Improving Highway Work Zone Safety

Final Report

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ABSTRACT

Highway work zones disrupt normal traffic flow and can create severe safety problems. Due to the rising needs in highway maintenance and construction in the United States, the number of work zones is increasing nationwide. With a total of 1,010 fatalities and more than 40,000 injuries occurring in 2006, improvements in work zone safety are necessary. The three primary objectives of this research project included: 1) to determine the effectiveness of a Portable Changeable Message Sign (PCMS) in reducing vehicle speeds on two-lane, rural highway work zones; 2) to determine the effectiveness of a Temporary Traffic Sign (TTS), (W20-1, "Road Work Ahead"); and 3) to determine motorists' responses to the signage. To accomplish these objectives, field experiments were conducted at US-36 and US-73 in Seneca and Hiawatha, Kansas, respectively. During the field experiments, an evaluation of the effectiveness of the PCMS was conducted under three different conditions: 1) PCMS on; 2) PCMS off, but still visible; and 3) PCMS removed from the road and out of sight. The researchers also divided the vehicles into three classes (passenger car, truck, and semitrailer) and compared the mean speed change of these classes based on three different sign setups: PCMS on, PCMS off, and the use of the TTS (W20-1, "Road Work Ahead"). A survey was also conducted at the experimental work zones to obtain a general understanding of the motorists' attitudes as they traveled through the construction areas. Based on the data analysis results, researchers concluded that the presence of the PCMS effectively reduced vehicle speeds on two-lane highway work zones. A slow speed is more likely to reduce the probability of a crash or the severity of a crash. In addition, researchers performed a univariate analysis of the variance test to determine if a significant interaction existed between motorists' responses and the sign

conditions. The results showed a significant interaction between the signs and passenger car vehicles.

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CHAPTER 1 – INTRODUCTION

1.1 Problem Statement

For decades, safety within highway work zones has been a major concern of engineers, government agencies, the highway industry, and the public. More than 40,000 people are injured each year as a result of work zone crashes (Fars 2006). In 2006, 466 severe crashes were reported in Kansas work zones alone, leaving 15 killed and 659 injured. These numbers contributed to an overall increase of 43% compared to 2005 in the total number of fatalities and injuries in Kansas (KDOT 2007). Over the last 10 years, the annual number of people killed in work zone crashes has increased by 45%, up to 1,010 in 2006 (FARS 2006). Figure 1.1 shows the fatality rate from 1982 to 2006.

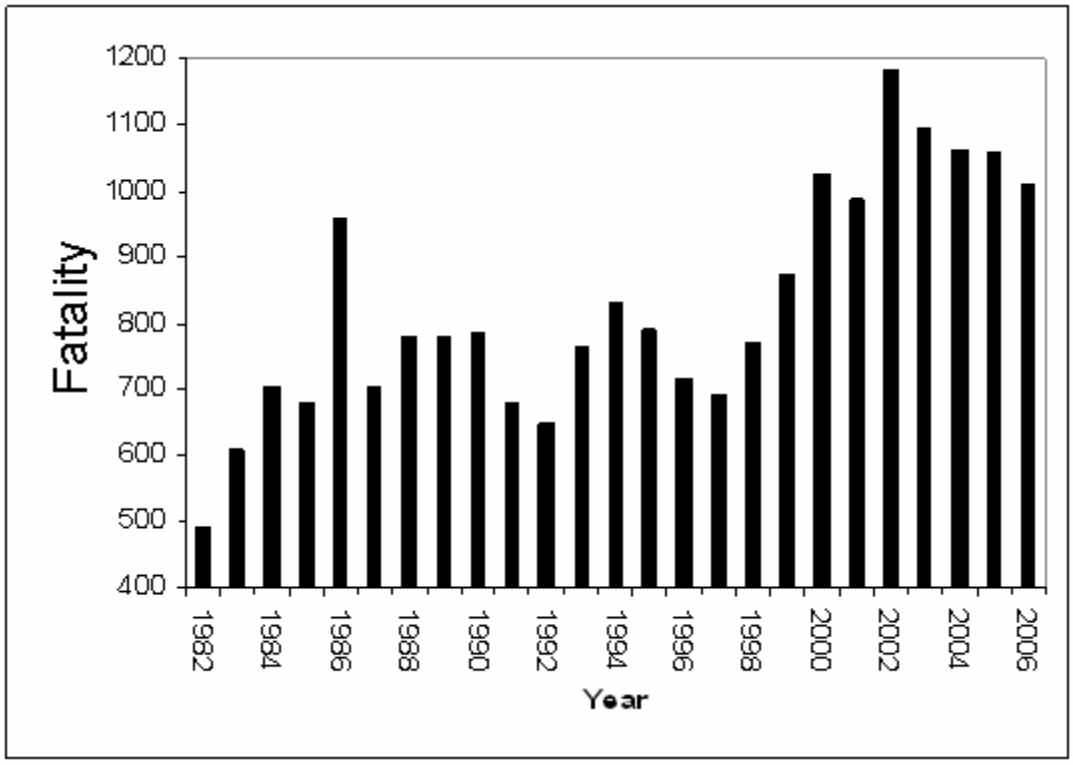


Figure 1.1: Histogram of Fatality (FARS 2006)

In addition, the United States is one of the leading countries in spending for highway maintenance and construction. Based on crash data from 1995 to 1997, the direct cost of highway work zone crashes escalated as high as $6.2 billion per year, an average cost of $3,687 per crash (Mohan and Gautam 2002).

Since the 1960s, researchers have been studying work zone safety (Mohan and Gautam 2002). A significant number of relevant studies have been published to unveil safety problems and to propose safety improvements in work zones (Bai 2002, Bai and Cao 2003, Schrock et al. 2004, Li and Bai 2008a). Work zone safety is affected in large part by the type of vehicles passing through a work zone. Benekohal and Shim (1999) found that 90% of surveyed tractor-trailer truck drivers considered traveling through a work zone to be more dangerous than driving under normal conditions. Driver precaution is also an important factor in the safety of motorists and construction workers in work zones. Excessive vehicle speeds, variation of speeds between different vehicles, driver inattention, and erratic maneuvers are some of the factors that have been extensively cited as the main causes of traffic crashes in highway work zones (Zech and Mohan 2008; Daniel et al 2000; Fontaine and Carlson 2001; Hall and Lorenz 1989; Ha and Nemeth 1995; Migletz et al 1999; Wang et al 1996; Bai and Li 2006; Bai and Li 2007; Bai and Li 2008).

Researchers are most concerned with reducing traffic speeds in work zones, and believe speed reductions will ultimately be the most effective in reducing crashes and fatalities (Zech and Mohan 2008). In order to reduce vehicle speeds, the signage system has been enhanced and studies of speed control measures have been conducted. With the growth of technology, using new equipment and adapting to new procedures have been utilized to improve the efficiency of work zones.

Though researchers have published numerous studies on various safety-related work zone concerns, there are still numerous issues to be resolved and practices to be improved upon. Safety in two-lane, rural highway work zones is one such issue and the focus of this study. This report presents the results of a field study conducted on two rural highway work zones in Kansas (US-36 and US-73) in order to evaluate the effectiveness of Portable Changeable Message Signs (PCMS). This traffic device was used as a speed control measure under three conditions: 1) PCMS on; 2) PCMS off, but still visible; and 3) PCMS removed from the road and out of sight. Researchers also evaluated the effectiveness of temporary traffic control (TTC) devices based on motorists' responses to the signs; motorists were placed in one of three vehicle classes including passenger car, truck, and semitrailer in order to better evaluate the vehicle speeds.

1.2 Report Organization

This report is organized as follows:

1. Introduction. The introduction chapter presents the general problem statement of the research and a brief description of the report organization.
2. Literature review. Relevant findings from a comprehensive literature review are synthesized in this chapter. Topics of the review include: impact of CMS on work zones, effectiveness of speed control measures in rural work zones, classification and safety countermeasures using PCMS in work zones, and use of the survey method in work zones. The content studied in the literature review provides the background information for this research project.
3. Research objective, scope, and methodology. The primary objective, scope, and methodology of this research project are defined in this chapter.

4. Field experimental design. This chapter describes the field experiments conducted during the research project, as well as the devices used for data collection. A description of the survey questionnaire is also provided.
5. Data collection. This chapter describes the data collection procedures, as well as the collected vehicle speed data and survey data.
6. Data analysis. The analyses of the collected speed data and survey data are included in this chapter. The chapter begins with the methodology of data analyses and then proceeds with the detailed analysis results of both speed data and survey feedback collected during the field experiments.
7. Conclusion and recommendation. Based on the results of this research project, conclusions and recommendations on the effectiveness of the PCMS, the feasibility of utilizing this traffic control device, and its implementation are provided in this chapter.

CHAPTER 2 – LITERATURE REVIEW

2.1 Introduction

Work zone safety is a major issue across the United States. A national study found that fatal crash frequencies and average fatalities per crash were higher in work zones, especially those on rural highways which accounted for 69% of all fatal crashes (AASHTO 1987). Another study found that accident rates on highways were 7-119% higher in work zones than roads without any construction (Wang et al 1996). With the increased probability of crashes and fatalities in work zones and the rising number of work zones across the nation, it is vital that work zone safety increase.

Numerous studies have been conducted on the subject of work zone safety. According to the Manual on Uniform Traffic Control Devices (MUTCD), a work zone is divided into four areas: the advance warning area, the transition area, the activity area, and the termination area (FHWA 2003). Previous studies agree that an unbalanced distribution of crashes occur within these four areas; however, different studies have declared each work zone area the most dangerous. For example, the advanced warning area (Pigman and Agent 1990), the activity area (Garber and Zhao 2002; Schrock et al 2004), the transition area, and the termination area (Nemeth and Migletz 1978; Hargroves 1981) have all been identified as the most dangerous work zone area in terms of severe crash frequency.

2.2 Traditional Work Zone Traffic Control Methods and Effectiveness

Highway work zones use temporary traffic control (TTC) devices to provide continuity of reasonably safe and efficient traffic flows during road work. As indicated in the MUTCD

(FHWA 2003), TTC devices commonly used in work zones include flaggers, traffic signs, arrow panels, portable changeable message signs, channelizing devices, pavement markings, lighting devices, temporary traffic control signals, and rumble strips. A review of these traffic control methods and their related studies is presented herein.

A typical work zone on a two-lane highway occupies one lane for roadwork while the other remains open for incoming traffic from both directions. This type of work zone is assembled for a short duration (a few hours to several days) and requires frequent movement due to roadwork progress. Thus, safely coordinating and guiding two-way traffic through the work zone is crucial. These one-lane, two-way work zones typically utilize traffic control devices such as flaggers and pilot-cars to control traffic flows and provide safety for travelers and highway workers. According to MUTCD, such work zones may require the proper implementation of the following traffic control methods (FHWA 2003):

Configuration of flagger control. Flaggers are qualified personnel wearing high-visibility safety apparel and equipped with hand-held devices such as STOP/SLOW paddles, lights, and red flags to direct vehicles through work zones. The MUTCD suggests that flaggers should be located at the work zones in order to allow incoming vehicles a sufficient distance to stop at an intended stopping point. Flaggers should be preceded by an advance warning sign or signs and should also be illuminated at night. When a one-lane, two-way work zone is short enough to allow a flagger to see from one end of the work zone to the other, a single flagger may be used to control traffic. For relatively long work zones, a flagger at each end of the work zone is necessary. These flaggers should be able to communicate with each other orally, electronically, or with manual signals. In addition, flaggers should coordinate traffic so that vehicles from one

end of the work zone do not proceed until vehicles from the opposite direction have traveled through the work zone. Figure 2.1 shows a flagger in control of the traffic.

Figure 2.1: Flagger position in the work zone

A study (Richard and Dudek 1986) revealed that flaggers are most efficient on two-lane, two-way rural highways and urban arterials where they are able to attract the majority of drivers' attentions. Flaggers are also well-suited for short-duration applications (less than one day) and for intermittent use at long-duration work zones. Garber and Woo (1990) concluded that the most effective combinations of traffic control devices for work zones on multilane highways are cones, flashing arrows, and flaggers. They found that the most effective combinations of traffic control devices for work zones on urban two-lane highways are cones and flaggers, and static signs and flaggers. Hill (2003) proved that flaggers were effective in reducing fatal work zone crashes. However, the study by Benekohal ea al. (1995) indicated there was a need for

improving flagging for heavy truck traffic. Their survey showed that one third of the surveyed truck drivers believed the flaggers were hard to see; half of them thought the directions of the flaggers were confusing. Recent evaluations (Li and Bai 2008b) showed that the presence of flaggers in work zones could lower the odds of fatalities caused by severe crashes by 56%.

Proper use of pilot vehicle. A pilot car may be used in a one-way, two-lane work zone to guide a queue of vehicles. The operation of a pilot vehicle should be coordinated with flagging operations or other controls at each end of the work zone. A "PILOT CAR FOLLOW ME" sign should be mounted on the pilot vehicle at a prominent location. The vehicle may also turn on its emergency lights and additional flashers to improve its visibility.

Other traffic signs and signals. In addition to flaggers and pilot vehicles, other supplemental traffic control methods used in one-lane, two-way work zones include traffic control signals and STOP or YIELD traffic signs. When conditions allow (e.g., when the signs and signals are sufficiently visible to approaching vehicles and drivers are able to see the opposite end of the work zone), these methods may also be used independently for traffic control.

As listed in the MUTCD, traffic signs in work zones include regulatory signs, warning signs, and guide signs. Regulatory signs inform road users of traffic laws or regulations and indicate the applicability of legal requirements that would not otherwise be apparent. Most regulatory signs are rectangular with a black legend and border on a white background. Warning signs notify road users of specific situations or conditions on or adjacent to a roadway that otherwise might not be apparent. Common warning signs are diamond-shaped with a black legend and border on a yellow background and are placed in advance of work zones. Guide signs along highways provide road users with information to help them through work zones.

Traffic signs in work zones are important in informing travelers about interrupted traffic conditions. A survey indicated that 50% of surveyed truck drivers wanted to see warning signs 3-5 miles in advance of a work zone (Benekohal et al. 1995). Garber and Woo (1990) found that static traffic signs could effectively reduce crashes in work zones on urban two-lane highways when used with flaggers. However, Li and Bai (2008b) found that stop signs in work zones could triple the odds of crashes caused by "following too closely."

Arrow Panels and Portable Changeable Message Signs. An arrow panel is a sign with a matrix of elements capable of either flashing or sequential display. A portable changeable message sign is a message sign with the flexibility to display a variety of messages. Arrow panels and portable changeable message signs usually contain luminous panels with high visibility that makes them an ideal traffic control supplement during both day and night.

Many studies have been conducted on the development, use, and effectiveness of changeable message signs (CMS) in reducing speeds and informing traffic of an upcoming work zone. Various studies have shown that CMS are more effective than traditional traffic control devices in reducing the number of speeding vehicles in work zones (Garber and Patel 1994, Garber and Srinivasan 1998, Brewer et al. 2006). However, Richards and Dudek (1986) state that CMS could result in only modest reductions (less than 10 mph) when used alone, and the devices would lose their effectiveness if operated continuously for long periods with the same message. Another evaluation (Dixon and Wang 2002) showed that changeable message signs with radar effectively reduced vehicle speeds in the immediate vicinity of the sign. But once again, vehicles tended to return to their original speeds after passing the signs. Huebschman et al. (2003) argued that changeable message signs are actually no more effective than traditional message panels.

Channelizing Devices. Channelizing devices are used to warn road users of changed traffic conditions in work zones and to safely and smoothly guide travelers through work zones. Channelizing devices include cones, tubular markers, vertical panels, drums, barricades, and temporary raised islands. Results of a study (Pain et al. 1983) showed that most channelizing devices were effective in alerting and guiding drivers, but the devices only obtained their maximum effectiveness when properly deployed as a system or array of devices. Garber and Woo (1990) however, found that the use of barricades in any combination of traffic control devices on urban multilane highways seemed to reduce the effectiveness of other traffic control devices.

Temporary Pavement Markings. Temporary pavement markings are maintained along paved streets and highways in all long- and intermediate- term stationary work zones. In addition, temporary raised pavement markers and delineators are used sometimes to supplement pavement markings to highlight travel paths. Pavement markings can be used to control speeds. A traffic control strategy using modified optical speed bars to meet the conditions of highway work zones has been applied to control speeds in work zones. Optical speed bars are an innovative speed control technique that use transverse stripes spaced at gradually decreasing distances on pavement to affect a driver's perception of speed. Meyer (2004) conducted a study to evaluate the effectiveness of this strategy in reducing work zone speed in Kansas. Results of the study showed that the speed bars had both warning and perceptual effect, and were effective in controlling speeds and reducing speed variations.

Lighting Devices. Lighting devices are used based on engineering judgment to supplement retroreflectorized signs, barriers, and channelizing devices. The four types of lighting devices commonly used in work zones are floodlights, flashing warning beacons,

warning lights, and steady-burn electric lamps. These devices attract drivers' attentions and can illuminate work zones or warn drivers of the complicated travel conditions throughout the day and night. It was recommended that properly aimed and aligned lighting was important for nighttime work zone setup in order to avoid glare (Cottrell 1999). Some studies (Huebschman et al. 2003; Arnold 2003) found that using flashing warning lights, especially the flashing lights of police vehicles, was one of the most effective approaches for reducing speeds in work zones.

Temporary Traffic Control Signals. Temporary traffic control signals are typically used for conditions such as temporary one-way operations in work zones with one operable lane, as well as work zones containing intersections. The MUTCD suggests that temporary traffic control signals should be used in accordance with other traffic control devices such as warning and regulatory signs, pavement markings, and channelizing devices. In addition, temporary traffic control signals should be designed and placed in connection to other traffic control signals along the roadway. Those signals not in use should be covered or removed. Some analyses of fatal crashes in work zones showed that certain temporary traffic control signals, such as STOP/GO signals, were very effective in reducing fatal crashes in work zones (Hill 2003).

Rumble Strip. Rumble strips consist of intermittent, narrow, transverse areas of rough-texture or slightly raised or depressed road surface that extend across travel lanes to alert drivers of unusual traffic conditions through noise and vibration. Longitudinal rumble strips are rough-textured road surfaces located along the shoulder to alert road users that they are leaving the travel lanes. Two types of temporary transverse rumble strips were tested by Horowitz and Notbohm (2005). Test results showed that the rumble strips with a depth of 0.25 in. were as effective as cut-in-pavement rumble strips when vehicles traveled at 55mph. The rumble strips with a depth of 0.75 in. were effective for vehicles traveling at a speed between 10 and 40 mph.

Another evaluation (Meyer 2006) of temporary rumble strips revealed that properly designed strips could be easily installed and reinstalled. The disassembly of these rumble strips was not extremely difficult and could be completed by individual workers. A study by Fontaine and Carlson (2001) showed a reduced percentage of passenger cars that exceeded the 70 mph speed limit due to the implementation of rumble strips.

2.3 Research and Development Trends in Work Zone Safety

This section presents an overview of some relatively new technologies and methodologies that have benefited or could benefit work zone safety practice and research. Mitchell et al. (2005) conducted a study in a laboratory environment to assess the validity of using a driving simulator to determine the effectiveness of several speed control techniques in highway work zones. The AMOSII simulator from Doran Precision Systems, Inc. used in the study was operated from one control station and networked with five individual computers. The study simulated a work zone with three different conditions: no speed control, rumble strips placed in advance of the lane closure taper, and narrow traffic lane through the work zone. Through the statistical analysis of the data obtained from the simulations, the researchers found that the narrow-lane scenario was effective in reducing vehicle speed through entire work zones. The placement of rumble strips appeared to be effective only in the transition area, but not in the work activity area where construction workers were exposed to traffic.

The new technology of CMS is gaining widespread popularity in many jurisdictions. The Ontario Ministry of Transportation (OMT) is one location where CMS are widely employed. More than 41 CMS have been installed on the highways to provide drivers with AMBER alerts

and warnings of upcoming traffic conditions such as congestion, construction, incidents, or travel time information.

According to the MUTCD (FHWA 2003) for streets and highways, a CMS is a sign that is capable of displaying more than one message and can be changed by manual, remote, or automatic control. These signs are referred to as Dynamic Message Signs (DMS) in the National Intelligent Transportation Systems (ITS) Architecture. DMS are commonly used to indicate traffic flow, weather, speed limits, individual speed, alternative-route guidance systems, and highway conditions to drivers. DMS could also be referred to as PCMS if the DMS are portable and can easily be transferred from one location to another. Most research tests the effectiveness of DMS under a simulated driving environment rather than real life situations (Miller 2007 and Miller et al 2008). Few investigations have focused on the effectiveness of DMS based on the reduction of vehicle speed in a work zone environment. CMS have become an integral part of work zone traffic control, advising motorists of unexpected traffic and routing situations. The following section briefly reviews research of CMS used in work zones in order to reduce crashes and improve work zone safety.

Zech, Mohan, and Dmochowski (Zech and Mohan 2008) measured the effectiveness of three commonly used CMS messages in reducing vehicle speeds and speed variance in highway work zones. They conducted a field study on Interstate 90 in western New York State and recorded speed measurements of nearly 180,000 vehicles. The three types of CMS messages tested in the study were: (1) RIGHT|LANE|CLOSED ~ KEEP|LEFT; (2) WORK ZONE|MAX SPEED|45 MPH ~ BE|PREPARED|TO STOP; and (3) LEFT|LANE|CLOSED ~ KEEP|RIGHT. Of the CMS messages tested, the second CMS message proved the most effective, significantly reducing vehicle speeds by 3.3-6.7 mph (5.3-10.8 km/h). This research revealed that properly

selected CMS messages can be significantly effective in reducing speeds of all classes of vehicles in highway work zones.

Fontaine and Carlson (2001) evaluated the effectiveness of speed displays and portable rumble strips in reducing vehicle speeds. The field studies were conducted in four sites in the Childress District in Texas. All four sites were rural-maintenance work zones on low-volume, two-lane roads with 112.7 km/h (70 mph) speed limits. Fontaine and Carlson found that the speed display effectively reduced vehicle speeds. Passenger car speeds were between 2 and 9 mph (3.2 and 14.5 km/h) lower in the advance warning area of the work zone than with only normal traffic control devices present. Also, speed displays appeared to produce a greater speed reduction in commercial trucks than in passenger cars. Speeds were 3-10 mph (4.8-16.1 km/h) lower with the speed display for trucks in the advance warning area of the work zone.

Garber and Srinivasan (1998) conducted a research project using a CMS equipped with a radar unit on highways in Virginia. The CMS was placed within the work area at the beginning of the lane taper. Four different messages were evaluated during the course of the study, and researchers found that the message "YOU ARE SPEEDING. SLOW DOWN" was the most effective. They also concluded that the CMS equipped with a radar unit was effective for work zones with long durations.

Benekohal and Shu (1992) observed the effectiveness of placing a single CMS in advance of work zones. Although the speed reductions were statistically significant in general, they were not practically significant for speed reduction in trucks. However, for some automobiles exceeding the speed limit, the CMS was able to reduce vehicle speed by 20 %.

Ullman (1991) evaluated the effectiveness of using radar transmissions to reduce speeds without visible enforcement. Results showed that the radar signal generally reduced speeds by 3

mph (4.82 km/h) and had a greater effect on commercial trucks than cars. Jackels and Brannan (1988) conducted a similar study using a radar-controlled speed sign. The study revealed that the 85th percentile speeds were reduced from 68 to 58 mph (109.3 to 93.26 km/h) with the installation of the static signs. The installation of the radar-controlled speed sign reduced the 85th percentile further to 53 mph (85.22 km/h).

2.4 Semitrailers and Safety in Work Zones

The frequent involvement of heavy trucks in work zone crashes is a major work zone safety concern. Studies have found that the percentage of crashes involving trucks are much higher in work zones (AASHTO 1987, Pigman and Agent 1990). Studies have also found that crashes related to heavy trucks were more likely to involve multiple vehicles and frequently resulted in fatalities and large monetary loss (Pigman and Agent 1990, Schrock et al. 2004).

2.5 Use of Survey Method in Work Zones

Surveys are useful in highway research projects to understand drivers' perceptions of work zone conditions. Benekohal et al. (1995) conducted a statewide opinion survey of 930 semi-trailer truck drivers to study their concerns about traffic control in Illinois work zones. The survey contained questions about the drivers' assessment of work zones and the traffic control devices and their suggestions for improving traffic flow and safety in work zones. Researchers found that 90% of the surveyed truck drivers considered driving through work zones more hazardous than in other areas because of the frequent occurrence of crashes. A portion of the drivers also suggested that the traditional warning signs were not explicitly clear and that more

signs should be added to work zones. In addition, approximately half of the drivers wanted to see a warning sign 3 to 5 miles in advance of the work zones.

Surveys are also useful in evaluating the effectiveness of traffic control devices in work zones. Bushman and Berthelot (2005) used a survey to evaluate the effectiveness of the ITS system utilized in two work zones in North Carolina. Results of the analyses of 333 completed and returned questionnaires revealed that most motorists agreed that the work zones with this system provided more up-to-date information of the traffic conditions. Most motorists also believed that the information provided by the ITS was accurate, or at least accurate 95% of the time. In addition, over 95 % of motorists supported the future use of these types of systems. The results of this study proved that drivers acknowledged the benefits of the ITS in work zones.

A survey (Arnold, 2003) was also conducted in Virginia to evaluate the effectiveness of using policemen as a traffic control method in work zones. The survey was distributed to the personnel in the Virginia Department of Transportation (VDOT), Virginia State Police (VSP), and VMS, Inc. Based on the analyses of the results of the survey, the researchers concluded that the presence of policemen and police cars with flashing lights in highway work zones was undoubtedly effective in controlling driving speed and alerting inattentive drivers. The results also revealed that VSP had been cooperating well with VDOT in meeting the goal of controlling traffic in work zones.

Though there has been a substantial amount of studies published on work zone safety, particularly in the areas of CMS use and vehicle type causality of crashes, questions remain. A vast majority of studies have focused their efforts on the interstate highway system and rural primary roads; only a small number of studies have been devoted to two-lane, rural highways. Few of these studies have attempted to evaluate CMS or focus on vehicle size. This study

evaluates the effectiveness of a portable changeable message sign (PCMS) and a temporary traffic sign (TTS).

CHAPTER 3 – RESEARCH OBJECTIVES AND METHODOLOGY

3.1 Objectives

The three primary objectives of this research included: 1) to determine the effectiveness of PCMS in reducing vehicle speeds on two-lane, rural highway work zones; 2) to determine the effectiveness of a TTS, W20-1 ("Road Work Ahead"); and 3) to determine motorists' responses to the signage. The effectiveness of the PCMS was evaluated under three different conditions: 1) PCMS switched on; 2) PCMS switched off, but still visible; and 3) PCMS removed from the road and out of sight.

3.2 Methodology

The objectives of this research were achieved through the following steps.

Step 1: Literature review. Researchers first conducted a comprehensive literature review to gather background information for the study. As presented in Chapter 2 of this report, researchers synthesized findings from previous studies on topics including: the impact of CMS, the effectiveness of speed control measures in rural work zones, safety countermeasure using PCMS in work zones, crash statistics, and use of the survey method in work zones.

Step 2: Assessing the Effectiveness of PCMS to uncover motorists' responses to the warning signs. Two methods utilized during the field experiments were used to measure the effectiveness of the PCMS in the work zones. One method was to compare the changes in vehicle speeds with and without the PCMS. The vehicle speeds were measured by two Wavetronix SmartSensor HD Model 125 sensor systems under three cases, including: 1) a

comparison of speeds captured when the PCMS was turned on and turned off; 2) a comparison of speeds captured when the PCMS was turned on and when the device was removed from the road; and 3) a comparison of speeds captured when the PCMS was turned off and when the device was absent from the highway. If vehicle speeds decreased significantly in the comparison of these cases, researchers could conclude that the PCMS impacted drivers' behaviors.

The second method was to survey those drivers who travelled through the work zones under one of the three conditions: 1) PCMS on; 2) PCMS off, but still visible; and 3) PCMS removed from the road and out of sight. Under the third condition, drivers were warned of the upcoming work zone only with the presence of a TTS (W20-1, "Road Work Ahead"). The research team developed a questionnaire and surveyed drivers to determine if the PCMS impacted their driving behaviors. To uncover motorists' responses to the warning signs, researchers divided the vehicles into three classes (passenger car, truck, and semitrailer) and compared the mean speed change of the vehicle classes based on the three different sign conditions mentioned above.

Step 3: Data analysis. The collected speed data and returned surveys were carefully analyzed using statistics methods such as t-test, univariate analysis of variance test (ANOVA test), and frequency analysis. In addition, drivers' responses to the survey questions were analyzed to determine the positive and negative implications regarding the potential implementation of the PCMS and temporary traffic sign.

Step 4: Conclusion and recommendation. Conclusions of the effectiveness of PCMS and drivers' responses to the warning signs were reached based on the data analysis outcomes. Recommendations for the potential implementation of the device and future research needs were also outlined.

The remainder of the report is organized as follows. Authors will first describe the field experimental design (Chapter 4), followed by data collection (Chapter 5) and data analysis (Chapter 6). Conclusions and recommendations will then be presented in Chapter 7.

CHAPTER 4 – FIELD EXPERIMENTAL DESIGN

To achieve the objectives of this research, field experiments were conducted in two work zones in Kansas. This chapter describes the field experimental design, including the experimental device and installation, speed data collection, experimental site selection, and development of the survey questionnaire.

4.1 Experimental Device and Installation

Vehicle speeds were collected by two SmartSensor HD Model 125 radar sensor systems. The SmartSensor HD is capable of collecting vehicle speeds up to ten lanes and uses microwave radar technology to detect speeds with minimal influence from environmental conditions (TxDOT 2007). Table 4.1 summarizes the major technical data of a SmartSensor HD Model 125.

Table 4.1: Fact Sheet of SmartSensor HD Model 125

Category	Description
Installation	Relatively easy installation procedure. It can be mounted on an existing pole that provides proper height and distance.
Configuration	Auto configuration, low requirement for human adjustments.
Detection Range	Up to 10 traffic lanes, 6 to 250 ft.
Data Storage	Flash memory-based data storage.
Data Downloading	Wireless or cable downloading.
Operating Environment	Temperature: -40^{o}C to 75^{o}C; Humidity: up to 95% RH.
Maintenance	Minimum maintenance required.

Source: Wavetronix LLC. (2007). "SmartSensor 125 Cut Sheet." http://www.wavetronix.com/support/smartsensor/125/documents/SS125_CutSheet.pdf. (Oct. 20, 2007).

Each radar system used in the field experiments of this study included the following components:

- One SmartSensor HD Model 125 unit including power and data cables
- One set of solar panels that charged two 12-volt batteries
- One equipment/battery cabinet - this cabinet housed the central control panel for the SmartSensor and the solar battery set
- One laptop computer for data collection, monitoring, and downloading
- One set of 12-foot temporary mounting posts assembled by a seven-foot top, a six-foot base, and three supporting anchors

As illustrated in Figure 4.1, the SmartSensor HD was mounted on the mounting post approximately 12 feet above the ground and installed 8 to 12 feet away from the travel lane. This distance provided a relatively safe lateral clearance for the equipment and the researchers from the passing traffic. In addition, this distance also complied with the manufacturer-recommended installation requirements. Field tests demonstrated that this installation configuration enabled accurate speed collection, especially when the speeds of the passing vehicles were greater than 20 mph.

A 40-foot cable connected the SmartSensor HD with the central control panel located in the cabinet. This cable also delivered the speed data to the data ports in the control panel. Two 12-volt batteries were stored in the cabinet which could provide the required power to the sensor for eight consecutive days. To monitor real-time data collection and data processing, a laptop computer was connected to the central control panel in the cabinet through a RS232 9-pin straight-through cable or a USB converter. In addition, the sensor was required to have horizontal and vertical orientations and lane setup (direction, lane width, and lane location) for

each installation to ensure proper function. One of the SmartSensor HD speed detection systems is shown in Figure 4.1. Figure 4.2 is a close up of the SmartSensor HD.

Figure 4.1: SmartSensor HD system

Figure 4.2: SmartSensor HD close up

Although the SmartSensor HD system has functions such as data storage and wireless data downloading, a laptop computer and two researchers were employed in a real-time basis during the data collection procedure due to the nature of this research project. It was necessary to differentiate the speed comparison analyses between the different conditions and setups tested. Therefore, each speed datum collected by the sensor had to be clearly verified with the proper judgment of the speed corresponding to the speed passing by. The data also had to be labeled under which of the three PCMS conditions the vehicle speeds were collected. As a result, a laptop computer and real-time human supervision were needed so that the measured speeds could be identified and then properly characterized.

In addition to the two radar sensor systems, the main test equipment of this research was the PCMS. Researchers rented the PCMS model SMC1000 by Precision Solar Controls from NES Traffic Safety in Eldorado, Kansas. The dimensions of the PCMS panel are 6.5 feet tall by 10 feet wide. The message of the PCMS changed from “SLOW DOWN” to “DRIVE SAFELY”

every three seconds. The PCMS was placed on the shoulder of the highway approximately 3 feet from the road on the side of the highway where drivers approached the work zone. Since the PCMS was located between the two sensors, the effectiveness of the PCMS was analyzed by the change in vehicle speed that occurred between the sensors. Figure 4.3 is the PCMS used in this experiment.

Figure 4.3: PCMS used for field experiments

Vehicle speeds were collected in the following fashion. The first sensor measured the speed of the vehicle approaching the work zone. Then, a second sensor recorded the same vehicle's speed after the driver had passed the PCMS located between the first and second

sensor. The speed data were transferred to the laptop. Researchers recorded the time difference between the two laptops and verified the speed of the car from the first sensor in order to match the vehicle's output by the corresponding laptop. Researchers had to verify each setup before running the experiments.

4.2 Speed Data Collection and Experimental Site Selection

A key element for an accurate speed measurement was the proper location of the speed detection equipment. The placement of the sensor was at a location that would help to better understand the drivers' reactions and deceleration behaviors. Assuming the PCMS was effective, motorists approaching the work zone would drive more cautiously. Presumably, drivers would 1) begin reducing their speeds earlier; 2) reduce their speeds more rapidly; or 3) decelerate their vehicles both earlier and more rapidly. Any of the three reactions would result in a lower speed at a certain stage during the deceleration process.

The success of the experiments greatly depended on the capture of the vehicle speeds at a location where pronounced speed differences would occur given the PCMS was effective. For this research, the SmartSensor HD was placed at the highway location where vehicles would decelerate to a speed of 45 mph when entering the work zone from a 65 mph speed limit.

In order to collect the speed data of the vehicles, two sensors were utilized. The first sensor (Sensor 1) was installed 1,050 feet from the first TTS with the message *Road Work Ahead*. The second sensor (Sensor 2) was installed 550 feet from the first TTS. The PCMS was located between the two sensors and was 200 feet away from Sensor 2. The design of the sensors, PCMS, and the first TTS is shown in Figure 4. This layout was used for test condition 1

(PCMS on) and 2 (PCMS off, but still visible). The experimental layout remained the same for test condition 3 (PCMS absent) except there was no PCMS present as shown in Figure 4.5.

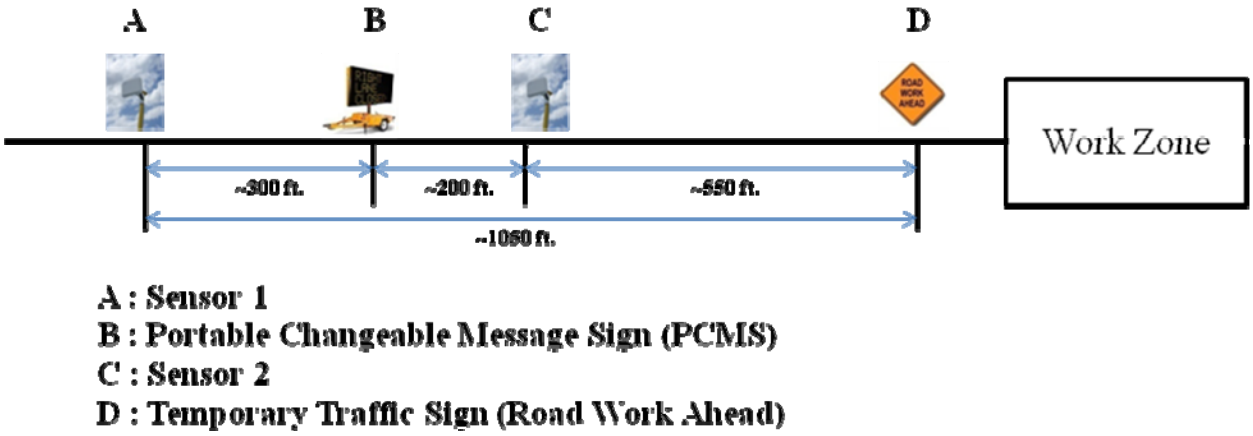


Figure 4.4: Experimental layout for test conditions 1 and 2

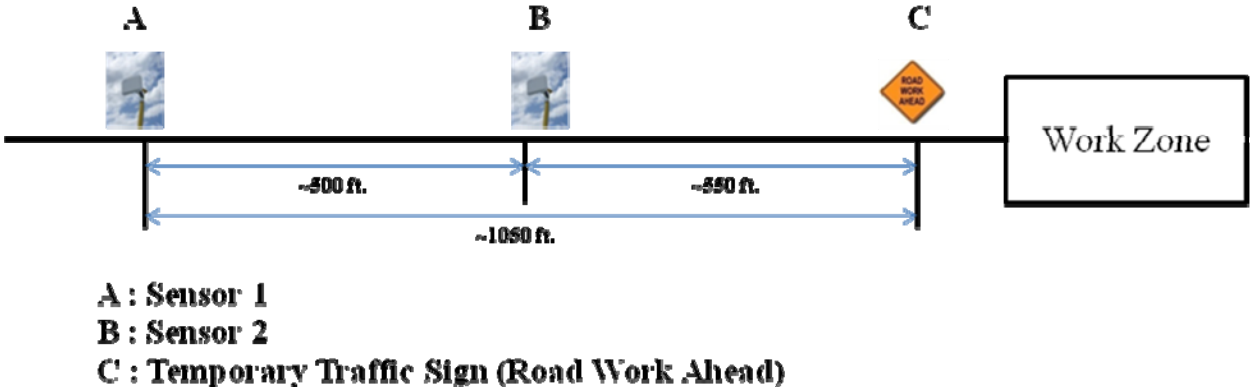
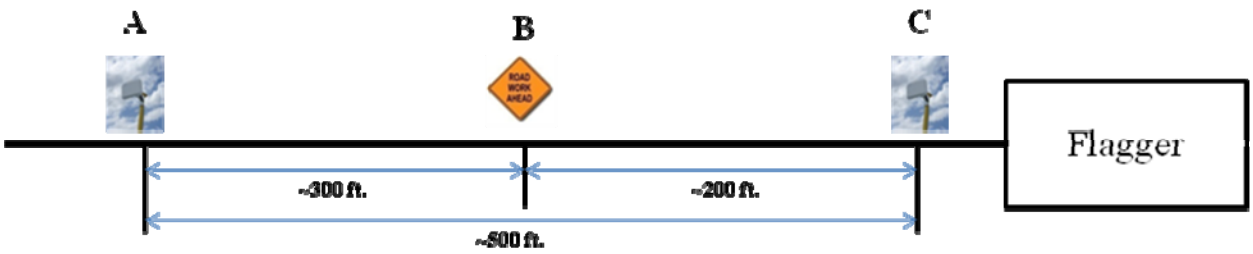


Figure 4.5: Experimental layout for test condition 3

To test the motorists' responses to the warning signs, researchers created three different sign setups: 1) PCMS on, 2) PCMS off, and 3) TTS (W20-1, "Road Work Ahead"). The first and second setups are similar to conditions 1 and 2 in Figure 4.4 and 4.5, respectively. In the

third setup, the first sensor was located near the first TTS (W20-1) in the advanced warning zone. Sensor 1 was placed 300 feet away from the first TTS and 200 feet away from Sensor 2. Figure 4.6 shows the third setup in detail.



A : Sensor 1
B : Temporary Traffic Sign (Road Work Ahead)
C : Sensor 2

Figure 4.6: Location of sensors in work zone for setup 3

The field experiments were conducted at two site locations. These sites were appointed to the researchers by the KDOT Seneca office. The one-lane, two-way work zones on rural two-lane highways with speed limits of 65 mph were selected. Other than availability, the two work zones were selected for two major reasons: roadway type and work zone configurations.

In general, the traffic flows on urban two-lane roadways are considerably affected by factors such as high traffic volume and traffic signals. The speed limits of these highways are typically low (i.e. lower than 55 mph). Rural highways, on the other hand, do not have these limitations and were suitable for this study. Work zones with multiple open lanes do not require traffic to stop, and consequently may not suffer as severely from rear-end collision problems as one-lane, two-way work zones where complete stops are required for through traffic. In addition, one-lane, two-way work zones that require traffic stops give researchers an ideal opportunity to conduct driver surveys.

Traffic characteristics, exclusively traffic volume, were critical factors for the success of this study. During experiments, flaggers asked drivers to stop for approximately 10 to 15 minutes to wait for the pilot vehicle to lead traffic from the opposite direction. This delay increased traffic and affected the experiment if the traffic volume of the road was high. Therefore, it was necessary for the traffic volume of the study work zone to be moderate. Fortunately, the traffic volume of the experimental work zones was extremely low and researchers were able to collect enough data for analysis.

The first selected work zone was located on highway US-36 between K-87 and K-63, as shown in Figure 4.7. This work zone was a two-lane highway section with a speed limit of 65 mph in north Kansas between Marysville and Seneca. The traffic volume for US-36 was 3,630 vehicles per day (vpd). The construction project took place in early June of 2008 and was a paving (chip and seal) operation used to rehabilitate the roadway surface. The project required one traffic lane to be closed to overlay the pavement while the other lane was kept in service. A flagger was used at each end of the work zone for traffic control and a pilot vehicle was employed to guide through traffic, as shown in Figure 4.8. Two stop locations at each end of the work zone were moved approximately 3 to 4 times per day, depending on weather conditions and project progress. Experiments were conducted at this work zone from June 3, 2008 to June 6, 2008.

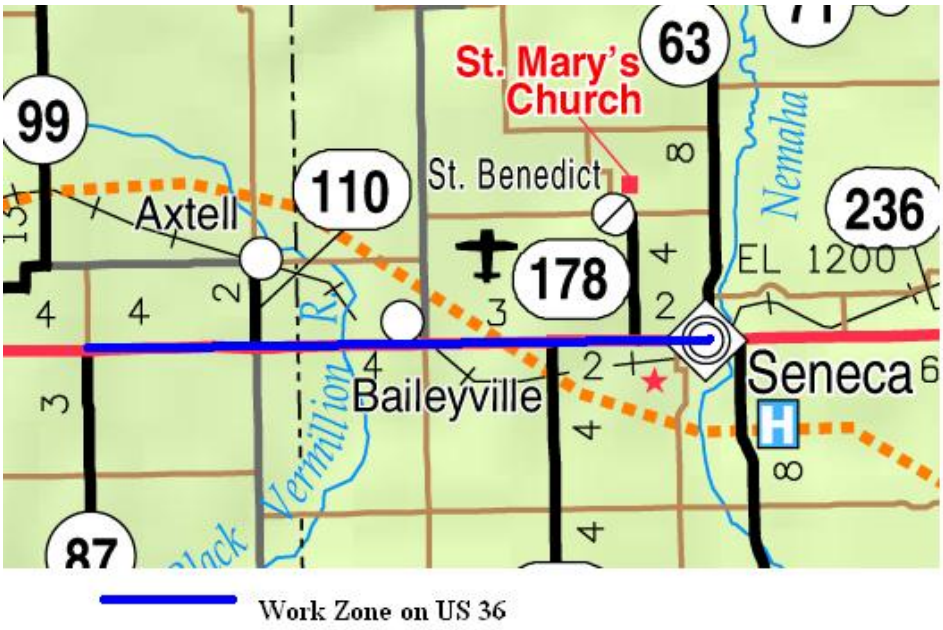


Figure 4.7: Work zone on US-36 between K-87 and K-63

Figure 4.8: A pilot car at the US-36 work zone

The second selected work zone was located on US-73 between US-36 and K-20, as shown in Figure 4.9. This work zone was a two-lane highway section with a speed limit of 65 mph located in northeast Kansas between Horton and Hiawatha. The annual average daily traffic along the highway section was approximately 3,400 vehicles per day. A paving operation was also occurring in this work zone in order to rehabilitate the roadway surface. A flagger was used to control traffic at each end of the work zone and every major highway entrance. Two stop locations at each end of the work zone were moved 3 or 4 times per day depending on the weather and project progress. A pilot car was utilized to guide traffic safely through the work zone. Experiments were conducted at this work zone from June 9, 2008 to June 11, 2008.

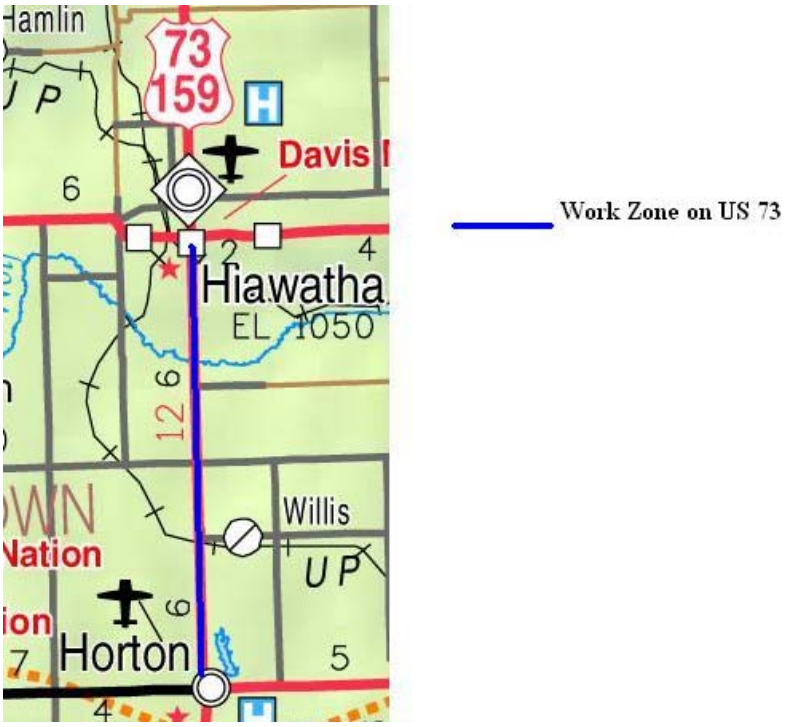


Figure 4.9: Work zone on US-73 between Hiawatha and Horton

4.3 Development of Survey Questionnaire

Prior to entering the work zone, traffic was required to stop at a flagger location to wait for a pilot car. Drivers had to wait approximately 13 minutes for the pilot car to return from the opposite direction. Surveys were conducted during this waiting period, which allowed for an unhurried administration of the survey and enough time for drivers to provide thoughtful answers to the questions.

The survey questions focused primarily on the attitudes and behaviors of motorists while driving through the work zone. Drivers' perceptions of posted and non-posted signs regarding work zone conditions were also inquired. Results from this survey may be used to develop future empirical studies of motorists' perceptions and attitudes of work zone signage.

Given the limited time between the arrival and departure of motorists at the flagger location, the survey was designed to take no more than 3 to 5 minutes to complete. All vehicles except motorcycles and large semi-trucks were surveyed. Under no conditions were other motorists disqualified from the survey. Drivers had the option of declining to participate in the survey when approached by researchers at the flagger location. Motorists were informed that no personal information was recorded and were asked to be as honest as possible with their responses. The survey was divided into 3 parts: demographics, attitudes, and miscellaneous. An example of the survey form is included in (APPENDIX I) of this report and the questions included are described in the following section.

Attitudes

Question 1: Have you exceeded a work zone speed limit?

This was a yes-no question. If the motorist answered "yes," further questions were asked to understand the driver's reasons for speeding. If the motorist responded "no," Question 2 was omitted.

Question 2: What is the most common reason you might speed in a work zone?

This question was designed to understand motorists' reasons for speeding in a work zone. To achieve a more focused answer, responses were limited to the following options: 1) Driving with flow of traffic; 2) Work zone seemed inactive; 3) Did not see work zone; 4) In a hurry; and 5) Speed limit seemed inappropriate.

Question 3: What is the second most common reason you might speed in a work zone?

This question is an extension of the previous question. Motorists had to choose their second best reason for speeding from the same responses provided in Question 2.

Question 4: Have you ever carefully obeyed the speed limit in a work zone?

This was a yes-no question. If the motorist answered "yes," further questions were asked to better understand the driver's reasons for speeding. If the motorist answered "no," Questions 5 and 6 were omitted.

Question 5: What is the most common reason you are likely to obey the speed limit in a work zone?

This question sought to understand the attitudes of motorists who follow the posted speed limits in work zones. Motorists were asked to choose from the following responses: 1) Driving with flow of traffic; 2) Observed worker activity; 3) Motivated by warning signs; 4) Presence of police; and 5) Speed limit seemed appropriate.

Question 6: What is the second most common reason you are likely to obey the speed limit in a work zone?

This question is an extension of the previous question. Motorists had to choose their second best reason for obeying the speed limit from the same responses provided in Question 5.

Question 7: Rank the following signs as FIRST and SECOND most effective for encouraging safe work zone driving.

The following signs in Figure 4.10 were used to solicit motorists' responses to Question 7. This question was designed to investigate the effectiveness of signs that evoke certain emotions, such as fear.

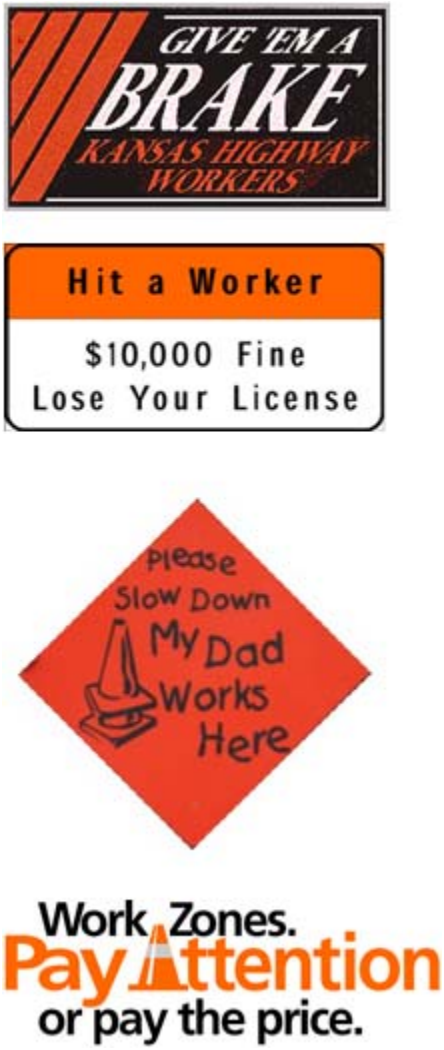


Figure 4.10: Sign used to solicit motorist response

The first 2 signs, “Give ’Em a Brake” and “Hit a Driver,” were fairly familiar to motorists in the survey region as they are often displayed on Kansas and Missouri highways. The other 2 signs were not from the region; thus, the possibility of novelty may have caused motorists to be more sensitive to these signs.

Question 8: Which of these signs did you see on the way into the work zone?

The signs in Figure 4.11 were used to investigate whether motorists were paying attention to the signs as they approached the work zone.

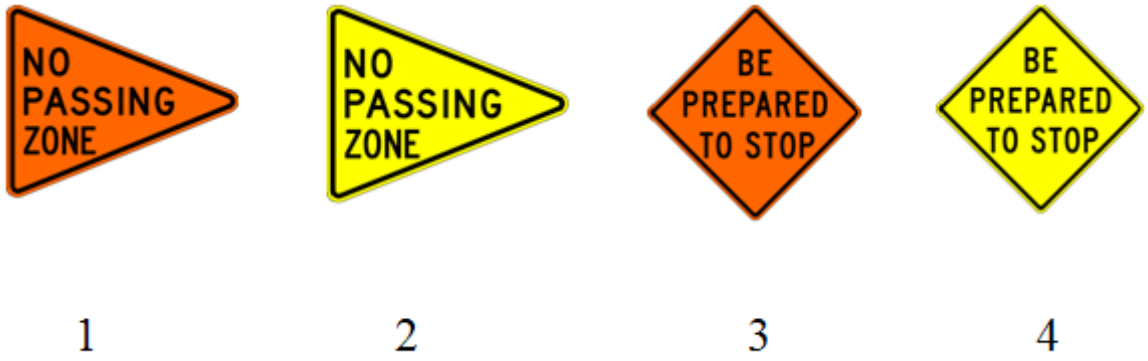


Figure 4.11: Signs used to investigate whether motorists were paying attention

Miscellaneous

Question 1: About how many work zone-related accidents occurred in 2006 in the State of Kansas?

This question was designed to gauge motorists’ baseline of knowledge regarding work zone related accidents. Individuals who underestimate the baseline may make poor decisions while driving in work zones. Possible answers included: 1) About 100; 2) About 500; 3) About 2000; and 4) About 5000. (KDOT – Kansas Traffic Accident Facts).

Question 2: How many work zone-related fatalities occurred in 2006 in the State of Kansas?

This question gauged the motorists' knowledge of work zone safety. Possible answers included: 1) None; 2) Around a dozen; 3) Around two dozen; and 4) Over two dozen.

Question 3: Would presenting this information in a work zone encourage you to drive more cautiously?

This was a simple yes-no question designed to understand motorists' perceptions of signs that provide statistical information of work zone-related accidents.

In addition to the above questions, the survey also included fields that recorded demographic information such as gender and age. The duration of the motorists' driving trips was also requested. This information served as a means to compare possible group differences between motorists.

CHAPTER 5 – DATA COLLECTION

5.1 Data Collection Procedure

5.1.1 Vehicle Speed Measurement

The research team conducted the experiments in two rural highway work zones in Seneca and Hiawatha, Kansas. While construction operations were underway, the two lane highways were reduced to one lane, two-way work zones. These operations required a Temporary Traffic Control (TTC) device to coordinate vehicles entering the work zones. When the normal function of the roadway is suspended, TTC provides continuity of motor vehicle movement (FHWA 2003). Inside the TTC zone, Temporary Traffic Signs (TTS) guided the vehicles through and toward the flagger station where vehicles were stopped in order to wait for the pilot car. The layout of the work zone is shown in Figure 5.1. The experimental location was located 550 feet away from the first TTC in order to avoid disturbing the traffic control device and to exclusively test the PCMS.

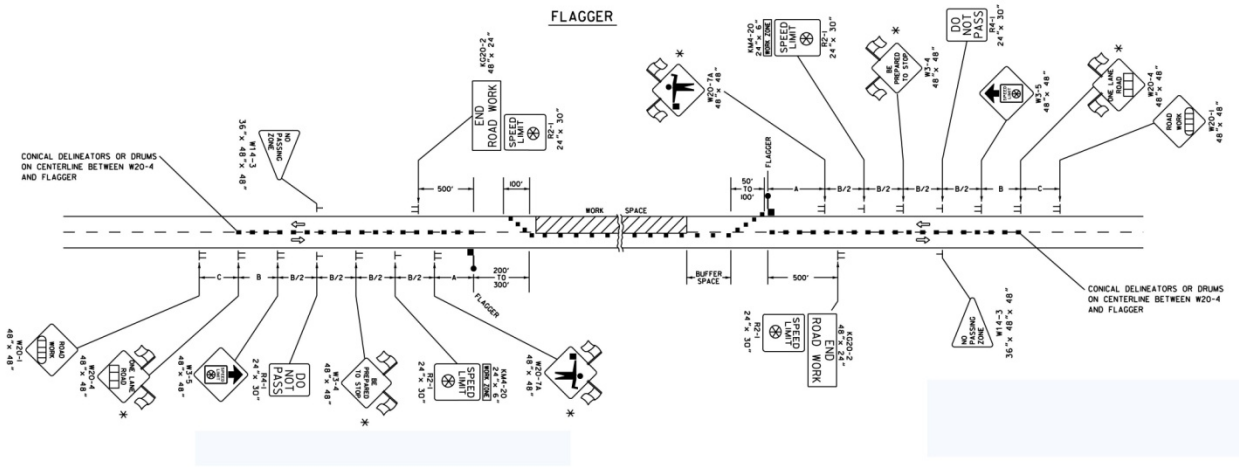


Figure 5.1: Work zone layout on US-36 and US-73

When the speed of a passing vehicle was captured, the speed detector sent the speed datum to the connected notebook computer in real time and the computer displayed the speed on a graphic interface that simulated the passing vehicle labeled with its speed. A research assistant examined each speed datum displayed on the computer, recorded those that were incorrectly detected, and made notes for researchers to discard the incorrect data. Factors other than the considered work zone conditions occasionally interfered with vehicles and caused the data to be incorrect. External factors included the interference of pedestrians, low-speed farm vehicles, or construction-related vehicles operating at a very low speed or slowing in response to the upcoming work zone conditions. In addition, a valid speed (the speed of a vehicle collected when the PCMS was employed) occurred only when the vehicle speed in Sensor 1 matched the corresponding vehicle speed in Sensor 2. The speeds were matched by verifying the difference of the computer times and drawing a correlation between the data from Sensor 1 and Sensor 2.

5.1.2 Driver Survey

Four research assistants, A, B, C and D, were employed in the work zones to collect data. Research assistants A and B were positioned near Sensor 1 and Sensor 2 while assistant C assisted A and B with preliminary setup and troubleshooting of the software. Assistant C was responsible for communicating to the rest of the researchers whether the PCMS was on or off.

Driver surveys were distributed by research assistant D in coordination with the rest of the team. Once cars were fully stopped at the flagger location, assistant D approached the motorist with the survey. A survey was considered complete if all the questions were answered before the car departed. Figure 5.2 shows assistant D conducting a survey.

Figure 5.2: A research assistant conducting a driver survey

5.2 Collected Datasets

5.2.1 Vehicle Speed Data

The sensors produced raw data files in a text file (.txt file) and classified the data by lanes, length of vehicle, speed, vehicle class, range, date, and time as shown in Figure 5.3. Appendix II presents the entire speed data file. The raw data collected from the field experiments went through an extensive screening and analysis process. The raw data was first thoroughly screened by matching individual vehicle data points recorded on Sensors 1 and 2. Any vehicle that did not have a corresponding data point from both sensors was discarded. In addition, a data point was discarded from the data population if accurate vehicle length, speed, or

any other value was not recorded by one of the sensors, regardless if there were two corresponding data points. Finally, any data point that recorded a vehicle speed under 20 mph was omitted from the data set because the sensors were unable to properly record speeds under 20 mph according to sensor specifications. Through this initial data screening and analysis, the raw data was condensed and sorted before using a statistical analysis program to perform further calculations and analysis.

```
#########################################################################
#                                                                       #
#             DATE         : June 03, 2008                              #
#             SERIAL NUMBER: SS125 U100000378                           #
#             DESCRIPTION  : SS125 ITS Radar                            #
#             LOCATION     : US-36                                      #
#             ORIENTATION  : North                                      #
#_______________________________________________________________________#
#           |          |       |         |         |      SENSOR TIME      #
# LANE      | LENGTH   | (MPH) | CLASS   | RANGE   | YYYY-MM-DD HH:MM:SS.sss #
#           |          |       |         |         |                       #
#########################################################################
  LANE_01       76       48       4         36     2008-06-03 10:28:50.200
  LANE_01       45       38       3         35     2008-06-03 10:30:35.195
  LANE_01       20       37       2         37     2008-06-03 10:31:30.457
  LANE_01       21       47       2         38     2008-06-03 10:31:48.408
  LANE_01       22       49       2         37     2008-06-03 10:31:56.469
  LANE 01       19       46       1         37     2008-06-03 10:33:07.094
```

Figure 5.3: Example of the text file

Table 5.1 shows a portion of the speed datasheet from Sensor 1 and Appendix II presents the entire speed data from Sensor 1 and Sensor 2. In addition to the vehicle speeds, the datasheet also included the following relevant traffic variables:

1. Sensor 1: Indicates whether Sensor 1 or Sensor 2 provided the data. Table 5.1 includes a portion of the data from Sensor 1.
2. Lane: This is a variable indicating the lane which the vehicle has passed by. The SmartSensor HD has the capability of capturing up to 10 lanes. For this project, experiments were conducted in two-lane work zones.

3. Length: This variable indicates the vehicle length detected by the SmartSensor HD.
4. MPH: This variable is the detected speeds of the vehicles as they passed the sensors.
5. CLASS: This variable indicates the type of vehicle passing the sensors. Vehicle classes included passenger cars, trucks, and semi-trailers. A vehicle's length corresponded to its class.
6. RANGE: This is a secondary variable used to verify the classification of the data in the initial data collection.
7. YYYY-MM-DD: This variable indicates the year, month, and day of the experiment.
8. HH:MM: SS.SSS: This variable indicates the time when the vehicle passed the sensor. Researchers used this variable to match data from Sensor 1 to Sensor 2.

Table 5.1: A Portion of the Speed Datasheet

Sensor 1						
LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
LANE_01	15	15	1	20	6/13/2008	11:17:56
LANE_01	27	19	2	19	6/13/2008	12:36:39
LANE_01	17	27	1	19	6/13/2008	12:46:00
LANE_01	19	31	1	18	6/13/2008	11:11:58
LANE_01	21	31	2	20	6/13/2008	11:15:29
LANE_01	22	32	2	22	6/13/2008	11:53:22
LANE_01	17	34	1	20	6/13/2008	11:02:09
LANE_01	18	34	1	18	6/13/2008	11:11:54
LANE_01	23	35	2	20	6/13/2008	10:45:09

A successful experimental trial depended on both sensors to collect the vehicle speeds during the experiment. A total of 976 vehicle speed data were collected. Of these, 358 vehicle speed data were captured with the PCMS on, 435 were collected with the PCMS off, and 183 were collected when the PCMS was removed from the highway. Table 5.2 shows the list of data collected from US-36 from June 2 to June 6, 2008 and from US-73 from June 9 to June 13, 2008.

Table 5.2: Speed Data by Different Experimental Conditions

Work Zone	Speed Limit (mph)	PCMS ON	PCMS OFF	Without PCMS
US-36	65	358	435	31
US-73	65	0	0	152
Total		358	435	183

5.2.2 Driver Survey Data

The initial survey design called for combined data sets, but due to on-site changes to the work zone, separate data sets were created for each work zone. The US-36 work zone followed protocol and presented all of the necessary signage; however, US-73 failed to display the orange "No Passing Zone" sign on the left side of the roadway. A diagram of the work zones is presented in Figure 5.5, with the missing sign from US-73 marked by a square. Note that this is only a partial representation of the work zones where the surveys were conducted. This is an important point, and will be discussed in greater detail in Chapter 6. Therefore, a total of 89 surveys at the US-36 work zone and 53 surveys at US-73 work zone were completed. The completed surveys were compiled in a datasheet (Appendix III). Questions with multiple responses appear as multiple columns in the datasheet to accommodate all responses.

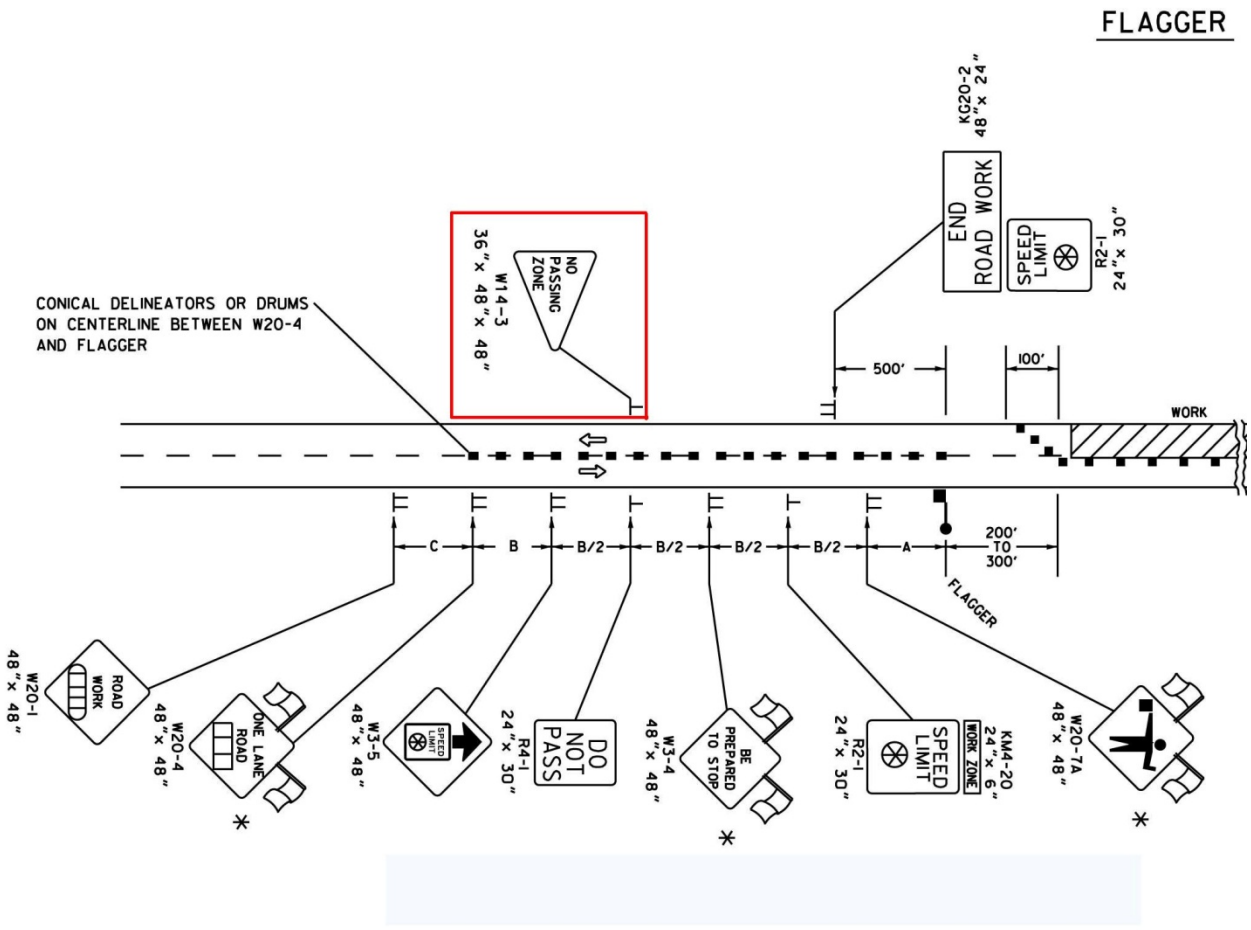


Figure 5.4: Schematic of work zone with missing sign at US-73 marked out.

CHAPTER 6 – DATA ANALYSIS

6.1 Data Analysis Methodology

The effectiveness of the PCMS and the TTS was first assessed based on the comparison tests. If the vehicle speeds evidently changed in favor of safety at the speed collection locations after the PCMS or TTS was present, researchers concluded that both signs were effective in one-lane, two-way work zones. In addition, the effectiveness of the PCMS and TTS was further evaluated based on the responses of driver surveys distributed in these work zones. The frequency analysis method was used for the analyses of the speed data and driver surveys. The major task that needed to be accomplished in the analyses of speed data was the evaluation of the change in vehicle speeds, which is briefly described in the following section.

6.1.1 Change in Vehicle Speeds

Researchers sorted the data collected from Sensor 1 and Sensor 2 based on each individual vehicle. The data collected for each experimental condition followed the normal distribution. Figures 6.1, 6.2, and 6.3 show the graphs of the normally distributed data for each condition.

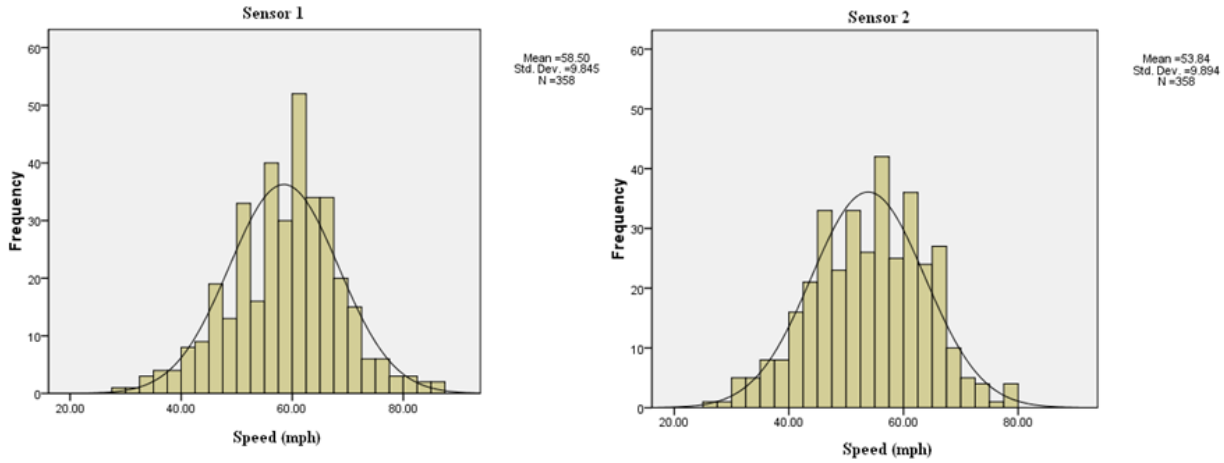


Figure 6.1: Data distributions of Sensors 1 and 2 when PCMS on

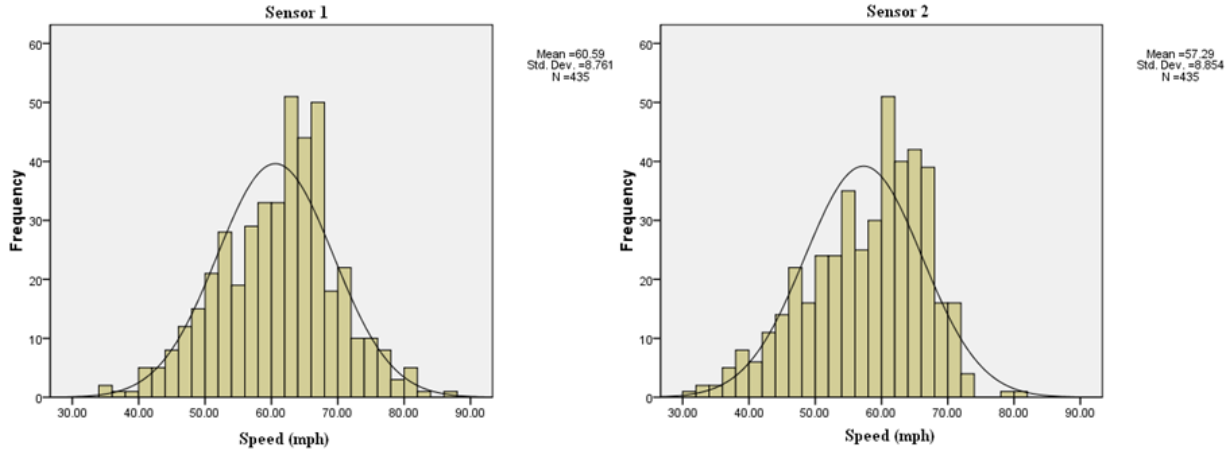


Figure 6.2: Data distribution of Sensors 1 and 2 when PCMS off

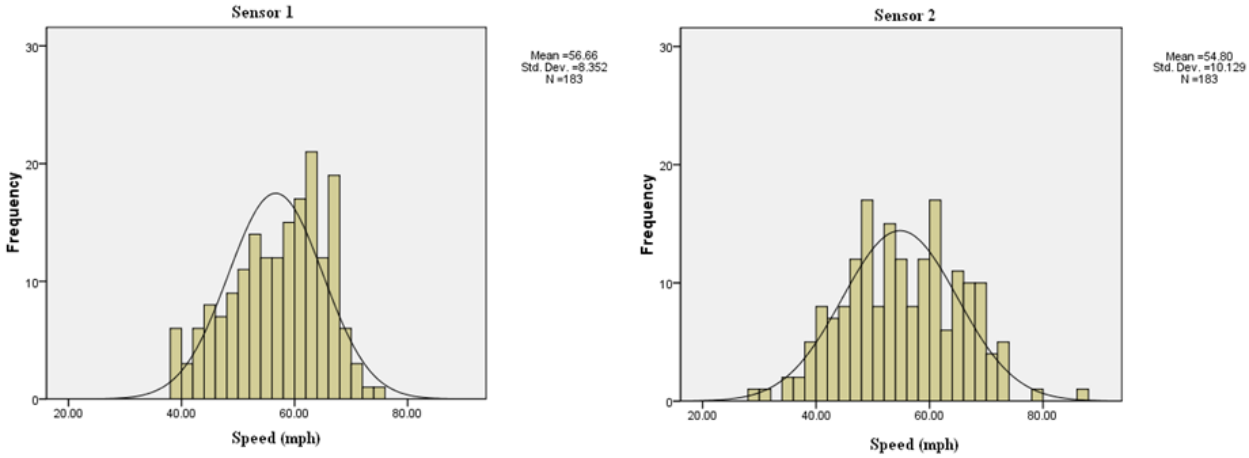


Figure 6.3: Data distribution of Sensors 1 and 2 when PCMS absent

Due to the normal distribution, sample t-tests were performed to test for any significant effects. The two-sample t-tests were developed to statically compare two population means based on the hypothesis test. Researchers defined 3 comparison analyses to test the three PCMS conditions as shown in Table 6.1. A more detailed explanation is presented in the comparison analysis section of this report.

Table 6.1: Three Conditions and Data Information

Conditions	Mean PCMS ON		Mean PCMS OFF		Without PCMS	
Speed Limit	Sensor 1	Sensor 2	Sensor 1	Sensor 2	Sensor 1	Sensor 2
65 mph	58.50	53.84	60.59	57.29	56.65	54.79
Speed Reduction	*4.66*		*3.30*		*1.86*	
Reduction Percent	*7.97%*		*5.45%*		*3.28%*	

6.2 Comparison Analysis

The effectiveness of the PCMS was measured based on the correlation of the vehicle speed change or the difference in speeds from Sensor 1 and Sensor 2 under the three PCMS conditions. The important tasks that were accomplished in the analyses of speed data include: 1) analyses of the vehicle speed difference between Sensor 1 and Sensor 2 when the PCMS was turned on and off; 2) a comparison of the change in vehicle speeds when the PCMS was on and when the PCMS was removed from the highway; and 3) a comparison of the change in vehicle

speed when the PCMS was off and when the PCMS was absent from the road. There are a number of ways to compare and analyze the effectiveness of the PCMS. One of the data analyses that researchers discovered was the mean from Sensor 1 was greater than the mean from Sensor 2 under all three experimental conditions. This could be due to the drivers' awareness of the road conditions when the PCMS was either on or off and researchers were present on the side of the road. However, since researchers wanted to test the effectiveness of the PCMS under three specific conditions, including the mean speed difference from Sensor 1 and Sensor 2 when the PCMS was both on and off, the interference from the other sources was neglected and assumed had little influence on drivers.

6.2.1 Comparison between PCMS on and off

The amount of data collected (population) from the sensors when the PCMS was on and off was 358 and 435, respectively. Under the first condition of PCMS on, Sensor 1 recorded a mean vehicle speed of 58.5 mph with a standard deviation of 9.85. Sensor 2 recorded a mean vehicle speed of 53.84 mph with a standard deviation of 9.89. These values clearly show a 7.97 %, or 4.66 mph, speed reduction from Sensor 1 to Sensor 2. The minimum value and the maximum value from Sensor 1 to Sensor 2 also show a decreasing pattern. Table 6.2displays detailed statistical values for the first condition of PCMS on.

Table 6.2: Statistical Value for Condition 1

PCMS ON	Sensor 1	Sensor 2
Population	358	
Mean	58.5	53.84
Median	59	54
Standard Deviation	9.85	9.89
Min	29	26
Max	85	79
Reduction	4.66	
Percent Reduction	7.97%	

Under the second condition of PCMS off, researchers wanted to see if the blank device would cause vehicle speeds to increase due to a belief that the work zone was inactive, or if vehicle speeds would decrease due to the mere presence of the traffic control device. A recent study shows that the misapplication of PCMS in work zones commonly causes confusion and anxiety in drivers (Helmuth 2002). The statistic values when the PCMS was turned off also indicate a decreasing pattern, but not as large as when the PCMS was turned on. The mean speed reduction for Sensor 1 was 60.59 mph with a standard deviation of 8.76. Sensor 2 had an average speed reduction of 57.29 with a standard deviation of 8.85. The percent reduction is 5.45 % as indicated in Table 6.3.

Table 6.3: Statistical Value for Condition 2

PCMS OFF	Sensor 1	Sensor 2
Population	435	
Mean	60.59	57.29
Median	62	59
Standard Deviation	8.76	8.85
Min	35	30
Max	86	80
Reduction	3.3	
Percent Reduction	5.45%	

"Case 1" is the first comparison analysis which compares the mean speed reductions between the first and second conditions of PCMS on and PCMS off. Researchers defined a null hypothesis (H_0) and alternating hypothesis (H_1) as shown below.

(Case 1)

$$H_0 : (\mu_{O1} - \mu_{O2}) \leq (\mu_{F1} - \mu_{F2})$$

$$H_1 : (\mu_{O1} - \mu_{O2}) > (\mu_{F1} - \mu_{F2})$$

Where μ_{O1} or μ_{O2} = mean vehicle speed at Sensor 1 or Sensor 2 when the PCMS was on and μ_{F1} or μ_{F2} = mean vehicle speed at Sensor 1 or Sensor 2 when the PCMS was off.

The null hypothesis was interpreted to indicate that the mean of the PCMS turned off is no larger than that of the PCMS turned on. The alternating hypothesis, on the other hand, was

interpreted to indicate that the mean of the PCMS turned on is larger than that of the PCMS turned off. A 5 % (0.05) level of confidence is used in the significance test. In other words, if the result of the t-test indicates significances less than 0.05, then the null hypothesis can be confidently rejected in favor of the alternating hypothesis.

Table 6.4 shows the results of the t-test for Case 1. Based on the results, the researchers concluded that the null hypothesis of Case 1 could be confidently rejected in favor of the alternating hypothesis. It is shown the significance is less than 0.05; in other words, this indicates the statistical analyses proved that the mean reduction with PCMS on was greater than the mean reduction with PCMS off.

Table 6.4: Results of Two-Sample t-Test for Means of Speeds for Case 1

Cases	Conditions	Population	Significance	Effectiveness
1	PCMS on	358	0.002	Yes
	PCMS off	435		

6.2.2 Comparison between PCMS on and PCMS absent

Data collected at the first experimental location, US-36 between Seneca and Marysville, was predominantly data with the PCMS present (PCMS on or off). The second location, US-73 between Horton and Hiawatha, was used to collect 183 speed data under condition 3 (PCMS absent). The statistic values for condition 3 also indicate a decrease in values from Sensor 1 to Sensor 2. As listed in Table 6.5, the mean for Sensor 1 is 56.65 with the standard deviation of 8.35. The mean for Sensor 2 is 54.79 with the standard deviation of 10.12. The percent reduction is 3.28%, which was the smallest reduction among the three conditions.

Table 6.5: Statistical Value for Condition 3

Without PCMS	Sensor 1	Sensor 2
Population	183	
Mean	56.65	54.79
Median	58	55
Standard Deviation	8.35	10.12
Min	38	29
Max	74	87
Reduction	1.86	
Percent Reduction	3.28%	

"Case 2," the second comparison analysis, compares the mean speed reduction between the first and third conditions of PCMS on and PCMS absent. Researchers defined a second null hypothesis (H_0) and second alternating hypothesis (H_1) as shown below.

(Case 2)

$$H_0 : (\mu_{O1} - \mu_{O2}) \leq (\mu_{N1} - \mu_{N2})$$

$$H_1 : (\mu_{O1} - \mu_{O2}) > (\mu_{N1} - \mu_{N2})$$

Where μ_{O1} or μ_{O2} = mean vehicle speed at Sensor 1 or Sensor 2 when the PCMS was on and μ_{N1} or μ_{N2} = mean vehicle speed at Sensor 1 or Sensor 2 when the PCMS was removed from the highway (PCMS absent).

The null hypothesis is interpreted to indicate that the mean of the third condition, PCMS absent, is no larger than that of PCMS on. The alternating hypothesis, on the other hand, is interpreted to indicate that the mean of PCMS on is larger than that of PCMS absent. A 5 % (0.05) level of confidence is used in the test of significances. In other words, if the results of the t-test indicate significances less than 0.05, then the null hypothesis can be confidently rejected in favor of the alternating hypothesis.

Table 6.6 shows the results of the t-test for Case 2. Based on the results, the researchers concluded that the null hypothesis of Case 2 could be confidently rejected in favor of the alternating hypothesis. It is shown the significance is less than 0.05, indicating the statistical analyses proved that the speed reduction of PCMS off was greater than that of PCMS absent.

Table 6.6: Results of Two-Sample t-Test for Means of Speeds for Case 2

Cases	Conditions	Population	Significance	Effectiveness
2	PCMS on	358	0.000	Yes
	Without PCMS	183		

6.2.3 Comparison between PCMS off and PCMS absent

"Case 3," the third and final comparison, compares the mean speed reduction of PCMS off between PCMS absent. In this final case, researchers wanted to know how significant an impact the inactive, but still visible PCMS had on drivers compared to the condition without the PCMS. Researchers defined a third and last null hypothesis (H_0) and second alternating hypothesis (H_1) as shown below.

(Case 3)

$$H_0 : (\mu_{F1} - \mu_{F2}) \leq (\mu_{N1} - \mu_{N2})$$

$$H_1 : (\mu_{F1} - \mu_{F2}) > (\mu_{N1} - \mu_{N2})$$

Where μ_{F1} or μ_{F2} = mean vehicle speed at Sensor 1 or Sensor 2 when the PCMS was off and μ_{N1} or μ_{N2} = mean vehicle speed at Sensor 1 or Sensor 2 when the PCMS was removed from the highway.

The null hypothesis is interpreted to indicate that the mean of PCMS absent was no larger than that of PCMS off. The alternating hypothesis, on the other hand, is interpreted to indicate that the mean of PCMS off was larger than that of PCMS absent. A 5 % (0.05) level of confidence is used in the test of significances. In other words, if the result of the t-test indicates significances less than 0.05, then the null hypothesis could be confidently rejected in favor of the alternating hypothesis.

Table 6.7 shows the results of the t-test for Case 3. Based on the results, the researchers concluded that the null hypothesis of Case 3 could be confidently rejected in favor of the alternating hypothesis. It is shown the significance is less than 0.05, meaning the statistical analyses proved that the reduction with PCMS off was greater than the reduction of PCMS absent.

Table 6.7: Results of Two-Sample t-Test for Means of Speeds for Case 3

Cases	Conditions	Population	Significance	Effectiveness
3	PCMS off	435	0.005	Yes
	Without PCMS	183		

6.2.4 Summary

As mentioned above, there is a decreasing speed pattern for all of the PCMS conditions, as shown in Figure 6.4. The normally distributed sample data and equality variances allowed researchers to test the significances using the t-test within the cases. Using the SPSS software to calculate the significance by the independent two-sample t-test (unequal sample size and equal variance), results were 0.002 for Case 1, 0.000 for Case 2, and 0.005 for Case 3. Table 6.8 shows the computed values generated by SPSS. These values are significantly less than 0.05. As a result, researchers concluded that all three null hypotheses were confidently rejected. Thus, all three alternative hypotheses were statistically true.

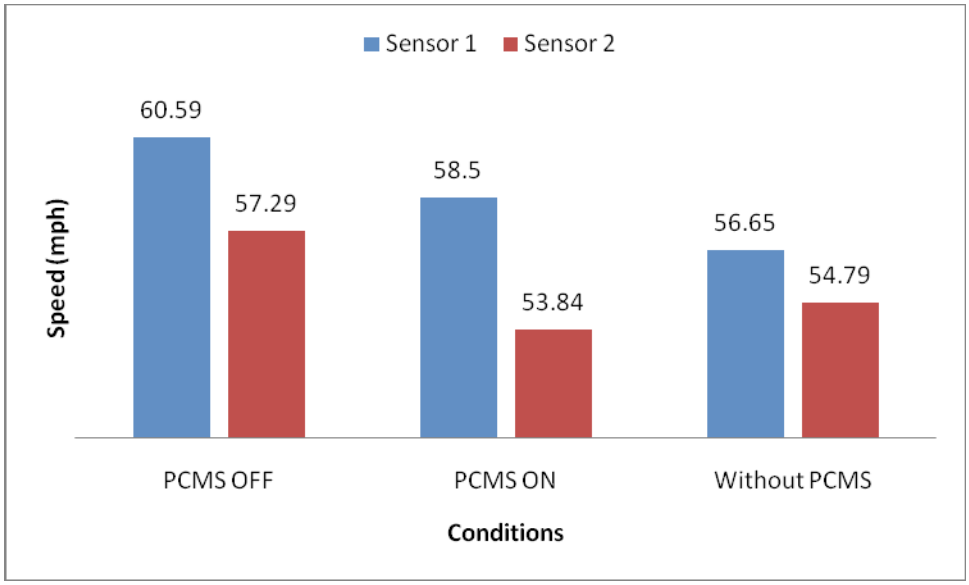


Figure 6.4: Average speed comparison in conditions

Table 6.8: Independent Sample Test

Cases	Significant	Effectiveness? $\alpha = 0.05$
1	0.002	YES
2	0.000	YES
3	0.005	YES

6.3 Comparison of Three Vehicle Classes

The frequency of individual vehicle speed changes, sorted by vehicle class, are shown in the histograms in Figure 6.5. Each histogram in Figure 6.5 also contains a bell curve which represents a plot of the normal distribution of the data set. The frequency of individual vehicle speed changes tends to follow the normal distribution of the bell curve for each vehicle class. Table 6.9 shows the results of the data collected during the field experiments broken down by vehicle class. Results are displayed for each case based on vehicle class.

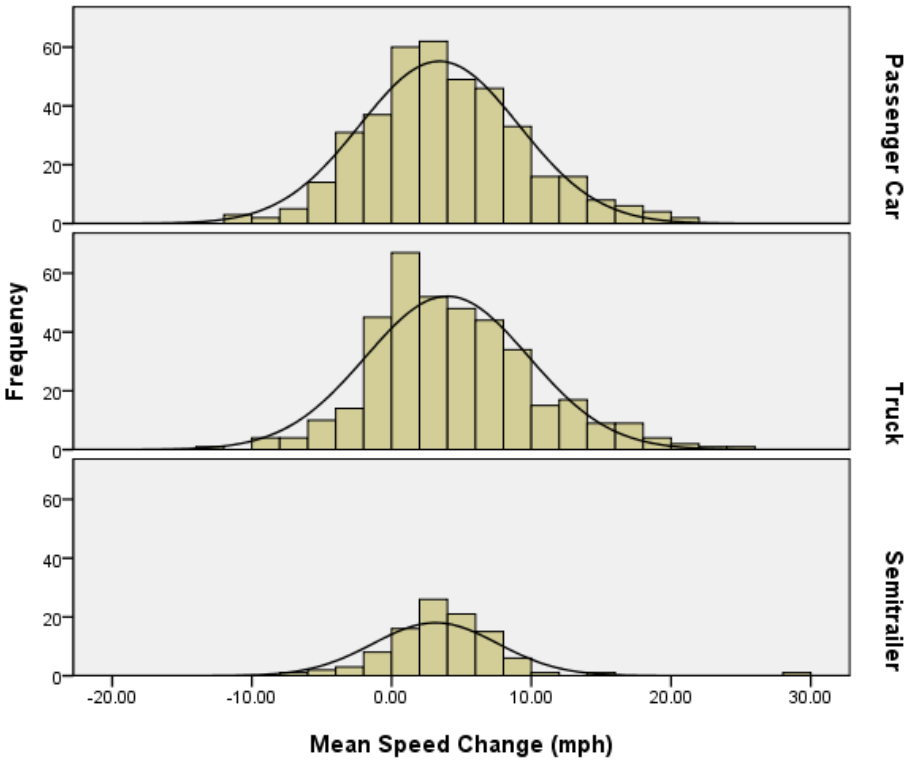


Figure 6.5: Histograms showing frequency of speed change by vehicle class

Table 6.9: Mean Speed Values Based on Class for Each Case

Vehicle Class	Case	N	Sensor 1 Speed (mph)	Sensor 2 Speed (mph)	Mean Speed Change (mph)	Speed Change Percentage
Passenger Cars	PCMS OFF	188	60.2	57.9	2.4	3.9%
	PCMS ON	132	58.5	54.5	3.9	6.7%
	TTS	74	50.5	45.3	5.2	10.3%
Trucks	PCMS OFF	174	59.4	55.7	3.7	6.2%
	PCMS ON	154	57.0	52.3	4.7	8.3%
	TTS	53	48.2	45.4	2.8	5.8%
Semitrailers	PCMS OFF	47	61.6	58.6	3.0	4.8%
	PCMS ON	48	59.1	56.1	3.1	5.2%
	TTS	6	49.2	44.2	5.0	10.2%

For the passenger car, truck, and semitrailer classes, the speed reductions were 2.4 mph, 3.7 mph, and 3.0 mph over a distance of 500 feet when the PCMS was off. These results reveal that the PCMS, though turned off, could still affect a vehicle's speed. The truck class exhibited the highest speed reduction when the PCMS was off, showing a 6.2% speed reduction over a distance of 500 feet.

When the PCMS was on, passenger cars, trucks, and semitrailers showed speed reductions of 3.9 mph, 4.7 mph, and 3.1 mph over a distance of 500 feet. The results indicate that the speed reduction of passenger cars and trucks increased 1.5 mph and 1.0 mph, respectively. The activated PCMS affected the speeds of the truck class the most, showing a speed reduction of 8.3% over a distance of 500 feet.

Passenger cars, trucks, and semitrailers experienced speed reductions of 5.2 mph, 2.8 mph, and 5.0 mph, over a distance of 500 feet when the PCMS was absent. Under this condition, vehicles were warned of the upcoming work zone conditions only with the presence of a TTS. Passenger cars responded to the TTS the most and exhibited the highest speed reductions among the three classes approaching the advanced warning area of the work zone. However, the TTS did not have the same effect as the PCMS.

As shown in Table 6.9, passenger cars exhibited the greatest speed reduction (10.3%) when approaching the TTS. The greatest speed reduction (8.3%) for the truck class occurred when the PCMS was on. The semitrailer class experienced the highest speed reduction (10.2%) when approaching the advance warning area.

For two of the three PCMS conditions, the average speed of the semitrailer class was greater than the other two vehicle classes. These results reveal that the PCMS was not effective in reducing semitrailer vehicle speeds on rural highway work zones because semitrailer drivers usually keep their high speeds when traveling on rural highways. Based on the analysis results, the PCMS had the greatest effect on the truck class when it was either on or off, better than the TTS (8.3%, 6.2%, and 5.8%). The change in speed for different vehicle classes is shown in Figure 6.6.

Figure 6.6 provides a visual of the breakdown of mean speed changes for each case based on vehicle class. The bar chart indicates that the truck class was the most responsive vehicle class to Cases 1 and 2, both which involved the PCMS. The chart also indicates that the truck class was the least responsive vehicle class to Case 3, which involved the TTS in rural work zones. Another correlation that can be drawn from the chart is that the passenger car and

semitrailer classes were more responsive to the TTS than to the inactive, but still visible PCMS placed on the side of the rural highway.

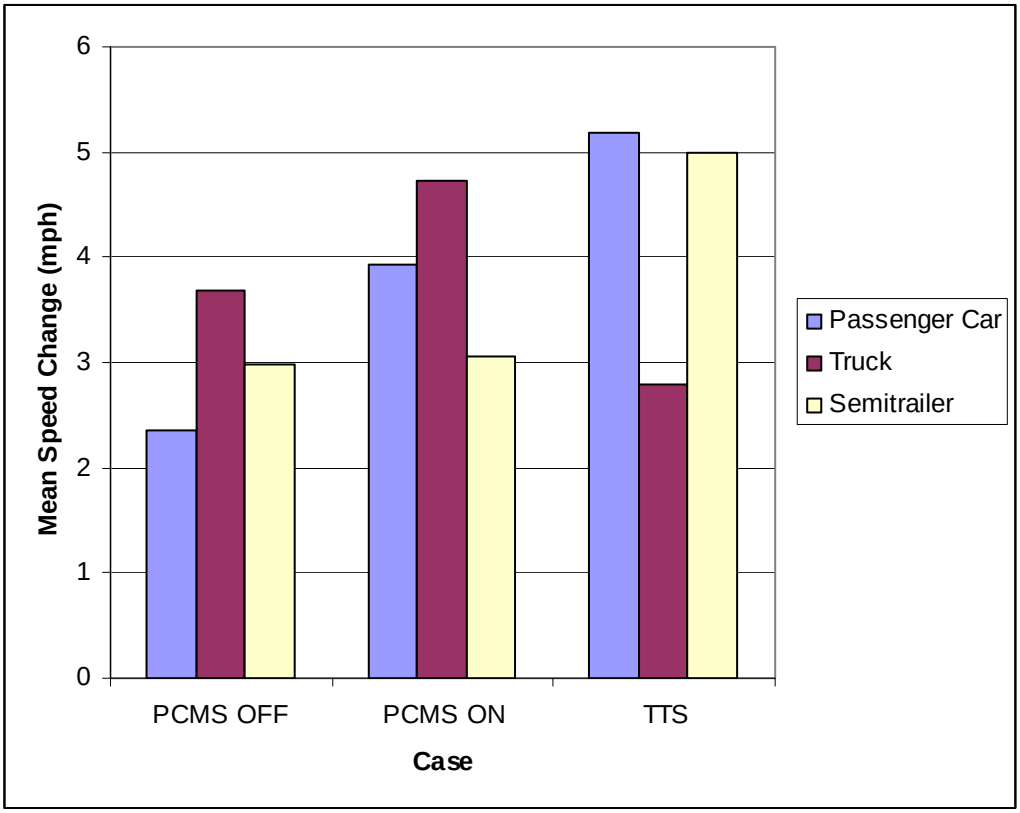


Figure 6.6: Mean speed change of vehicle classes for three cases

The values of speed and length for each vehicle collected by the two sensors were inserted into a statistical analysis program along with a corresponding numerical value to represent which sign was present when the values were recorded. The differences in the values of speed and length between Sensors 1 and 2 were then calculated and a frequency analysis was performed based on these calculated values. The results show that there was a wide range of values for change in length, with a standard deviation of 3.5 feet. It was decided that the majority of values were within two standard deviations (7 feet) and therefore, all other points with a positive or negative change greater than 7 were discarded. This was done to account for errors in

the sensors' abilities to accurately read a vehicle's length. The final population consisted of 876 vehicle data points. These data points are broken down by case in Table 6.10 and by vehicle class in Table 6.11.

The classes of the vehicles were determined using AASHTO Green Book definitions. A passenger car is defined as being 19 feet long and the smallest semitrailer (WB-12[WB-40]) is defined as being 45.5 feet long (AASHTO 2004). Therefore, Class 1 (passenger car) includes any vehicle with an average length of 19 feet or less, and Class 3 (semitrailer) includes any vehicle with an average length equal to or greater than 45 feet. The result being that Class 2 (truck) is defined as any vehicle with an average length greater than 19 feet and less than 45 feet. After the individual data points were sorted by length and assigned a class, statistical analyses were performed.

Table 6.10: Break Down of Data Points by Case

CASE	No. of Data	Percent of Total (%)
PCMS OFF	409	46.7
PCMS ON	334	38.1
TTS	133	15.2
Total	876	100.0

Table 6.11: Break Down of Data Points by Vehicle Class

Vehicle Class	No. of Data	Percent of Total (%)
Passenger Car	394	45.0
Truck	381	43.5
Semitrailer	101	11.5
Total	876	100.0

6.3.1 Significance of test analysis

Besides frequency analysis, hypothesis tests were conducted during the data analysis process. The null hypothesis of this research is that there is no change between cases in the mean speeds of the three vehicle classes. The alternative hypothesis is that there is a difference between cases in the mean speed of one or more of the vehicle classes. A univariate analysis of variance (UNIANOVA) was performed on the data to determine whether the interaction between the three cases and the three vehicle classes is significant. UNIANOVA is a two-way analysis of variance with vehicle class and case as the two factors. The results of the UNIANOVA test are shown in Table 6.12 and are based on a 95% confidence interval. Table 6.12 shows that the value must be less than 0.05 for there to be a significant interaction between vehicle class and case and for the null hypothesis to be rejected. Since the test returned a significance value of 0.019 for the interaction between vehicle class and case, the null hypothesis was rejected in favor of the alternative hypothesis.

Further UNIANOVA tests were performed to determine what factor(s) were causing a significant interaction between vehicle class and case. Tables 6.13 and 6.14 show the noteworthy findings of the in-depth pairwise comparison. Table 6.13 indicates that the passenger

car class is the only class having a significant effect and interaction with the three sign cases because the significance value was 0.00. Table 6.14 shows a more in-depth, pairwise comparison of the passenger car class with the three cases. The results in Table 6.14 indicate that there was a significant interaction between PCMS off and the other two cases for passenger cars.

Table 6.12: UNIANOVA Test of Between-Subjects Effects

Source	Type III Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Corrected Model	764.395[a]	8	95.549	3.072	.002
Intercept	4264.488	1	4264.488	137.097	.000
Vehicle Class	1.713	2	.856	.028	.973
Case	142.241	2	71.121	2.286	.102
Interaction (Vehicle Class by Case)	367.435	4	91.859	2.953	**.019**
Error	26968.540	867	31.106		
Total	39255.000	876			
Corrected Total	27732.935	875			

a R Squared = .028 (Adjusted R Squared = .019)

* Dependent Variable = Mean Speed Change

Table 6.13: Comparison of Individual Vehicle Classes with Cases

Vehicle Class	Analysis Type	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance
Passenger Car	Contrast	478.505	2	239.252	7.692	**0.00**
	Error	26968.54	867	31.106		
Truck	Contrast	175.1	2	87.55	2.815	0.06
	Error	26968.54	867	31.106		
Semitrailer	Contrast	22.268	2	11.134	0.358	0.699
	Error	26968.54	867	31.106		

Each F tests the simple effects of sign case within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means

Table 6.14: Pairwise Comparison of Class by Case

Vehicle Class	(I) Case	(J) Case	Mean Difference (I-J)	Std. Error	Significance[a]	95% Confidence Interval for Difference[a]	
						Lower Bound	Upper Bound
Passenger Car	PCMS OFF	PCMS ON	-1.588*	0.633	**0.037**	-3.107	-0.069
	PCMS OFF	TTS	-2.825*	0.765	**0.001**	-4.66	-0.989

Based on estimated marginal means

*. The mean difference is significant at the .05 level

a. Adjustment for multiple comparisons: Bonferroni.

6.4 Speeds Analysis

Analyses of the distributions of speeds with PCMS on, PCMS off, and PCMS absent were another approach to demonstrate the effectiveness of PCMS. The basic assumption is that, if the PCMS was effective, it would reduce the number of speeding drivers, commonly characterized as inattentive or reckless, approaching the work zones. If the distribution of the speeds recorded when the PCMS was on illustrates a pronounced reduction in the number of notably high speeds, then researchers concluded that the PCMS was able to more effectively reduce the speeding behavior of drivers when approaching the work zones. Figures 6.7, 6.8, and 6.9 show the distribution speeds by 5 mph speed intervals when the PCMS was on, off, and absent from the highway.

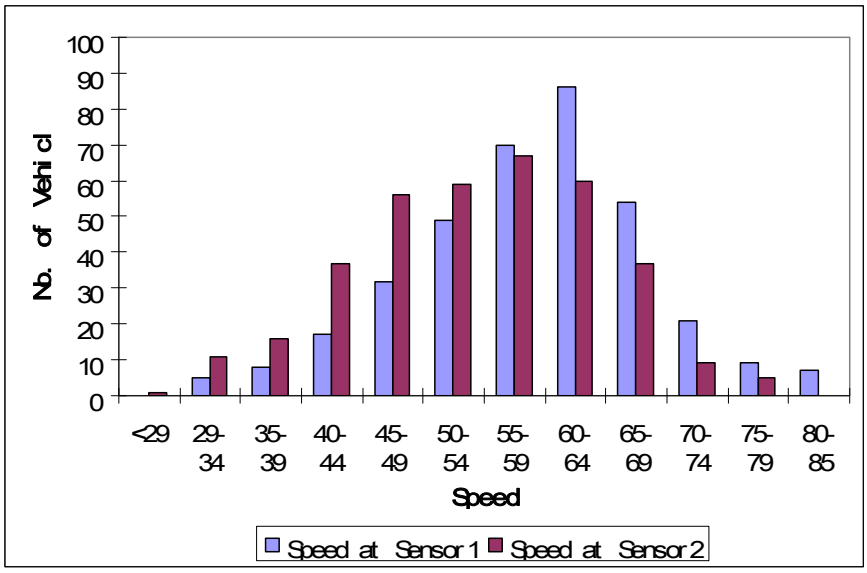


Figure 6.7: Distribution speeds by 5 mph speed intervals with PCMS was on

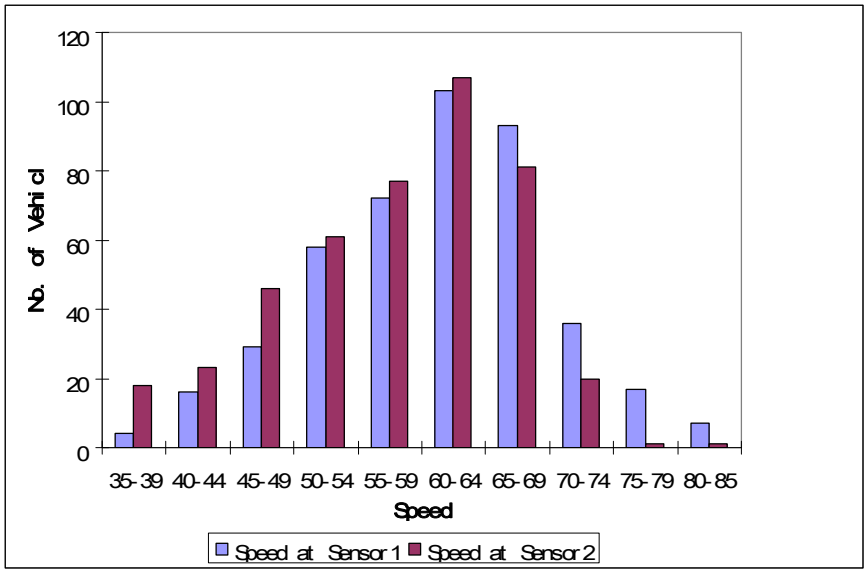


Figure 6.8: Distribution speeds by 5 mph speed intervals with PCMS turn off.

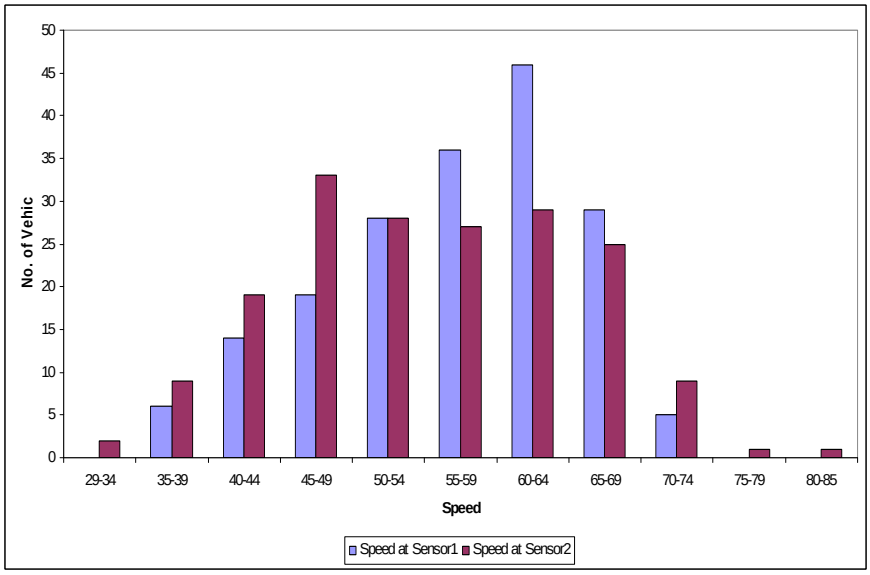


Figure 6.9: Distribution speeds by 5 mph speed intervals without PCMS.

When the PCMS was on, the speeding car percentage of Sensor 1 was 25.4%. After the vehicle had passed the PCMS, the speeding car percentage was 14.2% when collected by Sensor 2,

showing an 11.2% speeding reduction. When the PCMS was off, the speeding car percentage of Sensor 1 was 35.2%. After the vehicle had passed the PCMS, the speeding car percentage of Sensor 2 was 23.7%, showing an 11.5% speeding reduction. When the PCMS was absent from the road, the speeding car percentage of Sensor 1 was 18.6%. After the vehicle had passed the PCMS, the percentage of Sensor 2 increased to19.7%, showing a1.1% rise in speeding percentage. Table 6.15 shows the speeding car percentage.

Table 6.15: Percentage of Speeding Cars

	Speeding car percentage at Sensor 1	Speeding car percentage at Sensor 2	Change of Speeding car Percentage
PCMS On	25.4%	14.2%	11.2% ↓
PCMS Off	35.2%	23.7%	11.5% ↓
No PCMS	18.6%	19.7%	1.1% ↑

Table 6.15 demonstrates that the speeding car percentage decreased significantly, by more than 10%, for both conditions of PCMS on and off. Researchers noticed that although the distance from Sensor 2 to the advanced warning area of the work zone was 550 feet, there was a 1.1% increase in speeding car percentage when the PCMS was absent from the road. Such high speeds observed at the speed collection locations are difficult to slow in order to comply with the reduced speed limit of a work zone, causing the risk of an accident to soar significantly. Based on the analysis above, researchers made the following conclusions:

1) The PCMS worked effectively to reduce the excessive speeding of vehicles. The changing messages of the PCMS attracted a certain proportion of the drivers' attentions and demonstrated positive results in improving work zone safety.

2) The location of the PCMS affected the drivers' behaviors. The geographic conditions of the rural highways affected the placement of the PCMS. The distance between the PCMS and the TTS (W20-1) remained constant during the course of the experiments. When the slope of the highway ditch was too steep, half of the PCMS had to be positioned on the roadside. The size of the PCMS also affected the change in vehicle speeds.

6.4.1 Changes in 85th-Percentile Speeds

The 85th-percentile speeds indicate the largest speed reductions. However, under a normal distribution, the 85th-percentile speeds are more than one standard deviation from the mean speed. A parametric hypothesis test could not be conducted since the 85th-percentile speeds are not a parameter that defines the normal distribution. Nonparametric tests can be performed when a value other than the mean is of interest. However, additional assumptions must be made about the distribution, which decreases the accuracy of the test and makes the statistical theory generally not accepted. Table 6.16 shows the measure of effectiveness of the 85th percentile.

Table 6.16: Measure of 85th Percentile

Measure of Effectiveness	Speed change PCMS on	Speed change PCMS off	Speed change No PCMS
85th-percentile speed	4 mph ↓	2 mph ↓	0 mph
% of vehicles exceeding speed limit by 5 mph	6.4% ↓	8.7% ↓	3.3% ↑
% of vehicles exceeding speed limit by 10 mph	3.1% ↓	5.1% ↓	1.1% ↑

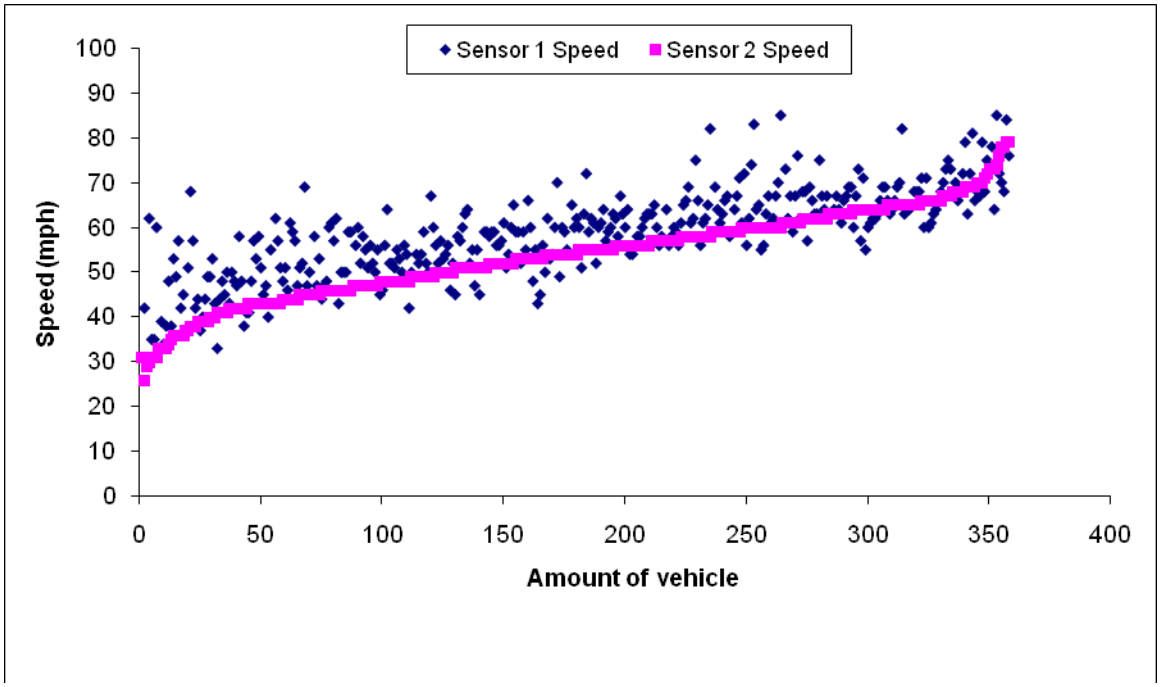


Figure 6.10: Percentage speed change when PCMS on

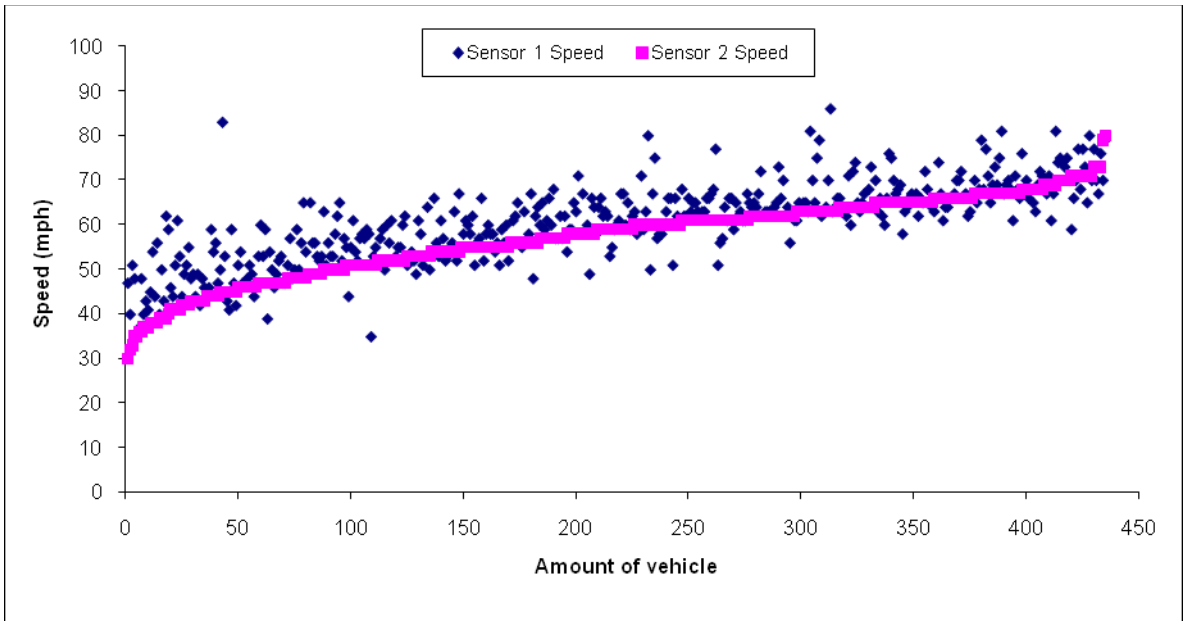


Figure 6.11: Percentage speed change when PCMS off

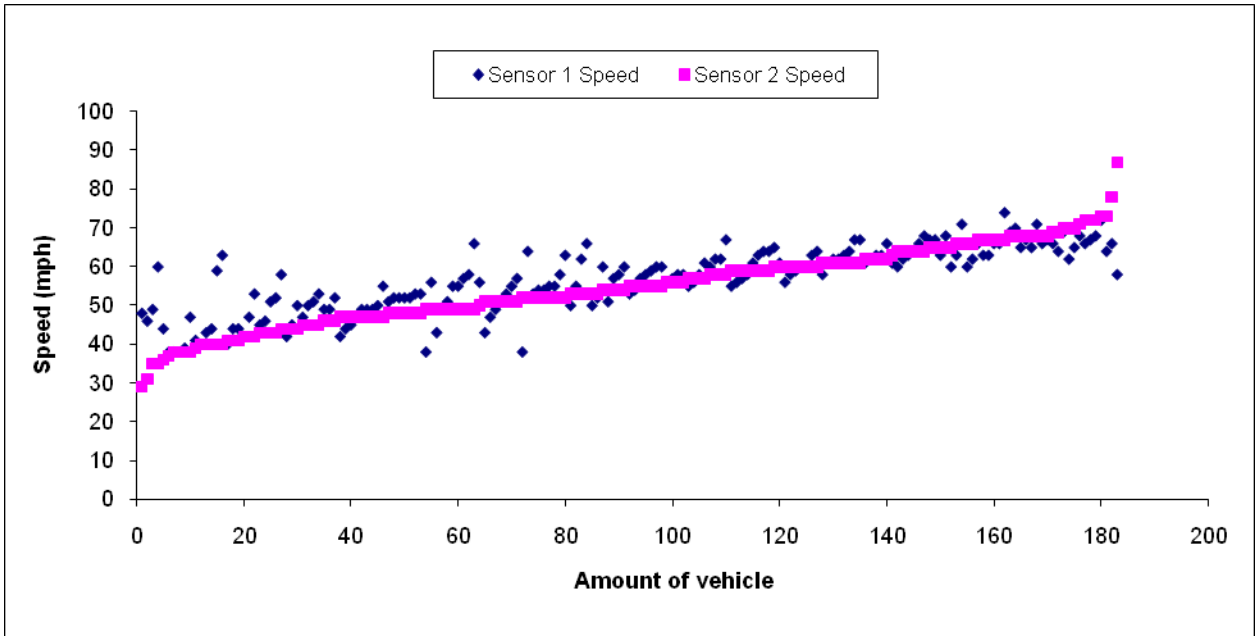


Figure 6.12: Percentage speed change without PCMS

Figure 6.10 shows that approximately 19.3% of the vehicles increased their speeds from 1 mph to 10 mph after passing the PCMS when the device was turned on. Under this condition, 5.3% of the vehicles remained at the same speed and 75.6% of the vehicles reduced their speeds from 1 mph to 32 mph. Figure 6.11 shows that approximately 20.2% of the vehicles increased their speeds from 1 mph to 16 mph after passing the PCMS when the device was turned off. Under this condition, 10.1% of the vehicles remained at the same speed and 69.7% of the vehicles reduced their speeds from 1 mph to 38 mph. When the PCMS was absent from the road, about 32.8% of the vehicles increased their speeds from 1 mph to 29 mph, as shown in Figure 6.12. Under this condition, 7.1% of the vehicles remained at the same speed and 60.1% of the vehicles reduced their speeds from 1 mph to 25 mph. These results provide additional proof regarding the effectiveness of the PCMS. Table 6.17 compares the percent speed classification.

Table 6.17: Percent Speed Classification

	Speed Up (%)	Same Speed (%)	Slow Down (%)	Min Speed Up	Max Speed Up	Min Slow Down	Max Slow Down
PCMS ON	19.3	5.3	75.6	1 mph	10 mph	1 mph	32 mph
PCMS OFF	20.2	10.1	69.7	1 mph	16 mph	1 mph	38 mph
Without PCMS	32.8	7.1	60.1	1 mph	29 mph	1 mph	25 mph

6.5 Driver Survey Results

6.5.1 Overview

As stated in Chapter 4, the main purpose of the survey was to obtain a general understanding of the motorists' attitudes as they traveled through the work zones. The survey

also sought to investigate motorists' perceptions of posted and non-posted signs in the work zones, which may lend support to the findings from the PCMS studies. Findings from this survey may give future researchers suggestions to design better signage, thus further improving work zone safety for motorists and workers in work zones.

In this section, an overview of the question will be presented, followed by a detailed description of the results. All results will be discussed in general unless specifically noted. Note that due to unequal sample sizes between vehicles types, results of the survey will be discussed based on motorists only.

For US-36, a total of 89 surveys were completed. Among the surveyed motorists, 54 were male and 35 were female. For US-73, 53 surveys were completed; 34 were male and 19 were female.

6.5.2 Survey Feedback

Attitudes

Question 1: Have you exceeded a work zone speed limit?

Response to the first question was poor for both work zones. Only 27% (24 out of 89) of those surveyed at US-36, and 15% (8 out of 53) of those surveyed at US-73 responded that they had exceeded the work zone speed limit. Poor response to this question could be due to the following reasons:

1. Motorists were unwilling to admit they had exceeded the work zone speed limit. As part of the introduction, the researcher administering the survey would inform motorists that the survey was part of a KDOT study on work zone safety

awareness. This reference to the transportation agency may have caused motorists to be wary of admitting to exceeding the work zone speed limit.

2. Motorists being unaware of their vehicle speed while driving through the work zone. This is inferred from the common response, "*not to my knowledge*," provided by motorists when asked the above question.

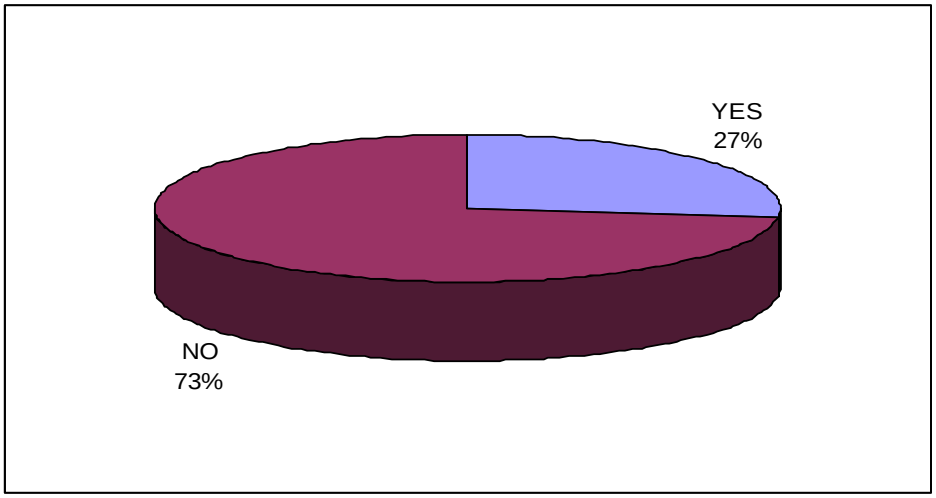


Figure 6.13: "Have you exceeded a work speed limit?" (US-36)

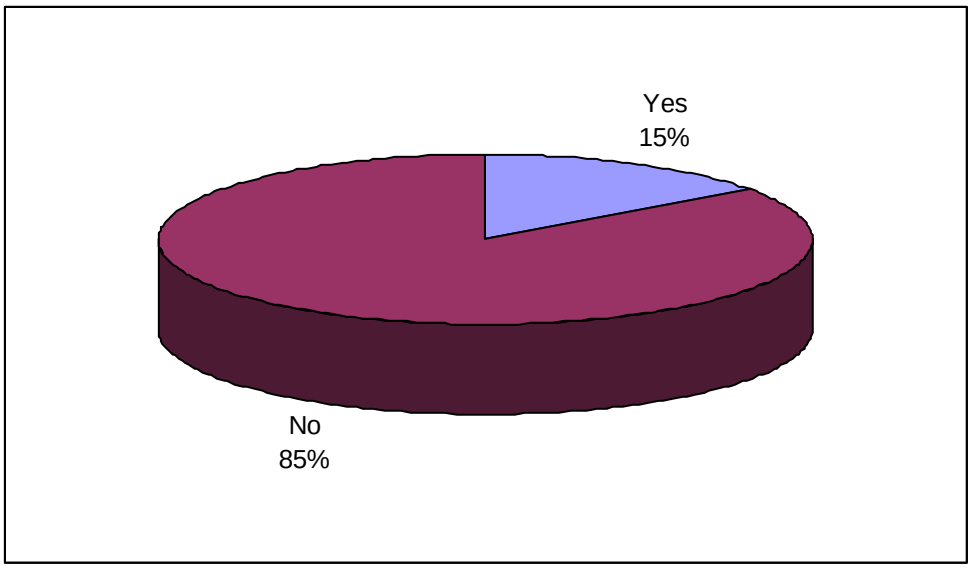


Figure 6.14: "Have you exceeded a work speed limit?" (US-73)

Question 2: What is the most common reason you might speed in a work zone?

As noted earlier, only 27% (24 out of 89) of those surveyed at US-36, and 15% (8 out of 53) of those surveyed at US-73 responded that they had exceeded a work zone speed limit. Thus, the analysis will only discuss motorists who admitted to speeding in a work zone. This question is answered in tandem with Question 3.

Question 3: What is the second most common reason you might speed in a work zone?

Motorists were first told to pick the most common reason for speeding from the following choices: 1) Driving with flow of traffic; 2) Work zone seemed inactive; 3) Did not see work zone; 4) In a hurry; and 5) Speed limit seemed inappropriate. After selecting their first choice, motorists were then asked to choose their second best reason. A graphical representation of the data is provided in Figure 6.13 and 6.14.

The top reason for exceeding a work zone speed limit was "Driving with flow of traffic." As shown by Table 6.18 and 6.19, 62.5% (15 out of 24) of motorists on US-36 selected this reason, and 75% (6 out 8) of motorists on US-73 chose this reason. This phenomenon is not unexpected. Psychological studies have shown that when placed in a group, individuals within the group tend to follow group norms even when the individual is clearly aware that it is not the case (Asch, 1956). In the case of speeding in a work zone, drivers may feel the impulse to increase their speeds in order to match those of vehicles already speeding in the work zone, hence allowing them to follow the flow of traffic.

Table 6.18: Responses Frequency and Percentage on US-36

US-36	Top Reason		Second Best	
Response	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**
Driving with flow of traffic (Reason 1)	15	62.5	5	20.8
Work zone seemed inactive (Reason 2)	3	12.5	9	37.4
Did not see work zone (Reason3)	2	8.3	6	25
In a Hurry (Reason 4)	3	12.5	0	0
Speed limit seemed inappropriate (Reason 5)	1	4.2	4	16.8

Table 6.19: Responses Frequency and Percentage on US-73

US-73	Top Reason		Second Best	
Response	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**
Driving with flow of traffic (Reason 1)	6	75	2	25
Work zone seemed inactive (Reason 2)	0	0	1	12.5
Did not see work zone (Reason3)	1	12.5	2	25
In a Hurry (Reason 4)	1	12.5	2	25
Speed limit seemed inappropriate (Reason 5)	0	0	1	12.5

The second best reason for exceeding the speed limit of the work zone on US-36 was "Work zone seemed inactive." A three-way tie occurred at US-73 between "Driving with flow of traffic," "Did not see work zone," and "In a Hurry" for the second best reason for speeding, as shown in Table 6.19. Because the results for US-73 are too thinly spread due to a small sample size, the following information will focus solely on the results of US-36 in order to make any significant inferences and discussion.

37.4% (9 out of 24) motorists on US-36 selected "Work zone seemed inactive" as their second best reason for speeding in the work zone. The motorists believed that the absence of worker activity in the work zone was a sufficient reason to exceed the speed limit. A graphical representation of the data is presented in Figure 6.15 and Figure 6.16 for US-36 and US-73, respectively.

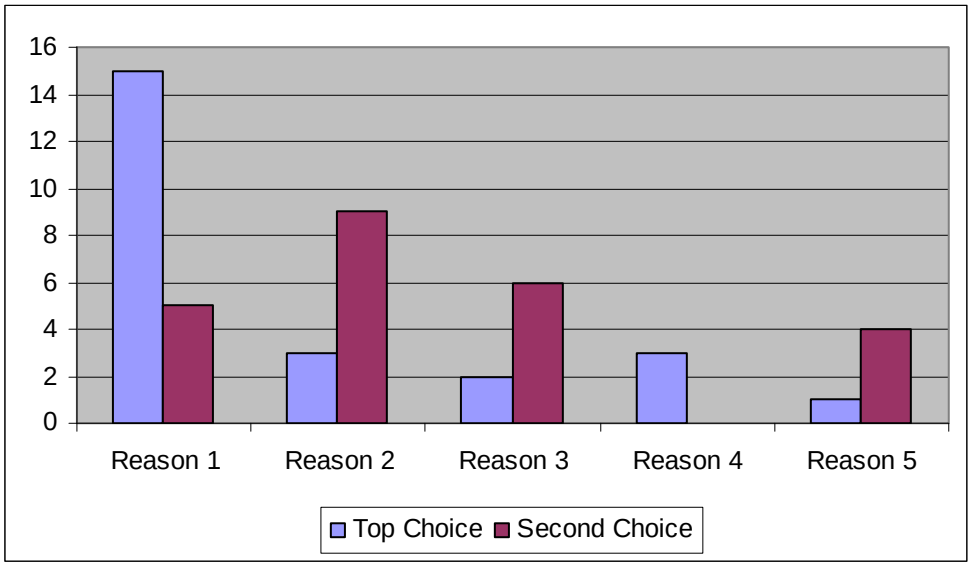


Figure 6.15: "What is the top reason you are likely to speed in a work zone?" (US-36)

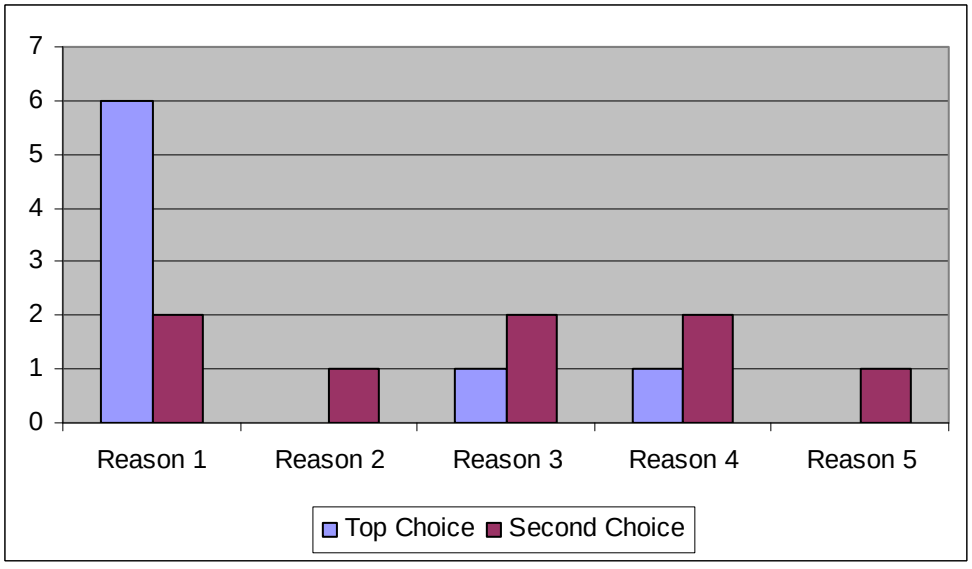


Figure 6.16: "What is the top reason you are likely to speed in a work zone?" (US-73)

Question 4: Have you ever carefully obeyed the speed limit in a work zone?

All motorists answered "yes" to the above question. This result is once again not unexpected, as it is highly unlikely that there are motorists who have never carefully obeyed a work zone speed limit throughout their driving experience.

Question 5: What is the most common reason you are likely to obey the speed limit in a work zone? This question was asked in tandem with Question 6.

Question 6: What is the second most common reason you are likely to obey the speed limit in a work zone?

Motorists were asked to explain why they obeyed a work zone speed limit by choosing a response from the following choices: 1) Driving with flow of traffic; 2) Observed worker activity; 3) Motivated by warning signs; 4) Presence of police; and 5) Speed limit seemed appropriate. A graphical representation of the data is given in Figure 6.17 and Figure 6.18.

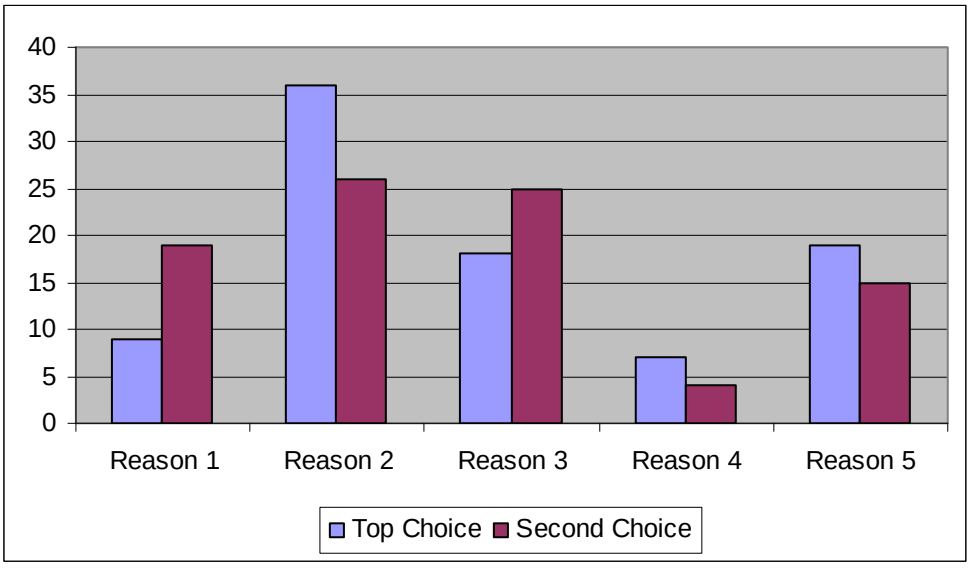


Figure 6.17: "What is the most common reason you are likely to obey the speed limit in a work zone?" (US-36)

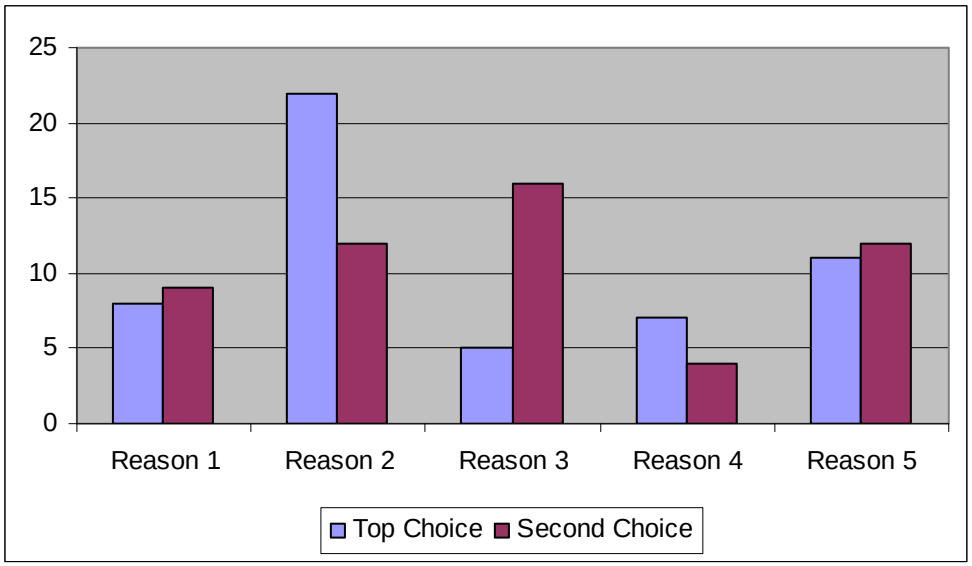


Figure 6.18: "What is the most common reason you are likely to obey the speed limit in a work zone?" (US-73)

As shown in Table 6.19, "Observed worker activity" was the principal reason that drivers chose for observing work zone speed limits. 40.4% (36 out of 89) of motorists at US-36, and 41.5% (22 out of 53) of motorists at US-73 selected that reason. This would suggest that motorists are aware of their surroundings when they drive through work zones.

The second best reason motorists chose for obeying work zone speed limits varied between the work zones. 29.2% (26 out of 89) of motorists at US-36 chose "Observed worker activity," while 28.1% (25 out of 89) of motorists chose "Motivated by warning signs." Although it received a lower percentage, focus will be devoted to the option "Motivated by warning signs" as "Observed worker activity" had already been selected as the most common reason for obeying work zone speed limits. Since these options are mutually exclusive, it can be safely suggested that motorists who selected "Motivated by warning signs" as their second most common reason would represent a mixture of motorists who did not select the option as their top choice; or in other words, the remaining 59.6% of motorists, as shown in Table 6.20.

Results were similar at US-73, with 30.2% (16 out of 53) of motorists selecting "Motivated by warning signs" as their second best option. There were no other competing choices for the second best option for US-73, as shown in Table 6.21.

These findings suggest that the presence of warning signs is an important mitigating factor for obeying work zone speed limits, in addition to looking out for work zone employees. This would also further suggest the importance of effective signage in work zones to encourage safe driving.

Table 6.20: Response for Question 6 on US-36

US-36	**Top Reason**		**Second Best**	
Response	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**
Driving with flow of traffic (Reason 1)	9	10.1	19	21.3
Observed worker activity (Reason 2)	36	40.4	26	29.2
Motivated by warning signs (Reason3)	18	20.2	25	28.1
Presence of police (Reason 4)	7	7.9	4	4.5
Speed limit seemed appropriate (Reason 5)	19	21.3	15	16.9

Table 6.21: Response for Question 6 on US-73

US-73	Top Reason		Second Best	
Response	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**
Driving with flow of traffic (Reason 1)	8	15.1	9	16.9
Observed worker activity (Reson 2)	22	41.5	12	22.6
Motivated by warning signs (Reason3)	5	9.4	16	30.2
Presence of police (Reason 4)	7	13.2	4	7.5
Speed limit seemed appropriate (Reason 5)	11	20.8	12	22.6

Question 7: Rank the following signs as FIRST and SECOND most effective for encouraging safe work zone driving?

This question was designed to investigate the perceived effectiveness of signage on motorists as they drove through the work zones. Examples of the signs used in the survey were provided in Chapter 4. It is worthy to note that participants may have misinterpreted the question, as the surveyor noted that many motorists stated they had "seen the sign before." Thus, motorists may have been encouraged to select those signs they were most familiar with. Let it be clear that the premise of the question was to verify the effectiveness of the signs and not to establish whether the motorists had seen them; therefore, the results may not answer the question

completely. Nonetheless, results for Question 7 suggest that motorists were aware of the signs posted in the work zones.

In both work zones, motorists selected Sign 1 as the most effective. 59.6% (53 out of 89) of drivers on US-36, and 62.3% (33 out of 53) of drivers on US-73 selected the first sign. A detailed breakdown of the motorists' choices is provided in Tables 6.22 and 6.23. A graphical representation is also given in Figures 6.19 and 6.20 for US-36 and US-73, respectively.

Results appear to differ slightly between the work zones for the second best sign. 45.3% (24 out of 53) of motorists at US-73 clearly favored Sign 2, while motorists at US-36 were evenly divided between Sign 2 and Sign 3. 29.2% (26 out of 53) of US-36 drivers chose Sign 2 and 30.3% (27 out of 53) chose Sign 3.

Table 6.22: Response for Question 7 on US-36

US-36	Top Reason		Second Best	
Response	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**
Sign 1	53	59.6	23	25.8
Sign 2	20	22.4	26	29.2
Sign 3	13	14.6	27	30.3
Sign 4	3	3.4	13	14.6

Table 6.23: Response for Question 7 on US-73

US-73	Top Reason		Second Best	
Response	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**
Sign 1	33	62.3	10	18.8
Sign 2	8	15.1	24	45.3
Sign 3	11	20.7	12	22.6
Sign 4	1	1.9	7	13.2

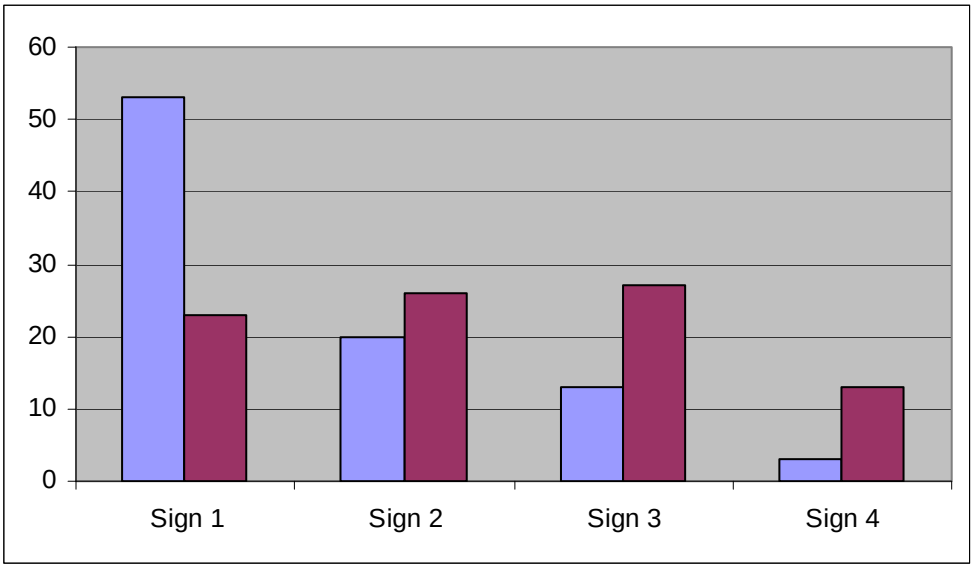


Figure 6.19: Rank the following signs as FIRST and SECOND most effective for encouraging safe work zone driving?(US-36)

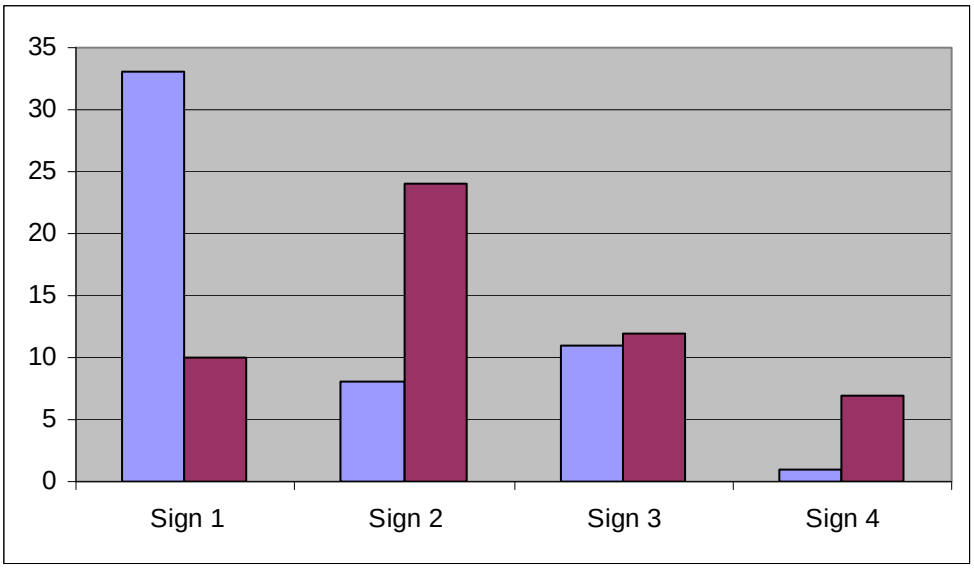


Figure 6.20: Rank the following signs as FIRST and SECOND most effective for encouraging safe work zone driving?(US-73)

Question 8: Which of these signs did you see on the way into the work zone?

This question was designed to investigate the awareness of motorists as they entered the work zone. Question 8 also aimed to see if drivers truly paid attention to the signs in the work zones or if they simply recalled signs from their past work zone experiences.

As stated in Chapter 5, US-36 displayed all the necessary signage. The results suggest that 80.9% (72 responses) of motorists were aware of the 'Be prepared to stop' (orange) sign on the right side of the road. Table 6.24 and Table 6.25 provide a breakdown of responses from the motorists. Figures 6.21 and 6.22 provide a graphical representation of the data for each work zone.

Table 6.24: Response for Question 8 on US-36

Response	Frequency	Percentage (%)
No Passing Zone (Orange)	21	23.6
No Passing Zone (Yellow)	10	11.2
Be Prepared to Stop (Orange)	72	80.9
Be Prepared to Stop (Yellow)	11	12.4

Table 6.25: Response for Question 8 on US-73

Response	Frequency	Percentage (%)
No Passing Zone (Orange)	8	15.1
No Passing Zone (Yellow)	8	15.1
Be Prepared to Stop (Orange)	47	88.7
Be Prepared to Stop (Yellow)	4	7.5

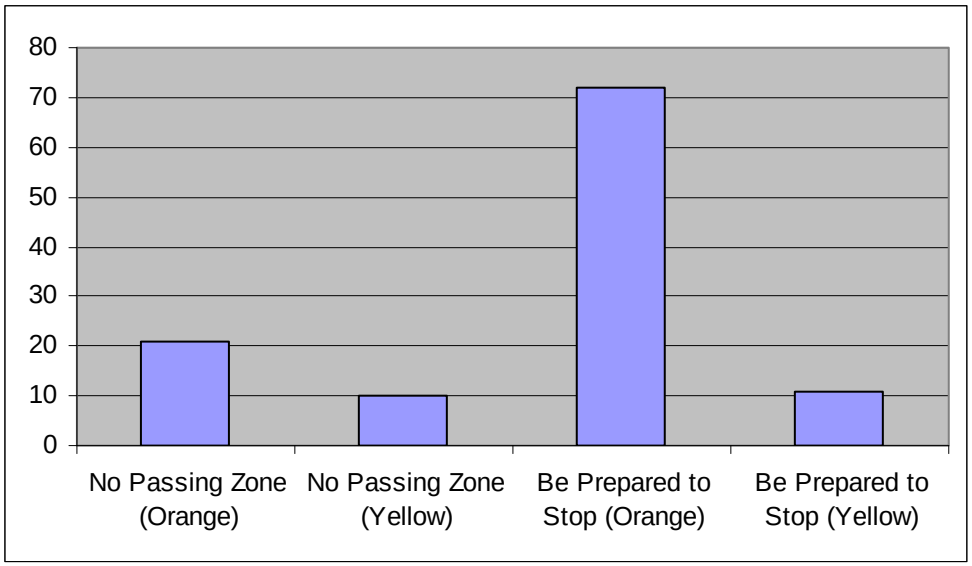


Figure 6.21: Question 8: Which of these signs did you see on the way into the work zone?

(US-36)

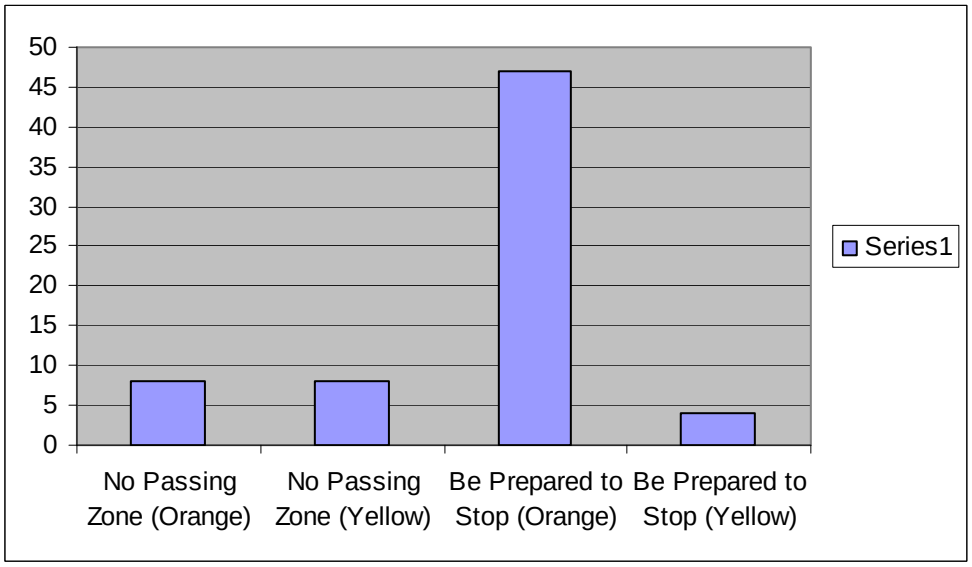


Figure 6.22: Question 8: Which of these signs did you see on the way into the work zone?

(HW 73)

It is interesting to note that even though the 'No passing zone' (orange) sign was present on the roadway, only 23.6% (21 responses) of motorists reported seeing the sign. This lack of awareness may have implications for events occurring on the left side of the road, such as the possibility of hitting a worker.

Results for the 'Be prepared to stop' (orange) sign on the right side of the work zone on US-73 were similar to US-36. 88.7% (47 responses) of motorists stated they had seen the sign as they approached the work zone. US-36 did not display the 'No passing zone' (orange) sign on the left side of the road, yet 15.1% (8 responses) of motorists reported seeing it. Although a small number, this may suggest that motorists may have been recalling signs they were previously familiar with when filling out the survey, rather than actually observing the signs present in the work zone. The same phenomena possibly occurred with the motorists' perceptions of another work zone sign. 12.4 % (11 responses) of motorists on US-36 and 7.5% (4 responses) of motorists on US-73 reported they had seen the 'Be prepared to stop' (yellow) sign. However, this sign did not appear in either of the work zones, as orange is the standard color for work zone signs rather than yellow.

A point to note is that motorists selected responses for 'No passing zone' (yellow), which was likely due to the locations of the work zones. The work zones were located on undulating terrain; thus, the 'No passing zone' (yellow) signs were always present. It is also worthy to note that the response percentages do not equal 100% as motorists were allowed to select multiple responses.

Miscellaneous

Question 1: About how many work zone- related accidents occurred in 2006 in the State of Kansas?

This question investigated the baseline of knowledge of motorists regarding work zone-related accidents. Results suggest that motorists underestimated the number of accidents in work zones. Note that the accident data used here counts for all types of work zone accidents, including personal and property damage.

Motorists at both work zones appear to underestimate the number of accidents that had occurred in Kansas work zones in 2006. 41.6% (37 out of 89) of motorists at US-36 believed approximately 500 work zone-related accidents occurred in the State of Kansas in 2006. Motorists on US-73 also underestimated the number, with 45.3% (24 out of 53) of motorists choosing the same answer. Based on data from KDOT, the correct number of accidents is approximately 2000, as shown in Tables 6.26 and 6.27, and Figures 6.23 and 6.24. Only 21.3% (19 out of 89) of motorists on US-36 and 33.9% (18 out of 53) of motorists on US-73 selected the correct answer.

Table 6.26: Response from Question 1 (misc) on US-36

Response	Frequency	Percentage (%)
About 100	29	32.6
About500	37	41.6
About 2000	19	21.3
About 5000	4	4.5

Table 6.27: Response from Question 1 (misc) on US-73

Response	Frequency	Percentage (%)
About 100	9	16.9
About500	24	45.3
About 2000	18	33.9
About 5000	2	3.8

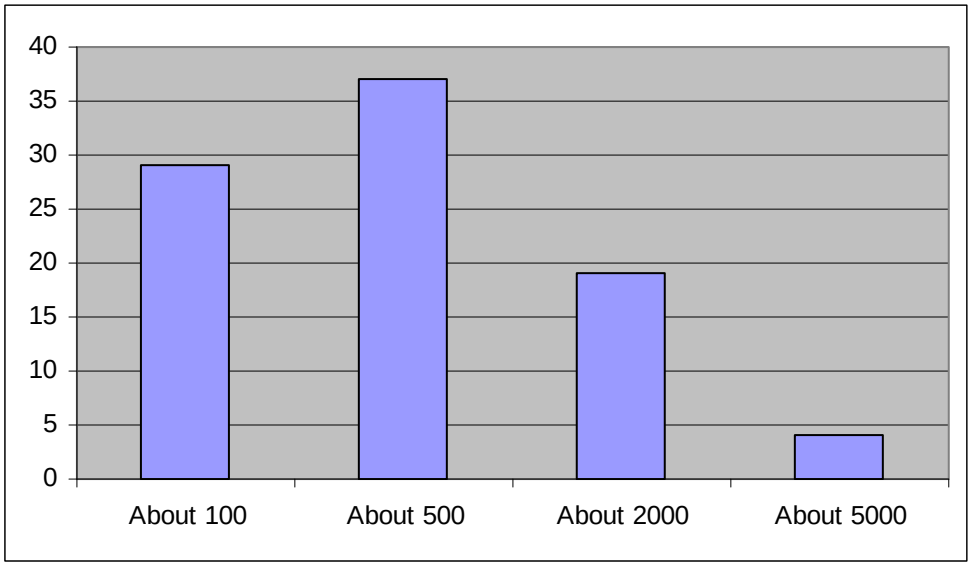


Figure 6.23: About how many work zones related accidents occurred in 2006 in the State of Kansas? (US-36)

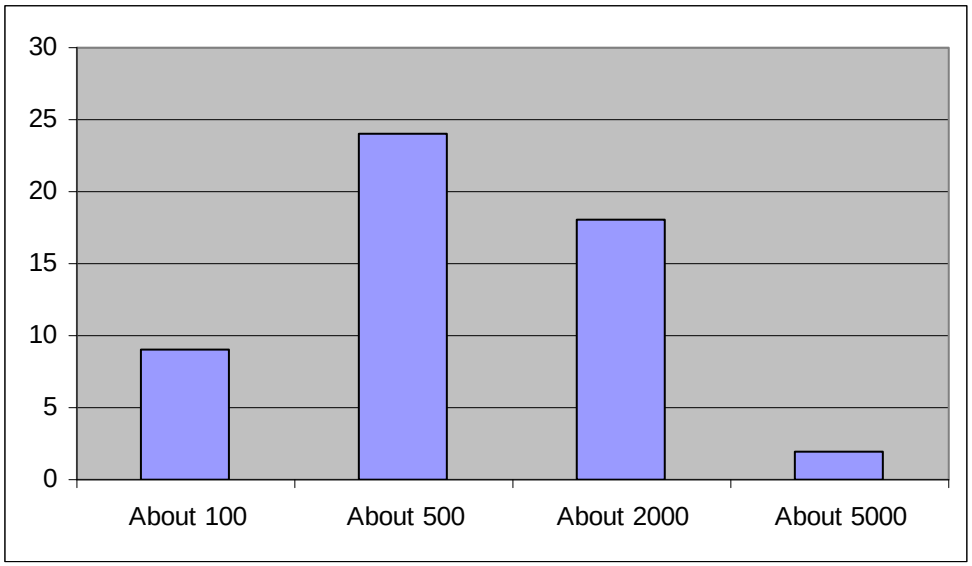


Figure 6.24: About how many work zones related accidents occurred in 2006 in the State of Kansas? (US-73)

Question 2: How many work zone-related fatalities occurred in 2006 in the State of Kansas?

Similar to Question 1, the purpose of this question was to investigate the motorists' baseline of knowledge regarding fatalities in work zones. Results for this question suggest that motorists are aware of the number of fatalities that occur in work zones for the State of Kansas.

For this question, motorists at both experimental locations were better at estimating the correct answers. 59.5% (53 out 89) of motorists from US-36, and 41.5% (22 out of 53) of motorists from US-73 chose "Approx. 1 Doz." as their best guess. As shown in Tables 6.28 and 6.29, and Figures 6.25 and 6.26, some motorists did overestimate the number of fatalities; however, the general trend indicates that the majority of motorists selected the correct choice.

Table 6.28: Response for Question 2 (misc) on US-36

Response	Frequency	Percentage (%)
None	7	7.9
Approx. 1 Dozen	53	59.5
Approx. 2 Dozen	11	12.4
Over 2 Dozen	18	20.2

Table 6.29: Response for Question 2 (misc) on US-76

Response	Frequency	Percentage (%)
None	1	1.9
Approx. 1 Dozen	22	41.5
Approx. 2 Dozen	14	26.4
Over 2 Dozen	16	30.2

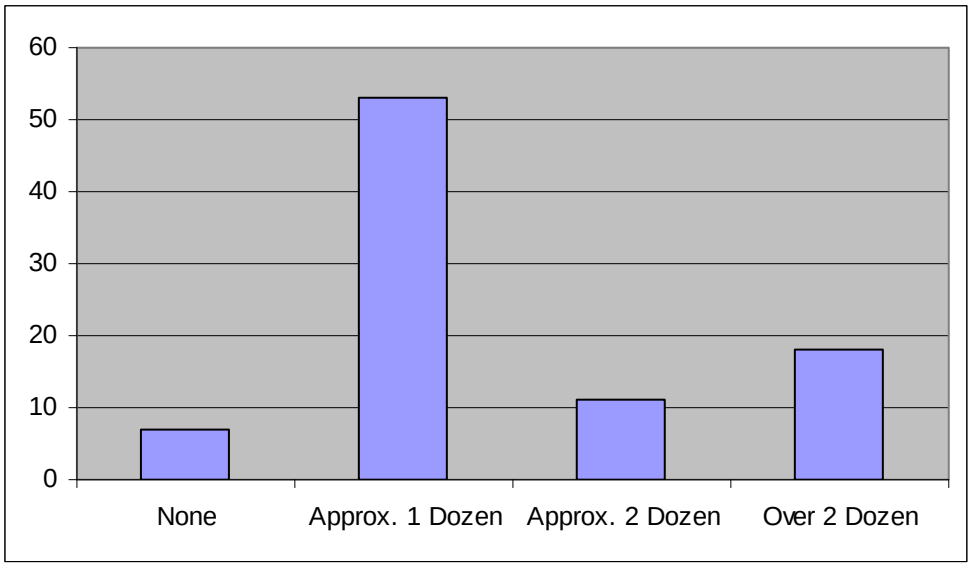


Figure 6.25: How many work zone related fatalities occurred in 2006 in the State of Kansas? (US-36)

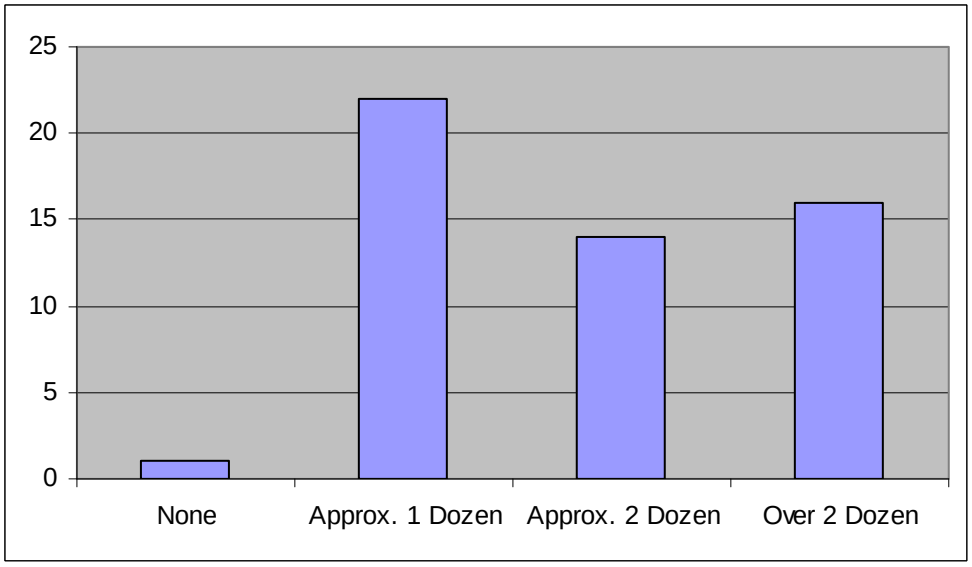


Figure 6.26: How many work zone related fatalities occurred in 2006 in the State of Kansas? (US-73)

Question 3: Would presenting this information in a work zone encourage you to drive more cautiously?

This was a simple yes-no question which sought to investigate whether motorists' attitudes would be affected by statistics if the data were available on work zone warning signage. 83% (74 out of 89) of motorists from US-36 and 89% (47 out of 53) of motorists from US-73 agreed that signage that provides statistics may encourage cautious work zone driving behavior. Figures 6.27 and 6.28 give a visual break down of the results for Question 3 for both experimental highways.

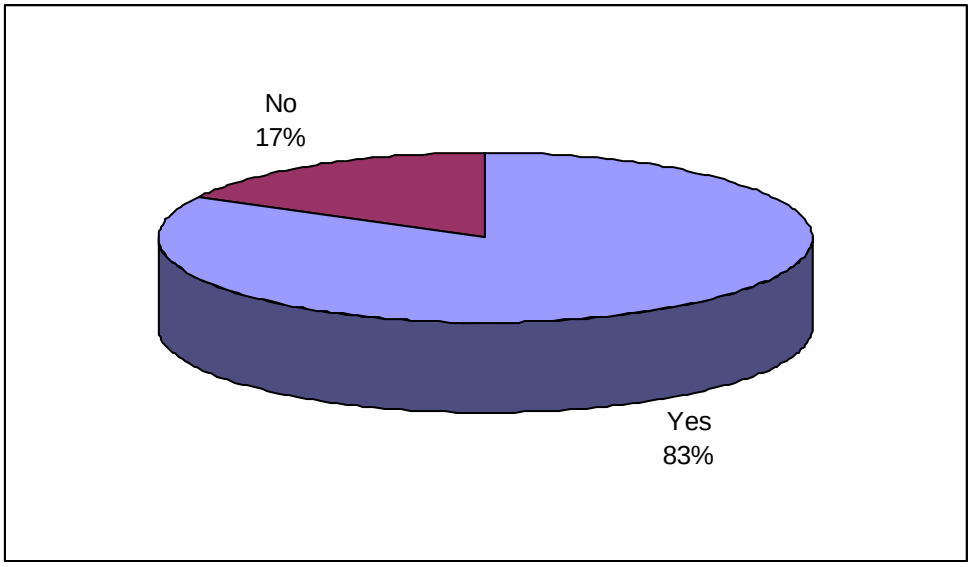


Figure 6.27: 'Would presenting this information in a work zone encourage you to drive more cautiously?" (US-36)

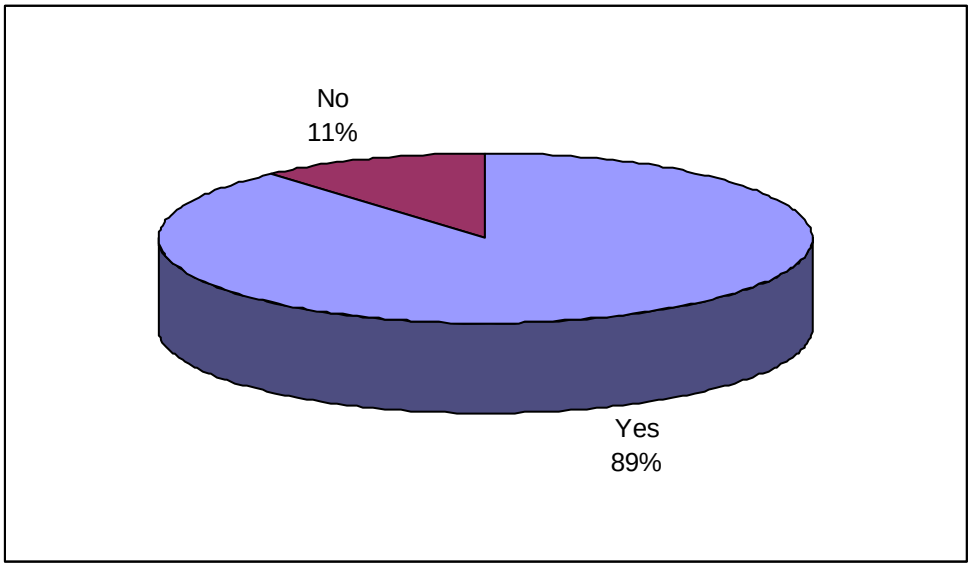


Figure 6.28: 'Would presenting this information in a work zone encourage you to drive more cautiously?" (US-73)

CHAPTER 7 – CONCLUSION AND RECOMMENDATION

7.1 Conclusions

Highway statistics data indicate that 91% of the Kansas public roadway miles are rural, and approximately 97% of the major rural roadways (interstates, principal and minor arterials, and major collector) are two-lane highways. Preserving, rehabilitating, expanding, and enhancing these highways require the construction of a large number of work zones. 63% of the fatal crashes and a third of the injury crashes of Kansas occurred in two-lane highway work zones (Bai and Li 2007).

To improve work zone safety, many types of signage have been developed and employed; however, the effectiveness of some signs has not been quantified. This research project determined the effectiveness of PCMS and a TSS ("Work Zone Ahead") in rural highway work zones under three different conditions: 1) PCMS on; 2) PCMS off, but still visible; and 3) PCMS removed from the road and out of sight.

Two results of the field experiments are briefly discussed as follows:

1) The data analysis results show that the PCMS was effective in reducing vehicle speeds in two-lane work zones. The PCMS was significantly effective when turned on compared to when the device was turned off. The results also indicate that the PCMS, whether on or off, was significantly effective compared to the PCMS being removed from the highway. Vehicle speeds were reduced by 4.7 mph over an average distance of 500 feet when the PCMS was turned on. This was an approximate reduction of 147 % in comparison to the condition when the PCMS was absent. When the PCMS was off but still visible, the vehicle speeds reduced 3.3 mph over an average distance of 500 feet, a

reduction of about 74 % compared to the condition when the PCMS was removed from the road. A mere 1.9 mph speed reduction occurred over an average distance of 500 feet when the PCMS was absent. Based on the data analysis results, researchers concluded that a visible and active PCMS significantly reduces the speed of vehicles approaching work zones. A reduction in vehicular speed allows for greater reaction time to avoid crashes and potentially creates a safer environment for drivers and workers in the work zones.

2) The second part of the data analysis results show that the PCMS was effective in reducing truck speeds in one-way, two-lane work zones. When the PCMS was on, passenger car vehicle speeds were reduced by 3.9 mph, truck speeds by 4.7 mph, and semitrailer speeds by 3.1 mph over an average distance of 500 feet. When the PCMS was off, passenger car vehicle speeds were reduced by 2.4 mph, truck speeds by 3.7 mph, and semitrailer speeds by 3.0 mph over an average distance of 500 feet. When the PCMS was absent and vehicles approaching the advance warning area of a work zone were warned solely by a TTS, passenger car speeds declined by 5.2 mph, truck speeds by 2.8 mph, and semitrailer speeds by 5.0 mph over an average distance of 500 feet. Based on these results, researchers concluded that a visible and active PCMS in a work zone significantly reduces the speed of truck vehicles approaching work zones. One TTS, (W20-1), has a greater effect in reducing vehicle speeds for passenger cars and semitrailer drivers than an activated and visible PCMS.

7.2 Recommendations

The purpose of this study was to reveal the effectiveness of PCMS in highway work zones. Based on the results, the researchers recommend some potential safety improvements. For example, the researchers recommend the implementation of an active PCMS in one-lane, two-way work zones. Statewide, a large percentage of two-lane rural highways are low-volume roads where there exists an urgent need for a highly effective traffic control method. One-lane, two-way work zones on these highways typically remain in operation for relatively short durations and require frequent movement. Therefore, high visibility, high flexibility, and efficiency become critical qualifications for an effective warning sign in these work zones. The implementation of the PCMS in these work zones would be ideal because the device is easy to assemble and remove.

Not only do researchers recommend the implementation of PCMS in one-lane, two-way work zones, but in all work zones. Researchers believe it is critical to conduct research of the success of the PCMS before implementing the device in other work zones. A review of the PCMS Handbook would also be instrumental given that some PCMS messages are more effective than others, as presented in the literature review. If implemented in other work zones, the researchers suggest that the PCMS should be located 500 feet away from the first temporary traffic sign. This distance allows motorists enough time to respond to the PCMS and TTS warnings regarding the upcoming work zone conditions.

Improvement of traffic control is the most direct method to reduce highway work zone crashes. Based on the characteristics of highway work zone crashes, the researchers recommend more effective speed control strategies. The high composition of crashes in high-speed zones and the dominance of rear-end collisions in injury crashes indicate a strong association between

high speeds and work zone injury and fatal crashes. Therefore, controlling speeds is a key step towards improving work zone safety. The crash analysis results suggest a need of more effective and more strictly enforced speed control strategies in highway work zones in order to prevent high-severity crashes causing injuries and fatalities. In particular, more strictly enforced speed limits should be considered in work zones with complex highway geometric alignments. However, the question of how to properly determine work zone speed limits remains. A previous study indicated that a sharp speed reduction (a reduction of more than 10 mph) might increase the number of crashes in highway work zones. Further research in this area is necessary.

Certain trends in respect to driver attitudes and sign efficacy emerged in the evaluation of the survey conducted in the two experimental work zones. These trends led the research team to suggest the following recommendations to improve work zone safety.

First, one of the biggest findings from the survey was that many drivers failed to notice the presence of a road sign on the left side of the road. This may be due to a learned behavior, as drivers are accustomed to only observing traffic flow that travels in their same direction. This behavior has serious implications, as workers on the left side of the road may be in danger since drivers may not see them. It is recommended that future research investigates why drivers are unaware of objects on the left visual field when driving on the right side of the road.

Second, most drivers reported that work zone signs that gave roadway statistics, such as accidents and fatalities, may help encourage safe work zone driving. This finding is also corroborated with data that suggest that most drivers underestimate accident rates in work zones. Thus, it is recommended that future signs contain some degree of information that provides drivers with empirical evidence of work zone hazards. It must be noted that these signs should

not contain too much information which could draw drivers' attentions away from their primary task of driving.

Finally, it is recommended that future studies investigate the attitudes of motorists toward certain signs. Results from the survey suggest that the "Give 'Em A Brake" sign was most effective for encouraging safe work zone driving. Yet, among the four signs presented to the drivers, the "Give 'Em A Brake" sign is the most common on Kansas roads. This raises the question as to whether the drivers' responses were biased or they were truly affected by the sign. Possible future studies could evaluate signs not common in the State of Kansas or novel signs recommended in the preceding paragraph.

As noted by the surveys, the presence of workers and warning signs are the two most important reasons why drivers observe work zone speed limits. Thus, future research should continue to focus on improving driver awareness as vehicles enter work zones. Researchers believe there is potential for the PCMS system to aid in improving driver awareness if deployed in work zones.

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APPENDIX

Appendix I: Sample Survey Form

EXCUSE ME, THE KANSAS DEPARTMENT OF TRANSPORTATION IS TRYING TO IMPROVE WORKZONE SAFETY.

WOULD YOU MIND IF I ASK YOU A FEW QUESTSIONS ABOUT WORK ZONES?

ALL OF THE INFORMATION WILL BE ANONYMOUS.

DEMOGRAPHICS

1. **Note gender**
2. **Which age-group do you fall under? (SKIP IF YOU CAN TELL)**
    a. Under 30
    b. 30 to 60
    c. over 60
3. **How many hours have you been driving today?**
    a. Less than an hour
    b. Over three hours
    c. Between one and three hours

ATTITUDES

1. Have you ever exceeded a work zone speed limit?

IF YES ASK:

2. What is the most common reason you might speed in a work zone?

a. Driving with flow of traffic

b. Work zone seemed inactive

c. Did not see work zone

d. In a hurry

e. Speed limit seemed inappropriate

3. What is the SECOND most common reason you might speed in a work zone?

USE SAME ALTERNATIVES MINUS FIRST CHOICE

4. Have you ever carefully obeyed the speed limit in a work zone?

IF YES ASK

5. What is the most common reason you are likely to obey the speed limit in a work zone?

a. Driving with flow of traffic

b. Observed worker activity

c. Motivated by warning signs

d. Presence of police

e. Speed limit seemed appropriate

6. What is the SECOND most common reason you are likely to obey the speed limit in a work zone?

USE SAME ALTERNATIVES MINUS FIRST CHOICE

7. Rank the following signs as FIRST and SECOND most effective for encouraging safe work zone driving


GIVE 'EM A
BRAKE
KANSAS HIGHWAY
WORKERS


Hit a Worker
$10,000 Fine
Lose Your License


Please
Slow Down
My Dad
Works
Here


Work Zones.
Pay Attention
or pay the price.

8. Which of these signs did you see on the way into the work zone?

1 2 3 4

MISCELLANEOUS

1. About how many work zone related accidents occurred in 2006 in the state of Kansas?

About 100

About 500

About 2000

About 5000

2. How many work zone related fatalities occurred in 2006 in the state of Kansas?

None

Around a dozen

Around two dozen

Over two dozen

3. GIVE ANSWERS

Would presenting this information in a work zone encourage you to drive more cautiously?

THANK YOU FOR YOUR HELP.

Appendix II: Vehicle Speed Data

Sensor 1							Avg. LENGTH	Sensor 2						
LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss		LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
Message sign On														
LANE_01	19	31	1	35	6/3/2008	10:57:02	19	LANE_01	19	31	1	32	6/3/2008	10:56:46
LANE_01	70	33	4	38	6/3/2008	10:51:38	71	LANE_01	72	41	4	33	6/3/2008	10:51:17
LANE_01	19	36	1	35	6/3/2008	10:31:52	20	LANE_01	20	37	2	37	6/3/2008	10:31:30
LANE_01	51	41	3	40	6/3/2008	10:53:51	50	LANE_01	49	43	3	36	6/3/2008	10:53:29
LANE_01	20	43	2	37	6/3/2008	10:51:15	19	LANE_01	18	42	1	35	6/3/2008	10:50:53
LANE_01	77	44	4	38	6/3/2008	10:51:51	79	LANE_01	81	46	4	32	6/3/2008	10:51:28
LANE_01	23	45	2	38	6/3/2008	10:53:32	23	LANE_01	22	48	2	37	6/3/2008	10:53:08
LANE_01	19	46	1	39	6/3/2008	10:55:24	18	LANE_01	16	48	1	36	6/3/2008	10:55:00
LANE_01	20	47	2	38	6/3/2008	10:33:31	20	LANE_01	19	46	1	37	6/3/2008	10:33:07
LANE_01	21	47	2	37	6/3/2008	10:54:38	22	LANE_01	22	47	2	33	6/3/2008	10:54:15
LANE_01	47	48	3	42	6/3/2008	10:49:57	48	LANE_01	48	46	3	35	6/3/2008	10:49:34
LANE_01	22	50	2	36	6/3/2008	10:32:21	22	LANE_01	22	49	2	37	6/3/2008	10:31:56
LANE_01	20	56	2	36	6/3/2008	10:32:13	21	LANE_01	21	47	2	38	6/3/2008	10:31:48
LANE_01	69	56	4	35	6/3/2008	10:35:47	69	LANE_01	69	50	4	39	6/3/2008	10:35:22
LANE_01	77	56	4	37	6/3/2008	10:29:15	77	LANE_01	76	48	4	36	6/3/2008	10:28:50
LANE_01	19	59	1	38	6/3/2008	10:50:18	19	LANE_01	18	59	1	36	6/3/2008	10:49:53
LANE_	23	60	2	42	6/3/20	10:55:54	22	LANE_	21	55	2	40	6/3/20	10:55:29

01					08			01					08	
LANE_01	23	60	2	37	6/3/2008	10:35:35	23	LANE_01	23	46	2	37	6/3/2008	10:35:11
LANE_01	26	60	2	37	6/3/2008	10:34:16	27	LANE_01	27	47	2	38	6/3/2008	10:33:51
LANE_01	21	61	2	42	6/3/2008	10:53:01	20	LANE_01	19	58	1	34	6/3/2008	10:52:36
LANE_01	70	61	4	35	6/3/2008	10:52:28	70	LANE_01	70	61	4	32	6/3/2008	10:52:03
LANE_01	19	63	1	38	6/3/2008	10:50:46	18	LANE_01	17	57	1	34	6/3/2008	10:50:20
LANE_01	67	63	4	38	6/3/2008	10:38:02	68	LANE_01	69	63	4	39	6/3/2008	10:37:36
LANE_01	18	65	1	37	6/3/2008	10:35:07	18	LANE_01	18	57	1	37	6/3/2008	10:34:41
LANE_01	77	65	4	34	6/3/2008	10:35:32	74	LANE_01	70	58	4	36	6/3/2008	10:35:06
LANE_01	68	68	4	35	6/3/2008	10:30:59	57	LANE_01	45	38	3	35	6/3/2008	10:30:35
Message sign Off														
LANE_01	16	70	1	39	6/3/2008	12:09:02	16	LANE_01	16	67	1	35	6/3/2008	12:08:35
LANE_01	18	60	1	38	6/3/2008	11:01:39	17	LANE_01	15	57	1	35	6/3/2008	11:01:14
LANE_01	16	61	1	36	6/3/2008	12:20:05	17	LANE_01	17	63	1	34	6/3/2008	12:19:39
LANE_01	17	66	1	38	6/3/2008	12:25:56	17	LANE_01	16	64	1	34	6/3/2008	12:25:30
LANE_01	17	70	1	39	6/3/2008	12:09:08	17	LANE_01	17	65	1	36	6/3/2008	12:08:41
LANE_01	17	53	1	37	6/3/2008	12:14:52	17	LANE_01	17	54	1	34	6/3/2008	12:14:27
LANE_01	19	65	1	35	6/3/2008	11:10:58	18	LANE_01	16	57	1	32	6/3/2008	11:10:33
LANE_01	18	63	1	39	6/3/2008	11:12:31	18	LANE_01	17	64	1	37	6/3/2008	11:12:05
LANE_01	18	63	1	38	6/3/2008	12:10:52	18	LANE_01	17	50	1	36	6/3/2008	12:10:26
LANE_	17	63	1	37	6/3/20	12:10:58	18	LANE_	18	65	1	36	6/3/20	12:10:32

01					08			01					08	
LANE_01	18	56	1	38	6/3/2008	12:14:50	18	LANE_01	17	56	1	35	6/3/2008	12:14:25
LANE_01	19	51	1	37	6/3/2008	11:02:46	18	LANE_01	17	48	1	35	6/3/2008	11:02:22
LANE_01	18	55	1	40	6/3/2008	11:55:31	18	LANE_01	18	51	1	34	6/3/2008	11:55:07
LANE_01	18	51	1	37	6/3/2008	11:56:19	18	LANE_01	18	53	1	37	6/3/2008	11:55:54
LANE_01	18	64	1	38	6/3/2008	12:06:40	18	LANE_01	18	64	1	35	6/3/2008	12:06:14
LANE_01	18	52	1	38	6/3/2008	12:07:34	18	LANE_01	18	52	1	35	6/3/2008	12:07:09
LANE_01	18	57	1	38	6/3/2008	12:10:46	18	LANE_01	18	52	1	36	6/3/2008	12:10:21
LANE_01	19	44	1	39	6/3/2008	11:06:29	19	LANE_01	18	51	1	35	6/3/2008	11:06:06
LANE_01	20	65	2	38	6/3/2008	11:09:05	19	LANE_01	17	67	1	35	6/3/2008	11:08:38
LANE_01	20	40	2	36	6/3/2008	11:09:40	19	LANE_01	17	39	1	34	6/3/2008	11:09:19
LANE_01	19	52	1	37	6/3/2008	12:01:58	19	LANE_01	18	53	1	34	6/3/2008	12:01:34
LANE_01	20	55	2	39	6/3/2008	12:03:05	19	LANE_01	17	55	1	35	6/3/2008	12:02:41
LANE_01	19	68	1	39	6/3/2008	12:23:51	19	LANE_01	18	61	1	34	6/3/2008	12:23:24
LANE_01	20	66	2	37	6/3/2008	11:02:25	19	LANE_01	18	54	1	35	6/3/2008	11:02:00
LANE_01	19	61	1	37	6/3/2008	11:04:05	19	LANE_01	19	56	1	37	6/3/2008	11:03:40
LANE_01	19	65	1	40	6/3/2008	11:07:58	19	LANE_01	19	63	1	37	6/3/2008	11:07:32
LANE_01	19	63	1	36	6/3/2008	11:11:27	19	LANE_01	19	66	1	35	6/3/2008	11:11:01
LANE_01	19	46	1	39	6/3/2008	11:59:17	19	LANE_01	19	41	1	35	6/3/2008	11:58:54
LANE_01	18	55	1	38	6/3/2008	12:07:36	19	LANE_01	20	51	2	33	6/3/2008	12:07:12

LANE_01	19	58	1	38	6/3/2008	12:14:50	19	LANE_01	19	55	1	33	6/3/2008	12:14:25
LANE_01	20	37	2	37	6/3/2008	11:09:42	20	LANE_01	19	36	1	33	6/3/2008	11:09:21
LANE_01	19	63	1	36	6/3/2008	12:01:07	20	LANE_01	20	60	2	34	6/3/2008	12:00:42
LANE_01	19	62	1	37	6/3/2008	12:01:52	20	LANE_01	20	56	2	33	6/3/2008	12:01:27
LANE_01	19	54	1	38	6/3/2008	12:21:45	20	LANE_01	20	58	2	35	6/3/2008	12:21:20
LANE_01	20	44	2	37	6/3/2008	11:02:10	20	LANE_01	20	42	2	35	6/3/2008	11:01:47
LANE_01	19	58	1	36	6/3/2008	11:09:31	20	LANE_01	21	60	2	33	6/3/2008	11:09:05
LANE_01	20	66	2	35	6/3/2008	11:10:48	20	LANE_01	20	66	2	31	6/3/2008	11:10:22
LANE_01	20	64	2	36	6/3/2008	12:05:29	20	LANE_01	20	63	2	33	6/3/2008	12:05:03
LANE_01	20	44	2	38	6/3/2008	12:13:09	20	LANE_01	20	41	2	34	6/3/2008	12:12:46
LANE_01	21	59	2	39	6/3/2008	12:03:33	21	LANE_01	20	57	2	35	6/3/2008	12:03:08
LANE_01	21	51	2	38	6/3/2008	12:16:00	21	LANE_01	20	50	2	36	6/3/2008	12:15:36
LANE_01	21	62	2	37	6/3/2008	11:13:15	21	LANE_01	21	61	2	34	6/3/2008	11:12:49
LANE_01	21	48	2	34	6/3/2008	12:13:13	22	LANE_01	22	43	2	34	6/3/2008	12:12:51
LANE_01	21	58	2	37	6/3/2008	12:06:05	22	LANE_01	23	59	2	33	6/3/2008	12:05:39
LANE_01	25	61	2	39	6/3/2008	11:01:36	23	LANE_01	21	51	2	34	6/3/2008	11:01:11
LANE_01	24	61	2	36	6/3/2008	11:02:24	23	LANE_01	22	55	2	34	6/3/2008	11:01:59
LANE_01	23	59	2	34	6/3/2008	11:10:20	23	LANE_01	23	58	2	31	6/3/2008	11:09:55
LANE_01	23	59	2	34	6/3/2008	12:04:01	23	LANE_01	23	58	2	32	6/3/2008	12:03:35
LANE_	24	49	2	37	6/3/20	11:04:25	24	LANE_	23	43	2	39	6/3/20	11:04:02

01					08			01					08	
LANE_01	23	59	2	37	6/3/2008	12:18:39	24	LANE_01	24	52	2	33	6/3/2008	12:18:14
LANE_01	26	65	2	34	6/3/2008	12:18:02	26	LANE_01	26	62	2	33	6/3/2008	12:17:36
LANE_01	32	61	2	35	6/3/2008	11:01:32	32	LANE_01	32	57	2	33	6/3/2008	11:01:07
LANE_01	35	54	2	36	6/3/2008	11:01:41	36	LANE_01	37	53	2	32	6/3/2008	11:01:16
LANE_01	37	49	2	38	6/3/2008	11:03:52	37	LANE_01	36	49	2	34	6/3/2008	11:03:28
LANE_01	38	60	2	37	6/3/2008	11:12:34	38	LANE_01	37	60	2	35	6/3/2008	11:12:09
LANE_01	38	56	2	35	6/3/2008	12:04:09	38	LANE_01	38	54	2	31	6/3/2008	12:03:44
LANE_01	42	62	3	37	6/3/2008	12:11:36	46	LANE_01	50	64	3	33	6/3/2008	12:11:10
LANE_01	54	68	3	35	6/3/2008	12:14:13	48	LANE_01	41	67	3	33	6/3/2008	12:13:47
LANE_01	51	66	3	35	6/3/2008	12:02:38	56	LANE_01	60	65	4	33	6/3/2008	12:02:12
LANE_01	58	51	3	34	6/3/2008	12:18:14	56	LANE_01	54	46	3	31	6/3/2008	12:17:51
LANE_01	64	60	4	39	6/3/2008	12:17:20	64	LANE_01	63	55	4	33	6/3/2008	12:16:55
LANE_01	69	44	4	36	6/3/2008	12:13:11	69	LANE_01	68	43	4	34	6/3/2008	12:12:49
LANE_01	70	65	4	36	6/3/2008	12:10:36	70	LANE_01	69	63	4	34	6/3/2008	12:10:10
LANE_01	70	65	4	37	6/3/2008	12:01:50	71	LANE_01	71	63	4	32	6/3/2008	12:01:24
LANE_01	72	58	4	36	6/3/2008	12:01:57	71	LANE_01	70	55	4	35	6/3/2008	12:01:32
LANE_01	73	64	4	36	6/3/2008	12:22:31	72	LANE_01	71	62	4	34	6/3/2008	12:22:05
LANE_01	70	53	4	36	6/3/2008	12:26:55	73	LANE_01	75	47	4	33	6/3/2008	12:26:31
LANE_01	76	65	4	37	6/3/2008	12:23:56	77	LANE_01	78	58	4	33	6/3/2008	12:23:30

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LANE_01	21	62	2	21	6/3/2008	16:54:11	21	LANE_01	20	61	2	22	6/3/2008	16:53:52
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LANE_01	17	50	1	21	6/3/2008	17:40:04	17	LANE_01	17	54	1	20	6/3/2008	17:39:47
LANE_01	16	51	1	20	6/3/2008	17:40:57	17	LANE_01	18	45	1	19	6/3/2008	17:40:41
LANE_01	16	61	1	21	6/3/2008	17:46:28	17	LANE_01	18	60	1	24	6/3/2008	17:46:10
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LANE_01	17	48	1	20	6/3/2008	17:21:57	18	LANE_01	18	42	1	19	6/3/2008	17:21:42
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LANE_01	17	58	1	22	6/3/2008	17:29:37	18	LANE_01	18	51	1	20	6/3/2008	17:29:19
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LANE_01	24	52	2	21	6/3/2008	17:15:00	23	LANE_01	22	47	2	21	6/3/2008	17:14:42
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LANE_01	37	45	2	18	6/3/2008	17:40:48	37	LANE_01	36	43	2	18	6/3/2008	17:40:32
LANE_01	42	52	3	20	6/3/2008	17:03:03	41	LANE_01	39	53	2	23	6/3/2008	17:02:46
LANE_01	44	47	3	21	6/3/2008	17:22:26	42	LANE_01	40	45	3	21	6/3/2008	17:22:10
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LANE_01	64	49	4	19	6/3/2008	17:46:26	68	LANE_01	71	54	4	20	6/3/2008	17:46:07
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LANE_01	66	84	4	22	6/3/2008	17:49:19	69	LANE_01	71	79	4	22	6/3/2008	17:48:57
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Message sign Off														
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LANE_01	21	50	2	22	6/3/2008	18:03:18	19	LANE_01	16	39	1	21	6/3/2008	18:03:04
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LANE_01	20	48	2	22	6/3/2008	18:40:43	20	LANE_01	20	48	2	23	6/3/2008	18:40:25
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LANE_01	22	49	2	19	6/3/2008	18:16:16	22	LANE_01	22	43	2	21	6/3/2008	18:15:59
LANE_01	23	55	2	21	6/3/2008	18:30:55	23	LANE_01	22	56	2	22	6/3/2008	18:30:36
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LANE_01	49	53	3	22	6/3/2008	18:20:38	48	LANE_01	47	50	3	22	6/3/2008	18:20:20
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LANE_01	76	58	4	19	6/3/2008	18:39:11	71	LANE_01	66	50	4	21	6/3/2008	18:38:50
LANE_01	91	81	4	22	6/3/2008	18:35:32	88	LANE_01	84	63	4	22	6/3/2008	18:35:10
LANE_01	96	80	4	20	6/3/2008	18:35:47	89	LANE_01	82	60	4	24	6/3/2008	18:35:26
LANE_01	84	70	4	21	6/3/2008	18:39:40	89	LANE_01	94	79	4	22	6/3/2008	18:39:19
LANE_01	79	50	4	18	6/3/2008	18:16:13	90	LANE_01	101	60	4	18	6/3/2008	18:15:57
Sensor 1							Avg.	**Sensor 2**						

LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss	LENGTH	LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
Message sign Off														
LANE_01	22	42	2	16	6/4/2008	10:56:10	23	LANE_01	23	43	2	18	6/4/2008	10:56:53
LANE_01	22	43	2	22	6/4/2008	10:57:49	22	LANE_01	21	45	2	25	6/4/2008	10:58:31
LANE_01	18	50	1	18	6/4/2008	10:57:45	18	LANE_01	18	47	1	21	6/4/2008	10:58:27
LANE_01	32	51	2	21	6/4/2008	10:57:03	32	LANE_01	31	33	2	20	6/4/2008	10:57:45
LANE_01	19	53	1	18	6/4/2008	10:54:43	19	LANE_01	19	54	1	19	6/4/2008	10:55:25
Message sign On														
LANE_01	16	47	1	19	6/4/2008	11:01:07	17	LANE_01	17	43	1	21	6/4/2008	11:01:50
LANE_01	16	43	1	20	6/4/2008	11:14:02	17	LANE_01	17	46	1	22	6/4/2008	11:14:45
LANE_01	16	50	1	18	6/4/2008	11:38:37	17	LANE_01	18	46	1	21	6/4/2008	11:39:19
LANE_01	17	53	1	19	6/4/2008	11:24:25	18	LANE_01	18	48	1	21	6/4/2008	11:25:07
LANE_01	17	50	1	17	6/4/2008	11:44:00	18	LANE_01	18	46	1	19	6/4/2008	11:44:41
LANE_01	17	59	1	19	6/4/2008	11:26:58	18	LANE_01	19	53	1	22	6/4/2008	11:27:39
LANE_01	16	40	1	18	6/4/2008	11:34:14	18	LANE_01	20	43	2	19	6/4/2008	11:34:57
LANE_01	17	55	1	18	6/4/2008	11:41:08	18	LANE_01	19	47	1	21	6/4/2008	11:41:49
LANE_01	19	51	1	20	6/4/2008	11:00:23	19	LANE_01	18	47	1	21	6/4/2008	11:01:05
LANE_01	19	63	1	17	6/4/2008	11:15:12	19	LANE_01	18	56	1	19	6/4/2008	11:15:53
LANE_01	18	63	1	16	6/4/2008	11:43:07	19	LANE_01	19	62	1	19	6/4/2008	11:43:47
LANE_	18	46	1	20	6/4/20	11:50:36	19	LANE_	19	44	1	20	6/4/20	11:51:18

01					08			01					08	
LANE_01	19	50	1	18	6/4/2008	11:11:02	19	LANE_01	19	45	1	20	6/4/2008	11:11:44
LANE_01	19	69	1	21	6/4/2008	11:15:14	19	LANE_01	19	58	1	22	6/4/2008	11:15:54
LANE_01	19	62	1	19	6/4/2008	11:20:34	19	LANE_01	19	60	1	20	6/4/2008	11:21:15
LANE_01	20	73	2	22	6/4/2008	11:53:13	19	LANE_01	18	61	1	24	6/4/2008	11:53:53
LANE_01	19	37	1	18	6/4/2008	11:06:42	20	LANE_01	20	39	2	18	6/4/2008	11:07:26
LANE_01	19	56	1	22	6/4/2008	11:38:44	20	LANE_01	20	47	2	23	6/4/2008	11:39:26
LANE_01	20	56	2	20	6/4/2008	11:39:05	20	LANE_01	19	52	1	21	6/4/2008	11:39:46
LANE_01	21	64	2	20	6/4/2008	11:01:03	20	LANE_01	19	51	1	21	6/4/2008	11:01:44
LANE_01	21	72	2	18	6/4/2008	11:01:13	20	LANE_01	19	55	1	20	6/4/2008	11:01:54
LANE_01	20	52	2	19	6/4/2008	11:06:33	20	LANE_01	20	47	2	19	6/4/2008	11:07:15
LANE_01	21	52	2	17	6/4/2008	11:35:58	20	LANE_01	19	51	1	20	6/4/2008	11:36:40
LANE_01	20	59	2	21	6/4/2008	11:39:58	20	LANE_01	20	55	2	22	6/4/2008	11:40:39
LANE_01	22	61	2	25	6/4/2008	11:51:39	20	LANE_01	18	44	1	23	6/4/2008	11:52:21
LANE_01	20	42	2	16	6/4/2008	11:41:56	21	LANE_01	21	26	2	17	6/4/2008	11:42:41
LANE_01	21	50	2	16	6/4/2008	11:19:34	21	LANE_01	21	46	2	18	6/4/2008	11:20:17
LANE_01	22	45	2	18	6/4/2008	11:10:03	22	LANE_01	21	45	2	21	6/4/2008	11:10:46
LANE_01	21	45	2	20	6/4/2008	11:33:04	22	LANE_01	22	41	2	21	6/4/2008	11:33:47
LANE_01	20	40	2	18	6/4/2008	11:12:02	22	LANE_01	24	39	2	19	6/4/2008	11:12:46
LANE_01	23	50	2	18	6/4/2008	11:12:13	22	LANE_01	21	41	2	19	6/4/2008	11:12:55

LANE_01	21	61	2	17	6/4/2008	11:18:59	22	LANE_01	23	58	2	17	6/4/2008	11:19:39
LANE_01	22	55	2	16	6/4/2008	11:07:25	23	LANE_01	23	53	2	18	6/4/2008	11:08:06
LANE_01	23	39	2	17	6/4/2008	11:13:24	23	LANE_01	22	33	2	18	6/4/2008	11:14:09
LANE_01	23	55	2	18	6/4/2008	11:22:41	23	LANE_01	22	43	2	19	6/4/2008	11:23:23
LANE_01	22	42	2	20	6/4/2008	11:54:04	23	LANE_01	23	36	2	21	6/4/2008	11:54:48
LANE_01	22	29	2	17	6/4/2008	11:54:15	23	LANE_01	23	29	2	19	6/4/2008	11:55:02
LANE_01	23	34	2	18	6/4/2008	11:54:22	23	LANE_01	22	33	2	19	6/4/2008	11:55:07
LANE_01	22	43	2	17	6/4/2008	11:06:38	23	LANE_01	24	43	2	19	6/4/2008	11:07:21
LANE_01	23	60	2	19	6/4/2008	11:09:48	23	LANE_01	23	56	2	17	6/4/2008	11:10:29
LANE_01	23	50	2	18	6/4/2008	11:11:00	23	LANE_01	23	47	2	20	6/4/2008	11:11:42
LANE_01	23	64	2	18	6/4/2008	11:21:50	23	LANE_01	23	59	2	21	6/4/2008	11:22:30
LANE_01	23	53	2	17	6/4/2008	11:39:06	23	LANE_01	23	50	2	20	6/4/2008	11:39:48
LANE_01	23	57	2	18	6/4/2008	11:51:16	23	LANE_01	23	57	2	19	6/4/2008	11:51:57
LANE_01	24	52	2	17	6/4/2008	11:45:08	24	LANE_01	24	49	2	19	6/4/2008	11:45:50
LANE_01	27	35	2	19	6/4/2008	11:54:13	27	LANE_01	26	31	2	21	6/4/2008	11:54:59
LANE_01	37	59	2	17	6/4/2008	11:24:07	38	LANE_01	38	44	2	21	6/4/2008	11:24:48
LANE_01	41	58	3	17	6/4/2008	11:38:43	39	LANE_01	37	45	2	20	6/4/2008	11:39:24
LANE_01	42	50	3	21	6/4/2008	11:01:01	41	LANE_01	39	48	2	20	6/4/2008	11:01:43
LANE_01	49	74	3	15	6/4/2008	11:08:31	46	LANE_01	43	60	3	17	6/4/2008	11:09:12
LANE_	57	38	3	18	6/4/20	11:22:21	56	LANE_	55	42	3	18	6/4/20	11:23:04

01					08			01					08	
LANE_01	61	54	4	22	6/4/2008	11:50:08	61	LANE_01	60	49	4	18	6/4/2008	11:50:49
LANE_01	74	44	4	17	6/4/2008	11:22:16	72	LANE_01	69	39	4	18	6/4/2008	11:22:59
LANE_01	72	35	4	22	6/4/2008	11:54:10	74	LANE_01	76	31	4	22	6/4/2008	11:54:56
LANE_01	85	83	4	15	6/4/2008	11:20:55	77	LANE_01	68	60	4	18	6/4/2008	11:21:35
LANE_01	79	54	4	14	6/4/2008	11:42:31	79	LANE_01	78	50	4	16	6/4/2008	11:43:12
LANE_01	81	60	4	23	6/4/2008	11:47:54	79	LANE_01	77	54	4	23	6/4/2008	11:48:35
LANE_01	86	59	4	17	6/4/2008	11:38:01	80	LANE_01	73	49	4	18	6/4/2008	11:38:43
LANE_01	85	55	4	24	6/4/2008	11:48:11	81	LANE_01	77	51	4	20	6/4/2008	11:48:52
LANE_01	88	59	4	15	6/4/2008	11:24:02	84	LANE_01	79	46	4	18	6/4/2008	11:24:44
LANE_01	83	59	4	22	6/4/2008	11:48:04	85	LANE_01	87	54	4	17	6/4/2008	11:48:46
Message sign Off														
LANE_01	19	62	1	23	6/4/2008	14:17:23	18	LANE_01	17	59	1	22	6/4/2008	14:18:03
LANE_01	17	41	1	18	6/4/2008	14:49:38	19	LANE_01	20	45	2	19	6/4/2008	14:50:21
LANE_01	20	58	2	17	6/4/2008	14:36:47	20	LANE_01	19	51	1	19	6/4/2008	14:37:28
LANE_01	21	65	2	23	6/4/2008	14:13:08	20	LANE_01	19	49	1	25	6/4/2008	14:13:49
LANE_01	20	45	2	19	6/4/2008	14:37:52	20	LANE_01	20	44	2	19	6/4/2008	14:38:35
LANE_01	20	58	2	18	6/4/2008	14:38:03	20	LANE_01	20	55	2	19	6/4/2008	14:38:44
LANE_01	21	48	2	21	6/4/2008	14:59:42	20	LANE_01	19	43	1	22	6/4/2008	15:00:24
LANE_01	21	47	2	26	6/4/2008	14:39:19	21	LANE_01	21	46	2	21	6/4/2008	14:40:01
LANE_	22	46	2	20	6/4/20	14:31:53	22	LANE_	21	43	2	22	6/4/20	14:32:36

01					08			01					08	
LANE_01	22	56	2	18	6/4/2008	14:39:16	22	LANE_01	21	49	2	21	6/4/2008	14:39:58
LANE_01	23	63	2	23	6/4/2008	14:32:41	23	LANE_01	22	59	2	22	6/4/2008	14:33:21
LANE_01	23	67	2	20	6/4/2008	14:45:39	23	LANE_01	22	66	2	22	6/4/2008	14:46:19
LANE_01	22	49	2	20	6/4/2008	14:51:16	23	LANE_01	23	53	2	21	6/4/2008	14:51:58
LANE_01	23	41	2	19	6/4/2008	14:56:48	23	LANE_01	22	37	2	20	6/4/2008	14:57:32
LANE_01	22	46	2	17	6/4/2008	14:34:59	23	LANE_01	24	44	2	20	6/4/2008	14:35:41
LANE_01	23	56	2	21	6/4/2008	14:54:35	23	LANE_01	23	52	2	19	6/4/2008	14:55:17
LANE_01	26	57	2	18	6/4/2008	14:45:52	25	LANE_01	24	51	2	20	6/4/2008	14:46:34
LANE_01	39	50	2	19	6/4/2008	14:33:46	38	LANE_01	37	48	2	19	6/4/2008	14:34:28
LANE_01	42	48	3	21	6/4/2008	14:32:12	44	LANE_01	45	46	3	26	6/4/2008	14:32:54
LANE_01	71	63	4	17	6/4/2008	14:44:21	71	LANE_01	71	61	4	18	6/4/2008	14:45:01
LANE_01	88	51	4	17	6/4/2008	14:57:44	84	LANE_01	80	46	4	18	6/4/2008	14:58:27
Message sign On														
LANE_01	17	52	1	19	6/4/2008	15:50:27	17	LANE_01	17	49	1	21	6/4/2008	15:50:44
LANE_01	18	55	1	19	6/4/2008	15:35:40	18	LANE_01	17	54	1	20	6/4/2008	15:36:22
LANE_01	18	38	1	18	6/4/2008	15:06:47	19	LANE_01	20	35	2	18	6/4/2008	15:07:30
LANE_01	20	57	2	21	6/4/2008	15:27:47	19	LANE_01	18	38	1	21	6/4/2008	15:28:29
LANE_01	19	62	1	18	6/4/2008	15:04:16	20	LANE_01	20	55	2	19	6/4/2008	15:04:57
LANE_01	20	66	2	18	6/4/2008	15:56:35	20	LANE_01	19	53	1	21	6/4/2008	15:56:51
LANE_	20	57	2	18	6/4/20	15:56:57	20	LANE_	19	44	1	23	6/4/20	15:57:13

01					08			01					08	
LANE_01	20	62	2	19	6/4/2008	15:57:03	20	LANE_01	19	43	1	23	6/4/2008	15:57:19
LANE_01	19	43	1	17	6/4/2008	15:57:41	20	LANE_01	20	40	2	21	6/4/2008	15:57:58
LANE_01	20	61	2	18	6/4/2008	15:53:49	20	LANE_01	20	55	2	23	6/4/2008	15:54:04
LANE_01	21	50	2	18	6/4/2008	15:08:06	22	LANE_01	22	49	2	18	6/4/2008	15:08:48
LANE_01	21	47	2	19	6/4/2008	15:50:49	22	LANE_01	22	44	2	21	6/4/2008	15:51:06
LANE_01	22	60	2	17	6/4/2008	15:54:14	22	LANE_01	21	53	2	22	6/4/2008	15:54:30
LANE_01	21	42	2	17	6/4/2008	15:57:43	22	LANE_01	22	38	2	19	6/4/2008	15:58:01
LANE_01	23	57	2	21	6/4/2008	15:33:20	23	LANE_01	22	43	2	22	6/4/2008	15:34:02
LANE_01	23	70	2	19	6/4/2008	15:47:04	23	LANE_01	22	68	2	20	6/4/2008	15:47:18
LANE_01	25	55	2	18	6/4/2008	15:34:30	23	LANE_01	21	47	2	20	6/4/2008	15:35:13
LANE_01	23	49	2	18	6/4/2008	15:33:07	24	LANE_01	24	39	2	21	6/4/2008	15:33:50
LANE_01	25	59	2	16	6/4/2008	15:58:45	25	LANE_01	25	46	2	19	6/4/2008	15:59:01
LANE_01	31	56	2	18	6/4/2008	15:04:51	26	LANE_01	20	50	2	21	6/4/2008	15:05:33
LANE_01	37	51	2	21	6/4/2008	15:07:40	36	LANE_01	34	43	2	21	6/4/2008	15:08:22
LANE_01	39	41	2	16	6/4/2008	15:08:30	37	LANE_01	34	42	2	19	6/4/2008	15:09:13
LANE_01	46	56	3	20	6/4/2008	15:50:24	45	LANE_01	44	52	3	22	6/4/2008	15:50:40
LANE_01	74	64	4	18	6/4/2008	15:06:24	70	LANE_01	65	56	4	18	6/4/2008	15:07:04
LANE_01	78	67	4	20	6/4/2008	15:08:57	77	LANE_01	76	63	4	21	6/4/2008	15:09:37
LANE_01	89	64	4	19	6/4/2008	15:07:55	81	LANE_01	73	57	4	18	6/4/2008	15:08:36

Message sign Off														
LANE_01	16	67	1	18	6/4/2008	16:27:49	16	LANE_01	16	60	1	22	6/4/2008	16:28:04
LANE_01	17	61	1	18	6/4/2008	16:01:58	17	LANE_01	16	53	1	20	6/4/2008	16:02:14
LANE_01	16	56	1	17	6/4/2008	16:09:53	17	LANE_01	18	49	1	21	6/4/2008	16:10:09
LANE_01	16	59	1	18	6/4/2008	16:28:22	17	LANE_01	18	48	1	22	6/4/2008	16:28:38
LANE_01	16	40	1	19	6/4/2008	16:01:38	18	LANE_01	19	32	1	21	6/4/2008	16:01:58
LANE_01	16	50	1	17	6/4/2008	16:09:40	18	LANE_01	19	48	1	19	6/4/2008	16:09:56
LANE_01	17	46	1	18	6/4/2008	16:11:32	18	LANE_01	18	47	1	22	6/4/2008	16:11:49
LANE_01	17	62	1	17	6/4/2008	16:15:59	18	LANE_01	18	50	1	20	6/4/2008	16:16:14
LANE_01	17	61	1	19	6/4/2008	16:38:10	18	LANE_01	18	54	1	21	6/4/2008	16:38:26
LANE_01	16	47	1	16	6/4/2008	16:01:33	18	LANE_01	20	30	2	19	6/4/2008	16:01:52
LANE_01	17	49	1	17	6/4/2008	16:11:27	18	LANE_01	19	46	1	22	6/4/2008	16:11:43
LANE_01	19	65	1	19	6/4/2008	16:19:34	18	LANE_01	17	61	1	20	6/4/2008	16:19:49
LANE_01	18	71	1	21	6/4/2008	16:27:36	18	LANE_01	18	67	1	22	6/4/2008	16:27:50
LANE_01	19	63	1	20	6/4/2008	16:40:35	18	LANE_01	17	56	1	21	6/4/2008	16:40:51
LANE_01	18	57	1	18	6/4/2008	16:41:06	18	LANE_01	18	54	1	20	6/4/2008	16:41:21
LANE_01	16	53	1	18	6/4/2008	16:43:06	18	LANE_01	20	49	2	19	6/4/2008	16:43:22
LANE_01	17	48	1	17	6/4/2008	16:01:35	19	LANE_01	20	36	2	20	6/4/2008	16:01:55
LANE_01	18	44	1	19	6/4/2008	16:03:49	19	LANE_01	19	46	1	21	6/4/2008	16:04:06
LANE_01	19	64	1	18	6/4/2008	16:29:36	19	LANE_01	18	62	1	21	6/4/2008	16:29:51

LANE_01	18	70	1	16	6/4/2008	16:33:14	19	LANE_01	19	63	1	19	6/4/2008	16:33:28
LANE_01	17	60	1	17	6/4/2008	16:38:18	19	LANE_01	20	55	2	20	6/4/2008	16:38:34
LANE_01	18	60	1	20	6/4/2008	16:40:57	19	LANE_01	19	57	1	21	6/4/2008	16:41:13
LANE_01	19	56	1	18	6/4/2008	16:43:07	19	LANE_01	18	48	1	20	6/4/2008	16:43:24
LANE_01	19	59	1	18	6/4/2008	16:02:18	19	LANE_01	19	44	1	20	6/4/2008	16:02:34
LANE_01	18	49	1	20	6/4/2008	16:09:15	19	LANE_01	20	47	2	22	6/4/2008	16:09:32
LANE_01	19	54	1	18	6/4/2008	16:09:18	19	LANE_01	19	44	1	21	6/4/2008	16:09:35
LANE_01	19	66	1	20	6/4/2008	16:22:52	19	LANE_01	19	65	1	20	6/4/2008	16:23:07
LANE_01	19	74	1	17	6/4/2008	16:30:23	19	LANE_01	19	70	1	21	6/4/2008	16:30:37
LANE_01	19	65	1	19	6/4/2008	16:37:33	19	LANE_01	19	48	1	21	6/4/2008	16:37:48
LANE_01	19	65	1	19	6/4/2008	16:39:01	19	LANE_01	19	63	1	21	6/4/2008	16:39:16
LANE_01	20	54	2	16	6/4/2008	16:15:20	20	LANE_01	19	38	1	21	6/4/2008	16:15:38
LANE_01	20	68	2	18	6/4/2008	16:32:56	20	LANE_01	19	57	1	20	6/4/2008	16:33:11
LANE_01	20	53	2	18	6/4/2008	16:09:16	20	LANE_01	20	41	2	19	6/4/2008	16:09:33
LANE_01	20	52	2	20	6/4/2008	16:13:52	20	LANE_01	20	47	2	22	6/4/2008	16:14:08
LANE_01	20	67	2	19	6/4/2008	16:20:10	20	LANE_01	20	62	2	20	6/4/2008	16:20:24
LANE_01	21	75	2	18	6/4/2008	16:30:07	20	LANE_01	19	60	1	22	6/4/2008	16:30:22
LANE_01	20	76	2	19	6/4/2008	16:33:53	20	LANE_01	20	68	2	20	6/4/2008	16:34:07
LANE_01	21	59	2	19	6/4/2008	16:35:36	20	LANE_01	19	51	1	20	6/4/2008	16:35:52
LANE_	20	71	2	18	6/4/20	16:40:04	20	LANE_	20	64	2	18	6/4/20	16:40:19

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LANE_01	21	56	2	18	6/4/2008	16:13:53	21	LANE_01	20	44	2	20	6/4/2008	16:14:10
LANE_01	21	75	2	18	6/4/2008	16:26:25	21	LANE_01	20	70	2	20	6/4/2008	16:26:40
LANE_01	21	76	2	17	6/4/2008	16:28:01	21	LANE_01	20	65	2	19	6/4/2008	16:28:16
LANE_01	20	77	2	20	6/4/2008	16:36:24	21	LANE_01	21	73	2	20	6/4/2008	16:36:38
LANE_01	20	59	2	17	6/4/2008	16:37:23	21	LANE_01	21	45	2	20	6/4/2008	16:37:38
LANE_01	21	75	2	20	6/4/2008	16:23:21	21	LANE_01	21	65	2	20	6/4/2008	16:23:36
LANE_01	21	62	2	17	6/4/2008	16:37:25	21	LANE_01	21	39	2	20	6/4/2008	16:37:41
LANE_01	20	66	2	17	6/4/2008	16:38:15	21	LANE_01	22	71	2	21	6/4/2008	16:38:30
LANE_01	22	47	2	17	6/4/2008	16:11:30	22	LANE_01	21	46	2	23	6/4/2008	16:11:46
LANE_01	22	58	2	18	6/4/2008	16:13:45	22	LANE_01	21	51	2	21	6/4/2008	16:14:00
LANE_01	21	62	2	16	6/4/2008	16:43:03	22	LANE_01	22	59	2	20	6/4/2008	16:43:18
LANE_01	21	55	2	18	6/4/2008	16:15:29	22	LANE_01	23	42	2	21	6/4/2008	16:15:46
LANE_01	23	65	2	16	6/4/2008	16:28:21	22	LANE_01	21	50	2	20	6/4/2008	16:28:36
LANE_01	22	58	2	17	6/4/2008	16:37:54	22	LANE_01	22	53	2	20	6/4/2008	16:38:10
LANE_01	24	65	2	18	6/4/2008	16:29:30	23	LANE_01	22	61	2	22	6/4/2008	16:29:45
LANE_01	23	58	2	17	6/4/2008	16:41:01	23	LANE_01	23	55	2	18	6/4/2008	16:41:17
LANE_01	24	48	2	16	6/4/2008	16:01:34	24	LANE_01	23	35	2	20	6/4/2008	16:01:53
LANE_01	23	47	2	18	6/4/2008	16:12:36	24	LANE_01	24	45	2	20	6/4/2008	16:12:53
LANE_01	23	35	2	16	6/4/2008	16:10:55	24	LANE_01	25	35	2	19	6/4/2008	16:11:13

LANE_01	25	75	2	16	6/4/2008	16:17:28	24	LANE_01	23	63	2	20	6/4/2008	16:17:42
LANE_01	26	63	2	17	6/4/2008	16:16:13	26	LANE_01	26	61	2	19	6/4/2008	16:16:28
LANE_01	42	44	3	17	6/4/2008	16:07:20	42	LANE_01	42	38	3	21	6/4/2008	16:07:37
LANE_01	44	56	3	16	6/4/2008	16:15:28	42	LANE_01	40	38	3	19	6/4/2008	16:15:45
LANE_01	49	70	3	16	6/4/2008	16:39:33	49	LANE_01	49	65	3	18	6/4/2008	16:39:47
LANE_01	53	53	3	20	6/4/2008	16:13:18	53	LANE_01	53	47	3	20	6/4/2008	16:13:35
LANE_01	44	35	3	15	6/4/2008	16:43:12	60	LANE_01	76	51	4	18	6/4/2008	16:43:27
LANE_01	74	72	4	15	6/4/2008	16:42:32	70	LANE_01	66	62	4	17	6/4/2008	16:42:47
LANE_01	83	79	4	17	6/4/2008	16:36:28	75	LANE_01	67	63	4	21	6/4/2008	16:36:43
LANE_01	78	61	4	16	6/4/2008	16:28:34	76	LANE_01	73	52	4	18	6/4/2008	16:28:49
Sensor 1							Avg. LENGTH	**Sensor 2**						
LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss		LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
Message sign On														
LANE_01	21	45	2	23	6/5/2008	12:55:01	20	LANE_01	19	36	1	23	6/5/2008	12:54:59
LANE_01	16	47	1	19	6/5/2008	12:43:24	17	LANE_01	18	45	1	21	6/5/2008	12:43:21
LANE_01	19	47	1	21	6/5/2008	12:31:58	19	LANE_01	19	51	1	21	6/5/2008	12:31:54
LANE_01	23	48	2	19	6/5/2008	12:47:54	24	LANE_01	24	53	2	20	6/5/2008	12:47:50
LANE_01	19	55	1	22	6/5/2008	12:59:47	19	LANE_01	18	53	1	21	6/5/2008	12:59:43
LANE_01	15	56	1	21	6/5/2008	12:45:02	16	LANE_01	16	57	1	22	6/5/2008	12:44:57
LANE_	24	56	2	20	6/5/20	12:40:37	23	LANE_	22	48	2	19	6/5/20	12:40:33

01					08			01					08	
LANE_01	23	57	2	20	6/5/2008	12:44:32	23	LANE_01	22	52	2	20	6/5/2008	12:44:28
LANE_01	22	58	2	22	6/5/2008	12:50:56	22	LANE_01	21	57	2	22	6/5/2008	12:50:51
LANE_01	19	60	1	22	6/5/2008	12:57:46	19	LANE_01	18	57	1	21	6/5/2008	12:57:41
LANE_01	19	60	1	22	6/5/2008	12:57:00	21	LANE_01	22	64	2	25	6/5/2008	12:56:54
LANE_01	67	61	4	22	6/5/2008	12:57:22	66	LANE_01	65	59	4	22	6/5/2008	12:57:17
LANE_01	80	61	4	17	6/5/2008	12:44:25	77	LANE_01	74	52	4	20	6/5/2008	12:44:20
LANE_01	15	62	1	22	6/5/2008	12:37:53	16	LANE_01	17	61	1	22	6/5/2008	12:37:48
LANE_01	18	62	1	21	6/5/2008	12:44:58	18	LANE_01	18	58	1	22	6/5/2008	12:44:52
LANE_01	17	63	1	22	6/5/2008	12:52:50	19	LANE_01	20	65	2	24	6/5/2008	12:52:45
LANE_01	39	63	2	22	6/5/2008	12:50:43	40	LANE_01	41	59	3	22	6/5/2008	12:50:38
LANE_01	19	64	1	21	6/5/2008	12:29:52	19	LANE_01	18	63	1	23	6/5/2008	12:29:47
LANE_01	70	64	4	18	6/5/2008	12:32:45	70	LANE_01	69	60	4	18	6/5/2008	12:32:40
LANE_01	18	65	1	21	6/5/2008	12:57:47	18	LANE_01	18	60	1	22	6/5/2008	12:57:42
LANE_01	17	67	1	22	6/5/2008	12:46:17	17	LANE_01	17	61	1	21	6/5/2008	12:46:11
LANE_01	16	67	1	21	6/5/2008	12:52:28	18	LANE_01	19	49	1	24	6/5/2008	12:52:22
LANE_01	18	67	1	22	6/5/2008	12:37:07	18	LANE_01	18	64	1	22	6/5/2008	12:37:01
LANE_01	22	68	2	25	6/5/2008	12:59:07	22	LANE_01	22	70	2	27	6/5/2008	12:59:01
LANE_01	22	71	2	22	6/5/2008	12:58:13	23	LANE_01	24	66	2	25	6/5/2008	12:58:06
LANE_01	19	73	1	19	6/5/2008	12:43:43	19	LANE_01	19	64	1	21	6/5/2008	12:43:37

LANE_01	37	75	2	18	6/5/2008	12:47:15	35	LANE_01	32	58	2	23	6/5/2008	12:47:10
LANE_01	88	75	4	19	6/5/2008	12:59:33	81	LANE_01	74	62	4	18	6/5/2008	12:59:27
LANE_01	80	79	4	18	6/5/2008	12:59:17	76	LANE_01	71	69	4	20	6/5/2008	12:59:11
Message sign Off														
LANE_01	22	28	2	19	6/5/2008	13:54:31	22	LANE_01	21	16	2	21	6/5/2008	13:54:33
LANE_01	18	42	1	20	6/5/2008	13:55:39	18	LANE_01	18	45	1	21	6/5/2008	13:55:36
LANE_01	21	47	2	21	6/5/2008	13:29:44	21	LANE_01	21	44	2	20	6/5/2008	13:29:41
LANE_01	73	51	4	17	6/5/2008	13:27:02	72	LANE_01	71	53	4	19	6/5/2008	13:26:57
LANE_01	19	52	1	23	6/5/2008	13:33:01	19	LANE_01	19	54	1	22	6/5/2008	13:32:57
LANE_01	35	52	2	19	6/5/2008	13:21:15	36	LANE_01	36	52	2	20	6/5/2008	13:21:11
LANE_01	58	52	3	18	6/5/2008	13:14:39	57	LANE_01	55	49	3	17	6/5/2008	13:14:35
LANE_01	67	52	4	18	6/5/2008	13:26:53	66	LANE_01	65	50	4	20	6/5/2008	13:26:48
LANE_01	12	53	1	21	6/5/2008	13:26:55	12	LANE_01	12	51	1	23	6/5/2008	13:26:51
LANE_01	17	53	1	22	6/5/2008	13:33:21	18	LANE_01	19	59	1	22	6/5/2008	13:33:16
LANE_01	19	53	1	24	6/5/2008	13:26:54	19	LANE_01	18	53	1	24	6/5/2008	13:26:50
LANE_01	19	53	1	22	6/5/2008	13:47:32	19	LANE_01	19	52	1	24	6/5/2008	13:47:28
LANE_01	22	53	2	18	6/5/2008	13:07:12	23	LANE_01	23	54	2	20	6/5/2008	13:07:08
LANE_01	18	54	1	23	6/5/2008	13:25:16	18	LANE_01	18	48	1	23	6/5/2008	13:25:12
LANE_01	11	55	1	24	6/5/2008	13:26:58	11	LANE_01	11	52	1	22	6/5/2008	13:26:53
LANE_01	17	55	1	22	6/5/2008	13:51:33	18	LANE_01	19	59	1	21	6/5/2008	13:51:28

LANE_01	39	55	2	19	6/5/2008	13:13:11	40	LANE_01	40	54	3	21	6/5/2008	13:13:06
LANE_01	51	55	3	21	6/5/2008	13:14:23	50	LANE_01	48	52	3	21	6/5/2008	13:14:18
LANE_01	76	55	4	21	6/5/2008	13:34:04	75	LANE_01	73	51	4	19	6/5/2008	13:34:00
LANE_01	19	56	1	23	6/5/2008	13:32:59	19	LANE_01	18	56	1	22	6/5/2008	13:32:54
LANE_01	78	56	4	24	6/5/2008	13:32:57	77	LANE_01	76	54	4	24	6/5/2008	13:32:52
LANE_01	18	57	1	23	6/5/2008	13:35:04	18	LANE_01	17	60	1	24	6/5/2008	13:34:58
LANE_01	17	57	1	22	6/5/2008	13:04:55	18	LANE_01	19	57	1	22	6/5/2008	13:04:49
LANE_01	68	57	4	21	6/5/2008	13:14:18	69	LANE_01	69	57	4	22	6/5/2008	13:14:13
LANE_01	16	58	1	22	6/5/2008	13:38:55	17	LANE_01	18	60	1	24	6/5/2008	13:38:50
LANE_01	18	58	1	21	6/5/2008	13:47:29	18	LANE_01	18	60	1	22	6/5/2008	13:47:24
LANE_01	33	58	2	22	6/5/2008	13:51:28	33	LANE_01	33	56	2	23	6/5/2008	13:51:23
LANE_01	46	58	3	19	6/5/2008	13:37:32	46	LANE_01	45	55	3	19	6/5/2008	13:37:27
LANE_01	18	59	1	23	6/5/2008	13:19:50	18	LANE_01	17	59	1	22	6/5/2008	13:19:45
LANE_01	15	60	1	20	6/5/2008	13:30:46	16	LANE_01	17	64	1	21	6/5/2008	13:30:40
LANE_01	18	60	1	21	6/5/2008	13:22:08	18	LANE_01	17	52	1	22	6/5/2008	13:22:03
LANE_01	20	60	2	24	6/5/2008	13:47:22	20	LANE_01	20	59	2	23	6/5/2008	13:47:17
LANE_01	67	60	4	21	6/5/2008	13:13:24	68	LANE_01	68	60	4	22	6/5/2008	13:13:18
LANE_01	19	61	1	22	6/5/2008	13:20:03	20	LANE_01	20	59	2	21	6/5/2008	13:19:57
LANE_01	35	61	2	21	6/5/2008	13:47:27	36	LANE_01	37	66	2	21	6/5/2008	13:47:21
LANE_	17	62	1	21	6/5/20	13:30:47	18	LANE_	18	63	1	21	6/5/20	13:30:42

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LANE_01	19	62	1	20	6/5/2008	13:02:41	19	LANE_01	18	62	1	21	6/5/2008	13:02:35
LANE_01	23	62	2	22	6/5/2008	13:41:50	23	LANE_01	22	52	2	21	6/5/2008	13:41:45
LANE_01	28	62	2	23	6/5/2008	13:59:57	28	LANE_01	28	61	2	21	6/5/2008	13:59:52
LANE_01	68	62	4	18	6/5/2008	13:26:43	67	LANE_01	65	57	4	19	6/5/2008	13:26:38
LANE_01	16	63	1	21	6/5/2008	13:14:00	17	LANE_01	17	62	1	22	6/5/2008	13:13:55
LANE_01	19	63	1	21	6/5/2008	13:51:30	19	LANE_01	18	61	1	22	6/5/2008	13:51:25
LANE_01	20	63	2	23	6/5/2008	13:50:08	20	LANE_01	19	62	1	22	6/5/2008	13:50:03
LANE_01	20	63	2	21	6/5/2008	13:38:54	20	LANE_01	20	63	2	21	6/5/2008	13:38:49
LANE_01	21	63	1	19	6/5/2008	13:40:34	20	LANE_01	19	54	1	19	6/5/2008	13:40:30
LANE_01	24	63	2	21	6/5/2008	13:58:18	25	LANE_01	25	62	2	21	6/5/2008	13:58:12
LANE_01	57	63	3	21	6/5/2008	13:56:27	56	LANE_01	54	60	3	22	6/5/2008	13:56:21
LANE_01	67	63	4	21	6/5/2008	13:14:11	68	LANE_01	68	62	4	24	6/5/2008	13:14:06
LANE_01	77	63	4	17	6/5/2008	13:50:46	76	LANE_01	75	61	4	16	6/5/2008	13:50:41
LANE_01	18	64	1	21	6/5/2008	13:20:12	18	LANE_01	18	66	1	19	6/5/2008	13:20:07
LANE_01	19	64	1	22	6/5/2008	13:23:27	20	LANE_01	20	66	2	22	6/5/2008	13:23:21
LANE_01	22	64	2	20	6/5/2008	13:38:57	22	LANE_01	22	62	2	20	6/5/2008	13:38:52
LANE_01	54	64	3	21	6/5/2008	13:13:27	54	LANE_01	53	63	3	22	6/5/2008	13:13:22
LANE_01	85	64	4	20	6/5/2008	13:31:18	80	LANE_01	75	53	4	21	6/5/2008	13:31:13
LANE_01	19	65	1	22	6/5/2008	13:44:25	20	LANE_01	20	67	2	23	6/5/2008	13:44:19

LANE_01	49	65	3	22	6/5/2008	13:42:57	48	LANE_01	47	62	3	21	6/5/2008	13:42:51
LANE_01	19	66	1	21	6/5/2008	13:52:01	19	LANE_01	19	66	1	20	6/5/2008	13:51:55
LANE_01	77	66	4	20	6/5/2008	13:14:14	74	LANE_01	70	60	4	23	6/5/2008	13:14:09
LANE_01	77	66	4	17	6/5/2008	13:58:15	75	LANE_01	72	60	4	20	6/5/2008	13:58:09
LANE_01	81	66	4	17	6/5/2008	13:00:47	78	LANE_01	74	61	4	20	6/5/2008	13:00:41
LANE_01	77	66	4	21	6/5/2008	13:09:03	78	LANE_01	79	66	4	22	6/5/2008	13:08:57
LANE_01	84	66	4	21	6/5/2008	13:12:59	80	LANE_01	76	61	4	23	6/5/2008	13:12:53
LANE_01	16	67	1	20	6/5/2008	13:36:07	16	LANE_01	16	66	1	20	6/5/2008	13:36:01
LANE_01	20	67	2	22	6/5/2008	13:59:43	20	LANE_01	19	65	1	22	6/5/2008	13:59:37
LANE_01	20	67	2	21	6/5/2008	13:02:21	20	LANE_01	20	68	2	20	6/5/2008	13:02:15
LANE_01	21	67	2	21	6/5/2008	13:20:05	20	LANE_01	19	59	1	19	6/5/2008	13:19:59
LANE_01	45	67	3	17	6/5/2008	13:34:54	43	LANE_01	40	59	3	21	6/5/2008	13:34:49
LANE_01	52	67	3	19	6/5/2008	13:58:10	51	LANE_01	49	56	3	19	6/5/2008	13:58:04
LANE_01	68	67	4	21	6/5/2008	13:56:23	64	LANE_01	60	58	4	22	6/5/2008	13:56:18
LANE_01	87	67	4	18	6/5/2008	13:10:21	87	LANE_01	87	61	4	19	6/5/2008	13:10:16
LANE_01	19	68	1	21	6/5/2008	13:19:54	18	LANE_01	17	61	1	22	6/5/2008	13:19:48
LANE_01	23	68	2	22	6/5/2008	13:05:22	23	LANE_01	22	69	2	20	6/5/2008	13:05:16
LANE_01	74	68	4	20	6/5/2008	13:23:43	74	LANE_01	73	65	4	23	6/5/2008	13:23:37
LANE_01	18	69	1	23	6/5/2008	13:57:50	18	LANE_01	18	67	1	22	6/5/2008	13:57:44
LANE_	23	69	2	23	6/5/20	13:25:46	23	LANE_	23	65	2	22	6/5/20	13:25:40

01					08			01					08	
LANE_01	18	70	1	21	6/5/2008	13:37:55	18	LANE_01	17	66	1	23	6/5/2008	13:37:49
LANE_01	18	70	1	24	6/5/2008	13:13:40	18	LANE_01	18	68	1	23	6/5/2008	13:13:34
LANE_01	18	70	1	21	6/5/2008	13:54:09	18	LANE_01	18	71	1	21	6/5/2008	13:54:03
LANE_01	26	70	2	24	6/5/2008	13:41:08	26	LANE_01	25	66	2	21	6/5/2008	13:41:02
LANE_01	32	70	2	19	6/5/2008	13:51:54	32	LANE_01	31	63	2	17	6/5/2008	13:51:49
LANE_01	24	72	2	21	6/5/2008	13:10:47	23	LANE_01	22	64	2	21	6/5/2008	13:10:42
LANE_01	76	72	4	22	6/5/2008	13:53:30	75	LANE_01	73	66	4	19	6/5/2008	13:53:24
LANE_01	73	73	4	22	6/5/2008	13:00:38	71	LANE_01	68	67	4	22	6/5/2008	13:00:32
LANE_01	76	73	4	20	6/5/2008	13:35:15	71	LANE_01	66	62	4	20	6/5/2008	13:35:10
LANE_01	15	74	1	20	6/5/2008	13:02:38	15	LANE_01	14	70	1	22	6/5/2008	13:02:32
LANE_01	21	77	2	22	6/5/2008	13:01:14	21	LANE_01	20	71	2	23	6/5/2008	13:01:08
LANE_01	58	77	3	19	6/5/2008	13:58:12	53	LANE_01	48	61	3	19	6/5/2008	13:58:06
LANE_01	52	86	3	18	6/5/2008	13:33:27	45	LANE_01	37	63	2	18	6/5/2008	13:33:22
Message sign On														
LANE_01	18	43	1	21	6/5/2008	14:41:03	18	LANE_01	18	53	1	23	6/5/2008	14:40:59
LANE_01	19	45	1	21	6/5/2008	14:29:28	19	LANE_01	19	53	1	23	6/5/2008	14:29:24
LANE_01	14	46	1	20	6/5/2008	14:14:15	15	LANE_01	16	50	1	21	6/5/2008	14:14:11
LANE_01	20	52	2	21	6/5/2008	14:39:20	20	LANE_01	19	55	1	21	6/5/2008	14:39:16
LANE_01	17	53	1	20	6/5/2008	14:37:17	17	LANE_01	17	45	1	21	6/5/2008	14:37:12
LANE_	18	54	1	22	6/5/20	14:15:58	19	LANE_	19	48	1	22	6/5/20	14:15:54

01					08			01					08	
LANE_01	21	54	2	23	6/5/2008	14:08:58	21	LANE_01	20	54	2	24	6/5/2008	14:08:54
LANE_01	21	54	2	22	6/5/2008	14:08:56	21	LANE_01	21	56	2	24	6/5/2008	14:08:51
LANE_01	22	54	2	24	6/5/2008	14:08:54	22	LANE_01	22	56	2	24	6/5/2008	14:08:49
LANE_01	17	55	1	21	6/5/2008	14:19:44	18	LANE_01	18	60	1	22	6/5/2008	14:19:39
LANE_01	65	55	4	18	6/5/2008	14:16:27	64	LANE_01	63	51	4	18	6/5/2008	14:16:23
LANE_01	58	56	3	24	6/5/2008	14:17:37	58	LANE_01	57	60	3	22	6/5/2008	14:17:32
LANE_01	77	56	4	21	6/5/2008	14:11:37	77	LANE_01	76	56	4	21	6/5/2008	14:11:32
LANE_01	92	56	4	18	6/5/2008	14:14:19	88	LANE_01	83	53	4	20	6/5/2008	14:14:15
LANE_01	20	57	2	23	6/5/2008	14:05:57	21	LANE_01	21	64	2	24	6/5/2008	14:05:52
LANE_01	77	58	4	20	6/5/2008	14:14:13	74	LANE_01	70	56	4	22	6/5/2008	14:14:08
LANE_01	75	59	4	21	6/5/2008	14:13:00	75	LANE_01	74	61	4	23	6/5/2008	14:12:54
LANE_01	76	59	4	19	6/5/2008	14:13:13	76	LANE_01	75	57	4	19	6/5/2008	14:13:08
LANE_01	16	60	1	22	6/5/2008	14:27:41	17	LANE_01	17	66	1	22	6/5/2008	14:27:36
LANE_01	21	60	2	21	6/5/2008	14:15:56	21	LANE_01	20	49	2	20	6/5/2008	14:15:51
LANE_01	75	60	4	19	6/5/2008	14:14:08	73	LANE_01	71	55	4	20	6/5/2008	14:14:03
LANE_01	20	61	2	21	6/5/2008	14:27:14	19	LANE_01	18	55	1	21	6/5/2008	14:27:09
LANE_01	20	61	2	22	6/5/2008	14:12:40	20	LANE_01	19	63	1	21	6/5/2008	14:12:35
LANE_01	20	63	2	24	6/5/2008	14:25:32	21	LANE_01	21	60	2	23	6/5/2008	14:25:27
LANE_01	23	63	2	19	6/5/2008	14:03:18	25	LANE_01	26	69	2	20	6/5/2008	14:03:12

LANE_01	20	64	2	23	6/5/2008	14:38:57	21	LANE_01	21	65	2	23	6/5/2008	14:38:51
LANE_01	22	64	2	23	6/5/2008	14:24:41	22	LANE_01	21	55	2	23	6/5/2008	14:24:36
LANE_01	54	65	3	21	6/5/2008	14:34:54	51	LANE_01	47	54	3	21	6/5/2008	14:34:48
LANE_01	22	66	2	24	6/5/2008	14:15:00	22	LANE_01	22	65	2	22	6/5/2008	14:14:54
LANE_01	23	66	2	21	6/5/2008	14:21:27	23	LANE_01	22	59	2	21	6/5/2008	14:21:21
LANE_01	81	66	4	20	6/5/2008	14:19:47	77	LANE_01	73	58	4	20	6/5/2008	14:19:41
LANE_01	15	67	1	21	6/5/2008	14:30:51	16	LANE_01	16	70	1	21	6/5/2008	14:30:44
LANE_01	19	67	1	21	6/5/2008	14:41:06	18	LANE_01	17	59	1	22	6/5/2008	14:41:01
LANE_01	23	67	2	21	6/5/2008	14:03:01	23	LANE_01	22	62	2	21	6/5/2008	14:02:55
LANE_01	59	67	3	19	6/5/2008	14:02:21	58	LANE_01	56	60	3	20	6/5/2008	14:02:15
LANE_01	79	67	4	23	6/5/2008	14:18:10	78	LANE_01	76	61	4	22	6/5/2008	14:18:05
LANE_01	17	68	1	19	6/5/2008	14:36:26	18	LANE_01	18	71	1	21	6/5/2008	14:36:20
LANE_01	20	69	2	20	6/5/2008	14:38:58	20	LANE_01	20	65	2	21	6/5/2008	14:38:53
LANE_01	18	70	1	22	6/5/2008	14:26:44	19	LANE_01	19	65	1	22	6/5/2008	14:26:38
LANE_01	25	70	2	23	6/5/2008	14:18:32	25	LANE_01	25	67	2	23	6/5/2008	14:18:26
LANE_01	26	71	2	22	6/5/2008	14:30:44	25	LANE_01	24	66	2	22	6/5/2008	14:30:38
LANE_01	35	71	2	18	6/5/2008	14:09:07	35	LANE_01	34	64	2	20	6/5/2008	14:09:01
LANE_01	23	72	2	23	6/5/2008	14:39:09	23	LANE_01	22	69	2	24	6/5/2008	14:39:02
LANE_01	21	73	2	22	6/5/2008	14:12:14	20	LANE_01	19	67	1	22	6/5/2008	14:12:08
LANE_	17	74	1	22	6/5/20	14:36:22	18	LANE_	18	73	1	23	6/5/20	14:36:16

01					08			01					08	
LANE_01	72	75	4	18	6/5/2008	14:04:48	69	LANE_01	65	67	4	19	6/5/2008	14:04:42
LANE_01	60	76	4	18	6/5/2008	14:42:47	55	LANE_01	50	61	3	20	6/5/2008	14:42:41
LANE_01	19	78	1	21	6/5/2008	14:01:42	19	LANE_01	18	73	1	24	6/5/2008	14:01:36
LANE_01	23	81	2	24	6/5/2008	14:36:16	22	LANE_01	20	69	2	20	6/5/2008	14:36:10
LANE_01	83	82	4	18	6/5/2008	14:12:37	75	LANE_01	66	65	4	18	6/5/2008	14:12:31
Sensor 1							Avg. LENGTH	**Sensor 2**						
LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss		LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
Message sign Off														
LANE_01	21	48	2	20	6/6/2008	9:40:51	22	LANE_01	22	56	2	20	6/6/2008	9:40:44
LANE_01	17	50	1	22	6/6/2008	9:41:56	17	LANE_01	17	53	1	24	6/6/2008	9:41:50
LANE_01	20	51	2	22	6/6/2008	9:42:04	20	LANE_01	19	60	1	23	6/6/2008	9:41:58
LANE_01	20	51	2	22	6/6/2008	9:44:01	22	LANE_01	24	61	2	22	6/6/2008	9:43:55
LANE_01	22	52	2	20	6/6/2008	9:53:46	22	LANE_01	21	54	2	23	6/6/2008	9:53:39
LANE_01	18	54	1	22	6/6/2008	9:50:07	18	LANE_01	18	55	1	24	6/6/2008	9:50:00
LANE_01	14	56	1	22	6/6/2008	9:58:28	16	LANE_01	17	61	1	24	6/6/2008	9:58:21
LANE_01	15	57	1	24	6/6/2008	9:46:14	16	LANE_01	17	61	1	22	6/6/2008	9:46:07
LANE_01	23	57	2	21	6/6/2008	9:53:48	22	LANE_01	20	50	2	23	6/6/2008	9:53:41
LANE_01	65	57	4	17	6/6/2008	9:58:33	66	LANE_01	66	57	4	22	6/6/2008	9:58:27
LANE_01	16	58	1	22	6/6/2008	9:58:25	17	LANE_01	18	65	1	23	6/6/2008	9:58:17

LANE_01	19	58	1	20	6/6/2008	9:41:05	19	LANE_01	19	58	1	22	6/6/2008	9:40:58
LANE_01	17	60	1	22	6/6/2008	9:56:10	17	LANE_01	17	58	1	23	6/6/2008	9:56:03
LANE_01	18	60	1	23	6/6/2008	9:53:13	18	LANE_01	17	59	1	23	6/6/2008	9:53:06
LANE_01	17	62	1	23	6/6/2008	9:53:40	16	LANE_01	15	56	1	25	6/6/2008	9:53:33
LANE_01	64	63	4	19	6/6/2008	9:44:20	65	LANE_01	65	65	4	22	6/6/2008	9:44:13
LANE_01	71	63	4	19	6/6/2008	9:56:08	72	LANE_01	73	63	4	20	6/6/2008	9:56:00
LANE_01	18	64	1	23	6/6/2008	9:43:36	19	LANE_01	19	65	1	26	6/6/2008	9:43:29
LANE_01	19	64	1	23	6/6/2008	9:48:32	19	LANE_01	18	61	1	24	6/6/2008	9:48:25
LANE_01	70	64	4	21	6/6/2008	9:41:37	70	LANE_01	70	63	4	20	6/6/2008	9:41:30
LANE_01	18	65	1	22	6/6/2008	9:41:12	18	LANE_01	17	59	1	25	6/6/2008	9:41:05
LANE_01	16	66	1	23	6/6/2008	9:49:03	16	LANE_01	16	65	1	22	6/6/2008	9:48:56
LANE_01	20	66	2	21	6/6/2008	9:52:41	20	LANE_01	20	68	2	23	6/6/2008	9:52:34
LANE_01	22	66	2	22	6/6/2008	9:52:16	21	LANE_01	20	62	2	22	6/6/2008	9:52:08
LANE_01	44	66	3	18	6/6/2008	9:41:14	42	LANE_01	40	60	3	21	6/6/2008	9:41:07
LANE_01	18	67	1	24	6/6/2008	9:49:27	18	LANE_01	17	65	1	23	6/6/2008	9:49:19
LANE_01	17	68	1	23	6/6/2008	9:48:01	18	LANE_01	19	71	1	23	6/6/2008	9:47:53
LANE_01	19	68	1	22	6/6/2008	9:42:29	19	LANE_01	19	68	1	22	6/6/2008	9:42:22
LANE_01	55	69	3	22	6/6/2008	9:54:03	54	LANE_01	53	67	3	23	6/6/2008	9:53:55
LANE_01	16	70	1	23	6/6/2008	9:49:12	16	LANE_01	16	73	1	23	6/6/2008	9:49:04
LANE_	81	74	4	25	6/6/20	9:57:58	75	LANE_	69	64	4	25	6/6/20	9:57:50

01					08			01					08	
LANE_01	21	75	2	22	6/6/2008	9:59:31	20	LANE_01	19	67	1	25	6/6/2008	9:59:23
LANE_01	18	81	1	22	6/6/2008	9:58:47	18	LANE_01	17	67	1	25	6/6/2008	9:58:39
Message sign On														
LANE_01	21	31	2	19	6/6/2008	10:16:09	22	LANE_01	23	18	2	21	6/6/2008	10:16:09
LANE_01	20	38	2	19	6/6/2008	10:09:19	20	LANE_01	20	33	2	24	6/6/2008	10:09:16
LANE_01	20	42	2	23	6/6/2008	10:36:39	20	LANE_01	20	48	2	23	6/6/2008	10:36:33
LANE_01	20	45	2	23	6/6/2008	10:32:08	21	LANE_01	21	51	2	22	6/6/2008	10:32:02
LANE_01	16	51	1	22	6/6/2008	10:07:51	16	LANE_01	16	52	1	23	6/6/2008	10:07:44
LANE_01	20	51	2	18	6/6/2008	10:48:02	21	LANE_01	21	51	2	22	6/6/2008	10:47:55
LANE_01	20	52	2	25	6/6/2008	10:57:26	21	LANE_01	22	50	2	27	6/6/2008	10:57:19
LANE_01	20	54	2	24	6/6/2008	10:53:19	20	LANE_01	20	52	2	26	6/6/2008	10:53:13
LANE_01	22	55	2	21	6/6/2008	10:23:00	22	LANE_01	22	64	2	22	6/6/2008	10:22:53
LANE_01	20	56	2	21	6/6/2008	10:16:55	21	LANE_01	21	57	2	23	6/6/2008	10:16:49
LANE_01	29	56	2	20	6/6/2008	10:04:57	30	LANE_01	31	58	2	21	6/6/2008	10:04:51
LANE_01	16	57	1	27	6/6/2008	10:01:20	17	LANE_01	17	55	1	27	6/6/2008	10:01:13
LANE_01	18	58	1	19	6/6/2008	10:28:38	19	LANE_01	19	56	1	21	6/6/2008	10:28:31
LANE_01	19	58	1	23	6/6/2008	10:54:59	19	LANE_01	18	59	1	24	6/6/2008	10:54:52
LANE_01	17	59	1	23	6/6/2008	10:36:17	17	LANE_01	16	55	1	25	6/6/2008	10:36:10
LANE_01	17	59	1	24	6/6/2008	10:42:09	17	LANE_01	17	51	1	25	6/6/2008	10:42:02
LANE_	18	59	1	24	6/6/20	10:34:50	18	LANE_	18	59	1	24	6/6/20	10:34:43

01					08			01					08	
LANE_01	19	59	1	23	6/6/2008	10:22:26	19	LANE_01	18	51	1	23	6/6/2008	10:22:19
LANE_01	14	60	1	25	6/6/2008	10:28:33	14	LANE_01	13	54	1	25	6/6/2008	10:28:26
LANE_01	16	60	1	25	6/6/2008	10:13:59	17	LANE_01	17	64	1	23	6/6/2008	10:13:51
LANE_01	17	60	1	25	6/6/2008	10:26:03	17	LANE_01	17	56	1	26	6/6/2008	10:25:56
LANE_01	17	60	1	23	6/6/2008	10:45:55	17	LANE_01	17	52	1	24	6/6/2008	10:45:48
LANE_01	22	60	2	23	6/6/2008	10:31:36	21	LANE_01	20	55	2	22	6/6/2008	10:31:30
LANE_01	67	60	4	17	6/6/2008	10:48:20	64	LANE_01	61	31	4	19	6/6/2008	10:48:14
LANE_01	63	60	4	21	6/6/2008	10:14:09	65	LANE_01	66	66	4	22	6/6/2008	10:14:01
LANE_01	16	61	1	25	6/6/2008	10:56:52	17	LANE_01	18	64	1	29	6/6/2008	10:56:44
LANE_01	17	61	1	23	6/6/2008	10:13:08	18	LANE_01	18	66	1	24	6/6/2008	10:13:00
LANE_01	18	61	1	23	6/6/2008	10:15:53	18	LANE_01	18	60	1	23	6/6/2008	10:15:46
LANE_01	21	61	2	24	6/6/2008	10:50:03	21	LANE_01	21	58	2	24	6/6/2008	10:49:56
LANE_01	16	62	1	23	6/6/2008	10:03:15	16	LANE_01	16	58	1	24	6/6/2008	10:03:08
LANE_01	16	62	1	23	6/6/2008	10:23:24	16	LANE_01	16	64	1	24	6/6/2008	10:23:17
LANE_01	17	62	1	22	6/6/2008	10:40:16	17	LANE_01	16	56	1	28	6/6/2008	10:40:09
LANE_01	19	62	1	22	6/6/2008	10:53:41	20	LANE_01	20	54	2	23	6/6/2008	10:53:34
LANE_01	20	62	2	21	6/6/2008	10:12:41	20	LANE_01	20	64	2	22	6/6/2008	10:12:34
LANE_01	31	62	2	23	6/6/2008	10:28:36	31	LANE_01	30	60	2	24	6/6/2008	10:28:29
LANE_01	60	62	4	19	6/6/2008	10:36:16	60	LANE_01	60	61	4	20	6/6/2008	10:36:09

LANE_01	16	63	1	24	6/6/2008	10:25:21	16	LANE_01	15	56	1	24	6/6/2008	10:25:14
LANE_01	17	63	1	23	6/6/2008	10:36:24	18	LANE_01	18	65	1	24	6/6/2008	10:36:17
LANE_01	20	63	2	22	6/6/2008	10:34:59	20	LANE_01	19	64	1	23	6/6/2008	10:34:52
LANE_01	21	63	2	23	6/6/2008	10:38:21	21	LANE_01	21	56	2	23	6/6/2008	10:38:14
LANE_01	24	63	2	21	6/6/2008	10:35:49	24	LANE_01	24	55	2	24	6/6/2008	10:35:42
LANE_01	76	63	4	19	6/6/2008	10:12:01	78	LANE_01	80	66	4	21	6/6/2008	10:11:54
LANE_01	17	64	1	23	6/6/2008	10:26:10	17	LANE_01	16	65	1	24	6/6/2008	10:26:02
LANE_01	17	64	1	22	6/6/2008	10:40:00	18	LANE_01	19	73	1	23	6/6/2008	10:39:52
LANE_01	19	64	1	24	6/6/2008	10:59:21	19	LANE_01	18	62	1	26	6/6/2008	10:59:14
LANE_01	41	64	3	23	6/6/2008	10:00:40	41	LANE_01	40	59	3	25	6/6/2008	10:00:33
LANE_01	72	64	4	22	6/6/2008	10:03:11	72	LANE_01	72	65	4	23	6/6/2008	10:03:03
LANE_01	75	64	4	20	6/6/2008	10:54:52	77	LANE_01	79	66	4	22	6/6/2008	10:54:45
LANE_01	16	65	1	22	6/6/2008	10:42:28	17	LANE_01	17	52	1	23	6/6/2008	10:42:21
LANE_01	18	65	1	21	6/6/2008	10:05:53	18	LANE_01	17	58	1	24	6/6/2008	10:05:45
LANE_01	23	65	2	20	6/6/2008	10:43:15	23	LANE_01	23	65	2	22	6/6/2008	10:43:07
LANE_01	17	66	1	23	6/6/2008	10:46:50	17	LANE_01	17	69	1	24	6/6/2008	10:46:42
LANE_01	18	66	1	22	6/6/2008	10:01:26	18	LANE_01	17	64	1	23	6/6/2008	10:01:18
LANE_01	27	66	2	20	6/6/2008	10:34:27	28	LANE_01	28	66	2	22	6/6/2008	10:34:20
LANE_01	59	66	3	19	6/6/2008	10:36:12	60	LANE_01	61	68	4	21	6/6/2008	10:36:04
LANE_	73	66	4	24	6/6/20	10:59:47	72	LANE_	71	63	4	23	6/6/20	10:59:39

01					08			01					08	
LANE_01	16	67	1	22	6/6/2008	10:21:35	16	LANE_01	16	63	1	22	6/6/2008	10:21:27
LANE_01	18	67	1	22	6/6/2008	10:41:33	18	LANE_01	17	62	1	25	6/6/2008	10:41:25
LANE_01	19	67	1	22	6/6/2008	10:55:09	19	LANE_01	18	59	1	25	6/6/2008	10:55:01
LANE_01	22	67	2	19	6/6/2008	10:45:32	22	LANE_01	21	60	2	23	6/6/2008	10:45:25
LANE_01	16	68	1	26	6/6/2008	10:10:00	17	LANE_01	17	65	1	27	6/6/2008	10:09:53
LANE_01	21	68	2	20	6/6/2008	10:47:00	21	LANE_01	21	65	2	23	6/6/2008	10:46:52
LANE_01	66	68	4	23	6/6/2008	10:29:26	65	LANE_01	63	66	4	23	6/6/2008	10:29:18
LANE_01	81	68	4	21	6/6/2008	10:56:29	80	LANE_01	78	65	4	23	6/6/2008	10:56:22
LANE_01	18	69	1	23	6/6/2008	10:21:37	18	LANE_01	17	64	1	24	6/6/2008	10:21:30
LANE_01	17	69	1	22	6/6/2008	10:46:24	18	LANE_01	18	68	1	23	6/6/2008	10:46:16
LANE_01	20	69	2	23	6/6/2008	10:31:47	19	LANE_01	18	63	1	25	6/6/2008	10:31:39
LANE_01	81	69	4	20	6/6/2008	10:54:47	78	LANE_01	75	63	4	22	6/6/2008	10:54:40
LANE_01	81	69	4	20	6/6/2008	10:31:57	79	LANE_01	77	64	4	23	6/6/2008	10:31:50
LANE_01	24	70	2	21	6/6/2008	10:07:30	23	LANE_01	21	60	2	25	6/6/2008	10:07:23
LANE_01	17	71	1	22	6/6/2008	10:58:15	17	LANE_01	17	59	1	23	6/6/2008	10:58:08
LANE_01	17	72	1	25	6/6/2008	10:35:38	17	LANE_01	17	76	1	26	6/6/2008	10:35:29
LANE_01	65	72	4	23	6/6/2008	10:02:23	64	LANE_01	63	68	4	25	6/6/2008	10:02:15
LANE_01	23	73	2	22	6/6/2008	10:31:08	23	LANE_01	22	67	2	24	6/6/2008	10:31:01
LANE_01	45	75	3	19	6/6/2008	10:21:32	44	LANE_01	43	72	3	22	6/6/2008	10:21:24

LANE_01	17	76	1	20	6/6/2008	10:38:37	17	LANE_01	17	79	1	23	6/6/2008	10:38:28
LANE_01	48	79	3	18	6/6/2008	10:17:00	46	LANE_01	43	70	3	20	6/6/2008	10:16:52
LANE_01	33	82	2	18	6/6/2008	10:54:48	30	LANE_01	26	58	2	21	6/6/2008	10:54:41
LANE_01	25	85	2	22	6/6/2008	10:00:35	22	LANE_01	18	60	1	24	6/6/2008	10:00:27
Message sign Off														
LANE_01	18	47	1	22	6/6/2008	11:48:55	18	LANE_01	17	47	1	23	6/6/2008	11:48:49
LANE_01	18	47	1	21	6/6/2008	11:41:37	19	LANE_01	19	47	1	24	6/6/2008	11:41:32
LANE_01	43	49	3	22	6/6/2008	11:20:23	43	LANE_01	42	58	3	23	6/6/2008	11:20:17
LANE_01	22	50	2	21	6/6/2008	11:59:25	22	LANE_01	22	53	2	23	6/6/2008	11:59:19
LANE_01	22	51	2	21	6/6/2008	11:24:43	22	LANE_01	22	55	2	27	6/6/2008	11:24:36
LANE_01	17	52	1	22	6/6/2008	11:46:23	18	LANE_01	18	55	1	23	6/6/2008	11:46:17
LANE_01	18	53	1	22	6/6/2008	11:32:06	18	LANE_01	17	49	1	25	6/6/2008	11:32:00
LANE_01	16	55	1	25	6/6/2008	11:55:47	17	LANE_01	17	57	1	25	6/6/2008	11:55:39
LANE_01	15	56	1	22	6/6/2008	11:30:51	16	LANE_01	17	62	1	22	6/6/2008	11:30:43
LANE_01	18	56	1	22	6/6/2008	11:02:29	18	LANE_01	18	55	1	22	6/6/2008	11:02:22
LANE_01	20	56	2	19	6/6/2008	11:31:28	21	LANE_01	22	55	2	25	6/6/2008	11:31:22
LANE_01	16	59	1	20	6/6/2008	11:14:43	16	LANE_01	16	61	1	22	6/6/2008	11:14:35
LANE_01	17	59	1	22	6/6/2008	11:30:12	18	LANE_01	18	55	1	22	6/6/2008	11:30:05
LANE_01	36	59	2	28	6/6/2008	11:11:56	37	LANE_01	38	59	2	29	6/6/2008	11:11:49
LANE_01	19	60	1	21	6/6/2008	11:42:14	19	LANE_01	19	55	1	23	6/6/2008	11:42:07

LANE_01	20	60	2	27	6/6/2008	11:44:50	21	LANE_01	22	60	2	29	6/6/2008	11:44:42
LANE_01	18	61	1	21	6/6/2008	11:30:19	18	LANE_01	18	61	1	24	6/6/2008	11:30:12
LANE_01	19	61	1	22	6/6/2008	11:30:32	19	LANE_01	18	61	1	25	6/6/2008	11:30:24
LANE_01	18	61	1	22	6/6/2008	11:07:06	19	LANE_01	20	69	2	22	6/6/2008	11:06:59
LANE_01	20	61	2	22	6/6/2008	11:07:02	21	LANE_01	21	61	2	22	6/6/2008	11:06:54
LANE_01	21	61	2	28	6/6/2008	11:44:48	21	LANE_01	21	62	2	26	6/6/2008	11:44:40
LANE_01	63	61	4	17	6/6/2008	11:19:36	66	LANE_01	68	67	4	21	6/6/2008	11:19:29
LANE_01	16	62	1	19	6/6/2008	11:07:05	16	LANE_01	16	65	1	22	6/6/2008	11:06:57
LANE_01	18	62	1	22	6/6/2008	11:37:43	18	LANE_01	17	62	1	23	6/6/2008	11:37:35
LANE_01	18	62	1	20	6/6/2008	11:34:09	19	LANE_01	19	66	1	21	6/6/2008	11:34:02
LANE_01	18	62	1	19	6/6/2008	11:38:17	19	LANE_01	19	60	1	22	6/6/2008	11:38:10
LANE_01	19	62	1	19	6/6/2008	11:29:35	19	LANE_01	19	59	1	24	6/6/2008	11:29:27
LANE_01	22	62	2	24	6/6/2008	11:24:54	22	LANE_01	21	61	2	28	6/6/2008	11:24:46
LANE_01	22	62	2	24	6/6/2008	11:24:40	22	LANE_01	22	62	2	26	6/6/2008	11:24:33
LANE_01	33	62	2	26	6/6/2008	11:24:46	33	LANE_01	33	57	2	27	6/6/2008	11:24:39
LANE_01	17	63	1	22	6/6/2008	11:23:03	17	LANE_01	17	68	1	24	6/6/2008	11:22:55
LANE_01	17	63	1	24	6/6/2008	11:52:52	17	LANE_01	17	66	1	22	6/6/2008	11:52:45
LANE_01	18	63	1	21	6/6/2008	11:36:02	19	LANE_01	19	66	1	23	6/6/2008	11:35:54
LANE_01	19	63	1	28	6/6/2008	11:25:07	20	LANE_01	20	61	2	24	6/6/2008	11:24:59
LANE_	35	63	2	22	6/6/20	11:07:04	37	LANE_	39	64	2	20	6/6/20	11:06:56

01					08			01					08	
LANE_01	17	64	1	21	6/6/2008	11:40:00	17	LANE_01	17	64	1	24	6/6/2008	11:39:52
LANE_01	18	64	1	23	6/6/2008	11:35:53	18	LANE_01	17	58	1	23	6/6/2008	11:35:46
LANE_01	20	64	2	22	6/6/2008	11:30:14	19	LANE_01	18	56	1	25	6/6/2008	11:30:07
LANE_01	21	64	2	20	6/6/2008	11:34:43	21	LANE_01	21	65	2	25	6/6/2008	11:34:36
LANE_01	21	64	2	18	6/6/2008	11:34:37	22	LANE_01	22	64	2	23	6/6/2008	11:34:30
LANE_01	77	64	4	18	6/6/2008	11:30:18	75	LANE_01	73	62	4	22	6/6/2008	11:30:10
LANE_01	10	65	1	26	6/6/2008	11:16:11	10	LANE_01	10	64	1	28	6/6/2008	11:16:03
LANE_01	18	65	1	23	6/6/2008	11:15:03	18	LANE_01	17	61	1	24	6/6/2008	11:14:56
LANE_01	18	65	1	27	6/6/2008	11:10:39	18	LANE_01	18	65	1	27	6/6/2008	11:10:31
LANE_01	19	65	1	21	6/6/2008	11:05:57	19	LANE_01	18	64	1	24	6/6/2008	11:05:49
LANE_01	20	65	2	21	6/6/2008	11:57:45	20	LANE_01	19	68	1	22	6/6/2008	11:57:37
LANE_01	20	65	2	23	6/6/2008	11:12:44	21	LANE_01	21	71	2	23	6/6/2008	11:12:36
LANE_01	21	65	2	22	6/6/2008	11:02:55	21	LANE_01	21	68	2	21	6/6/2008	11:02:47
LANE_01	81	65	4	16	6/6/2008	11:51:27	78	LANE_01	74	60	4	19	6/6/2008	11:51:20
LANE_01	110	65	4	23	6/6/2008	11:29:33	110	LANE_01	110	65	4	25	6/6/2008	11:29:25
LANE_01	10	66	1	27	6/6/2008	11:00:25	10	LANE_01	10	65	1	28	6/6/2008	11:00:17
LANE_01	16	66	1	21	6/6/2008	11:38:57	16	LANE_01	16	67	1	23	6/6/2008	11:38:49
LANE_01	17	66	1	25	6/6/2008	11:11:34	17	LANE_01	16	61	1	26	6/6/2008	11:11:26
LANE_01	17	66	1	22	6/6/2008	11:14:20	17	LANE_01	16	61	1	23	6/6/2008	11:14:13

LANE_01	17	66	1	25	6/6/2008	11:28:43	17	LANE_01	16	66	1	29	6/6/2008	11:28:35
LANE_01	16	66	1	22	6/6/2008	11:58:23	17	LANE_01	18	78	1	21	6/6/2008	11:58:15
LANE_01	18	66	1	23	6/6/2008	11:08:00	18	LANE_01	17	65	1	24	6/6/2008	11:07:52
LANE_01	18	66	1	20	6/6/2008	11:32:39	18	LANE_01	17	63	1	24	6/6/2008	11:32:31
LANE_01	19	66	1	22	6/6/2008	11:55:35	20	LANE_01	21	72	2	22	6/6/2008	11:55:27
LANE_01	21	66	2	24	6/6/2008	11:47:14	21	LANE_01	21	66	2	26	6/6/2008	11:47:06
LANE_01	34	66	2	25	6/6/2008	11:25:04	33	LANE_01	32	58	2	28	6/6/2008	11:24:57
LANE_01	16	67	1	23	6/6/2008	11:00:37	16	LANE_01	16	69	1	25	6/6/2008	11:00:29
LANE_01	17	67	1	27	6/6/2008	11:00:24	17	LANE_01	17	67	1	29	6/6/2008	11:00:16
LANE_01	17	67	1	23	6/6/2008	11:21:47	17	LANE_01	17	69	1	24	6/6/2008	11:21:39
LANE_01	18	67	1	22	6/6/2008	11:14:08	18	LANE_01	18	73	1	23	6/6/2008	11:14:00
LANE_01	19	67	1	21	6/6/2008	11:17:49	18	LANE_01	17	64	1	22	6/6/2008	11:17:41
LANE_01	21	67	2	23	6/6/2008	11:30:50	20	LANE_01	19	61	1	24	6/6/2008	11:30:42
LANE_01	21	67	2	21	6/6/2008	11:30:27	21	LANE_01	20	66	2	25	6/6/2008	11:30:19
LANE_01	23	67	2	22	6/6/2008	11:32:58	22	LANE_01	21	54	2	23	6/6/2008	11:32:50
LANE_01	35	67	2	19	6/6/2008	11:05:51	36	LANE_01	36	65	2	21	6/6/2008	11:05:43
LANE_01	16	68	1	23	6/6/2008	11:28:46	17	LANE_01	17	67	1	24	6/6/2008	11:28:38
LANE_01	17	68	1	20	6/6/2008	11:35:07	17	LANE_01	17	64	1	23	6/6/2008	11:34:59
LANE_01	18	68	1	26	6/6/2008	11:29:17	19	LANE_01	19	65	1	26	6/6/2008	11:29:09
LANE_	38	68	2	21	6/6/20	11:14:18	38	LANE_	38	67	2	25	6/6/20	11:14:11

01					08			01					08	
LANE_01	17	69	1	22	6/6/2008	11:05:03	17	LANE_01	16	67	1	24	6/6/2008	11:04:55
LANE_01	19	69	1	22	6/6/2008	11:23:54	19	LANE_01	19	68	1	24	6/6/2008	11:23:46
LANE_01	75	69	4	20	6/6/2008	11:52:58	74	LANE_01	72	68	4	22	6/6/2008	11:52:50
LANE_01	18	70	1	22	6/6/2008	11:38:50	18	LANE_01	18	70	1	23	6/6/2008	11:38:42
LANE_01	20	70	2	21	6/6/2008	11:05:19	20	LANE_01	19	67	1	23	6/6/2008	11:05:11
LANE_01	20	70	2	20	6/6/2008	11:36:47	21	LANE_01	21	71	2	23	6/6/2008	11:36:39
LANE_01	51	70	3	18	6/6/2008	11:53:59	51	LANE_01	50	68	3	20	6/6/2008	11:53:52
LANE_01	62	70	4	24	6/6/2008	11:13:30	60	LANE_01	58	62	3	20	6/6/2008	11:13:23
LANE_01	14	71	1	24	6/6/2008	11:40:11	14	LANE_01	14	68	1	25	6/6/2008	11:40:03
LANE_01	18	71	1	21	6/6/2008	11:04:20	18	LANE_01	18	69	1	23	6/6/2008	11:04:12
LANE_01	41	71	3	21	6/6/2008	11:28:19	41	LANE_01	40	67	3	23	6/6/2008	11:28:11
LANE_01	16	72	1	20	6/6/2008	11:28:21	16	LANE_01	15	65	1	23	6/6/2008	11:28:13
LANE_01	24	72	2	21	6/6/2008	11:37:22	23	LANE_01	22	68	2	23	6/6/2008	11:37:14
LANE_01	19	73	1	21	6/6/2008	11:05:52	19	LANE_01	18	70	1	23	6/6/2008	11:05:45
LANE_01	20	73	2	24	6/6/2008	11:09:59	19	LANE_01	18	71	1	25	6/6/2008	11:09:51
LANE_01	28	73	2	22	6/6/2008	11:38:22	27	LANE_01	25	64	2	24	6/6/2008	11:38:14
LANE_01	80	75	4	22	6/6/2008	11:29:07	74	LANE_01	68	70	4	24	6/6/2008	11:28:59
LANE_01	17	76	1	21	6/6/2008	11:17:51	17	LANE_01	16	73	1	22	6/6/2008	11:17:43
LANE_01	60	77	4	21	6/6/2008	11:05:49	59	LANE_01	57	71	3	21	6/6/2008	11:05:42

LANE_01	22	79	2	21	6/6/2008	11:10:24	22	LANE_01	21	80	2	23	6/6/2008	11:10:16
LANE_01	71	80	4	21	6/6/2008	11:16:52	67	LANE_01	62	71	4	22	6/6/2008	11:16:44
LANE_01	47	81	3	21	6/6/2008	11:36:42	44	LANE_01	40	69	3	21	6/6/2008	11:36:34
without PCMS														
LANE_01	18	38	1	27	6/6/2008	12:11:17	19	LANE_01	19	52	1	26	6/6/2008	12:11:12
LANE_01	19	38	1	25	6/6/2008	12:11:15	20	LANE_01	21	49	2	22	6/6/2008	12:11:10
LANE_01	21	42	2	22	6/6/2008	12:03:05	21	LANE_01	20	47	2	25	6/6/2008	12:03:00
LANE_01	18	43	1	29	6/6/2008	12:11:14	18	LANE_01	17	51	1	24	6/6/2008	12:11:08
LANE_01	20	55	2	29	6/6/2008	12:09:45	21	LANE_01	21	59	2	22	6/6/2008	12:09:38
LANE_01	70	58	4	22	6/6/2008	12:07:15	71	LANE_01	71	61	4	22	6/6/2008	12:07:08
LANE_01	18	60	1	22	6/6/2008	12:06:32	18	LANE_01	17	54	1	24	6/6/2008	12:06:25
LANE_01	17	61	1	25	6/6/2008	12:03:30	18	LANE_01	18	63	1	31	6/6/2008	12:03:23
LANE_01	18	61	1	29	6/6/2008	12:12:44	18	LANE_01	17	61	1	23	6/6/2008	12:12:37
LANE_01	19	61	1	23	6/6/2008	12:12:37	19	LANE_01	18	60	1	22	6/6/2008	12:12:30
LANE_01	80	63	4	28	6/6/2008	12:14:17	80	LANE_01	80	65	4	20	6/6/2008	12:14:09
LANE_01	17	64	1	27	6/6/2008	12:16:43	19	LANE_01	21	73	2	23	6/6/2008	12:16:36
LANE_01	20	65	2	19	6/6/2008	12:04:21	21	LANE_01	21	68	2	21	6/6/2008	12:04:13
LANE_01	18	66	1	22	6/6/2008	12:15:10	19	LANE_01	19	69	1	21	6/6/2008	12:15:02
LANE_01	19	67	1	22	6/6/2008	12:02:21	18	LANE_01	17	65	1	24	6/6/2008	12:02:13
LANE_01	20	67	2	23	6/6/2008	12:01:34	20	LANE_01	20	65	2	31	6/6/2008	12:01:26

LANE_01	78	67	4	23	6/6/2008	12:03:47	79	LANE_01	79	68	4	25	6/6/2008	12:03:40
LANE_01	79	68	4	23	6/6/2008	12:16:40	78	LANE_01	77	65	4	20	6/6/2008	12:16:33
LANE_01	81	69	4	24	6/6/2008	12:12:35	81	LANE_01	81	70	4	21	6/6/2008	12:12:27
LANE_01	17	71	1	21	6/6/2008	12:02:11	17	LANE_01	16	66	1	25	6/6/2008	12:02:03
LANE_01	70	71	4	20	6/6/2008	12:15:04	68	LANE_01	66	68	4	20	6/6/2008	12:14:56
LANE_01	65	72	4	28	6/6/2008	12:13:25	66	LANE_01	67	73	4	24	6/6/2008	12:13:17

Sensor 1							Avg. LENGTH	**Sensor 2**						
LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss		LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
LANE_01	27	48	2	22	6/9/2008	13:46:12	26	LANE_01	24	29	2	22	6/9/2008	13:46:04
LANE_01	20	55	2	20	6/9/2008	13:49:52	21	LANE_01	22	53	2	21	6/9/2008	13:49:40
LANE_01	19	56	1	21	6/9/2008	14:17:19	18	LANE_01	17	49	1	21	6/9/2008	14:17:07
LANE_01	18	58	1	22	6/9/2008	13:50:35	19	LANE_01	20	44	2	19	6/9/2008	13:52:11
LANE_01	20	60	2	23	6/9/2008	14:17:41	20	LANE_01	20	66	2	20	6/9/2008	14:17:28
LANE_01	27	62	2	21	6/9/2008	13:47:27	26	LANE_01	25	53	2	20	6/9/2008	13:47:15
LANE_01	19	64	1	22	6/9/2008	14:17:15	18	LANE_01	17	52	1	20	6/9/2008	14:17:03
LANE_01	20	66	2	21	6/9/2008	14:21:58	19	LANE_01	17	53	1	20	6/9/2008	14:21:46
LANE_01	46	66	3	22	6/9/2008	14:15:17	47	LANE_01	48	67	3	20	6/9/2008	14:15:04

Sensor 1							Avg. LENGTH	Sensor 2						
LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss		LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
LANE_01	22	38	2	20	6/10/2008	14:52:45	21	LANE_01	20	37	2	24	6/10/2008	52:05.2
LANE_01	22	38	2	22	6/10/2008	14:45:01	22	LANE_01	22	38	2	22	6/10/2008	44:50.2
LANE_01	74	38	4	17	6/10/2008	10:11:09	72	LANE_01	70	38	4	18	6/10/2008	10:57.4
LANE_01	17	39	1	18	6/10/2008	11:35:51	17	LANE_01	17	38	1	19	6/10/2008	35:39.1
LANE_01	20	40	2	20	6/10/2008	10:55:24	20	LANE_01	20	40	2	22	6/10/2008	55:12.1
LANE_01	47	40	3	19	6/10/2008	11:35:53	47	LANE_01	46	41	3	22	6/10/2008	35:41.0
LANE_01	20	41	2	20	6/10/2008	11:03:17	19	LANE_01	18	39	1	22	6/10/2008	03:05.2
LANE_01	16	42	1	21	6/10/2008	10:57:30	16	LANE_01	16	42	1	22	6/10/2008	57:17.3
LANE_01	18	42	1	23	6/10/2008	11:21:21	18	LANE_01	17	44	1	25	6/10/2008	21:09.0
LANE_01	19	43	1	23	6/10/2008	14:46:42	19	LANE_01	19	40	1	23	6/10/2008	46:29.2
LANE_01	19	43	1	22	6/10/2008	14:45:14	20	LANE_01	21	49	2	23	6/10/2008	45:01.1
LANE_01	18	44	1	22	6/10/2008	15:05:09	18	LANE_01	18	40	1	23	6/10/2008	04:57.1
LANE_01	25	44	2	19	6/10/2008	15:01:32	25	LANE_01	24	41	2	21	6/10/2008	01:19.2
LANE_01	46	44	3	20	6/10/2008	11:22:02	46	LANE_01	46	36	3	21	6/10/2008	21:50.2
LANE_01	66	44	4	19	6/10/2008	11:07:18	67	LANE_01	68	41	4	24	6/10/2008	07:05.3
LANE_01	79	44	4	20	6/10/2008	11:03:47	76	LANE_01	73	47	4	21	6/10/2008	03:34.2
LANE	11	45	1	24	6/10/20	14:56:18	12	LANE	12	43	1	25	6/10/20	56:05.1

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LANE _01	20	45	2	22	6/10/2008	15:00:53	20	LANE _01	19	44	1	23	6/10/2008	00:40.1
LANE _01	23	45	2	18	6/10/2008	10:29:23	23	LANE _01	22	47	2	21	6/10/2008	29:10.3
LANE _01	18	46	1	22	6/10/2008	14:52:55	19	LANE _01	20	31	2	21	6/10/2008	52:33.4
LANE _01	21	46	2	19	6/10/2008	11:45:43	22	LANE _01	23	43	2	21	6/10/2008	45:30.3
LANE _01	19	47	1	20	6/10/2008	15:03:37	19	LANE _01	18	45	1	22	6/10/2008	03:24.2
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LANE _01	22	47	2	20	6/10/2008	11:03:31	22	LANE _01	22	51	2	27	6/10/2008	03:17.2
LANE _01	22	47	2	22	6/10/2008	14:52:18	23	LANE _01	23	47	2	24	6/10/2008	50:59.3
LANE _01	26	47	2	21	6/10/2008	15:03:39	26	LANE _01	26	42	2	24	6/10/2008	03:26.3
LANE _01	18	48	1	22	6/10/2008	14:49:51	18	LANE _01	18	11	1	16	6/10/2008	49:02.4
LANE _01	17	49	1	20	6/10/2008	10:34:48	17	LANE _01	17	46	1	22	6/10/2008	34:35.2
LANE _01	17	49	1	22	6/10/2008	9:12:53	18	LANE _01	18	47	1	24	6/10/2008	12:39.3
LANE _01	18	49	1	22	6/10/2008	10:56:04	18	LANE _01	17	46	1	24	6/10/2008	55:51.0
LANE _01	21	49	2	20	6/10/2008	11:23:04	22	LANE _01	23	49	2	22	6/10/2008	22:51.2
LANE _01	25	49	2	20	6/10/2008	15:04:43	25	LANE _01	24	47	2	22	6/10/2008	04:30.1
LANE _01	33	49	2	21	6/10/2008	10:57:26	32	LANE _01	31	47	2	22	6/10/2008	57:12.3
LANE _01	49	49	3	19	6/10/2008	9:16:37	48	LANE _01	46	35	3	22	6/10/2008	16:25.3
LANE _01	82	49	4	20	6/10/2008	10:16:56	84	LANE _01	86	51	4	23	6/10/2008	16:43.3
LANE _01	18	50	1	20	6/10/2008	14:56:14	18	LANE _01	18	47	1	22	6/10/2008	56:01.1

LANE_01	19	50	1	22	6/10/2008	11:06:04	19	LANE_01	18	44	1	22	6/10/2008	05:51.1
LANE_01	18	50	1	21	6/10/2008	9:27:16	19	LANE_01	20	45	2	22	6/10/2008	27:02.4
LANE_01	24	50	2	19	6/10/2008	10:34:47	24	LANE_01	24	53	2	22	6/10/2008	34:33.5
LANE_01	17	51	1	21	6/10/2008	11:43:20	16	LANE_01	15	51	1	24	6/10/2008	43:06.4
LANE_01	19	51	1	20	6/10/2008	11:33:48	19	LANE_01	19	43	1	21	6/10/2008	33:35.4
LANE_01	19	51	1	22	6/10/2008	15:04:31	19	LANE_01	19	48	1	22	6/10/2008	04:17.0
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LANE_01	20	51	2	21	6/10/2008	9:21:38	21	LANE_01	22	54	2	23	6/10/2008	17:26.4
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LANE_01	19	52	1	21	6/10/2008	11:44:05	19	LANE_01	18	53	1	24	6/10/2008	43:51.0
LANE_01	18	52	1	22	6/10/2008	11:22:14	19	LANE_01	20	48	2	24	6/10/2008	22:00.2
LANE_01	20	52	2	19	6/10/2008	10:50:03	20	LANE_01	20	48	2	21	6/10/2008	49:49.4
LANE_01	22	52	2	19	6/10/2008	10:06:31	23	LANE_01	23	48	2	21	6/10/2008	06:17.2
LANE_01	23	52	2	18	6/10/2008	11:31:47	23	LANE_01	23	43	2	20	6/10/2008	31:33.3
LANE_01	26	52	2	22	6/10/2008	9:24:16	25	LANE_01	24	46	2	24	6/10/2008	24:03.1
LANE_01	75	52	4	21	6/10/2008	10:34:45	74	LANE_01	73	48	4	22	6/10/2008	34:32.0
LANE_01	16	53	1	20	6/10/2008	11:45:08	16	LANE_01	15	42	1	22	6/10/2008	44:54.2
LANE_01	18	53	1	20	6/10/2008	10:42:44	18	LANE_01	17	48	1	22	6/10/2008	42:29.4
LANE_01	20	53	2	21	6/10/2008	10:42:46	20	LANE_01	19	51	1	22	6/10/2008	42:31.4
LANE	19	53	1	22	6/10/20	11:29:35	20	LANE	20	55	2	23	6/10/20	29:21.1

_01					08			_01					08	
LANE _01	20	53	2	21	6/10/2008	9:12:34	21	LANE _01	21	45	2	23	6/10/2008	12:20.1
LANE _01	24	53	2	19	6/10/2008	10:50:05	24	LANE _01	24	48	2	21	6/10/2008	49:51.1
LANE _01	26	53	2	22	6/10/2008	14:42:38	26	LANE _01	25	52	2	22	6/10/2008	42:23.4
LANE _01	20	54	2	20	6/10/2008	10:03:53	21	LANE _01	21	55	2	22	6/10/2008	03:39.2
LANE _01	23	54	2	20	6/10/2008	10:07:20	23	LANE _01	23	52	2	21	6/10/2008	07:06.1
LANE _01	53	54	3	18	6/10/2008	11:31:26	54	LANE _01	54	52	3	21	6/10/2008	31:12.5
LANE _01	19	55	1	21	6/10/2008	14:59:12	18	LANE _01	17	49	1	24	6/10/2008	58:57.4
LANE _01	19	55	1	22	6/10/2008	9:17:05	19	LANE _01	19	49	1	24	6/10/2008	16:51.0
LANE _01	20	55	2	20	6/10/2008	10:31:36	20	LANE _01	19	47	1	22	6/10/2008	31:22.3
LANE _01	21	55	2	20	6/10/2008	10:06:15	21	LANE _01	20	52	2	22	6/10/2008	06:01.3
LANE _01	23	55	2	22	6/10/2008	14:51:13	21	LANE _01	19	52	1	25	6/10/2008	50:52.1
LANE _01	28	55	2	19	6/10/2008	10:36:21	28	LANE _01	27	51	2	21	6/10/2008	36:07.2
LANE _01	18	56	1	22	6/10/2008	11:02:47	18	LANE _01	18	57	1	24	6/10/2008	02:32.3
LANE _01	18	56	1	21	6/10/2008	10:07:17	19	LANE _01	20	59	2	21	6/10/2008	07:03.2
LANE _01	19	56	1	23	6/10/2008	11:07:48	19	LANE _01	19	50	1	25	6/10/2008	07:33.4
LANE _01	23	56	2	18	6/10/2008	10:51:45	24	LANE _01	25	56	2	21	6/10/2008	51:30.3
LANE _01	43	56	3	18	6/10/2008	10:36:19	46	LANE _01	48	60	3	19	6/10/2008	36:05.1
LANE _01	19	57	1	19	6/10/2008	10:51:06	19	LANE _01	18	51	1	22	6/10/2008	50:52.2
LANE _01	19	57	1	21	6/10/2008	10:51:54	19	LANE _01	18	54	1	23	6/10/2008	51:40.1

LANE_01	18	57	1	20	6/10/2008	11:14:16	19	LANE_01	19	59	1	22	6/10/2008	14:02.1
LANE_01	19	57	1	21	6/10/2008	11:36:02	20	LANE_01	20	55	2	22	6/10/2008	35:47.4
LANE_01	20	57	2	22	6/10/2008	14:51:06	20	LANE_01	20	49	2	23	6/10/2008	49:38.1
LANE_01	22	57	2	20	6/10/2008	10:19:51	22	LANE_01	22	56	2	23	6/10/2008	19:36.2
LANE_01	17	58	1	21	6/10/2008	9:36:36	17	LANE_01	17	56	1	23	6/10/2008	36:21.5
LANE_01	17	58	1	22	6/10/2008	10:46:58	17	LANE_01	17	52	1	25	6/10/2008	46:44.2
LANE_01	18	58	1	20	6/10/2008	9:12:01	18	LANE_01	17	59	1	24	6/10/2008	11:55.0
LANE_01	17	58	1	21	6/10/2008	11:16:11	18	LANE_01	18	56	1	22	6/10/2008	15:56.4
LANE_01	19	58	1	21	6/10/2008	10:54:17	20	LANE_01	20	55	2	22	6/10/2008	54:02.4
LANE_01	19	58	1	20	6/10/2008	11:29:22	20	LANE_01	20	60	2	22	6/10/2008	29:07.4
LANE_01	22	58	2	21	6/10/2008	10:57:47	21	LANE_01	20	49	2	23	6/10/2008	57:33.0
LANE_01	21	58	2	19	6/10/2008	11:16:43	22	LANE_01	23	57	2	22	6/10/2008	16:28.3
LANE_01	43	58	3	21	6/10/2008	10:08:00	46	LANE_01	48	54	3	23	6/10/2008	07:45.4
LANE_01	46	58	3	22	6/10/2008	10:56:54	52	LANE_01	58	87	3	23	6/10/2008	56:39.5
LANE_01	17	59	1	22	6/10/2008	11:21:25	18	LANE_01	19	55	1	23	6/10/2008	21:10.3
LANE_01	20	59	2	21	6/10/2008	14:48:48	20	LANE_01	20	60	2	24	6/10/2008	48:33.3
LANE_01	68	59	4	20	6/10/2008	14:58:28	65	LANE_01	61	40	4	22	6/10/2008	58:15.0
LANE_01	11	60	1	24	6/10/2008	14:58:20	11	LANE_01	10	35	1	27	6/10/2008	58:06.2
LANE_01	18	60	1	21	6/10/2008	11:44:02	18	LANE_01	18	64	1	23	6/10/2008	43:47.4
LANE	19	60	1	19	6/10/20	10:22:41	19	LANE	19	55	1	21	6/10/20	22:26.2

_01					08			_01					08	
LANE _01	19	60	1	21	6/10/2008	11:29:39	19	LANE _01	19	60	1	23	6/10/2008	29:24.3
LANE _01	19	60	1	21	6/10/2008	10:22:42	20	LANE _01	20	54	2	22	6/10/2008	22:27.3
LANE _01	19	60	1	21	6/10/2008	11:44:00	20	LANE _01	20	60	2	23	6/10/2008	43:45.3
LANE _01	21	60	2	21	6/10/2008	15:01:14	21	LANE _01	20	58	2	24	6/10/2008	00:59.0
LANE _01	21	60	2	21	6/10/2008	11:12:07	21	LANE _01	21	65	2	22	6/10/2008	11:52.1
LANE _01	22	60	2	21	6/10/2008	11:38:58	22	LANE _01	22	55	2	22	6/10/2008	38:43.5
LANE _01	19	61	1	21	6/10/2008	11:09:03	19	LANE _01	18	57	1	23	6/10/2008	08:48.1
LANE _01	19	61	1	20	6/10/2008	11:12:08	19	LANE _01	19	62	1	21	6/10/2008	11:53.1
LANE _01	22	61	2	20	6/10/2008	11:29:16	22	LANE _01	21	59	2	23	6/10/2008	29:01.4
LANE _01	16	62	1	19	6/10/2008	11:27:33	17	LANE _01	18	64	1	21	6/10/2008	27:17.5
LANE _01	19	62	1	20	6/10/2008	10:29:50	20	LANE _01	20	58	2	21	6/10/2008	29:34.4
LANE _01	20	62	2	25	6/10/2008	14:46:06	20	LANE _01	20	61	2	23	6/10/2008	45:50.4
LANE _01	19	62	1	21	6/10/2008	10:53:24	21	LANE _01	22	70	2	22	6/10/2008	53:09.1
LANE _01	21	62	2	22	6/10/2008	11:27:47	21	LANE _01	20	58	2	24	6/10/2008	27:32.2
LANE _01	23	62	2	19	6/10/2008	10:26:02	23	LANE _01	23	62	2	21	6/10/2008	25:47.3
LANE _01	32	62	2	17	6/10/2008	11:18:43	33	LANE _01	34	66	2	19	6/10/2008	18:28.1
LANE _01	42	62	3	21	6/10/2008	11:35:22	42	LANE _01	42	61	3	20	6/10/2008	35:07.3
LANE _01	17	63	1	20	6/10/2008	10:49:58	17	LANE _01	17	59	1	22	6/10/2008	49:43.3
LANE _01	18	63	1	21	6/10/2008	9:26:04	18	LANE _01	18	62	1	23	6/10/2008	25:49.0

LANE_01	19	63	1	22	6/10/2008	9:26:39	19	LANE_01	18	52	1	21	6/10/2008	26:25.2
LANE_01	19	63	1	21	6/10/2008	11:38:19	19	LANE_01	18	61	1	22	6/10/2008	38:03.3
LANE_01	19	63	1	20	6/10/2008	14:55:40	19	LANE_01	18	40	1	22	6/10/2008	52:42.3
LANE_01	19	63	1	21	6/10/2008	10:52:13	19	LANE_01	19	60	1	23	6/10/2008	51:58.0
LANE_01	18	63	1	19	6/10/2008	11:25:33	19	LANE_01	20	64	2	22	6/10/2008	25:18.1
LANE_01	22	63	2	20	6/10/2008	11:40:57	23	LANE_01	23	67	2	22	6/10/2008	40:42.2
LANE_01	35	63	2	19	6/10/2008	10:30:43	37	LANE_01	38	67	2	21	6/10/2008	30:28.4
LANE_01	40	63	3	23	6/10/2008	11:12:48	41	LANE_01	42	62	3	24	6/10/2008	12:33.2
LANE_01	17	64	1	18	6/10/2008	10:23:11	17	LANE_01	17	61	1	21	6/10/2008	22:55.4
LANE_01	17	64	1	20	6/10/2008	10:52:57	19	LANE_01	21	69	2	23	6/10/2008	52:41.4
LANE_01	21	64	2	21	6/10/2008	9:22:06	21	LANE_01	21	60	2	22	6/10/2008	21:51.1
LANE_01	23	64	2	21	6/10/2008	11:09:52	23	LANE_01	22	59	2	22	6/10/2008	09:37.0
LANE_01	33	64	2	17	6/10/2008	10:20:27	31	LANE_01	29	59	2	21	6/10/2008	20:12.3
LANE_01	39	64	2	20	6/10/2008	10:45:10	40	LANE_01	41	64	3	23	6/10/2008	44:55.4
LANE_01	19	65	1	21	6/10/2008	10:30:12	19	LANE_01	19	70	1	24	6/10/2008	29:57.1
LANE_01	18	66	1	22	6/10/2008	11:07:56	18	LANE_01	18	62	1	25	6/10/2008	07:40.3
LANE_01	19	66	1	21	6/10/2008	9:27:53	19	LANE_01	19	49	1	23	6/10/2008	27:38.2
LANE_01	19	66	1	20	6/10/2008	11:32:14	19	LANE_01	19	68	1	22	6/10/2008	31:59.1
LANE_01	21	66	2	21	6/10/2008	11:40:09	21	LANE_01	20	67	2	25	6/10/2008	39:53.2
LANE	67	66	4	18	6/10/20	11:38:17	67	LANE	67	64	4	20	6/10/20	38:02.3

_01					08			_01					08	
LANE _01	65	66	4	23	6/10/2008	11:36:48	68	LANE _01	70	67	4	23	6/10/2008	36:33.3
LANE _01	18	67	1	18	6/10/2008	10:43:10	17	LANE _01	16	58	1	21	6/10/2008	42:55.2
LANE _01	18	67	1	23	6/10/2008	11:10:14	18	LANE _01	17	61	1	20	6/10/2008	09:58.4
LANE _01	20	67	2	20	6/10/2008	11:10:16	20	LANE _01	20	61	2	22	6/10/2008	10:00.4
LANE _01	25	67	2	20	6/10/2008	10:10:34	26	LANE _01	26	72	2	21	6/10/2008	10:18.4
LANE _01	79	67	4	18	6/10/2008	10:53:32	81	LANE _01	83	68	4	21	6/10/2008	53:16.5
LANE _01	20	68	2	20	6/10/2008	11:09:19	20	LANE _01	20	71	2	24	6/10/2008	09:03.4
LANE _01	23	68	2	20	6/10/2008	14:58:01	23	LANE _01	22	64	2	21	6/10/2008	57:45.2
LANE _01	25	68	2	21	6/10/2008	10:53:50	26	LANE _01	27	72	2	23	6/10/2008	53:35.1
LANE _01	18	74	1	22	6/10/2008	10:14:03	18	LANE _01	17	67	1	22	6/10/2008	13:48.1

Sensor 1							Avg. LENGTH	Sensor 2						
LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss		LANE	LENGTH	(MPH)	CLASS	RANGE	YYYY-MM-DD	HH:MM:SS.sss
LANE_01	15	15	1	20	6/13/2008	11:17:56	16	LANE_01	17	24	1	18	6/13/2008	11:17:44
LANE_01	27	19	2	19	6/13/2008	12:36:39	21	LANE_01	14	9	1	16	6/13/2008	12:36:29
LANE_01	17	27	1	19	6/13/2008	12:46:00	19	LANE_01	21	38	2	18	6/13/2008	12:45:42
LANE_01	19	31	1	18	6/13/2008	11:11:58	19	LANE_01	18	37	1	18	6/13/2008	11:11:41
LANE_01	21	31	2	20	6/13/2008	11:15:29	20	LANE_01	18	31	1	17	6/13/2008	11:15:14
LANE_01	22	32	2	22	6/13/2008	11:53:22	20	LANE_01	18	36	1	19	6/13/2008	11:53:06
LANE_01	17	34	1	20	6/13/2008	11:02:09	18	LANE_01	19	31	1	19	6/13/2008	11:01:52
LANE_01	18	34	1	18	6/13/2008	11:11:54	19	LANE_01	19	38	1	17	6/13/2008	11:11:37
LANE_01	23	35	2	20	6/13/2008	10:45:09	24	LANE_01	24	36	2	17	6/13/2008	10:44:52
LANE_01	51	35	3	16	6/13/2008	10:59:46	51	LANE_01	51	33	3	22	6/13/2008	10:59:30
LANE_01	16	36	1	20	6/13/2008	12:45:58	16	LANE_01	15	41	1	17	6/13/2008	12:45:39
LANE_01	20	36	2	19	6/13/2008	12:45:14	21	LANE_01	22	38	2	18	6/13/2008	12:44:57
LANE_01	30	36	2	19	6/13/2008	10:47:39	30	LANE_01	30	32	2	18	6/13/2008	10:47:24
LANE_01	14	37	1	21	6/13/2008	10:17:56	17	LANE_01	19	43	1	20	6/13/2008	10:17:37
LANE_01	19	37	1	17	6/13/2008	10:58:45	20	LANE_01	21	39	2	16	6/13/2008	10:58:27
LANE_01	19	37	1	18	6/13/2008	13:03:02	20	LANE_01	21	45	2	20	6/13/2008	13:02:43
LANE	17	38	1	21	6/13/20	9:56:21	17	LANE	16	32	1	20	6/13/20	9:56:05

_01					08			_01					08	
LANE _01	16	38	1	20	6/13/2008	12:53:08	17	LANE _01	18	39	1	17	6/13/2008	12:52:51
LANE _01	18	38	1	17	6/13/2008	11:36:57	18	LANE _01	17	38	1	17	6/13/2008	11:36:39
LANE _01	21	38	2	20	6/13/2008	12:54:26	21	LANE _01	21	37	2	18	6/13/2008	12:54:08
LANE _01	17	39	1	19	6/13/2008	11:35:55	17	LANE _01	17	51	1	17	6/13/2008	11:35:36
LANE _01	22	39	2	22	6/13/2008	11:52:29	20	LANE _01	18	36	1	19	6/13/2008	11:52:13
LANE _01	20	39	2	23	6/13/2008	11:38:54	21	LANE _01	22	41	2	17	6/13/2008	11:38:35
LANE _01	63	39	4	18	6/13/2008	10:18:21	70	LANE _01	76	47	4	16	6/13/2008	10:18:02
LANE _01	17	40	1	22	6/13/2008	10:43:07	17	LANE _01	16	39	1	18	6/13/2008	10:42:49
LANE _01	19	41	1	19	6/13/2008	12:52:00	21	LANE _01	22	46	2	18	6/13/2008	12:51:41
LANE _01	14	42	1	20	6/13/2008	12:09:40	15	LANE _01	16	43	1	19	6/13/2008	12:09:20
LANE _01	52	42	3	18	6/13/2008	12:03:19	50	LANE _01	48	36	3	16	6/13/2008	12:03:02
LANE _01	16	43	1	21	6/13/2008	12:03:34	17	LANE _01	17	33	1	19	6/13/2008	12:03:17
LANE _01	17	43	1	21	6/13/2008	11:30:30	18	LANE _01	18	42	1	19	6/13/2008	11:30:11
LANE _01	18	43	1	20	6/13/2008	11:11:48	18	LANE _01	18	38	1	18	6/13/2008	11:11:30
LANE _01	19	43	1	19	6/13/2008	11:44:39	18	LANE _01	17	36	1	17	6/13/2008	11:44:21
LANE _01	19	43	1	20	6/13/2008	13:08:48	18	LANE _01	17	39	1	20	6/13/2008	13:08:29
LANE _01	19	43	1	19	6/13/2008	11:08:38	19	LANE _01	19	34	1	18	6/13/2008	11:08:20
LANE _01	21	43	2	21	6/13/2008	11:51:19	20	LANE _01	19	34	1	19	6/13/2008	11:51:02
LANE _01	23	43	2	20	6/13/2008	12:57:06	23	LANE _01	23	43	2	18	6/13/2008	12:56:47

LANE_01	18	44	1	19	6/13/2008	12:15:42	19	LANE_01	19	35	1	19	6/13/2008	12:15:23
LANE_01	18	44	1	19	6/13/2008	11:37:14	19	LANE_01	20	48	2	18	6/13/2008	11:36:54
LANE_01	20	44	2	20	6/13/2008	11:13:15	20	LANE_01	19	36	1	19	6/13/2008	11:12:58
LANE_01	23	44	2	21	6/13/2008	10:43:09	22	LANE_01	20	39	2	16	6/13/2008	10:42:51
LANE_01	23	44	2	23	6/13/2008	13:46:59	23	LANE_01	23	46	2	20	6/13/2008	13:46:40
LANE_01	17	45	1	21	6/13/2008	10:40:29	17	LANE_01	16	51	1	18	6/13/2008	10:40:09
LANE_01	19	45	1	20	6/13/2008	13:03:49	19	LANE_01	19	41	1	20	6/13/2008	13:03:30
LANE_01	20	45	2	20	6/13/2008	12:24:19	21	LANE_01	21	43	2	19	6/13/2008	12:24:00
LANE_01	21	45	2	21	6/13/2008	13:16:21	22	LANE_01	23	46	2	20	6/13/2008	13:16:01
LANE_01	17	46	1	20	6/13/2008	11:46:05	18	LANE_01	18	44	1	19	6/13/2008	11:45:46
LANE_01	18	46	1	21	6/13/2008	11:27:16	18	LANE_01	18	44	1	19	6/13/2008	11:26:57
LANE_01	19	46	1	18	6/13/2008	11:37:35	19	LANE_01	18	43	1	18	6/13/2008	11:37:16
LANE_01	17	47	1	21	6/13/2008	10:42:10	17	LANE_01	16	50	1	18	6/13/2008	10:41:50
LANE_01	18	47	1	21	6/13/2008	10:49:03	19	LANE_01	19	38	1	20	6/13/2008	10:48:44
LANE_01	19	47	1	18	6/13/2008	10:57:14	19	LANE_01	18	41	1	17	6/13/2008	10:56:55
LANE_01	19	47	1	22	6/13/2008	13:49:37	19	LANE_01	19	47	1	20	6/13/2008	13:49:18
LANE_01	20	47	2	21	6/13/2008	11:16:19	20	LANE_01	20	49	2	17	6/13/2008	11:15:59
LANE_01	20	47	2	17	6/13/2008	11:48:45	21	LANE_01	21	41	2	18	6/13/2008	11:48:26
LANE_01	22	47	2	18	6/13/2008	11:03:22	21	LANE_01	20	34	2	16	6/13/2008	11:03:05
LANE	22	47	2	20	6/13/20	11:37:12	22	LANE	21	49	2	18	6/13/20	11:36:53

_01					08			_01					08	
LANE _01	19	48	1	20	6/13/2008	11:10:59	18	LANE _01	17	49	1	17	6/13/2008	11:10:40
LANE _01	19	48	1	21	6/13/2008	11:42:14	19	LANE _01	19	38	1	20	6/13/2008	11:41:55
LANE _01	21	48	2	17	6/13/2008	12:06:49	20	LANE _01	18	43	1	18	6/13/2008	12:06:30
LANE _01	21	48	2	19	6/13/2008	10:52:14	21	LANE _01	21	37	2	18	6/13/2008	10:51:56
LANE _01	22	48	2	18	6/13/2008	11:20:47	22	LANE _01	21	47	2	16	6/13/2008	11:20:28
LANE _01	22	48	2	22	6/13/2008	13:46:00	22	LANE _01	21	52	2	19	6/13/2008	13:45:40
LANE _01	24	48	2	19	6/13/2008	11:13:19	24	LANE _01	24	40	2	17	6/13/2008	11:13:01
LANE _01	35	48	2	18	6/13/2008	10:18:15	34	LANE _01	33	44	2	16	6/13/2008	10:17:56
LANE _01	42	48	3	18	6/13/2008	13:04:56	42	LANE _01	41	49	3	17	6/13/2008	13:04:36
LANE _01	63	48	4	19	6/13/2008	10:45:31	75	LANE _01	87	69	4	15	6/13/2008	10:45:10
LANE _01	16	49	1	20	6/13/2008	10:55:17	15	LANE _01	14	41	1	19	6/13/2008	10:54:59
LANE _01	19	49	1	20	6/13/2008	11:31:28	18	LANE _01	17	40	1	17	6/13/2008	11:31:09
LANE _01	20	49	2	21	6/13/2008	12:57:09	19	LANE _01	17	42	1	18	6/13/2008	12:56:50
LANE _01	18	49	1	19	6/13/2008	13:02:01	19	LANE _01	19	41	1	17	6/13/2008	13:01:41
LANE _01	21	49	2	17	6/13/2008	10:56:57	20	LANE _01	19	41	1	17	6/13/2008	10:56:38
LANE _01	22	49	2	17	6/13/2008	11:40:14	22	LANE _01	21	50	2	17	6/13/2008	11:39:54
LANE _01	22	49	2	19	6/13/2008	10:42:38	22	LANE _01	22	52	2	18	6/13/2008	10:42:19
LANE _01	66	49	4	21	6/13/2008	12:39:13	70	LANE _01	73	55	4	16	6/13/2008	12:38:53
LANE _01	17	50	1	20	6/13/2008	13:16:50	17	LANE _01	17	45	1	20	6/13/2008	13:16:31

LANE_01	18	50	1	22	6/13/2008	12:26:37	18	LANE_01	18	48	1	17	6/13/2008	12:26:17
LANE_01	21	50	2	18	6/13/2008	10:48:26	19	LANE_01	17	31	1	18	6/13/2008	10:48:09
LANE_01	22	50	2	17	6/13/2008	10:54:46	23	LANE_01	23	48	2	18	6/13/2008	10:54:27
LANE_01	76	50	4	21	6/13/2008	11:51:25	76	LANE_01	76	41	4	20	6/13/2008	11:51:06
LANE_01	16	51	1	21	6/13/2008	12:15:48	16	LANE_01	15	37	1	18	6/13/2008	12:15:30
LANE_01	16	51	1	19	6/13/2008	12:10:27	17	LANE_01	17	49	1	17	6/13/2008	12:10:07
LANE_01	19	51	1	16	6/13/2008	12:15:12	19	LANE_01	19	34	1	18	6/13/2008	12:15:06
LANE_01	19	51	1	20	6/13/2008	12:27:07	20	LANE_01	20	51	2	17	6/13/2008	12:26:46
LANE_01	22	51	2	18	6/13/2008	11:43:03	22	LANE_01	21	46	2	18	6/13/2008	11:42:44
LANE_01	21	51	2	21	6/13/2008	12:00:20	22	LANE_01	22	50	2	17	6/13/2008	12:00:00
LANE_01	41	51	3	19	6/13/2008	10:53:20	39	LANE_01	36	40	2	17	6/13/2008	10:53:01
LANE_01	71	51	4	19	6/13/2008	11:55:38	69	LANE_01	67	47	4	15	6/13/2008	11:55:19
LANE_01	16	52	1	19	6/13/2008	12:26:20	16	LANE_01	15	55	1	16	6/13/2008	12:25:59
LANE_01	17	52	1	20	6/13/2008	12:28:45	17	LANE_01	16	49	1	18	6/13/2008	12:28:25
LANE_01	17	52	1	19	6/13/2008	11:25:39	17	LANE_01	17	45	1	16	6/13/2008	11:25:19
LANE_01	18	52	1	20	6/13/2008	11:42:15	19	LANE_01	19	40	1	20	6/13/2008	11:41:57
LANE_01	22	52	2	18	6/13/2008	10:58:00	22	LANE_01	21	47	2	17	6/13/2008	10:57:41
LANE_01	30	52	2	21	6/13/2008	12:27:34	30	LANE_01	30	51	2	18	6/13/2008	12:27:13
LANE_01	18	53	1	20	6/13/2008	12:15:24	18	LANE_01	18	39	1	19	6/13/2008	12:15:13
LANE	20	53	2	19	6/13/20	11:36:07	20	LANE	20	54	2	18	6/13/20	11:35:47

_01					08			_01					08	
LANE _01	21	53	2	22	6/13/2008	12:00:03	20	LANE _01	19	40	1	19	6/13/2008	11:59:45
LANE _01	73	53	4	17	6/13/2008	9:59:24	75	LANE _01	76	51	4	15	6/13/2008	9:59:05
LANE _01	20	54	2	20	6/13/2008	13:16:53	20	LANE _01	19	45	1	19	6/13/2008	13:16:33
LANE _01	21	54	2	20	6/13/2008	11:46:59	20	LANE _01	19	49	1	17	6/13/2008	11:46:39
LANE _01	17	55	1	21	6/13/2008	12:39:10	16	LANE _01	14	45	1	18	6/13/2008	12:38:50
LANE _01	17	55	1	24	6/13/2008	11:54:49	17	LANE _01	16	48	1	20	6/13/2008	11:54:29
LANE _01	20	55	2	21	6/13/2008	11:49:56	19	LANE _01	18	46	1	19	6/13/2008	11:49:36
LANE _01	18	55	1	21	6/13/2008	13:12:30	19	LANE _01	20	57	2	21	6/13/2008	13:12:09
LANE _01	20	55	2	18	6/13/2008	11:46:54	20	LANE _01	19	55	1	16	6/13/2008	11:46:34
LANE _01	67	55	4	20	6/13/2008	11:08:49	71	LANE _01	74	56	4	15	6/13/2008	11:08:29
LANE _01	19	56	1	19	6/13/2008	11:09:07	17	LANE _01	15	44	1	18	6/13/2008	11:08:47
LANE _01	19	56	1	20	6/13/2008	12:12:30	18	LANE _01	17	47	1	19	6/13/2008	12:12:10
LANE _01	19	56	1	17	6/13/2008	12:26:13	18	LANE _01	17	55	1	17	6/13/2008	12:25:53
LANE _01	23	56	2	17	6/13/2008	10:41:21	19	LANE _01	14	39	1	16	6/13/2008	10:41:02
LANE _01	18	56	1	19	6/13/2008	10:50:18	19	LANE _01	19	46	1	18	6/13/2008	10:49:59
LANE _01	20	56	2	21	6/13/2008	11:30:48	19	LANE _01	18	47	1	20	6/13/2008	11:30:29
LANE _01	21	56	2	17	6/13/2008	11:37:06	20	LANE _01	19	56	1	16	6/13/2008	11:36:46
LANE _01	20	56	2	19	6/13/2008	12:00:12	21	LANE _01	21	50	2	18	6/13/2008	11:59:52
LANE _01	16	57	1	19	6/13/2008	12:49:32	16	LANE _01	15	47	1	17	6/13/2008	12:49:12

LANE_01	17	57	1	21	6/13/2008	11:38:26	17	LANE_01	17	48	1	19	6/13/2008	11:38:06
LANE_01	21	57	2	22	6/13/2008	12:36:31	20	LANE_01	19	54	1	17	6/13/2008	12:36:10
LANE_01	19	58	1	23	6/13/2008	11:13:55	19	LANE_01	18	41	1	19	6/13/2008	11:13:37
LANE_01	20	58	2	22	6/13/2008	13:11:20	20	LANE_01	19	52	1	21	6/13/2008	13:11:00
LANE_01	55	58	3	19	6/13/2008	12:47:32	51	LANE_01	46	42	3	18	6/13/2008	12:47:12
LANE_01	17	59	1	19	6/13/2008	13:13:42	16	LANE_01	15	61	1	17	6/13/2008	13:13:21
LANE_01	16	59	1	22	6/13/2008	10:18:34	17	LANE_01	17	56	1	18	6/13/2008	10:18:14
LANE_01	19	59	1	18	6/13/2008	12:21:36	17	LANE_01	14	46	1	17	6/13/2008	12:21:16
LANE_01	18	60	1	22	6/13/2008	11:05:53	18	LANE_01	17	50	1	19	6/13/2008	11:05:33
LANE_01	21	60	2	19	6/13/2008	11:23:52	19	LANE_01	17	39	1	17	6/13/2008	11:23:34
LANE_01	19	60	1	20	6/13/2008	12:12:37	19	LANE_01	19	54	1	18	6/13/2008	12:12:17
LANE_01	17	61	1	21	6/13/2008	11:52:40	17	LANE_01	17	67	1	18	6/13/2008	11:52:19
LANE_01	21	61	2	21	6/13/2008	12:15:32	20	LANE_01	18	25	1	13	6/13/2008	12:15:17
LANE_01	18	62	1	21	6/13/2008	13:11:13	18	LANE_01	17	53	1	20	6/13/2008	13:10:52
LANE_01	21	62	2	21	6/13/2008	12:01:07	20	LANE_01	19	57	1	18	6/13/2008	12:00:46
LANE_01	22	62	2	19	6/13/2008	10:52:09	22	LANE_01	21	53	2	17	6/13/2008	10:51:48
LANE_01	17	63	1	20	6/13/2008	13:07:18	17	LANE_01	16	53	1	20	6/13/2008	13:06:58
LANE_01	16	64	1	21	6/13/2008	12:07:30	16	LANE_01	15	63	1	17	6/13/2008	12:07:09
LANE_01	19	64	1	20	6/13/2008	10:57:41	18	LANE_01	17	61	1	18	6/13/2008	10:57:20
LANE	80	64	4	22	6/13/20	13:15:03	79	LANE	77	57	4	23	6/13/20	13:14:42

_01					08			_01					08	
LANE _01	18	65	1	21	6/13/2008	11:43:50	17	LANE _01	16	55	1	20	6/13/2008	11:43:29
LANE _01	18	65	1	21	6/13/2008	12:59:33	18	LANE _01	18	58	1	18	6/13/2008	12:59:12
LANE _01	22	65	2	20	6/13/2008	12:16:21	21	LANE _01	19	45	1	17	6/13/2008	12:16:02
LANE _01	20	67	2	18	6/13/2008	12:25:53	18	LANE _01	16	48	1	18	6/13/2008	12:25:32
LANE _01	87	68	4	14	6/13/2008	10:51:45	82	LANE _01	76	59	4	16	6/13/2008	10:51:24
LANE _01	20	69	2	21	6/13/2008	12:45:40	19	LANE _01	18	54	1	18	6/13/2008	12:45:18
LANE _01	22	71	2	22	6/13/2008	11:55:17	21	LANE _01	19	57	1	19	6/13/2008	11:54:56
LANE _01	19	73	1	22	6/13/2008	12:58:49	18	LANE _01	17	65	1	18	6/13/2008	12:58:27
LANE _01	78	77	4	18	6/13/2008	10:43:28	70	LANE _01	62	58	4	15	6/13/2008	10:43:07
LANE _01	24	78	2	22	6/13/2008	10:42:20	21	LANE _01	17	62	1	20	6/13/2008	10:41:59

Appendix III: Driver Survey Results

						XSpeed1 MOD						XSpeed2 MOD								OSpeed1 MOD						OSpeed2 MOD																	
No	Type	M/F	Age	Dirs	Xspeed	XSpeed1A	XSpeed1B	XSpeed1C	XSpeed1D	XSpeed1E	XSpeed2A	XSpeed2B	XSpeed2C	XSpeed2D	XSpeed2E	Xspeed1	Xspeed2	Cspeed	OSpeed1A	OSpeed1B	OSpeed1C	OSpeed1D	OSpeed1E	OSpeed2A	OSpeed2B	OSpeed2C	OSpeed2D	OSpeed2E	Cspeed1	Cspeed2	SignPref1	SignPref2	VisSign1	VisSign2	VisSign3	VisSign4	WkZAct	WkZFtl	EnYes
1	2	1	3	3	1	1	0	0	0	0	0	1	0	0	0	1	2	1	0	1	0	0	0	0	0	1	0	0	2	3	2	1	0	0	1	0	2	3	1
2	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	0	0	0	1	3	5	2	3	0	0	1	0	2	4	1
3	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	2	3	0	0	1	0	2	1	1
4	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	0	0	0	1	3	5	4	3	1	0	1	0	1	3	1
5	1	0	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	1	0	0	0	0	3	1	1	3	0	0	1	0	3	2	1
6	2	1	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	2	0	0	1	0	1	3	1
7	1	0	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	1	0	0	0	2	2	1	2	0	0	1	0	2	2	1
8	1	0	1	1	1	1	0	0	0	0	0	1	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	1	1	5	1	3	0	0	1	0	2	4	0
9	4	1	2	3	1	0	1	0	0	0	1	0	0	0	0	2	1	1	0	1	0	0	0	1	0	0	0	0	2	1	1	2	0	0	1	0	2	2	1
10	4	1	2	2	1	0	0	0	1	0	0	0	1	0	0	4	3	1	0	0	0	0	1	1	0	0	0	0	5	1	1	2	0	0	1	0	1	1	1
11	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	1	0	0	0	3	2	1	3	0	0	1	0	1	2	1
12	1	0	2	1	1	1	0	0	0	0	0	1	0	0	0	1	2	1	0	0	0	0	1	0	1	0	0	0	5	2	1	4	0	0	1	0	3	3	1

13	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	0	1	0	0	5	3	3	1	0	0	1	0	2	2	1
14	3	1	2	1	1	0	0	1	0	0	0	1	0	0	0	3	2	1	0	1	0	0	0	0	0	1	0	0	2	3	1	3	0	0	1	0	1	1	1
15	5	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0			1	1	0	0	0	0	0	0	1	0	0	1	3	1	4	0	0	1	0	1	2	1
16	1	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	1	2	0	0	1	1	3	3	1
17	1	0	2	1	1	1	0	0	0	0	0	1	0	0	0	1	2	1	1	0	0	0	0	0	0	1	0	0	0	1	2	1	4	0	0	1	0	2	2	0
18	1	0	2	1	1	0	0	1	0	0	0	0	0	0	1	3	5	1	0	0	1	0	0	1	0	0	0	0	3	1	2	3	0	0	1	0	3	2	1
19	5	1	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	0	1	0	2	4	2	1	0	0	0	1	3	2	1
20	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	2	0	0	1	0	1	2	1
21	5	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	0	0	1	2	5	3	1	0	0	1	0	2	3	1
22	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	1	2	1	0	1	0	2	2	1
23	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	1	0	0	0	0	5	1	3	1	0	0	1	0	1	2	0
24	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	0	1	0	0	5	3	2	1	0	0	1	0	3	4	1
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2	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	0	0	1	0	5	4	1	2	0	1	1	0	2	2	1

6																																							
27	5	1	3	3	1	1	0	0	0	0	0	1	0	0	0	1	2	1	1	0	0	0	0	0	1	0	0	0	1	2	3	1	1	0	1	0	2	2	1
28	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	1	0	0	0	0	3	1	1	4	1	0	1	0	1	2	1
29	2	1	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	1	0	0	1	0	0	0	4	2	1	3	0	0	1	1	3	4	1
30	5	0	1	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	2	3	0	0	1	0	1	4	1
31	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	1	3	0	0	1	0	2	4	0
32	2	1	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	1	0	1	0	0	0	0	4	1	3	1	0	0	1	0	4	2	0
33	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	1	0	0	0	3	2	1	2	0	0	1	0	3	4	1
34	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	2	0	0	1	0	2	2	1
35	5	0	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	1	2	0	0	0	1	4	2	1
36	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0			1	1	0	0	0	0	0	1	0	0	0	1	2	1	2	0	0	1	0	1	2	1
37	2	1	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	0	0	0	1	3	5	1	2	1	0	0	0	1	2	1
38	1	1	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	0	0	0	1	3	5	2	1	0	0	0	1	2	2	1
39	3	1	3	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	1	0	0	0	0	3	1	3	1	0	0	1	0	1	2	1

40	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	0	0	1	2	5	2	3	0	0	1	0	1	2	1
41	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	0	1	0	0	5	3	3	4	0	0	1	0	2	2	1
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43	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	3	0	1	1	0	3	4	1
44	2	1	3	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	2	0	0	1	0	2	2	0
45	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	3	1	0	1	0	2	2	1
46	2	0	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	1	0	0	1	0	2	2	0
47	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0			1	1	0	0	0	0	0	1	0	0	0	1	2	1	2	0	0	1	0	1	2	1
48	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	1	0	0	0	3	2	1	3	0	0	1	0	2	2	1
49	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	1	0	0	0	3	2	1	4	0	0	1	0	3	4	1
50	1	0	3	3	0	0	0	0	0	0	0	0	0	0	0			1	1	0	0	0	0	0	1	0	0	0	1	2	1	4	0	1	0	0	1	2	1
51	3	1	2	1	1	1	0	0	0	0	0	0	1	0	0	1	3	1	0	1	0	0	0	0	0	1	0	0	2	3	1	4	0	0	1	0	3	2	1
52	2	1	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	0	0	0	1	3	5	2	1	0	0	1	0	2	3	1
5	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	0	1	0	2	4	1	2	1	0	0	0	2	2	0

3																																							
54	1	1	2	1	1	1	0	0	0	0	0	0	1	0	0	1	3	1	0	0	0	0	1	0	1	0	0	0	5	2	1	3	0	0	1	0	1	2	0
55	1	0	1	1	1	0	0	0	1	0	0	0	0	0	1	4	5	1	0	0	0	1	0	0	1	0	0	0	4	2	2	3	0	1	1	0	3	4	1
56	1	1	3	3	1	0	1	0	0	0	1	0	0	0	0	2	1	1	0	1	0	0	0	0	0	0	0	1	2	5	3	1	0	0	0	1	2	2	1
57	4	1	3	2	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	2	1	1	0	1	0	1	1	0
58	1	1	2	2	1	1	0	0	0	0	0	0	1	0	0	1	3	1	0	1	0	0	0	0	0	1	0	0	2	3	2	1	0	0	1	0	2	2	1
59	1	0	2	1	1	1	0	0	0	0	0	0	0	0	1	1	5	1	0	1	0	0	0	1	0	0	0	0	2	1	1	3	1	1	1	0	3	2	1
60	2	1	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	0	1	0	0	5	3	3	1	1	0	1	0	1	2	0
61	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	0	0	1	2	5	4	1	0	1	1	0	1	3	1
62	5	1	1	3	1	0	1	0	0	0	1	0	0	0	0	2	1	1	0	0	0	1	0	1	0	0	0	0	4	1	3	4	1	0	1	0	2	3	1
63	1	1	1	3	0	0	0	0	0	0	0	0	0	0	0			1	1	0	0	0	0	0	0	0	0	1	1	5	1	3	1	0	0	0	3	4	1
64	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	1	0	0	0	0	2	1	1	4	0	0	1	0	4	1	1
65	4	0	3	2	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	1	0	0	0	0	2	1	2	1	0	0	1	0	2	2	1
66	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	1	0	0	0	0	2	1	1	2	0	1	0	0	4	2	1

67	2	1	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	1	0	0	0	0	3	1	1	2	1	0	1	0	3	2	0
68	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	1	0	0	0	3	2	2	1	0	0	0	0	2	2	1
69	2	1	2	1	1	1	0	0	0	0	0	0	0	0	1	1	5	1	0	1	0	0	0	0	0	1	0	0	2	3	3	1	0	0	1	0	1	2	0
70	5	1	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	3	1	1	0	0	0	1	2	1
71	3	0	2	1	1	1	0	0	0	0	0	1	0	0	0	1	2	1	0	0	1	0	0	1	0	0	0	0	3	1	1	4	0	0	1	0	3	3	1
72	2	1	2	3	1	1	0	0	0	0	0	1	0	0	0	1	2	1	0	0	1	0	0	0	0	0	1	0	3	4	2	3	0	0	1	0	2	4	1
73	2	1	2	3	1	1	0	0	0	0	0	1	0	0	0	1	2	1	0	1	0	0	0	0	0	0	0	1	2	5	2	3	1	0	1	1	2	2	1
74	3	0	1	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	3	2	0	0	1	0	2	4	1
75	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	1	0	0	0	0	2	1	1	3	0	0	1	0	1	2	1
76	2	1	2	3	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	3	0	1	0	0	1	2	1
77	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	2	0	0	1	0	3	4	1
78	1	1	2	2	1	0	0	0	1	0	1	0	0	0	0	4	1	1	0	0	0	1	0	0	1	0	0	0	4	2	2	1	0	0	1	0	1	2	1
79	4	1	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	1	0	0	0	0	0	0	1	3	5	1	2	0	1	0	1	3	4	1
8	5	0	2	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	0	0	1	2	5	1	3	1	0	1	0	1	1	1

0																																							
81	1	1	3	3	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	0	1	0	0	0	5	2	2	4	0	0	1	0	2	3	1
82	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0			1	1	0	0	0	0	0	1	0	0	0	1	2	1	2	0	0	1	0	1	2	0
83	4	0	2	2	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	1	0	0	0	0	2	1	1	3	0	0	1	0	2	4	1
84	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	0	0	1	2	5	1	4	0	0	1	0	1	4	1
85	1	1	3	1	0	0	0	0	0	0	0	0	0	0	0			1	0	0	0	0	1	1	0	0	0	0	5	1	1	2	1	0	1	0	2	4	1
86	5	0	3	1	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	4	2	0	0	0	1	2	2	0
87	5	0	2	1	1	1	0	0	0	0	0	0	1	0	0	1	3	1	0	1	0	0	0	0	0	1	0	0	2	3	1	3	1	0	1	0	2	2	1
88	5	1	1	1	1	0	0	0	0	1	1	0	0	0	0	5	1	1	0	0	0	1	0	0	1	0	0	0	4	2	1	2	1	0	1	0	3	1	1
89	2	1	2	2	0	0	0	0	0	0	0	0	0	0	0			1	0	1	0	0	0	0	0	1	0	0	2	3	1	3	1	1	1	1	1	2	1