLS FOR LIFE'. The text on the advertisement includes: 'There's a right tool for every job.', 'Reducing the highway fatality rate to one per 100 million miles traveled can save 9,000 lives a year in the United States by 2008.', 'It's an attainable goal. You can make it happen.', 'To help you, we've created some new tools for addressing many of the challenges you face in making roads safer.', 'Get your tools. Save more lives.', and 'The National Cooperative Highway Research Program has developed new tools for implementing the AASHTO Strategic Highway Safety Plan and reducing highway deaths and serious injuries. Printed copies of implementation guides for specific objectives in the strategic plan may be obtained from the NCHRP, 500 Fifth St., NW, Washington, DC 20001. Phone: 202-334-3215. For more detailed information go to the AASHTO website: safety.transportation.org.'

- ☐ Motorcycles
- ☐ Work Zones
- ☐ Rural Emergency Management Services
- ☐ Distracted/Fatigued Drivers
- ☐ Head-on Crashes on Freeways
- ☐ Alcohol
- ☐ Bicyclists

Printed copies of the guides may be ordered from NCHRP or electronic copies may be accessed and downloaded at: <http://safety.transportation.org>

AASHTO Lead State Initiative

- ❑ States develop and implement plans to address specific highway safety issues

DRIVING DOWN FATALITIES
TOOLS FOR LIFE

AASHTO – NCHRP Project 17-18

LIFELINES

Vol. 1, No. 1 March 2004

New Effort Launched to Lower Nation's Highway Fatality Rate to 1.0 per 100 Million VMT by 2008

30 'Lead States' Enlist to Test Drive Strategic Safety Plan and Process
Creative Thinking, Innovative Pathways Needed to Re-Energize Highway Safety

The nation's new goal in highway safety is to cut the fatality rate by a third to 1.0 per 100 vehicle million miles traveled, and to do it within five years, Tom Bryer told participants at the National Orientation meeting in Washington. "If we are successful in accomplishing that," he said, "we can be saving 9,000 lives a year by 2008."

More than 150 representatives of state transportation and safety agencies, the federal government and the safety research community gathered at a National Orientation meeting in Washington in December to begin a new, coordinated effort to significantly alter the nation's worsening highway death and injury picture.

The gathering was a follow-up to an early-summer meeting in Lexington, Ky., of state transportation CEOs, sponsored by the American Association of State Highway and Transportation Officials (AASHTO).

"Our ranking among industrialized nations is slipping. Absolute fatalities are going up and the death rate is flat. We need to leave this meeting committed to take action" to reduce the road fatality rate to 1 per 100 million miles traveled, said George Ostensen, Associate Administrator for Safety at the Federal Highway Administration.

Save 9,000 Lives Annually

Effective implementation of the AASHTO strategic highway safety plan can save 9,000 lives per year and significantly reduce serious injuries, Tom Bryer, chairman of NCHRP's implementation support project for the strategic plan, told the assembled transportation and safety leaders.

At that meeting, the leaders agreed their states should form coalitions with other agencies that have a stake in death, injury and crash reductions and, using the AASHTO Strategic Highway Safety Plan, develop comprehensive statewide plans.

During the two-day session in Washington, the participants focused on fleshing out work plans and schedules for two efforts. One is a "Lead State Initiative" to demonstrate that deaths and injuries in given emphasis areas can be reduced by applying specific strategies. The other is a "Pilot State" program to demonstrate the application of an "Integrated Safety

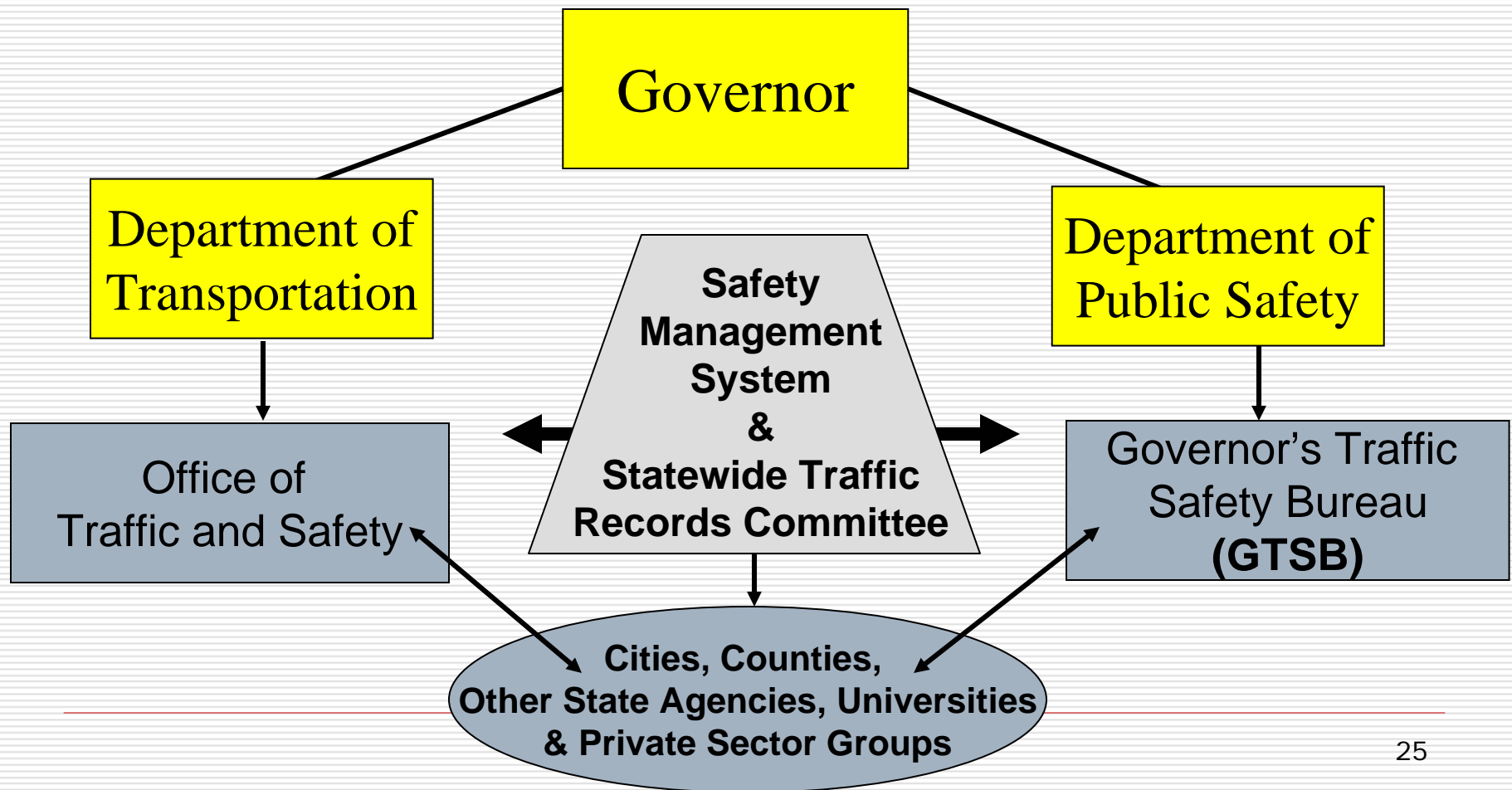
Lead States

MD

DETOUR See New Approach, page 2

DETOUR See National Meeting, page 3

Iowa's Highway Safety Management



GTSB Programs

Main emphasis areas :

- ☐ Section 157 incentive seat belt
- ☐ Section 405a occupant protection
- ☐ Section 410 alcohol impaired driving prevention
- ☐ Section 411 traffic records data improvement
- ☐ Section 2003b child passenger safety education
- ☐ Section 402 highway safety funds



GTSB 402 Funds

Main emphasis areas :

- ☐ alcohol
- ☐ occupant protection
- ☐ police traffic services
- ☐ emergency medical services
- ☐ traffic records
- ☐ engineering
- ☐ motorcycles
- ☐ pedestrian/bicycle safety



DOT and GTSB Partnerships



- ☐ Safety Management System (SMS)
- ☐ Section 411, State Traffic Records
Advisory Committee (STRAC)
- ☐ Local Multidisciplinary Highway
Safety Teams
- ☐ Section 157, Seat Belt Incentive Funds
- ☐ Section 402, Highway Safety Program



Iowa DOT Safety Programs Collaboration

- ☐ SMS – Iowa Safety Management System State
- ☐ Federal Hazard Elimination Safety Program (HES)
- ☐ Safety Data Products
 - Crash Data Analysis Tools
 - Iowa Traffic Safety Data Services (ITSDS)
- ☐ Traffic Engineering Assistance Program (TEAP)
- ☐ Traffic Safety Improvement Programs (TSIP)
- ☐ Safety Conscious Planning
- ☐ Traffic & Safety Engineering Forum
- ☐ Safety Research Program
- ☐ “Proactive” Highway Safety Program
- ☐ Roadway Safety Audits



Iowa SMS is:

A diverse partnership of highway safety practitioners in engineering, enforcement, education, and emergency services dedicated to reducing the number and severity of crashes on Iowa's roadways.

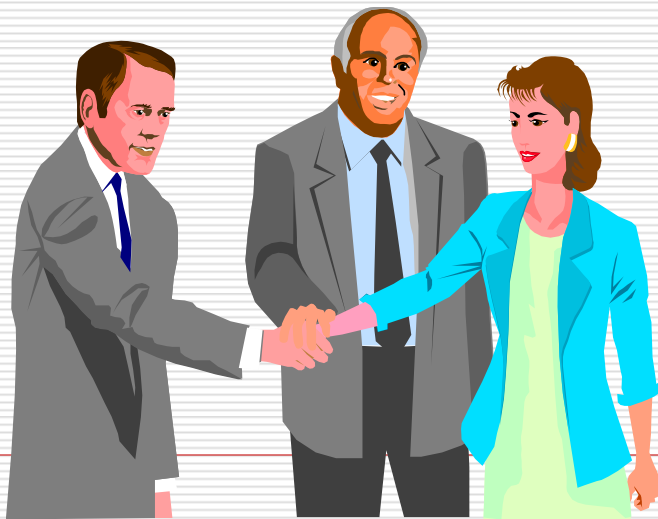
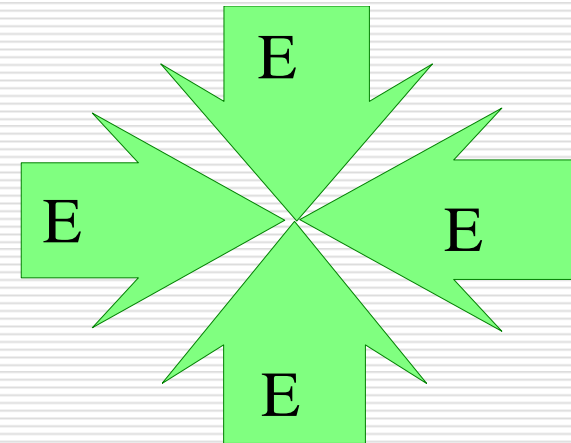
www.iowaSMS.org

Working Together- Across Agencies and Disciplines



What (or Who) is SMS?

- ☐ Enforcement
- ☐ Engineering
- ☐ Emergency Response
- ☐ Education
- ☐ Everyone Else



- ☐ Communication
- ☐ Cooperation
- ☐ Coordination

SMS Membership

State Agencies

- Department of Education
- Department of Elder Affairs
- Department of Public Health
- Department of Public Safety
 - Governor's Traffic Safety Bureau
 - Iowa State Patrol
 - Fire Safety Institute
- Department of Transportation

Education

- Iowa State University
 - Center for Transportation Research & Education
-

SMS Membership

Federal Agencies

- FHWA - Federal Highway Administration
- FMCSA - Federal Motor Carrier Administration
- NHTSA - National Highway Traffic Safety Administration

Associations and Local Government

- American Public Works Association
- Iowa County Engineer's Association
- Iowa State Sheriff's and Deputy's Association
- Iowa Traffic Control and Safety Association

Private Sector

- AAA Iowa / Minnesota
- AARP Iowa
- Union Pacific Railroad
- Iowa Motor Truck Association
- State Farm Insurance

SMS Roles

- ☐ Be a "Resource"
 - Legislature
 - State and Local Agencies
 - Communities
- ☐ Stimulate collaboration
- ☐ Identify Alternatives
- ☐ Provide Data
- ☐ Fill gaps
- ☐ No Recommendations

STATEMENT OF IOWA'S COMMITMENT TO HIGHWAY SAFETY

We, the undersigned Iowa officials, join to commend the great strides that have been made to reduce the number of traffic crash fatalities and injuries in Iowa and to acknowledge that continued and increased multidisciplinary efforts are required to meet Iowa's growing highway safety needs.

Many effective transportation safety programs are being implemented by Iowa's engineering, enforcement, education, and emergency response agencies. Still, Iowa experiences epidemic-level losses on its highways every year, with 450 deaths or more and over 13,000 injuries resulting from motor vehicle crashes annually. The emotional and economic loss to Iowans is unacceptable.

We hereby affirm Iowa's role in the nationwide mission, established by the American Association of State Highway and Transportation Officials (AASHTO), to reduce the number of motor

vehicle crash deaths by 5,000-7,000 each year, and to substantially reduce associated health care costs.

As Iowa officials, we commit our support of the goal in Iowa, established by the Iowa Safety Management System (Iowa SMS), to reduce the number and severity of crashes on Iowa's roadways by promoting collaboration, innovation, and citizen participation in efforts to reduce motor vehicle crash losses.

The Iowa SMS toolbox provides multidisciplinary strategies to identify, implement, and evaluate opportunities for highway safety improvement. Iowa's crash reduction goals will only be met through increased innovation, cooperation, and partnering among all roadway safety practitioners, citizens, and advocates at both the state and local level. We, the undersigned, are fully committed to this purpose and do hereby endorse the Iowa SMS toolbox.



Thomas J. Wulack
Thomas J. Wulack, Governor
State of Iowa

Sally J. Pedersen
Sally J. Pedersen, Lt. Governor
State of Iowa

Mark P. Winkler
Mark P. Winkler, Director
Iowa Department of Transportation

Ted Stuber
Ted Stuber, Director
Iowa Department of Education

Judy Corbin
Judy Corbin, Executive Director
Iowa Department of Elder Affairs

Bobby W. Blackston
Bobby W. Blackston, Administrator
Federal Highway Administration
Iowa Division

Kent Fleming
Kent Fleming, State Director
Federal Motor Carrier Safety
Administration Iowa Division

Kevin W. Tichauer
Kevin W. Tichauer, Commissioner
Iowa Department of Public Safety

Stephen C. Gleason
Stephen C. Gleason, D.O., Director
Iowa Department of Public Health

Tom Miller
Tom Miller, Attorney General
Iowa Department of Justice

Ronell Cooks
Ronell Cooks, Regional Administrator
National Highway Traffic Safety
Administration Region VII



The SMS Toolbox Charter

Signed by :

- Iowa's Governor & Lt. Governor
- 6 Department Directors
- 3 Federal Administrators

2002 Iowa SMS

Toolbox of Highway Safety Strategies

28 Key Emphasis Subjects in 5 Areas:

- Drivers
- Special Users
- Highways
- Emergency Response
- Management Systems

Emphasis Areas

Drivers

1. Increasing Driver Safety Awareness
2. Increasing Safety Belt and Child Restraint Usage
3. Preventing Drowsy and Distracted Driving
4. Curbing High-Risk Driving Behaviors
5. Ensuring Drivers are Fully Licensed, Competent, and Insured
6. Education and Licensing for Young Drivers
7. Graduated Licensing for Young Drivers
8. Sustaining Proficiency in Older Drivers

Special (Other) Users

9. Making Walking and Street Crossing Safer
10. Ensuring Safer Bicycle Travel
11. Making School Bus Travel Safer
12. Making Public Transit Travel Safer
13. Improving Motorcycle Safety and Increasing Motorcycle Awareness
14. Making Truck Travel Safer
15. Reducing Farm Vehicle Crashes

Emphasis Areas

Highways

- 16. Improving the Design and Operation of Highway Intersections
- 17. Keeping Vehicles on the Roadway and Minimizing the Consequences of Leaving the Road
- 18. Reducing Head-On and Across-Median Crashes
- 19. Improving Work Zone Safety
- 20. Accommodating Older Drivers
- 21. Reducing Train-Vehicle Crashes
- 22. Reducing Deer-Vehicle Crashes
- 23. Implementing Road Safety Audits

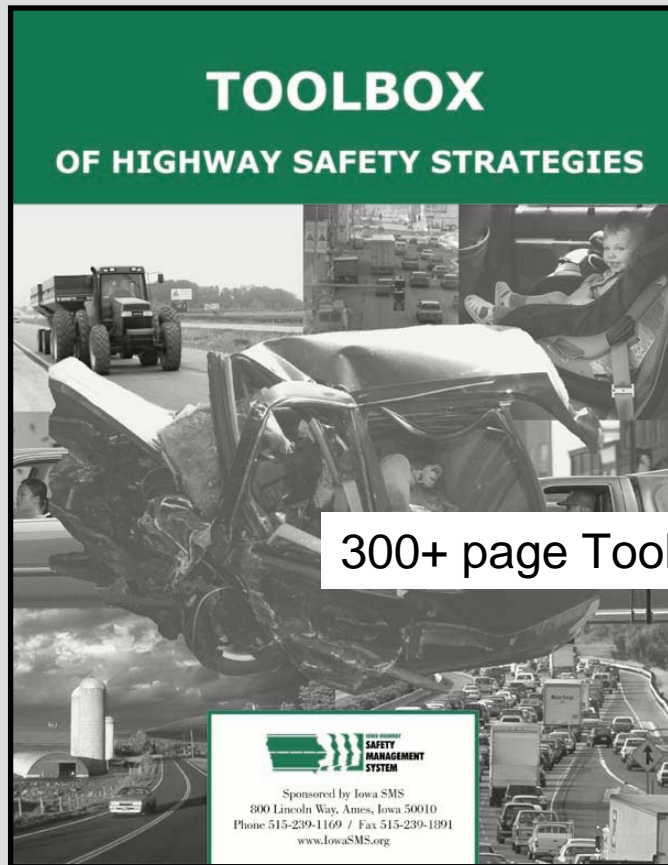
Emergency Response

- 24. Enhancing Emergency Response Capabilities to Increase Survivability

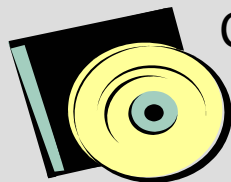
Management Systems

- 25. Improving Information and Decision Support Systems
- 26. Using Intelligent Transportation Systems (ITS) to Improve Highway safety
- 27. Creating More Effective Processes and Safety Management Systems Designing Safer Work Zones
- 28. Developing and Encouraging Multidisciplinary Safety Teams

TOOLBOX Products



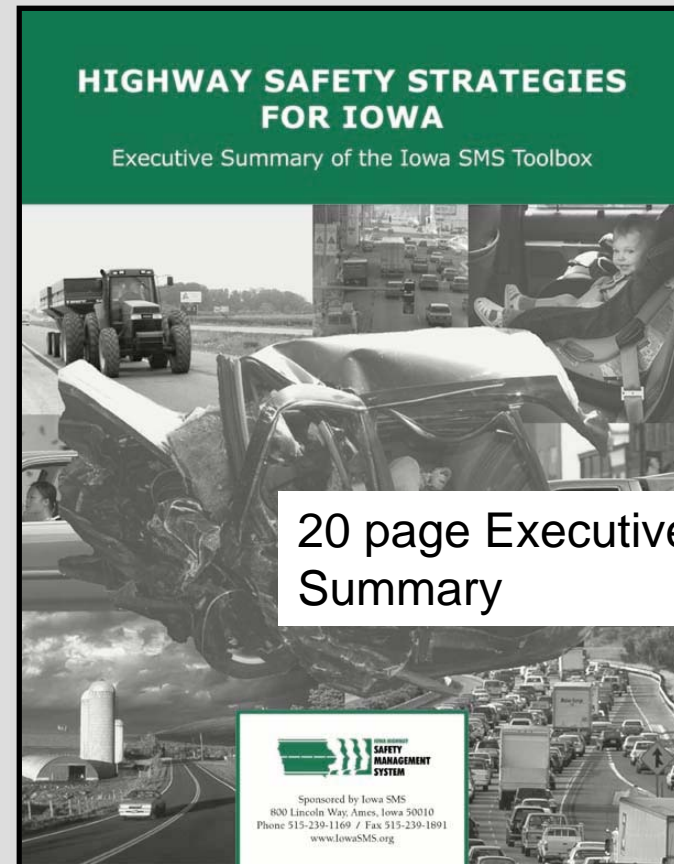
300+ page Toolbox



CD Version



View @ www.iowaSMS.org

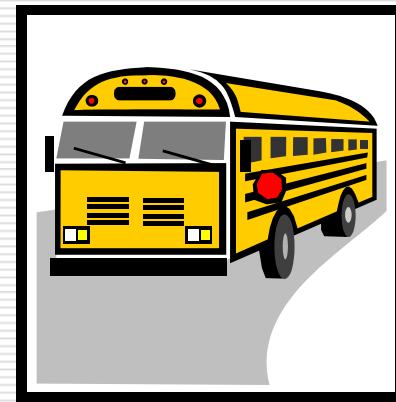


20 page Executive
Summary

2001-2002

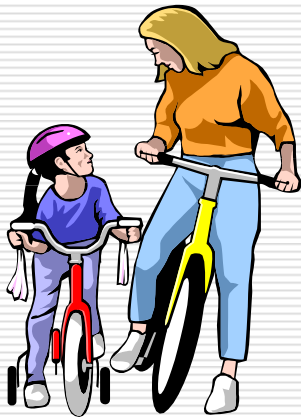
Toolbox Strategy Implementation

- ❑ Funded young driver (GDL) “Heads Up” video developed by Office of Driver Services
- ❑ Funded a pilot project with stop arm video cameras to document improper school bus passing.
(Department of Education, school districts, and law enforcement)

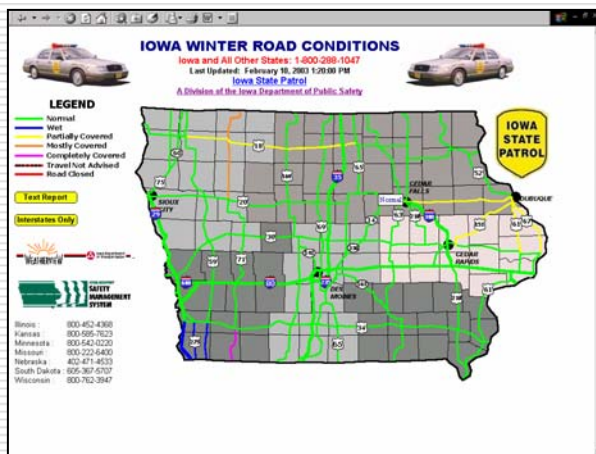


2001-2002

Toolbox Strategy Implementation



- ☐ Piloted “Safe Wheeler” classroom curriculum. Revised materials were sent to all Iowa elementary PE instructors as part of a broader collaborative bicycle safety program.
- ☐ Funded upgrades for Iowa Road Conditions web site and 511 voice recognition phone access (DOT’s ITS and DPS project)



2001-2002

Toolbox Strategy Implementation

- ❑ Crash data retrieval
“black box”
pilot project.



- ❑ UNI analysis of older
driver crash
characteristics
and locations



2001-2002

Toolbox Strategy Implementation

Supported local Multi-Disciplinary Safety Team (MDTS) projects and development

- Sponsored a statewide MDST peer exchange
- Provided incident management training
- Helped fund local incident management planning handbooks
- Helped fund local team crash investigation software tools
- Helped fund local “Heat” safety awareness project



2002 Toolbox Strategy Implementation



- ❑ Funded older driver video "Choices Not Chances" developed by the Office of Driver Services



- ❑ Sponsored the Iowa Safe Mobility Decisions for Older Drivers Forum



Older Driver Forum June 2002

State Older Driver Forum

Collaborated with:

- ☐ Department of Elder Affairs
- ☐ DOT- Engineering, licensing, transit
- ☐ FHWA
- ☐ Department of Public Safety
- ☐ Medical Staff of University of Iowa
- ☐ University of Iowa Center on Aging
- ☐ Iowa State University Extension Services
- ☐ AAA, AARP, 3M, Vehicle Modifiers
- ☐ Area Agencies on Aging

State Older Driver Forum

Invited:

- ☐ Senior citizens
- ☐ State legislators
- ☐ Policy-makers
- ☐ Media
- ☐ Senior advocacy groups
- ☐ National activity reports





Older Iowans:

- Open Microphone
- Video Critique
- Discussion of Priorities
- Medical and Engineering
- Breakout Discussions

Regional Older Driver Forums

- ☐ State Licensing Officials-
"Choice Not Chances" vide
- ☐ Media
- ☐ Local senior services stakeholders
 - Area Agency on Aging
 - Senior advocacy groups
 - Caretakers / caseworkers
 - Hospitals / community nursing
 - Meal sites
 - Senior housing
- ☐ Occupational Therapy
- ☐ Transit and other transportation
- ☐ Municipal and county officials
- ☐ State legislators
- ☐ Local Traffic Safety Teams
- ☐ MPO / RPA
- ☐ Law enforcement
- ☐ Local medical providers



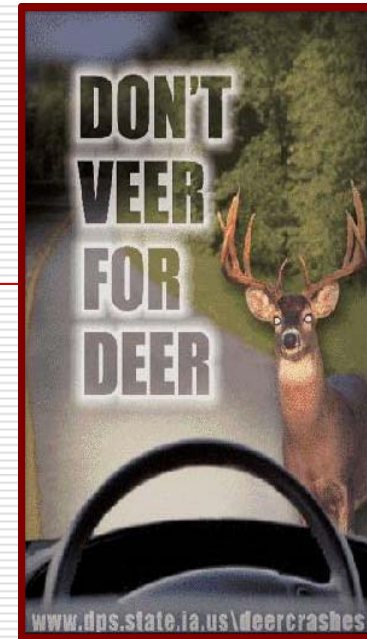
Forum Attendees' Potential Strategies for Implementation

☐ **Roadways and Engineering** (summarized)

- Provide larger and brighter signs and pavement markings
- Improve signals and lighting
- Install more paved shoulders and rumble strips
- Improve intersections with turn lanes or other solutions
- Ensure roadways are planned or improved with aging population in mind.

Recent SMS Toolbox Implementation

- ❑ Assisted in data analysis and communication for **"Don't Veer for Deer"** campaign with DPS, DNR, and other stakeholders.
- ❑ Jointly hosted a November **2003 Motorcycle Safety Forum** with DPS, GTSB, SMS, and other stakeholders and produced a **Stay Alert- Stay Alive** brochure for and distributed 25,000 for the **2004 Motorcycle Safety Awareness Month-** and in Motorcycle safety and driving classrooms



Iowa Motorcycle Forum

November 2003 Stakeholders Invited:

- ☐ Department of Public Safety
- ☐ GTSB
- ☐ Iowa DOT Driver Services
 - Licensing
 - Safety Program
 - Data analysts
- ☐ Iowa SMS membership
- ☐ AARP Safe Driving Program
- ☐ Iowa ABATE representative
- ☐ Iowa Goldwing Association Representative
- ☐ State and local motorcycle law enforcement officers

March 2005 Groups Added:

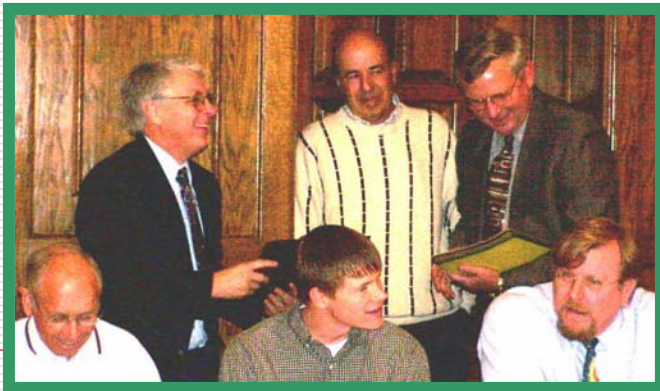
- ☐ Motorcycle riders (ABATE, Goldwing, and other clubs)
- ☐ Motorcycle Rider Coaches
- ☐ Iowa Motorcycle Dealers Association
- ☐ Iowa Trauma Nurses
- ☐ Injury prevention Practitioners
- ☐ 2-Wheel trauma trainers
- ☐ Community College site coordinators
- ☐ Harley Davidson Riders' Edge Program
- ☐ Iowa Safety Educators Association

Congratulations Iowa SMS!

Partnership in Excellence Award, November 1999

“It is my pleasure to honor you as one of the first recipients of the Federal Highway Administration’s (FHWA) Partnership in Excellence Award. This award honors the partnership efforts of State and Local Governments, private industry, other federal agencies and FHWA working together to help insure the best possible transportation system for the traveling public.”

Bobby W. Blackmon, Division Director, FHWA



“Back to the Basics” Safety Presentation Emphasis

- Emphasis on reducing

FATAL and

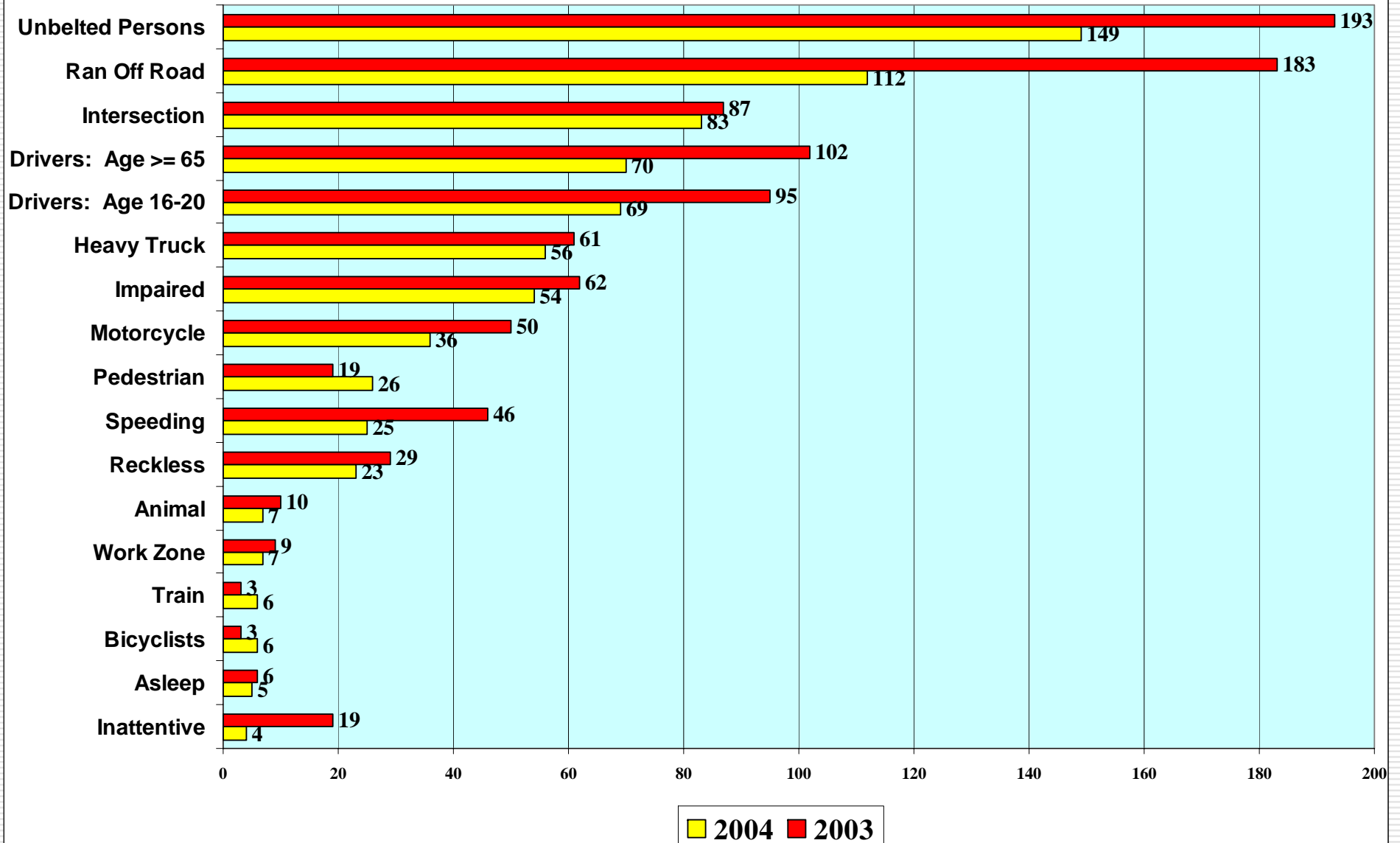
MAJOR INJURY
crashes



Iowa Crash Deaths Associated with Key Emphasis Areas

(produced by Iowa Dept. of Transportation - Office of Traffic and Safety on January 25, 2004)

(note that 2004 data remains preliminary due to submission, entry, and edit lag)



"Back to the Basics"

Safety Investment Emphasis

- ❑ 52% of Iowa's fatalities are related to "lane departure crashes."
- ❑ Candidate projects focus on lane departure and identified high crash locations or conditions.



Candidate Safety Projects

1. Paved shoulders
2. Milled in shoulder rumble strips
3. 2-lane shoulder widening
4. High crash curves
5. Centerline rumble strips
6. Cross-Median head-on crashes
7. High severity crash 2-lane roads
8. High severity crash intersections
9. Expressway intersections

Optimizing Safety Funds

- ☐ Using data to define problem areas
- ☐ Targeting improvements
- ☐ Targeting enforcement
- ☐ Using low-cost solutions where possible

Two Lane Safety Corridors

Rural Two-Lane Primary Road Fatalities and Major Injuries (District 6
1998-2000)



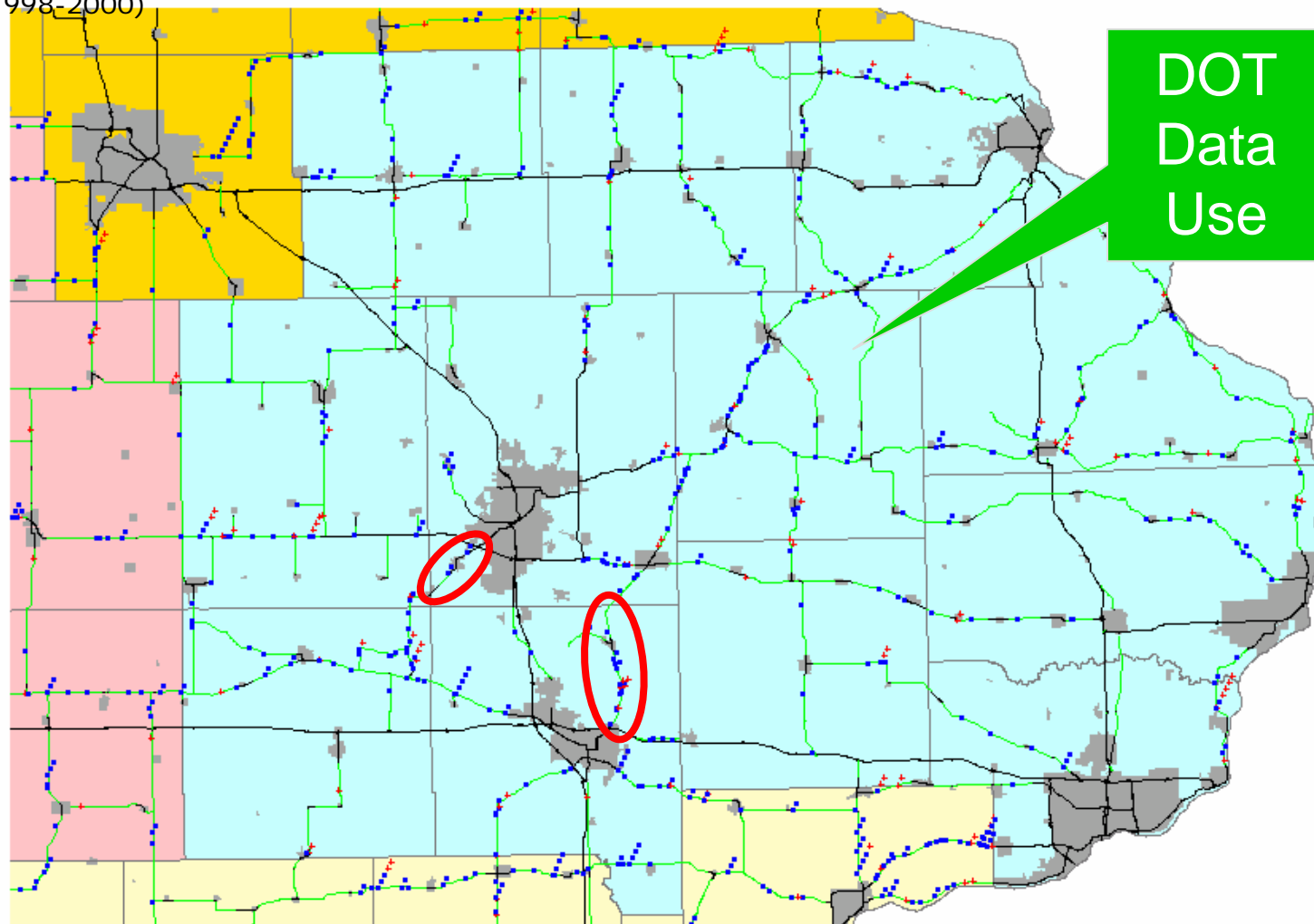
TRAFFIC SAFETY
DATA SERVICE

LEGEND

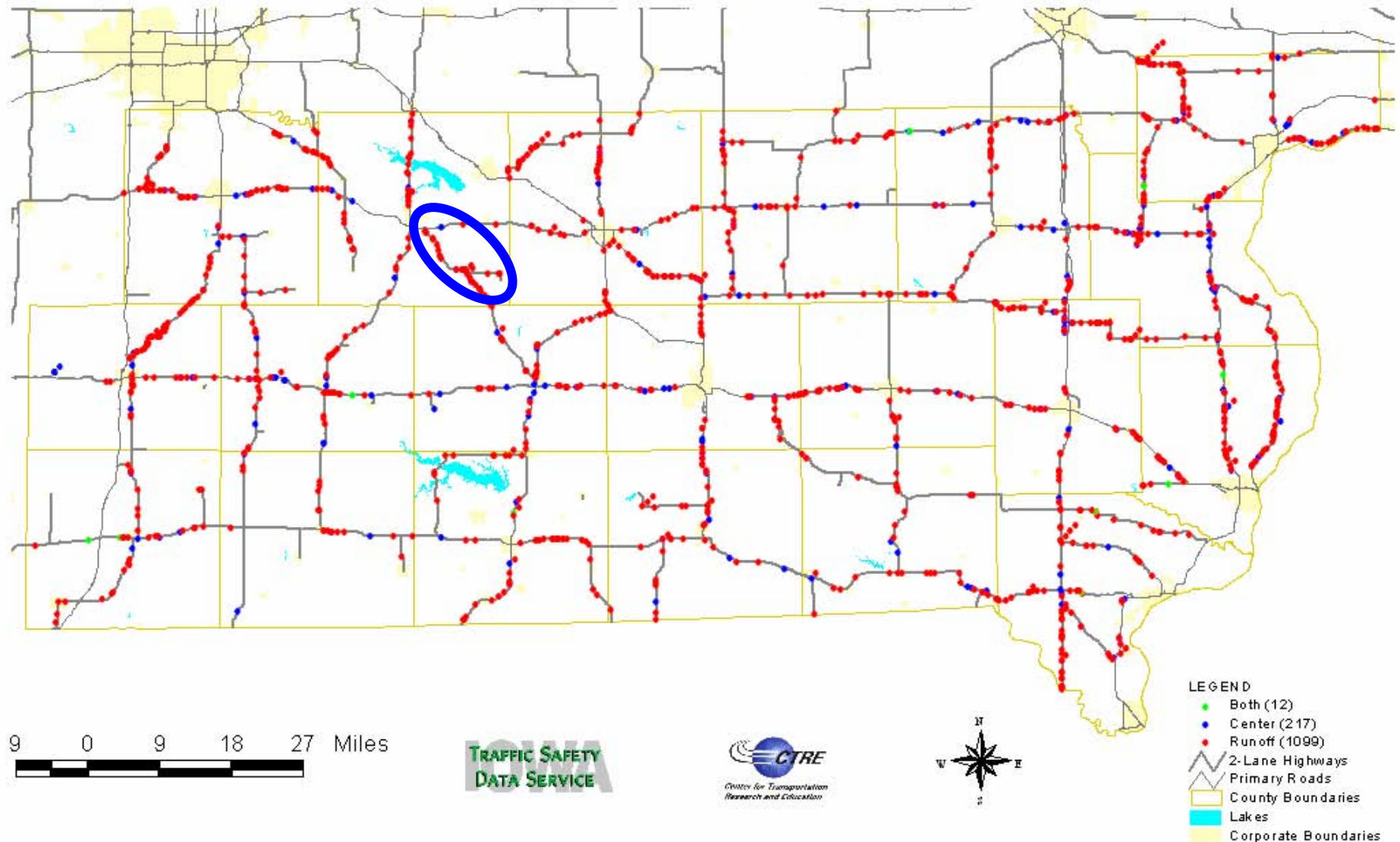
Injury Severities

- Fatal (97)
- Major Injury (372)
- 2-Lane Rural Primary Roads
- Primary Roads

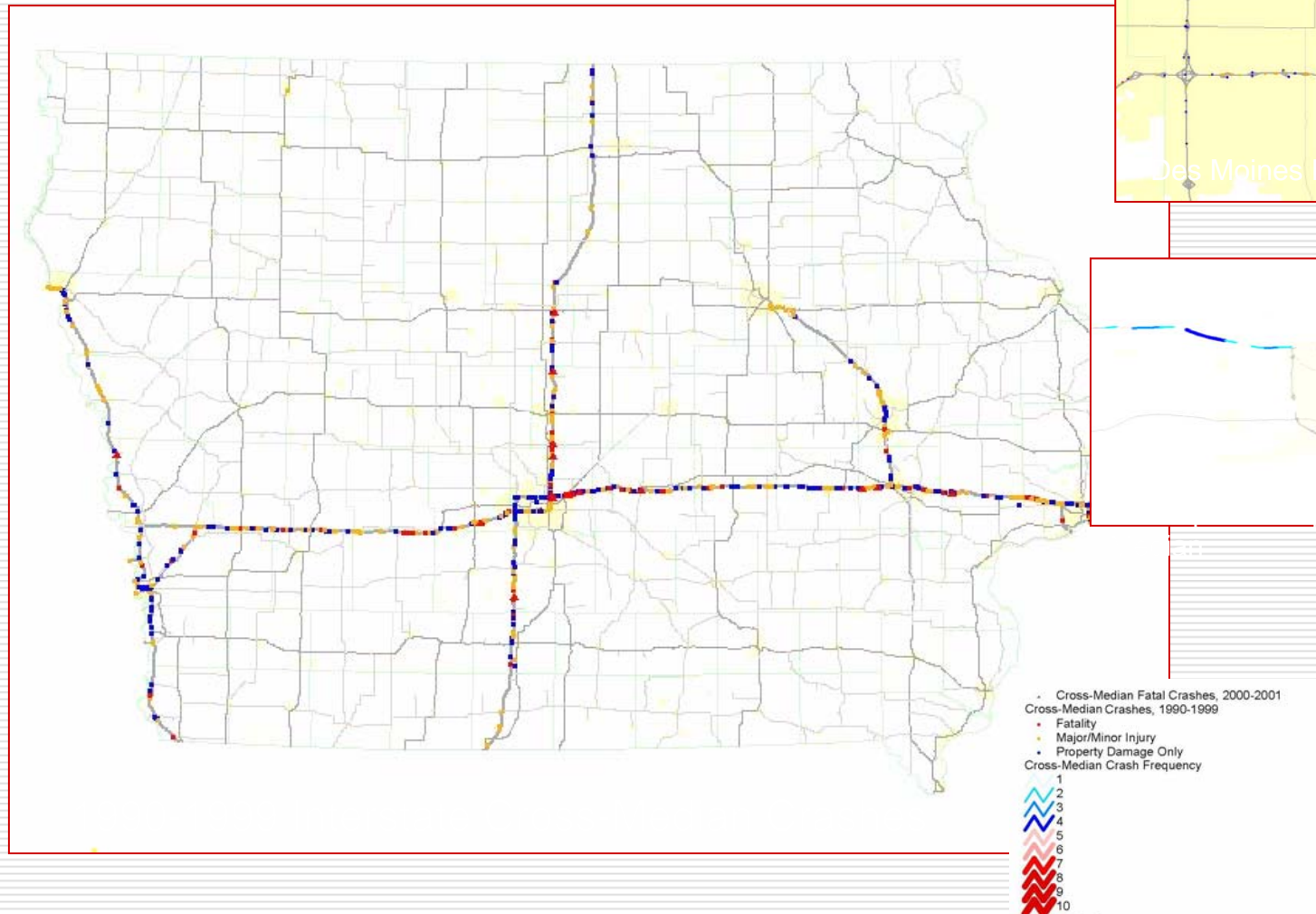
25 unlocated injury
severities not
represented.
(2 Fatal, 23 Major
Injuries)



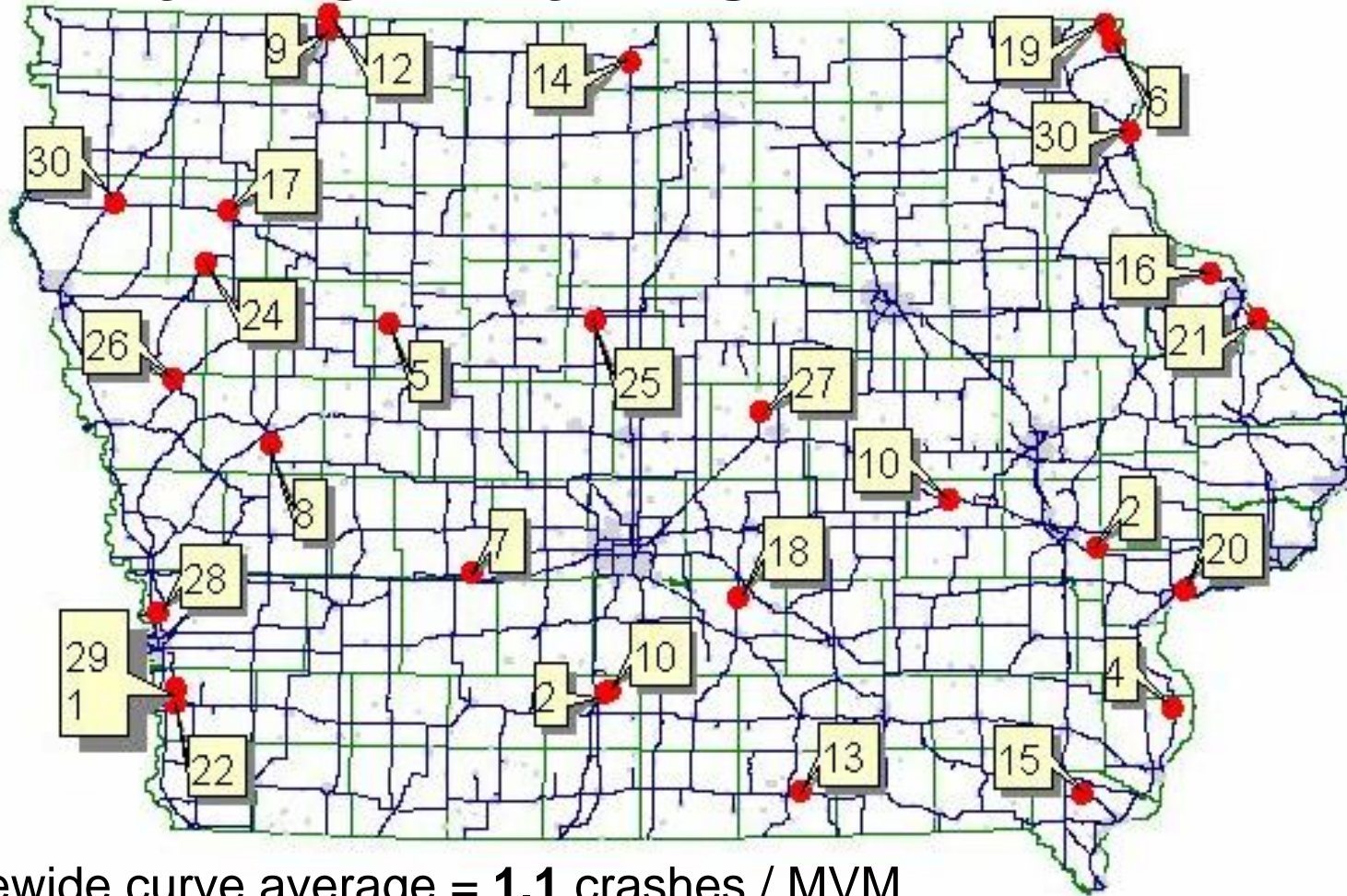
Target Corridors with high numbers of Single-Vehicle, Run-off-the-Road Crashes on 2-Lane Highways (example District 5)



Cross-Median Interstate Crashes



Primary Highway High-Crash Curves



- Statewide curve average = **1.1** crashes / MVM
- Top 30 average = **11.7** crashes / MVM
- Worst Curve = **78** crashes / MVM
- **5%** of crashes occur at top **30** locations (**1%** of curves)
- **11%** of **fatal** crashes occur at top **30** locations



Curves

- ☐ Super elevation: add or correct
- ☐ Pave shoulders: outside & inside
- ☐ Shoulder rumble strips
- ☐ Flatten outside slope
- ☐ Remove objects outside curve
- ☐ Delineate, chevron, RPM's, ball bank advisory

Without Large Chevron Signs



US 6, Johnson County

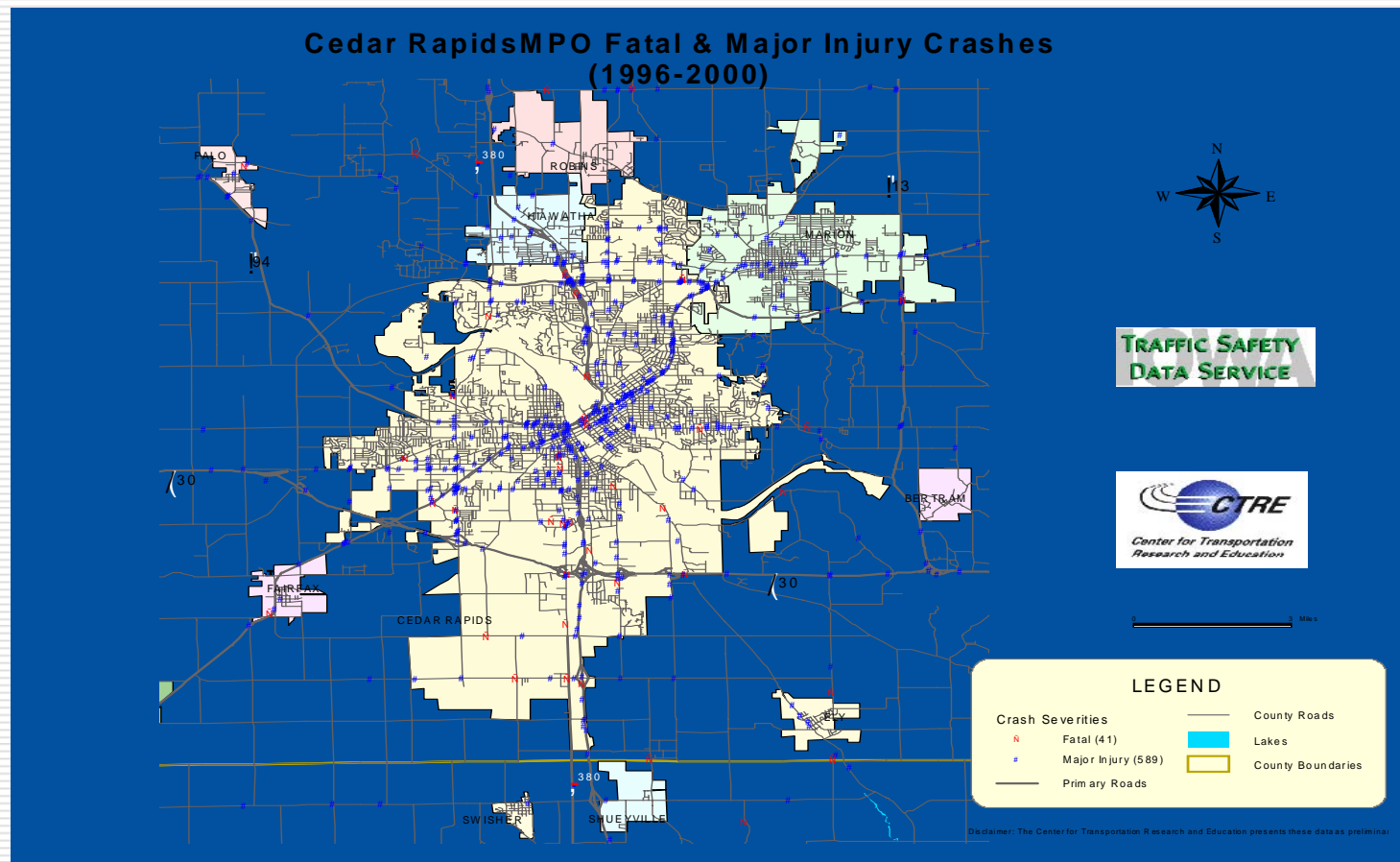
Bigger and Brighter Curve and Chevron Signs



US 6, Johnson County

Multidiscipline Local Emphasis

Engaging MPO's RPAS local and county engineers

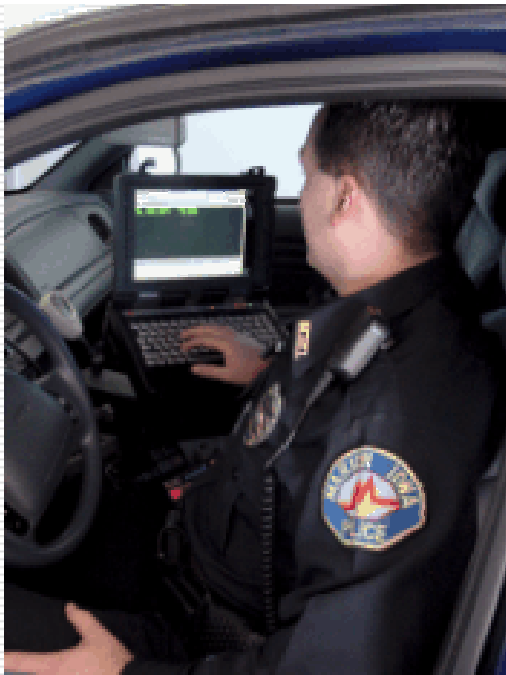




Timely
accessible
crash data
is **CRITICAL** to
making
wise safety
investments.



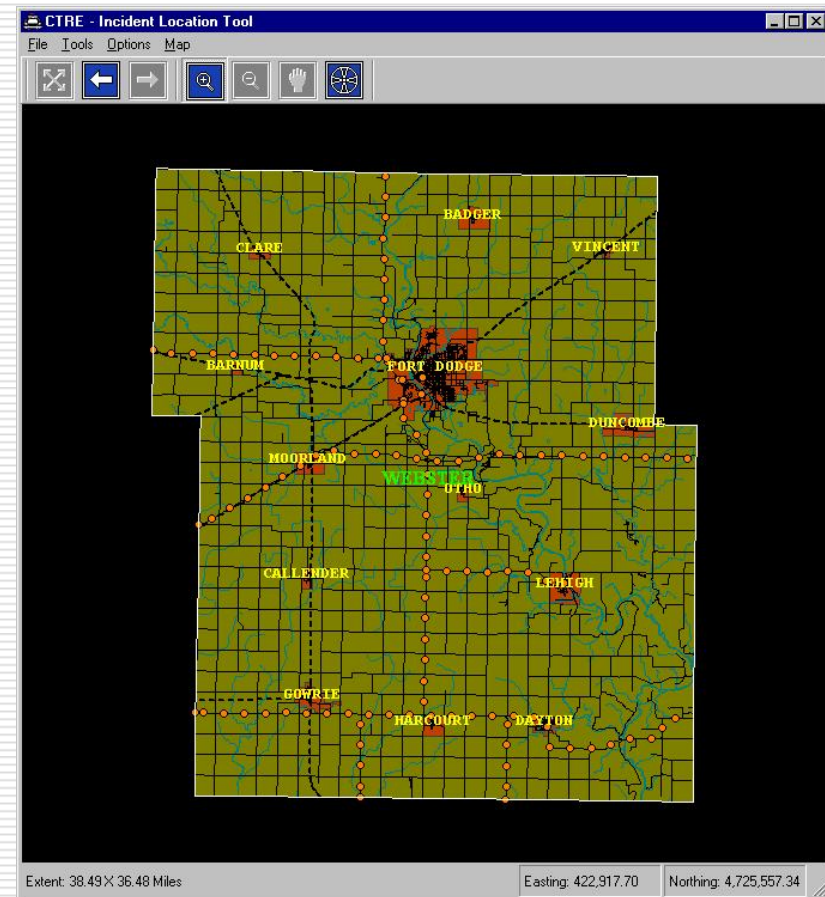
Crash Data *Collection* Collaboration



- ❑ >65% of Iowa's crash data is reported electronically
- ❑ Electronic data collection software
 - Iowa "National Model" with FHWA is the "TraCS" (Traffic and Criminal System)
- ❑ "Smart Map" location tool enables consistent, automated capture of event location on all reports statewide.

Incident Location Tool

- ❑ Integrated into TraCS
- ❑ Intuitive, visual, map interface
- ❑ Provides consistent locations for GIS-based analysis
- Led to development of IMAT and CMAT-
Simple analysis tools available free to local agencies



Crash Data *Analysis* Collaboration



- ❑ Iowa DOT compiles and refines crash data
 - Office of Driver Services
 - Office of Traffic and Safety
- ❑ Data is made available on CD to state and local entities for their analysis use.
- ❑ Iowa's data analysis "tools" software is available to state and local entities
- ❑ Technical support and training is made available as needed

CMAT

- ☐ User-friendly tool
- ☐ Available free to local agencies for quick analysis of limited data sets
- ☐ Can be used with Iowa crash data or other data



The logo features the word "IOWA" in large, light gray, sans-serif capital letters. Overlaid on this is the text "TRAFFIC SAFETY" in green, bold, sans-serif capital letters, followed by "DATA SERVICE" in the same green, bold, sans-serif capital letters on a second line. A thick red horizontal line is positioned to the left of the text, extending from the left edge of the slide towards the "IOWA" text.

TRAFFIC SAFETY DATA SERVICE

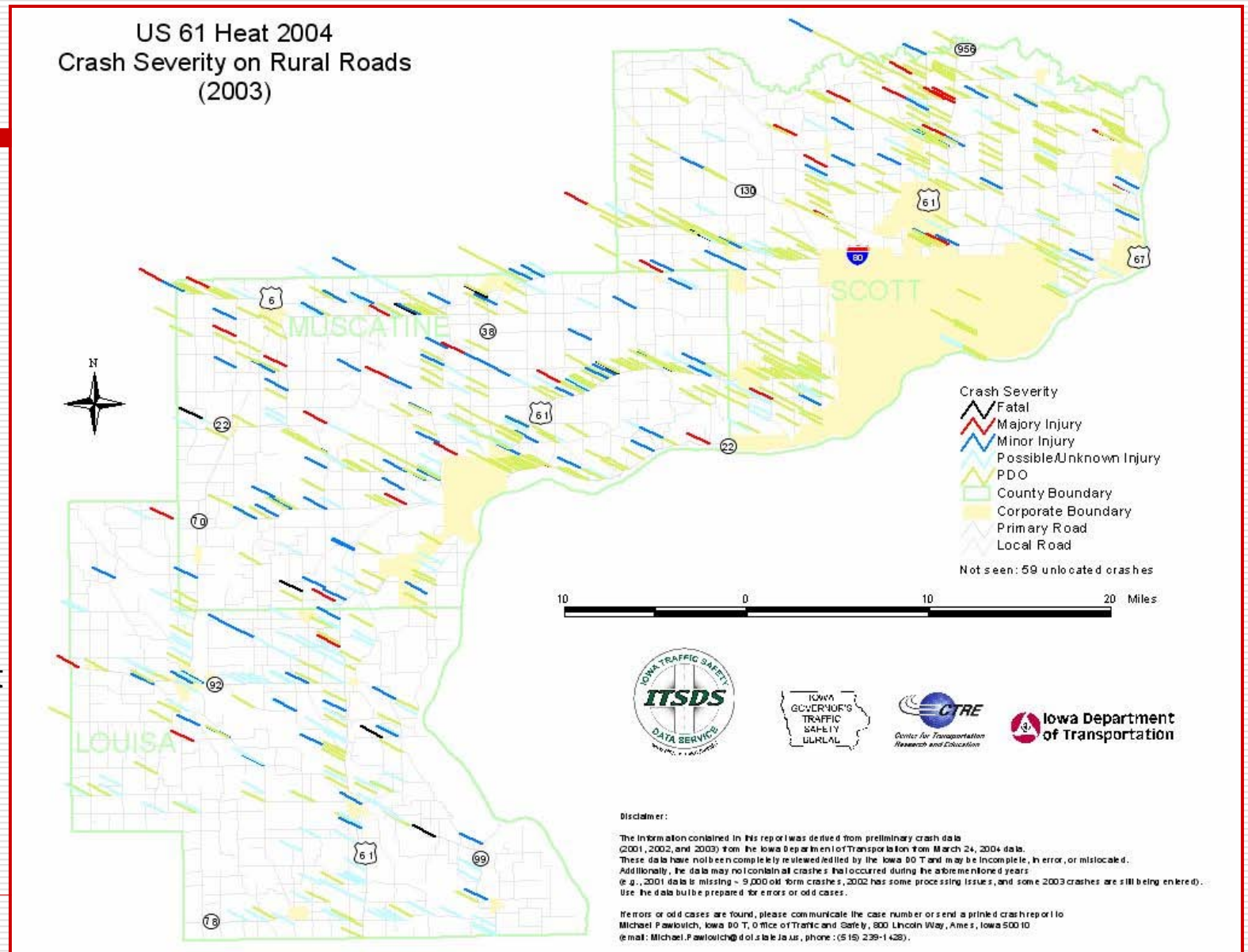
Iowa State University, CTRE

Sponsors:

- Office of Traffic and Safety, DOT
- Governor's Traffic Safety Bureau, DPS

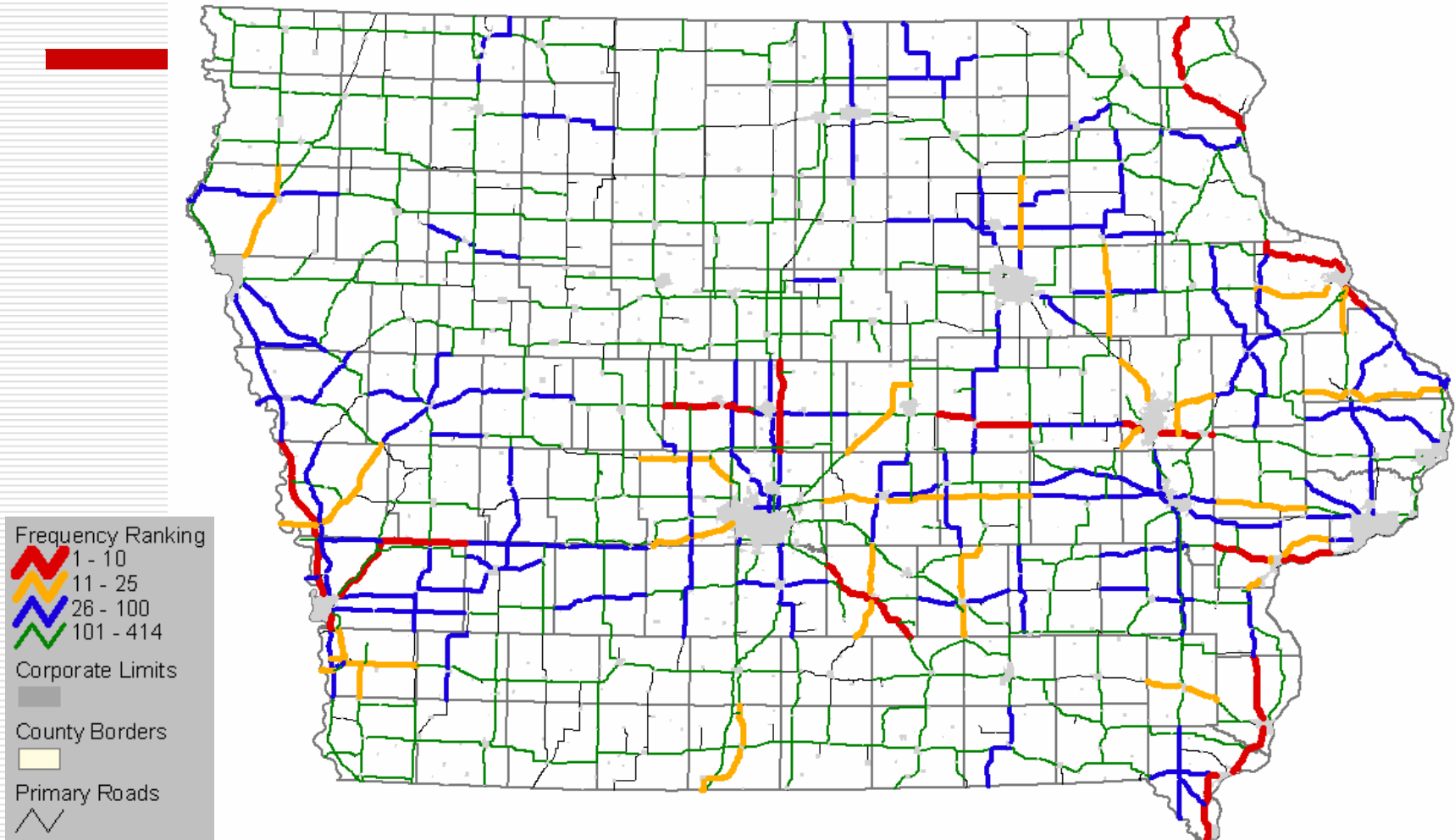
US 61 HEAT Analysis

HEAT :
Highway
Enforcement
Action
Team



Targeted Enforcement

1995-1999 Rural Alcohol-Related Crashes



Corridors ranked by Frequency

School-Age Pedestrian Crashes

City of Des Moines
1995 to 1999

Ages 5 to 19

August 15 to June 15

Monday to Friday

7:00 a.m. to 5:00 p.m.

Schools Data Use

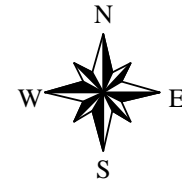
Middle Schools

Pedestrian Injuries

- Age 5-11 (Major)
- Age 5-11 (Minor)
- Age 5-11 (Possible, Unknown)
- Age 5-11 (Possible, Unknown)
- Age 12-14 (Major)
- Age 12-14 (Minor)
- Age 12-14 (Possible, Unknown)
- Age 12-14 (Possible, Unknown)
- ▲ Age 15-19 (Major)
- ▲ Age 15-19 (Minor)
- ▲ Age 15-19 (Possible, Unknown)
- ▲ Age 15-19 (Possible, Unknown)

Cedar Rapids MPO Fatal & Major Injury Crashes (1996-2000)

MPO Data Use



TRAFFIC SAFETY
DATA SERVICE



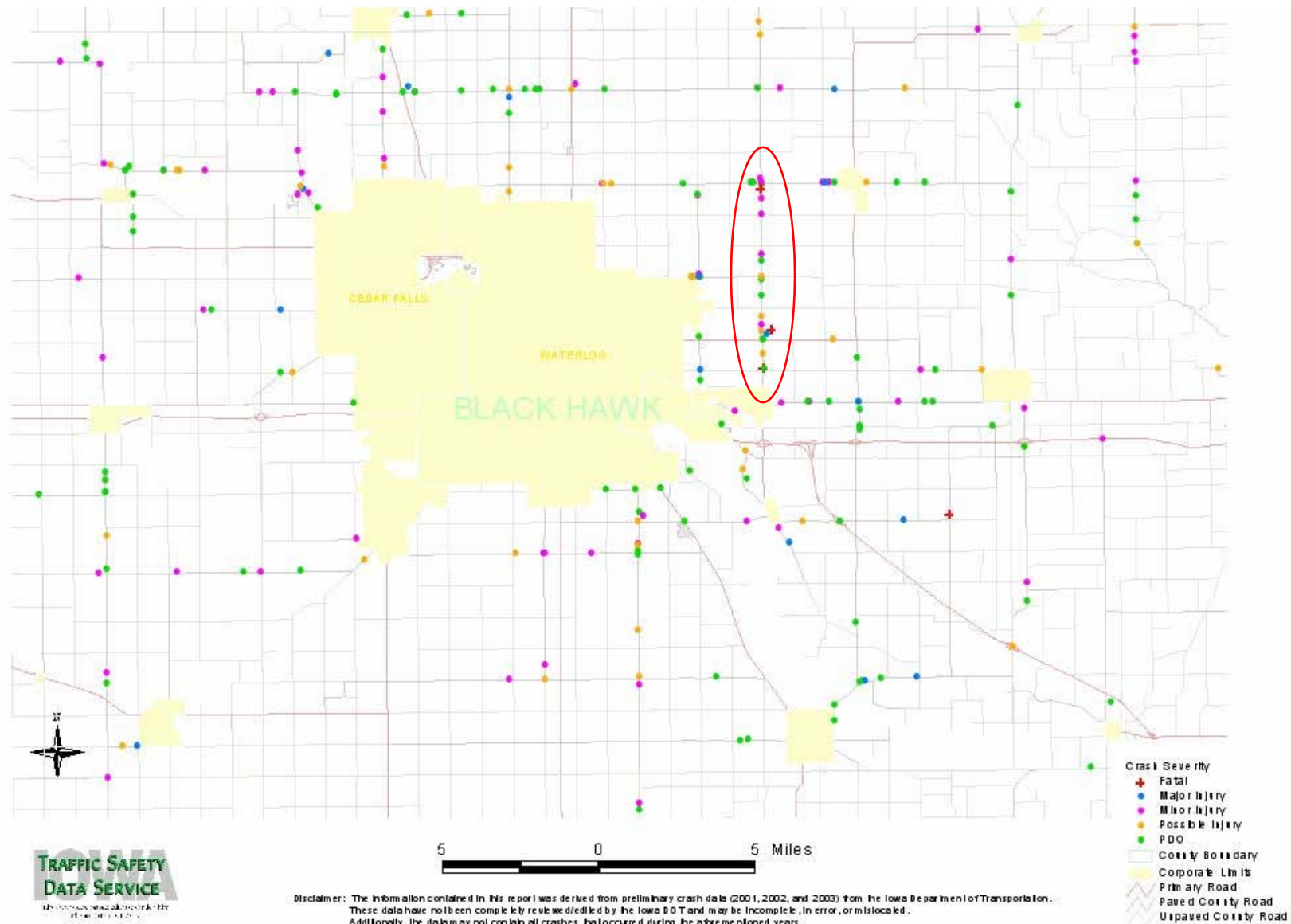
0 3 Miles

LEGEND

Crash Severities		—	County Roads
N	Fatal (41)	■	Lakes
#	Major Injury (589)	□	County Boundaries
—	Primary Roads		

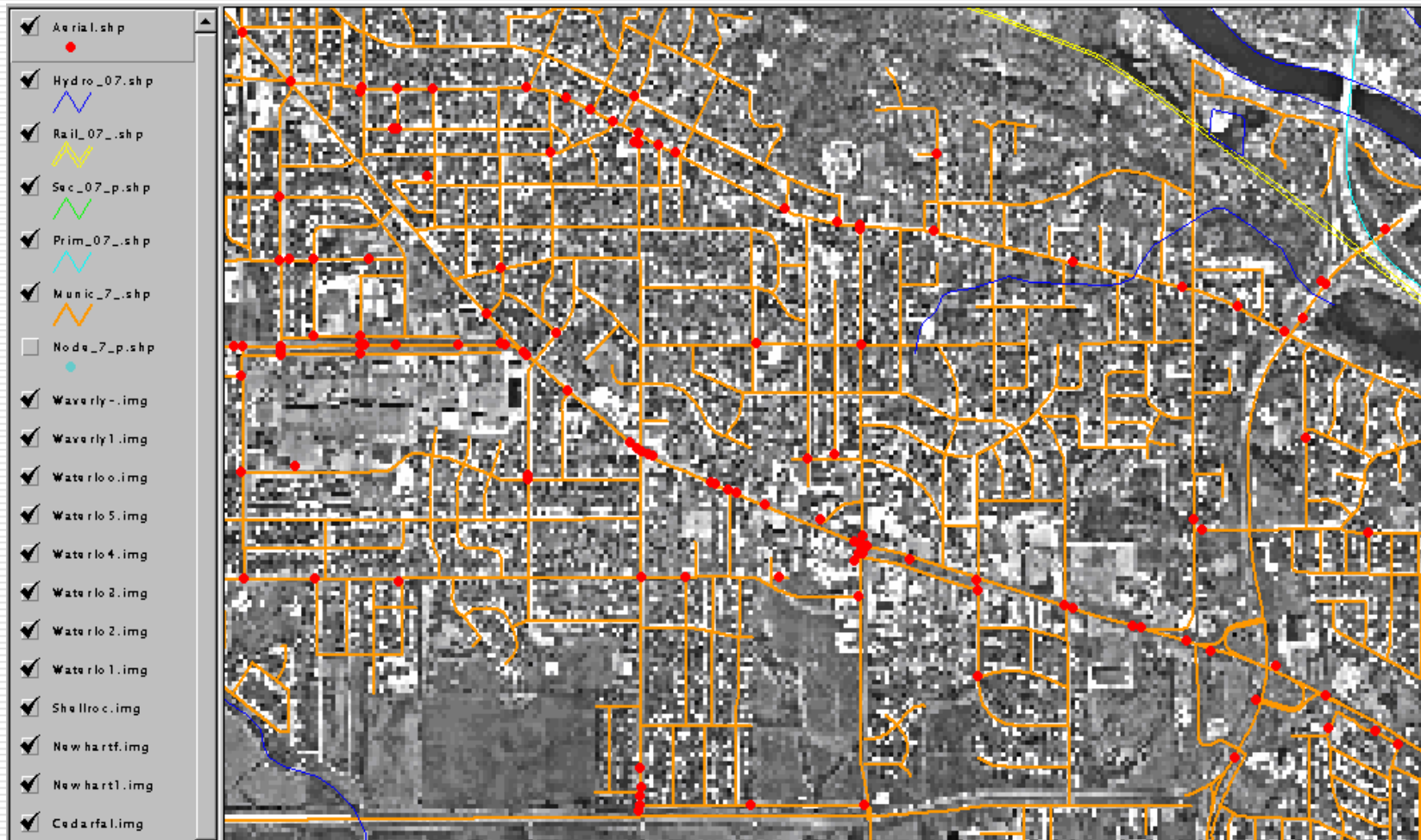
Disclaimer: The Center for Transportation Research and Education presents these data as preliminary

Blackhawk County Single Vehicle ROR



Using data–“The Sky is the limit”

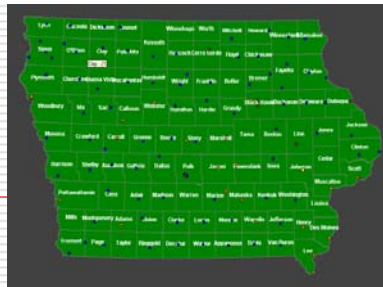
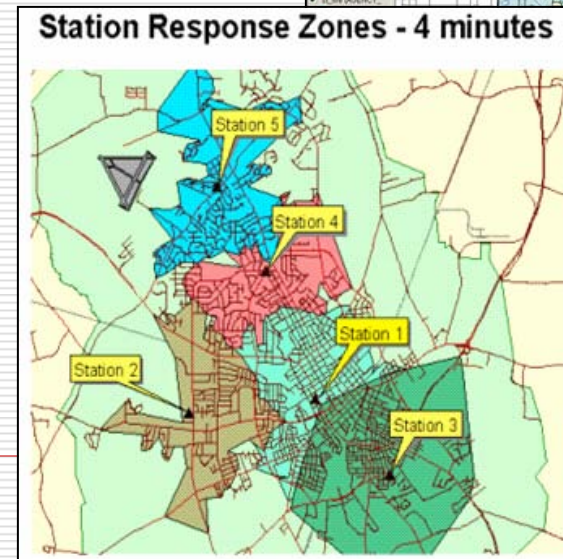
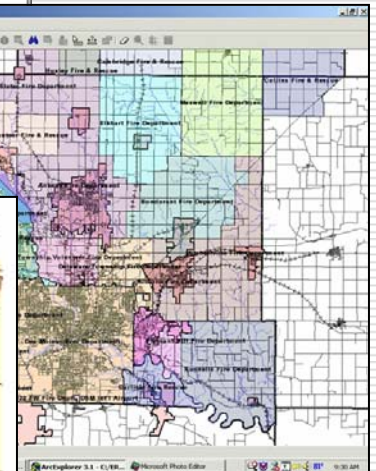
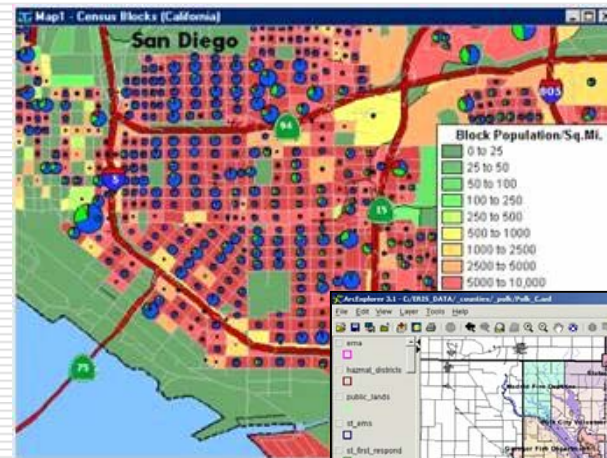
Aerial photo integration



ERIS

Emergency Response Information System

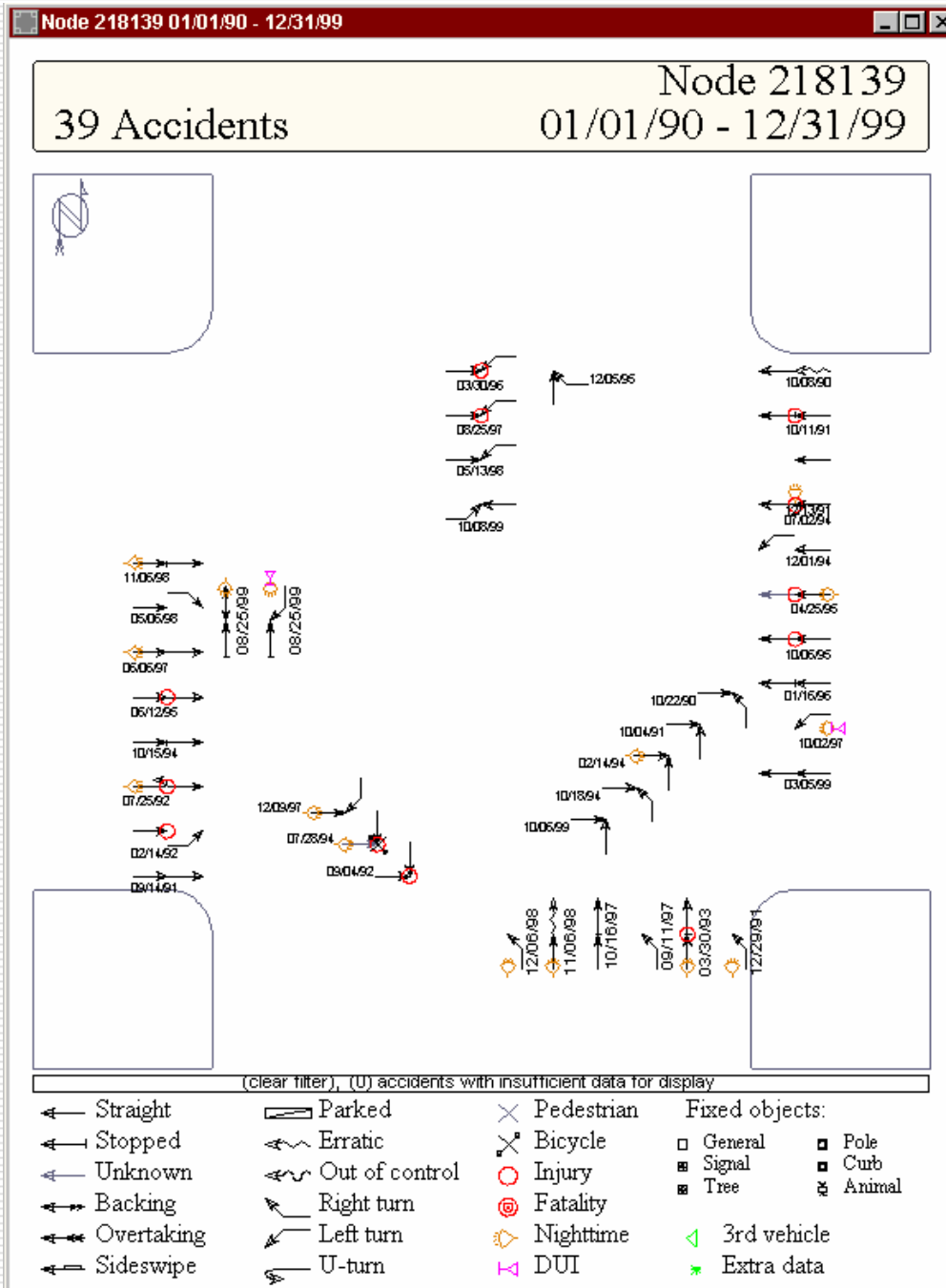
- ❑ Fire districts
- ❑ First Responder
- ❑ Emergency management
- ❑ Hazmat response areas
- ❑ Ambulance (and crashes)
- ❑ Census
- ❑ Hospitals / trauma facilities
- ❑ Statewide data: roads, rivers, lakes, rails, etc.



Sample of High Crash Locations

Polk County sites listed with state ranking

6	Polk		IA 415	2nd Ave & NW 54th Ave
7	Polk		IA 415	2nd Ave & Aurora Ave
11	Polk	Des Moines		9th St & Clark St
12	Polk	Des Moines		2nd Ave & Holcomb Ave
14	Polk	Ankeny	IA 415	IA 415 & NW 16th St
16	Polk	Des Moines		SW 9th St & Porter Ave
23	Polk	Des Moines	US 69	E15th St At I-235 WB Ramps/Maple
28	Polk	Des Moines		NW Meredith Dr & Westside Frontage Road To IA 28/Merle Hay Road
42	Polk	Des Moines	US 6	50th St & Douglas Ave
53	Polk		US 6	WB Rmp At US 6 Conn To US 65
54	Polk	Altoona	US 6	NB US 65 Rp At US 6
55	Polk	Des Moines	I-235	Br EBi-235 At W End Des Moin Riv
57	Polk	Des Moines		Clark St & W 19th St
82	Polk	Des Moines		33rd St E & Hubbell Ave
86	Polk	Des Moines		6th Ave & Grand Ave
88	Polk	Des Moines		35th St & University Ave
91	Polk			NE 29th St & NE 62nd Ave
98	Polk		IA 415	2nd Ave & NW 60th Ave



Statewide License for Intersection Collision Analysis Tool

*Intersection Magic
Software*

Traffic Engineering Assistance Program (TEAP)



- ❑ \$100,000 per year from Federal 402 (GTSB)
- ❑ \$100,000 per year from Iowa DOT Engineering Services budget
- ❑ 3 On-call Consultants

Traffic Engineering Assistance Program (TEAP)

- ☐ Identifies solutions to existing problems
 - On or off state highway system
 - Intersections, corridors, school routes, railroad crossings, etc.
- ☐ Free to smaller cities and all counties
- ☐ Up to 100 hours of consultant analysis
- ☐ A study report



Local MDST's

- ❑ Des Moines Metro "CITSTF"
- ❑ Davenport "CARS"
- ❑ Council Bluffs "SWIFT"
- ❑ Dubuque
- ❑ Sioux City
- ❑ November 2004 - Clinton
- ❑ 2005 *Waterloo and Cedar Rapids next?*



November 5-6, 2002

3R Safety Workshop



Roadway Resurfacing Safety Workshops

Sponsored by the Office
of Traffic
and Safety

University Collaboration

- ❑ Iowa State University
- ❑ University of Iowa
- ❑ University of Northern Iowa
- ❑ Pooled studies with other states

University Collaboration

- ☐ Traffic/Safety Research Forum
- ☐ Safety research (\$300,000-\$400,000 / yr)
- ☐ SMS
- ☐ Data Support
- ☐ Training

Examples of University Safety Research for Iowa DOT

- ☐ Expressway intersection Crash Analysis
- ☐ Small Town Entrance Traffic Calming
- ☐ Diagonal Parking
- ☐ High Speed Traffic Signals
- ☐ Using Crash Costs in Safety Analysis
- ☐ 4 to 3 Lane Conversions
- ☐ Pavement Marking Management Program
- ☐ Older Driver Crash Analysis
- ☐ Left Turn Signal Phasing for Older and Younger Drivers
- ☐ Access Management Research and Awareness Program

Annual Iowa Traffic and Safety Engineering Forum

- ☐ Local Peer exchange
- ☐ Policy / standards update
- ☐ Safety research /pilot studies

Return on Investment?

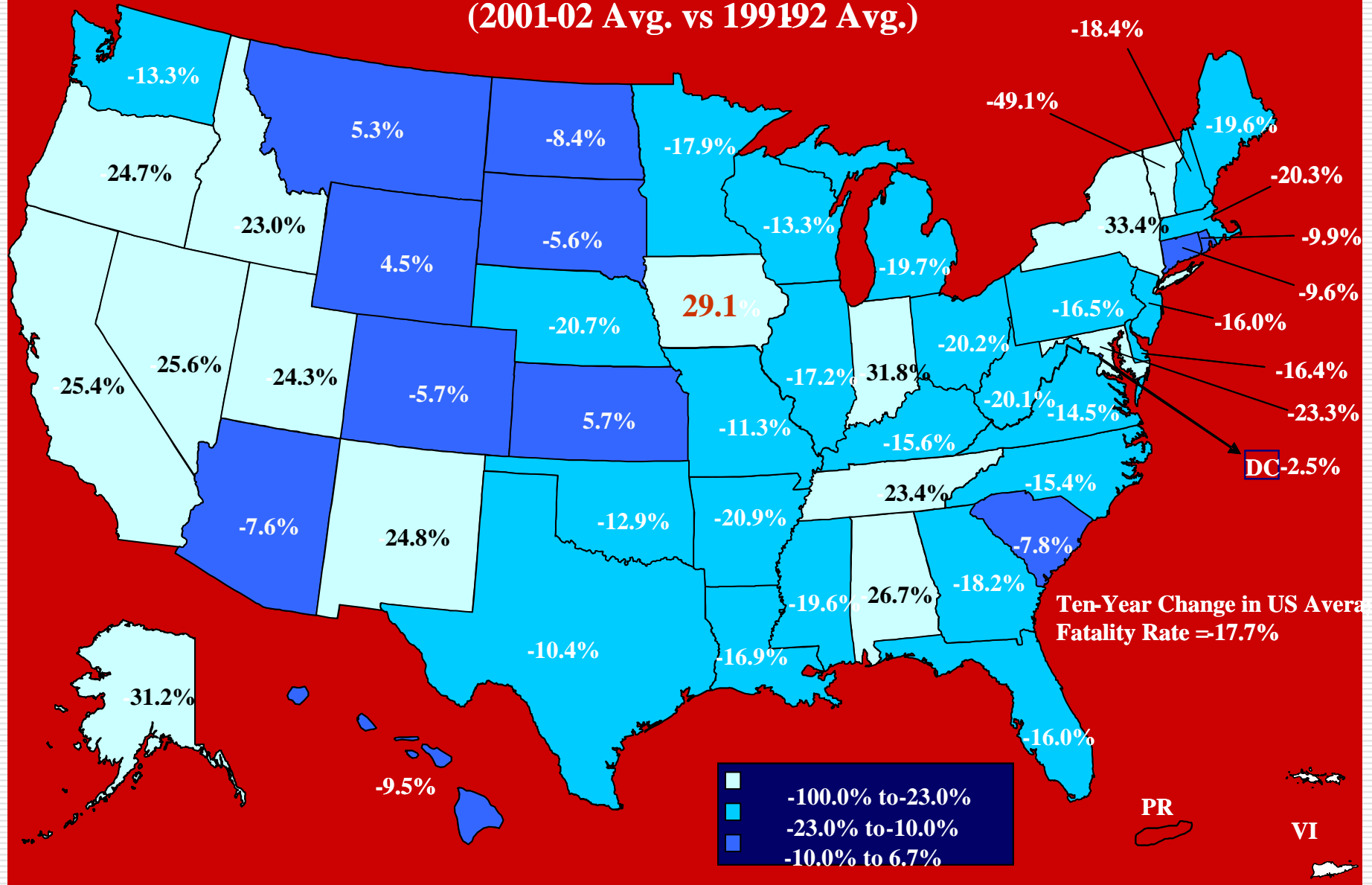
Iowa Highway Fatalities Five Year Average

□ 1995 - 1999 480

□ 2000 - 2004* 420

* *Preliminary*

Ten-Year Change in Average Fatality Rates (2001-02 Avg. vs 1991-92 Avg.)



Safety Solutions Matrix

"The Seven E's"



	Humans	Vehicle	Roadway
<i>Engineering</i>		✓	✓
<i>Education</i>	✓		
<i>Enforcement</i>	✓	✓	✓
<i>Effective Laws</i>	✓	✓	✓
<i>Emerg. Med. Serv.</i>	✓	✓	✓
<i>Exemplary Leaders</i>	✓	✓	✓
<i>Evaluation</i>	✓	✓	✓