

Fluorescent Yellow-Green Background for Vehicle Mounted Work Zone Signs

Midwest Smart Work Zone Conference

May 10-11

Isle of Capri

Bettendorf, Iowa

Thomas J. McDonald. PE

Safety Circuit Rider

Iowa Local Technical Assistance
Program

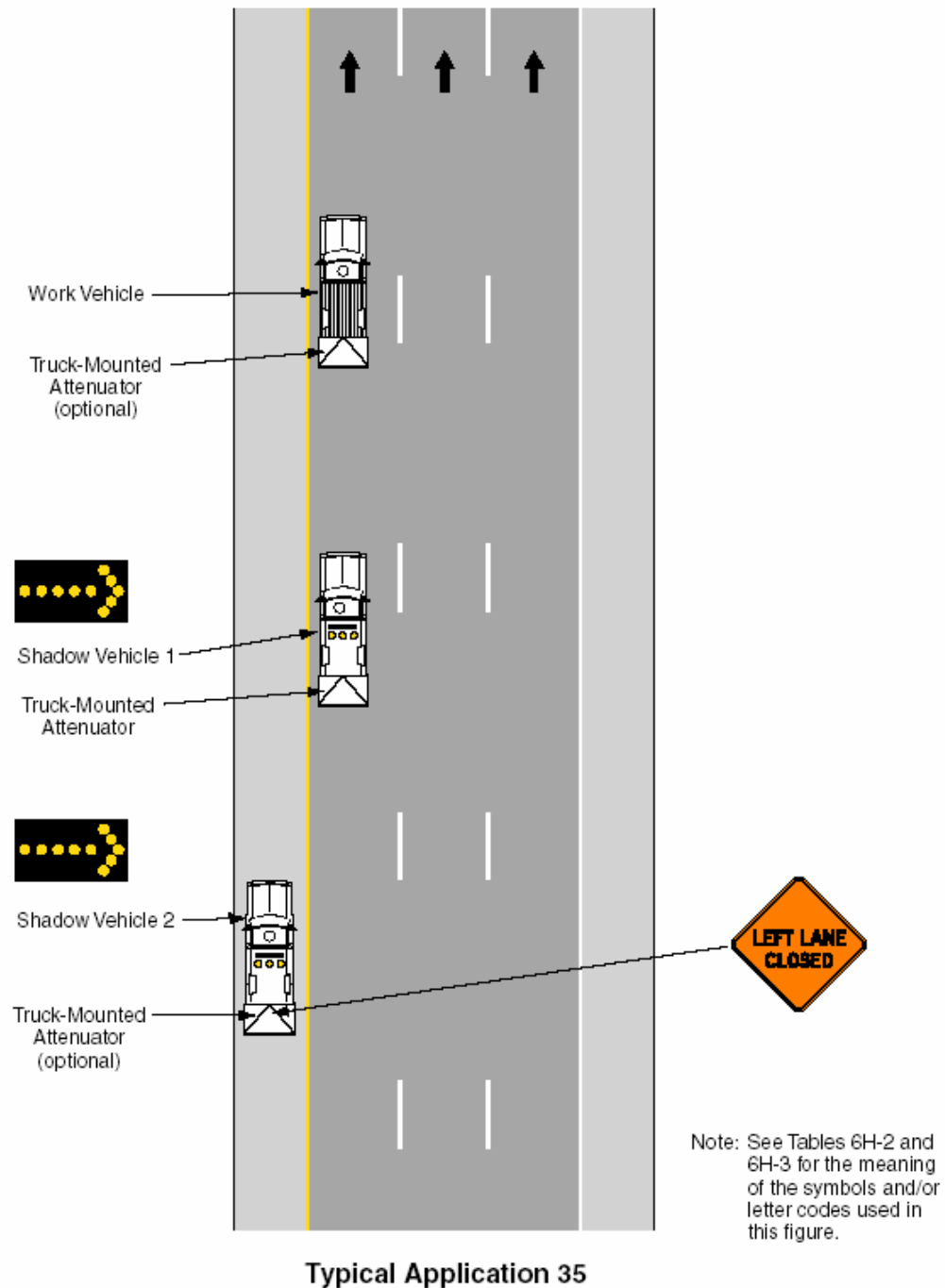
Ali Kamyab
Principal Investigator

Completed
October 2001

Figure 6H-35

MUTCD

(little advance warning)



Typical Advance Warning Sign Historically Used by Iowa DOT Maintenance



Backing Enhancement

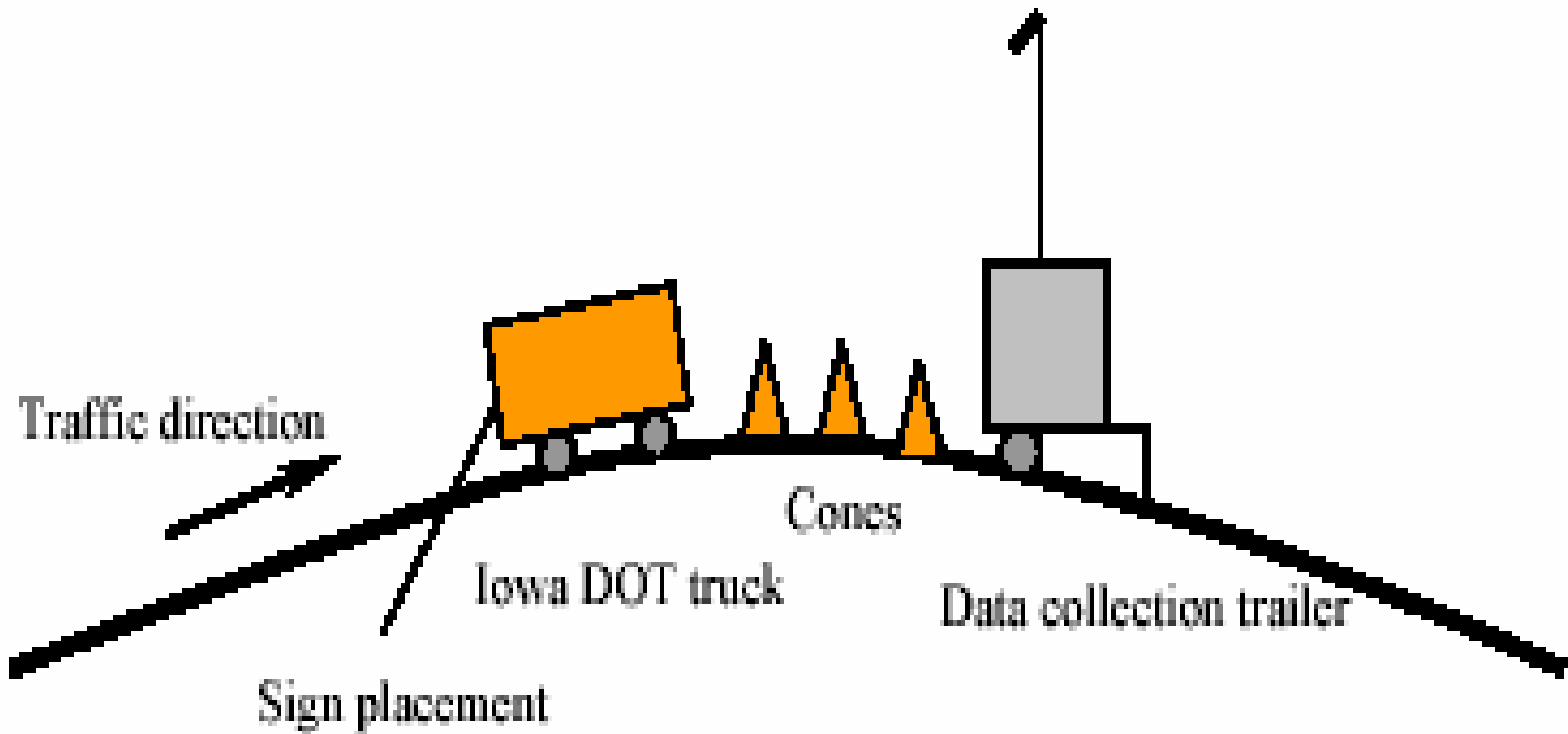


Resultant Sign



Evaluation Methodology

Traffic Performance Measurement





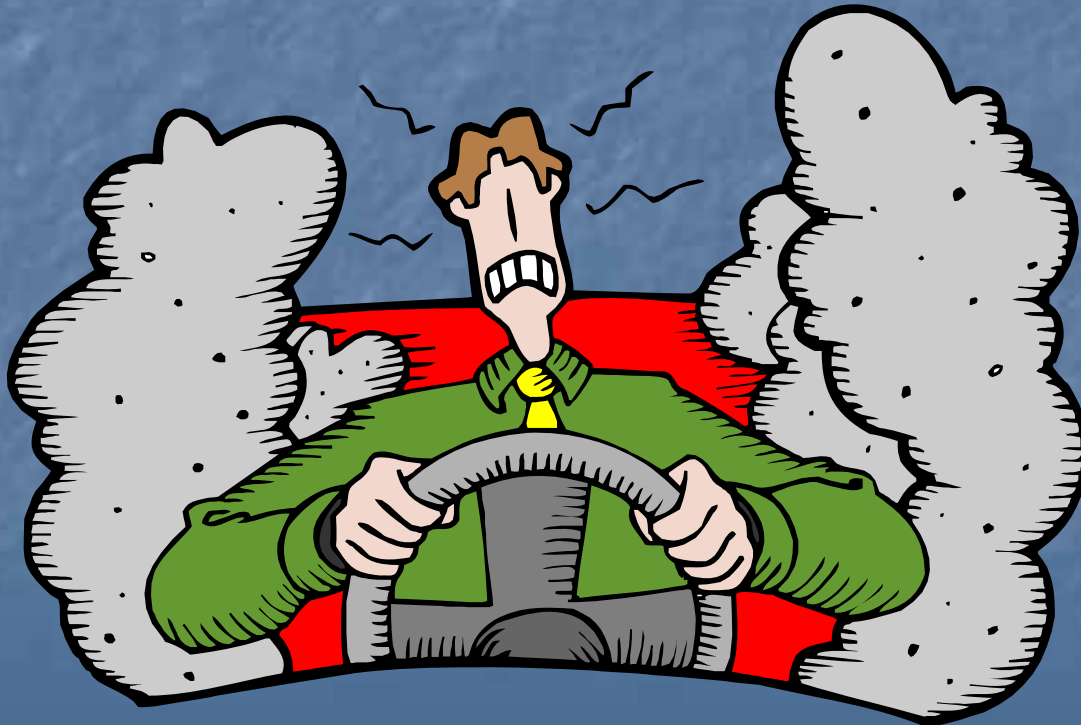
Vehicle Placement

Data Collection

- Seven sites selected
 - 4 on Interstate 35
 - 3 on 4 lane divided primary, US 30
- July 7 -19, 2001
 - 42 hours in 7 days (new location daily)
 - ½ with FYG backing, ½ without

Evaluation Methodology

- Driver Survey



RESULTS

Table 3. Combined Traffic Volume

Site	Total Traffic Volume		Right Lane Proportion (%)	
	Before	After	Before	After
US 30 - 161	1,678	1,706	18	13
I-35 - 118	2,979	4,566	16	17
I-35 -101	6,374	5,498	21	19
US 30 - Boone	668	753	7	8
Total	11,699	12,523	19	17

Statistically Significant??

$$t = \frac{p_b - p_a}{\sqrt{p_0 q_0 \left(\frac{1}{n_b} + \frac{1}{n_a} \right)}}$$

where

$$p_0 = \frac{p_b n_b + p_a n_a}{n_b + n_a}$$

$$q_0 = 1 - p_0$$

n_a and n_b = total number of vehicles observed after and before the background placement, respectively

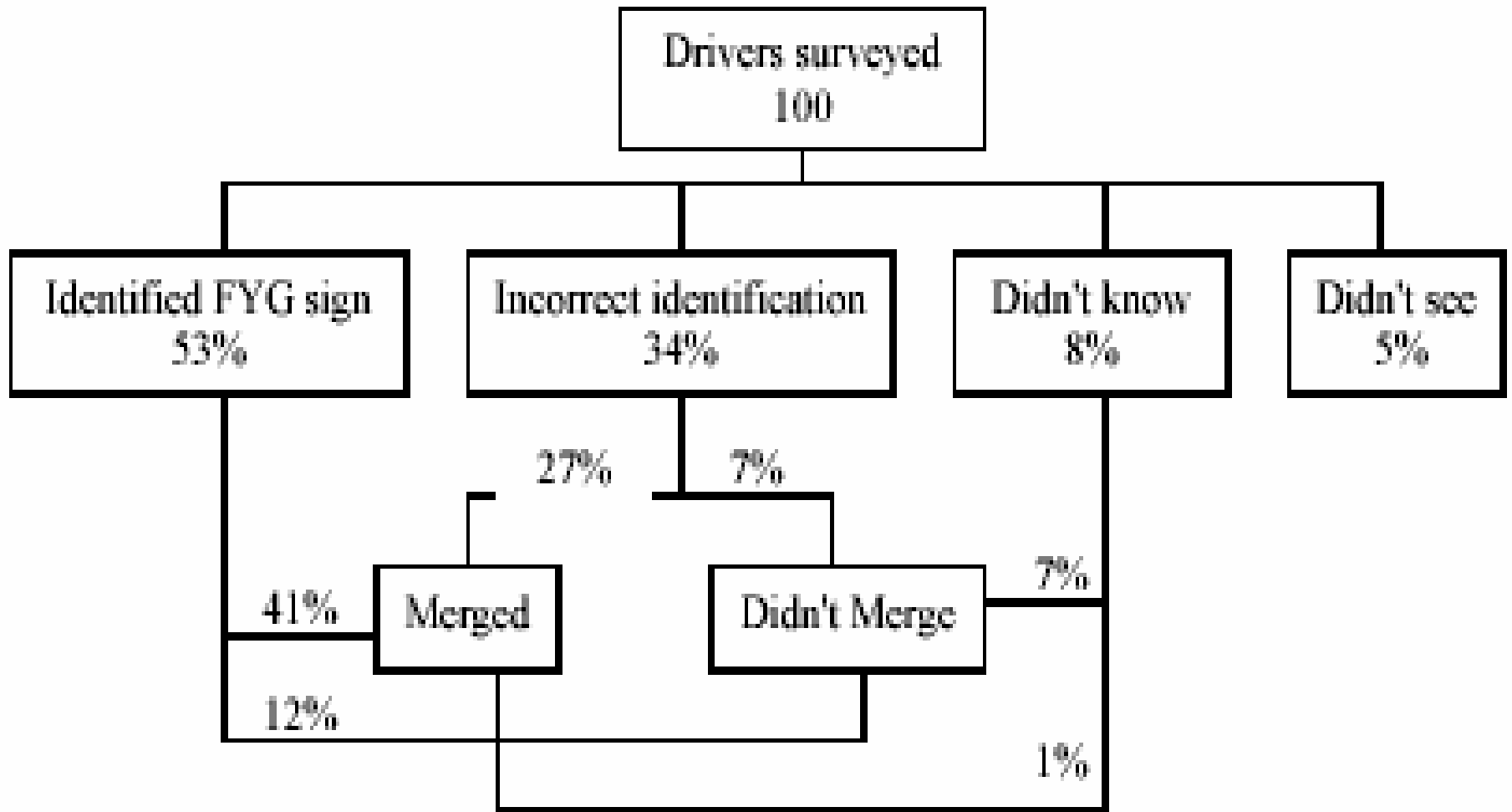
p_a and p_b = percent of vehicles observed after and before the background placement, respectively

t- Statistics

Site	<i>t</i> -statistic	Significant (95%)
US 30 - 161	3.87	Yes
I-35 - 118	-1.03	No
I-35 - 101	3.19	Yes
US 30 - Boone	-0.79	No
Total	3.86	Yes

($t > \sim 1.96$ % significant)

Driver Surveys



CONCLUSIONS

- CLEAR CONTRAST CREATED
- RIGHT LANE VOLUMES REDUCED
- > HALF OF SURVEYED DRIVERS SAW THE FYG BACKED SIGN

LIMITATIONS

- Observations of lane change too close
- Artificial work zone, stationary vs. mobile

*Human factors study on FYG signing
nearing completion in Kansas
-results soon*

STATUS IN IOWA

- Common use in many Interstate and some primary road applications, 124 deployed
- Moving operations and specific signs only
- Perception of benefit by workers
- Heavy and difficult to handle

ROAD
WORK
AHEAD.

3 12:23 PM



ROAD
WORK
AHEAD

3 12:23 PM

QUESTIONS ??