

***International
Telecommunications
Safety
Conference
Marietta, GA
Sept. 18, 2003***



Safety Through Communication

www.incomsafety.com

OVERVIEW

- The Telecomm Roadway Work Zone
- Emerging Issues - *OSHA, FHWA and the MUTCD*
- A Five Part Plan

Who is INCOM ?

- Div. of Dicke Tool Company; founded 1886
- Started 1993; utility safety support services
- Publications, Training Courses, Consultation
- Member National Safety Council - Utilities Division
- NSC - Certified Worksite Traffic Control Supervisor
- ATSSA - Certified Worksite Traffic Technician

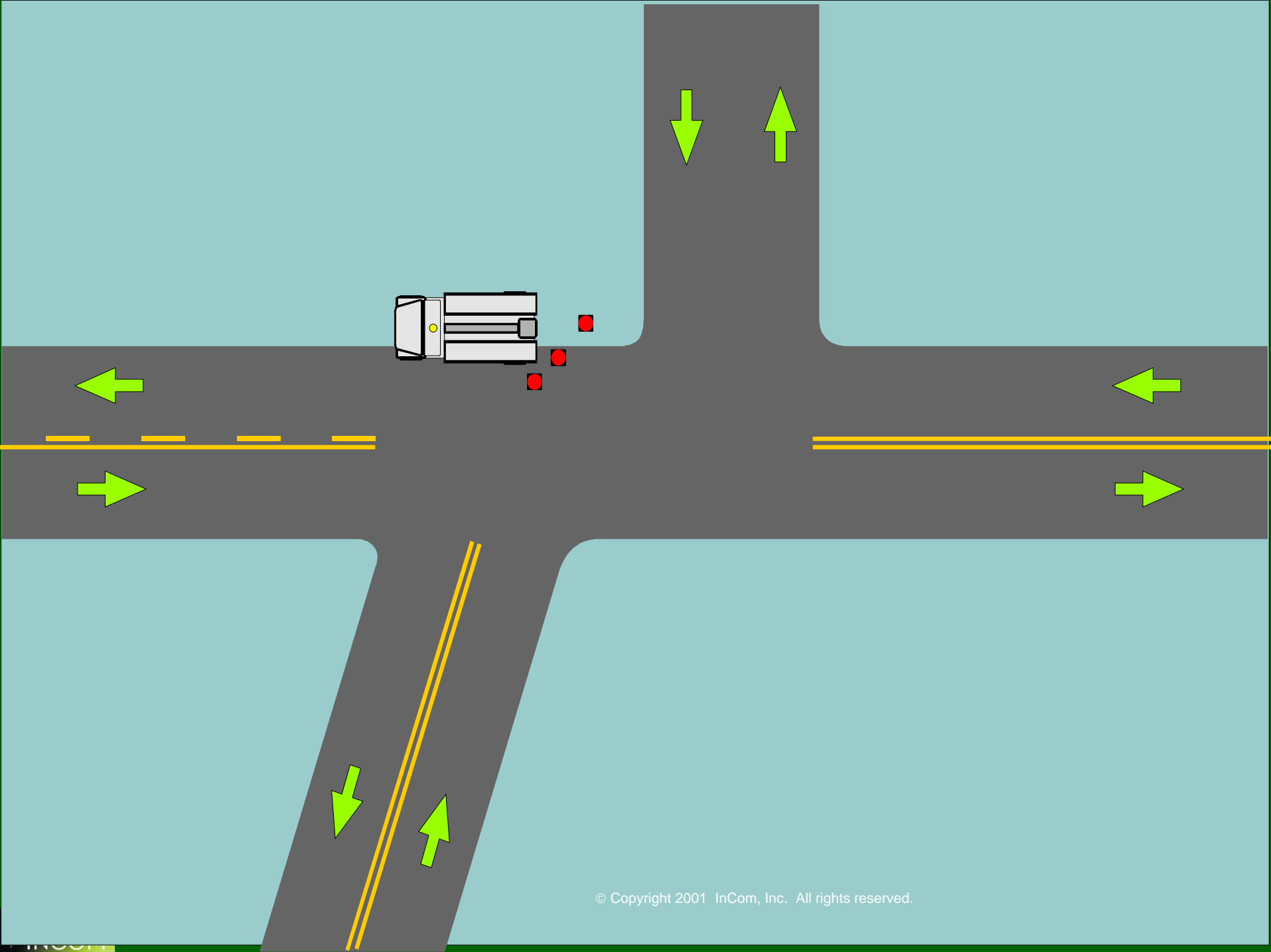
The Telecomm Roadway Work Zone

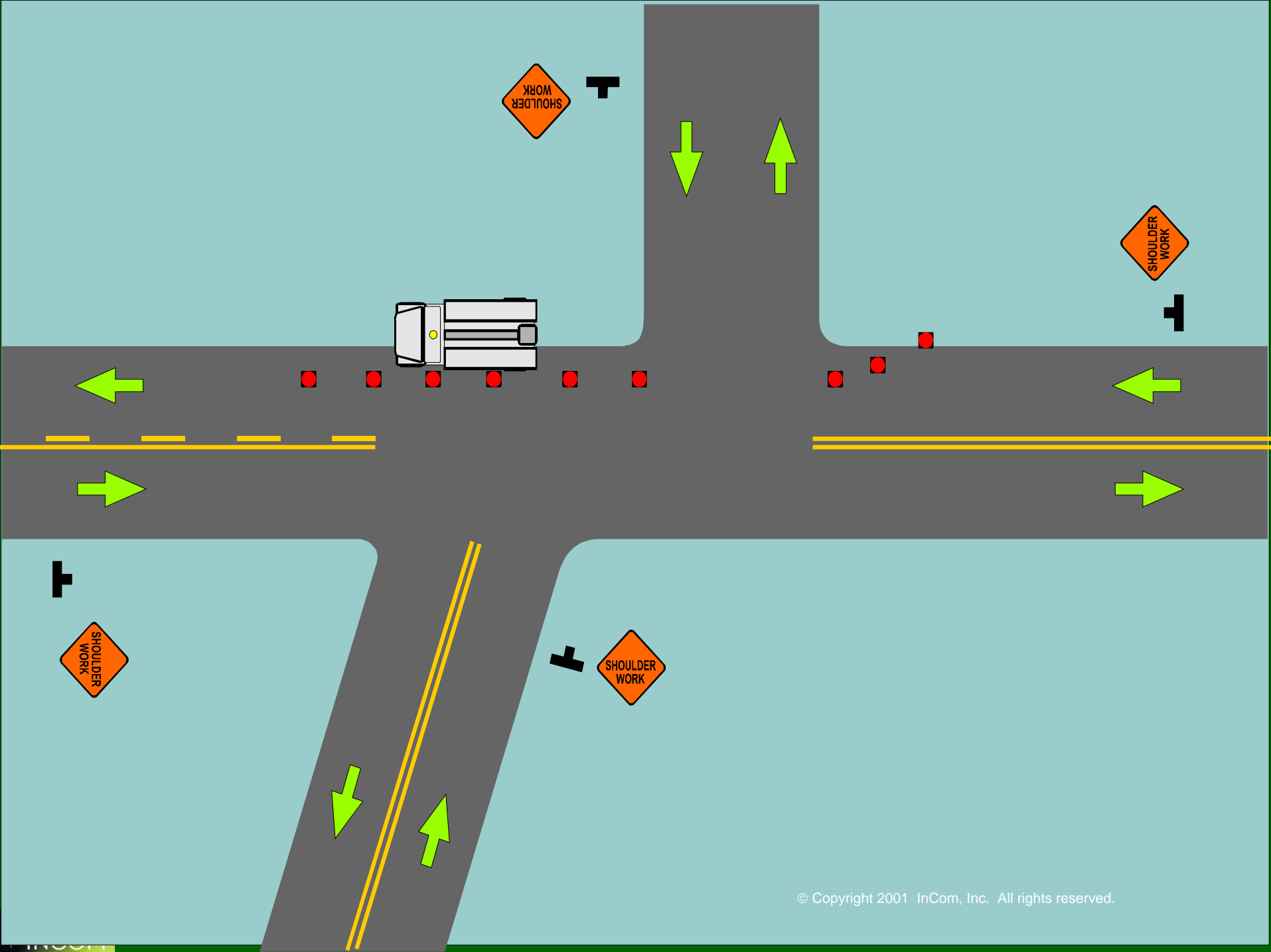
- **The Need**
- **The Standards**
- **Basic Principles**
- **Special Considerations**
- **Responsibility**



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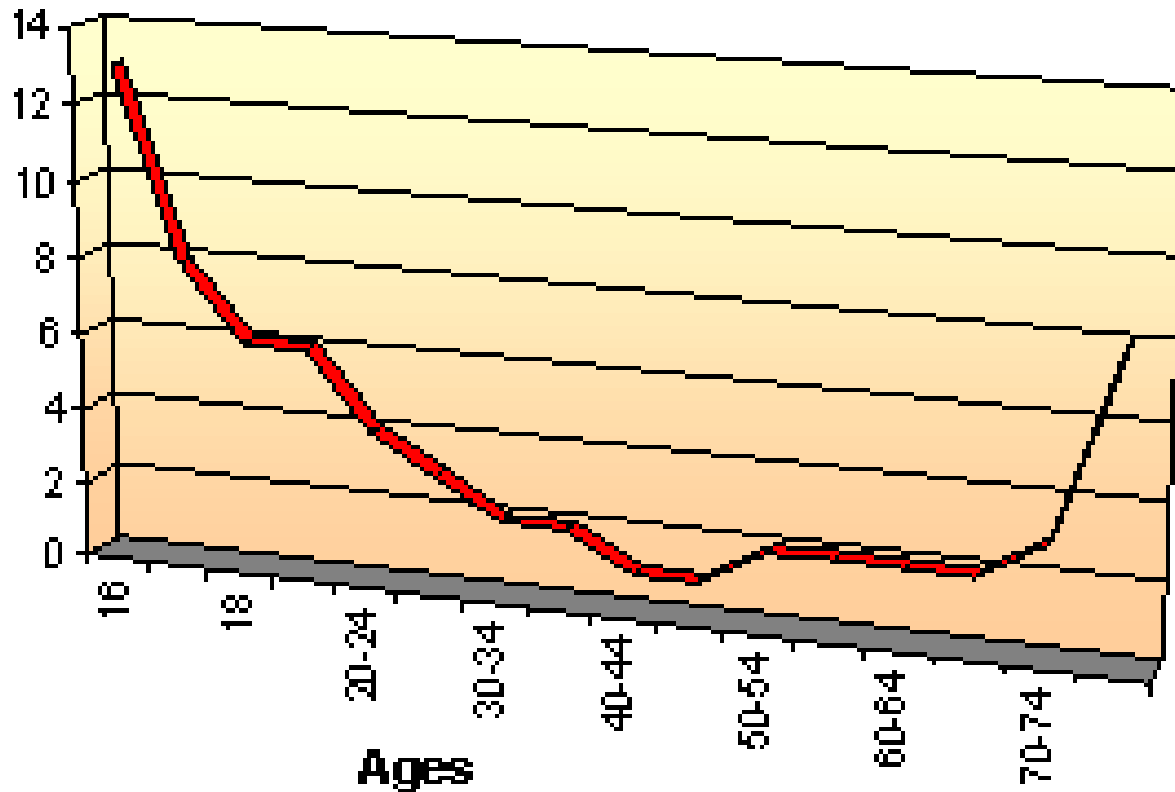




The Need

- **Deteriorating Infrastructure**
- **Changing Traffic Patterns**
- **Changing Driver Habits**
- **Aging Driver**
- **Visual Noise**
- **Field Operation Personal Habits
(Attitude)**

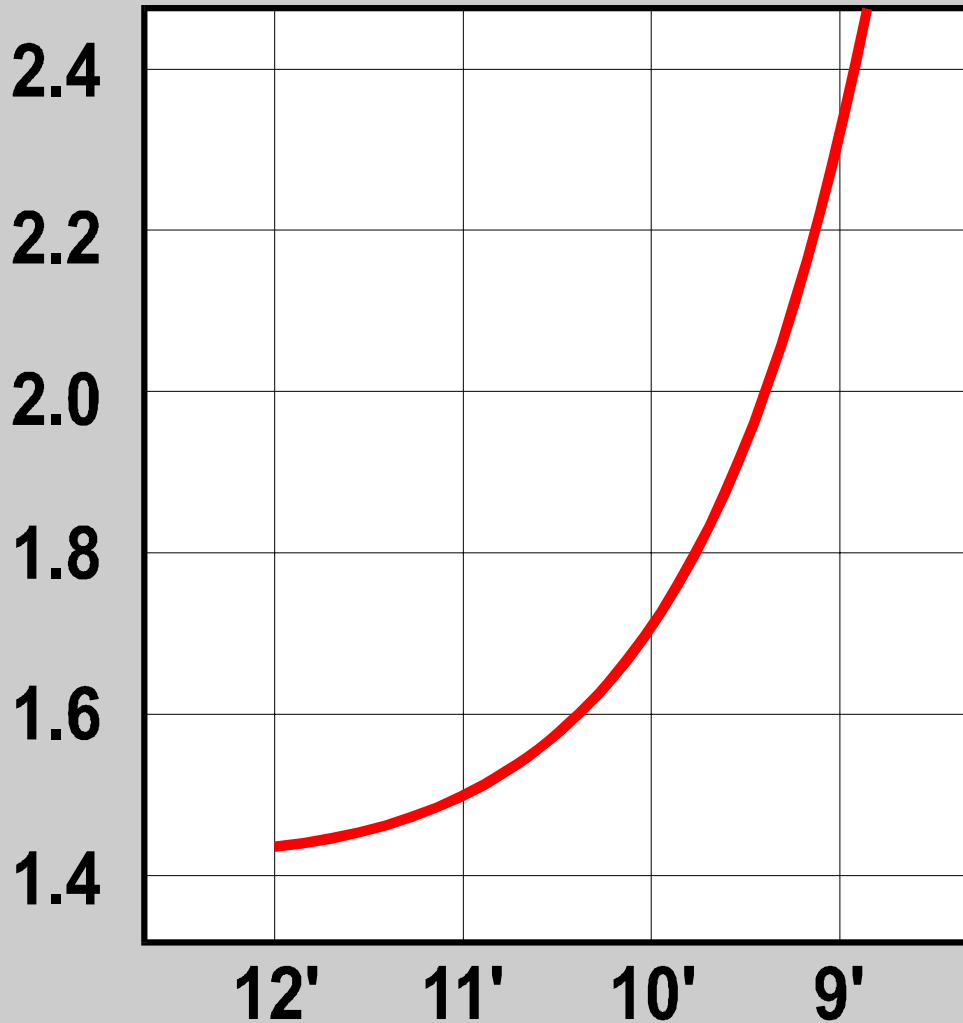
FATAL CRASH INVOLVEMENT PER 100 MILLION MILES BY DRIVER AGE, 1995-96



POSITIVE GUIDANCE

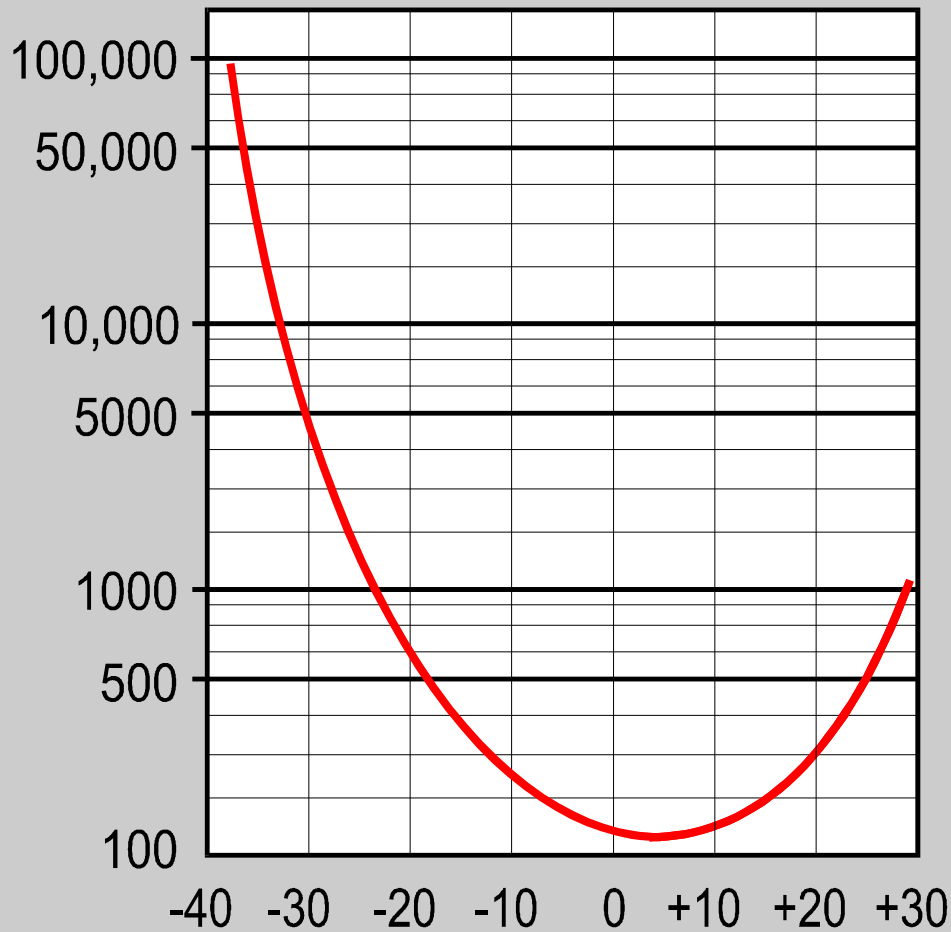
- The only way to keep the work zone safe is through effective, pro-active communication with the driver of each and every vehicle encountering the work zone.

Accident Rates Related to Lane Width



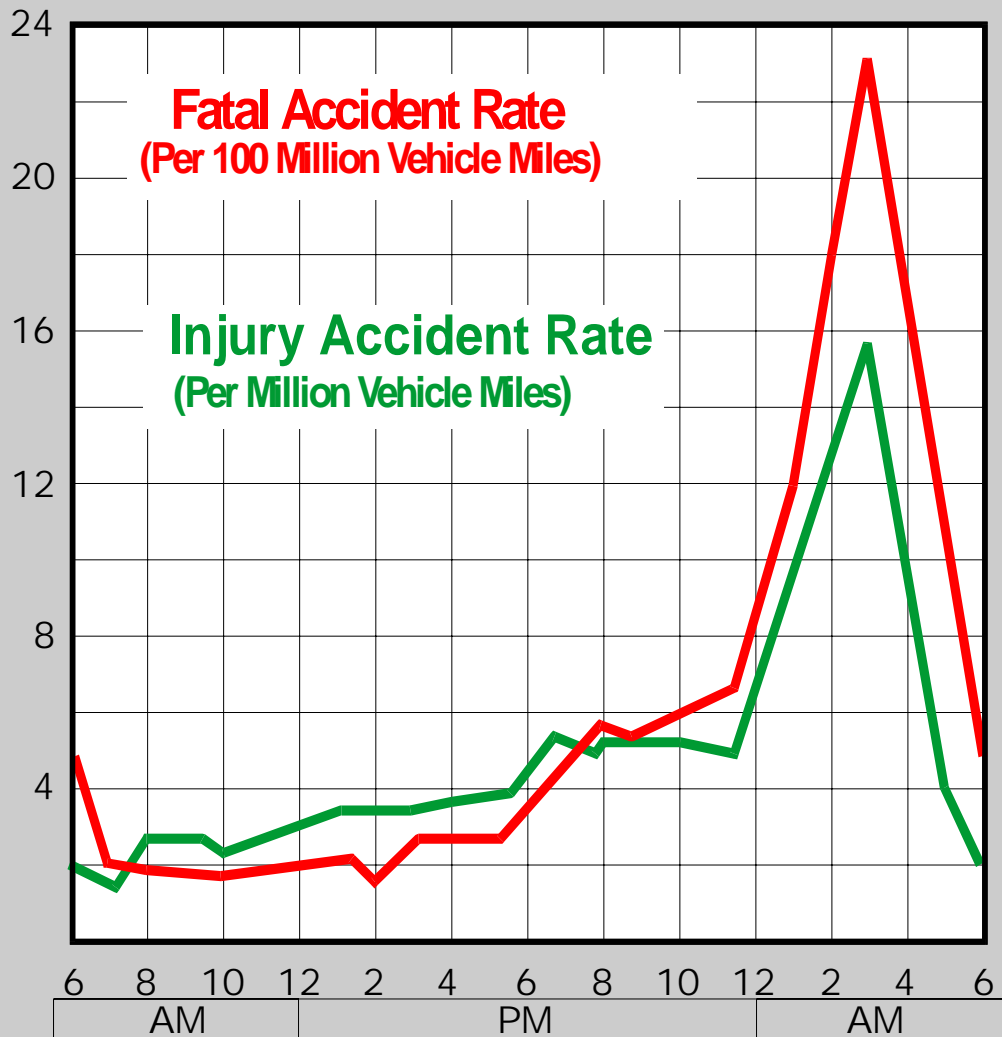
Accidents per Mill.
Vehicle Miles; Lane
Width in Feet

Accident Rates Related to Speed Variations



Accidents per 100 Million
Vehicle Miles; Variation
From Average Speed in MPH

Accident Rates by Hour of Day



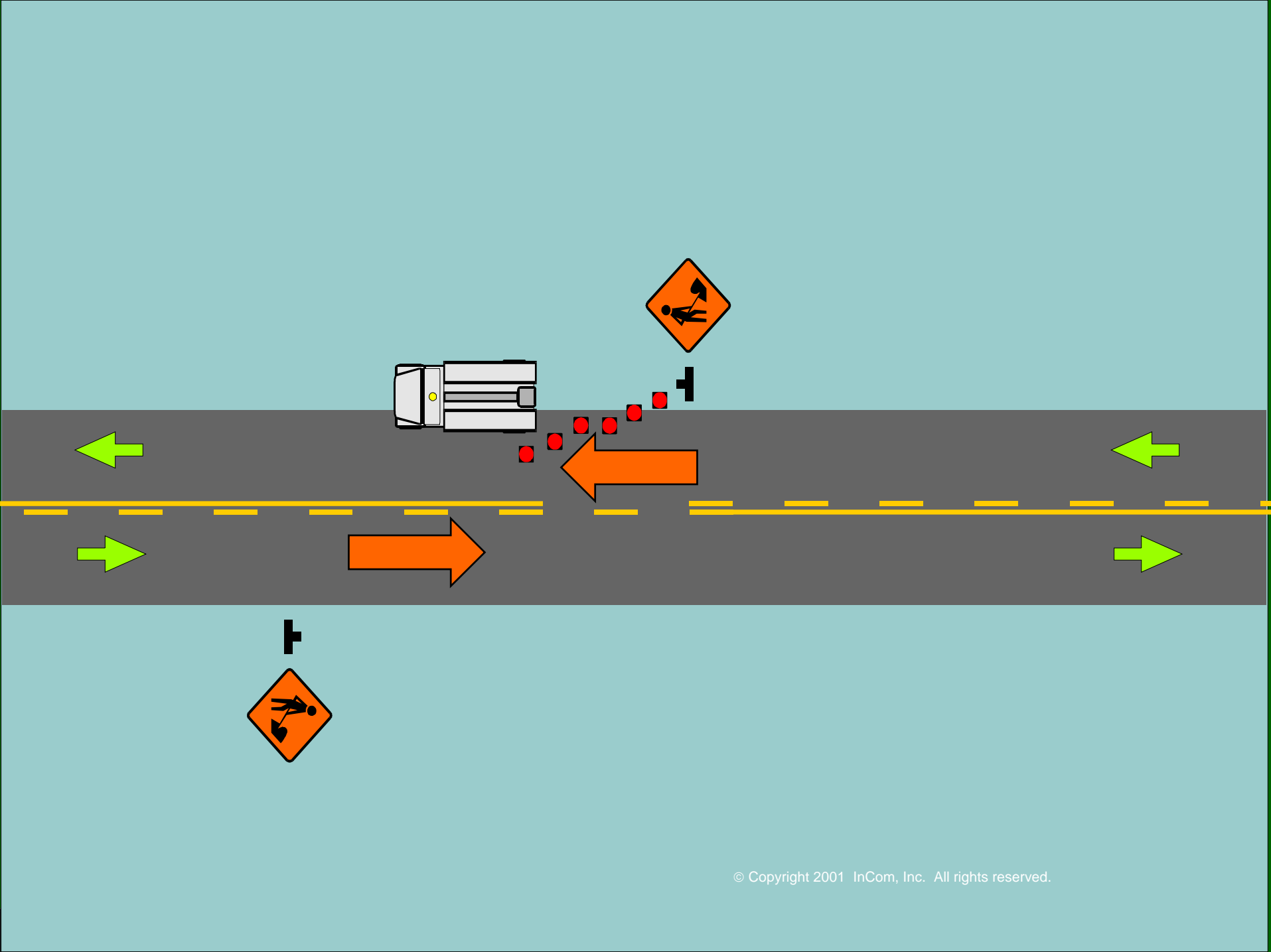


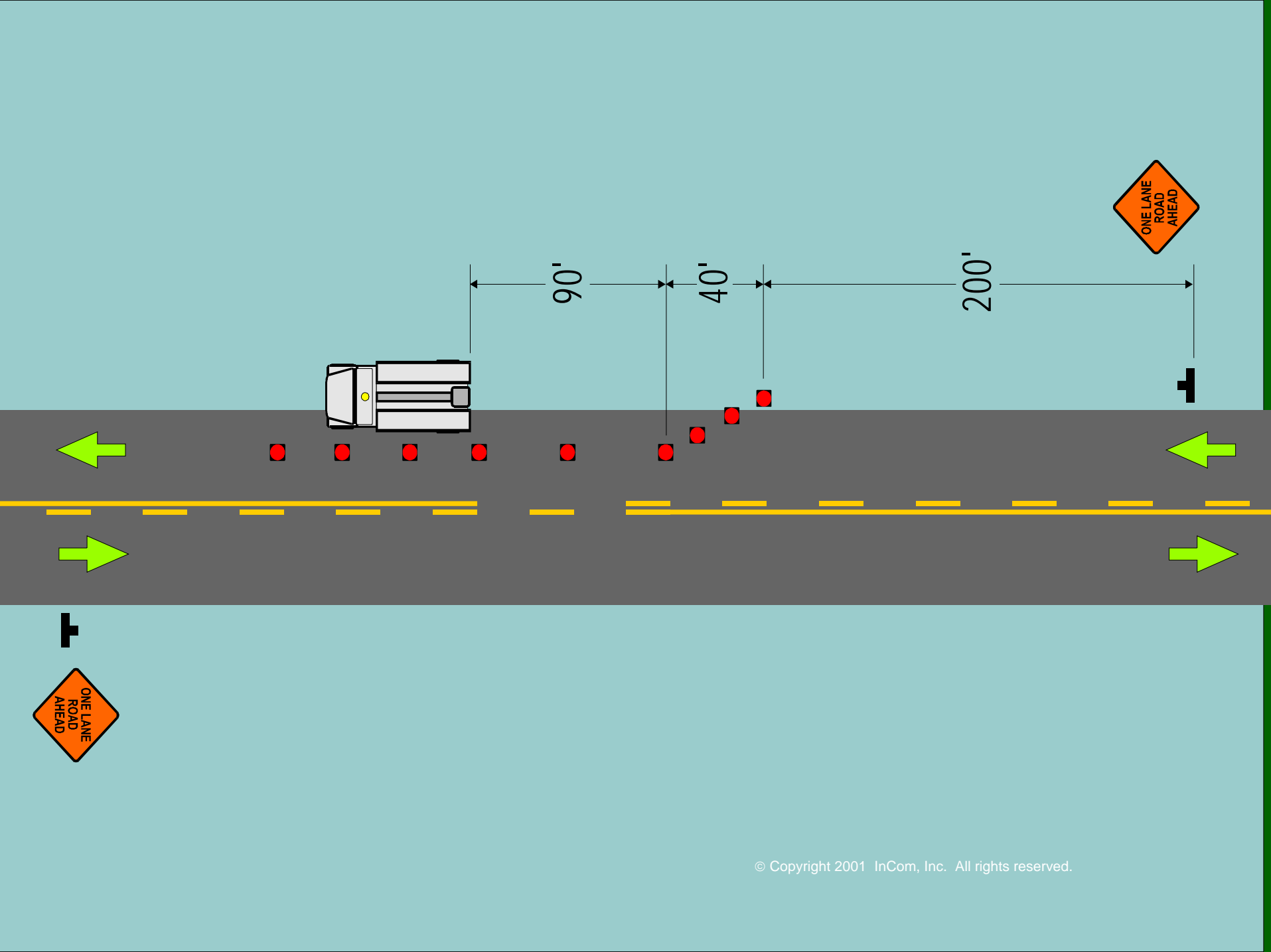




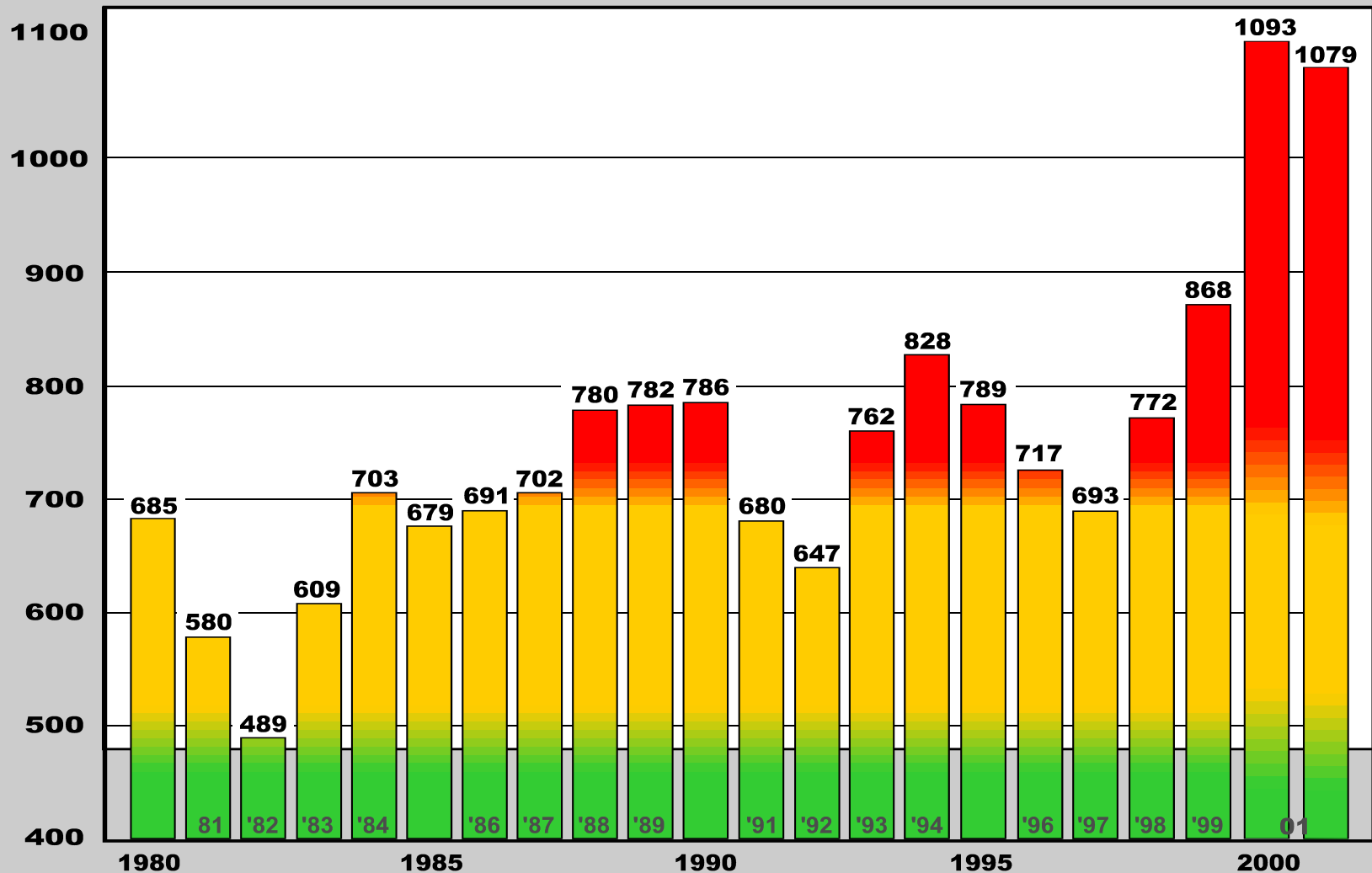








Work Zone Fatalities



THE STANDARDS

- **USDOT / FHWA Manual on Uniform Traffic Control Devices - “MUTCD 2000” Millennium Edition, dated December 2000, including Errata #1, dated June 14, 2001.**
- **OSHA – 1926.200(g)(2); 1910.268**
- **State MUTCDs; State R & B Const. Stds**

OSHA STANDARDS

- **Construction Standard**
- **1926.200**
- ***Updated Dec. 11, 2002***

OSHA STANDARDS

- **Telecommunications Industry - 1910.268**
- **Electric/Gas Utility Industry - 1910.269**
- **Inclusion Reference - 1926.200**

Principles of Safe Traffic Control

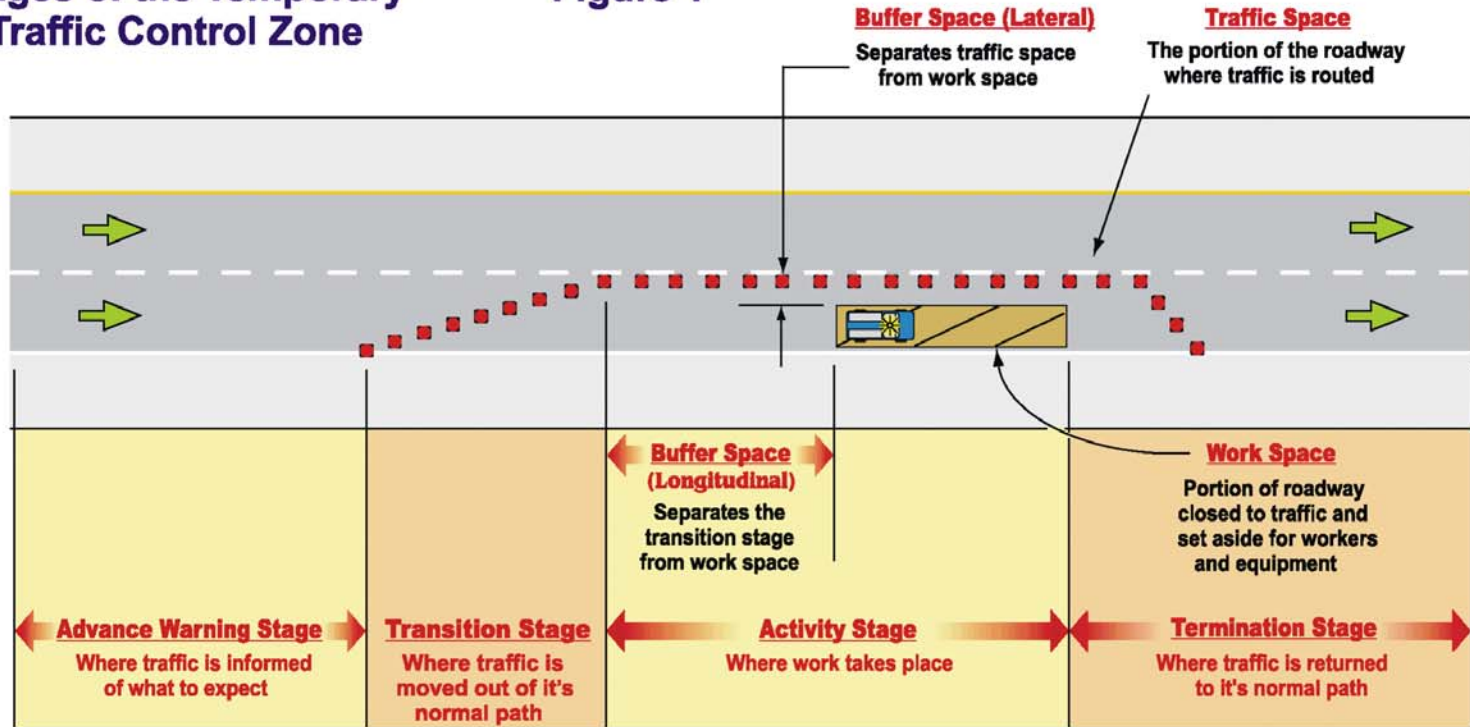
- Plan for Safety
- Keep it Moving
- Communicate
- Monitor
- Plan for the Worst
- Train

"Stages" of the Roadway Work Zone

- **Advance Warning**
- **Transition**
- **Activity - Buffer Space, Work Space, Traffic Space**
- **Termination**

Stages of the Temporary Traffic Control Zone

Figure 1



Typical Application Selection Criteria

- **Work Duration**
- **Work Location**
- **Roadway Type - Traffic Speed &
Volume**

Work Duration

- Long Term Stationary - > 3 days
- Intermediate Term Stationary –
- Over 1 daylight period to 3 days or over 1 hour nighttime
- Short Term Stationary -
1-12 hours daytime
- Short Duration - 60 minutes or less
- Mobile - Continuous or intermittent

Work Location

- **Outside the shoulder edge.**
- **On shoulder edge - no encroachment.**
- **On shoulder edge - minor encroachment.**
- **Within the median.**
- **Within the traveled way.**

Roadway Type

- **Urban Streets**
- **Urban Arterial Roads**
- **Intersections**
- **Rural Two-Lane Roadways**
- **Rural / Urban Multilanes**
- **Freeways**

Special Telecomm Considerations

- Vehicle / Employee Ratio
- Vehicle Storage Space
- Inter-jurisdictional Operations
- Work Zone Location & Condition Variability
- Utility Contractors

Responsibility

- *Who is responsible for safe traffic control?*
 - Company is responsible to the motorist, public and employee.
 - Field employee is responsible to the motorist, public and company.
 - Most importantly, field employee is responsible to themselves for being safe in the roadway work zone.

EMERGING ISSUES

OSHA , FHWA & MUTCD 2000

- Recent CFR notices:
 - 9/12/02 (OSHA)
 - 5/21/02 (FHWA)
- Source Agencies: OSHA; FHWA
- Regulations Involved: OSHA, MUTCD

DEPARTMENT OF LABOR
Occupational Safety and Health Adm.
29 CFR Part 1926 [Docket # S-018]
RIN 1218-AB88
Safety Standards for Signs, Signals,
and Barricades
ACTION: Final Rule.

OSHA 9/12/02 FR

57722 Federal Register / Vol. 67, No. 177 / Thursday, September 12, 2002 / Rules and Regulations

DEPARTMENT OF LABOR

**Occupational Safety and Health
Administration**

29 CFR Part 1926

[Docket #S-018]

RIN 1218-AB88

**Safety Standards for Signs, Signals,
and Barricades**

**AGENCY: Occupational Safety and Health
Administration, Labor.**

ACTION: Final rule.

09/11/2002 - OSHA NEWS RELEASE

OSHA TO ISSUE FINAL RULE FOR SIGNS, SIGNALS, AND BARRICADES

WASHINGTON - A new construction standard for traffic control signs, signals, and barricades is expected to reduce fatalities and injuries at roadway worksites, the Occupational Safety and Health Administration announced today. The final rule becomes effective December 11, 2002.

"Every year more than 100 workers are killed and 20,000 more are injured at roadway construction sites," said OSHA Administrator John Henshaw. "These workers deserve the benefits of this new rule; improved traffic controls, more effective protective clothing, and the necessary information and guidance that will provide better protection from safety hazards on the job."

The rule requires compliance with either the 1993 or Millennium Edition version of Part VI of the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD), in place of the 1971 MUTCD.

OSHA initially proposed to amend the standard through a direct final rule. The agency withdrew the direct final rule because two of the eight comments received, both seeking a one-year delay in the August 13, 2002, effective date, were treated as significant adverse comments.

Because most affected employers have been required to comply with the updated MUTCD since 1996, OSHA determined that a one-year extension in the effective date is not necessary. However, the agency has added 120 days to the original proposed effective to emphasize outreach and education efforts to assist the industry in training employees on the new rule.

Among the specific changes, the revised standard requires retro-reflective and illuminated devices at intermediate and long-term stationary temporary traffic control zones; warning devices for mobile operations at speeds above 20 mph; advance warning signs for certain closed paved shoulders; a transition area containing a merging taper when one lane is closed on a multi-lane road; temporary traffic control devices with traffic barriers that are immediately adjacent to an open lane; and temporary traffic barriers separating opposing traffic on a two-way roadway.

The revised signs, signals, and barricades standard is scheduled for publication in the September 12, 2002 *Federal Register*

OSHA

OSHA 9/12/02 FR

“1926 Construction Standard ”

Summary:

The Occupational Safety and Health Administration (OSHA) is revising the construction industry safety standards to require that traffic control signs, signals, barricades or devices protecting workers conform to Part VI of either the 1988 Edition of the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), with 1993 revisions (Revision 3) or the Millennium Edition of the FHWA MUTCD (Millennium Edition), instead of the American National Standards Institute (ANSI) D6.1–1971, Manual on Uniform Traffic Control Devices for Streets and Highways (1971 MUTCD).

OSHA

“1926 Construction Standard ”

Dates:

This final rule will become effective December 11, 2002.

The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of December 11, 2002.

OSHA

OSHA 9/12/02 FR

“1926 Construction Standard ”

Introduction:

This final rule addresses the types of signs, signals, and barricades that must be used to protect construction employees from traffic hazards. The vast majority of road construction in the United States is funded through Federal transportation grants. As a condition to receiving Federal funding, the U.S. Department of Transportation's (DOT's) Federal Highway Administration requires compliance with its MUTCD. In furtherance of OSHA's statutory mandate to protect the health and safety of employees, OSHA also requires employers that are within the scope of its authority to comply with the MUTCD. However, OSHA's current standard incorporates the 1971 version of the MUTCD, which FHWA has since updated. The purpose of this final rule is to update OSHA's standard.

OSHA

OSHA 9/12/02 FR

“1926 Construction Standard ”

- Incorporation by reference at 1926.200 (g) (2) revised to read as follows:

“§ 1926.200 Accident Prevention Signs and Tags.

(g) (2) All traffic control signs or devices used for protection of construction workers shall conform to Part VI of the Manual of Uniform Traffic Control Devices (“MUTCD”), 1988 Edition, Revision 3, September 3, 1993, FHWA–SA–94–027 or Part VI of the Manual on Uniform Traffic Control Devices, Millennium Edition, December 2000, FHWA, which are incorporated by reference.”

OSHA

OSHA 9/12/02 FR

“1926 Construction Standard ”

- 1926.200 (g) (2) <cont'd>:

"The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C.

552(a) and 1 CFR Part 51.....

Electronic copies of the MUTCD 2000 are available for downloading at

<http://mutcd.fhwa.dot.gov/knomillennium>. Electronic copies of the 1988 Edition MUTCD,

Revision 3, are available for downloading at

http://www.osha.gov/doc/highway_workzones."

OSHA

OSHA 9/12/02 FR

“1926 Construction Standard ”

- 1926.201 (a) revised to read as follows:

”§ 1926.201 Signaling.

(a) Flaggers. Signaling by flaggers and the use of flaggers, including warning garments worn by flaggers shall conform to Part VI of the Manual on Uniform Traffic Control Devices, (1988 Edition, Revision 3 or the Millennium Edition), which are incorporated by reference in §1926.200(g)(2).”

OSHA

OSHA 9/12/02 FR

"1926 Construction Standard "

- 1926.202 revised to read as follows:

"§ 1926.202 Barricades.

Barricades for protection of employees shall conform to Part VI of the Manual on Uniform Traffic Control Devices (1988 Edition, Revision 3 or Millennium Edition), which are incorporated by reference in § 1926.200(g)(2)."

OSHA

OSHA 9/12/02 FR

“1926 Construction Standard ”

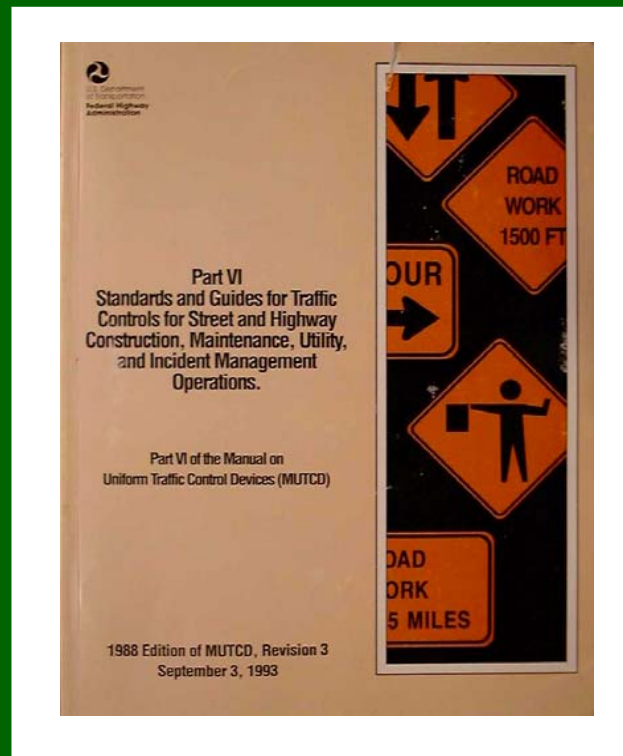
- 1926.203 (c) revised to read as follows:

"§ 1926.203 Definitions applicable to this subpart.

(c) Signals are moving signs, provided by workers, such as flaggers, or by devices, such as flashing lights, to warn of possible or existing hazards."

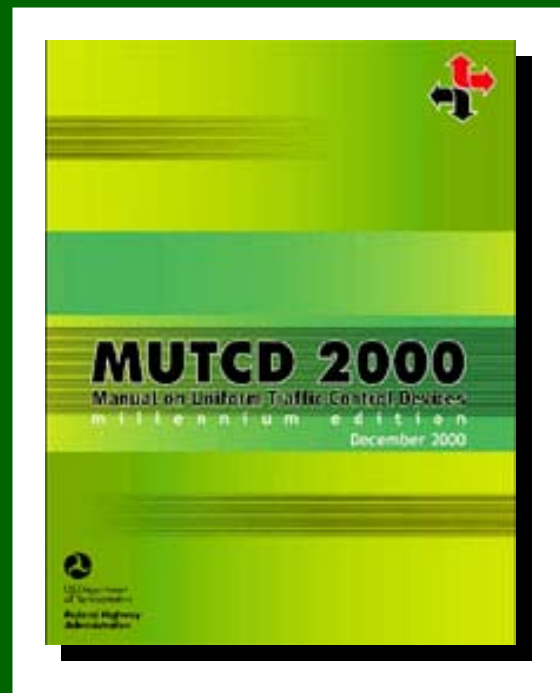
"Old" Standard - MUTCD 1988

- Part VI – Revision Sept. 3, 1993
- Final Rule – January 4, 1994



"New" "Current" Standard - MUTCD 2000

- December 2000 – Millennium Edition
- Entire MUTCD Revision – All Sections



DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
23 CFR Part 655

[FHWA Docket No. FHWA-2001-11159]
RIN 2125-AE93

National Standards for Traffic Control Devices: Manual on Uniform Traffic Control Devices for Streets and Highways; Revision
ACTION: Notice of proposed amendments to the Manual on Uniform Traffic Control Devices (MUTCD); request for comments.

FHWA 5/21/02 NPA

Comments due by August 19, 2002

35850

Federal Register / Vol. 67, No. 98 / Tuesday, May 21, 2002 / Proposed Rules

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

23 CFR Part 655

[FHWA Docket No. FHWA-2001-11159]

RIN 2125-AE93

National Standards for Traffic Control Devices: Manual on Uniform Traffic Control Devices for Streets and Highways; Revision

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Notice of proposed amendments to the Manual on Uniform Traffic Control Devices (MUTCD); request for comments.

Room 4230, (202) 368-0791, U.S. Department of Transportation, Federal Highway Administration, 400 Seventh Street, SW., Washington, DC 20590. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION:

Electronic Access and Filing

You may submit or retrieve comments online through the Document Management System (DMS) at <http://dmses.dot.gov/submit>. Acceptable formats include: MS Word (versions 95 to 97), MS Word for Mac (versions 6 to 8), Rich Text File (RTF), American Standard Code Information Interchange (ASCII)(TXT), Portable Document Format (PDF), and WordPerfect

MUTCD was published on December 18, 2000. About 150 of the 7100 comments that were received on the eight notices of proposed amendments leading to the creation of the Millennium Edition of the MUTCD, while extremely worthy, were deemed to result in too significant a change from the text in the notices of proposed amendments to be incorporated in the final rule without allowing the public an additional comment period. Also, this notice addresses the many advances in technology, and the traffic and safety management strategies that have occurred since the beginning of the updating process of the 1988 edition of the MUTCD in 1997.

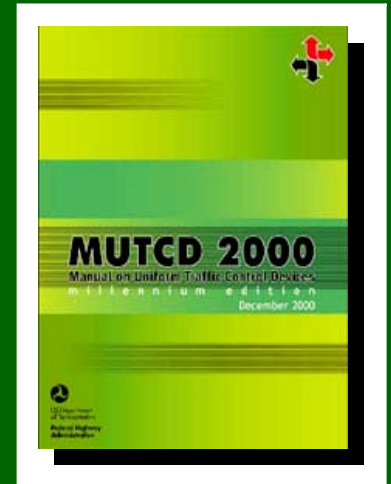
The FHWA invites comments on these proposed changes to the MUTCD.

MUTCD 2000 "QUICK REVIEW"

- Minimum federal standard for WZTC
- 10 Chapters or "Parts"
- 1100+ pages
- Revised through NCUTCD;

FHWA rulemaking

- Last revision to Part 6, Sept. 1993
- Parts 1,5,6 relevant to temporary work zone traffic control



MUTCD Millennium Edition

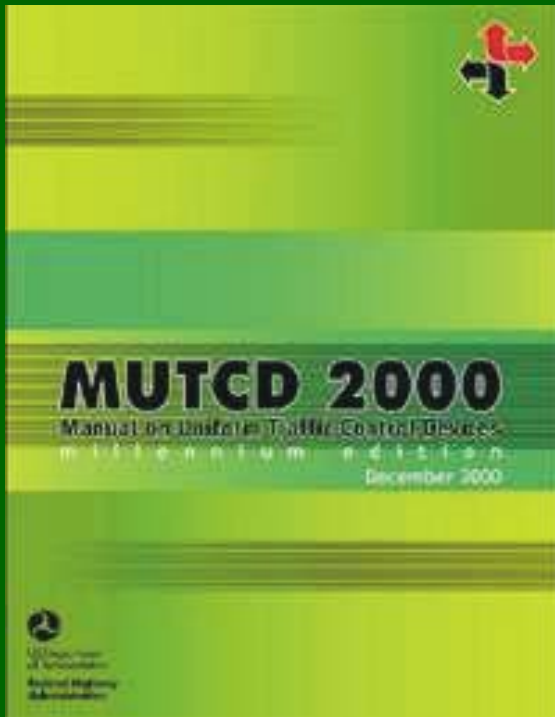


- **Fed. Reg. - Dec. 18, 2000**
- **Became law January 17, 2001**
- **Held up in “midnight-rule” review**
- **Errata #1, dated June 14, 2001, published July 27, 2001**

MUTCD Millennium Edition

Changes include:

- All parts now carry a number designation (2) rather than a roman numeral (II).
- New Sections and section names.
- New section for Low Volume Roads (Part 5)
- Measurements in both metric and English units.



MUTCD Millennium Edition

Changes include:

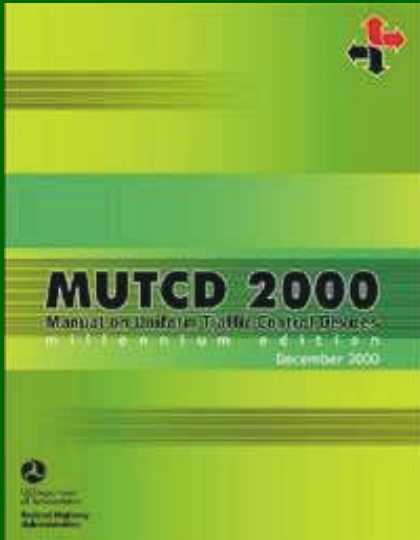
- Column text format
- 8 1/2" x 11"
- STANDARDS – “shall”
- GUIDANCE – “should”
- OPTIONS – “may”
- SUPPORT - descriptive & general information
- Over 120 new signs.
- More Typical Appl. (46)



MUTCD Millennium Edition

Other issues:

- Will need to know three Parts instead of one (Part 6)
- Part 1, Part 5 & Part 6
- Will need to monitor FHWA constantly for changes; “living document”
- State specifics may be more complicated than ever.

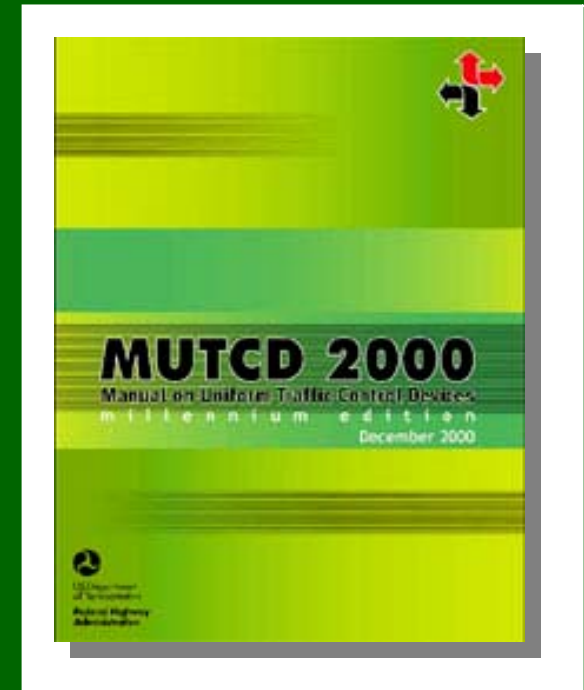


FHWA

FHWA 5/21/02 NPA

“MUTCD 2000 Millennium Edition, Rev. 2”

- Proposed amendment to the Millennium Edition, published 12/18/00 & Errata #1-6/14/01
- 8 separate FR notices during creation of MUTCD 2000
- Rec'd 7100 comments
- About 150 deemed worthy, but not included in 12/00 version without additional comment period

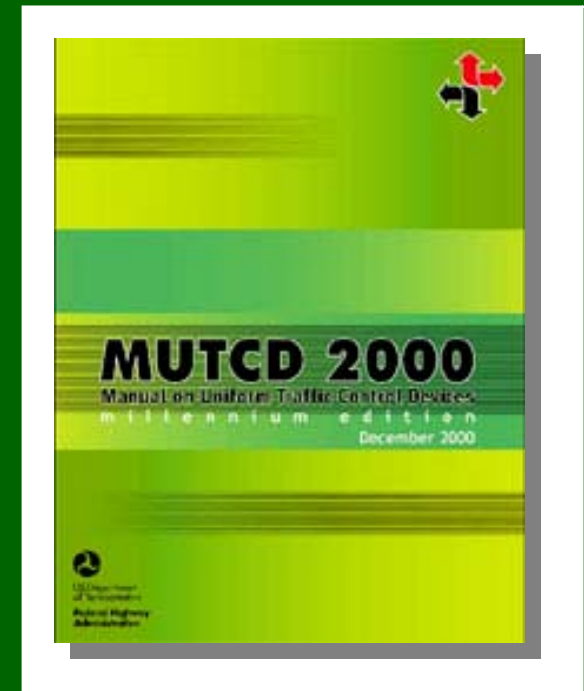


FHWA

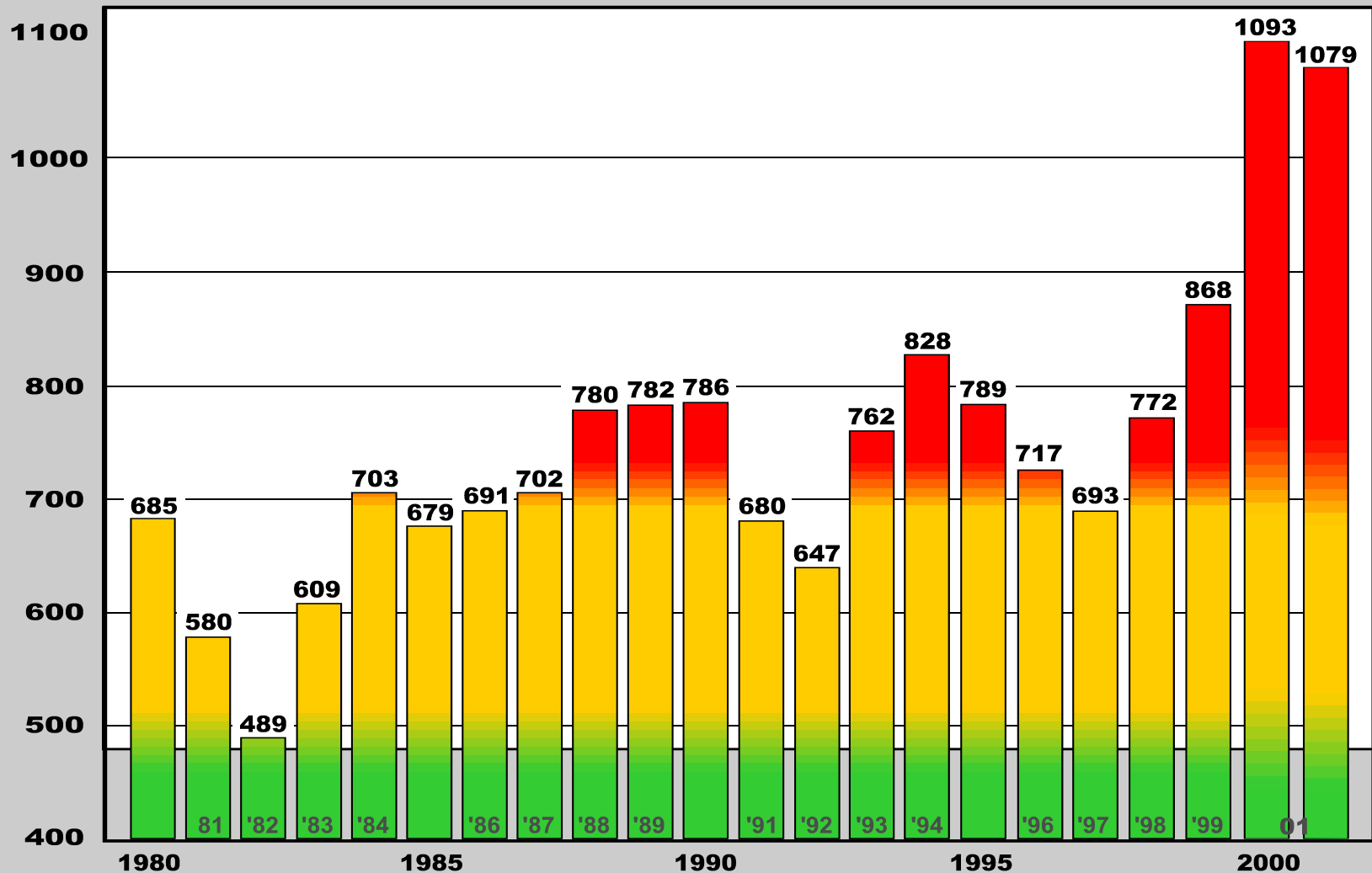
“MUTCD 2000 Millennium Edition, Rev. 2”

REVISION 2

- 251 changes in Part 6 alone
- FHWA expected to go to Final Rule early 2003
- Some, all or none of proposed may be included
- Comments due by 8/19/02



Work Zone Fatalities



FHWA

“MUTCD 2000 Millennium Edition, Rev. 2”

Some Key Considerations

- Enforcement
- Road Users
- Workers
- Flaggers
- Traffic Control Devices
- “Living Document”

FHWA

“MUTCD 2000 Millennium Edition, Rev. 2”

- **Flagger Considerations**

CURRENT – 6E.02 - Standard (Shall):

For daytime work, the flagger’s vest, shirt, or jacket shall be either orange, yellow, yellow-green or a fluorescent version of these colors. For nighttime work similar outside garments shall be retroreflective. The retroreflective material shall be either orange, yellow, white, silver, yellow-green or a fluorescent version of these colors, and shall be visible at a minimum distance of 1000 ft. The retroreflective clothing shall be designed to clearly identify the wearer as a person.

FHWA

“MUTCD 2000 Millennium Edition, Rev. 2”

- **Flagger Considerations**

PROPOSED – 6E.02 – Standard (Shall):

Flaggers shall wear safety apparel meeting the requirements of ISEA “American National Standard for High-Visibility Apparel” (see Section 1A.11) and labeled as meeting ANSI 107-1999 standard performance for Class 3 risk exposure. The apparel background (outer) material shall be either fluorescent orange-red or fluorescent yellow-green as defined in the standard.(cont'd. next slide)

FHWA

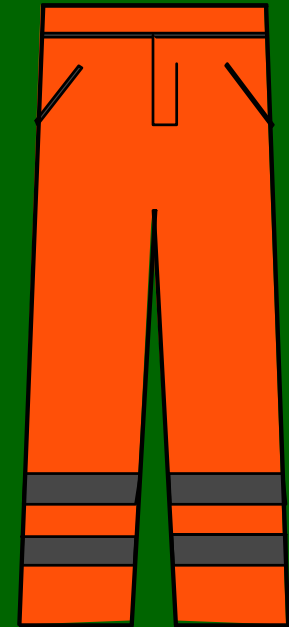
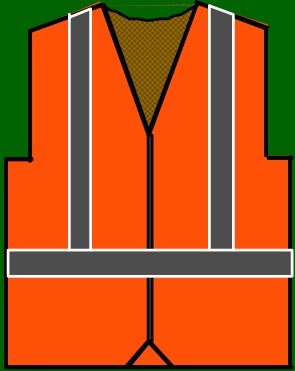
“MUTCD 2000 Millennium Edition, Rev. 2”

- **Flagger Considerations**

PROPOSED – 6E.02 - Standard (Shall): (cont'd.)

.....The retroreflective material shall be either orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300m (1,000ft). The retroreflective clothing shall be designed to clearly identify the wearer as a worker.

ANSI/ISEA Standard 107-199x Typical Garment Design



Colors

**Class 1
Garment**

**Class 2
Garment**

**Class 3
Garment**

FHWA

“MUTCD 2000 Millennium Edition, Rev. 2”

- **Traffic Control Device Considerations**
 - Some changes to devices (36"+ cones, etc.)
 - Crashworthiness NCHRP-350 (State timeline)
 - 5 Year Implementation from Acceptance Date

FHWA

“MUTCD 2000 Millennium Edition, Rev. 2”

- **"Big" Issues :**
 - **“Trained and/or Certified”**
 - **“Competent Person”**
 - **“OSHA / ADA / ISEA / ANSI / NCHRP / AASHTO”**

What's the Latest on Revision 2 ?


Status of NPA 2

- Docket closed 8/21/02
- 291 responses
- 5000 comments
- FHWA – all addressed by 10/03
- Probable earliest next rule early 2004

State Specific Complications

- State DOTs “adopted” MUTCD 1/17/03
- State DOTs issue “Roads & Bridges” Specs
- Utilities “lumped” with contractors (FLDOT)
- State DOTs quality, not safety
- Examples: FL vests, WA hard hats


Typical Utility Warning Signs and Sign Supports




"UTILITY WORK AHEAD"
Alerts drivers of utility work in or near the roadway.
#W21-7



FLAGGER SYMBOL
Used before any flagger station.
#W20-7a




"CENTER LANE CLOSED AHEAD"
For work in center lane of a three lane, one way road.
#W9-3




WORKER SYMBOL
Alerts drivers of worker(s) in or near the roadway.
#W21-1a



"ONE LANE ROAD AHEAD"
Used for one lane, two way traffic. (Flagger)
#W20-4




"RIGHT SHOULDER CLOSED"
Used when shoulder work closes an improved shoulder.
#W21-5a




"SHOULDER WORK"
Warns of work on the shoulder only.
#W21-5



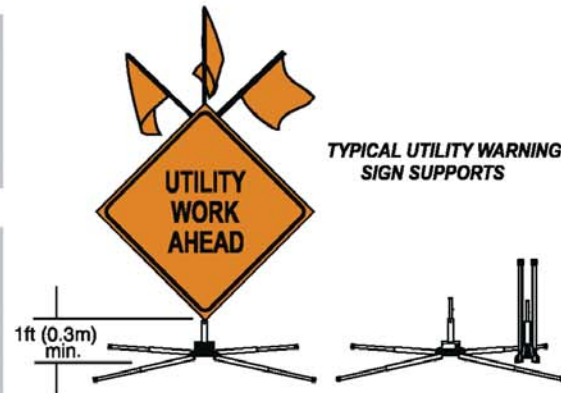
"RIGHT LANE CLOSED AHEAD"
Warns of closure of one lane of a multilane roadway.
#W20-5



"ROAD WORK AHEAD"
General warning of obstructions or restrictions.
#W20-1



"ROAD CLOSED AHEAD"
Used where road is closed to all or just local traffic.
#W20-3



Flagger Ahead

C9A

California

The second Advanced Warning Sign.

On high speed roads place this sign 600m (about 2000 ft.) before the flagger's station.

Equip the sign with flags during the day.



The Plan

A Five Part Compliance Plan

- **Training**
- **Manual**
- **Documentation**
- **Update**
- **Inspection / Audit Function**

The Plan

- **Training**
- *Field Personnel and Management need to know the established standards.*

The Plan

- **Manual**
- *Written company practices and procedures need to be in place.*

The Plan

- **Documentation**
- *Employee records that track training and performance in the work zone need to be kept.*

The Plan

- **Updates**
- *Continual changes and updates to the training, procedures, practices and product should be made to keep the company compliant with the most current established standards.*

The Plan

- **Inspection**
- *Enforcement of procedures can make field operation personnel responsible for safety in their work zone. Employees will be protected by better, more compliant work zones.*

The Plan

A Five Part Compliance Plan

- **Training**
- **Manual**
- **Documentation**
- **Update**
- **Inspection / Audit Function**

URL SUMMARY

<http://mutcd.fhwa.dot.gov/kno-millennium.htm> - MUTCD 2000, Incl. Err1 & Rev1

<http://mutcd.fhwa.dot.gov/> - NPA Rev. 2, MUTCD 2000

<http://dmses.dot.gov/submit> - USDOT Docket Management Facility

http://www.osha.gov./doc/highway_workzones - 1988 Rev. 3, MUTCD Part 6



Safety Through Communication

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Roadway Work
Zone Safety
“A Way of Life”

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