Work Zone on Local Roads – Why Does it Matter?
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NY Distribution of Lane Mileage

15,000 Lane Miles
150,000 Lane Miles

State System Road Milage
Local System Road Milage

Number of FA Projects
New York (2013)

Projects Locally-Administered
(Federal-aid Projects)

Source: FMIS
% of projects
% of costs

2009 2010 2011 2012 2013
10% 10% 15% 19% 29% 32%

Are the Laws, Regulations and Principles governing Work Zone Traffic Control the same?

On Local Roads versus State Roads?
Are the Standards different if the speed is different?

Standards are the same, but the calculations may be different.

Interstate versus City Street?

Multi-lane versus single lane?

Where do these people drive most often? Local Roads or Interstates?

When do they drive most often? During the day when they have good visibility or at night?

Fatalities

64%  36%

State versus Local Road Contracts
• Are they different contractors? Nope
• Are they different Consultant Inspectors? Nope
• Are they different Owners? Yup
So why do the Locally Administered Projects look so different?
Who is our Design Driver

- Diminished visual capabilities
- Diminished Physical Capabilities
- Diminished mental capabilities
  - Short, long, and working memory

View of Road Sign with Normal Contrast Sensitivity

View of Road Sign with a Cataract Condition

View with Good Acuity and Normal Contrast Sensitivity

View with Poor Contrast Sensitivity

Source: American Academy of Ophthalmology

Source: VISTECH
Why Do We Need to Consider Older Drivers and Pedestrians?

- People 65+ years old accounted for 26% of all motor vehicle drivers killed in crashes.
- 15% of all pedestrians killed or injured.
- Drivers 65+ years old:
  - Killed 33% of pedestrians.
  - Accounted for 33% of all collisions with pedestrians.

### Normal Unrestricted Attentional Window

[Image: Normal Unrestricted Attentional Window]

### Reduced Attentional Window

[Image: Reduced Attentional Window]

### Severely Restricted Attentional Window

[Image: Severely Restricted Attentional Window]

### Change in "Design Driver"

[Image: Change in "Design Driver"]

### 2012 Statistics (Last Full Reporting Year)

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PROBLEM LOCATION ACTION

NY Statistics
- Rear end collisions 45%
- All multi-vehicle 12%
- Run-off-the-road 12%
- At lane closure tapers 43%

What Can We Do?
Prevent or Mitigate Rear End Collisions
Concentrate At lane closure tapers

How?
Reduce Speed Differential
Better and more effective advanced warning
Advanced Warning

Speed – Injury/fatal Relationship

Quiz
What percentage of older drivers cannot read our signs at the distances that they are designed for?

Answer:
1” / 50’ relates to a visual acuity of 20/25, which exceeds 40% of drivers age 65-74

Quiz
Who has higher fatality rates among drivers per million vehicle miles traveled: older drivers (65+) or teenager drivers?
Part 1 – Introduction, General Provisions and Definitions

Standard:
Traffic control devices shall be defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or roadway by authority of a public agency having jurisdiction.

The Manual on Uniform Traffic Control Devices (MUTCD) is incorporated by reference in 23 Code of Federal Regulations (CFR), Part 655, Subpart F and shall be recognized as the national standard for traffic control devices in public travel in accordance with 23 U.S.C. 149(d) and 402(a). The policies and procedures of the Federal Highway Administration (FHWA) to obtain basic uniformity of traffic control devices shall be as described in 23 CFR 655, Subpart F.

Part 6 - Fundamental Principles

Design
Remove or cover
Inhibit as little as practical

Guide
Maintenance
Training
Public Relations

Don’t Violate Driver Expectancy

Answer:
Driver Fatality Rates, 1996 (NHTSA)
Design of Traffic Control Devices
- Standard shape, size, color
- Retro-reflective
- Uniform
- Crash worthy
- Placement
- Application

Size, Shape and Color

Retro-Reflectivity

Uniformity
Placement

Height, visibility, credibility…

Application & Deployment
Standard:

6. The ONE LANE ROAD (W20-4) sign (see Figure 6F-4) shall be used only in advance of that point where motor vehicle traffic in both directions must use a common single lane (see Section 6C.10). It shall have the legend ONE LANE ROAD, XX FEET, XX MILES, XX AHEAD.
Conditions of our TCD’s shouldn’t differ from local to state projects….but they do
Flaggers

Two-Way Traffic Taper

70th Annual School for Highway Superintendents
Guidance

FHWA regulation (23 CFR 652.5) require that provisions for the safe accommodation of bicyclists and pedestrians be given full consideration during construction.

Americans with Disabilities Act (28 CFR Part 33) and the current Americans with Disabilities Act Accessibility Guidelines (ADAAG) require that both permanent and temporary pedestrian facilities, including those associated with construction and maintenance activities, must provide safe and convenient access for persons with disabilities.

Section 619 of the NYSDOT Standard Specifications provides for the safe passage of pedestrian and bicyclists over any portion of the highway under construction where traffic is to be maintained, with a minimum of discomfort and inconvenience.

Older Driver?

High Profile or Dominant Devices?
Where is the channelization?
Crashworthy?
Glare? Good sight distance.
10’ Minimum?
Flashers, 4 way?
Summary

Number of FA Projects
New York (2013)

- 279
- $0.7B
- 196
- $1.6B

Fatalities

- 64%
- 36%

Glare?