# *Guidelines for Data Collection*

Data Collection

by

InTrans Staff & Students

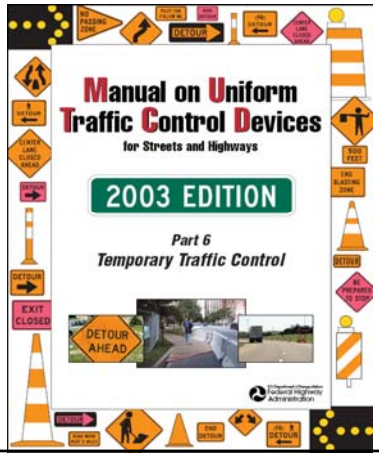
1

Safety considerations

2

# Guidance for Safety

- Have copy of Manual on Uniform Traffic Control Devices for reference




3

# Be Properly Trained

- Iowa DOT Flagger Training
- Familiar with MUTCD and Iowa DOT Standard Road Plans
- When working in other states, ask about temporary traffic control requirements

4

# Procedures

- Call agency in charge in advance to advise of work and request traffic control
- Develop and use traffic control plan
- Wear ANSI Standard Class 2 Apparel as minimum. Class 3 is better


5

## What is the ANSI 107-2004 Standard?

The American National Standards Institute (ANSI) approved the American National Standard for High-Visibility Safety Apparel (ANSI/ISEA 107-2004). This standard provides consistent, authoritative guidelines for the selection and use of high-visibility apparel in the United States.

ANSI/ISEA 107-2004 is a voluntary standard that offers performance specifications for reflective materials, including minimum amounts, placement, background material, test methods and care labeling. In simplest terms, the ANSI/ISEA 107-2004 standard provides for a high degree of reflective material incorporated into garments...thus improving visibility...and safety.

ANSI/ISEA 107-2004 specifies three classes of garments based on work environment:

**Class III**
Class III garments provide the highest level of visibility to workers in high-risk environments that involve high task loads, a wide range of weather conditions and traffic exceeding 50 mph. Class III garments, provide coverage to the arms and/or legs as well as the torso, and can include pants, jackets, coveralls or rain wear. The standard recommends these garments for all roadway construction personnel and vehicle operators, utility workers, survey crews, emergency responders, railway workers and accident site investigators.

**Class II**
Class II garments are for users who need greater visibility in poor weather conditions and whose activities occur near roadways where traffic speeds exceed 25 mph. This class of garment is suitable for railway workers, school crossing guards, parking and toll gate personnel, airport ground crews and law enforcement personnel directing traffic. Carolina Safety Sport manufactures a full range of vests that conform to Class II requirements.

**Class I**
These garments are intended for workers who have ample separation from vehicular traffic that does not exceed 25 mph. Class I garments are often safety vests thay are recommended for parking service attendants, workers in warehouses with equipment traffic, shopping cart retrievers, sidewalk maintenance workers and delivery vehicle drivers.

| Requirement | Class III garments | Class II garments | Class I garments |
|---|---|---|---|
| Background material | 1240 square in. (0.80 $m^2$) | 775 square in. (0.50 $m^2$) | 217 square in. (0.14 $m^2$) |
| Reflective material | 310 square in. (0.20 $m^2$) | 201 square in. (0.13 $m^2$) | 155 square in. (0.10 $m^2$) |
| Photometric performance | Level 2 | Level 2 | Level 2 |
| Combined performance | N/A | N/A | 310 |

http://www.cssport.com/ansi.htm

6

# Procedures

- Use proper advance warning signs
  - **Training at InTrans**
- Avoid peak traffic periods
- Visit site in advance to judge sight conditions and traffic volume
- Avoid locations with inadequate sight distance for on-coming traffic


7

# MUTCD Guidance

- Part 6 – Temporary Traffic Control
- **Chapter 6A —** General
- **Chapter 6B —** Fundamental Principles
- **Chapter 6C —** Temporary Traffic Control Elements
- **Chapter 6D —** Pedestrian and Worker Safety
- **Chapter 6E —** Flagger Control
- **Chapter 6F —** Temporary Traffic Control Zone Devices
- **Chapter 6G —** Type of Temporary Traffic Control Zone Activities
- **Chapter 6H —** Typical Applications
- **Chapter 6I –** TTC in Incident Management Areas

8

# Section 6G.02

- Short-duration work (less than an hour)
  - May take longer to set up traffic control than to perform the work
  - Set up can be hazardous and cause delays

SO, simplified procedures may be warranted

- ✓ reduce number of devices (signs, etc.)
- ✓ supplement with use of proper warning lights on work vehicles
- ✓ same procedures may apply to mobile operations

9

# Major Issue in all Situations

**VISIBILITY**

10

## Notes….

- For short-term, short-duration or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
- Vehicle hazard warning lights may be used to supplement these lights, **<u>however</u>**
  - ➢ Hazard warning lights **shall not** be used instead of MUTCD approved warning lights

11

## Use Advance Warning Signs


12

## Warning Light on Vehicle

13

## Watch for On-coming Traffic

14

## Wear Proper Apparel

15

## Caution with Moving Traffic

16

## Other safety tips

- Never turn your back on traffic
- Pay attention when your activities are focused on road (pulling up tape)
- Don't try to beat "traffic" when crossing road
- Notify supervisors of unsafe activities by colleagues (impacts your safety as well as potential liability)

17

## Other safety tips

- Plan out data collection before you go
  - Correct safety equipment
  - Correct data collection equipment
- Don't assume drivers will do the right thing
- Don't force drivers to do the right thing
  - You will lose all contests with a motor vehicle
  - You may be right but dead
- Notify supervisor if situation is different than expected and you need additional help

18

## Other safety tips

- MOST IMPORTANT:
- If you don't feel safe let someone know!!!!!!

19

## Data collection tips in general

20

# Experimental Design

- Consider sample size – we'll discuss later
- limitations
- All parameters in the study from one time period to the next should be the same except for the element you are studying (i.e. added speed feedback sign)

21

# Experimental Design

- Parameters to control
  - Traffic
  - Weather conditions
  - Location
  - Traffic
  - Time
  - Time periods included in study 24 hrs vs. 22 hours
  - Data collection devices
  - Data collection method

22

# Data collection

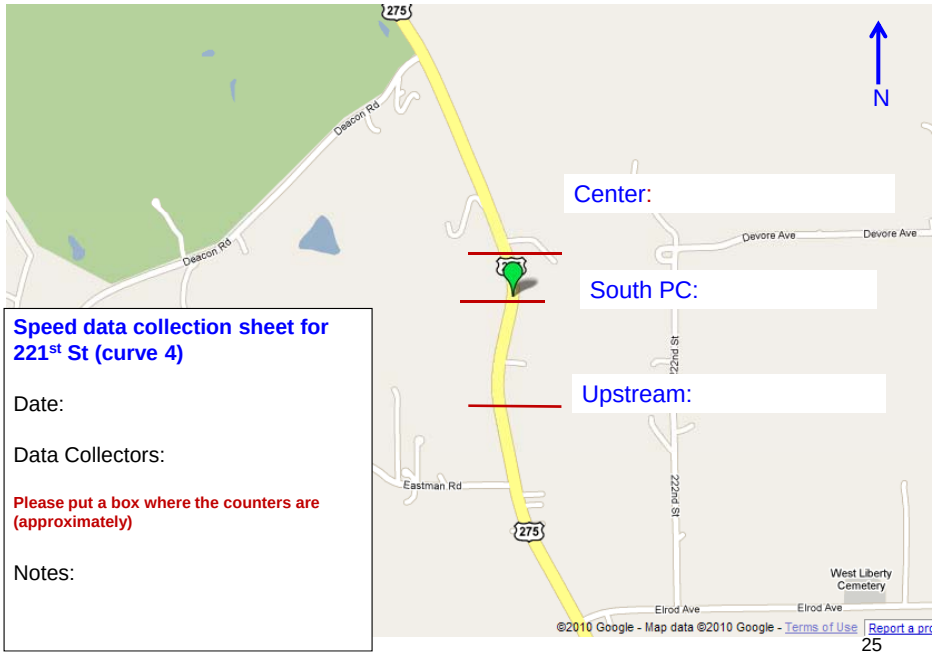
- Understand what you are collecting before you go and why
  - What do the study protocols require (sample size, collection times, etc)
  - Time of study (a peak hour study actually has to be done during peak hour)
  - What's the big picture
    - If you are collecting data to determine the effectiveness of a device make sure the device is working
- Avoid making assumptions– check if you need clarification
- If you have to make assumption, record what you did

23

# Data collection

- Use or make up data sheet to record all relevant information
  - Time, date
  - Weather
  - road condition
  - Location of data collection -use map
  - Who collected data
  - Problems
  - Back-up files and hard copies
  - More documentation is better than less

24




**Speed data collection sheet for 221st St (curve 4)**

Date:

Data Collectors:

**Please put a box where the counters are (approximately)**

Notes:

25

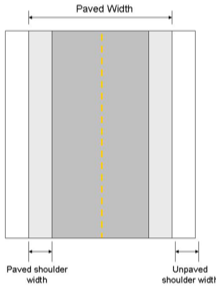
## Paved Shoulder Data Collection Form

*If this is a divided highway, note and do each direction separately*

**Date:** _____ **County:** _____

**Main St.** (include gov and local names): _____
**Begin cross-street:** _____
**End cross-street:** _____
*Note location on map for cross reference*
**Speed Limit:** _____ **Orientation:** N/S E/W
Sample -

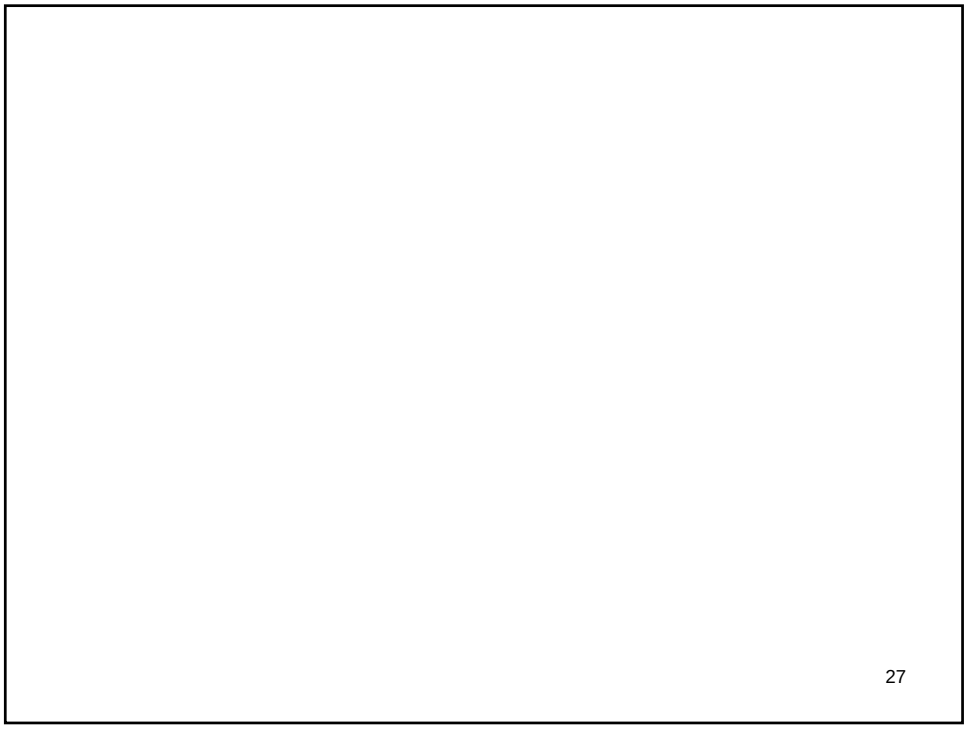
| | | | |
|---|---|---|---|
| **Pavement Type:** | Asphalt | Concrete | |
| **Shoulder:** | Fully Paved | Partially Paved | |
| **Shoulder pavement type:** | Asphalt | Concrete | |
| **Unpaved Shoulder type:** | Gravel | Earth | Mixed |

| | | |
|---|---|---|
| **West shoulder on N/S Road or North shoulder on E/W road** |  | **East shoulder on N/S Road or South shoulder on E/W road** |
| **Rumble strips**<br>None<br>Milled<br>Rolled<br><br>**RS Location:**<br>Edge of paved lane<br>Edge of paved shoulder<br>Dist from edge of paved shoulder _____ | | **Rumble strips**<br>None<br>Milled<br>Rolled<br><br>**RS Location:**<br>Edge of paved lane<br>Edge of paved shoulder<br>Dist from edge of paved shoulder _____ |
| **Total paved width:** | | **Total paved width:** |
| **Paved shoulder:** | | **Paved shoulder:** |
| **Unpaved shoulder:** | | **Unpaved shoulder:** |



**Note if there is anything unusual about this roadway.**
**Note if paved driveway entrances exist or widening on curves:**
**Location and type of other lane widenings**

26


27