

3R Safety Audits in Iowa

National RSA Peer Exchange
May 22-23, 2007
Charleston, SC

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Office of Traffic and Safety

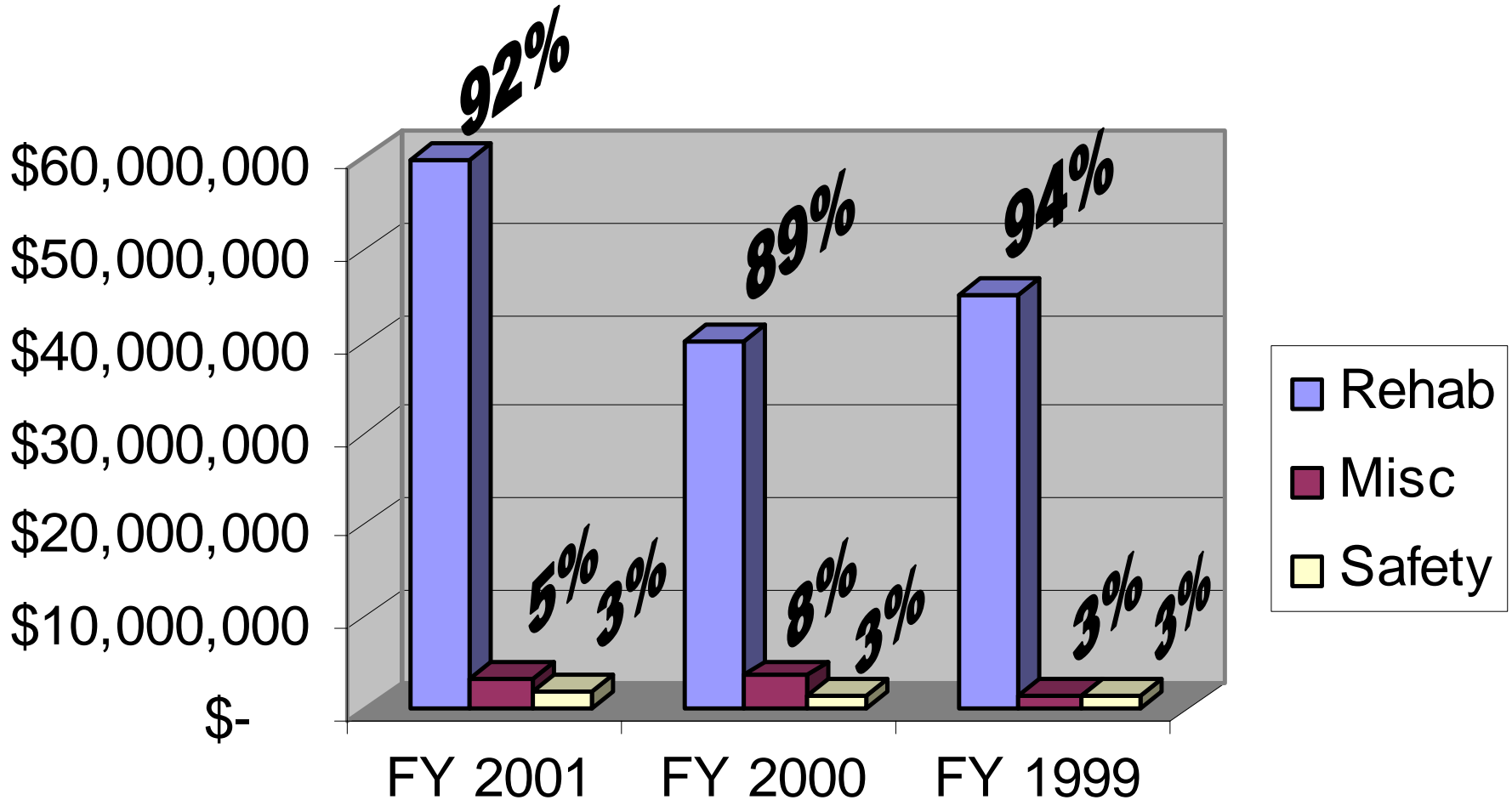
Iowa Department of Transportation

From 3R to 1R

- We were going to resurface the roads and nothing else with those projects
- 3 inch overlay every 20 years would cost \$100,000,000 a year so that was our program goal
- Safety and incidental items slowed this down

End of 1999

3R Project Annual Cost Breakdown



Where Do Safety Improvements Fit Now?

- Corridor Safety Improvements?
 - Instead of 6 to 15 mile resurfacing project cover longer stretches of corridor with safety improvements.
 - Better prices due to larger quantities.
 - New York presentation.

Didn't catch on but got everyone talking.

Reorganization

March 20, 2000

District Design Staff

- Assistant District Engineers
 - 1 Design Engineer
 - 1 Traffic and Safety Engineer
 - 2 Construction Engineers
 - 1 County Engineer
 - 1 Consultant Design Engineer
- Resident Maintenance Engineers became Staff Engineers in charge of 3R concepts and plans.
- Design Technicians came from various backgrounds.

Transition from Central Office to Districts

- Set up a 3R transition team
- Documented process
 - 3R Pre-Concept Inventory form
 - Shell for Concepts
 - Flow chart for process

No more transition – March 1, 2001
Districts do 3R

CADD Training

Design

Pavement Management

Plan Development

Concept Development

Safety

Relocation

- Supply them with information and training to make decisions.
 - Thinking Beyond the Pavement/Context Sensitive Design Workshop
 - Safety & Operational Effects of Highway Design Features on 2-Lane Rural Highways
 - 3R Workshop
 - Intersection Safety Workshop
 - Highway Design for Older Drivers And Pedestrians Workshop



Safety

3R Safety Audit Field Reviews

- Experience resided in the central office.
 - Needed a method to share this knowledge.
- We went from one office responsible for the program to six Districts.
 - Need a platform to share experience across the State.
- Not a critique or thou shall do in the future.





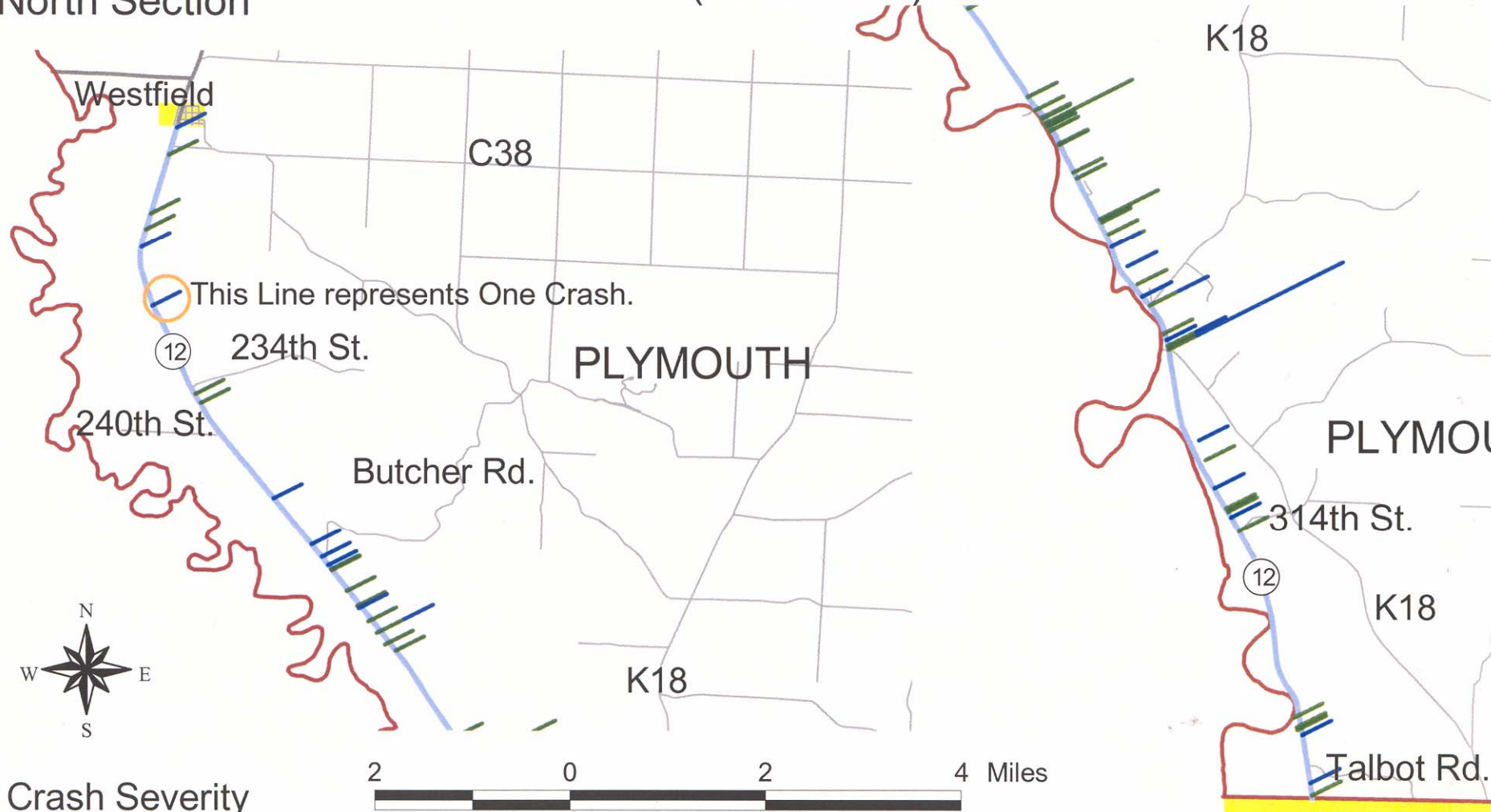
**IA 12 (Sioux City to the town of Westfield) Crashes by Collision Type
(1996-2000)**

Year	Collision Type	Crashes				Injuries					
		Total	Fatal	Injury	PDO	Total	Fatalities	Major	Minor	Possible	Unknown
1996-2000	Head-on	1	0	1	0	2	0	1	0	0	1
	Broadside/Left Turn	0	0	0	0	0	0	0	0	0	0
	Rear End	1	0	1	0	3	0	0	3	0	0
	Rear End/Right Turn	0	0	0	0	0	0	0	0	0	0
	Rear End/Left Turn	0	0	0	0	0	0	0	0	0	0
	Sideswipe/Opposite Direction	0	0	0	0	0	0	0	0	0	0
	Sideswipe/Same Direction	0	0	0	0	0	0	0	0	0	0
	Sideswipe/Right Turn	0	0	0	0	0	0	0	0	0	0
	Sideswipe/Left Turn	0	0	0	0	0	0	0	0	0	0
	Sideswipe/Dual Left Turn	0	0	0	0	0	0	0	0	0	0
	Sideswipe/Dual Right Turn	0	0	0	0	0	0	0	0	0	0
	Broadside/Right Angle	2	0	2	0	4	0	0	2	2	0
	Broadside/Right Entering	0	0	0	0	0	0	0	0	0	0
	Broadside/Left Entering	0	0	0	0	0	0	0	0	0	0
	Head-on/Left Entering	0	0	0	0	0	0	0	0	0	0
	Sideswipe/Both Left Turning	0	0	0	0	0	0	0	0	0	0
	Other	9	0	2	7	3	0	0	3	0	0
	Single	40	0	15	25	17	0	3	7	7	0
	Pedestrian	1	0	1	0	1	0	1	0	0	0
	Bicycle	0	0	0	0	0	0	0	0	0	0
Parked	0	0	0	0	0	0	0	0	0	0	
TOTAL	54	0	22	32	30	0	5	15	9	1	

North Section

(1996-2000)

South Section



Crash Severity
 Injury (21)
 Property Damage Only (43)

IA 12 AADT
 1700 - 2000
 County Boundaries

Primary Roads
 Public Roads



Center for Transportation
 Research and Education

**TRAFFIC SAFETY
 DATA SERVICE**

<http://www.ctre.iastate.edu/itsds/>
 Phone: 515-294-2329

IOWA
 GOVERNOR
 TRAFFIC
 SAFETY
 BUREAU

**Iowa Department
 of Transportation**

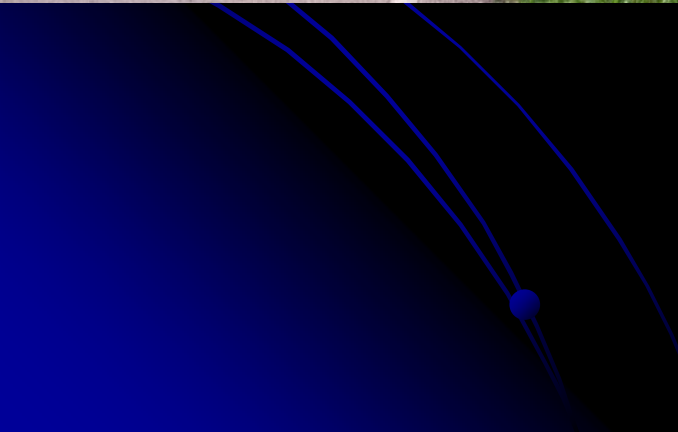


- **Troy Jerman TAS**
- **Tim Simodynes TAS**
- **Jerry Roche FHWA**
- **Reg Souleyrette ISU- CTRE**
- **Hossein Naraghi CTRE-ITSDS**
- **Jack Latterell Consultant**
- **Rich Michaelis District Engineer-3**
- **Tony Lazarowicz Asst. District Eng'r.-3**
- **Dwight Rorholm Maintenance-District 3**
- **Mark Wright Design-District 3**

Safety Improvements Incorporated Into 3R Projects



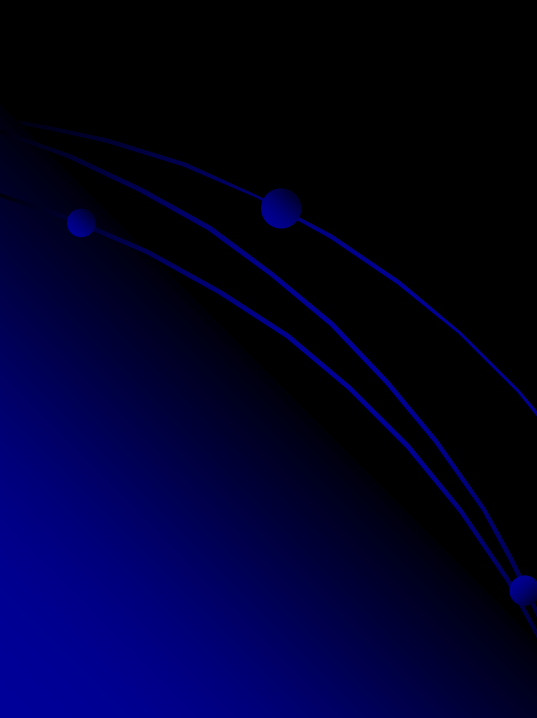
Delineate Obstacle



Safety Improvements Incorporated Into 3R Projects



Shield Obstacle



Safety Improvements Incorporated Into 3R Projects



Safety Improvements Incorporated Into 3R Projects



Safety Improvements Incorporated Into 3R Projects

Reduce Impact Severity



Safety Improvements Incorporated Into 3R Projects



Relocate Obstacle

Safety Improvements Incorporated Into 3R Projects



Remove Obstacle

Safety Improvements Incorporated Into 3R Projects



**Flatten
Transverse
Slopes**

Safety Improvements Incorporated Into 3R Projects



**Safety
Dikes**

Safety Improvements Incorporated Into 3R Projects



**4' Paved
Shoulder
s with
milled
rumble
strips**

6 16 2000





Safety Improvements Incorporated Into 3R Projects



Safety Improvements Incorporated Into 3R Projects

Add turn lanes





18 52

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