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IDENTIFICATION OF INTERSECTIONS' CRASH PROFILES/PATTERNS TO INCLUDE UNSIGNALIZED INTERSECTIONS AND EXPAND THE SAFETY/TRAFFIC DATABASE

Part I

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16. Abstract

This research identified the geometric and traffic-related factors affecting crashes at unsignalized intersections, and hence identified major types of unsignalized intersections to be studied. Once identified, crash profiles for those identified types of unsignalized intersections are developed. Those crash profiles act as a manual that could be used as reference values assisting in identifying intersections with specific problem(s) (e.g., high number of fatal crashes or high number of rear-end crashes, etc.). This will indeed help developing countermeasures tailored to the specific problem(s). To accomplish the project objectives, an extensive data collection effort for collecting unsignalized intersections in Florida was conducted. A sample of 2500 unsignalized intersections distributed among six counties (Orange, Seminole, Brevard, Hillsborough, Leon and Miami-Dade) was collected. This sample mainly includes unsignalized intersections located on state roads, and to broaden the data collection procedure, all-way stop-controlled intersections (i.e., three and four-way stops) were collected as well. Sixty categories were identified based on the collected sample, and the annual crash profile tables for these categories were developed. Those categories nearly represent all possible types of existing unsignalized intersections.

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Unsignalized intersections, crash profile, traffic safety, unsignalized intersection classification, yield, no control, stop control	

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DISCLAIMER

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the State of Florida Department of Transportation.

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LIST OF ACRONYMS/ABBREVIATIONS

2WLTL	Two-Way Left Turn Lane
AADT	Annual Average Daily Traffic
AWSC	All-Way Stop-Control
CAR	Crash Analysis Reporting System
DHSMV	Department of Highway Safety and Motor Vehicles
MUTCD	Manual on Uniform Traffic Control Devices
RCI	Roadway Characteristics Inventory
SAS	Statistical Analysis Software
SR	State Road
TWSC	Two-Way Stop-Control
VMT	Vehicle Miles Traveled

CHAPTER 1. INTRODUCTION

1.1 Overview

Traffic safety analysis is one of the most important applications in transportation. The issue of traffic safety has been of great importance to many researchers in the US. The annual increase in the vehicle miles traveled (*vmt*) increases the number of crash occurrences. Some of these crashes lead to injuries and fatalities. Thus, traffic safety analysts aim to reduce the harm in terms of fatalities and injuries resulting from vehicle crashes along roadways. Researchers dealing with traffic safety analysis usually investigate crashes at two locations, along arterials (corridors) and at intersections.

According to the U.S. Census Bureau, Florida was ranked the 17th in traffic fatalities per 100 million *vmt* in 2003. In 2007, the total number of reported traffic crashes in Florida was 256,206 (DHSMV, 2007), of which 2947 (1.15%) were fatal crashes. The number of injury crashes was 135,601 (52.93%). Compared to 2006, it is noted that there is almost the same number of reported crashes in 2007. Moreover, there is a decrease of 4.44% in fatal crashes, and a decrease of 1.22% in injury crashes.

Despite that intersections constitute only a small part of the overall highway system, intersection-related crashes constitute more than 50% of all crashes in urban areas, and over 30% in rural areas (Kuciemba and Cirillo, 1992). For the distribution of fatal crashes by location, non-intersection locations constitute the highest percentage (79%), followed by signalized intersections (12%), and finally unsignalized intersections (9%) (FARS, 1999). Of those 9% fatal crashes occurring at unsignalized intersections, 6% occurred in rural areas, and the remaining 3% occurred in urban areas. Moreover, for

the manner of collision of fatal crashes at unsignalized intersections, 85.6% were angle crashes, 2% were head-on crashes, and 1% were rear-end crashes. In U.S.A, around 700,000 reported motor-vehicle crashes by police officers occur annually at stop-controlled intersections, with one third of those crashes involving injuries. More than 3,000 of the injury crashes were fatal (U.S. Department of Transportation, 2002).

Intersections are classified into two main types, signalized intersections and unsignalized intersections. Crashes at unsignalized intersections are increasing at a high rate, thus, traffic safety at unsignalized intersections needs further investigation. One important reason for that is the unfamiliarity of drivers to traffic operations at unsignalized intersections, when compared to those of signalized intersections. Unsignalized intersections are the most frequent types of intersections in U.S.A. Unsignalized intersections include intersections with stop control, yield control, and no traffic control. Unsignalized intersections can be differentiated from signalized ones in that their operational functions take place without the presence of a traffic signal.

1.2 Project Objectives

The objectives of this project are two-fold, as follows:

1. Identifying major types of unsignalized intersections and geometric and traffic-related factors affecting crashes at unsignalized intersections.
2. Identifying crash profiles for those identified types of unsignalized intersections based on the geometric configurations, and traffic characteristics. Those crash profiles will act as a manual that could be used as reference values assisting in identifying intersections with specific problem(s) (e.g., high number of fatal

crashes or high number of rear-end crashes). This will help in developing countermeasures tailored to the specific problem(s).

CHAPTER 2. LITERATURE REVIEW

Though research done on the safety of unsignalized intersections is not highly documented, the contributions from researchers across the nation and the world have proven to be valuable for this study.

2.1 Significant Factors Contributing to Safety of Unsignalized Intersections

Previous research on the safety of unsignalized intersections focused on topics related to geometric design characteristics such as left and right turn lanes, channelization, number of intersecting legs, intersection skewness, intersection sight distance, approach lanes, approach width, shoulder width, median width and type and vertical and horizontal alignment on approaches, lighting, etc. (Intersection Safety, Nebraska Department of Roads, 2006). The following sections discuss previous studies that addressed the contributing factors to safety at unsignalized intersections.

2.1.1 Left and Right-Turn Lanes

Foody and Richardson (1973) reported that crash rates decreased by 76% at unsignalized intersections due to the addition of a left-turn lane. Moreover, Kulmala (1997) found that the inclusion of a left-turn lane on the major road reduced the number of rear-end crashes on the major road. Likewise, Vogt (1999) found that the presence of one or more left-turn lanes for four-leg unsignalized intersections resulted in a 38.4% reduction in total number of crashes.

Harwood et al. (2002) reported a 5% reduction in the number of crashes due to the inclusion of a right-turn lane along one major approach to a rural stop-controlled

intersection, and a 10% reduction due to having right-turn lanes along both major approaches.

Hauer (1988) found that the provision of left-turn lanes at unsignalized intersections, when combined with installation of curbs or raised medians, reduced crashes by 70%, 65%, and 60% at urban, suburban, and rural areas, respectively. He also reported that left-turn channelization reduced crashes depending upon the intersection configuration.

California study (1967) indicates greater reductions in crashes at unsignalized intersections with the use of a left-turn lane in a raised median than with painted left-turn lanes.

2.1.2 Number of Intersecting Legs

David and Norman (1976) found that for stop-controlled intersections in urban areas with a total entering volume of more than 20,000 vehicles per day, four-leg intersections experienced twice as many crashes as three-leg intersections.

Hanna et al. (1976) found that in rural areas, four-leg intersections experienced 69% more crashes than three-leg intersections.

Harwood et al. (1995) showed that divided highway intersections with four legs experienced about twice as many crashes as three-leg intersections for narrow medians and more than five times as many crashes as for wide medians.

Bauer and Harwood (1996) reported that both rural and urban stop-controlled four-leg intersections had twice as many crashes as three-leg intersections.

Leong (1973), Hanna et al. (1976), O'Brien (1976) and David and Norman (1975) found that 3-legged unsignalized intersections are much safer than 4-legged unsignalized intersections, while taking into account the traffic volume parameter.

Kulmala (1997) has found that a four-legged intersection is safer than two three-legged intersections for low minor road traffic volume, but less safe for high minor road volume. By contrast, Del Mistro (1979) found the opposite.

2.1.3 Land Use

A recent analysis in California found that an average of 1.5 crashes per year occurs at unsignalized intersections in rural areas, compared with an average of 2.5 crashes per year in urban areas (Bauer and Harwood, 1996).

2.1.4 Intersection Skewness

McCoy et al. (1994) found that crashes at rural two-way stop-controlled (*twsc*) intersections increased with increasing skew angle for both three and four-legged intersections.

2.1.5 Median Width

David and Norman (1975) found that multi-vehicle crash involvement decreases when lane dividers are used. Those lane dividers include raised reflectors, painted lines, barriers and medians.

Harwood et al. (1995) reported that crashes increased with increasing median width at unsignalized intersections in urban and suburban areas. Likewise, Leong (1973) found that the presence of narrow medians on main roads reduced the mean crash rate at

three-leg intersections, but had a small effect at four-leg intersections. Moreover, Van Maren (1980) found that median barriers increase crash rates as well.

Summersgill and Kennedy (1996) found that the presence of an island on the minor approach was associated with an increase in several crash types. By contrast, Layfield (1996) found that the presence of an island on the major road had a mixed effect, where some crash types were lower, and others were higher.

Pickering and Hall (1986) found that, at high traffic flow conditions, the presence of ghost islands (painted hatched islands) resulted in a 35 % reduction in crash rates for crashes occurring within 20 m of the intersection.

2.1.6 Lighting

The presence of lighting at unsignalized intersections appears to be associated with lower crash rates. For example, Bauer and Harwood (1996) found that lit rural four leg stop-controlled intersections experienced 21 % fewer crashes than intersections with no lighting. Moreover, Brude (1991) found that in dark hours, there were 30 % fewer intersection crashes with lighting than without.

The study done by Walker and Roberts (1976) found that there was a 49 % reduction in night crashes after the installation of lighting. However, the effect of lighting at the 19 unchannelized intersections within the study was not statistically significant.

2.1.7 Channelization

In general, for intersection safety research, David and Norman (1976) showed that intersection safety improved due to channelization.

As shown in “Intersection Safety, Nebraska Department of Roads (2006)”, Templer (1980) found that a raised median reduced number of conflicts between both pedestrians and vehicles, but the difference was not statistically significant.

More recently, Washington et al. (1991) reported that the presence of raised medians on intersection approaches reduced crash rates by 40 % when compared to other approaches with flush medians.

2.1.8 Intersection Sight Distance

Mitchell (1972) found that total intersection crashes were reduced by 67% when intersection sight obstructions were removed. Moreover, Poch and Mannering (1996) found that the presence of a sight-distance obstruction was found to significantly increase crash frequency.

David and Norman (1975) indicated that unsignalized intersections with an average daily traffic *(adt)* greater than 15,000, and with obstructions within the first 20 ft from the stop line recorded 83% more annual crashes than did intersections unobstructed within the same distance. Hanna et al. (1976) found that rural unsignalized intersections with poor sight distance on one or more approaches tend to have higher crash rates than normal values.

On the other side, Pickering and Hall (1986) found that better visibility resulted in a higher crash frequency. Moreover, Stockton and Bracckett (1981) found that at low-volume intersections, sight distance had no discernible effect on crash rates.

Thus, it is well noticed that there is inconsistency between the results obtained for the effect of visibility on crash rates.

2.1.9 Number of Approach Lanes

Bauer and Harwood (1996) reported that crashes at unsignalized intersections were higher on facilities with one approach lane than intersections with two or more approach lanes, using a negative binomial regression model.

Moreover, studies done by Summersgill and Kennedy (1996) and Layfield (1996) found that an increase in the number of approach traffic lanes increased the number of rear-end and lane-change crashes at unsignalized intersections.

Weerasuriya and Pietrzyk (1998) developed easy-to-use tables for Florida-based unsignalized three-legged intersections. These tables provided mean, variance, and 90th and 95th percentile conflict rates. The number of lanes (instead of traffic volume) was used as an intersection classification parameter.

2.1.10 Shoulder Width

The influence of shoulder width on intersection safety was investigated by Van Maren (1980) as well as Harwood et al. (1995). Both of these studies found that shoulder width has no influence on intersection safety.

2.1.11 Vertical and Horizontal Alignment on Approaches

Vertical curvature on intersection approaches tends to affect safety since sag curves increase stopping sight distance, while crest curves slow vehicles, and thus increase vehicles' exposure in the conflict area.

Fambro (1989) found high crash rates at intersections with crest vertical curves. Moreover, the presence of horizontal curves adds complexity to intersections.

Kuciemba and Cirillo (1992) showed that safety is affected by the presence of horizontal curves in close vicinity of intersections.

2.1.12 Traffic Flow

Studies done by Bauer and Harwood (1996), Huang and May (1991), Del Mistro (1981), Kulmala (1997) and Vogt and Bared (1998) for relating unsignalized intersections' geometry to safety have found traffic flow to be by far the most important exogeneous variable.

2.1.13 Traffic Control Type

Although there were some conflicting findings in the studies reviewed about the safety of traffic control types, a greater number of studies indicated that while traffic volume is taken into consideration, signalized intersections record higher number of accidents than the unsignalized ones. David and Norman (1975) found that signalized intersections showed higher crash rates than stop sign intersections. Hanna et al. (1976) found that, for a given intersection and *adt*, rural signalized intersections have higher crash rate than those with stop or yield signs.

Van Maren (1980) found that multi-lane unsignalized intersections have a lower number of crashes per million conflicts than the signalized ones. The number of crashes per million conflicts was used as the dependent (or target) variable, since it was found that this variable better describes the crash potential than that utilizing the entering traffic flows. Moreover, Leong (1973) found that the presence of traffic signals reduced the average crash rate at four-legged unsignalized intersections, but had a very small effect at three-legged unsignalized intersections.

2.1.14 Size of Intersection

Van Maren (1980) found that at large unsignalized intersections (intersections with a large distance across the intersection), the number of crashes per million conflicts was higher than that at small unsignalized intersections.

2.1.15 Minor Road Approach Geometry

Kulmala (1997) has found that crash rates to be lower than the average at intersections with a curve on the minor road approach just before the intersection, especially at four-legged unsignalized intersections.

2.1.16 Grades

Pickering and Hall (1986) found that downhill unsignalized intersections were found to be associated with higher crash rates. Moreover, Hanna et al. (1976) found that intersections with severe grades operate safer than others.

2.1.17 Signing and Delineation

David and Norman (1975) found that unsignalized intersections with high traffic volume using signs with white lettering on a dark background had an average of 96% more annual crashes than those having dark lettering on a white background. Moreover, they found that unsignalized intersections with raised pavement markers recorded much fewer crashes than those without raised markers.

Van Maren (1980) found that larger size stop signs on the minor approaches were found to decrease the number of crashes per million vehicle conflicts.

Huang and May (1991) found that intersections with stop signs on major streets recorded higher crash rates than those with stop signs on minor streets, as motorists might not expect stop signs on main streets.

Kitto (1980) found that unsignalized intersections with yield (give-way) signs showed similar crash rates to those with stop signs.

2.1.18 Spacing between Intersections

A study done by Layfield (1996) found that large spacing between minor approaches at urban unsignalized intersections resulted in fewer total and right-angle crashes.

2.1.19 Pedestrian Crossing Facilities

Summersgill and Kennedy (1996) as well as Layfield (1996) found that the presence of pedestrian crossing facilities at 3-legged and 4-legged intersections was associated with more pedestrian crashes.

2.1.20 Speed Parameters

Summersgill and Kennedy (1996) and Pickering and Hall (1986) found that there was no evidence that the speed of vehicles on both major and minor roads influenced crash occurrence. It is to be noted that this result was based on a narrow band of speed data, as Pickering and Hall analyzed only rural unsignalized intersections with speed limits over 50 mph, and Summersgill and Kennedy analyzed only 3-legged unsignalized intersections on 30 and 40 mph roadways. Thus, a strong and significant relationship between speed and number of crashes is unlikely to be found using such limited speed data.

By contrary, the study done by Brude (1991) found that lower speeds were found to improve intersection safety.

2.1.21 Beacons Use

King and Goldblatt (1975) found that the installation of flashing beacons to supplement stop-control signs had a favorable effect on crash patterns. However, this result is different from that obtained by Pant and Park (1999).

2.1.22 Turn Lanes Configuration

Poch and Mannering (1996) found that intersection approaches with a combined through and left lane were found to have higher crash frequencies than approaches not having that combined lane configuration.

2.1.23 Pavement Condition

A study done by Chovan et al. (1994) found that 74% of unsignalized-intersection crashes occurred on dry pavement, a significant percentage (25%) occurred on wet or snowy pavement, and the remaining 1% was not classified.

2.2 Some Facts about Unsignalized Intersections

According to Marek et al. (1997), under certain traffic volume and geometric characteristics, all-way stop-controlled (*awsc*) intersections operate much safer than signalized intersections as well as two-way stop-controlled intersections. In support of this finding, Briglia (1982) and Hauer and Lovell (1986) showed that *awsc* intersections have much lower crash rates than *twsc* intersections. Moreover, Byrd and Stafford (1984)

showed that traffic flow characteristics for *awsc* intersections are distinctly different than those controlled by two-way stop signs.

Sayed and Rodriguez (1999) suggested an adaptive accident prediction model for estimating safety (in terms of accident occurrence) at unsignalized urban junctions using the Generalized Linear Model (GLM) formulation. They estimated model parameters based on a methodology presented in the work of Bonneson and McCoy (1997). The methodology for estimating model parameters was done using the Poisson error structure. Pearson's chi-square was used to assess the model goodness-of-fit. The model was useful in applications that involved identifying accident-prone-locations (*apls*), developing critical accident frequency curves, ranking identified *apls*, and evaluating before-and-after studies.

Sayed and Zein (1999) used traffic conflict data from 94 unsignalized junctions to establish conflict frequency and severity standards. These standards were then applied to compare the relative rates of conflict risk between junctions in accordance with an established intersection conflict index that summarized levels of conflict risk. Regression analysis was then performed to develop predictive models that related the numbers of traffic conflicts to traffic volumes and accidents. Similar to accidents, conflicts were assumed to follow a Poisson distribution.

A study done by Salman and Al-Maita (1995) focused on traffic volume on 18 unsignalized 3-legged intersections located in Amman, Jordan. In this study, the authors found that the sum of major and minor volumes and the square root of the product of these volumes were correlated well with the number of traffic conflicts. They also

showed that daily conflict rates were significantly higher in Jordan at this type of junction than those reported earlier from studies in the US as done by Crowe (1990).

Vogt (1999) developed a model for a four-leg rural intersection of a four-lane major road with stop-controlled two-lane minor roads. This model yielded a crash reduction factor of 38 % for total crashes due to the installation of a left-turn lane along the major road.

Lau and May (1988, 1989) used CART (Classification And Regression Trees) analysis, and found that left-turn prohibitions were a significant factor in predicting injury crashes at unsignalized intersections. However, the results of this CART analysis are difficult to interpret in order to obtain an explicit estimate of this effect.

Van Maren (1980) used the number of crashes per million conflicts as the dependent variable, and he found that multi-lane unsignalized intersections have a lower number of crashes per million conflicts than signalized intersections.

Poch and Mannering (1996) fitted a rear-end crash frequency model at the approach level. They used 4 observations per intersection per year for 63 four-legged signalized and unsignalized intersections over 7 years (from 1987 till 1993) using the Negative Binomial regression. The number of through, right and left-turn lanes on the minor approach was used as surrogate variables for the magnitude of through, right and left-turning volumes, respectively.

A study done by Retting et al. (2003) who investigated motor vehicle crashes at 4 U.S. cities, Germantown, Tennessee; Oxnard, California; Springfield, Missouri; and Westfield, New Jersey, reached some countermeasures for possible improvement of stop-controlled intersections. They recommended that stop signs should be inspected routinely

to ensure they are not obscured by trees or any other blocking objects. They found that some stop signs may lack adequate retroflective properties, as demonstrated by their finding that crashes in which drivers failing to stop were more than twice as likely to occur at night, compared with crashes involving drivers who did stop. Moreover, they assured that proper levels of stop sign luminance should be ensured through periodic inspections and sign replacement programs. Also, supplemental pavement markings including the 'stop' message and 'stop line' as well as 'stop ahead' signs also can be used to increase driver awareness of stop sign locations.

2.3 Types of Crashes Occurring at Unsignalized Intersections and their Modeling Scheme

Summersgill and Kennedy (1996), Layfield (1996), Pickering and Hall (1986), Agent (1988) and Hanna et al. (1976) found that the most common crashes at unsignalized intersections appear to be angle crashes (right-turn or through movement from the minor approach colliding with a through-moving vehicle on the major road) and rear-end crashes. Single vehicle, head-on, sideswipe and left-turn from minor colliding with a through-moving vehicle on the major road are common, but are fewer in number.

At unsignalized intersections, McCoy and Malone (1989) determined that there was a significant increase in right-angle crashes. However, on rural two-lane highways, McCoy et al. (1985) found no significant difference in rear-end and left-turn crash rates between unsignalized intersections with and without left-turn lanes.

Chovan et al. (1994) investigated stop-sign intersection crash statistics for straight-crossing-path crashes. These crashes are defined as crashes in which two

vehicles, one with right-of-way and one without, cross one another's path perpendicularly in an intersection and then collide.

Najm et al. (2001) estimated that there were 1.72 million police-reported crossing-path crashes. Of these crashes, *ltap* (left turn across path) crashes accounted for the largest percentage (47.2%), followed by *scp* (straight cross path) crashes (29.9%). The other crossing-path crash types accounted for the remaining percentage (22.9%). The great majority of these crossing-path crashes occurred at intersections (75.1%), followed by driveways (21.0%). Overall, 41.6% of crashes occurred at signalized intersections, 36.3% at stop-signed intersections, and 22.1% at intersections with no controls or other types of controls. Moreover, higher fatality rates were found for unsignalized-intersection crashes.

A study done by Retting et al. (2003) who investigated motor vehicle crashes at 4 U.S. cities, Germantown, Tennessee; Oxnard, California; Springfield, Missouri; and Westfield, New Jersey, concluded that rear-end crashes were somewhat more common at 3-legged intersections than at 4-legged intersections (16% vs. 10%, p-value < 0.001). Moreover, they found that young and older drivers were disproportionately judged to be at fault in crashes at intersections with stop signs, specifically in stop sign violation and rear-end crashes. According to them, in stop sign violation crashes where drivers failed to stop, young drivers were notably over involved; 33% of the 'those at-fault' drivers in these crashes were younger than 21.

The research "Strategies to Address Nighttime Crashes at Rural, Unsignalized Intersections, 2008" evaluated crashes for rural unsignalized intersections in the state of Iowa for 2001 to 2005. Results show that 26% of crashes at rural unsignalized

intersections occur during nighttime conditions, and another 4% occur during dawn or dusk. Moreover, it was found that 29% of fatal and injury crashes occur during the nighttime. As for investigating nighttime crashes for multiple vehicles that occur at rural intersections, it was found that broadside crashes made up 41.8% of crashes, followed by rear-end crashes (25.3%). For sideswipe crashes, the percentage was 16.7%, with 13.6% same-direction sideswipe, and 3.1% opposite-direction sideswipe. Angle crashes (for oncoming left turn) accounted for 9.6%, and head-on crashes account for 3%. Moreover, this research addressed some countermeasures (strategies) to reduce nighttime crashes at rural unsignalized intersections. Some of these strategies are advance signing, overhead beacons, improved signing and marking and advance stop sign rumble strips.

2.4 Analysis of Unsignalized Intersections

Several different methods of analyzing data have been used in the multi-factor studies. Studies from the early 1980s used stepwise multiple linear regression analysis techniques that assume normal distribution of data. One example of this is Kitto (1980). Recent studies assumed nonlinear distributions, and more specifically the Poisson distribution. One example of this is Agent (1988). Moreover, Vogt (1999) used Negative Binomial models for analysis, and Bauer and Harwood (1996) used log-normal models in their analysis.

Bauer and Harwood (1996) indicated that the use of the Poisson distribution is only relevant when the variance in the crash data is equal to the mean. But, this is not the common case for crash data, as crash data always suffer from over-dispersion, where the variance is greater than the mean. Thus, the use of the Poisson distribution is no longer valid, as it can result in biased model coefficients and erroneous standard errors. The

remedy for this is using the Negative Binominal model, as it can overcome the over-dispersion phenomenon.

Summersgill and Kennedy (1996) used a 'quasi-likelihood' method to take into account the over-dispersion in the presence of low mean values.

Studies done by Tijerina et al. (1994), Chovan et al. (1994) and Wang and Knipling (1994) were summarized in a synthesis report by Najm et al. (1995) that provided further insight into the general characteristics of intersection crashes. This synthesis report took the following statistical characteristics into account while performing crash-type analysis:

- Time of day
- Lighting condition
- Atmospheric condition
- Roadway surface condition
- Roadway alignment
- Roadway profile
- Speed limit – the higher-profile road of the intersection is coded
- Relation to junction
- Alcohol involvement
- Maximum severity – police reported severity of worst-injured person

2.5 Safety Effectiveness of Converting Unsignalized Intersections to Signalized Ones

Studies done by Datta and Dutta (1990), Datta (1991) and King and Goldblatt (1975) as well as the research "Effects of Signalization on Intersection Safety, 1982"

found that the number of right-angle crashes decreased at an intersection when the traffic control device was changed from a stop sign to a traffic signal. Moreover, Agent (1988) found a decrease in right-angle crash rates when a rural stop-controlled intersection with a beacon was changed to a traffic signal. Hall (1998) estimated the average cost of a right-angle crash to be about $60,000.

As for rear-end crashes, research done by Datta and Dutta (1990), Datta (1991), King and Goldblatt (1975) showed an increase in rear-end crash frequency with signalization. Datta and Dutta (1990) showed an increase of 53% with signalization. Other research "Effects of Signalization on Intersection Safety, 1982" showed a reduction in rear-end crash frequency with signalization. According to Hall (1998), the average cost of a rear-end crash is about $25,000.

2.6 Access Management and Traffic Safety

According to the FDOT Median Handbook (2006), access management is the location, spacing and design of driveways, medians, median openings, signals and interchanges. Thus, medians are an application of an access management design. According to the aforementioned handbook, restricted medians (such as directional and closed medians) as well as designed median openings are known to be very important features in a safe and efficient highway system. The design and placement of those medians and those median openings is an integral part of the access management design.

The benefits of installing medians are the following:

- Safety, i.e. fewer severe crashes, and less motor vehicle/pedestrian conflict
- Efficiency, i.e. higher level of service, and less 'stop and go' traffic

- Aesthetics, i.e. more space for landscaping and pedestrian facilities, and more attractive arterials

Many studies have shown that restricted medians are of larger safety benefits than those unrestricted medians. One of those studies for evaluating urban multilane highways in Florida in 1993 (FDOT Median Handbook, 2006), revealed that the crash rate for restricted medians is 25% lower than those having a two-way left turn lane. This indeed shows the negative safety effect of installing two-way left turn lane medians.

Another study done by Dissanayake and Lu (2003) showed that the conversion of a full median opening to a directional one reduces the average number of conflicts per hour by about 50%. Moreover, the conflict rate per thousand involved vehicles was also significantly reduced. Additionally, the severity of conflicts was also found to be reduced after some time period. They also investigated the operational characteristics that were measured in terms of the weighted average delay and weighted average travel time experienced by left turning vehicles from stop-controlled driveways. They found that the total weighted average travel delay was significantly reduced after the median opening was converted to a directional median.

2.7 Summary

Based on the literature review presented in this chapter, several important geometric and traffic-related factors contributing to crashes at unsignalized intersections were identified. These factors were taken into consideration while collecting data for this project. The next chapter shows the data collection effort performed.

CHAPTER 3. DATA COLLECTION

3.1 Introduction

The data collection process is critical for obtaining favorable results at the analysis stage and for reaching valuable conclusions, which as a whole fulfills the project's objectives initially specified in the introductory chapter. The more extensive the data collection process is, the more powerful the results will be. Thus, the procedures involved should be done precisely in order to obtain high confidence level for the results. This chapter presents the extensive data collection effort performed for collecting unsignalized intersections information in Florida.

3.2 Data Collection Procedure

Despite the fact that unsignalized intersections have less number of crashes compared to signalized intersections, unsignalized intersections are more frequent than the signalized ones. This makes the process of data collection much more difficult in the essence that the required sample size should be much more than that of the signalized intersections to accurately depict the population size.

In order to represent the population of 67 counties in Florida, a sample of 6 counties was selected to represent this population. This selection was not done randomly, but was based on the counties' geographic location in Florida, so as to represent the northern, southern, central, eastern and western parts of Florida. Leon County was selected to represent the northern part, Miami-Dade was selected to represent the south, Orange and Seminole Counties were selected to represent the central part, Brevard County was selected to represent the eastern part, and finally Hillsborough County was

selected to represent the western part. Moreover, the selection was based on having a combination of both urban and rural areas, so as to make the conclusion from the analysis procedure valid to all types of land use, and not only leaning to a specific type. It is known that Leon County has higher percentage of rural roads than the other five counties, and additionally, it has the capital of Florida, Tallahassee located within it.

It was decided to collect 2500 unsignalized intersections from those six selected counties. This sample was deemed sufficient for the analysis procedure. The following sections explain the list of variables (representing the geometric, traffic and control fields) used in data collection, median classification, the initial and final data collection procedures, some difficulties encountered during the data collection procedure in each selected county, some unfamiliar intersections captured and the data collection procedure for collecting all-way stop-controlled intersections.

3.3 Variables Description

A 'MS Excel' spreadsheet that lists all the required geometric, traffic and control fields required for getting a full understanding of the identified unsignalized intersections was created. There was a total of 45 variables listed in this table. It is to be noted that these 45 variables were not defined all at once, but the table was continuously expanded until these 45 variables were captured. Below is a detailed description of these 45 variables:

I. Geometric fields:

1. District: This variable shows the district number as indicated in the FDOT database.

2. Roadway ID: This variable shows the State Road (SR) ID as indicated in the FDOT database.
3. Intersection node: This variable shows the intersection node number as indicated in the FDOT database.
4. Mile point: This variable shows the mile post for each intersection (i.e. node) as indicated in the FDOT database.
5. County: This variable shows the county name to which each analyzed state road belongs.
6. County ID: This variable shows the ID of the county to which each analyzed state road belongs as indicated in the FDOT database.
7. Major road name: This variable shows the name of the major road in the intersection.
8. Minor road name: This variable shows the name of the minor road in the intersection.
9. Stop sign minor 1: This variable shows whether there is a stop sign on minor 1 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable). The main difference between ‘0’ and ‘N/A’ is that ‘0’ is used when minor 1 leg exists, but there is no stop sign existing, while ‘N/A’ means that minor 1 leg does not exist.

Figure 3-1 shows the concept for identifying the 4 approaches; major 1, major 2, minor 1 and minor 2 while collecting data on unsignalized intersections.

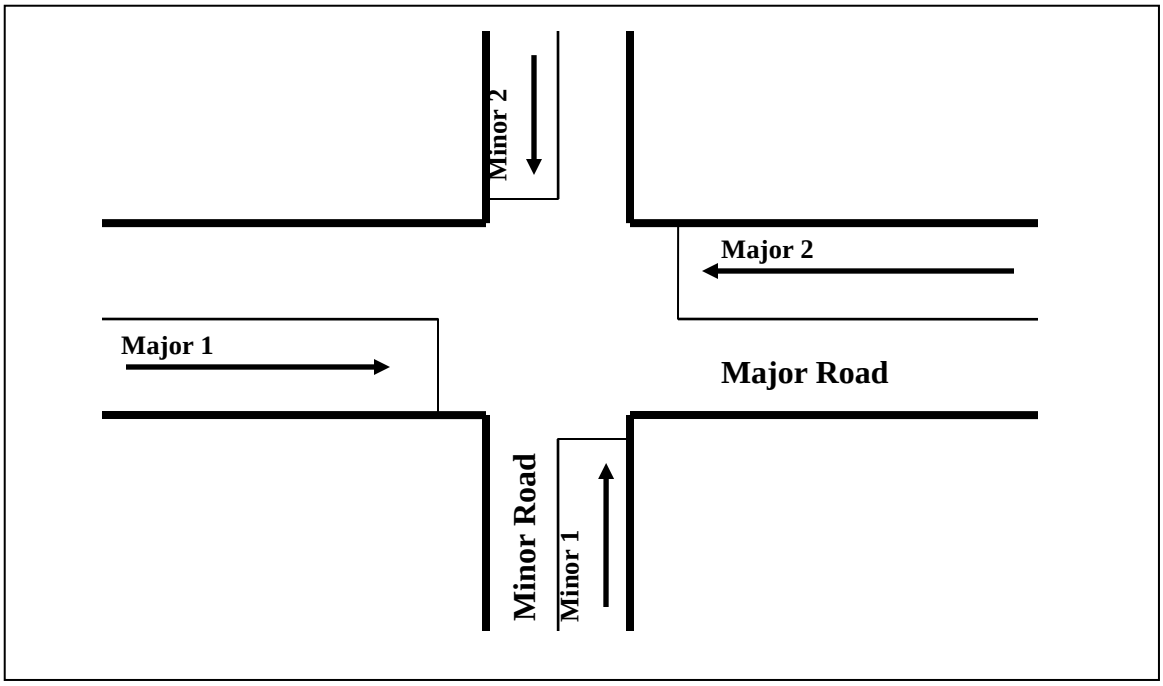


Figure 3-1: Conceptual Road Layout for Major 1, Major 2, Minor 1 and Minor 2 Approaches

10. Stop sign minor 2: This variable shows whether there is a stop sign on minor 2 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable). The difference between ‘0’ and ‘N/A’ is the same as that mentioned in variable ‘9’.
11. Stop sign major 1: This variable shows whether there is a stop sign on major 1 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
12. Stop sign major 2: This variable shows whether there is a stop sign on major 2 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
13. Stop line minor 1: This variable shows whether there is a stop line (i.e. stop bar) on minor 1 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).

14. Stop line minor 2: This variable shows whether there is a stop line (i.e. stop bar) on minor 2 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
15. Stop line major 1: This variable shows whether there is a stop line (i.e. stop bar) on Major 1 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
16. Stop line major 2: This variable shows whether there is a stop line (i.e. stop bar) on major 2 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
17. Crosswalk minor 1: This variable shows whether there is a crosswalk for pedestrians on minor 1 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
18. Crosswalk minor 2: This variable shows whether there is a crosswalk for pedestrians on minor 2 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
19. Crosswalk major 1: This variable shows whether there is a crosswalk for pedestrians on major 1 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
20. Crosswalk major 2: This variable shows whether there is a crosswalk for pedestrians on major 2 (‘1’ if it exists, ‘0’ if it does not exist and ‘N/A’ if not applicable).
21. Size of intersection: This variable shows the number of through lanes for both the major and minor roads, based on the normal cross-section of each

(e.g., 2x2, 2x3 and 2x4). The first number represents the number of through lanes for the minor approach for both directions, and the second number represents the number of through lanes for the major approach for both directions.

22. Number of intersecting legs: This variable shows the number of legs of the intersection (e.g. 3 legs and 4 legs).
23. Number of through lanes for major 1: This variable shows the number of through lanes for major 1 approach.
24. Number of through lanes for major 2: This variable shows the number of through lanes for major 2 approach.
25. Number of through lanes for minor 1: This variable shows the number of through lanes for minor 1 approach.
26. Number of through lanes for minor 2: This variable shows the number of through lanes for minor 2 approach.
27. Number of right turn lanes for major 1: This variable shows the number of right turn lanes for major 1 approach.
28. Number of right turn lanes for major 2: This variable shows the number of right turn lanes for major 2 approach.
29. Number of right turn lanes for minor 1: This variable shows the number of right turn lanes for minor 1 approach.
30. Number of right turn lanes for minor 2: This variable shows the number of right turn lanes for minor 2 approach.

31. Number of left turn lanes for major 1: This variable shows the number of left turn lanes for major 1 approach.
32. Number of left turn lanes for major 2: This variable shows the number of left turn lanes for major 2 approach.
33. Number of left turn lanes for minor 1: This variable shows the number of left turn lanes for minor 1 approach.
34. Number of left turn lanes for minor 2: This variable shows the number of left turn lanes for minor 2 approach.
35. Median type for major 1: This variable shows the type of median for major 1 (e.g. open, directional, closed, two-way left turn lane and undivided). A detailed explanation of those median types is shown later on, accompanied with some snap shots for better overview.
36. Median type for major 2: This variable shows the type of median for major 2 (e.g. open, directional, closed, two-way left turn lane and undivided).
37. Adjacent upstream signalized intersection distance for major 1: This variable determines the closest upstream signalized intersection distance (in miles) to the specified unsignalized one with respect to major 1. This distance can be written as ‘not applicable’ (N/A) if the distance exceeds 1 mile.
38. Adjacent downstream signalized intersection distance for major 1: This variable determines the closest downstream signalized intersection

distance (in miles) to the specified unsignalized one with respect to major 1.

39. Adjacent upstream signalized intersection distance for major 2: This variable determines the closest upstream signalized intersection distance (in miles) to the specified unsignalized one with respect to major 2. It is to be noted that this distance is exactly the same distance as variable ‘38’.
40. Adjacent downstream signalized intersection distance for major 2: This variable determines the closest downstream signalized intersection distance (in miles) to the specified unsignalized one with respect to major 2. It is to be noted that this distance is exactly the same distance as variable ‘37’.
41. Distance between successive unsignalized intersections: This distance was specific for each roadway ID. So, the first intersection within each assigned roadway ID always takes a distance value of zero, and the second intersection takes a distance value of the difference between this intersection of interest and the first intersection, and so on until the last intersection within the same roadway ID. Then the first intersection in another roadway ID takes a distance value of zero, and the procedure continues for all the collected roadway IDs.
42. Skewness: This variable shows the angle between the centerlines of both major and minor roads (e.g. 45, 60 and 90 degrees). Also, if both minor approaches have different angles with the major approach, it was decided

to take the smallest angle as the skewness, so as to get the worst possible case.

II. Control fields:

43. Major control type: This variable shows the traffic control type on the major road being considered. For unsignalized intersections on state roads, there will be always no traffic control on the major approach, i.e. no stop or yield traffic control, as this major approach always represents a traffic stream with no stops. However, for unsignalized intersections on non-state roads (i.e., three and four-way stopped-controlled intersections), there exists a stop sign on one or both major approaches.
44. Minor control type: This variable shows the traffic control type on the minor road being considered (e.g. 1-way stop, 2-way stop, yield traffic control and no traffic control).

Finally, the last variable listed in the table is:

45. Important (useful) note: This indicates an important note to be included in the table for some unsignalized intersections that have uncommon characteristics. Also, it indicates special notes for some unsignalized intersections that have been noticed through the data collection procedure.

III. Traffic fields:

Traffic fields like the annual average daily traffic (*aadt*) on the major approach as well as speed limit on the major approach were collected after merging the previously

collected fields with the RCI and CAR databases, as it was impossible to collect these data from ‘Google Earth’. Further explanation of how the merging procedure was done is shown in the following sections as well.

3.4 Median Classification

Median classification was initially problematic before starting the data collection procedure, and before coming up with the list of variables that represent all the required fields that will be used for collecting data. For the scope of this project, the median type on the major approach is to be considered for classification and analysis purposes. After going back and forth, it was decided to include 6 main types of medians, these are: open, directional, closed, two-way left turn lane, undivided and markings. It is to be noted that open, two-way left turn lane, undivided and markings medians are considered unrestricted medians; i.e. the vehicle from both major and minor approaches can pass through those median types. On the other hand, directional and closed are restricted medians, i.e. the vehicle on the minor approach can never pass through those two medians.

3.4.1 Closed Median

For the scope of this study, the unsignalized intersection that has a closed median on the major road is always treated as 3-legged intersection with a one-way direction on the major road. An example of a closed median is shown in Figure 3-2.

Figure 3-2: A 2x2 Unsignalized Intersection with a Closed Median

From this figure, we can note that the size of the intersection is 2x2 because the major road just near the minor road has 2 through lanes (one-way), and the minor road has 2 through lanes in both directions.

3.4.2 Directional Median

The unsignalized intersection that has a directional median on the major road is always treated as two 3-legged intersections. But, it is to be noted that the directional median can be dual (from both major directions) or one-way (from one major direction only). So, for the dual directional median, both major approaches in addition to one of the minor approaches are to be considered. An example of a dual directional median is shown in Figure 3-3.

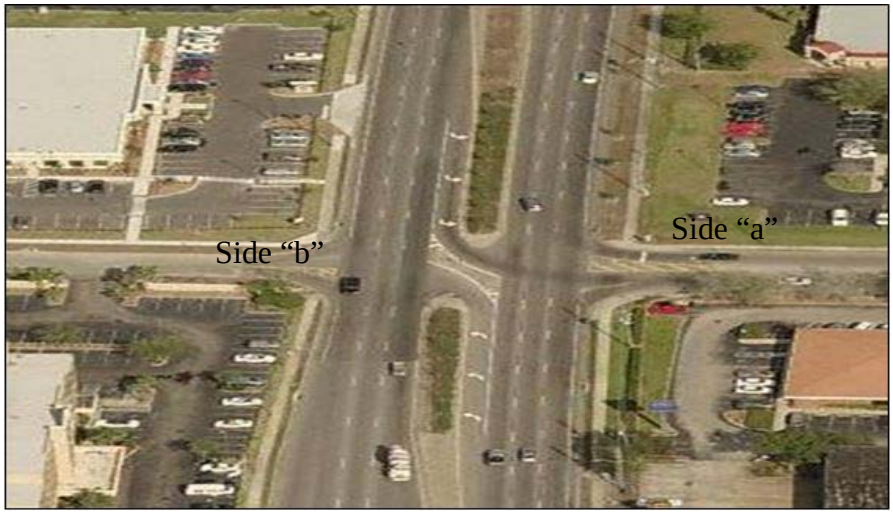


Figure 3-3: Two 2x6 Unsignalized Intersections with a Dual Directional Median

From this figure, we can note that there are two 3-legged intersections; i.e. the two sides; ‘a’ and ‘b’. For side ‘a’, the minor road on that side in addition to the 2 major road approaches are considered. Thus, for side ‘a’ (the first 3-legged intersection), the size of the intersection is 2x6. For side ‘b’, the minor road on that side in addition to the 2 major road approaches are considered. So, for side ‘b’ (the second 3-legged intersection), the size of the intersection is 2x6 as well.

An aerial photo of a one-way directional median is shown in Figure 3-4.

Figure 3-4: An Aerial Photo of a One-Way Directional Median

From this figure, we can note that there are two 3-legged intersections; i.e. sides ‘a’ and ‘b’. Side ’a’ can be treated as if there is a closed median, while side ‘b’ can be treated as if there is a directional median. For side ‘a’, the minor road on that side in addition to the major road just near that minor road are considered. So, for side ‘a’ (the first 3-legged intersection), the size of the intersection is 2x3. While for side ‘b’, the minor road on that side in addition to the 2 major road approaches are considered. Hence, for side ‘b’ (the second 3-legged intersection), the size of the intersection is 2x6.

3.4.3 Open Median

The open median was the most problematic type in the median classification procedure. There was a slight problem in determining how to classify an unsignalized intersection that has an open median on the major road while two minor roads were present. That is whether to classify this intersection as two ‘3-legged’ intersections or one ‘4-legged’ intersection. Finally, it was agreed to consider this type of intersection as one 4-legged intersection from the geometry point of view, even if the number of lanes on both major approaches exceeds 6 lanes because there is no geometric restriction for vehicles to pass from the first minor road to the second minor road, crossing the whole major road width. This scope was considered although it was found that drivers do not intend to do this maneuver so often. Drivers usually risk attempting this maneuver late at night when the roads are nearly empty. Thus, this scope was considered although this type of maneuver is very rare in daylight.

Unsignalized intersections with two minor roads and an open median on the major road are treated as a four-legged intersection from the geometric point of view. An aerial

photo of a four-legged unsignalized intersection with an open median on the major road is shown in Figure 3-5.

Figure 3-5: A 2x6 Four-Legged Unsignalized Intersection with an Open Median

3.4.4 Two-Way Left Turn Lane Median

An unsignalized intersection having a two-way left turn lane median on the major road is either treated as a 4-legged intersection if both minor roads exist, or a 3-legged intersection if only one minor road exists. Two aerial photos for a 3-legged unsignalized intersection and a 4-legged unsignalized intersection are shown in Figures 3-6 and 3-7, respectively.

Figure 3-6: A 2x4 Three-Legged Unsignalized Intersection with a Two-Way Left Turn Lane Median

Figure 3-7: A 2x2 Four-Legged Unsignalized Intersection with a Two-Way Left Turn Lane Median

3.4.5 Undivided Median

The fifth type of medians is undivided medians. Those undivided medians are mainly two solid yellow lines separating directional traffic, and are most common on two-lane roadways. An unsignalized intersection having an undivided median on the major road is treated as 3-legged intersection with both major road approaches in addition to one of the minor road approaches, and as 4-legged intersection if both minor road

approaches exist. Two aerial photos for 3 and 4-legged unsignalized intersections with an undivided median on the major road are shown in Figures 3-8 and 3-9, respectively.

Figure 3-8: A 2x4 Three-Legged Unsignalized Intersection with an Undivided Median

Figure 3-9: A 2x2 Four-Legged Unsignalized Intersection with an Undivided Median

3.4.6 Median with Markings

The last types of medians are the ones having yellow pavement markings. The main difference between those markings and undivided medians is that for markings, there is a yellow restricted region just in front of the intersection, which acts as a storage area for left turning vehicles to stop by in case there is heavy traffic on the opposing

direction. Those markings can act as a storage area for broken down vehicles as well. So, an unsignalized intersection having markings as a median on the major approach is treated as 3-legged intersection with both major road approaches in addition to one of the minor road approaches, and as 4-legged intersection if both minor road approaches exist. Two aerial photos for 3 and 4-legged unsignalized intersections having markings as a median on the major road are shown in Figures 3-10 and 3-11, respectively.

Figure 3-10: A 2x2 Three-Legged Unsignalized Intersection with Pavement Markings as a Median

Figure 3-11: A 2x2 Four-Legged Unsignalized Intersection with Pavement Markings as a Median

3.5 Initial Data Collection Procedure

The initial data collection procedure was done by randomly selecting some unsignalized intersections along randomly selected state roads (SRs) in Orange County, which includes the city of Orlando, using the 'Google Earth' software. These randomly selected unsignalized intersections were chosen on the basis of having as many types of unsignalized intersections as possible. The first chosen road for the data collection process was 'SR 50', and the starting intersection (i.e. node) was the 'SR 434/SR 50' signalized intersection. Then afterwards, it was decided to move in the westbound direction, heading towards Orlando's downtown area. While moving in the westbound direction of 'SR 50', 25 unsignalized intersections (including access points and driveway intersections) were randomly identified. A sample of these intersections is shown in Figure 3-12.

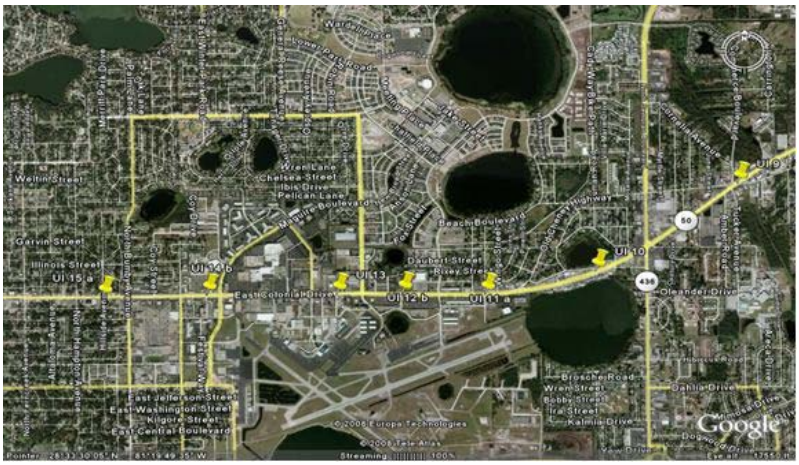


Figure 3-12: Aerial Image from "Google Earth" for 7 Unsignalized Intersections along SR 50 in Orange County during the Initial Data Collection Procedure

After identifying the 25 randomly selected unsignalized intersections along SR 50, it was concluded that it would be extremely hard to identify the respective roadway ID, mile point and node number for each. As a solution, it was decided to reverse the

procedure (i.e. to first identify the unsignalized intersections with their corresponding roadway ID, mile point and node number as indicated in the RCI database using the 'Video Log Viewer Application', and then to assign those intersections on 'Google Earth'.) A screen shot of the 'Video Log Viewer Application' from the RCI database is shown in Figure 3-13. This application is an advanced tool developed by the FDOT, and has the advantage of capturing the driving environment through any roadway. Moreover, this advanced application has two important features allowing different video perspectives, the 'right view' and the 'front view'. The 'right view' feature makes it possible to see whether a stop sign and a stop line exist or not. The 'front view' feature enables the identification of the median type as well as the number of lanes per direction more clearly.

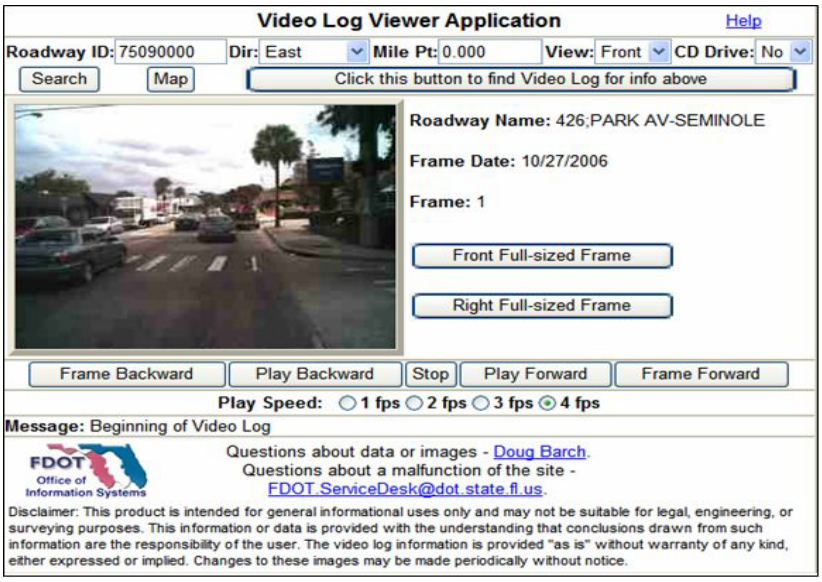


Figure 3-13: Screen Shot of the "Video Log Viewer Application" from FDOT's RCI Database

Thus, the reversed logical approach just described led to the last procedure of data collection, which will be detailed in the next section.

3.6 Final Data Collection Procedure

3.6.1 Orange County

As previously mentioned, this procedure came up after deciding to use the RCI database first for identifying unsignalized intersections along state roads. The procedure started with Orange County; and it was noted that there are 31 state roads in Orange County. The random selection method was used for choosing some state roads until ending up with 500 unsignalized intersections in this county. Ten state roads were randomly selected: SR 50, SR 434, SR 436, SR 414, SR 423, SR 426, SR 438, SR 424, SR 482 and SR 551. The number of selected intersections on each state road is shown in Table 3-1.

Table 3-1: The Used SRs, and the Corresponding Number of Unsignalized Intersections on Each of them in Orange County

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
50	201	426	42
434	39	438	35
436	65	424	29
414	8	482	9
423	42	551	30

Then, using the ‘Video Log Viewer Application’ accompanied with an ‘MS Excel’ spreadsheet that has all the unsignalized nodes in the whole state of Florida with their respective roadway ID, mile point and node number, the final data collection procedure was introduced. This procedure was used afterwards for collecting data

throughout the remaining five counties as well, as this procedure proved to be the most efficient and fast way. It is to be noted that the previously listed variables in the 'MS Excel' spreadsheet was used for collecting data from all the selected six counties.

3.6.1.1 Difficulties Faced during the Data Collection Process

The first difficulty encountered dealt with collecting some traffic fields in all the six selected counties like *aadt* on the major approach as well as speed limit on the major approach, as previously mentioned. Thus, it has been decided that these fields are to be filled later on after importing the used 'MS Excel' spreadsheet into the 'SAS' software, and also importing another 'MS Excel' spreadsheet from the RCI database that has all the required characteristics for every roadway ID and mile point. Then, a 'SAS' code was used to merge these two databases by roadway ID and mile point; thus, all the blank fields will be filled in automatically after the merging procedure in 'SAS'.

Another difficulty encountered in Orange County was lack of image clarity in 'Google Earth' (e.g. visibility was not too clear to determine the required number of lanes, presence or lack of stop signs, stop bars, extensive presence of trees that blocked the vision, etc.). As a solution, it was decided to use the website "http://www.live.com" which provides clearer images. A screen shot of 3 unsignalized intersections that present some difficulties in defining their geometric characteristics is shown in Figure 3-14.

Figure 3-14: Aerial Image from "Google Earth" for 3 Unsignalized Intersections in Orange County where Difficulty was Encountered in Identifying their Geometry due to Tree Blockage

3.6.2 Brevard County

After identifying 500 unsignalized intersections in Orange County, the data collection procedure proceeded in the same manner. The second selected county is Brevard County. There were 10 arterials, all state roads, used for collecting the 401 intersections in Brevard County. The state roads and the number of selected unsignalized intersections on each road are shown in Table 3-2.

Table 3-2: The Used SRs, and the Corresponding Number of Unsignalized Intersections on Each of them in Brevard County

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
3	44	46	24
507	34	50	33
514	30	5	80
518	18	405	24
519	55	A1A	59

3.6.2.1 Some Unfamiliar Intersections Collected

After illustrating the SRs used in Brevard County, as well as the number of intersections collected on each, this section discusses some unfamiliar unsignalized

intersections collected. Figure 3-15 shows a roundabout just on a 4-legged unsignalized intersection, which is an unfamiliar type. The size of the intersection in this case is '2x4', and the type of median on the major approach is a two-way left turn lane.

Figure 3-15: An Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Brevard County

3.6.3 Hillsborough County

The third selected county is Hillsborough County. There were 10 arterials (SRs) used for collecting 485 intersections in Hillsborough County. The state roads and the number of selected unsignalized intersections on each road are shown in Table 3-3.

Table 3-3: The Used SRs, and the Corresponding Number of Unsignalized Intersections on Each of them in Hillsborough County

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
60	65	574	70
39	28	580	31
45	95	597	33
43	68	676	10
39	31	45	54

3.6.3.1 Some Unfamiliar Intersections Collected

Figure 3-16 shows a 4-legged unsignalized intersection, where an offset exists on the minor approach, which is an unfamiliar type. The size of the intersection in this case is '2x4', and the type of median on the major approach is an open median.

Figure 3-16: First Aerial Image from "Google Earth" for an Unfamiliar Unsignalized Intersection in Hillsborough County

Figure 3-17 shows a 4-legged unsignalized intersection, where the major approach has a total of 8 lanes (4 lanes per direction), which is an unfamiliar type. Intersections with a total of 8 lanes in both directions are rare. Usually 4 lanes per direction are found on interstate roads. The size of the intersection in this case is '2x8', and the type of median on the major approach is an open median.

Figure 3-17: Second Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Hillsborough County

3.6.4 Miami-Dade County

The fourth selected county is Miami-Dade County. There were 10 arterials (SRs) used for collecting 488 intersections in Miami-Dade County. The state roads and the number of selected unsignalized intersections on each road are shown in Table 3-4.

Table 3-4: The Used SRs, and the Corresponding Number of Unsignalized Intersections on Each of them in Miami-Dade County

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
5	36	826	22
9	128	25	49
817	29	90	75
823	64	916	23
94	35	953	27

3.6.4.1 Some Unfamiliar Intersections Collected

Figure 3-18 shows a 3-legged unsignalized intersection at a signalized one. It is clear that there is channelized lane, having a stop sign, for making a right on the major approach. Thus, this intersection is not of a familiar type; it is very rare to find a stop sign on a signalized intersection. The size of the intersection is '1x3', and the type of median on the major approach is a closed median.

Figure 3-18: First Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Miami-Dade County

Figure 3-19 shows a 4-legged unsignalized intersection. It can be noticed that there is a subway bridge just above the median, so, this intersection is not of a familiar type. The size of the intersection is '2x4', and the type of median on the major approach is an open median. It is noted also that there is a crosswalk crossing the major approach. This intersection setup can potentially make pedestrian crashes more likely.

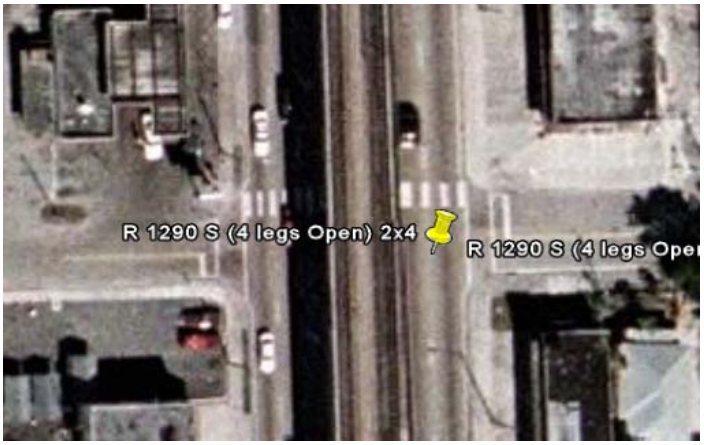


Figure 3-19: Second Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Miami-Dade County

Figure 3-20 shows a 3-legged unsignalized intersection. It is interesting to note the wide grass median, and the presence of two stop signs for both maneuvers The size of the intersection is '2x4', and the type of median on the major approach is an open median.

Figure 3-20: Third Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Miami-Dade County

Figure 3-21 shows a 3-legged unsignalized intersection, where the major approach has a total of 8 lanes (4 lanes per direction), and the minor approach has 4 lanes (two approaching lanes and two receiving lanes), so, the size of the intersection is '4x8'. It is to be noted that this large size of intersection is an unfamiliar type. The type of median on the major approach is an open median.

Figure 3-21: Fourth Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Miami-Dade County

3.6.5 Leon County

As previously illustrated, Leon County was selected because it has many rural roads. There were 7 arterials selected for collecting 364 unsignalized intersections in Leon County. Those used arterials were SRs. The state roads and the number of selected unsignalized intersections on each road are shown in Table 3-5. It is to be noted that the total number of collected intersections is 364, and not 400. This is attributed to the fact that Leon is a small county, much smaller than the other 4 counties, so it was extremely difficult to capture more intersections.

Table 3-5: The Used SRs, and the Corresponding Number of Unsignalized Intersections on Each of them in Leon County

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
10	67	261	31
20	79	263	34
61	83	363	43
63	27		

3.6.5.1 Some Unfamiliar Intersections Collected

Figure 3-22 shows a signalized intersection, where a stop sign exists for the right channelized lane. This type of intersection is uncommon. The size of the intersection in this case is '1x2', and the type of median on the major approach is closed.

Figure 3-22: First Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Leon County

Figure 3-23 shows a 3-legged unsignalized intersection with a stop sign on the minor leg, where the major approach has three-directional traffic. Each direction is separated from the other by a median. The size of the intersection in this case is '2x4', and the type of median on the major approach is closed.

Figure 3-23: Second Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Leon County

Figure 3-24 shows a 3-legged unsignalized intersection with a stop sign on the minor leg. The type of median on the major approach is directional. This directional median is uncommon, where the maneuver is only allowed for a left turn from the minor leg. The common shape of the directional median allows only the left-turn maneuver from the major approach, and not the minor one. The size of the intersection in this case is '2x4'.

Figure 3-24: Third Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Leon County

Figure 3-25 shows a 3-legged unsignalized intersection with a stop sign on the minor leg. The type of median on the major approach is open. This open median is uncommon, as there is a small-sized middle median at the centre of the median opening.

The traditional way of designing any open median is to have a full median opening. Still, this median type is open, as the left-turn maneuver from both major and minor approaches is permitted. The size of the intersection is ‘2x4’.

Figure 3-25: Fourth Aerial Image from ‘Google Earth’ for an Unfamiliar Unsignalized Intersection in Leon County

Figure 3-26 shows a 3-legged unsignalized intersection, where the major approach has a total of 6 lanes (3 lanes per direction), and the minor approach has 4 lanes (two approaching lanes and two receiving lanes), so, the size of the intersection is ‘4x6’. It is to be noted that this large size of the intersection uncommon. The type of median on the major approach is an open median. Moreover, the exclusive left-turn lane on the northbound major approach is mainly used for U-turns, while the opposing left-turn lane on the southbound major approach can be used for either making a U-turn, or entering the minor leg.

Figure 3-26: Fifth Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Leon County

3.6.6 Seminole County

The last selected county is Seminole County. There were 5 arterials selected for collecting 267 unsignalized intersections in Seminole County. Those used arterials were all SRs. The state roads and the number of selected unsignalized intersections on each road are shown in Table 3-6. Again, it is to be noted that the total number of collected intersections is 267, and not 400. This is attributed to the fact that Seminole is a small county; thus it was difficult to capture more than those 267 intersections.

Table 3-6: The Used SRs, and the Corresponding Number of Unsignalized Intersections on Each of them in Seminole County

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
15	68	426	27
434	73	419	21
46	78		

3.6.6.1 Some Unfamiliar Intersections Collected

Figure 3-27 shows a 3-legged unsignalized intersection (at the yellow pin), where the major road has a total of 6 lanes (3 lanes per direction), and the minor road has 4 lanes (two approaching lanes and two receiving lanes), so, the size of the intersection is '4x6', which is an uncommon type. The type of median on the major approach is an open median. Moreover, with the aid of both Figures 3-27 and 3-28, it can be seen that there are two left-turn lanes on the southbound major approach. These two left-turn lanes are the extension of the exclusive left-turn lanes of the upstream signalized intersection. Thus, having 2 left-turn lanes in front of the unsignalized intersection is very dangerous, and can encourage many drivers to use the outer left-turn lane, which is a risky maneuver. It is expected to have large number of angle (left-turn) and side-swipe crashes at this intersection. Angle crashes can result from the conflict between the left-turn maneuver from the southbound major approach with the through maneuver from the northbound major approach. Side-swipe crashes can result from the conflict between the two left-turn maneuvers from the southbound major approach.

Figure 3-27: First Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Seminole County

Figure 3-28: A Further View of the Unsignalized Intersection in Figure 3-28 for Better Clarification of the Extension of the Two Left-Turn Lanes to the Signalized Intersection

Figure 3-29 shows a 4-legged unsignalized intersection, where both minor approaches are not on the same line, which is an unfamiliar type as well. The size of the intersection in this case is '2x4', and the type of median on the major approach is a two-way left turn lane.

Figure 3-29: Second Aerial Image from 'Google Earth' for an Unfamiliar Unsignalized Intersection in Seminole County

3.7 Summary Table for the Data Collection Procedure throughout the Six Selected Counties

Tables 3-7 to 3-12 present summaries for the number of unsignalized intersections collected on each state road in each of the six counties, as well as the total number of intersections collected in each county. The total number of collected unsignalized intersections was 2505, but 2500 intersections were used as a starting sample for the classification purpose.

Table 3-7: Summary Table for the Data Collection Procedure in Orange County*

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
50	201	426	42
434	39	438	35
436	65	424	29
414	8	482	9
423	42	551	30

*** Total number of intersections is 500**

Table 3-8: Summary Table for the Data Collection Procedure in Brevard County*

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
3	44	46	24
507	34	50	33
514	30	5	80
518	18	405	24
519	55	A1A	59

*** Total number of intersections is 401**

Table 3-9: Summary Table for the Data Collection Procedure in Hillsborough County*

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
60	65	574	70
39	28	580	31
45	95	597	33
43	68	676	10
39	31	45	54

*** Total number of intersections is 485**

Table 3-10: Summary Table for the Data Collection Procedure in Miami-Dade County*

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
60	65	574	70
39	28	580	31
45	95	597	33
43	68	676	10
39	31	45	54

*** Total number of intersections is 488**

Table 3-11: Summary Table for the Data Collection Procedure in Leon County*

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
10	67	261	31
20	79	263	34
61	83	363	43
63	27		

*** Total number of intersections is 364**

Table 3-12: Summary Table for the Data Collection Procedure in Seminole County*

SR	Number of unsignalized intersections on each SR	SR	Number of unsignalized intersections on each SR
15	68	426	27
434	73	419	21
46	78		

*** Total number of intersections is 267**

3.8 Collecting Three and Four-Way Stop-Controlled Intersections

After collecting unsignalized intersections on state roads, it was decided to collect unsignalized intersections on non-state roads as well, so as to capture *awsc* intersections (i.e., three and four-way stop-controlled), and by this, the collected data are representatives of nearly all types of unsignalized intersections. It is known that unsignalized intersections on state roads have a maximum of two stop signs (in the case of *twsc* intersections at four-legged intersections). Thus, to capture three and four-way stop-controlled intersections, unsignalized intersections located on non-state roads should be identified. The same geometric and control fields (previously illustrated) for identifying three and four-way stop-controlled intersections were also filled in a similar 'MS Excel' spreadsheet.

3.8.1 Initial Data Collection Procedure for Capturing Three and Four-Way Stop-Controlled Intersections

The data collection procedure for collecting *awsc* intersections started with identifying 52 intersections of those types in the six counties. It is worth mentioning that *awsc* intersections were extremely hard to collect, as they are very rare, and collecting those 52 intersections was very time consuming. For the final classification of

unsignalized intersections, it was decided to have a separate category for 3 and 4-way stop-controlled unsignalized intersections.

The 3 and 4-way stop-controlled intersections were collected using 'Google Earth' by randomly following one of the minor collector roads. The intersections were then identified and their geometric and control fields were tabulated, similar to the procedure followed in identifying the 2500 intersections.

3.8.2 Final Data Collection Procedure for Capturing Three and Four-Way Stop-Controlled Intersections

After collecting 52 intersections of those types from the six counties, a problem arose in getting crash data for those intersections, as there were no matching fields between the collected features in the 'Excel' file, and the 'CAR' database. This means all those 52 randomly collected intersections have zero crashes. Thus, another data collection method had to be used, and it was decided to capture those intersections from the 'CAR' database using the major and minor road names in the six counties, and then assigning them on 'Google Earth'. This process was good as it guaranteed that there was at least one crash for any identified intersection of those types.

Following the aforementioned procedure, 24 *awsc* intersections were captured (18 four-way stop-controlled and 6 three-way stop-controlled). The used database for collection was a 4-year crash data (from 2003 till 2006, maintained by 'CAR') occurring on non-state roads in each of the six counties. This database has two column names with major and minor road names for each identified crash. Most of the crashes identified on non-state roads in the six counties occurred at signalized intersections, as crashes occurring on *awsc* intersections are very rare. The random selection procedure was used

by examining major and minor roads. Once more, this data collection procedure was extremely hard, as the probability of identifying a signalized intersection is higher than that for an *awsc* intersection (due to higher crash frequency occurring at signalized intersections than that at *awsc* intersections). After many trials, 24 AWSC intersections were identified, and located on 'Google Earth'. Also, crash frequency occurring in each of the 4 years was identified at each of the 24 intersections.

3.9 Preliminary Classification of Unsignalized Intersections

In order to initially classify unsignalized intersections, various steps were followed in order to fulfill this categorization. Following are the details of these procedures as well as the preliminary categories obtained. It is to be noted that this categorization was not based on any data, but rather from a perspective approach.

1) First of all, unsignalized intersections were classified based on five main factors. These five categories are:
    i. Classification based on the number of legs (3 and 4-legged intersections)
    ii. Classification based on the size of the intersection (the number of total approach through lanes on the major approach and the number of through lanes on the minor approach) (2x2, 2x4, 2x6 and 4x4)
    iii. Classification based on land use (urban and rural)
    iv. Classification based on median type on the major approach (divided and undivided)

v. Classification based on type of control on the minor approach (no control, yield control and stop control)

It is to be noted that the stop control can be a '1-way stop control' and a '3-way stop control' on a 3-legged unsignalized intersection, and a '2-way stop control' and a '4-way stop control' on a 4-legged unsignalized intersection. Moreover, 2x2, 2x4, 2x6 and 4x4 intersections were used in the categorization procedure, as they were thought to be the most occuring intersection sizes. So, the number of possible combinations is: 2 x 4 x 2 x 2 x 2 x 2 = 128 categories.

2) Secondly, after searching for previous literature on modeling crashes at unsignalized intersections, it was found that *aadt* was a significant factor while modeling crash frequencies occurring at unsignalized intersections. Examples of those studies are those done by Bauer and Harwood (1996), Huang and May (1991), Del Mistro (1981), Kulmala (1997) and Vogt and Bared (1998). Moreover, the posted speed limit on the major approach was an important factor, as indicated by Summersgill and Kennedy (1996), Pickering and Hall (1986) and Brude (1991). Hence, unsignalized intersections were further classified based on seven main factors. These seven categories are:

   i. Classification based on the number of legs (3 and 4-legged intersections)

   ii. Classification based on the size of the intersection (the number of total approach through lanes on the major approach and the number of through lanes on the minor approach) (2x2, 2x4, 2x6 and 4x4)

iii. Classification based on land use (urban and rural)

iv. Classification based on median type on the major approach (divided and undivided)

v. Classification based on type of control on the minor approach (no control, yield control and stop control)

vi. Classification based on *aadt* per lane on the major approach

vii. Classification based on the speed limit on the major approach

If the *aadt* was to be classified into two categories (high *aadt* and low *aadt*) by splitting the *aadt* values at its median (50^{th} percentile), as well as classifying the posted speed into two categories (high speed and low speed limits), the number of possible combinations becomes: 2 x 4 x 2 x 2 x 2 x 2 x 2 x 2 = 512 categories.

3) In order to be more specific, it was found that classifying median types on the major approach into two categories only was not sufficient. Thus, divided medians were further classified into more specific categories. These categories are open, directional, two-way left turn lane and closed medians. Thus, the seven main categories of unsignalized intersections now become:

i. Classification based on the number of legs (3 and 4-legged intersections)

ii. Classification based on the size of the intersection (the number of total approach through lanes on the major approach and the number of through lanes on the minor approach) (2x2, 2x4, 2x6 and 4x4)

iii. Classification based on land use (urban and rural)

iv. Classification based on median type on the major approach (open, directional, two-way left-turn lane, closed and undivided)

v. Classification based on type of control on the minor approach (no control, yield control and stop control)

vi. Classification based on *aadt* per lane on the major approach

vii. Classification based on the speed limit on the major approach

So, the number of possible combinations is: 2 x 4 x 2 x 5 x 2 x 2 x 2 x 2 = 1280 categories.

4) Afterwards it was realized that the new number of categories (1280) was a relatively large number. This leads to the final step of categorization, which used the fewest possible number of general categories to describe nearly all dominant types of unsignalized intersections.

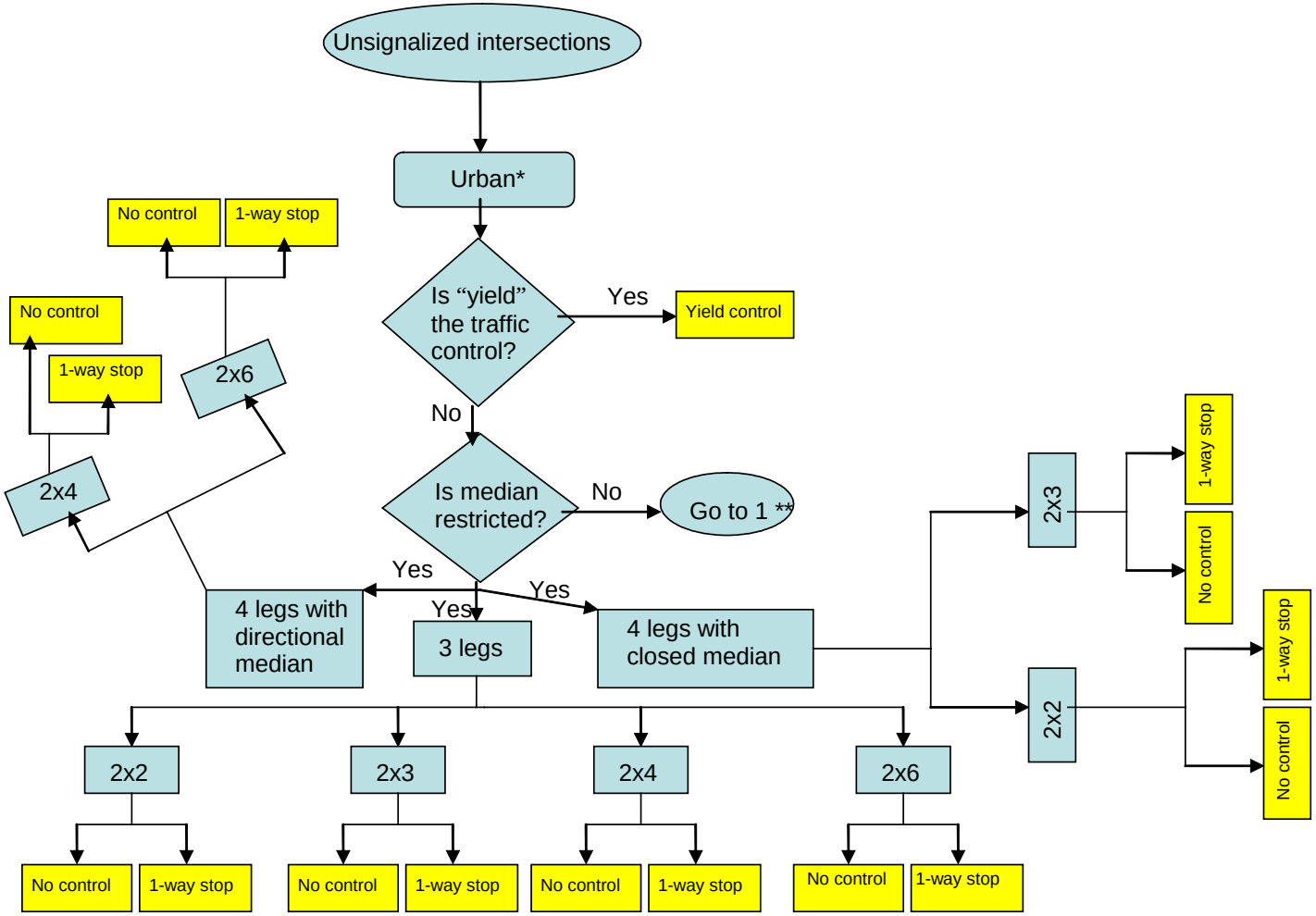
The preliminary unsignalized intersection classification accounts for those unsignalized intersections facing each other (i.e., having the same intersection node number, mile point and roadway ID). Those specific unsignalized intersections are called two 3-legged unsignalized intersections, and usually have directional or closed or mixed median types on the major approach. Mixed median types are those consisting of directional medians from one side, and closed medians on the other side. A screen shot of mixed medians using 'Google Earth' is shown in Figure 3-30. This figure shows two 3-legged unsignalized intersections with a mixed median on the major approach, where the intersection on the right is a 3-legged intersection that is influenced by the directional median type, and the intersection on the left is a 3-legged intersections influenced by the closed median type.

Figure 3-30: Mixed Median Type on the Major Approach (Directional from One Side, and Closed from the Other Side) to Illustrate the Idea of Having Two 3-Legged Unsignalized Intersections Facing Each Other (Having the Same Intersection Node Number, Mile Point and Roadway ID)

Summarizing the categorization process, the final classification possibilities are defined as follows:

- Aggregated preliminary number of possible combinations = 42 categories
- Maximum preliminary number of possible combinations = 68 categories

Figures 3-31 and 3-32 show a conceptual flow diagram for the final classification of unsignalized intersections based on the maximum and the aggregated categories, respectively.



* The same categorization is done for rural unsignalized intersections

Figure 3-31: Flow Chart for the Maximum Preliminary Number of Categories at Unsignalized Intersections

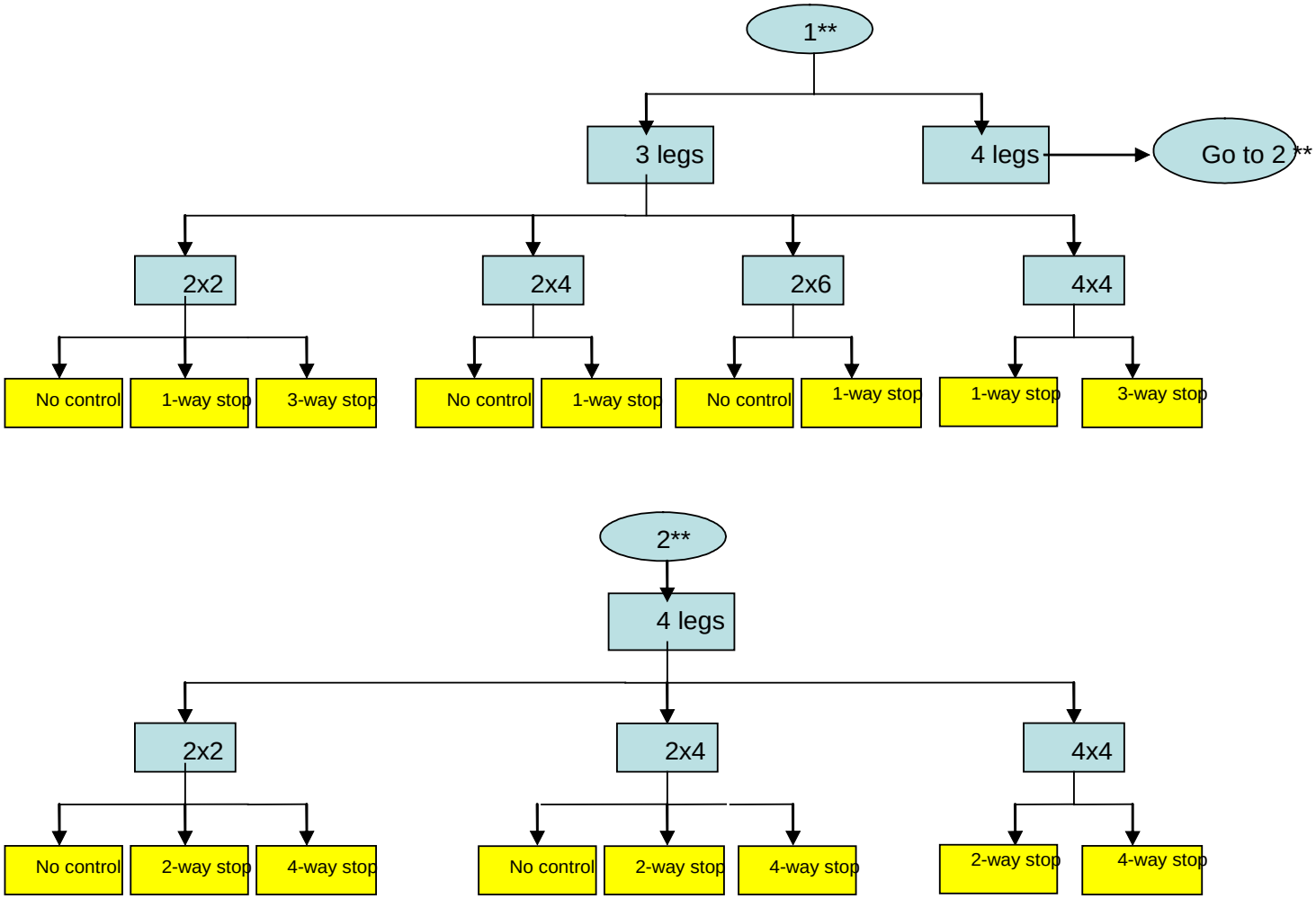
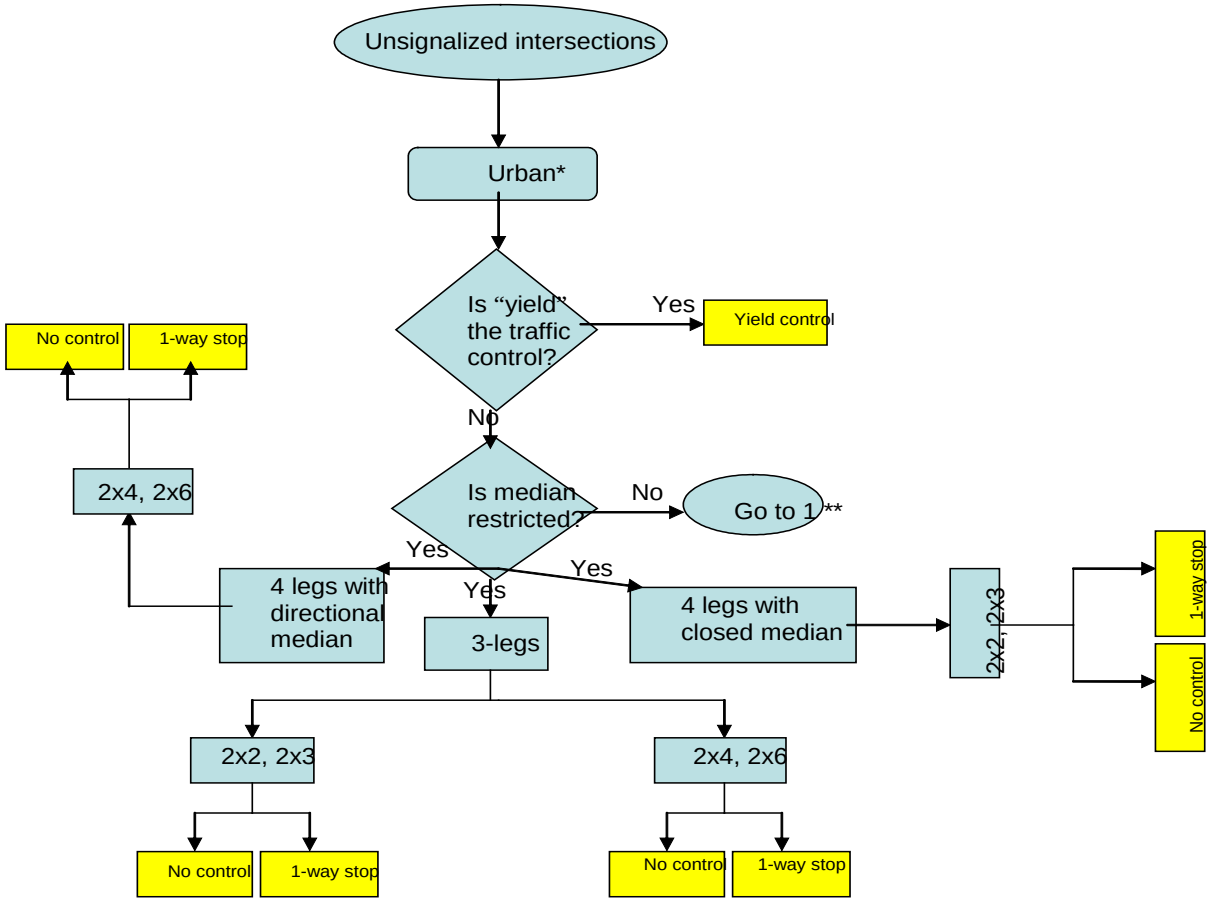


Figure 3-31: Flow Chart for the Maximum Preliminary Number of Categories at Unsignalized Intersections (Continued)



* The same categorization is done for rural unsignalized intersections

Figure 3-32: Flow Chart for the Combined Preliminary Number of Categories at Unsignalized Intersections

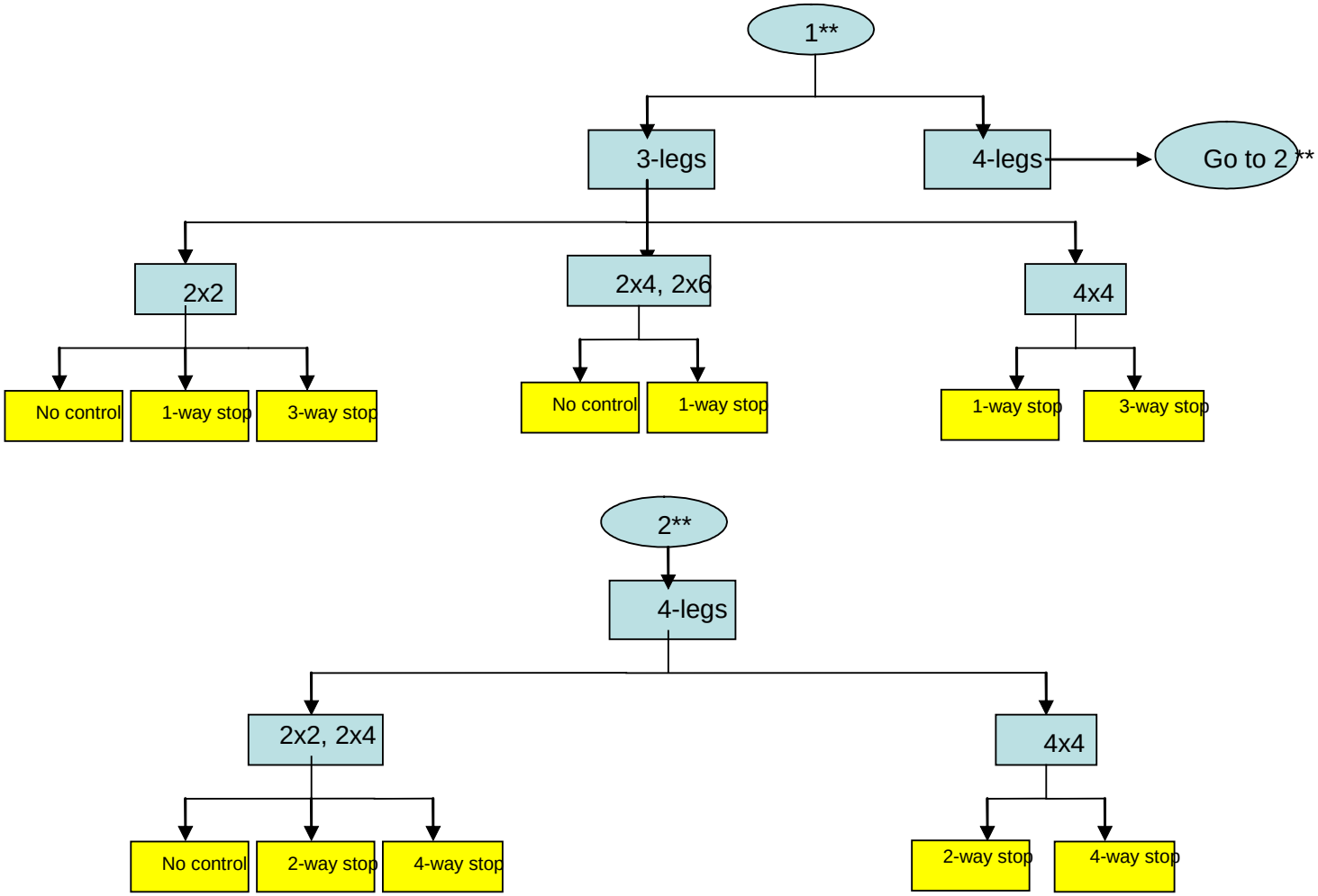


Figure 3-32: Flow Chart for the Combined Preliminary Number of Categories at Unsignalized Intersections (Continued)

For the maximum preliminary number of categories (as shown in Figure 3-31), the number of terminal nodes (leaves) in 'yellow' color for urban unsignalized intersections is 34, but the same categorization is done for rural unsignalized intersections, so the total number of categorization is 34 * 2 = 68 categories.

For the combined preliminary number of categories (as shown in Figure 3-32), the number of terminal nodes (leaves) for urban unsignalized intersections is 21, but the same categorization is done for rural unsignalized intersections, so the total number of categorization is 21 * 2 = 42 categories. It is to be noted that for the 3-legged median-restricted unsignalized intersections, the '2x2' and the '2x3' classification is aggregated together since both of them are usually found on closed and undivided medians, and there is not that much difference between both intersection sizes. Also, the '2x4' and the '2x6' classification is aggregated together since both of them are usually found on two-way left turn lane, open and directional medians.

From Figures 3-31 and 3-32, it is clear that the 'YIELD' control is used only as one category to summarize all crashes occurring at unsignalized intersections having a 'YIELD' control. This 'YIELD' control can be either the first traffic control or the second traffic control. This classification of all 'YIELD' control crashes as one unsignalized intersection category was concluded through a detailed inspection of crash data for 3 years (2002 – 2004) at all the 'YIELD' control types. These crash data include all the crashes occurring in the whole state of Florida with the exception of crashes occurring at freeways. The most important notes from these crash data are summarized as follows:

- Total number of crashes analyzed = 745,342 crash records

- Number of 'YIELD' crashes ('YIELD' is the 1st traffic control) = 3312 crashes (0.49%)
- Number of 'YIELD' crashes ('YIELD' is the 2nd traffic control) = 507 crashes (0.08%).
- Number of crashes for a 'YIELD' sign as the 2nd traffic control, and a traffic signal as the 1st traffic control = 238 crashes (0.04%)
- Number of crashes for a 'YIELD' sign as the 1st traffic control, and a traffic signal as the 2nd traffic control = 84 crashes (0.01%).
- The highest number of 'YIELD' crashes ('YIELD' is the 2nd traffic control) occurs at intersections. The number of crashes is 267 crash records (percentage = 267 / 507 = 52.66%). The second highest number occurs at driveway accesses (15.38%).
- The highest number of 'YIELD' crashes ('YIELD' is the 1st traffic control) occurs at intersections. The number of crashes is 1299 crash records (percentage = 1299 / 3312 = 39.22%). The second highest number occurs at driveway accesses (16.79%).
- The number of 'YIELD' crashes occurring at ramps (entrance or exit ramps) is very small, and can be neglected.

Thus, from the above mentioned points, it becomes obvious that crashes occurring at 'YIELD' control types are very rare. That is why crashes occurring at 'YIELD' traffic control are only categorized as one unsignalized intersection category. This category accounts for crashes occurring at a 'YIELD' traffic control at on and off-ramps, on signalized intersections, and on unsignalized intersections (which is very rare).

CHAPTER 4. PRELIMINARY ANALYSIS OF 433 UNSIGNALIZED INTERSECTIONS IN ORANGE COUNTY

4.1 Safety Effect of the Presence of Both Stop Sign and Line vs. Stop Sign Only in Orange County

The preliminary analysis presented in this chapter tests the safety effect of the presence of both stop sign and line vs. a stop sign only. The main objective of this analysis is to determine whether the presence of both stop sign and line would help increase or decrease crash frequency at unsignalized intersections. The county used in this analysis is Orange County.

In order to perform this analysis, 4 years of data from (2003 till 2006) were used. Each of the 4-year data includes geometric, traffic and control fields, as previously indicated in Chapter 3. The total number of unsignalized intersections used is 433 intersections, which is deemed a sufficient sample size to perform this type of analysis.

As previously mentioned in Chapter 3, some of those geometric, traffic and control fields were collected using 'Google Earth' and 'Video Log' applications, and the remaining fields were collected by merging those fields with the RCI database and the CAR database for each year separately. Then afterwards, all these 4 databases representing the 4 years were appended with each other in one database.

Since the collected unsignalized intersections contain both 3 and 4-legged intersections, this analysis was done for each type separately. It is to be noted that only stop-controlled intersections were used in the analysis. Thus, any intersection having yield control sign or no control was excluded from this analysis. The number of 3-legged

unsignalized intersections for the 4-year database after excluding yield and non-controlled intersections was 237. Of those 237 intersections, 160 intersections have both stop signs and lines (group 1), and 77 intersections have stop signs only, with no stop lines (group 2). For 4-legged unsignalized intersections, the number of unsignalized intersections for the 4-year database after excluding yield and non-controlled intersections was 58. Of those 58 intersections, 25 intersections have both stop signs and lines (group 1), and 33 intersections have stop signs only, with no stop lines (group 2).

Table 4-1 shows a summary descriptive statistics for both groups for the 3 and 4-legged stop-controlled intersections.

Table 4-1: Summary Descriptive Statistics for Group 1 and Group 2

	3-legged stop-controlled intersections		**4-legged stop-controlled intersections**	
	Group 1	**Group 2**	**Group 1**	**Group 2**
Sample size	160	77	25	33
Total number of crashes through all the selected intersections in 4 years	1348	485	336	319
Average number of crashes per intersection in 4 years	8.425	6.299	13.44	9.667

From this table, it is noticed that the total number of crashes for all the intersections in the 4 years as well as the average number of crashes per intersection in the 4 years for group 1 is more than that for group 2, for both 3 and 4-legged stop-controlled intersections. Moreover, it is well noticed that the average number of crashes per intersection for 4-legged stop-controlled intersections is much higher than the corresponding 3-legged stop-controlled ones. This indicates that 4-legged stop-controlled intersections are much more hazardous than 3-legged stop-controlled intersections, as more conflicts are found for the 4-legged intersections, especially for through maneuvers crossing the whole major road width.

This finding conforms to many studies dealing with safety of unsignalized intersections. For example, David and Norman (1976) as well as Bauer and Harwood (1996) found that four-leg intersections experienced twice as many crashes as three-leg intersections. In the same manner, Harwood et al. (1995) showed that divided highway intersections with four legs experienced about twice as many crashes as three-leg intersections for narrow medians and more than five times as many crashes as for wide medians. Also, Hanna et al. (1976) found that in rural areas, four-leg intersections experienced 69 % more crashes than three-leg intersections. Moreover, Leong (1973), O'Brien (1976) and David and Norman (1975) have shown that 3-legged unsignalized intersections are much safer than 4-legged unsignalized intersections, while taking into account the traffic volume parameter.

In order to statistically compare the 2 groups, a student's t-test (for two independent samples) is used to achieve this comparison There are two types of student's t-test, one assuming equal variances for 2 independent samples, and the other assuming unequal variances. In order to choose one of them, an F-test is initially used to test whether the 2 samples have equal variances or not.

Following this aspect, the aforementioned procedure was done for 3-legged and 4-legged stop-controlled intersections. For 3-legged stop-controlled intersections, the F-test indicated unequal variances for the two tested groups (1 and 2), as the resulting p-value was 0.000215. Then afterwards, the student's t-test assuming unequal variances was used, and the calculated p-value (for a two-tailed distribution) was 0.042976. Thus, there is sufficient evidence to indicate that there is a significant difference between the 2 groups at the 95% confidence level (5% error level). This in turn indicates that group 1

(both stop signs and stop lines exist) has a significantly higher crash frequency than group 2 (stop signs only exists). So, having both stop signs and lines for 3-legged stop-controlled intersections is much riskier than having stop signs only.

Although this finding is unexpected, this is mainly attributed to the fact that taking care of the existence of both stop signs and stop lines is always done at hazardous intersections. Another reason is that there were some trees blocking stop signs' visibility in group 1's sample while collecting geometric fields in the data collection procedure. Those dense trees can block the visibility of motorists approaching the intersection. Thus, in spite of having a stop line on the pavement, motorists tend to not make a full stop due to their inability to see the stop sign, potentially resulting in a crash.

For 4-legged stop-controlled intersections, the F-test indicated equal variances for the two tested groups (1 and 2), as the p-value was 0.22262. Then, the student's t-test assuming equal variances was used, and the p-value (for a two-tailed distribution) was 0.21175. Thus, there is not a sufficient evidence to indicate that there is a significant difference between the 2 groups at the 95% confidence level. The existence of both stop signs and lines for 4-legged stop-controlled intersections has significantly the same safety effect (in terms of crash frequency at those selected intersections) as having stop signs only.

4.1.1 General Conclusions and Recommendations from the Analysis

This analysis has examined the safety effect of the existence of both stop signs and stop lines, and stop signs only for 3-legged and 4-legged stop-controlled intersections in Orange County. It was concluded that having both stop signs and lines for 3-legged stop-controlled intersections is significantly much riskier than having stop signs only.

And for 4-legged stop-controlled intersections, it was concluded that there is no significant difference between those two categories in terms of safety.

As a recommendation, installing another stop sign on the left side of the minor road (or minor driveway access, or access point) at those 3-legged stop-controlled intersections with both stop signs and lines is one of the safety countermeasures for alleviating high crash occurrences. This countermeasure was examined by Polaris (1992), who found it to be effective in some cases.

Also, in order to increase motorists' awareness of the existence of stop signs, rumble strips can be installed on intersection approaches. Figure 4-1 shows how rumble strips are installed on the pavement. Rumble strips are usually recommended for application where less intrusive measures (such as pavement markings like 'STOP AHEAD' signs or flashers) have failed to reduce high crash occurrences. Moreover, rumble strips can be coordinated with a 'STOP AHEAD' device, i.e. when the driver crosses the rumble strip, this control device starts flashing. More literature review about rumble strip usage can be found in Harwood (1993). He suggested that installing rumble strips on stop-controlled approaches can provide a reduction of at least 50 % in rear-end crashes as well as crashes involving 'running' a stop sign. Moreover, installing advance stop sign rumble strips was one of the countermeasures recommended by the research "Strategies to Address Nighttime Crashes at Rural, Unsignalized Intersections, 2008".

Figure 4-1: Rumble Strips Installation

Finally, maintenance of stop signs must be done at a high standard to ensure that the effectiveness of those signs is retained. According to MUTCD criteria, stop signs must be kept in proper position, clean, and legible at all times (at day and night). Damaged signs should be replaced without any delay. To ensure adequate maintenance, a suitable schedule for inspection, cleaning, and replacement of stop signs should be established. It is the duty of the employees of highway and governmental agencies, and policemen to report any damaged or unmaintained signs. Special attention and necessary action should be taken to make sure that trees, shrubs, and other vegetations do not block stop signs.

CHAPTER 5. FINAL CLASSIFICATION OF UNSIGNALIZED INTERSECTIONS

5.1 Introduction

After illustrating the preliminary classification of unsignalized intersections at the end of Chapter 3, this chapter illustrates the steps used to classify unsignalized intersections using the collected 2500 intersections distributed among the six counties. The classification process was achieved by first introducing all possible categories of unsignalized intersections based on several important factors (such as *aadt*, minor approach control type, size of intersection, etc.), along with their crash statistics during the 4-year analysis period (from 2003 till 2006). So, if some categories have limited intersection sample within those categories, they were eliminated from further consideration, given that the mean crash frequency for those intersections was quite low. Afterwards, it was decided to combine (or merge) some categories that are similar, meaning that there is no much difference in the mean number of crashes and standard deviation of the crashes, and the histogram plot for the crash frequency distribution for those categories was nearly the same. This was done for the purpose of reducing the number of categories as much as possible. Below is the detailed description of classifying unsignalized intersections, aided with some crash histogram plots.

5.2 Introductory Main Types of Unsignalized Intersections

At the beginning of introducing the main types of unsignalized intersections (under which the categories are to be identified), it was decided to separate restricted

closed and restricted directional (and mixed) medians on the major approach, as crash patterns differ for both of them. As previously mentioned in Chapter 3 (under the section 'Median Classification'), restricted medians mean that no vehicle from any minor (cross) approach can go through the median, where vehicles are only allowed to make a right-turn only. At unsignalized intersections with closed medians, only one of the major approach directions is related to the intersection. The other direction is not related, as no vehicle traveling further in the major direction can make a left-turn maneuver due to the existence of a closed median. With this, unsignalized intersections with closed medians only operate with one-way major road.

As for unsignalized intersections with directional and mixed medians, both median types can be lumped together, as both intersection types operate with both major approaches. This is because any vehicle traveling in the nearer major approach can make a right-turn lane and enter the minor approach. Moreover, any vehicle traveling in the further major approach can make a left-turn and enter the minor approach. But for vehicles coming from the minor approach, they are only allowed to make a right-turn. Mixed medians are those medians having a directional type from one side, and a closed type from the other side, with both major approaches still related to the unsignalized intersection under consideration. Thus, both unsignalized intersections with directional and mixed medians should be lumped together.

There were 11 main types identified for classifying the 2500 unsignalized intersections, which are:

1) Yield (for urban and rural intersections)

2) Urban and rural directional and mixed restricted medians with two-way major road (always 3-legged intersections)
3) Urban and rural closed restricted medians with one-way major road (always 3-legged intersections)
4) Urban 3 legs with unrestricted medians (i.e, open, two-way left-turn lane, undivided and markings)
5) Rural 3 legs with unrestricted medians
6) Urban 4 legs with unrestricted medians
7) Rural 4 legs with unrestricted medians
8) Urban and rural two 3-legged with directional and mixed medians (two minor roads exist, but separated by directional and mixed medians, and two-way major road)
9) Urban and rural two 3-legged with closed medians (two minor roads exist, but separated by closed medians, and one-way major road)
10) Three-way stop-controlled intersections
11) Four-way stop-controlled intersections.

For types '2' and '3', urban and rural area types were lumped together as having separate types for both could not be achieved, as rural intersections for types '2' and '3' were very few, and in addition, their mean number of crashes was very small.

5.3 Categories Initially Identified for Classifying Unsignalized Intersections

While working on the classification, any category having less than 5 intersections was automatically removed from further consideration, given that the mean number of crashes for those intersections was small. Following this logic, 64 categories were identified representing 2429 intersections, i.e., 71 intersections were eliminated from further consideration. The 64 identified categories, the corresponding main type for each category, and the number of intersections in each category are shown in Table 5-1.

Table 5-1: Initial Identified Main Types, Categories, and Number of Intersections in Each Category

Category	Main type	Category classification	Number of intersections in each category
1	Yield	Ramps (including also non-controlled ramps)	45
2		Regular intersections, access points and parking lots	8
3	Urban directional and mixed restricted medians with two-way major road	2x4 with 1-way stop on the minor	45
4		**2x4 with no control on the minor**	**5**
5		2x6 with 1-way stop on the minor	81
6		**2x6 with no control on the minor**	**5**
7		2x8 with 1-way stop on the minor	8
8	Urban closed restricted medians with one-way major road	2x2 and 2x3 with 1-way stop on the minor	10
9		**2x4 with no control on the minor**	**19**
10		2x4 and 2x5 with 1-way stop on the minor and AADT (major) <= 34000	78
11		2x4 and 2x5 with 1-way stop on the minor and AADT > 34000	76
12		2x6 with 1-way stop on the minor and AADT (major) <= 50000	69
13		2x6 with 1-way stop on the minor and AADT > 50000	67
14		**2x6 with no control on the minor**	**16**
15		2x8 with 1-way stop on the minor	7
16	Urban 3 legs with unrestricted medians (i.e., open, undivided, two-way left turn lane "2WLTL" and markings)	**2x2, 2x4, 2x5 and 2x6 with no control on the minor**	**47**
17		**2x2 and 2x3 with 1-way stop on the minor and AADT (major) <= 12000**	**68**
18		**2x2 and 2x3 with 1-way stop on the minor and 12000 < AADT <= 15000**	**65**
19		**2x2 and 2x3 with 1-way stop on the minor and 15000 < AADT <= 20000**	**58**
20		**2x2 and 2x3 with 1-way stop on the minor and AADT > 20000**	**67**
21		2x4 with 1-way stop on the minor and AADT (major) <= 19000 and SL <= 45	77
22		2x4 with 1-way stop on the minor and AADT <= 19000 and SL > 45	47
23		2x4 with 1-way stop on the minor and 19000 < AADT <= 27000 and SL <= 45	95
24		2x4 with 1-way stop on the minor and 19000 < AADT <= 27000 and SL > 45	26
25		2x4 with 1-way stop on the minor and 27000 < AADT <= 39000 and SL <= 45	137
26		2x4 with 1-way stop on the minor and 27000 < ADT <= 390000 and SL > 45	12

Table 5-1: Initial Identified Main Types, Categories, and Number of Intersections in Each Category (Continued)

Category	Main type	Category classification	Number of intersections in each category
27		2x4 with 1-way stop on the minor and AADT > 39000 and SL <= 45	77
28		2x4 with 1-way stop on the minor and AADT > 39000 and SL > 45	16
29		**2x5 with 1-way stop on the minor and AADT (major) <= 22000**	**67**
30		**2x5 with 1-way stop on the minor and 22000 < AADT <= 30000**	**34**
31		**2x5 with 1-way stop on the minor and 30000 < AADT <= 42000**	**52**
32		**2x5 with 1-way stop on the minor and AADT > 42000**	**51**
33		**2x6 with 1-way stop on the minor and AADT (major) <= 45000**	**54**
34		**2x6 with 1-way stop on the minor and 45000 < AADT <= 50000**	**35**
35		**2x6 with 1-way stop on the minor and 50000 < AADT <= 58000**	**41**
36		**2x6 with 1-way stop on the minor and AADT > 58000**	**30**
37		2x7 with 1-way stop on the minor	21
38		2x8 with 1-way stop on the minor	8
39		3x4 and 3x6 with 1-way stop on the minor	5
40	Urban 4 legs with unrestricted medians (i.e., open, undivided, 2WLTL and markings)	2x2 with 2-way stop or "no control/stop" on the minor	40
41		2x3 with 2-way stop or no control or "no control/stop" on the minor	12
42		**2x4 with 2-way stop on the minor and AADT (major) <= 20000**	**51**
43		**2x4 with 2-way stop on the minor and 20000 < AADT <= 25000**	**42**
44		**2x4 with 2-way stop on the minor and 25000 < AADT <= 39000**	**69**
45		**2x4 with 2-way stop on the minor and AADT > 39000**	**42**
46		2x4 with "no control/stop" on the minor	53
47		2x5 with 2-way stop on the minor and AADT (major) <= 32000	39
48		2x5 with 2-way stop on the minor and AADT > 32000	39
49		2x5 with no control and "no control/stop" on the minor	19
50		2x6 with 2-way stop on the minor and AADT (major) <= 55000	41
51		2x6 with 2-way stop on the minor and AADT > 55000	37
52		2x6 with "no control/stop" on the minor	12

Table 5-1: Initial Identified Main Types, Categories, and Number of Intersections in Each Category (Continued)

Category	Main type	Category classification	Number of intersections in each category
53		2x7 with 2-way stop on the minor	8
54		2x8 with 2-way stop or "no control/stop" on the minor	3
55	Rural 3 legs with unrestricted medians (i.e., open, undivided, 2WLTL and markings)	2x2 and 2x4 with no control on the minor	12
56		2x2 with 1-way stop on the minor	69
57		2x4 with 1-way stop on the minor	27
58	Rural 4 legs with unrestricted medians (i.e., open, undivided, 2WLTL and markings)	2x2 and 2x4 with 2-way stop on the minor	14
59		2x2 and 2x4 with "no control/stop" on the minor	9
60	Urban and rural two 3-legged with directional and mixed medians (two minor roads exist, but separated by directional and mixed medians, and two-way major road)	**2x4 with 1-way stop on the minor**	**20**
61		**2x6 with 1-way stop on the minor**	**28**
62	Urban and rural two 3-legged with closed medians (two minor roads exist, but separated by closed medians, and one-way major road)	2x4 and 2x6 with 1-way stop on the minor	14
63	3-way stop-controlled intersections		
64	4-way stop-controlled intersections		
			SUM = 2429

5.4 Merging (Combining) Some Categories

Based on Table 5-1, there were some categories that could be merged with others. Many trials were used to perform this task.

5.4.1 Category 16

Category 16 was used separately for each size of the intersection, 2x2, 2x4, 2x5 and 2x6 (the first and second number is the number of through lanes based on the normal cross-section of both minor and major road approaches, respectively), but it was attempted to collect all of them into 1 category (as shown in Figure 5-1) as each size has a small number of intersections. Moreover, they all share the same minor road control type (no control), thus the trial of merging all these 4 sizes of intersections into 1 category was performed. The crash frequency histogram for each size is shown in Figure 5-1. Moreover, crash statistics for each size including the intersection sample in each size, mean number of crashes and standard deviation of crashes are shown in the upper right side of each histogram plot shown in Figure 5-1. From those plots, it is well noticed that the histograms appear similar, with the exception of that for '2x5', where there is no meaningful trend for intersection size '2x5'. However, the mean and standard deviation of this intersection type are very similar to those for '2x4'; and thus, merging those 4 intersection sizes into 1 category was a right decision.

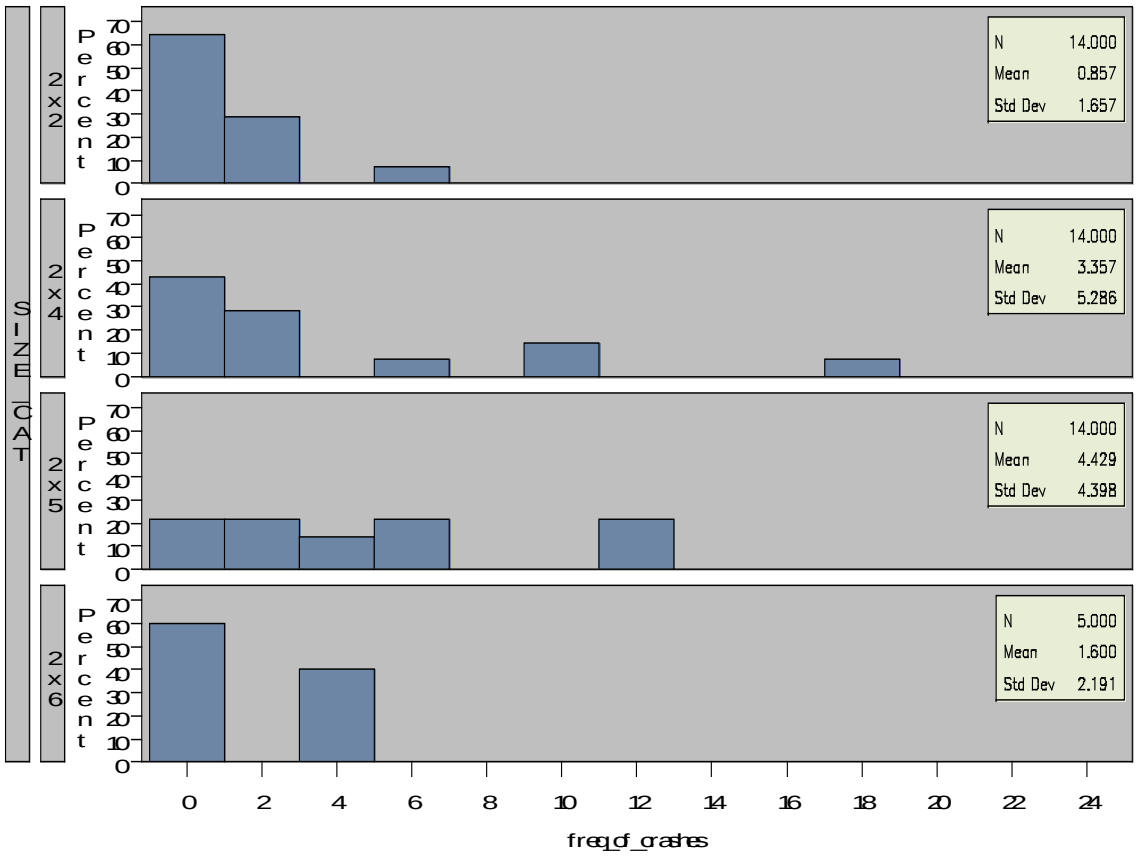


Figure 5-1: Crash Comparative Histograms for Intersection Size, 2x2, 2x4, 2x5 and 2x6 in Category 16

5.4.2 Category 60 and 61

Categories 60 and 61 have a 1-way stop control on the minor approach as a common feature between them. Moreover, the intersection sample in each was small, thus, the attempt of combining both categories was performed. The crash frequency histogram for both sizes, '2x4' and '2x6' is shown in Figure 5-2.

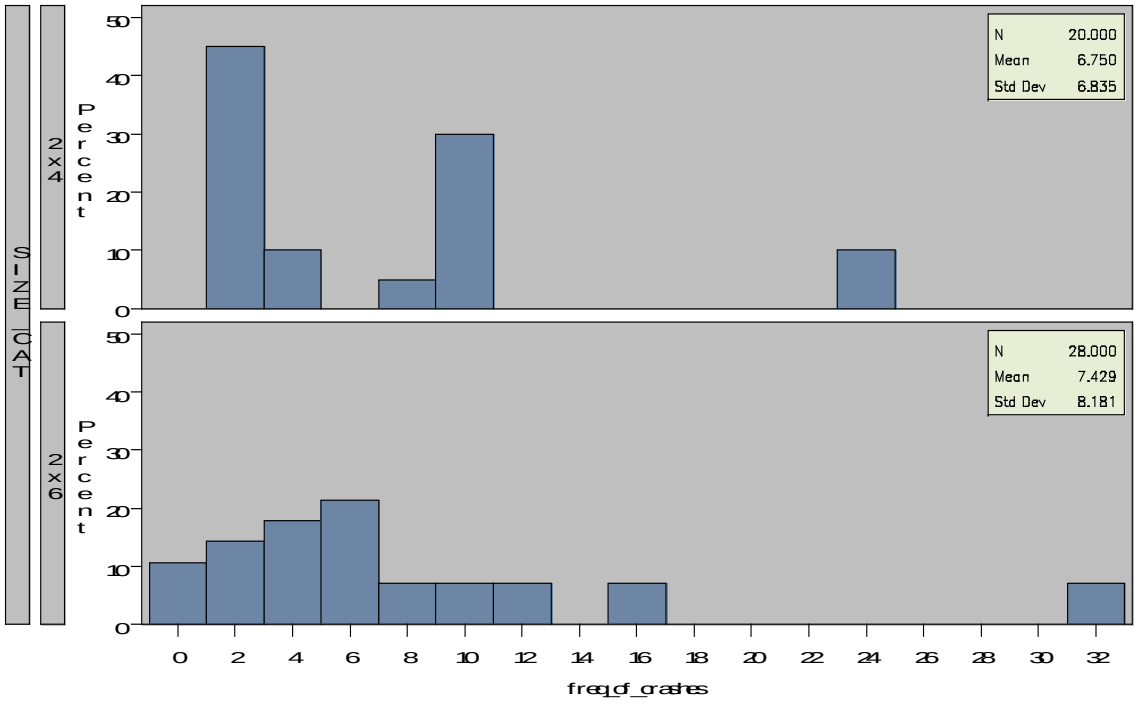


Figure 5-2: Crash Comparative Histograms for Intersection Size, 2x4 (Category 60) and 2x6 (Category 61)

From this figure, it is noticed that both histogram plots are very different from each other and the spread for both histograms is different. The two categories cannot be merged together, and it is recommended to have separate categories for both while creating crash tables.

5.4.3 Category 42 and 43

Categories 42 and 43 have a 2-way stop control on the minor approach as a common feature between them. The classification for categories 42, 43, 44 and 45 was based on the *aadt* on the major approach. However, the classification was mainly based on the three quantiles, 25%, 50% (or median) and 75 %. An attempt was performed so that splitting the *aadt* will be based on the median (50%) quantile only, in order to enrich

the intersection sample in each. The crash frequency histogram for categories 42 and 43 is shown in Figure 5-3.

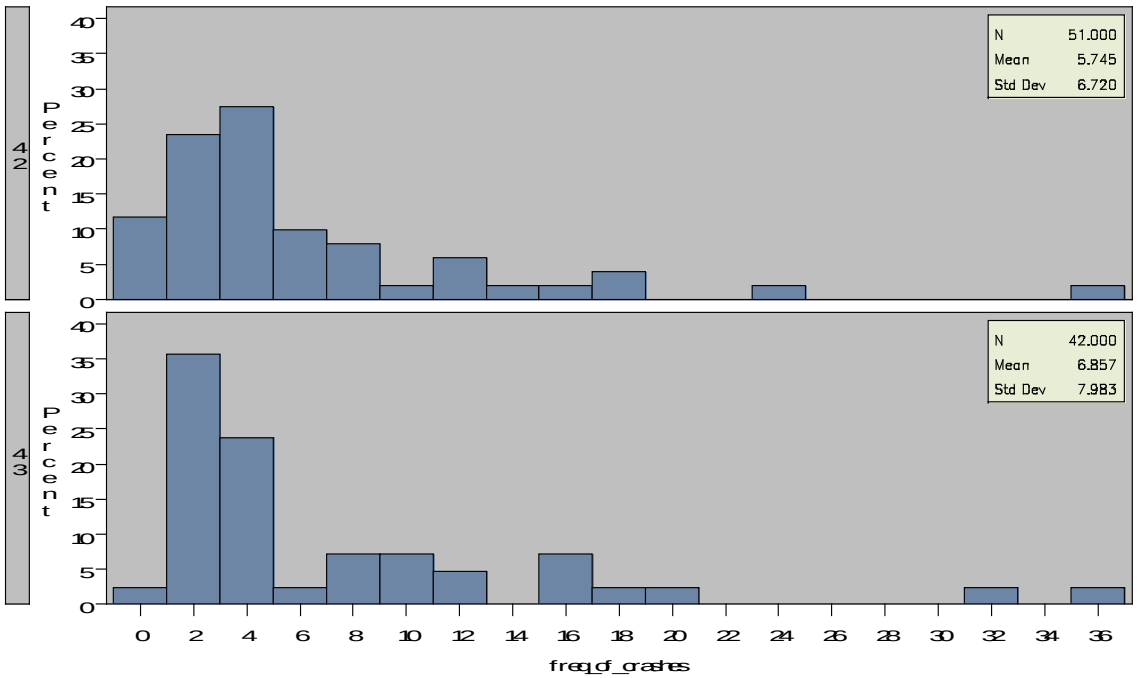


Figure 5-3: Crash Comparative Histograms for Category 42 (Upper) and Category 43 (Lower)

From this figure, it is noticed that both histogram plots are similar, and the spread is also similar for both of them. Both histograms take nearly a normal distribution with a skewness to the right. Thus, it is recommended to combine both categories.

5.4.4 Category 44 and 45

The classification for categories 44 and 45 was based on the *aadt* on the major approach. Similar to categories 42 and 43, an attempt was done to combine both. The crash frequency histogram for categories 44 and 45 is shown in Figure 5-4.

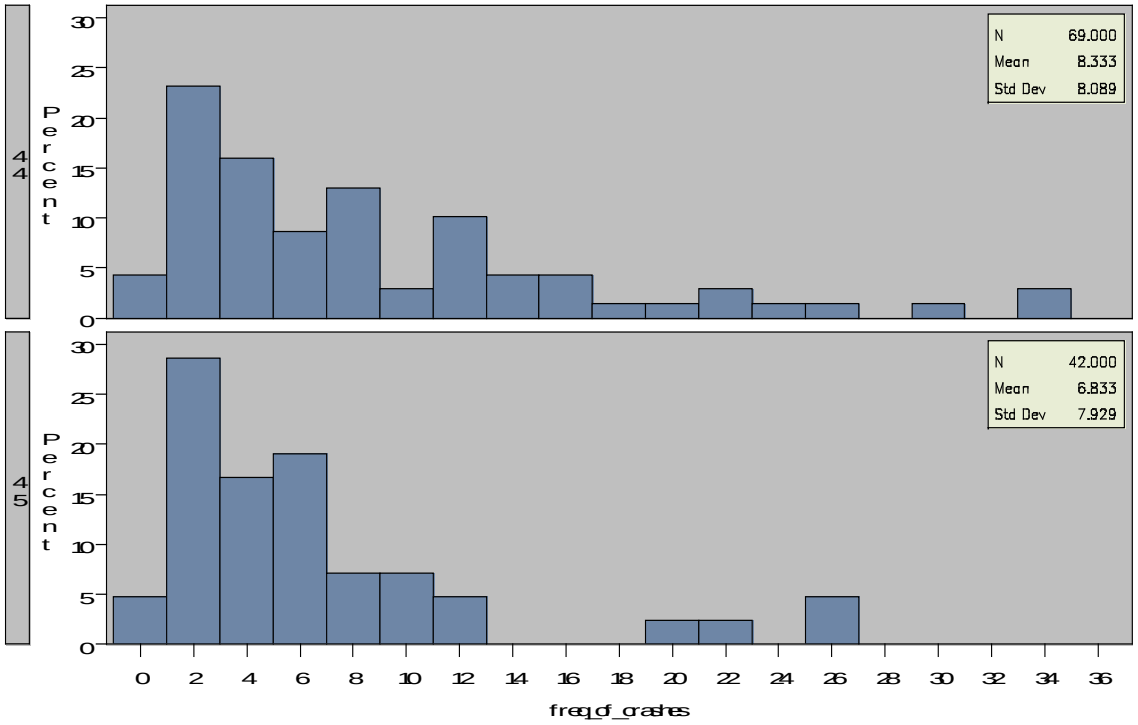


Figure 5-4: Crash Comparative Histograms for Category 44 (Upper) and Category 45 (Lower)

From this figure, it is noticed that both histogram plots are similar, and the spread is also similar for both of them. Both histograms take nearly a normal distribution with a skewness to the right. Thus, it is recommended to combine both categories.

5.4.5 Category 33 and 34

Categories 33 and 34 have a 1-way stop control on the minor approach as a common feature between them. The classification for categories 33, 34, 35 and 36 was based on the *aadt* on the major approach. However, the classification was mainly based on the three quantiles, 25%, 50% (or median) and 75 %. An attempt was performed so that splitting the *aadt* will be based on the median quantile only, in order to enrich the intersection sample in each. The crash frequency histogram for categories 33 and 34 is shown in Figure 5-5.

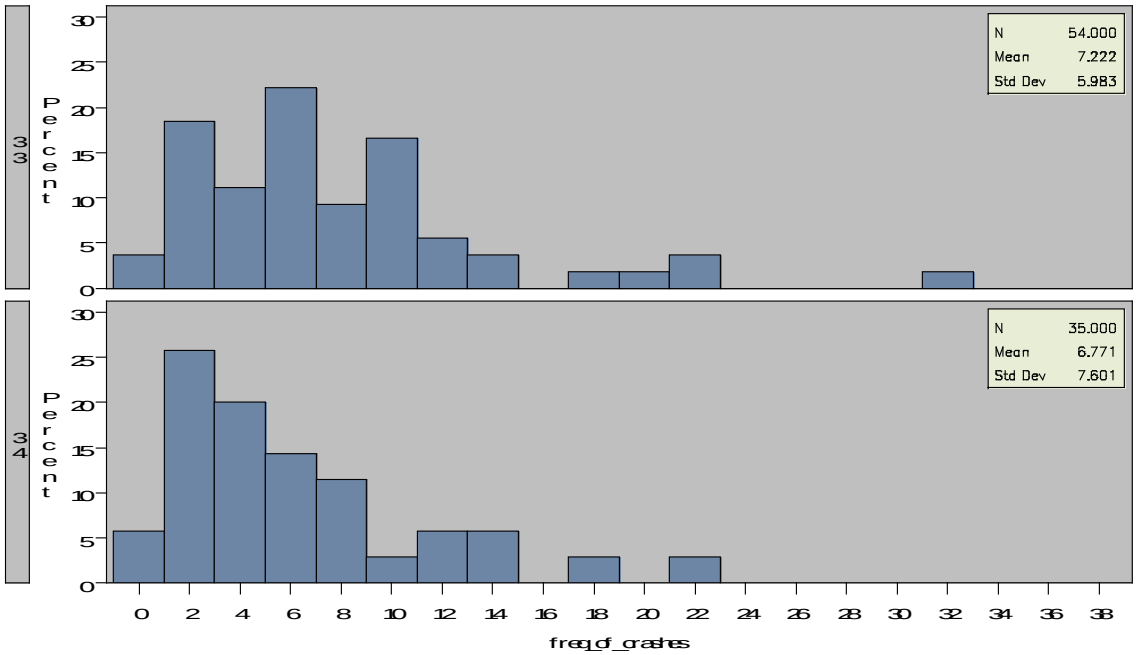


Figure 5-5: Crash Comparative Histograms for Category 33 (Upper) and Category 34 (Lower)

From this figure, it is noticed that both histogram plots are very different from each other and the spread for both histograms is different. Thus, both categories cannot be merged together, and it is recommended to have separate categories for both while creating crash tables.

5.4.6 Category 35 and 36

The classification for categories 35 and 36 was based on the *aadt* on the major approach. Similar to that done for categories 33 and 34, an attempt was done to combine both. The crash frequency histogram for categories 35 and 36 is shown in Figure 5-6.

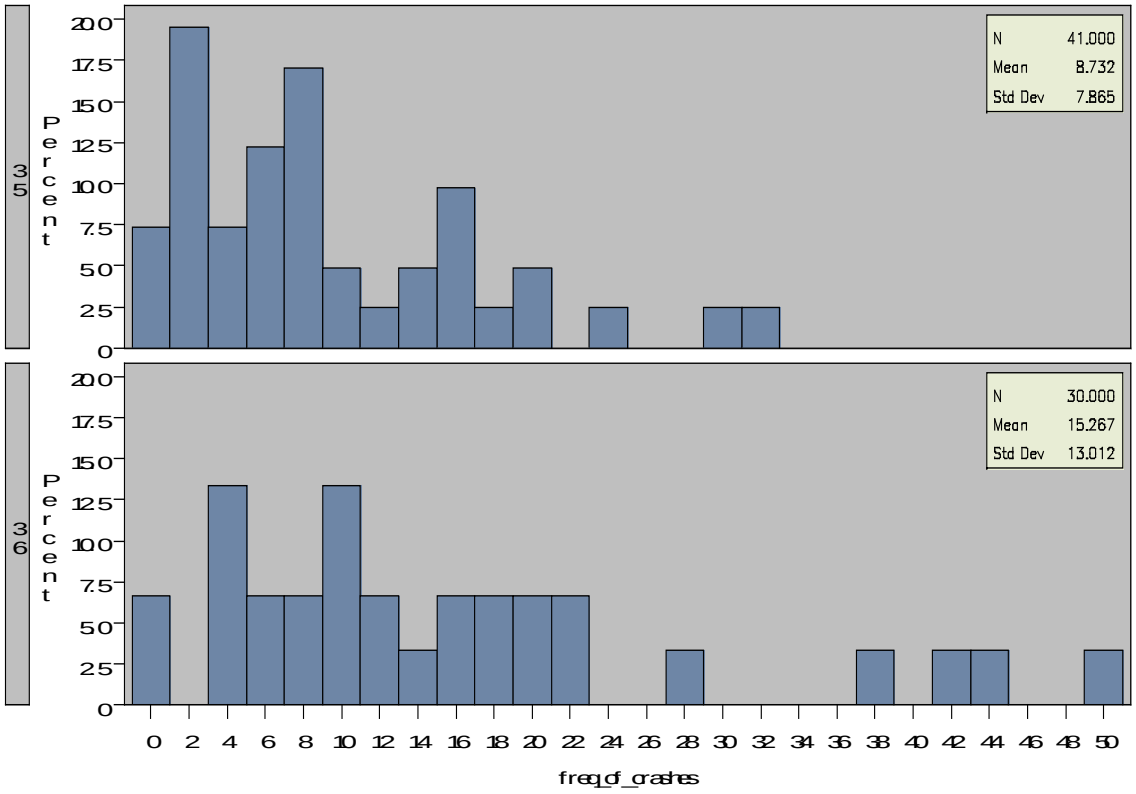


Figure 5-6: Crash Comparative Histograms for Category 35 (Upper) and Category 36 (Lower)

From this figure, it is noticed that both histogram plots are very different from each other and the spread for both histograms is different. Both categories cannot be merged together, and it is recommended to have separate categories for both while creating crash tables.

5.4.7 Category 29 and 30

Categories 29 and 30 have a 1-way stop control on the minor approach as a common feature between them. The classification for categories 29, 30, 31 and 32 was based on the *aadt* on the major approach. However, the classification was mainly based on the three quantiles, 25%, 50% (or median) and 75 %. An attempt was performed so

that splitting the *aadt* will be based on the median quantile only (50%), in order to enrich the intersection sample in each. The crash frequency histogram for categories 29 and 30 is shown in Figure 5-7.

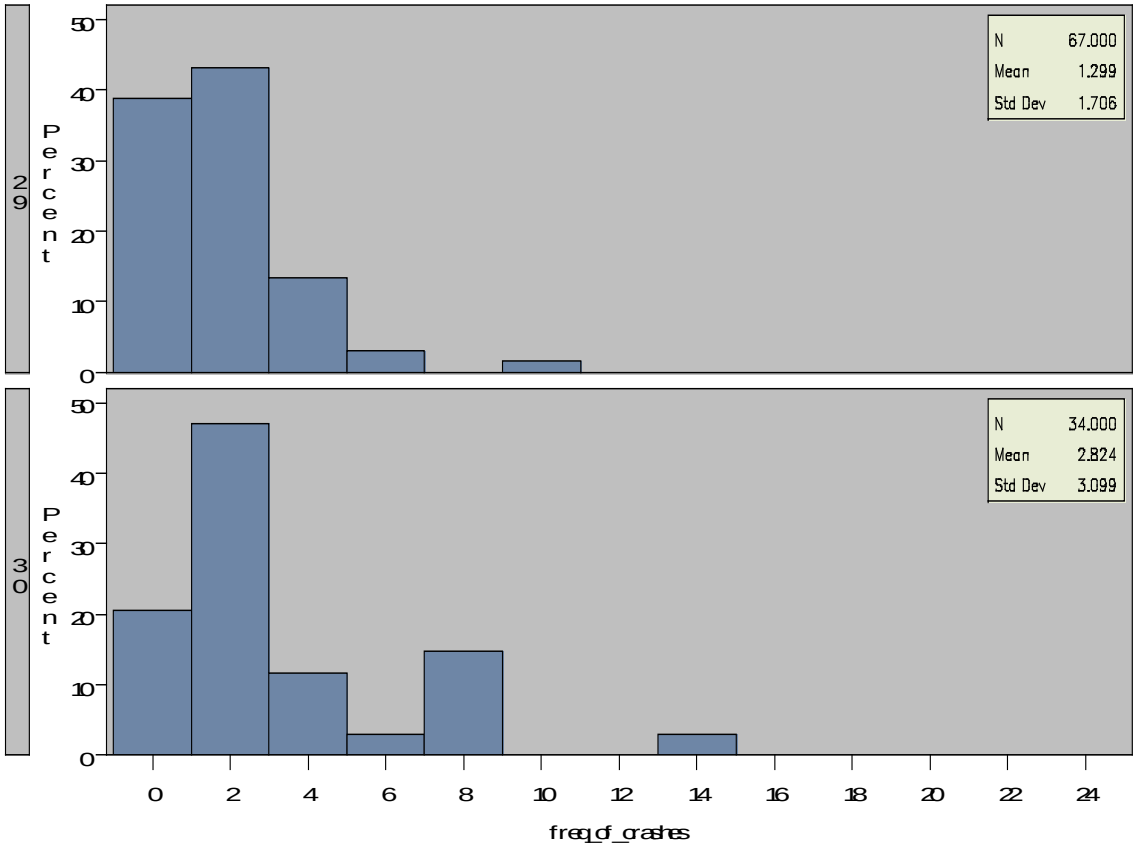


Figure 5-7: Crash Comparative Histograms for Category 29 (Upper) and Category 30 (Lower)

From this figure, it is noticed that both histogram plots are very different from each other and the spread for both histograms is different. Thus, the two categories cannot be merged together, and it is recommended to have separate categories for both while creating crash tables.

5.4.8 Category 31 and 32

The classification for categories 31 and 32 was based on the *aadt* on the major approach. Similar to categories 29 and 30, an attempt was done to combine both. The crash frequency histogram for categories 31 and 32 is shown in Figure 5-8.

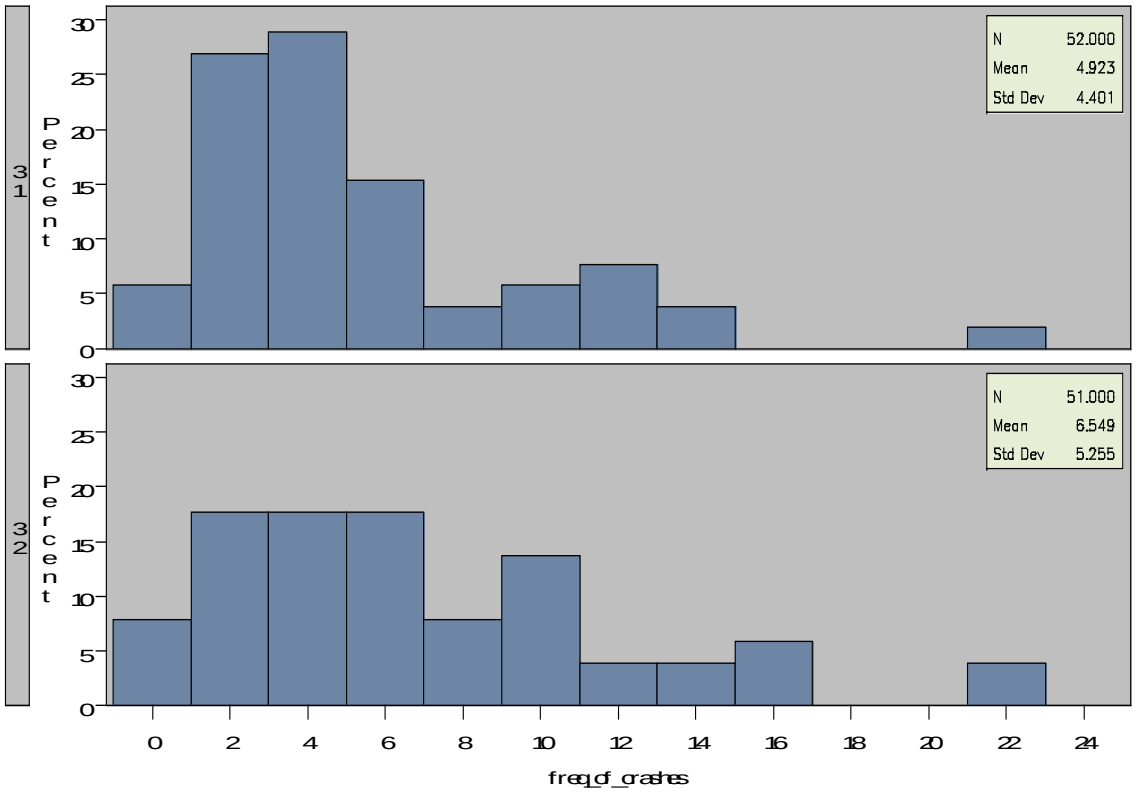


Figure 5-8: Crash Comparative Histograms for Category 31 (Upper) and Category 32 (Lower)

From this figure, it is noticed that both histogram plots are very different from each other and the spread for both histograms is different. The two categories cannot be merged together, and it is recommended to have separate ones while creating crash tables.

5.4.9 Category 17 and 18

Categories 17 and 18 have a 1-way stop control on the minor approach as a common feature between them. The classification for categories 17, 18, 19 and 20 was based on the *aadt* on the major approach. However, the classification was mainly based on the three quantiles, 25%, 50% (or median) and 75 %. Thus, an attempt was performed so that splitting the *aadt* will be based on the median quantile only, in order to enrich intersection sample in each. The crash frequency histogram for categories 17 and 18 is shown in Figure 5-9.

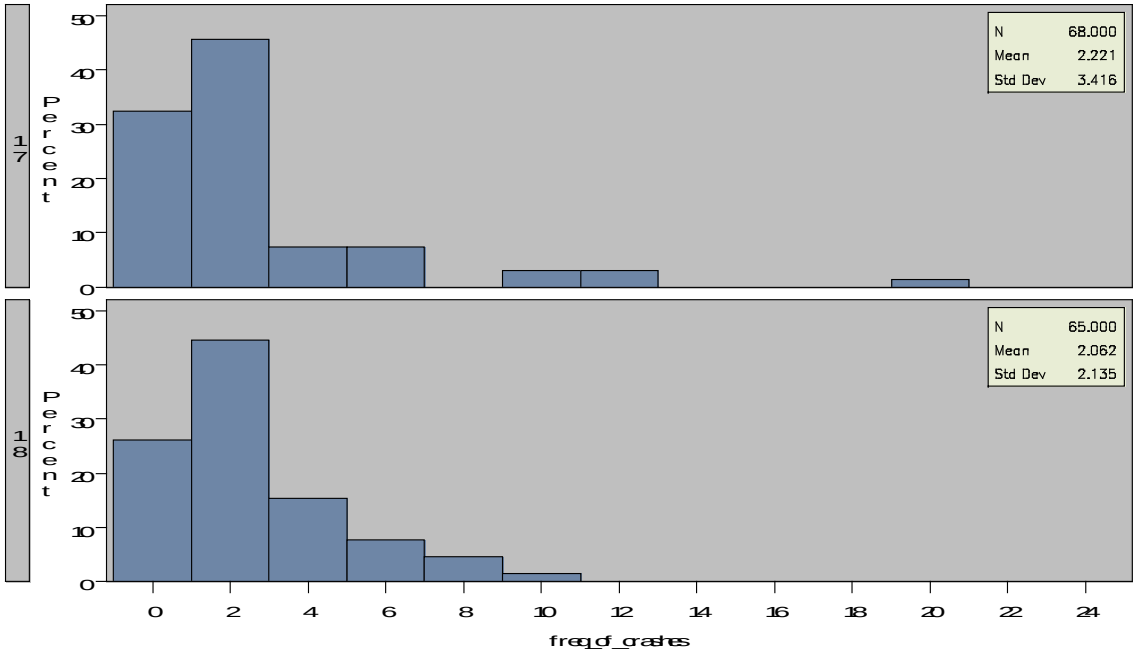


Figure 5-9: Crash Comparative Histograms for Category 17 (Upper) and Category 18 (Lower)

From this figure, it is noticed that both histogram plots are similar. Both histograms take nearly a normal distribution with a skewness to the right. Thus, it is recommended to combine both categories, and have only one table including both while creating crash tables.

5.4.10 Category 19 and 20

The classification for categories 19 and 20 was based on the *aadt* on the major approach. So, similar to the procedure carried out for categories 17 and 18, an attempt was done to combine both. The crash frequency histogram for categories 19 and 20 is shown in Figure 5-10.

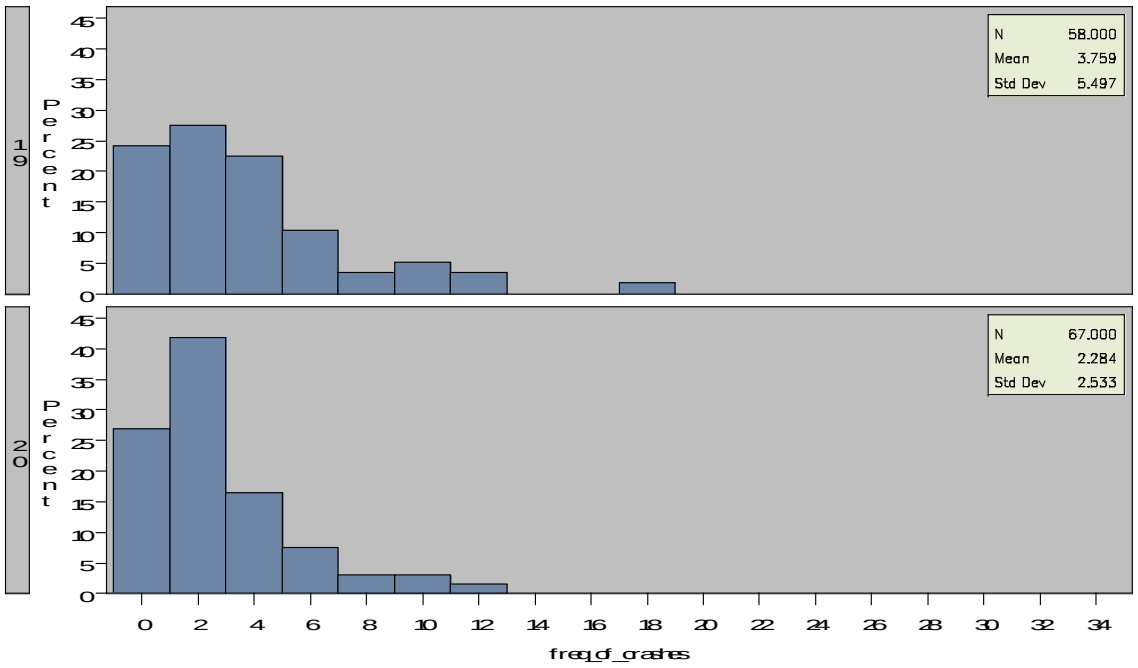


Figure 5-10: Crash Comparative Histograms for Category 19 (Upper) and Category 20 (Lower)

From this figure, it is noticed that both histogram plots are similar, and the spread is also similar for both of them. Both histograms take nearly a normal distribution with a skewness to the right. Thus, it is recommended to combine both categories, and have only one table including both while creating crash tables.

5.4.11 Category 4 and 6

Categories 4 and 6 have no control on the minor approach as a common feature between them. Moreover, the intersection sample in each was small, thus, the attempt of combining both categories was performed. The crash frequency histogram for both sizes, '2x4' and '2x6' is shown in Figure 5-11.

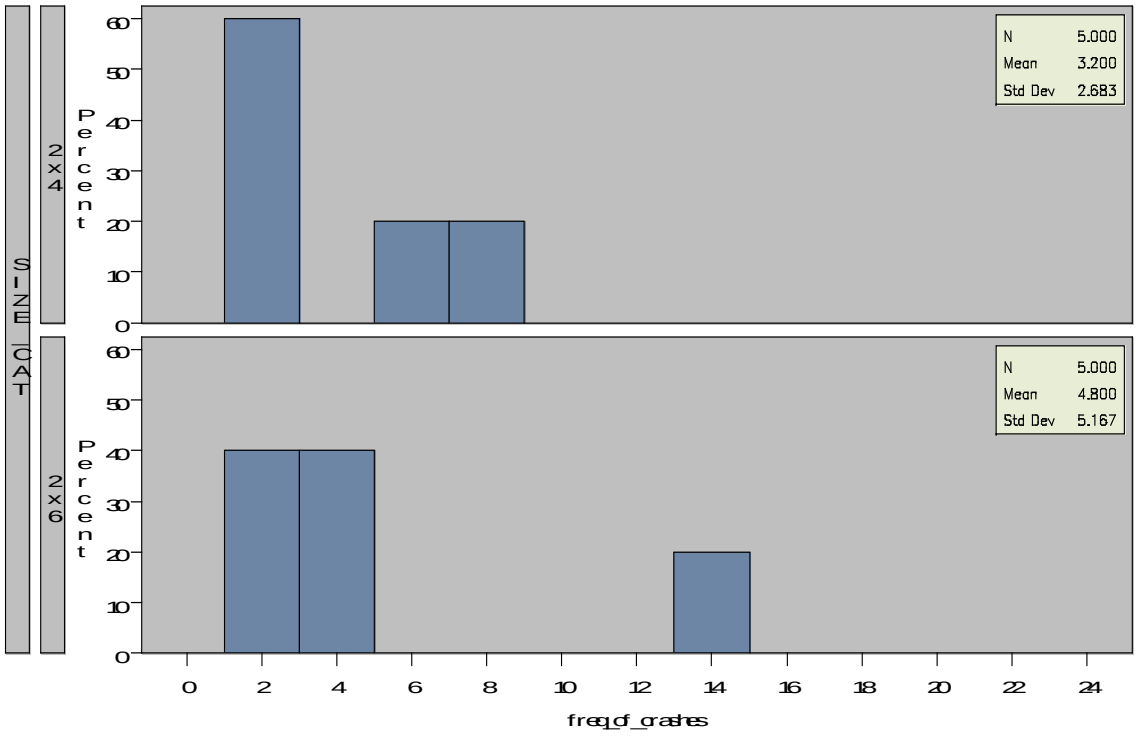


Figure 5-11: Crash Comparative Histograms for Intersection Size, 2x4 (Category 4) and 2x6 (Category 6)

From this figure, it is noticed that both histogram plots are very different from each other and the spread for both histograms is different. So, both categories cannot be merged together, and it is recommended to have separate categories for both while creating crash tables.

5.4.12 Category 9 and 14

Categories 9 and 14 have no control on the minor approach as a common feature between them. Moreover, the intersection sample in each was small, thus, the attempt of combining both categories was performed. The crash frequency histogram for both sizes, '2x4' and '2x6' is shown in Figure 5-12.

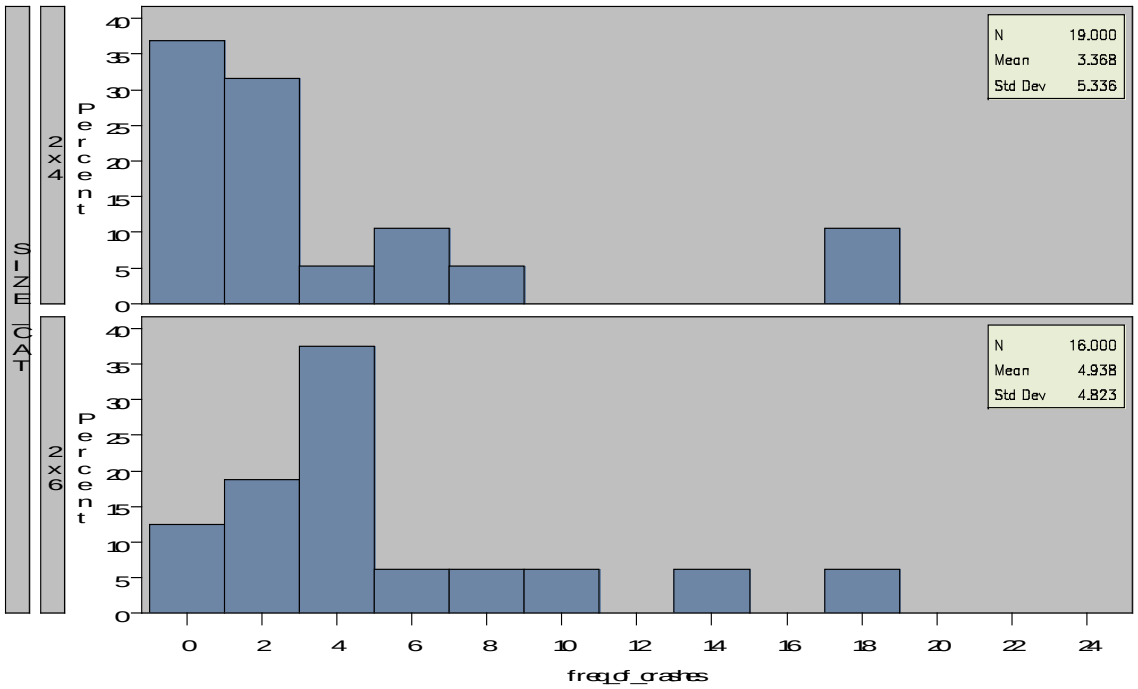


Figure 5-12: Crash Comparative Histograms for Intersection Size, 2x4 (Category 9) and 2x6 (Category 14)

From this figure, it is noticed that both histogram plots are very different from each other and the spread for both histograms is different. They cannot be merged together, and it is recommended to have separate categories for both while creating crash tables.

5.5 Further Classification into 60 Categories

After merging some categories, the final number of categories became 60. Those 60 categories along with the corresponding main type for each category, the number of intersections in each category, and crash statistics (including mean number of crashes in 4 years (from 2003 till 2006), standard deviation of the crashes, and minimum and maximum number of crashes) are shown in Table 5-2.

Table 5-2: Final Identified Main Types, Categories, Number of Intersections in Each Category, and Crash Statistics for Each Category

Category	Main type	Category classification	Number of intersections in each category	Mean	St. dev.	Min.	Max.
1	Yield	Ramps (including also non-controlled ramps)	45	3.51	6.58	0	35
2		Regular intersections, access points and parking lots	8	3.25	3.49	0	10
3	Urban and rural directional and mixed restricted medians with two-way major road	2x4 with 1-way stop on the minor	45	4.38	7.08	0	40
4		2x4 with no control on the minor	5	3.2	2.68	1	7
5		2x6 with 1-way stop on the minor	81	6.75	6.88	0	33
6		2x6 with no control on the minor	5	4.8	5.17	2	14
7		2x8 with 1-way stop on the minor	8	10.38	14.34	0	43
8	Urban and rural closed restricted medians with one-way major road	2x2 and 2x3 with 1-way stop on the minor	10	3.1	3.45	0	11
9		2x4 with no control on the minor	19	3.37	5.34	0	17
10		2x4 and 2x5 with 1-way stop on the minor and AADT (major) <= 34000	78	1.87	2.53	0	14
11		2x4 and 2x5 with 1-way stop on the minor and AADT > 34000	76	3.71	6.4	0	52
12		2x6 with 1-way stop on the minor and AADT (major) <= 50000	69	3.13	3.4	0	15
13		2x6 with 1-way stop on the minor and AADT > 50000	67	6.07	7.53	0	53
14		2x6 with no control on the minor	16	4.94	4.82	0	17
15		2x8 with 1-way stop on the minor	7	4.57	3.74	0	10

Table 5-2: Final Identified Main Types, Categories, Number of Intersections in Each Category, and Crash Statistics for Each Category (Continued)

Category	Main type	Category classification	Number of intersections in each category	Mean	St. dev.	Min.	Max.
16	Urban 3 legs with unrestricted medians (i.e., open, undivided, 2WLTL and markings)	2x2, 2x4, 2x5 and 2x6 with no control on the minor	47	2.74	4.09	0	17
17		2x2 and 2x3 with 1-way stop on the minor and AADT (major) <= 15000	133	2.14	2.85	0	19
18		2x2 and 2x3 with 1-way stop on the minor and AADT > 15000	125	2.97	4.23	0	35
19		2x4 with 1-way stop on the minor and AADT (major) <= 19000 and SL <= 45	77	3.03	3.3	0	20
20		2x4 with 1-way stop on the minor and AADT <= 19000 and SL > 45	47	3.17	5.19	0	32
21		2x4 with 1-way stop on the minor and 19000 < AADT <= 27000 and SL <= 45	95	3.67	3.54	0	22
22		2x4 with 1-way stop on the minor and 19000 < AADT <= 27000 and SL > 45	26	2.88	2.7	0	11
23		2x4 with 1-way stop on the minor and 27000 < AADT <= 39000 and SL <= 45	137	4.23	4.14	0	21
24		2x4 with 1-way stop on the minor and 27000 < AADT <= 390000 and SL > 45	12	6.67	5.6	0	19
25		2x4 with 1-way stop on the minor and AADT > 39000 and SL <= 45	77	3.43	3.69	0	20
26		2x4 with 1-way stop on the minor and AADT > 39000 and SL > 45	16	5	4.4	0	14
27		2x5 with 1-way stop on the minor and AADT (major) <= 22000	67	1.3	1.71	0	10
28		2x5 with 1-way stop on the minor and 22000 < AADT <= 30000	34	2.82	3.1	0	14
29		2x5 with 1-way stop on the minor and 30000 < AADT <= 42000	52	4.92	4.4	0	22
30		2x5 with 1-way stop on the minor and AADT > 42000	51	6.55	5.25	0	22
31		2x6 with 1-way stop on the minor and AADT (major) <= 45000	54	7.22	5.98	0	31
32		2x6 with 1-way stop on the minor and 45000 < AADT <= 50000	35	6.77	7.6	0	39
33		2x6 with 1-way stop on the minor and 50000 < AADT <= 58000	41	8.73	7.86	0	31
34		2x6 with 1-way stop on the minor and AADT > 58000	30	15.27	13.01	0	50
35		2x7 with 1-way stop on the minor	21	8.29	8.91	0	34
36		2x8 with 1-way stop on the minor	8	18.5	13.79	4	42
37		3x4 and 3x6 with 1-way stop on the minor	5	5.6	4.98	1	13

Table 5-2: Final Identified Main Types, Categories, Number of Intersections in Each Category, and Crash Statistics for Each Category (Continued)

Category	Main type	Category classification	Number of intersections in each category	Mean	St. dev.	Min.	Max.
38	Urban 4 legs with unrestricted medians (i.e., open, undivided, 2WLTL and markings)	2x2 with 2-way stop or "no control/stop" on the minor	40	6.05	6.8	0	29
39		2x3 with 2-way stop or no control or "no control/stop" on the minor	12	2.67	2.1	0	6
40		2x4 with 2-way stop on the minor and AADT (major) <= 25000	93	6.25	7.3	0	36
41		2x4 with 2-way stop on the minor and AADT > 25000	111	7.77	8.03	0	37
42		2x4 with "no control/stop" on the minor	53	5.62	8.26	0	38
43		2x5 with 2-way stop on the minor and AADT (major) <= 32000	39	4.15	3.9	0	17
44		2x5 with 2-way stop on the minor and AADT > 32000	39	14.3	13.79	0	62
45		2x5 with no control and "no control/stop" on the minor	19	4.89	4.37	0	15
46		2x6 with 2-way stop on the minor and AADT (major) <= 55000	41	11.71	11.81	0	50
47		2x6 with 2-way stop on the minor and AADT > 55000	37	16.89	12.59	1	52
48		2x7 with 2-way stop on the minor	8	13.75	10.98	1	36
49		2x6 with "no control/stop" on the minor	12	10.67	8.21	3	28
50		**2x8 with 2-way stop or "no control/stop" on the minor**	**3**	**41.67**	**5.51**	**36**	**47**
51	Rural 3 legs with unrestricted medians (i.e., open, undivided, 2WLTL and markings)	2x2 and 2x4 with no control on the minor	12	0.92	1.38	0	5
52		2x2 with 1-way stop on the minor	69	1.46	3.64	0	29
53		2x4 with 1-way stop on the minor	27	3.15	4.76	0	19
54	Rural 4 legs with unrestricted medians (i.e., open, undivided, 2WLTL and markings)	2x2 and 2x4 with 2-way stop on the minor	14	3	2.57	0	9
55		2x2 and 2x4 with "no control/stop" on the minor	9	0.89	0.78	0	2

Table 5-2: Final Identified Main Types, Categories, Number of Intersections in Each Category, and Crash Statistics for Each Category (Continued)

Category	Main type	Category classification	Number of intersections in each category	Mean	St. dev.	Min.	Max.
56	Urban and rural two 3-legged with directional and mixed medians (two minor roads exist, but separated by directional and mixed medians, with two-way major road)	**2x4 with 1-way stop on the minor**	**20**	**6.4**	**6.95**	**1**	**24**
57		**2x6 with 1-way stop on the minor**	**34**	**6.59**	**7.67**	**0**	**32**
58	Urban and rural two 3-legged with closed medians (two minor roads exist, but separated by closed medians, with one-way major road)	**2x4 and 2x6 with 1-way stop on the minor**	**6**	**1.67**	**1.03**	**1**	**3**
59	**3-way stop-controlled intersections***		**6**	**2.17**	**0.98**	**1**	**3**
60	**4-way stop-controlled intersections***		**18**	**3.17**	**3.33**	**1**	**14**
			Sum = 2451				

*Three and four-way stop-controlled intersections were extremely hard to be collected, thus the shown sample size was deemed sufficient for classification purposes in this project

It is noted that the highlighted category 50 in Table 5-2 is the only category with a very small intersections sample (three intersections). However, the mean number of crashes in the four years (41.67 or approximately 10.4 per year) and the minimum number of crashes (36 or 9 crashes per year) are both high. Thus, this category was retained.

The highlighted categories 56, 57 and 58 represent two 3-legged unsignalized intersections on both sides of the major approach. Categories 56 and 57 represent two 3-legged intersections with a directional (or mixed) median on the major approach, thus both directions of the major approach are related to each intersection. Category 58 represents two 3-legged intersections with a closed median on the major approach, thus only the nearer direction of the major approach is related to each intersection.

The highlighted categories 59 and 60 represent all-way stop-controlled intersections. Category 59 represents 3-way stop-controlled intersections, while category 60 represents 4-way stop-controlled intersections.

For urban and rural 4-legged unsignalized intersections with unrestricted medians (including open, undivided, two-way left-turn lane, markings medians), there is a control type on the minor approaches called ‘no control/stop’, which means that there is a stop sign on one of the minor approaches and no control on the other approach.

For urban 3-legged unsignalized intersections with unrestricted medians, it is noticed that some categories were further classified according to *aadt* on the major approach, as well as the speed limit (*sl*) on the major approach. These categories mainly include 2x4 with 1-way stop-controlled intersections.

Also, it is well noticed that sizes of the intersection like 2x4, 2x5 and 2x6 were always further classified by *aadt*, so as to have an adequate intersections sample in those classified categories. This is because 2x4, 2x5 and 2x6 intersections are the most common sizes, and they spread a lot through the collected samples.

From those finally identified main types and categories, it can be noted that there are nine main factors used for classifying unsignalized intersections, which are:

1) Crash pattern (Type of crash)
2) Major road type (one-way or two-way)
3) Number of legs (3 and 4 legs)
4) Land use (urban and rural areas)
5) Median type on the major approach
6) Traffic control type on the minor approach
7) Size of the intersection (based on the normal cross-section of both major and minor roads)
8) Annual average daily traffic (*aadt*) on the major approach for both directions (this factor was not a key for classifying all the categories, but some of them)
9) Speed limit on the major approach (similar to '8', this factor was not a key for classifying all the categories, but some of them)

The 58 crash profile tables for unsignalized intersections based on the identified 58 categories are shown in the appendix. Crash tables could not be developed for categories 59 and 60 (all-way stops) due to the limited crash frequency at those categories.

CHAPTER 6. CONCLUSIONS

In this project, the most extensive data collection effort for unsignalized intersections was conducted. Sixty categories were identified based on the collected sample (2500 unsignalized intersections). Those categories nearly represent all possible types of unsignalized intersections existing. Also, annual crash profile tables for these categories were developed. Those tables will act as a crash profile manual that can be used as reference values that can assist in identifying unsignalized intersections with specific problems, e.g., high number of fatal crashes or high number of rear-end crashes, etc.

A database application server was developed and which can be expanded in the future by allowing users to input data from other regions in the state. This application will serve as input and output at the same time. The data collected in the current project will serve as the base, and will keep growing over time until it encompasses all types of unsignalized intersections for all areas of the state beyond those six counties considered.

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APPENDIX: Annual Crash Profile Tables for 58 Identified Categories for Unsignalized Intersections

Expected Annual Crash Profile Table for Category 1 (Six Counties): Ramps with yield control (including also non-controlled ramps)

Total Number of Intersections Included - 45

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.85	1.42	1	1.75	3
	Head-on	0.38	0.35	0.5	0.5	0.5
	Angle	0.63	1.25	0.75	2	2
	Left-turn	0.53	0.78	0.75	1.25	1.25
	Right-turn	0.30	0.22	0.25	0.5	0.5
	Side-swipe	0.43	0.75	0.25	1.125	1.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.40	0.58	0.375	1	1
Severity	PDO	0.91	2.33	0.75	3	5
	Possible Injury	0.63	1.09	0.75	1.5	2.25
	Non-incapacitating	0.47	0.78	0.5	1.25	1.5
	Incapacitating	0.36	0.27	0.5	0.5	0.5
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.27	3.28	1.5	2.75	4.75
	Dusk	0.31	0.22	0.25	0.5	0.5
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.50	1.06	0.5	0.75	2.25
	Dark (without Street Light)	0.29	0.20	0.25	0.5	0.5
Road Surface Condition	Dry	1.15	2.74	1.25	2.75	4.75
	Wet	0.73	1.42	1	1	2.75
	Slippery	0.25	.	0.25	0.25	0.25
	Other	1.41	3.81	1.5	3.5	5.75
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.35	3.79	1.5	3.25	5.75
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.25	.	0.25	0.25	0.25
	Other	1.41	3.81	1.5	3.5	5.75
Month of Year	January	0.38	0.42	0.5	0.75	0.75
	February	0.33	0.35	0.25	0.75	0.75
	March	0.39	0.51	0.5	1	1
	April	0.33	0.26	0.5	0.5	0.5
	May	0.40	0.42	0.5	0.75	0.75
	June	0.53	0.98	0.5	1.75	1.75
	July	0.43	0.53	0.5	0.875	1
	August	0.35	0.35	0.5	0.625	0.75
	September	0.33	0.35	0.25	0.75	0.75
	October	0.28	0.18	0.25	0.5	0.5
	November	0.43	0.63	0.5	1	1
	December	0.34	0.37	0.375	0.75	0.75
Day of Week	Sunday	0.34	0.32	0.5	0.5	0.75
	Monday	0.46	0.87	0.5	0.75	1.75
	Tuesday	0.58	0.94	0.75	0.75	2
	Wednesday	0.42	0.50	0.5	1	1
	Thursday	0.50	0.50	0.75	0.75	0.75
	Friday	0.67	1.07	1	1.5	1.75
	Saturday	0.55	0.84	0.75	1.25	1.5
Hour of Day	< 00:00 - ≤ 06:00	0.30	0.21	0.25	0.5	0.5
	< 06:00 - ≤ 09:00	0.50	0.53	0.75	0.875	1
	< 09:00 - ≤ 11:00	0.61	0.70	1	1	1
	< 11:00 - ≤ 13:00	0.53	0.68	0.875	1	1
	< 13:00 - ≤ 15:00	0.38	0.35	0.5	0.625	0.75
	< 15:00 - ≤ 18:00	0.73	1.82	0.75	1.5	3.75
	< 18:00 - ≤ 24:00	0.43	0.62	0.5	0.75	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 2 (Six Counties): Regular intersections, access points and parking lots with yield sign

Total Number of Intersections Included - 8

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.88	1.06	1.25	1.25	1.25
	Head-on	.	.	.	.	.
	Angle	0.31	0.25	0.375	0.5	0.5
	Left-turn	0.42	0.29	0.5	0.5	0.5
	Right-turn	.	.	.	.	.
	Side-swipe	0.33	0.29	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	0.00	0.25	0.25	0.25
Severity	PDO	0.75	1.32	1.5	1.5	1.5
	Possible Injury	0.55	0.42	0.75	0.75	0.75
	Non-incapacitating	0.42	0.58	0.75	0.75	0.75
	Incapacitating	.	.	.	.	.
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	0.75	0.91	1.125	1.25	1.25
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.75	1.08	1.125	1.5	1.5
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	1.25	1.58	1.5	2.5	2.5
	Wet	0.25	.	0.25	0.25	0.25
	Slippery	.	.	.	.	.
	Other	1.30	1.47	1.5	2.5	2.5
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	1.25	1.46	1.25	2.5	2.5
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	1.30	1.47	1.5	2.5	2.5
Month of Year	January	.	.	.	.	.
	February	0.30	0.22	0.25	0.5	0.5
	March	0.25	.	0.25	0.25	0.25
	April	0.25	0.00	0.25	0.25	0.25
	May	0.50	.	0.5	0.5	0.5
	June	0.25	0.00	0.25	0.25	0.25
	July	0.25	0.00	0.25	0.25	0.25
	August	.	.	.	.	.
	September	0.31	0.25	0.375	0.5	0.5
	October	0.25	0.00	0.25	0.25	0.25
	November	0.33	0.29	0.5	0.5	0.5
	December	.	.	.	.	.
Day of Week	Sunday	0.42	0.29	0.5	0.5	0.5
	Monday	0.25	0.00	0.25	0.25	0.25
	Tuesday	0.25	0.00	0.25	0.25	0.25
	Wednesday	0.50	0.71	0.75	0.75	0.75
	Thursday	0.50	.	0.5	0.5	0.5
	Friday	0.50	0.71	0.75	0.75	0.75
	Saturday	0.38	0.29	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.25	0.00	0.25	0.25	0.25
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.25	0.00	0.25	0.25	0.25
	< 13:00 - ≤ 15:00	0.33	0.29	0.5	0.5	0.5
	< 15:00 - ≤ 18:00	0.50	.	0.5	0.5	0.5
	< 18:00 - ≤ 24:00	0.63	0.87	0.875	1.25	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 3 (Six Counties): 2x4 with 1-way stop on the minor (for urban and rural intersections with directional and mixed medians with two-way major road)

Total Number of Intersections Included - 45

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.71	1.69	0.5	2	2.875
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.56	1.12	0.5	1.5	2.25
	Left-turn	0.45	0.60	0.5	1	1.25
	Right-turn	0.35	0.27	0.5	0.5	0.5
	Side-swipe	0.46	0.73	1	1	1
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.48	0.78	0.5	1	1.5
Severity	PDO	1.14	2.09	1.625	2.75	3.625
	Possible Injury	0.69	1.50	0.75	1.75	3.25
	Non-incapacitating	0.47	0.64	0.5	1	1.5
	Incapacitating	0.34	0.46	0.25	0.5	1
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.19	2.69	1.5	2.5	4.5
	Dusk	0.50	.	0.5	0.5	0.5
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.54	1.02	0.5	1.25	2
	Dark (without Street Light)	0.40	0.79	0.25	1	1.5
Road Surface Condition	Dry	1.33	3.46	1.5	3	4.75
	Wet	0.53	0.63	0.5	1.25	1.25
	Slippery	.	.	.	.	.
	Other	1.45	3.82	1.5	3.25	4.75
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.39	3.63	1.5	3.25	4.5
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	1.45	3.82	1.5	3.25	4.75
Month of Year	January	0.32	0.31	0.25	0.5	0.75
	February	0.35	0.43	0.25	0.5	1
	March	0.48	0.61	0.75	1	1
	April	0.53	0.56	0.75	1	1
	May	0.50	0.67	0.75	1	1
	June	0.38	0.53	0.375	1	1
	July	0.30	0.21	0.25	0.5	0.5
	August	0.38	0.50	0.375	0.75	1
	September	0.45	0.58	0.5	0.5	1.25
	October	0.38	0.49	0.5	0.75	1
	November	0.41	0.46	0.625	0.75	0.75
	December	0.41	0.53	0.5	1	1
Day of Week	Sunday	0.54	1.04	0.625	1	2
	Monday	0.46	0.70	0.625	1	1.25
	Tuesday	0.43	0.48	0.5	0.75	1
	Wednesday	0.43	0.69	0.5	0.75	1.5
	Thursday	0.38	0.52	0.5	0.75	1.25
	Friday	0.64	1.05	0.75	1.5	2
	Saturday	0.46	0.61	0.5	0.75	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.54	1.10	0.5	1.75	1.75
	< 06:00 - ≤ 09:00	0.54	0.67	0.75	1	1.5
	< 09:00 - ≤ 11:00	0.35	0.41	0.5	0.5	1
	< 11:00 - ≤ 13:00	0.55	0.77	0.75	1.25	1.25
	< 13:00 - ≤ 15:00	0.48	0.66	0.5	0.75	1.5
	< 15:00 - ≤ 18:00	0.54	0.97	0.75	1	2.25
	< 18:00 - ≤ 24:00	0.47	0.90	0.5	1	2

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 4 (Six Counties): 2x4 with no control on the minor (for urban and rural intersections with directional and mixed medians with two-way major road)

Total Number of Intersections Included - 5

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.50	0.50	0.75	0.75	0.75
	Head-on	.	.	.	.	.
	Angle	0.31	0.25	0.375	0.5	0.5
	Left-turn	0.50	.	0.5	0.5	0.5
	Right-turn	.	.	.	.	.
	Side-swipe	0.25	.	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	.	0.25	0.25	0.25
Severity	PDO	0.58	0.58	0.75	0.75	0.75
	Possible Injury	0.31	0.25	0.375	0.5	0.5
	Non-incapacitating	0.38	0.35	0.5	0.5	0.5
	Incapacitating	0.25	.	0.25	0.25	0.25
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.58	1.15	1.25	1.25	1.25
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.67	1.04	1.25	1.25	1.25
	Dark (without Street Light)	0.25	.	0.25	0.25	0.25
Road Surface Condition	Dry	0.80	1.34	1.25	1.75	1.75
	Wet	.	.	.	.	.
	Slippery	.	.	.	.	.
	Other	0.80	1.34	1.25	1.75	1.75
Road Surface Type	Gravel	.	.	.	.	.
	Blacktop	0.80	1.34	1.25	1.75	1.75
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	0.80	1.34	1.25	1.75	1.75
Month of Year	January	0.25	0.00	0.25	0.25	0.25
	February	0.25	.	0.25	0.25	0.25
	March	0.25	.	0.25	0.25	0.25
	April	0.25	0.00	0.25	0.25	0.25
	May	0.25	.	0.25	0.25	0.25
	June	0.25	.	0.25	0.25	0.25
	July	.	.	.	.	.
	August	0.25	.	0.25	0.25	0.25
	September	0.25	0.00	0.25	0.25	0.25
	October	0.25	0.00	0.25	0.25	0.25
	November	.	.	.	.	.
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.50	0.00	0.5	0.5	0.5
	Monday	.	.	.	.	.
	Tuesday	0.25	0.00	0.25	0.25	0.25
	Wednesday	0.25	0.00	0.25	0.25	0.25
	Thursday	0.50	.	0.5	0.5	0.5
	Friday	0.25	0.00	0.25	0.25	0.25
	Saturday	0.25	0.00	0.25	0.25	0.25
Hour of Day	< 00:00 - ≤ 06:00	0.38	0.50	0.5	0.75	0.75
	< 06:00 - ≤ 09:00	.	.	.	.	.
	< 09:00 - ≤ 11:00	0.25	.	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.38	0.35	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.25	0.00	0.25	0.25	0.25
	< 15:00 - ≤ 18:00	0.50	.	0.5	0.5	0.5
	< 18:00 - ≤ 24:00	0.50	.	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 5 (Six Counties): 2x6 with 1-way stop on the minor (for urban and rural intersections with directional and mixed medians with two-way major road)

Total Number of Intersections Included - 81

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.63	0.92	0.75	1.25	1.75
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.74	1.58	1	1.75	2.75
	Left-turn	0.59	1.14	0.75	1.5	2
	Right-turn	0.35	0.38	0.25	0.75	0.75
	Side-swipe	0.33	0.35	0.25	0.5	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.42	0.58	0.5	1	1
Severity	PDO	0.96	1.74	1.25	2	3
	Possible Injury	0.67	1.15	0.75	1.5	2
	Non-incapacitating	0.55	0.92	0.75	1.25	1.5
	Incapacitating	0.42	0.54	0.5	0.75	1
	Fatal	0.30	0.22	0.25	0.5	0.5
Lighting Condition	Daylight	1.32	2.39	1.5	3	4.25
	Dusk	0.38	0.48	0.5	0.75	1
	Dawn	0.29	0.19	0.25	0.5	0.5
	Dark (with Street Light)	0.55	1.09	0.5	1	1.5
	Dark (without Street Light)	0.50	0.86	0.5	1.25	1.75
Road Surface Condition	Dry	1.62	2.86	2	4.25	4.75
	Wet	0.48	0.72	0.5	1.25	1.5
	Slippery	0.30	0.22	0.25	0.5	0.5
	Other	1.85	3.43	2.25	4.75	5.75
Road Surface Type	Gravel	0.42	0.83	0.25	1.5	1.5
	Blacktop	1.77	3.36	2	4.5	5.75
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.29	0.20	0.25	0.5	0.5
	Other	1.85	3.43	2.25	4.75	5.75
Month of Year	January	0.38	0.39	0.5	0.75	0.75
	February	0.36	0.34	0.5	0.5	0.5
	March	0.38	0.39	0.5	0.625	0.75
	April	0.31	0.29	0.25	0.5	0.75
	May	0.38	0.42	0.5	0.75	0.75
	June	0.38	0.54	0.5	0.75	1
	July	0.38	0.33	0.5	0.5	0.75
	August	0.33	0.30	0.5	0.5	0.75
	September	0.53	0.83	0.75	1.25	1.25
	October	0.42	0.61	0.5	1	1
	November	0.40	0.60	0.5	0.75	1
	December	0.45	0.58	0.5	0.75	1.25
Day of Week	Sunday	0.42	0.53	0.5	0.75	1
	Monday	0.48	0.61	0.5	0.75	1.25
	Tuesday	0.53	0.78	1	1	1.25
	Wednesday	0.55	0.66	0.75	0.75	1
	Thursday	0.47	0.64	0.5	1	1
	Friday	0.51	0.78	0.5	1	1.25
	Saturday	0.48	0.59	0.5	0.75	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.39	0.45	0.5	0.5	1
	< 06:00 - ≤ 09:00	0.49	0.77	0.5	0.75	1
	< 09:00 - ≤ 11:00	0.41	0.52	0.5	0.75	1
	< 11:00 - ≤ 13:00	0.44	0.61	0.625	0.75	1.125
	< 13:00 - ≤ 15:00	0.42	0.54	0.5	0.75	1
	< 15:00 - ≤ 18:00	0.74	1.59	0.75	1.5	2.25
	< 18:00 - ≤ 24:00	0.53	0.91	0.5	1.25	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 6 (Six Counties): 2x6 with no control on the minor (for urban and rural intersections with directional and mixed medians with two-way major road)

Total Number of Intersections Included - 5

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.33	0.29	0.5	0.5	0.5
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.58	0.76	1	1	1
	Left-turn	1.25	.	1.25	1.25	1.25
	Right-turn	0.25	.	0.25	0.25	0.25
	Side-swipe	0.25	.	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	0.00	0.25	0.25	0.25
Severity	PDO	0.88	1.77	1.5	1.5	1.5
	Possible Injury	0.33	0.29	0.5	0.5	0.5
	Non-incapacitating	0.44	0.48	0.625	0.75	0.75
	Incapacitating	0.75	1.41	1.25	1.25	1.25
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	1.00	2.26	0.75	3	3
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.33	0.29	0.5	0.5	0.5
	Dark (without Street Light)	.	.	.	.	.
Road Surface Condition	Dry	1.25	3.00	2	3.5	3.5
	Wet	0.33	0.29	0.5	0.5	0.5
	Slippery	.	.	.	.	.
	Other	1.20	2.58	0.75	3.5	3.5
Road Surface Type	Gravel	.	.	.	.	.
	Blacktop	1.20	2.58	0.75	3.5	3.5
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	1.20	2.58	0.75	3.5	3.5
Month of Year	January	0.25	.	0.25	0.25	0.25
	February	0.25	.	0.25	0.25	0.25
	March	0.25	0.00	0.25	0.25	0.25
	April	0.25	0.00	0.25	0.25	0.25
	May	0.75	.	0.75	0.75	0.75
	June	0.50	.	0.5	0.5	0.5
	July	.	.	.	.	.
	August	.	.	.	.	.
	September	0.42	0.58	0.75	0.75	0.75
	October	0.25	0.00	0.25	0.25	0.25
	November	1.00	.	1	1	1
	December	0.25	.	0.25	0.25	0.25
Day of Week	Sunday	0.75	.	0.75	0.75	0.75
	Monday	0.58	0.58	0.75	0.75	0.75
	Tuesday	0.50	.	0.5	0.5	0.5
	Wednesday	0.50	0.00	0.5	0.5	0.5
	Thursday	0.38	0.35	0.5	0.5	0.5
	Friday	0.50	.	0.5	0.5	0.5
	Saturday	0.38	0.35	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.38	0.35	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.50	0.71	0.75	0.75	0.75
	< 11:00 - ≤ 13:00	0.38	0.35	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	1.00	.	1	1	1
	< 15:00 - ≤ 18:00	0.42	0.29	0.5	0.5	0.5
	< 18:00 - ≤ 24:00	0.25	0.00	0.25	0.25	0.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 7 (Six Counties): 2x8 with 1-way stop on the minor (for urban and rural intersections with directional and mixed medians with two-way major road)

Total Number of Intersections Included - 8

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.96	2.11	1.75	2.75	2.75
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	1.38	3.92	1.5	5.25	5.25
	Left-turn	0.50	1.00	0.5	1.5	1.5
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.50	.	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.38	0.35	0.5	0.5	0.5
Severity	PDO	1.50	4.29	1.5	5.75	5.75
	Possible Injury	0.95	1.71	1.75	2	2
	Non-incapacitating	0.63	1.04	1	1.5	1.5
	Incapacitating	0.81	1.93	1.375	2.25	2.25
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	2.18	5.65	3.75	8	8
	Dusk	0.38	0.35	0.5	0.5	0.5
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.80	1.47	1	2	2
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	2.71	6.83	3.75	10	10
	Wet	0.58	0.58	0.75	0.75	0.75
	Slippery	.	.	.	.	.
	Other	2.96	7.41	4.5	10.75	10.75
Road Surface Type	Gravel	0.50	.	0.5	0.5	0.5
	Blacktop	2.79	6.75	4.5	9.75	9.75
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.25	.	0.25	0.25	0.25
	Other	2.96	7.41	4.5	10.75	10.75
Month of Year	January	0.25	0.00	0.25	0.25	0.25
	February	0.38	0.35	0.5	0.5	0.5
	March	0.50	0.71	0.75	0.75	0.75
	April	0.63	0.35	0.75	0.75	0.75
	May	0.50	0.41	0.625	0.75	0.75
	June	0.67	1.44	1.5	1.5	1.5
	July	0.63	0.35	0.75	0.75	0.75
	August	0.55	0.55	0.75	0.75	0.75
	September	0.45	0.22	0.5	0.5	0.5
	October	0.63	0.96	1	1.25	1.25
	November	0.44	0.75	0.625	1	1
	December	0.92	2.31	2.25	2.25	2.25
Day of Week	Sunday	0.56	0.75	0.875	1	1
	Monday	1.25	2.12	2	2	2
	Tuesday	1.00	1.32	1.75	1.75	1.75
	Wednesday	0.50	0.87	1	1	1
	Thursday	0.88	0.87	1.125	1.5	1.5
	Friday	0.95	1.39	1.25	2	2
	Saturday	0.46	0.93	0.5	1.5	1.5
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.33	0.29	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.42	0.41	0.5	0.75	0.75
	< 11:00 - ≤ 13:00	0.88	1.50	1.5	1.75	1.75
	< 13:00 - ≤ 15:00	1.00	1.47	1.5	2	2
	< 15:00 - ≤ 18:00	1.92	4.93	4.75	4.75	4.75
	< 18:00 - ≤ 24:00	0.54	0.80	0.75	1.25	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 8 (Six Counties): 2x2 and 2x3 with 1-way stop on the minor (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 10

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.25	0.00	0.25	0.25	0.25
	Head-on	.	.	.	.	.
	Angle	0.50	0.87	1	1	1
	Left-turn	0.75	0.00	0.75	0.75	0.75
	Right-turn	0.25	.	0.25	0.25	0.25
	Side-swipe	0.33	0.29	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.35	0.45	0.25	0.75	0.75
Severity	PDO	0.61	1.29	0.75	2	2
	Possible Injury	0.35	0.27	0.5	0.5	0.5
	Non-incapacitating	0.50	0.71	0.75	0.75	0.75
	Incapacitating	0.25	0.00	0.25	0.25	0.25
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.63	1.13	1	1.75	1.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.38	0.50	0.5	0.75	0.75
	Dark (without Street Light)	0.25	.	0.25	0.25	0.25
Road Surface Condition	Dry	0.91	1.67	1.125	2.75	2.75
	Wet	0.25	0.00	0.25	0.25	0.25
	Slippery	.	.	.	.	.
	Other	0.97	1.72	1.375	2.75	2.75
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	0.88	1.69	1.125	2.75	2.75
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	.	.	.	.	.
	Other	0.97	1.72	1.375	2.75	2.75
Month of Year	January	0.25	.	0.25	0.25	0.25
	February	0.50	0.00	0.5	0.5	0.5
	March	0.25	0.00	0.25	0.25	0.25
	April	0.63	0.35	0.75	0.75	0.75
	May	0.63	1.06	1	1	1
	June	0.25	0.00	0.25	0.25	0.25
	July	0.25	0.00	0.25	0.25	0.25
	August	0.25	.	0.25	0.25	0.25
	September	0.25	0.00	0.25	0.25	0.25
	October	0.25	.	0.25	0.25	0.25
	November	0.38	0.35	0.5	0.5	0.5
	December	0.25	.	0.25	0.25	0.25
Day of Week	Sunday	0.25	.	0.25	0.25	0.25
	Monday	0.25	0.00	0.25	0.25	0.25
	Tuesday	0.50	0.71	0.75	0.75	0.75
	Wednesday	0.42	0.58	0.75	0.75	0.75
	Thursday	0.63	1.06	1	1	1
	Friday	0.42	0.58	0.75	0.75	0.75
	Saturday	0.38	0.27	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.31	0.25	0.375	0.5	0.5
	< 06:00 - ≤ 09:00	0.50	.	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.33	0.29	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.33	0.29	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.50	0.50	0.75	0.75	0.75
	< 15:00 - ≤ 18:00	0.38	0.50	0.5	0.75	0.75
	< 18:00 - ≤ 24:00	0.33	0.29	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 9 (Six Counties): 2x4 with no control on the minor (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 19

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.72	1.57	0.75	2.5	2.5
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	1.17	2.31	2.5	2.5	2.5
	Left-turn	0.50	0.71	0.75	0.75	0.75
	Right-turn	0.25	.	0.25	0.25	0.25
	Side-swipe	0.63	1.06	1	1	1
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	0.00	0.25	0.25	0.25
Severity	PDO	0.68	1.57	0.75	1.5	2.75
	Possible Injury	0.75	0.50	1	1	1
	Non-incapacitating	0.46	0.35	0.5	0.75	0.75
	Incapacitating	0.63	1.06	1	1	1
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.08	2.83	1.125	3.75	4.25
	Dusk	0.25	.	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.50	0.71	0.75	1	1
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	1.15	2.72	1.375	3.5	4.25
	Wet	0.45	0.55	0.75	0.75	0.75
	Slippery	.	.	.	.	.
	Other	1.33	2.96	1.75	4.25	4.25
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.25	2.77	1.625	4	4
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	1.33	2.96	1.75	4.25	4.25
Month of Year	January	0.25	.	0.25	0.25	0.25
	February	0.38	0.29	0.5	0.5	0.5
	March	0.33	0.29	0.5	0.5	0.5
	April	0.33	0.29	0.5	0.5	0.5
	May	0.38	0.50	0.5	0.75	0.75
	June	0.50	0.00	0.5	0.5	0.5
	July	0.38	0.42	0.5	0.75	0.75
	August	0.42	0.58	0.75	0.75	0.75
	September	0.30	0.22	0.25	0.5	0.5
	October	0.33	0.29	0.5	0.5	0.5
	November	0.45	0.89	0.25	1.25	1.25
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.38	0.35	0.5	0.5	0.5
	Monday	0.36	0.39	0.5	0.75	0.75
	Tuesday	0.63	0.65	0.875	1	1
	Wednesday	0.29	0.20	0.25	0.5	0.5
	Thursday	0.43	0.24	0.5	0.5	0.5
	Friday	0.60	1.04	0.5	1.5	1.5
	Saturday	0.50	0.71	0.75	1	1
Hour of Day	< 00:00 - ≤ 06:00	0.42	0.29	0.5	0.5	0.5
	< 06:00 - ≤ 09:00	0.31	0.25	0.375	0.5	0.5
	< 09:00 - ≤ 11:00	0.35	0.45	0.25	0.75	0.75
	< 11:00 - ≤ 13:00	0.83	1.61	1.75	1.75	1.75
	< 13:00 - ≤ 15:00	0.46	0.49	0.75	0.75	0.75
	< 15:00 - ≤ 18:00	0.79	0.98	1.25	1.5	1.5
	< 18:00 - ≤ 24:00	0.33	0.29	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 10 (Six Counties): 2x4 and 2x5 with 1-way stop on the minor and AADT (major road) <= 34000 (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 78

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.50	0.91	0.5	0.75	1.75
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.35	0.34	0.5	0.625	0.75
	Left-turn	0.29	0.19	0.25	0.5	0.5
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.25	0.00	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.28	0.18	0.25	0.5	0.5
Severity	PDO	0.55	1.00	0.5	0.75	2.25
	Possible Injury	0.37	0.49	0.5	0.5	1
	Non-incapacitating	0.29	0.19	0.25	0.5	0.5
	Incapacitating	0.38	0.42	0.5	0.75	0.75
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.59	1.00	0.75	1	1.5
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.31	0.22	0.375	0.5	0.5
	Dark (without Street Light)	0.28	0.16	0.25	0.375	0.5
Road Surface Condition	Dry	0.59	1.01	0.75	1	1.25
	Wet	0.43	0.46	0.5	0.75	1
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	0.69	1.33	0.75	1	2
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	0.70	1.34	0.75	1	2
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	0.69	1.33	0.75	1	2
Month of Year	January	0.33	0.47	0.25	0.625	1
	February	0.31	0.30	0.25	0.5	0.75
	March	0.29	0.20	0.25	0.5	0.5
	April	0.28	0.16	0.25	0.375	0.5
	May	0.27	0.14	0.25	0.25	0.5
	June	0.27	0.14	0.25	0.25	0.5
	July	0.29	0.19	0.25	0.5	0.5
	August	0.28	0.17	0.25	0.5	0.5
	September	0.25	0.00	0.25	0.25	0.25
	October	0.39	0.52	0.5	0.75	1
	November	0.25	0.00	0.25	0.25	0.25
	December	0.38	0.26	0.5	0.5	0.5
Day of Week	Sunday	0.28	0.18	0.25	0.5	0.5
	Monday	0.36	0.36	0.5	0.75	0.75
	Tuesday	0.32	0.32	0.25	0.5	0.75
	Wednesday	0.34	0.30	0.5	0.5	0.75
	Thursday	0.33	0.41	0.25	0.5	1
	Friday	0.34	0.39	0.25	0.5	0.75
	Saturday	0.31	0.22	0.25	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.27	0.13	0.25	0.25	0.5
	< 06:00 - ≤ 09:00	0.34	0.34	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.34	0.32	0.5	0.5	0.75
	< 13:00 - ≤ 15:00	0.31	0.22	0.25	0.5	0.5
	< 15:00 - ≤ 18:00	0.39	0.55	0.5	0.75	1
	< 18:00 - ≤ 24:00	0.30	0.21	0.25	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 11 (Six Counties): 2x4 and 2x5 with 1-way stop on the minor and AADT (major road) > 34000 (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 76

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.59	1.46	0.5	1.25	1.5
	Head-on	0.33	0.29	0.5	0.5	0.5
	Angle	0.41	0.78	0.5	0.75	0.75
	Left-turn	0.25	0.00	0.25	0.25	0.25
	Right-turn	0.30	0.22	0.25	0.5	0.5
	Side-swipe	0.37	0.78	0.25	0.5	0.75
	Pedestrian/Bicycle	0.25	.	0.25	0.25	0.25
	Other	0.56	0.55	0.75	1	1
Severity	PDO	0.72	2.27	0.75	1.25	2
	Possible Injury	0.46	0.70	0.5	0.75	1.25
	Non-incapacitating	0.46	0.87	0.5	0.75	1
	Incapacitating	0.34	0.26	0.5	0.5	0.5
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.87	2.35	1	1.875	2.25
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.56	1.54	0.5	1	1
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	0.96	2.95	1.125	2	2.5
	Wet	0.37	0.52	0.25	0.75	0.75
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	1.04	3.32	1.25	2.25	3
Road Surface Type	Gravel	0.39	0.36	0.5	0.75	0.75
	Blacktop	0.97	2.86	1	2	2.75
	Brick	.	.	.	.	.
	Concrete	0.42	0.82	0.25	1.25	1.25
	Other	1.04	3.32	1.25	2.25	3
Month of Year	January	0.38	0.45	0.5	0.75	1
	February	0.38	0.49	0.5	0.5	0.75
	March	0.52	0.75	0.75	0.75	1.5
	April	0.34	0.36	0.5	0.5	0.5
	May	0.28	0.18	0.25	0.5	0.5
	June	0.38	0.58	0.25	0.75	1.25
	July	0.31	0.33	0.25	0.75	0.75
	August	0.38	0.55	0.25	0.75	1.25
	September	0.34	0.48	0.25	0.5	1.25
	October	0.43	0.78	0.5	0.75	1.5
	November	0.35	0.53	0.25	0.75	1.25
	December	0.33	0.38	0.25	0.5	1
Day of Week	Sunday	0.48	1.01	0.5	0.5	2.25
	Monday	0.37	0.50	0.5	0.5	1
	Tuesday	0.36	0.64	0.25	0.5	1
	Wednesday	0.41	0.55	0.5	0.5	0.75
	Thursday	0.41	0.59	0.5	0.5	0.75
	Friday	0.49	1.04	0.5	0.75	1
	Saturday	0.38	0.68	0.25	0.5	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.36	0.43	0.5	0.5	1
	< 06:00 - ≤ 09:00	0.36	0.40	0.5	0.5	0.75
	< 09:00 - ≤ 11:00	0.37	0.62	0.25	0.5	1.5
	< 11:00 - ≤ 13:00	0.41	0.70	0.5	0.5	1
	< 13:00 - ≤ 15:00	0.39	0.56	0.5	0.5	0.75
	< 15:00 - ≤ 18:00	0.53	1.10	0.75	1	1.25
	< 18:00 - ≤ 24:00	0.48	1.24	0.5	0.75	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 12 (Six Counties): 2x6 with 1-way stop on the minor and AADT (major road) <= 50000 (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 69

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.48	0.92	0.5	1	1.25
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.40	0.46	0.5	0.75	0.75
	Left-turn	0.30	0.21	0.25	0.5	0.5
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.34	0.36	0.375	0.75	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.34	0.45	0.25	0.75	1
Severity	PDO	0.61	0.83	0.75	1.25	1.5
	Possible Injury	0.40	0.65	0.5	0.5	1.25
	Non-incapacitating	0.40	0.42	0.5	0.75	0.75
	Incapacitating	0.25	0.00	0.25	0.25	0.25
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.73	1.29	1	1.5	2.25
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	.	0.25	0.25	0.25
	Dark (with Street Light)	0.48	0.64	0.625	1	1.25
	Dark (without Street Light)	0.37	0.39	0.5	0.75	0.75
Road Surface Condition	Dry	0.90	1.52	1.25	1.75	2.5
	Wet	0.35	0.25	0.5	0.5	0.5
	Slippery	.	.	.	.	.
	Other	1.00	1.68	1.25	2.25	2.75
Road Surface Type	Gravel	0.28	0.18	0.25	0.5	0.5
	Blacktop	0.97	1.66	1.25	1.75	2.75
	Brick	.	.	.	.	.
	Concrete	0.25	.	0.25	0.25	0.25
	Other	1.00	1.68	1.25	2.25	2.75
Month of Year	January	0.34	0.38	0.5	0.5	1
	February	0.27	0.13	0.25	0.25	0.5
	March	0.36	0.31	0.5	0.5	0.75
	April	0.32	0.23	0.5	0.5	0.5
	May	0.32	0.30	0.25	0.5	0.75
	June	0.27	0.13	0.25	0.25	0.5
	July	0.27	0.14	0.25	0.25	0.5
	August	0.34	0.47	0.25	0.5	0.875
	September	0.29	0.19	0.25	0.5	0.5
	October	0.38	0.41	0.5	0.5	1
	November	0.31	0.35	0.25	0.75	0.75
	December	0.32	0.23	0.5	0.5	0.5
Day of Week	Sunday	0.31	0.22	0.375	0.5	0.5
	Monday	0.38	0.35	0.5	0.75	0.75
	Tuesday	0.32	0.38	0.25	0.5	0.75
	Wednesday	0.28	0.17	0.25	0.5	0.5
	Thursday	0.30	0.20	0.25	0.5	0.5
	Friday	0.43	0.46	0.5	0.75	1
	Saturday	0.43	0.56	0.5	0.875	1.125
Hour of Day	< 00:00 - ≤ 06:00	0.29	0.20	0.25	0.5	0.5
	< 06:00 - ≤ 09:00	0.36	0.35	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.34	0.32	0.5	0.5	0.75
	< 11:00 - ≤ 13:00	0.31	0.22	0.375	0.5	0.5
	< 13:00 - ≤ 15:00	0.29	0.19	0.25	0.5	0.5
	< 15:00 - ≤ 18:00	0.48	0.63	0.75	1	1.25
	< 18:00 - ≤ 24:00	0.42	0.37	0.5	0.75	0.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 13 (Six Counties): 2x6 with 1-way stop on the minor and AADT (major road) > 50000 (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 67

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.73	1.12	1	1.25	1.5
	Head-on	0.38	0.35	0.5	0.5	0.5
	Angle	0.55	1.42	0.5	0.75	1
	Left-turn	0.61	1.75	0.5	1.25	3.75
	Right-turn	0.33	0.24	0.5	0.5	0.5
	Side-swipe	0.35	0.35	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.45	0.65	0.5	1	1
Severity	PDO	1.01	1.81	1.25	2	2.25
	Possible Injury	0.73	1.56	1	1.25	1.5
	Non-incapacitating	0.48	0.95	0.5	1	1
	Incapacitating	0.33	0.32	0.25	0.5	0.75
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.35	2.86	1.75	2	2.75
	Dusk	0.29	0.19	0.25	0.5	0.5
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.63	1.53	0.5	1.25	1.5
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	1.48	3.24	1.75	2.75	3.75
	Wet	0.47	0.73	0.5	0.75	1.25
	Slippery	0.25	.	0.25	0.25	0.25
	Other	1.75	3.84	2.25	3.25	5
Road Surface Type	Gravel	0.32	0.23	0.5	0.5	0.5
	Blacktop	1.67	3.50	2.25	3	4.75
	Brick	.	.	.	.	.
	Concrete	0.44	0.58	0.625	1	1
	Other	1.75	3.84	2.25	3.25	5
Month of Year	January	0.32	0.27	0.25	0.5	0.5
	February	0.31	0.29	0.25	0.5	0.75
	March	0.51	1.04	0.5	1	1
	April	0.39	0.44	0.5	0.75	0.875
	May	0.39	0.41	0.5	0.75	0.75
	June	0.43	0.86	0.5	0.75	2
	July	0.36	0.50	0.375	0.625	1
	August	0.42	0.42	0.5	0.75	0.75
	September	0.39	0.71	0.25	1	1
	October	0.34	0.44	0.375	0.5	0.5
	November	0.34	0.29	0.5	0.5	0.5
	December	0.35	0.36	0.5	0.5	0.5
Day of Week	Sunday	0.39	0.64	0.5	0.5	0.75
	Monday	0.45	0.68	0.5	0.75	1.25
	Tuesday	0.47	0.59	0.5	0.75	1
	Wednesday	0.53	0.89	0.5	1.25	1.25
	Thursday	0.42	0.66	0.5	0.75	1
	Friday	0.53	0.95	0.75	1	1.25
	Saturday	0.45	0.61	0.5	0.75	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.37	0.45	0.5	0.5	0.75
	< 06:00 - ≤ 09:00	0.47	0.67	0.5	1	1.25
	< 09:00 - ≤ 11:00	0.42	0.66	0.5	1	1.25
	< 11:00 - ≤ 13:00	0.53	0.87	0.75	1	1.25
	< 13:00 - ≤ 15:00	0.44	0.83	0.5	0.75	0.75
	< 15:00 - ≤ 18:00	0.53	0.93	0.5	0.875	1.375
	< 18:00 - ≤ 24:00	0.59	1.38	0.75	1.25	2.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 14 (Six Counties): 2x6 with no control on the minor (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 16

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.66	1.00	0.75	1.75	1.75
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.65	0.86	1	1.25	1.5
	Left-turn	0.88	1.04	1.25	1.5	1.5
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.30	0.22	0.25	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.31	0.25	0.375	0.5	0.5
Severity	PDO	0.73	1.56	1.25	1.75	2.75
	Possible Injury	0.58	0.71	0.75	1.125	1.25
	Non-incapacitating	0.35	0.26	0.5	0.5	0.5
	Incapacitating	.	.	.	.	.
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	1.07	2.29	1.5	3	4
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	.	0.25	0.25	0.25
	Dark (with Street Light)	0.41	0.37	0.5	0.75	0.75
	Dark (without Street Light)	.	.	.	.	.
Road Surface Condition	Dry	1.37	2.33	1.5	3.5	4
	Wet	0.29	0.19	0.25	0.5	0.5
	Slippery	.	.	.	.	.
	Other	1.41	2.37	1.75	3.5	4.25
Road Surface Type	Gravel	0.50	.	0.5	0.5	0.5
	Blacktop	1.30	2.46	1.75	3.5	4.25
	Brick	.	.	.	.	.
	Concrete	0.33	0.29	0.5	0.5	0.5
	Other	1.41	2.37	1.75	3.5	4.25
Month of Year	January	0.30	0.22	0.25	0.5	0.5
	February	0.25	0.00	0.25	0.25	0.25
	March	0.25	0.00	0.25	0.25	0.25
	April	0.25	0.00	0.25	0.25	0.25
	May	0.25	.	0.25	0.25	0.25
	June	0.30	0.22	0.25	0.5	0.5
	July	0.38	0.50	0.5	0.75	0.75
	August	0.31	0.25	0.375	0.5	0.5
	September	0.31	0.25	0.375	0.5	0.5
	October	0.33	0.34	0.25	0.625	0.75
	November	0.57	0.38	0.75	0.75	0.75
	December	0.45	0.55	0.75	0.75	0.75
Day of Week	Sunday	0.35	0.45	0.25	0.75	0.75
	Monday	0.56	0.48	0.75	0.75	0.75
	Tuesday	0.33	0.41	0.25	0.75	0.75
	Wednesday	0.58	0.56	0.75	1	1
	Thursday	0.42	0.41	0.5	0.75	0.75
	Friday	0.50	1.04	0.5	1.75	1.75
	Saturday	0.67	0.76	1	1	1
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.55	1.08	0.5	1.5	1.5
	< 09:00 - ≤ 11:00	0.40	0.27	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.38	0.38	0.5	0.75	0.75
	< 13:00 - ≤ 15:00	0.63	0.88	1	1.25	1.25
	< 15:00 - ≤ 18:00	0.68	1.25	0.75	2	2
	< 18:00 - ≤ 24:00	0.30	0.32	0.25	0.5	0.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 15 (Six Counties): 2x8 with 1-way stop on the minor (for urban and rural intersections with closed medians with one-way major road)

Total Number of Intersections Included - 7

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.94	0.25	1	1	1
	Head-on	.	.	.	.	.
	Angle	0.50	0.00	0.5	0.5	0.5
	Left-turn	0.38	0.35	0.5	0.5	0.5
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.25	.	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	.	0.25	0.25	0.25
Severity	PDO	0.71	0.97	1	1.5	1.5
	Possible Injury	0.56	0.25	0.625	0.75	0.75
	Non-incapacitating	1.00	.	1	1	1
	Incapacitating	0.50	.	0.5	0.5	0.5
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	1.25	1.46	1.75	2.25	2.25
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.35	0.45	0.25	0.75	0.75
	Dark (without Street Light)	.	.	.	.	.
Road Surface Condition	Dry	1.20	1.39	1.75	2	2
	Wet	0.40	0.27	0.5	0.5	0.5
	Slippery	.	.	.	.	.
	Other	1.33	1.72	2	2.5	2.5
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.25	1.58	2	2.25	2.25
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	1.33	1.72	2	2.5	2.5
Month of Year	January	0.33	0.29	0.5	0.5	0.5
	February	0.50	0.71	0.75	0.75	0.75
	March	0.25	.	0.25	0.25	0.25
	April	0.25	0.00	0.25	0.25	0.25
	May	.	.	.	.	.
	June	0.25	0.00	0.25	0.25	0.25
	July	0.38	0.35	0.5	0.5	0.5
	August	0.31	0.25	0.375	0.5	0.5
	September	0.25	.	0.25	0.25	0.25
	October	0.25	0.00	0.25	0.25	0.25
	November	0.38	0.35	0.5	0.5	0.5
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.25	0.00	0.25	0.25	0.25
	Monday	0.33	0.29	0.5	0.5	0.5
	Tuesday	0.38	0.29	0.5	0.5	0.5
	Wednesday	0.42	0.29	0.5	0.5	0.5
	Thursday	0.42	0.29	0.5	0.5	0.5
	Friday	0.25	0.00	0.25	0.25	0.25
	Saturday	0.30	0.22	0.25	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.25	.	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.33	0.29	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.75	0.71	1	1	1
	< 11:00 - ≤ 13:00	0.33	0.29	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.35	0.27	0.5	0.5	0.5
	< 15:00 - ≤ 18:00	0.25	0.00	0.25	0.25	0.25
	< 18:00 - ≤ 24:00	0.38	0.50	0.5	0.75	0.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 16 (Six Counties): 2x2, 2x4, 2x5 and 2x6 with no control on the minor (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 47

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.66	1.15	1.25	1.75	1.75
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.58	0.72	0.75	1.25	1.25
	Left-turn	0.53	0.73	0.75	1.25	1.25
	Right-turn	0.31	0.25	0.375	0.5	0.5
	Side-swipe	0.33	0.26	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	0.00	0.25	0.25	0.25
Severity	PDO	0.74	1.05	0.75	1.75	2
	Possible Injury	0.60	1.00	0.75	1.75	1.75
	Non-incapacitating	0.48	0.69	1	1	1
	Incapacitating	0.35	0.42	0.25	0.75	0.75
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.07	1.79	1.5	2.5	2.5
	Dusk	0.35	0.27	0.5	0.5	0.5
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.48	0.64	0.5	1	1.25
	Dark (without Street Light)	0.31	0.25	0.375	0.5	0.5
Road Surface Condition	Dry	1.11	1.90	1.5	2.5	2.75
	Wet	0.39	0.36	0.5	0.75	0.75
	Slippery	.	.	.	.	.
	Other	1.24	2.20	1.5	3	3
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	1.17	2.10	1.5	2.75	3
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.50	0.00	0.5	0.5	0.5
	Other	1.24	2.20	1.5	3	3
Month of Year	January	0.38	0.34	0.5	0.5	0.75
	February	0.28	0.16	0.25	0.375	0.5
	March	0.36	0.51	0.25	1	1
	April	0.29	0.19	0.25	0.5	0.5
	May	0.28	0.18	0.25	0.5	0.5
	June	0.50	0.71	0.75	0.75	0.75
	July	0.36	0.39	0.5	0.75	0.75
	August	0.33	0.24	0.5	0.5	0.5
	September	0.25	0.00	0.25	0.25	0.25
	October	0.50	0.35	0.5	0.75	0.75
	November	0.32	0.32	0.25	0.5	0.75
	December	0.44	0.74	0.5	1.25	1.25
Day of Week	Sunday	0.38	0.42	0.5	0.75	0.75
	Monday	0.44	0.58	0.625	1	1
	Tuesday	0.44	0.48	0.5	0.75	1
	Wednesday	0.40	0.62	0.375	0.75	1.25
	Thursday	0.40	0.37	0.5	0.75	0.75
	Friday	0.38	0.56	0.25	1	1
	Saturday	0.39	0.38	0.5	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.36	0.39	0.5	0.75	0.75
	< 06:00 - ≤ 09:00	0.36	0.36	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.33	0.24	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.31	0.22	0.25	0.5	0.5
	< 13:00 - ≤ 15:00	0.48	0.75	0.5	1	1.5
	< 15:00 - ≤ 18:00	0.63	0.91	0.75	1.5	1.75
	< 18:00 - ≤ 24:00	0.47	0.30	0.5	0.75	0.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 17 (Six Counties): 2x2 and 2x3 with 1-way stop on the minor and AADT (major road) <= 15000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 133

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.41	0.61	0.5	0.75	1
	Head-on	0.33	0.41	0.25	0.75	0.75
	Angle	0.34	0.34	0.5	0.75	0.75
	Left-turn	0.42	0.62	0.5	0.75	1
	Right-turn	0.28	0.17	0.25	0.5	0.5
	Side-swipe	0.27	0.15	0.25	0.25	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.32	0.30	0.25	0.5	0.75
Severity	PDO	0.57	1.01	0.75	1	1.5
	Possible Injury	0.41	0.54	0.5	0.75	1.25
	Non-incapacitating	0.32	0.23	0.5	0.5	0.5
	Incapacitating	0.29	0.18	0.25	0.5	0.5
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	0.57	1.16	0.75	1	1.25
	Dusk	0.29	0.19	0.25	0.5	0.5
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.31	0.22	0.25	0.5	0.5
	Dark (without Street Light)	0.44	0.62	0.5	1	1.25
Road Surface Condition	Dry	0.69	1.33	1	1.5	2.25
	Wet	0.29	0.19	0.25	0.5	0.5
	Slippery	0.25	.	0.25	0.25	0.25
	Other	0.76	1.49	1	1.5	2.25
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	0.74	1.45	1	1.5	2.25
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	0.76	1.49	1	1.5	2.25
Month of Year	January	0.33	0.24	0.5	0.5	0.5
	February	0.29	0.19	0.25	0.5	0.5
	March	0.29	0.24	0.25	0.25	0.5
	April	0.33	0.52	0.25	0.5	1.25
	May	0.29	0.19	0.25	0.5	0.5
	June	0.29	0.18	0.25	0.5	0.5
	July	0.28	0.17	0.25	0.5	0.5
	August	0.30	0.28	0.25	0.5	0.75
	September	0.28	0.18	0.25	0.5	0.5
	October	0.30	0.25	0.25	0.5	0.5
	November	0.33	0.32	0.25	0.5	0.75
	December	0.30	0.20	0.25	0.5	0.5
Day of Week	Sunday	0.29	0.23	0.25	0.5	0.5
	Monday	0.38	0.47	0.5	0.75	1
	Tuesday	0.33	0.27	0.5	0.5	0.5
	Wednesday	0.31	0.32	0.25	0.5	0.5
	Thursday	0.32	0.26	0.25	0.5	0.5
	Friday	0.35	0.43	0.5	0.5	1
	Saturday	0.33	0.27	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.31	0.22	0.25	0.5	0.5
	< 06:00 - ≤ 09:00	0.34	0.33	0.5	0.5	0.75
	< 09:00 - ≤ 11:00	0.30	0.26	0.25	0.5	0.5
	< 11:00 - ≤ 13:00	0.29	0.24	0.25	0.375	0.625
	< 13:00 - ≤ 15:00	0.32	0.38	0.25	0.5	0.75
	< 15:00 - ≤ 18:00	0.35	0.55	0.25	0.5	0.75
	< 18:00 - ≤ 24:00	0.38	0.50	0.5	0.75	1

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 18 (Six Counties): 2x2 and 2x3 with 1-way stop on the minor and AADT (major road) > 15000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 125

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.54	0.95	0.5	1	1.5
	Head-on	0.27	0.14	0.25	0.25	0.5
	Angle	0.41	0.65	0.5	0.75	1
	Left-turn	0.36	0.39	0.5	0.75	0.75
	Right-turn	0.30	0.22	0.25	0.5	0.5
	Side-swipe	0.29	0.18	0.25	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.38	0.63	0.25	0.625	1
Severity	PDO	0.68	1.62	0.75	1.25	1.75
	Possible Injury	0.42	0.65	0.5	0.75	1.5
	Non-incapacitating	0.37	0.52	0.5	0.5	0.5
	Incapacitating	0.28	0.17	0.25	0.5	0.5
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.76	1.86	0.875	1.75	1.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.39	0.45	0.5	0.75	1
	Dark (without Street Light)	0.48	0.90	0.5	1.25	1.25
Road Surface Condition	Dry	0.84	1.85	1	1.75	2
	Wet	0.47	0.66	0.5	1	1.25
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	1.00	2.23	1.25	2.25	2.75
Road Surface Type	Gravel	0.34	0.53	0.25	1	1
	Blacktop	0.94	1.95	1	2	2.5
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.35	0.45	0.25	0.75	0.75
	Other	1.00	2.23	1.25	2.25	2.75
Month of Year	January	0.27	0.14	0.25	0.25	0.5
	February	0.34	0.37	0.375	0.5	0.75
	March	0.35	0.28	0.5	0.5	0.5
	April	0.33	0.31	0.375	0.5	0.75
	May	0.38	0.65	0.5	0.5	0.5
	June	0.31	0.28	0.25	0.5	0.75
	July	0.34	0.54	0.25	0.5	1.25
	August	0.34	0.39	0.25	0.5	0.75
	September	0.33	0.45	0.25	0.75	1
	October	0.37	0.34	0.5	0.75	0.75
	November	0.33	0.31	0.25	0.5	0.75
	December	0.33	0.27	0.5	0.5	0.5
Day of Week	Sunday	0.34	0.31	0.5	0.5	0.75
	Monday	0.33	0.39	0.25	0.5	0.75
	Tuesday	0.33	0.35	0.25	0.5	0.75
	Wednesday	0.45	0.85	0.5	0.75	1
	Thursday	0.38	0.62	0.375	0.5	1.25
	Friday	0.42	0.69	0.5	0.75	0.75
	Saturday	0.31	0.26	0.25	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.36	0.38	0.5	0.5	0.75
	< 06:00 - ≤ 09:00	0.33	0.36	0.25	0.5	0.75
	< 09:00 - ≤ 11:00	0.40	0.62	0.5	0.75	0.75
	< 11:00 - ≤ 13:00	0.36	0.47	0.5	0.75	0.75
	< 13:00 - ≤ 15:00	0.42	0.85	0.5	0.5	1
	< 15:00 - ≤ 18:00	0.44	0.64	0.5	0.75	1.25
	< 18:00 - ≤ 24:00	0.37	0.42	0.5	0.5	1

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 19 (Six Counties): 2x4 with 1-way stop on the minor and AADT (major road) <= 19000 and speed limit (major road) <= 45 mph (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 77

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.47	0.77	0.5	0.75	1
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.38	0.33	0.5	0.5	0.75
	Left-turn	0.36	0.41	0.375	0.75	0.75
	Right-turn	0.38	0.50	0.5	0.75	0.75
	Side-swipe	0.28	0.17	0.25	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.34	0.32	0.5	0.5	0.75
Severity	PDO	0.48	0.51	0.5	0.75	1
	Possible Injury	0.52	0.93	0.5	1	1.5
	Non-incapacitating	0.44	0.53	0.5	0.75	1
	Incapacitating	0.37	0.32	0.5	0.5	0.75
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.69	1.07	1	1.5	2
	Dusk	0.34	0.26	0.5	0.5	0.5
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.48	0.66	0.5	0.75	1
	Dark (without Street Light)	0.30	0.22	0.25	0.5	0.5
Road Surface Condition	Dry	0.88	1.44	1.25	1.75	2
	Wet	0.39	0.32	0.5	0.5	0.75
	Slippery	.	.	.	.	.
	Other	0.97	1.63	1.25	2	2.375
Road Surface Type	Gravel	0.27	0.15	0.25	0.25	0.5
	Blacktop	0.91	1.58	1	2	2.25
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	0.97	1.63	1.25	2	2.375
Month of Year	January	0.28	0.18	0.25	0.5	0.5
	February	0.32	0.41	0.25	0.5	1
	March	0.32	0.23	0.5	0.5	0.5
	April	0.31	0.28	0.25	0.5	0.75
	May	0.31	0.27	0.25	0.5	0.5
	June	0.32	0.30	0.25	0.5	0.75
	July	0.25	0.00	0.25	0.25	0.25
	August	0.34	0.29	0.5	0.5	0.5
	September	0.27	0.14	0.25	0.25	0.5
	October	0.33	0.24	0.5	0.5	0.5
	November	0.31	0.29	0.25	0.5	0.75
	December	0.26	0.12	0.25	0.25	0.5
Day of Week	Sunday	0.29	0.18	0.25	0.5	0.5
	Monday	0.31	0.35	0.25	0.5	0.5
	Tuesday	0.36	0.53	0.5	0.5	0.75
	Wednesday	0.38	0.39	0.5	0.75	0.75
	Thursday	0.34	0.32	0.5	0.5	0.75
	Friday	0.35	0.32	0.5	0.5	0.75
	Saturday	0.39	0.36	0.5	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.34	0.29	0.5	0.5	0.625
	< 06:00 - ≤ 09:00	0.35	0.45	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.27	0.13	0.25	0.25	0.5
	< 11:00 - ≤ 13:00	0.35	0.33	0.5	0.5	0.75
	< 13:00 - ≤ 15:00	0.34	0.31	0.5	0.5	0.75
	< 15:00 - ≤ 18:00	0.41	0.63	0.5	0.75	1
	< 18:00 - ≤ 24:00	0.38	0.44	0.5	0.75	0.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 20 (Six Counties): 2x4 with 1-way stop on the minor and AADT (major road) <= 19000 and speed limit (major road) > 45 mph (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 47

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.63	1.66	0.5	1.5	3.5
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.56	0.89	0.75	1.5	1.5
	Left-turn	0.48	0.86	0.5	0.75	1.75
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.29	0.20	0.25	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	0.00	0.25	0.25	0.25
Severity	PDO	0.82	1.49	1	1.5	3.5
	Possible Injury	0.54	0.84	0.5	1	2
	Non-incapacitating	0.39	0.82	0.25	0.75	2
	Incapacitating	0.33	0.34	0.25	0.625	0.75
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.90	2.36	1.25	1.75	2.5
	Dusk	0.38	0.35	0.5	0.5	0.5
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.34	0.26	0.5	0.5	0.5
	Dark (without Street Light)	0.35	0.33	0.5	0.5	0.75
Road Surface Condition	Dry	0.93	2.49	1.25	1.5	3
	Wet	0.45	0.52	0.5	0.875	1
	Slippery	0.25	.	0.25	0.25	0.25
	Other	1.03	2.80	1.375	2.25	3
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.01	2.70	1.375	2.25	2.75
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	1.03	2.80	1.375	2.25	3
Month of Year	January	0.34	0.34	0.5	0.5	0.75
	February	0.36	0.41	0.5	0.75	0.75
	March	0.35	0.48	0.25	0.75	1
	April	0.31	0.22	0.25	0.5	0.5
	May	0.42	0.41	0.5	0.75	0.75
	June	0.36	0.26	0.5	0.5	0.5
	July	0.25	0.00	0.25	0.25	0.25
	August	0.28	0.17	0.25	0.5	0.5
	September	0.36	0.57	0.25	1	1
	October	0.38	0.53	0.375	1	1
	November	0.34	0.37	0.375	0.75	0.75
	December	0.35	0.33	0.5	0.5	0.75
Day of Week	Sunday	0.33	0.24	0.5	0.5	0.5
	Monday	0.44	0.82	0.5	1.5	1.5
	Tuesday	0.48	0.82	0.5	1	1.5
	Wednesday	0.48	0.88	0.5	0.75	2
	Thursday	0.42	0.59	0.5	0.75	1.25
	Friday	0.40	0.50	0.5	0.75	1
	Saturday	0.34	0.29	0.5	0.5	0.625
Hour of Day	< 00:00 - ≤ 06:00	0.28	0.17	0.25	0.5	0.5
	< 06:00 - ≤ 09:00	0.48	1.14	0.5	0.5	2.25
	< 09:00 - ≤ 11:00	0.32	0.24	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.40	0.43	0.5	0.75	0.75
	< 13:00 - ≤ 15:00	0.50	0.89	0.5	1	1.75
	< 15:00 - ≤ 18:00	0.48	0.74	0.5	1.25	1.5
	< 18:00 - ≤ 24:00	0.43	0.46	0.75	0.75	0.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 21 (Six Counties): 2x4 with 1-way stop on the minor and 19000 < AADT (major road) <= 27000 and speed limit (major road) <= 45 mph

Total Number of Intersections Included - 95

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.37	0.36	0.5	0.75	0.75
	Head-on	0.30	0.22	0.25	0.5	0.5
	Angle	0.41	0.55	0.5	0.5	0.75
	Left-turn	0.47	1.08	0.5	0.5	1
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.34	0.34	0.375	0.625	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.49	0.71	0.5	1	1.25
Severity	PDO	0.69	1.15	0.875	1.375	1.875
	Possible Injury	0.41	0.74	0.25	0.75	1
	Non-incapacitating	0.43	0.49	0.5	0.75	1
	Incapacitating	0.26	0.11	0.25	0.25	0.5
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.79	1.46	1	1.5	2
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.36	0.45	0.5	0.75	0.75
	Dark (without Street Light)	0.33	0.25	0.5	0.5	0.5
Road Surface Condition	Dry	0.94	1.51	1.25	1.75	2
	Wet	0.37	0.43	0.5	0.5	1
	Slippery	.	.	.	.	.
	Other	1.06	1.74	1.25	2.25	2.5
Road Surface Type	Gravel	0.31	0.29	0.25	0.5	0.75
	Blacktop	0.96	1.65	1.25	2	2.25
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	1.06	1.74	1.25	2.25	2.5
Month of Year	January	0.36	0.31	0.5	0.5	0.75
	February	0.32	0.23	0.5	0.5	0.5
	March	0.31	0.29	0.25	0.5	0.75
	April	0.38	0.60	0.5	0.5	1
	May	0.27	0.15	0.25	0.25	0.5
	June	0.29	0.24	0.25	0.5	0.5
	July	0.38	0.55	0.375	0.75	1.125
	August	0.29	0.18	0.25	0.5	0.5
	September	0.31	0.22	0.25	0.5	0.5
	October	0.29	0.25	0.25	0.5	0.5
	November	0.28	0.15	0.25	0.375	0.5
	December	0.26	0.12	0.25	0.25	0.5
Day of Week	Sunday	0.33	0.29	0.5	0.5	0.5
	Monday	0.36	0.34	0.5	0.5	0.75
	Tuesday	0.37	0.37	0.5	0.75	0.75
	Wednesday	0.34	0.36	0.5	0.5	0.75
	Thursday	0.34	0.30	0.5	0.5	0.75
	Friday	0.42	0.58	0.5	0.75	0.75
	Saturday	0.36	0.37	0.5	0.5	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.31	0.36	0.25	0.5	0.75
	< 06:00 - ≤ 09:00	0.41	0.45	0.5	0.75	1
	< 09:00 - ≤ 11:00	0.31	0.38	0.25	0.25	0.75
	< 11:00 - ≤ 13:00	0.35	0.42	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.31	0.28	0.25	0.5	0.75
	< 15:00 - ≤ 18:00	0.45	0.58	0.5	0.75	1
	< 18:00 - ≤ 24:00	0.41	0.48	0.5	0.75	1

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 22 (Six Counties): 2x4 with 1-way stop on the minor and 19000 < AADT (major road) <= 27000 and speed limit (major road) > 45 mph (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 26

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.31	0.22	0.25	0.5	0.5
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.48	0.72	0.5	0.75	1.5
	Left-turn	0.45	0.42	0.5	0.75	0.75
	Right-turn	0.25	.	0.25	0.25	0.25
	Side-swipe	0.33	0.41	0.25	0.75	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.33	0.29	0.5	0.5	0.5
Severity	PDO	0.48	0.75	0.5	1.25	1.25
	Possible Injury	0.31	0.39	0.25	0.5	1
	Non-incapacitating	0.44	0.71	0.5	0.75	1.5
	Incapacitating	0.25	0.00	0.25	0.25	0.25
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	0.67	0.69	0.75	1.5	1.5
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.47	0.62	0.75	1	1
	Dark (without Street Light)	0.30	0.22	0.25	0.5	0.5
Road Surface Condition	Dry	0.88	1.05	1	1.75	2.25
	Wet	0.29	0.20	0.25	0.5	0.5
	Slippery	0.25	.	0.25	0.25	0.25
	Other	0.99	1.20	1	2	2.75
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	0.93	1.15	1	2	2.5
	Brick	.	.	.	.	.
	Concrete	0.25	.	0.25	0.25	0.25
	Other	0.99	1.20	1	2	2.75
Month of Year	January	0.29	0.19	0.25	0.5	0.5
	February	0.40	0.27	0.5	0.5	0.5
	March	0.29	0.20	0.25	0.5	0.5
	April	0.25	0.00	0.25	0.25	0.25
	May	0.25	0.00	0.25	0.25	0.25
	June	0.38	0.35	0.5	0.5	0.5
	July	0.33	0.26	0.5	0.5	0.5
	August	0.25	0.00	0.25	0.25	0.25
	September	0.25	0.00	0.25	0.25	0.25
	October	0.44	0.48	0.625	0.75	0.75
	November	0.30	0.22	0.25	0.5	0.5
	December	0.28	0.18	0.25	0.5	0.5
Day of Week	Sunday	0.30	0.21	0.25	0.5	0.5
	Monday	0.28	0.18	0.25	0.5	0.5
	Tuesday	0.31	0.35	0.25	0.75	0.75
	Wednesday	0.31	0.23	0.375	0.5	0.5
	Thursday	0.45	0.63	0.75	1	1
	Friday	0.29	0.19	0.25	0.5	0.5
	Saturday	0.30	0.22	0.25	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.28	0.18	0.25	0.5	0.5
	< 06:00 - ≤ 09:00	0.32	0.24	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.29	0.19	0.25	0.5	0.5
	< 13:00 - ≤ 15:00	0.36	0.36	0.5	0.75	0.75
	< 15:00 - ≤ 18:00	0.45	0.94	0.5	1.125	1.75
	< 18:00 - ≤ 24:00	0.34	0.25	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 23 (Six Counties): 2x4 with 1-way stop on the minor and 27000 < AADT (major road) <= 39000 and speed limit (major road) <= 45 mph

Total Number of Intersections Included - 137

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.55	0.73	0.75	1	1.25
	Head-on	0.27	0.15	0.25	0.25	0.5
	Angle	0.41	0.59	0.5	1	1.25
	Left-turn	0.43	0.53	0.5	1	1
	Right-turn	0.30	0.22	0.25	0.5	0.5
	Side-swipe	0.34	0.39	0.25	0.75	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.40	0.53	0.5	0.75	0.75
Severity	PDO	0.67	1.18	0.75	1.5	2.5
	Possible Injury	0.47	0.61	0.5	1	1.25
	Non-incapacitating	0.45	0.63	0.5	1	1.25
	Incapacitating	0.29	0.18	0.25	0.5	0.5
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.99	1.62	1.5	2.25	2.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.45	0.60	0.5	1	1
	Dark (without Street Light)	0.39	0.65	0.25	0.75	1.25
Road Surface Condition	Dry	1.10	1.82	1.5	2.5	3.25
	Wet	0.36	0.47	0.5	0.5	0.75
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	1.24	2.03	1.5	2.75	3.75
Road Surface Type	Gravel	0.30	0.21	0.25	0.5	0.5
	Blacktop	1.17	1.93	1.5	2.75	3.25
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.32	0.32	0.25	0.5	0.75
	Other	1.24	2.03	1.5	2.75	3.75
Month of Year	January	0.31	0.21	0.25	0.5	0.5
	February	0.32	0.28	0.25	0.5	0.75
	March	0.37	0.44	0.5	0.5	1
	April	0.31	0.30	0.25	0.5	0.5
	May	0.36	0.35	0.5	0.5	0.75
	June	0.34	0.31	0.5	0.5	0.75
	July	0.29	0.22	0.25	0.5	0.5
	August	0.41	0.40	0.5	0.75	0.75
	September	0.31	0.38	0.25	0.5	0.5
	October	0.36	0.34	0.5	0.75	0.75
	November	0.33	0.30	0.25	0.5	0.75
	December	0.33	0.32	0.375	0.5	0.5
Day of Week	Sunday	0.31	0.25	0.25	0.5	0.5
	Monday	0.37	0.37	0.5	0.5	0.75
	Tuesday	0.37	0.34	0.5	0.5	0.75
	Wednesday	0.41	0.40	0.5	0.75	0.75
	Thursday	0.39	0.44	0.5	0.75	0.75
	Friday	0.44	0.51	0.5	0.75	1
	Saturday	0.38	0.42	0.5	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.33	0.29	0.5	0.5	0.75
	< 06:00 - ≤ 09:00	0.39	0.42	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.36	0.31	0.5	0.5	0.75
	< 11:00 - ≤ 13:00	0.36	0.38	0.5	0.5	0.75
	< 13:00 - ≤ 15:00	0.40	0.46	0.5	0.75	1
	< 15:00 - ≤ 18:00	0.52	0.71	0.75	1	1.25
	< 18:00 - ≤ 24:00	0.43	0.56	0.5	0.75	1

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 24 (Six Counties): 2x4 with 1-way stop on the minor and 27000 < AADT (major road) <= 390000 and speed limit (major road) > 45 mph (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 12

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.56	0.58	0.75	1	1
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.78	1.36	0.75	2.5	2.5
	Left-turn	0.65	0.67	1	1	1
	Right-turn	0.33	0.29	0.5	0.5	0.5
	Side-swipe	.	.	.	.	.
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.36	0.57	0.25	1	1
Severity	PDO	0.50	0.53	0.625	1	1
	Possible Injury	0.69	0.60	1	1	1
	Non-incapacitating	0.63	1.03	0.75	1.5	1.75
	Incapacitating	0.69	0.85	1	1.25	1.25
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.11	1.81	1.5	2.75	2.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.75	0.71	1	1	1
	Dark (without Street Light)	0.67	0.52	0.75	1	1
Road Surface Condition	Dry	1.64	2.38	2.5	2.75	4
	Wet	0.40	0.45	0.5	0.75	0.75
	Slippery	.	.	.	.	.
	Other	1.82	2.72	2.75	3	4.75
Road Surface Type	Gravel	.	.	.	.	.
	Blacktop	1.82	2.72	2.75	3	4.75
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	1.82	2.72	2.75	3	4.75
Month of Year	January	0.50	0.87	1	1	1
	February	0.63	1.19	1	1.5	1.5
	March	0.30	0.22	0.25	0.5	0.5
	April	0.25	0.00	0.25	0.25	0.25
	May	0.45	0.22	0.5	0.5	0.5
	June	0.25	0.00	0.25	0.25	0.25
	July	0.29	0.20	0.25	0.5	0.5
	August	0.32	0.24	0.5	0.5	0.5
	September	0.38	0.35	0.5	0.5	0.5
	October	0.29	0.20	0.25	0.5	0.5
	November	0.44	0.48	0.625	0.75	0.75
	December	0.40	0.27	0.5	0.5	0.5
Day of Week	Sunday	0.50	0.77	0.5	1.25	1.25
	Monday	0.58	0.29	0.75	0.75	0.75
	Tuesday	0.69	0.75	0.875	1.25	1.25
	Wednesday	0.48	0.44	0.75	0.75	0.75
	Thursday	0.45	0.42	0.5	0.75	0.75
	Friday	0.36	0.27	0.5	0.5	0.5
	Saturday	0.50	0.55	0.5	1	1
Hour of Day	< 00:00 - ≤ 06:00	0.56	0.48	0.75	0.75	0.75
	< 06:00 - ≤ 09:00	0.38	0.38	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.55	0.82	0.5	1.25	1.25
	< 13:00 - ≤ 15:00	0.35	0.27	0.5	0.5	0.5
	< 15:00 - ≤ 18:00	0.53	0.81	0.5	1.5	1.5
	< 18:00 - ≤ 24:00	0.79	0.74	0.75	1.5	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 25 (Six Counties): 2x4 with 1-way stop on the minor and AADT (major road) > 39000 and speed limit (major road) <= 45 mph (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 77

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.39	0.40	0.5	0.75	0.75
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.42	0.55	0.5	0.75	1
	Left-turn	0.32	0.31	0.25	0.5	0.75
	Right-turn	0.31	0.33	0.25	0.75	0.75
	Side-swipe	0.27	0.13	0.25	0.25	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.49	0.85	0.5	0.75	1.5
Severity	PDO	0.61	1.34	0.75	1	1.5
	Possible Injury	0.41	0.53	0.5	0.75	1
	Non-incapacitating	0.42	0.48	0.5	0.75	1
	Incapacitating	0.27	0.14	0.25	0.25	0.5
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.81	1.48	1	1.5	2.375
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.42	0.47	0.5	0.75	1
	Dark (without Street Light)	0.30	0.22	0.25	0.5	0.5
Road Surface Condition	Dry	0.90	1.65	1	1.75	2
	Wet	0.39	0.38	0.5	0.5	1
	Slippery	.	.	.	.	.
	Other	1.02	1.84	1.25	1.75	2.25
Road Surface Type	Gravel	0.29	0.20	0.25	0.5	0.5
	Blacktop	0.98	1.73	1.25	1.75	2.25
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	.	.	.	.	.
	Other	1.02	1.84	1.25	1.75	2.25
Month of Year	January	0.33	0.24	0.5	0.5	0.5
	February	0.31	0.28	0.25	0.5	0.75
	March	0.33	0.28	0.5	0.5	0.5
	April	0.33	0.29	0.5	0.5	0.75
	May	0.28	0.16	0.25	0.5	0.5
	June	0.28	0.17	0.25	0.5	0.5
	July	0.30	0.28	0.25	0.5	0.75
	August	0.31	0.21	0.25	0.5	0.5
	September	0.30	0.21	0.25	0.5	0.5
	October	0.34	0.33	0.5	0.5	0.75
	November	0.33	0.31	0.5	0.5	0.75
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.39	0.61	0.5	0.5	1.25
	Monday	0.33	0.33	0.25	0.5	0.5
	Tuesday	0.40	0.41	0.5	0.75	0.75
	Wednesday	0.37	0.37	0.5	0.5	0.75
	Thursday	0.37	0.35	0.5	0.5	0.5
	Friday	0.46	0.66	0.5	1	1.25
	Saturday	0.30	0.26	0.25	0.5	0.625
Hour of Day	< 00:00 - ≤ 06:00	0.34	0.34	0.5	0.5	0.75
	< 06:00 - ≤ 09:00	0.37	0.43	0.5	0.5	1
	< 09:00 - ≤ 11:00	0.28	0.16	0.25	0.5	0.5
	< 11:00 - ≤ 13:00	0.36	0.45	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.30	0.21	0.25	0.5	0.5
	< 15:00 - ≤ 18:00	0.53	0.76	0.75	1	1.25
	< 18:00 - ≤ 24:00	0.37	0.47	0.5	0.5	1

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 26 (Six Counties): 2x4 with 1-way stop on the minor and AADT (major road) > 39000 and speed limit (major road) > 45 mph (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 16

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.50	0.52	0.75	0.75	1
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.56	0.86	0.5	1.5	1.5
	Left-turn	0.33	0.26	0.5	0.5	0.5
	Right-turn	.	.	.	.	.
	Side-swipe	0.25	.	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.39	0.51	0.5	1	1
Severity	PDO	0.81	0.82	1.25	1.25	1.25
	Possible Injury	0.56	0.60	0.75	1	1
	Non-incapacitating	0.66	0.70	0.875	1.25	1.25
	Incapacitating	0.30	0.22	0.25	0.5	0.5
	Fatal	0.50	.	0.5	0.5	0.5
Lighting Condition	Daylight	0.98	1.45	1.625	2	2.25
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.47	0.86	0.5	1.5	1.5
	Dark (without Street Light)	0.50	0.84	0.75	1.25	1.25
Road Surface Condition	Dry	1.23	1.57	1.5	2.75	2.75
	Wet	0.42	0.43	0.5	0.75	0.75
	Slippery	0.25	.	0.25	0.25	0.25
	Other	1.43	2.12	2	3.5	3.5
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.39	2.13	1.75	3.5	3.5
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	1.43	2.12	2	3.5	3.5
Month of Year	January	0.33	0.26	0.5	0.5	0.5
	February	0.32	0.38	0.25	0.75	0.75
	March	0.45	0.55	0.75	0.75	0.75
	April	0.50	.	0.5	0.5	0.5
	May	0.35	0.27	0.5	0.5	0.5
	June	0.33	0.29	0.5	0.5	0.5
	July	0.25	0.00	0.25	0.25	0.25
	August	0.50	0.50	0.75	0.75	0.75
	September	0.29	0.20	0.25	0.5	0.5
	October	0.33	0.41	0.25	0.75	0.75
	November	0.31	0.25	0.375	0.5	0.5
	December	0.31	0.33	0.25	0.75	0.75
Day of Week	Sunday	0.35	0.27	0.5	0.5	0.5
	Monday	0.31	0.23	0.375	0.5	0.5
	Tuesday	0.50	0.65	0.75	1	1
	Wednesday	0.32	0.24	0.5	0.5	0.5
	Thursday	0.50	0.58	0.75	1	1
	Friday	0.47	0.56	0.625	1	1
	Saturday	0.56	0.48	0.75	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.42	0.26	0.5	0.5	0.5
	< 06:00 - ≤ 09:00	0.42	0.41	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.29	0.20	0.25	0.5	0.5
	< 11:00 - ≤ 13:00	0.33	0.29	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.36	0.39	0.5	0.75	0.75
	< 15:00 - ≤ 18:00	0.55	0.94	0.75	1.25	1.75
	< 18:00 - ≤ 24:00	0.47	0.85	0.5	1.5	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 27 (Six Counties): 2x5 with 1-way stop on the minor and AADT (major road) <= 22000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 67

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.31	0.27	0.25	0.5	0.75
	Head-on	.	.	.	.	.
	Angle	0.27	0.15	0.25	0.25	0.5
	Left-turn	0.30	0.20	0.25	0.5	0.5
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.31	0.25	0.375	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.32	0.32	0.25	0.5	0.75
Severity	PDO	0.31	0.27	0.25	0.5	0.5
	Possible Injury	0.31	0.50	0.25	0.25	1.25
	Non-incapacitating	0.36	0.29	0.5	0.5	0.5
	Incapacitating	0.25	0.00	0.25	0.25	0.25
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.45	0.55	0.75	0.75	1
	Dusk	0.25	.	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.35	0.49	0.25	0.5	1.25
	Dark (without Street Light)	0.25	.	0.25	0.25	0.25
Road Surface Condition	Dry	0.50	0.77	0.75	0.75	1.25
	Wet	0.25	0.00	0.25	0.25	0.25
	Slippery	.	.	.	.	.
	Other	0.53	0.87	0.75	1	1.25
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	0.53	0.87	0.75	1	1.25
	Brick	.	.	.	.	.
	Concrete	0.25	.	0.25	0.25	0.25
	Other	0.53	0.87	0.75	1	1.25
Month of Year	January	0.25	0.00	0.25	0.25	0.25
	February	0.30	0.21	0.25	0.5	0.5
	March	0.30	0.22	0.25	0.5	0.5
	April	0.31	0.22	0.25	0.5	0.5
	May	0.25	0.00	0.25	0.25	0.25
	June	0.25	0.00	0.25	0.25	0.25
	July	0.25	0.00	0.25	0.25	0.25
	August	0.31	0.25	0.375	0.5	0.5
	September	0.25	0.00	0.25	0.25	0.25
	October	0.28	0.17	0.25	0.5	0.5
	November	0.31	0.23	0.375	0.5	0.5
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.39	0.49	0.75	0.75	0.75
	Monday	0.30	0.20	0.25	0.5	0.5
	Tuesday	0.30	0.30	0.25	0.25	0.75
	Wednesday	0.27	0.15	0.25	0.25	0.5
	Thursday	0.30	0.20	0.25	0.5	0.5
	Friday	0.28	0.17	0.25	0.5	0.5
	Saturday	0.25	0.00	0.25	0.25	0.25
Hour of Day	< 00:00 - ≤ 06:00	0.31	0.33	0.25	0.75	0.75
	< 06:00 - ≤ 09:00	0.36	0.41	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.25	.	0.25	0.25	0.25
	< 13:00 - ≤ 15:00	0.27	0.13	0.25	0.25	0.5
	< 15:00 - ≤ 18:00	0.34	0.31	0.5	0.5	0.75
	< 18:00 - ≤ 24:00	0.31	0.22	0.25	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 28 (Six Counties): 2x5 with 1-way stop on the minor and 22000 < AADT (major road) <= 30000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 34

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.34	0.51	0.25	0.5	1.25
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.38	0.37	0.5	0.75	0.75
	Left-turn	0.36	0.52	0.25	0.75	1
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.29	0.19	0.25	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.33	0.34	0.25	0.625	0.75
Severity	PDO	0.56	0.81	0.75	1.25	1.5
	Possible Injury	0.37	0.56	0.25	0.5	1.25
	Non-incapacitating	0.39	0.52	0.5	0.75	1
	Incapacitating	0.33	0.24	0.5	0.5	0.5
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.74	1.31	1	1.5	1.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.36	0.32	0.5	0.5	0.75
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	0.82	1.49	1.25	1.75	1.75
	Wet	0.28	0.18	0.25	0.5	0.5
	Slippery	.	.	.	.	.
	Other	0.89	1.54	1.5	1.75	2
Road Surface Type	Gravel	0.38	0.35	0.5	0.5	0.5
	Blacktop	0.86	1.51	1.25	1.75	2
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	0.89	1.54	1.5	1.75	2
Month of Year	January	0.32	0.24	0.5	0.5	0.5
	February	0.38	0.38	0.5	0.75	0.75
	March	0.28	0.18	0.25	0.5	0.5
	April	0.25	0.00	0.25	0.25	0.25
	May	0.30	0.22	0.25	0.5	0.5
	June	0.34	0.26	0.5	0.5	0.5
	July	0.33	0.41	0.25	0.75	0.75
	August	0.25	0.00	0.25	0.25	0.25
	September	0.33	0.26	0.5	0.5	0.5
	October	0.36	0.51	0.25	1	1
	November	0.29	0.20	0.25	0.5	0.5
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.25	0.00	0.25	0.25	0.25
	Monday	0.30	0.21	0.25	0.5	0.5
	Tuesday	0.25	0.00	0.25	0.25	0.25
	Wednesday	0.40	0.40	0.5	0.75	0.75
	Thursday	0.35	0.43	0.25	0.5	1
	Friday	0.47	0.73	0.75	1.25	1.25
	Saturday	0.31	0.23	0.375	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.28	0.18	0.25	0.5	0.5
	< 06:00 - ≤ 09:00	0.33	0.24	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.36	0.36	0.5	0.75	0.75
	< 13:00 - ≤ 15:00	0.37	0.56	0.25	0.5	1.25
	< 15:00 - ≤ 18:00	0.45	0.60	0.5	1	1.25
	< 18:00 - ≤ 24:00	0.33	0.24	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 29 (Six Counties): 2x5 with 1-way stop on the minor and 30000 < AADT (major road) <= 42000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 52

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.49	0.73	0.5	0.75	1.5
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.48	0.68	0.625	1	1.25
	Left-turn	0.36	0.47	0.5	0.5	0.75
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.32	0.32	0.25	0.5	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.40	0.62	0.375	1	1.125
Severity	PDO	0.78	1.49	1	1.5	2.5
	Possible Injury	0.52	0.62	0.75	1	1.25
	Non-incapacitating	0.42	0.60	0.5	0.75	1.25
	Incapacitating	0.31	0.22	0.25	0.5	0.5
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	0.96	1.79	1.25	2.5	2.5
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	.	0.25	0.25	0.25
	Dark (with Street Light)	0.42	0.44	0.5	0.75	1
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	1.12	1.82	1.5	2.5	3
	Wet	0.40	0.47	0.5	0.75	1
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	1.31	2.18	1.5	3	3.5
Road Surface Type	Gravel	0.33	0.29	0.5	0.5	0.5
	Blacktop	1.29	2.12	1.75	3	3.5
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.50	.	0.5	0.5	0.5
	Other	1.31	2.18	1.5	3	3.5
Month of Year	January	0.32	0.29	0.25	0.5	0.75
	February	0.31	0.22	0.25	0.5	0.5
	March	0.35	0.30	0.5	0.5	0.625
	April	0.42	0.39	0.5	0.75	0.75
	May	0.35	0.25	0.5	0.5	0.5
	June	0.35	0.36	0.5	0.75	0.75
	July	0.35	0.35	0.5	0.625	0.75
	August	0.28	0.15	0.25	0.375	0.5
	September	0.30	0.28	0.25	0.5	0.75
	October	0.32	0.23	0.5	0.5	0.5
	November	0.31	0.21	0.25	0.5	0.5
	December	0.33	0.24	0.5	0.5	0.5
Day of Week	Sunday	0.27	0.13	0.25	0.25	0.5
	Monday	0.44	0.47	0.5	0.75	1
	Tuesday	0.41	0.42	0.5	0.75	0.75
	Wednesday	0.39	0.53	0.5	0.5	0.5
	Thursday	0.33	0.36	0.25	0.5	0.75
	Friday	0.50	0.65	0.75	1	1.25
	Saturday	0.37	0.38	0.5	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.34	0.30	0.5	0.5	0.75
	< 06:00 - ≤ 09:00	0.32	0.23	0.5	0.5	0.5
	< 09:00 - ≤ 11:00	0.32	0.37	0.25	0.5	1
	< 11:00 - ≤ 13:00	0.53	0.59	0.75	1	1.25
	< 13:00 - ≤ 15:00	0.41	0.49	0.5	0.875	1
	< 15:00 - ≤ 18:00	0.49	0.75	0.625	1.25	1.5
	< 18:00 - ≤ 24:00	0.42	0.45	0.5	0.75	0.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 30 (Six Counties): 2x5 with 1-way stop on the minor and AADT (major road) > 42000

Total Number of Intersections Included - 51

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.72	0.88	1	1.25	1.5
	Head-on	0.29	0.19	0.25	0.5	0.5
	Angle	0.50	0.85	0.5	1	1.25
	Left-turn	0.51	0.78	0.5	1	1
	Right-turn	0.35	0.45	0.25	0.75	0.75
	Side-swipe	0.30	0.29	0.25	0.5	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.63	0.94	0.875	1.5	1.5
Severity	PDO	1.03	1.59	1.75	2	2.5
	Possible Injury	0.65	1.02	0.75	1.5	1.5
	Non-incapacitating	0.49	0.82	0.5	1	1.25
	Incapacitating	0.41	0.46	0.625	0.75	0.75
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.39	1.97	1.75	3	3.5
	Dusk	0.35	0.45	0.25	0.75	0.75
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.47	0.59	0.75	0.75	1.25
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	1.60	2.29	2.25	3.5	3.5
	Wet	0.37	0.51	0.5	0.75	1.25
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	1.78	2.55	2.5	3.75	3.75
Road Surface Type	Gravel	0.39	0.43	0.5	0.75	0.75
	Blacktop	1.57	2.32	2.25	3.5	3.75
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.46	0.66	0.75	1	1
	Other	1.78	2.55	2.5	3.75	3.75
Month of Year	January	0.31	0.27	0.25	0.5	0.75
	February	0.32	0.33	0.25	0.75	0.75
	March	0.43	0.52	0.5	0.75	1.25
	April	0.38	0.41	0.5	0.625	0.875
	May	0.36	0.30	0.5	0.5	0.5
	June	0.32	0.28	0.25	0.5	0.75
	July	0.38	0.31	0.5	0.5	0.75
	August	0.40	0.50	0.625	0.75	0.875
	September	0.32	0.29	0.25	0.5	0.75
	October	0.43	0.66	0.5	1.25	1.25
	November	0.38	0.45	0.5	0.75	1
	December	0.39	0.48	0.5	0.75	1
Day of Week	Sunday	0.34	0.25	0.5	0.5	0.5
	Monday	0.49	0.70	0.75	0.75	1.25
	Tuesday	0.51	0.45	0.75	0.75	1
	Wednesday	0.44	0.48	0.5	0.75	0.75
	Thursday	0.48	0.63	0.75	1	1
	Friday	0.54	0.73	0.75	1.25	1.25
	Saturday	0.38	0.56	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.33	0.24	0.5	0.5	0.5
	< 06:00 - ≤ 09:00	0.39	0.45	0.5	0.75	1
	< 09:00 - ≤ 11:00	0.40	0.38	0.5	0.75	0.75
	< 11:00 - ≤ 13:00	0.42	0.45	0.5	0.75	1
	< 13:00 - ≤ 15:00	0.45	0.46	0.625	0.75	0.75
	< 15:00 - ≤ 18:00	0.66	1.12	0.75	1.5	2
	< 18:00 - ≤ 24:00	0.50	0.64	0.5	1	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 31 (Six Counties): 2x6 with 1-way stop on the minor and AADT (major road) <= 45000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 54

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.54	0.60	0.75	1	1
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.69	1.17	0.75	1.5	2
	Left-turn	0.59	0.86	1	1.25	1.25
	Right-turn	0.29	0.19	0.25	0.5	0.5
	Side-swipe	0.36	0.31	0.5	0.5	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.47	0.51	0.75	0.75	1
Severity	PDO	0.95	1.40	1.25	1.5	2.5
	Possible Injury	0.62	1.15	0.75	1	2
	Non-incapacitating	0.53	0.80	0.5	1	1.5
	Incapacitating	0.41	0.54	0.5	1	1
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.35	2.41	1.75	2.75	4.25
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.73	1.07	1	1.5	1.75
	Dark (without Street Light)	0.33	0.33	0.375	0.5	0.75
Road Surface Condition	Dry	1.64	2.54	2.25	2.75	4.75
	Wet	0.43	0.49	0.5	1	1
	Slippery	0.33	0.29	0.5	0.5	0.5
	Other	1.88	2.96	2.25	3.5	5.25
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.78	2.88	2.25	3.25	4.75
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.33	0.29	0.5	0.5	0.5
	Other	1.88	2.96	2.25	3.5	5.25
Month of Year	January	0.40	0.44	0.5	0.75	0.75
	February	0.39	0.49	0.5	0.75	1
	March	0.35	0.41	0.375	0.625	0.875
	April	0.34	0.30	0.5	0.5	0.75
	May	0.37	0.41	0.5	0.75	0.75
	June	0.35	0.30	0.5	0.5	0.5
	July	0.29	0.25	0.25	0.5	0.75
	August	0.39	0.42	0.5	0.75	1
	September	0.44	0.65	0.5	0.75	1
	October	0.45	0.53	0.75	0.75	1
	November	0.33	0.24	0.5	0.5	0.5
	December	0.35	0.39	0.5	0.5	0.75
Day of Week	Sunday	0.41	0.44	0.625	0.75	0.75
	Monday	0.48	0.51	0.75	0.75	1
	Tuesday	0.48	0.53	0.75	0.75	1
	Wednesday	0.52	0.82	0.75	1.25	1.5
	Thursday	0.42	0.61	0.5	0.75	1.25
	Friday	0.47	0.56	0.5	1	1.25
	Saturday	0.48	0.66	0.625	1	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.35	0.29	0.5	0.5	0.5
	< 06:00 - ≤ 09:00	0.58	1.05	0.75	1	2.25
	< 09:00 - ≤ 11:00	0.40	0.42	0.5	0.75	1
	< 11:00 - ≤ 13:00	0.37	0.29	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.39	0.60	0.5	0.75	1
	< 15:00 - ≤ 18:00	0.65	0.99	0.75	1.25	1.75
	< 18:00 - ≤ 24:00	0.59	1.03	0.75	1.375	2

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 32 (Six Counties): 2x6 with 1-way stop on the minor and 45000 < AADT (major road) <= 50000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 35

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.61	0.82	0.875	1.25	1.25
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.83	1.65	1.25	1.75	2.75
	Left-turn	0.57	1.04	0.75	1	2.25
	Right-turn	0.38	0.50	0.5	0.75	0.75
	Side-swipe	0.38	0.43	0.5	0.5	1
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.29	0.19	0.25	0.5	0.5
Severity	PDO	0.89	2.06	1	2	2.75
	Possible Injury	0.82	0.94	1	1.5	1.75
	Non-incapacitating	0.51	0.70	0.5	1	1.25
	Incapacitating	0.55	0.86	0.5	0.75	1.75
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.21	2.66	1.5	2.75	3.5
	Dusk	0.38	0.38	0.5	0.75	0.75
	Dawn	0.25	.	0.25	0.25	0.25
	Dark (with Street Light)	0.66	0.95	0.75	1.25	1.5
	Dark (without Street Light)	0.33	0.29	0.5	0.5	0.5
Road Surface Condition	Dry	1.58	3.57	1.75	3.5	4.5
	Wet	0.44	0.53	0.5	0.75	1.25
	Slippery	.	.	.	.	.
	Other	1.80	3.82	2	3.5	5.5
Road Surface Type	Gravel	0.50	0.50	0.75	0.75	0.75
	Blacktop	1.76	3.74	2.125	3.5	4.75
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.33	0.29	0.5	0.5	0.5
	Other	1.80	3.82	2	3.5	5.5
Month of Year	January	0.36	0.26	0.5	0.5	0.5
	February	0.33	0.32	0.25	0.5	0.75
	March	0.31	0.30	0.25	0.5	0.75
	April	0.33	0.41	0.25	0.5	1
	May	0.40	0.58	0.5	0.5	1.25
	June	0.40	0.72	0.375	0.5	1.5
	July	0.44	0.55	0.5	1	1
	August	0.36	0.41	0.5	0.5	1
	September	0.32	0.23	0.5	0.5	0.5
	October	0.53	0.72	0.75	1.125	1.25
	November	0.38	0.50	0.5	1	1
	December	0.48	0.78	0.5	1	1.5
Day of Week	Sunday	0.41	0.46	0.5	0.5	1
	Monday	0.49	0.56	0.5	1	1
	Tuesday	0.53	0.81	0.75	1	1.75
	Wednesday	0.50	0.80	0.5	1.25	1.75
	Thursday	0.55	0.88	0.75	1	2
	Friday	0.62	1.02	0.5	1.75	1.75
	Saturday	0.37	0.46	0.5	0.75	1
Hour of Day	< 00:00 - ≤ 06:00	0.36	0.26	0.5	0.5	0.5
	< 06:00 - ≤ 09:00	0.47	0.46	0.5	0.75	1
	< 09:00 - ≤ 11:00	0.46	1.07	0.5	0.75	2.25
	< 11:00 - ≤ 13:00	0.39	0.46	0.5	0.75	1
	< 13:00 - ≤ 15:00	0.39	0.58	0.5	0.75	1.25
	< 15:00 - ≤ 18:00	0.64	1.22	1	1	1.25
	< 18:00 - ≤ 24:00	0.56	0.95	0.625	1.25	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 33 (Six Counties): 2x6 with 1-way stop on the minor and 50000 < AADT (major road) <= 58000

Total Number of Intersections Included - 41

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.91	1.50	1	1.875	3
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.68	0.94	1	1.25	1.75
	Left-turn	0.48	0.53	0.5	0.75	1
	Right-turn	0.38	0.27	0.5	0.5	0.5
	Side-swipe	0.38	0.38	0.5	0.75	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.73	1.16	0.875	1.75	2
Severity	PDO	1.30	2.34	2.25	3	4
	Possible Injury	0.73	1.21	0.75	1.25	1.5
	Non-incapacitating	0.53	0.69	0.75	1.125	1.25
	Incapacitating	0.31	0.30	0.25	0.5	0.75
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.80	2.95	2.75	3.75	5.25
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	.	0.25	0.25	0.25
	Dark (with Street Light)	0.67	1.08	1	1.25	1.25
	Dark (without Street Light)	0.31	0.25	0.375	0.5	0.5
Road Surface Condition	Dry	2.00	3.42	3	4	6.5
	Wet	0.51	0.56	0.75	0.75	1
	Slippery	0.33	0.29	0.5	0.5	0.5
	Other	2.36	3.88	3.75	5	7.5
Road Surface Type	Gravel	0.43	0.48	0.75	0.75	0.75
	Blacktop	2.19	3.72	3.25	4.75	7.25
	Brick	.	.	.	.	.
	Concrete	0.36	0.39	0.5	0.75	0.75
	Other	2.36	3.88	3.75	5	7.5
Month of Year	January	0.38	0.26	0.5	0.5	0.5
	February	0.43	0.65	0.5	0.875	1.25
	March	0.42	0.68	0.5	1	1
	April	0.38	0.43	0.5	0.5	1
	May	0.33	0.30	0.5	0.5	0.75
	June	0.48	0.54	0.75	0.875	1
	July	0.36	0.30	0.5	0.5	0.75
	August	0.40	0.40	0.5	0.5	1
	September	0.47	0.70	0.625	1.25	1.25
	October	0.45	0.63	0.5	1	1.25
	November	0.48	0.53	0.625	1	1
	December	0.49	0.50	0.5	1	1
Day of Week	Sunday	0.41	0.37	0.5	0.75	0.75
	Monday	0.67	1.04	1	1.25	1.5
	Tuesday	0.56	0.79	0.75	1	1
	Wednesday	0.50	0.71	1	1	1
	Thursday	0.60	0.87	0.75	1.5	1.5
	Friday	0.57	0.73	0.75	1.25	1.25
	Saturday	0.42	0.34	0.5	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.41	0.34	0.5	0.5	0.75
	< 06:00 - ≤ 09:00	0.51	0.87	0.5	1	1.25
	< 09:00 - ≤ 11:00	0.53	0.75	0.75	1	1.5
	< 11:00 - ≤ 13:00	0.46	0.53	0.5	1	1
	< 13:00 - ≤ 15:00	0.63	1.05	0.75	1.25	2
	< 15:00 - ≤ 18:00	0.77	1.08	1	1.5	2
	< 18:00 - ≤ 24:00	0.63	0.78	0.75	1	1

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 34 (Six Counties): 2x6 with 1-way stop on the minor and AADT (major road) > 58000 (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 30

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	1.38	2.11	2	3.25	3.25
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	1.00	1.94	1	3	3.25
	Left-turn	0.58	1.20	0.75	1.75	2.5
	Right-turn	0.28	0.16	0.25	0.375	0.5
	Side-swipe	0.42	0.45	0.5	0.75	1
	Pedestrian/Bicycle	.	.	.	.	.
	Other	1.11	2.78	1.125	3.375	4.875
Severity	PDO	2.44	4.33	3	6.75	7.5
	Possible Injury	1.20	1.47	1.75	2.25	2.25
	Non-incapacitating	0.64	0.94	0.75	1.25	1.5
	Incapacitating	0.30	0.30	0.25	0.25	0.75
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	2.94	4.98	3.75	7.25	8.25
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	1.04	1.64	1.25	1.75	2.5
	Dark (without Street Light)	0.29	0.20	0.25	0.5	0.5
Road Surface Condition	Dry	3.37	5.08	4.375	8.75	8.75
	Wet	0.91	1.68	1.25	1.75	3.75
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	4.09	6.39	5	10.5	10.75
Road Surface Type	Gravel	0.45	0.42	0.5	0.75	0.75
	Blacktop	3.92	6.19	4.875	9.75	10.25
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	4.09	6.39	5	10.5	10.75
Month of Year	January	0.65	0.80	1	1.25	1.25
	February	0.51	0.86	0.5	1	1.75
	March	0.46	0.60	0.5	1	1
	April	0.54	0.58	0.75	1	1
	May	0.50	0.52	0.5	1	1
	June	0.47	0.51	0.75	0.75	1
	July	0.51	0.70	0.75	1.25	1.25
	August	0.50	0.94	0.75	1.25	2
	September	0.63	0.92	0.75	1.75	1.75
	October	0.49	0.72	0.5	1	1.5
	November	0.49	0.60	0.5	0.75	1.125
	December	0.55	0.84	0.75	1.5	1.5
Day of Week	Sunday	0.43	0.49	0.5	0.75	1
	Monday	0.89	1.25	1.25	1.5	2.25
	Tuesday	0.74	0.79	1	1.5	1.5
	Wednesday	0.86	1.25	1	2	2
	Thursday	0.82	1.51	1.125	2	2.5
	Friday	0.83	1.06	1.125	1.75	2
	Saturday	0.57	0.91	0.75	1.5	1.5
Hour of Day	< 00:00 - ≤ 06:00	0.71	1.14	0.75	1.25	2.5
	< 06:00 - ≤ 09:00	0.69	1.32	0.875	1.875	2.25
	< 09:00 - ≤ 11:00	0.60	0.71	0.75	1.25	1.25
	< 11:00 - ≤ 13:00	0.58	0.76	0.75	1.25	1.25
	< 13:00 - ≤ 15:00	0.86	1.07	1.25	1.5	2
	< 15:00 - ≤ 18:00	1.19	1.88	1.75	2	3.25
	< 18:00 - ≤ 24:00	0.62	0.84	0.75	1.25	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 35 (Six Counties): 2x7 with 1-way stop on the minor (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 21

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.84	1.25	1.25	2	2
	Head-on	0.33	0.29	0.5	0.5	0.5
	Angle	0.70	1.49	0.75	2	2.75
	Left-turn	1.03	1.79	1.5	2.5	3
	Right-turn	0.38	0.35	0.5	0.5	0.5
	Side-swipe	0.33	0.35	0.25	0.75	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.33	0.41	0.25	0.75	0.75
Severity	PDO	0.93	1.44	1.5	1.75	3
	Possible Injury	0.98	1.91	1.5	2	3.5
	Non-incapacitating	0.82	1.71	1.25	2.25	2.5
	Incapacitating	0.32	0.38	0.25	0.75	0.75
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.64	3.37	2.25	4.25	5.375
	Dusk	0.31	0.23	0.375	0.5	0.5
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.59	0.78	1	1.25	1.25
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	1.93	4.01	2.5	4.75	6.375
	Wet	0.59	0.65	0.75	1.25	1.25
	Slippery	0.25	.	0.25	0.25	0.25
	Other	2.18	4.47	2.875	5.5	7.375
Road Surface Type	Gravel	0.50	0.71	0.75	0.75	0.75
	Blacktop	1.99	4.08	2.875	5.25	6.625
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.33	0.26	0.5	0.5	0.5
	Other	2.18	4.47	2.875	5.5	7.375
Month of Year	January	0.41	0.37	0.5	0.75	0.75
	February	0.32	0.24	0.5	0.5	0.5
	March	0.39	0.36	0.5	0.75	0.75
	April	0.50	0.87	1	1.25	1.25
	May	0.41	0.26	0.5	0.5	0.5
	June	0.42	0.35	0.5	0.75	0.75
	July	0.46	0.45	0.75	0.75	0.75
	August	0.44	0.33	0.5	0.75	0.75
	September	0.46	0.61	0.75	1	1
	October	0.48	0.80	0.5	1.125	1.5
	November	0.43	0.41	0.5	0.75	0.75
	December	0.41	0.40	0.5	0.75	0.75
Day of Week	Sunday	0.59	0.88	0.75	1.5	1.5
	Monday	0.55	0.88	0.5	1.125	1.75
	Tuesday	0.57	0.81	1	1	1.25
	Wednesday	0.69	0.93	1	1.5	1.5
	Thursday	0.50	0.85	0.5	1.25	1.5
	Friday	0.64	1.17	1	1.75	2
	Saturday	0.34	0.40	0.25	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.36	0.36	0.5	0.75	0.75
	< 06:00 - ≤ 09:00	0.48	0.55	0.75	0.875	1
	< 09:00 - ≤ 11:00	0.36	0.34	0.5	0.5	0.75
	< 11:00 - ≤ 13:00	0.40	0.56	0.5	0.75	1.25
	< 13:00 - ≤ 15:00	0.63	1.09	1	1.25	2
	< 15:00 - ≤ 18:00	1.00	1.80	1.5	1.5	3.25
	< 18:00 - ≤ 24:00	0.64	0.83	1	1.25	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 36 (Six Counties): 2x8 with 1-way stop on the minor (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 8

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.97	1.52	1	2.75	2.75
	Head-on	.	.	.	.	.
	Angle	2.04	3.97	4.75	5	5
	Left-turn	0.93	1.91	1	3	3
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.65	0.67	1	1	1
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.60	0.45	0.75	0.75	0.75
Severity	PDO	1.81	3.16	3	4.25	4.25
	Possible Injury	1.78	3.01	2.625	4.5	4.5
	Non-incapacitating	1.04	1.28	1.75	1.75	1.75
	Incapacitating	0.38	0.29	0.5	0.5	0.5
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	3.59	6.06	5	9.75	9.75
	Dusk	0.25	.	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	1.07	1.91	1.5	3	3
	Dark (without Street Light)	0.50	.	0.5	0.5	0.5
Road Surface Condition	Dry	4.34	6.44	7	9.75	9.75
	Wet	0.45	0.55	0.75	0.75	0.75
	Slippery	.	.	.	.	.
	Other	4.63	6.90	7.375	10.5	10.5
Road Surface Type	Gravel	0.33	0.29	0.5	0.5	0.5
	Blacktop	4.44	6.63	6.75	10.5	10.5
	Brick	.	.	.	.	.
	Concrete	0.25	.	0.25	0.25	0.25
	Other	4.63	6.90	7.375	10.5	10.5
Month of Year	January	0.55	0.65	0.75	1	1
	February	0.50	0.45	0.75	0.75	0.75
	March	0.90	0.45	1	1.25	1.25
	April	0.67	0.61	1	1	1
	May	0.50	0.77	1	1	1
	June	0.45	0.65	0.5	1	1
	July	0.35	0.45	0.25	0.75	0.75
	August	0.70	0.89	1	1.25	1.25
	September	0.65	0.57	0.75	1	1
	October	0.45	0.65	0.5	1	1
	November	0.67	1.17	0.75	1.75	1.75
	December	0.55	0.65	0.75	1	1
Day of Week	Sunday	0.40	0.67	0.25	1	1
	Monday	0.78	1.18	1.25	1.75	1.75
	Tuesday	1.21	2.18	1.5	3.25	3.25
	Wednesday	0.84	1.19	1	2	2
	Thursday	1.04	1.30	1.25	2.25	2.25
	Friday	0.89	1.58	1.5	2.25	2.25
	Saturday	0.63	1.06	1	1	1
Hour of Day	< 00:00 - ≤ 06:00	0.56	0.48	0.75	0.75	0.75
	< 06:00 - ≤ 09:00	1.31	2.72	1.375	4.5	4.5
	< 09:00 - ≤ 11:00	0.38	0.42	0.5	0.75	0.75
	< 11:00 - ≤ 13:00	1.08	1.53	1.75	1.75	1.75
	< 13:00 - ≤ 15:00	1.38	1.94	2	2.75	2.75
	< 15:00 - ≤ 18:00	0.96	1.48	1.75	2.25	2.25
	< 18:00 - ≤ 24:00	0.93	1.25	1.5	2	2

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 37 (Six Counties): 3x4 and 3x6 with 1-way stop on the minor (for urban 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 5

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.63	0.87	0.875	1.25	1.25
	Head-on	.	.	.	.	.
	Angle	0.50	0.00	0.5	0.5	0.5
	Left-turn	0.38	0.35	0.5	0.5	0.5
	Right-turn	0.38	0.35	0.5	0.5	0.5
	Side-swipe	0.50	.	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.38	0.35	0.5	0.5	0.5
Severity	PDO	0.75	1.08	1.125	1.5	1.5
	Possible Injury	0.50	0.41	0.625	0.75	0.75
	Non-incapacitating	0.33	0.29	0.5	0.5	0.5
	Incapacitating	0.25	.	0.25	0.25	0.25
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.05	1.92	1.5	2.5	2.5
	Dusk	0.25	.	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.63	0.35	0.75	0.75	0.75
	Dark (without Street Light)	.	.	.	.	.
Road Surface Condition	Dry	1.56	2.25	2.25	3	3
	Wet	0.25	0.00	0.25	0.25	0.25
	Slippery	.	.	.	.	.
	Other	1.40	2.49	1.75	3.25	3.25
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	1.20	2.07	1.5	2.75	2.75
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	1.40	2.49	1.75	3.25	3.25
Month of Year	January	0.42	0.29	0.5	0.5	0.5
	February	0.50	0.50	0.75	0.75	0.75
	March	0.25	.	0.25	0.25	0.25
	April	.	.	.	.	.
	May	0.25	0.00	0.25	0.25	0.25
	June	.	.	.	.	.
	July	0.50	.	0.5	0.5	0.5
	August	0.75	.	0.75	0.75	0.75
	September	0.25	.	0.25	0.25	0.25
	October	0.50	.	0.5	0.5	0.5
	November	0.25	0.00	0.25	0.25	0.25
	December	0.38	0.35	0.5	0.5	0.5
Day of Week	Sunday	0.63	0.35	0.75	0.75	0.75
	Monday	0.63	0.35	0.75	0.75	0.75
	Tuesday	0.38	0.35	0.5	0.5	0.5
	Wednesday	0.50	0.71	0.75	0.75	0.75
	Thursday	0.42	0.58	0.75	0.75	0.75
	Friday	0.33	0.29	0.5	0.5	0.5
	Saturday	0.25	0.00	0.25	0.25	0.25
Hour of Day	< 00:00 - ≤ 06:00	0.50	0.71	0.75	0.75	0.75
	< 06:00 - ≤ 09:00	0.25	.	0.25	0.25	0.25
	< 09:00 - ≤ 11:00	0.38	0.29	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.25	0.00	0.25	0.25	0.25
	< 13:00 - ≤ 15:00	0.50	0.71	0.75	1	1
	< 15:00 - ≤ 18:00	0.63	0.35	0.75	0.75	0.75
	< 18:00 - ≤ 24:00	0.25	0.00	0.25	0.25	0.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 38 (Six Counties): 2x2 with 2-way stop or "no control/stop" on the minor (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 40

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.60	1.19	0.5	1.75	2.25
	Head-on	0.35	0.45	0.25	0.75	0.75
	Angle	0.68	1.20	0.75	1.25	2.25
	Left-turn	0.44	0.63	0.5	1	1.25
	Right-turn	0.38	0.29	0.5	0.5	0.5
	Side-swipe	0.32	0.23	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.63	1.15	0.75	1.25	2.25
Severity	PDO	0.92	2.08	1.125	2.5	3.25
	Possible Injury	0.74	1.33	1	1.75	1.75
	Non-incapacitating	0.47	0.80	0.75	1	1.25
	Incapacitating	0.32	0.34	0.25	0.75	0.75
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	1.26	2.54	1.5	3.25	4
	Dusk	0.28	0.17	0.25	0.5	0.5
	Dawn	0.31	0.25	0.375	0.5	0.5
	Dark (with Street Light)	0.40	0.46	0.5	0.75	1
	Dark (without Street Light)	0.43	0.46	0.5	0.75	1
Road Surface Condition	Dry	1.49	2.79	1.75	4	4.25
	Wet	0.60	0.78	0.875	1	1.5
	Slippery	0.25	.	0.25	0.25	0.25
	Other	1.68	3.42	2	4.75	5
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.61	3.13	2	4.25	5
	Brick	.	.	.	.	.
	Concrete	0.50	0.71	0.75	0.75	0.75
	Other	1.68	3.42	2	4.75	5
Month of Year	January	0.46	0.61	0.75	1	1
	February	0.37	0.56	0.25	0.75	1.25
	March	0.38	0.45	0.5	0.75	1
	April	0.34	0.42	0.25	0.5	1
	May	0.34	0.44	0.25	0.75	1
	June	0.41	0.64	0.5	0.75	1.25
	July	0.33	0.35	0.25	0.75	0.75
	August	0.39	0.38	0.5	0.75	0.75
	September	0.42	0.47	0.5	0.75	1
	October	0.39	0.60	0.5	0.5	1.5
	November	0.40	0.48	0.5	0.75	1
	December	0.43	0.45	0.75	0.75	0.75
Day of Week	Sunday	0.42	0.49	0.5	0.75	1
	Monday	0.56	0.94	0.75	1	1.625
	Tuesday	0.55	0.66	0.75	0.75	1.5
	Wednesday	0.49	0.83	0.5	1.25	1.5
	Thursday	0.57	0.74	0.75	1.25	1.25
	Friday	0.46	0.70	0.5	1	1.25
	Saturday	0.35	0.37	0.5	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.40	0.48	0.5	0.75	1
	< 06:00 - ≤ 09:00	0.46	0.77	0.5	1.25	1.5
	< 09:00 - ≤ 11:00	0.38	0.42	0.5	0.5	1
	< 11:00 - ≤ 13:00	0.52	0.87	0.5	0.75	2
	< 13:00 - ≤ 15:00	0.48	0.74	0.75	1	1.5
	< 15:00 - ≤ 18:00	0.78	1.11	1.125	1.25	2
	< 18:00 - ≤ 24:00	0.47	0.56	0.5	0.75	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 39 (Six Counties): 2x3 with 2-way stop or no control or "no control/stop" on the minor (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 12

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.35	0.27	0.5	0.5	0.5
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.33	0.26	0.5	0.5	0.5
	Left-turn	0.29	0.19	0.25	0.5	0.5
	Right-turn	0.25	.	0.25	0.25	0.25
	Side-swipe	0.25	0.00	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	.	0.25	0.25	0.25
Severity	PDO	0.47	0.56	0.625	1	1
	Possible Injury	0.29	0.20	0.25	0.5	0.5
	Non-incapacitating	0.42	0.58	0.75	0.75	0.75
	Incapacitating	0.31	0.25	0.375	0.5	0.5
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.72	0.63	1	1.25	1.25
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.50	.	0.5	0.5	0.5
	Dark (without Street Light)	0.33	0.29	0.5	0.5	0.5
Road Surface Condition	Dry	0.83	0.66	1	1.25	1.25
	Wet	0.25	.	0.25	0.25	0.25
	Slippery	0.25	.	0.25	0.25	0.25
	Other	0.89	0.79	1.25	1.5	1.5
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	0.86	0.83	1.25	1.5	1.5
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	0.89	0.79	1.25	1.5	1.5
Month of Year	January	0.31	0.25	0.375	0.5	0.5
	February	0.25	0.00	0.25	0.25	0.25
	March	0.35	0.27	0.5	0.5	0.5
	April	0.25	0.00	0.25	0.25	0.25
	May	0.25	0.00	0.25	0.25	0.25
	June	0.25	.	0.25	0.25	0.25
	July	0.25	0.00	0.25	0.25	0.25
	August	.	.	.	.	.
	September	0.25	0.00	0.25	0.25	0.25
	October	0.38	0.35	0.5	0.5	0.5
	November	0.25	.	0.25	0.25	0.25
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.38	0.35	0.5	0.5	0.5
	Monday	0.25	0.00	0.25	0.25	0.25
	Tuesday	0.44	0.48	0.625	0.75	0.75
	Wednesday	0.25	0.00	0.25	0.25	0.25
	Thursday	0.25	0.00	0.25	0.25	0.25
	Friday	0.31	0.25	0.375	0.5	0.5
	Saturday	0.38	0.50	0.5	0.75	0.75
Hour of Day	< 00:00 - ≤ 06:00	0.38	0.35	0.5	0.5	0.5
	< 06:00 - ≤ 09:00	0.31	0.25	0.375	0.5	0.5
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.29	0.20	0.25	0.5	0.5
	< 13:00 - ≤ 15:00	0.25	0.00	0.25	0.25	0.25
	< 15:00 - ≤ 18:00	0.35	0.27	0.5	0.5	0.5
	< 18:00 - ≤ 24:00	0.38	0.35	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 40 (Six Counties): 2x4 with 2-way stop on the minor and AADT (major road) <= 25000 (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 93

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.45	0.65	0.5	0.75	1.25
	Head-on	0.37	0.48	0.25	0.75	1
	Angle	0.83	1.96	0.75	1.75	3.25
	Left-turn	0.51	0.86	0.5	1	2
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.31	0.27	0.25	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.60	1.16	0.75	1.75	1.75
Severity	PDO	1.06	2.20	1.5	2.75	3.25
	Possible Injury	0.67	1.25	0.75	1.25	2.5
	Non-incapacitating	0.48	0.62	0.5	1	1
	Incapacitating	0.34	0.47	0.25	0.5	1
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.29	2.70	1.875	3	3.75
	Dusk	0.31	0.22	0.25	0.5	0.5
	Dawn	0.32	0.24	0.5	0.5	0.5
	Dark (with Street Light)	0.66	1.16	1	1.375	1.75
	Dark (without Street Light)	0.43	0.59	0.5	1	1.25
Road Surface Condition	Dry	1.46	3.23	2	3.75	4
	Wet	0.48	0.68	0.625	1	1.25
	Slippery	0.25	.	0.25	0.25	0.25
	Other	1.69	3.68	2.25	4	5
Road Surface Type	Gravel	0.29	0.26	0.25	0.5	0.75
	Blacktop	1.63	3.56	2	4	4.5
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.27	0.13	0.25	0.25	0.5
	Other	1.69	3.68	2.25	4	5
Month of Year	January	0.40	0.44	0.5	0.75	0.75
	February	0.43	0.66	0.5	0.75	1
	March	0.46	0.50	0.5	0.75	1
	April	0.35	0.33	0.5	0.5	0.75
	May	0.38	0.49	0.5	0.75	0.75
	June	0.37	0.45	0.5	0.75	1
	July	0.44	0.69	0.5	1	1.5
	August	0.37	0.39	0.5	0.75	0.75
	September	0.35	0.35	0.5	0.5	0.75
	October	0.36	0.40	0.5	0.5	0.75
	November	0.36	0.47	0.25	0.75	1
	December	0.45	0.70	0.5	1	1.5
Day of Week	Sunday	0.45	0.66	0.5	1	1.25
	Monday	0.44	0.57	0.5	0.75	1.25
	Tuesday	0.54	0.76	0.75	1	1.5
	Wednesday	0.51	0.87	0.75	1	1.25
	Thursday	0.54	0.89	0.5	1.25	1.5
	Friday	0.53	0.84	0.75	1	1.5
	Saturday	0.39	0.42	0.5	0.75	0.875
Hour of Day	< 00:00 - ≤ 06:00	0.45	0.75	0.5	0.75	1.25
	< 06:00 - ≤ 09:00	0.46	0.71	0.5	0.75	1
	< 09:00 - ≤ 11:00	0.41	0.48	0.5	0.625	1
	< 11:00 - ≤ 13:00	0.41	0.53	0.5	0.75	1
	< 13:00 - ≤ 15:00	0.54	0.80	0.75	1.25	1.25
	< 15:00 - ≤ 18:00	0.66	0.98	1	1.25	1.25
	< 18:00 - ≤ 24:00	0.54	0.72	0.75	1	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 41 (Six Counties): 2x4 with 2-way stop on the minor and AADT (major road) > 25000 (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 111

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.68	1.14	0.75	1	2
	Head-on	0.36	0.38	0.5	0.75	0.75
	Angle	0.78	1.72	0.75	1.5	3
	Left-turn	0.54	0.85	0.75	1	1.5
	Right-turn	0.30	0.20	0.25	0.5	0.5
	Side-swipe	0.35	0.40	0.5	0.5	1
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.61	0.99	0.75	1.25	1.75
Severity	PDO	1.21	2.41	1.75	3.125	3.75
	Possible Injury	0.69	1.11	0.75	1.375	1.75
	Non-incapacitating	0.62	0.88	0.75	1.25	1.5
	Incapacitating	0.35	0.30	0.5	0.5	0.75
	Fatal	0.33	0.29	0.5	0.5	0.5
Lighting Condition	Daylight	1.64	3.13	2	4.25	5.75
	Dusk	0.29	0.19	0.25	0.5	0.5
	Dawn	0.28	0.18	0.25	0.5	0.5
	Dark (with Street Light)	0.61	1.11	0.75	1	1.75
	Dark (without Street Light)	0.46	1.08	0.25	1	2.5
Road Surface Condition	Dry	1.75	3.41	2.25	3.75	5.25
	Wet	0.50	0.73	0.75	1	1.25
	Slippery	0.29	0.20	0.25	0.5	0.5
	Other	2.03	4.01	2.75	5.5	6.5
Road Surface Type	Gravel	0.38	0.38	0.5	0.75	0.75
	Blacktop	1.88	3.71	2.75	5	5.75
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.38	0.48	0.375	0.75	1
	Other	2.03	4.01	2.75	5.5	6.5
Month of Year	January	0.44	0.63	0.5	1	1.25
	February	0.41	0.43	0.5	0.75	0.75
	March	0.44	0.55	0.5	0.75	1
	April	0.39	0.48	0.5	0.75	0.75
	May	0.39	0.44	0.5	0.75	0.75
	June	0.40	0.48	0.5	0.75	1
	July	0.40	0.55	0.5	1	1
	August	0.45	0.50	0.5	0.75	1
	September	0.44	0.52	0.5	0.75	1
	October	0.41	0.49	0.5	0.75	1
	November	0.40	0.43	0.5	0.75	0.75
	December	0.45	0.56	0.5	0.75	0.75
Day of Week	Sunday	0.45	0.50	0.5	1	1
	Monday	0.60	0.90	0.75	1.25	1.5
	Tuesday	0.50	0.80	0.5	1	1.5
	Wednesday	0.55	0.81	0.75	1	1.5
	Thursday	0.53	0.65	0.75	1	1
	Friday	0.55	0.91	0.75	1.25	1.5
	Saturday	0.47	0.60	0.5	1	1
Hour of Day	< 00:00 - ≤ 06:00	0.42	0.65	0.5	0.75	1
	< 06:00 - ≤ 09:00	0.50	0.92	0.5	0.75	1.25
	< 09:00 - ≤ 11:00	0.55	0.86	0.75	1.25	1.5
	< 11:00 - ≤ 13:00	0.44	0.51	0.5	0.75	1
	< 13:00 - ≤ 15:00	0.52	0.66	0.75	1	1
	< 15:00 - ≤ 18:00	0.79	1.38	1	1.5	2.25
	< 18:00 - ≤ 24:00	0.56	0.91	0.75	1.25	1.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 42 (Six Counties): 2x4 with "no control/stop" on the minor (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 53

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.59	1.32	0.75	1.25	2.5
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.90	1.86	1	2.5	3.25
	Left-turn	0.64	1.16	0.75	1.5	2
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.40	0.60	0.5	0.75	1.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.48	0.58	0.5	0.75	1.25
Severity	PDO	1.06	2.54	1	3	4.25
	Possible Injury	0.61	1.16	0.75	1.25	1.5
	Non-incapacitating	0.49	0.62	0.5	1	1.25
	Incapacitating	0.39	0.57	0.375	0.875	1.125
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.44	3.76	1.375	3.75	6.625
	Dusk	0.32	0.38	0.25	0.75	0.75
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.43	0.57	0.5	1	1
	Dark (without Street Light)	0.40	0.60	0.5	0.75	1.25
Road Surface Condition	Dry	1.46	3.63	1.75	3	5.5
	Wet	0.49	0.79	0.5	1	1.5
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	1.73	4.33	1.75	3.75	6.75
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.69	4.24	1.75	3.75	6.75
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.25	.	0.25	0.25	0.25
	Other	1.73	4.33	1.75	3.75	6.75
Month of Year	January	0.37	0.56	0.25	1	1
	February	0.42	0.62	0.5	1	1.25
	March	0.48	0.80	0.5	1.25	1.25
	April	0.34	0.31	0.5	0.5	0.75
	May	0.37	0.62	0.25	0.5	1.5
	June	0.42	0.52	0.5	1	1
	July	0.32	0.34	0.25	0.75	0.75
	August	0.50	0.71	0.5	0.75	1.5
	September	0.42	0.35	0.5	0.75	0.75
	October	0.46	0.59	0.5	1	1.25
	November	0.42	0.56	0.5	1	1
	December	0.40	0.43	0.5	0.5	1
Day of Week	Sunday	0.39	0.55	0.5	0.75	1.25
	Monday	0.53	0.83	0.75	1.25	1.75
	Tuesday	0.52	0.94	0.5	1.25	1.75
	Wednesday	0.55	0.94	0.5	1.5	1.75
	Thursday	0.53	1.04	0.5	1.25	2
	Friday	0.60	0.98	0.75	1.25	1.75
	Saturday	0.35	0.25	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.46	0.71	0.5	1	1.5
	< 06:00 - ≤ 09:00	0.59	1.08	0.75	1.375	1.875
	< 09:00 - ≤ 11:00	0.47	0.73	0.5	0.75	1.75
	< 11:00 - ≤ 13:00	0.46	1.06	0.5	1	2.5
	< 13:00 - ≤ 15:00	0.51	0.88	0.5	1.5	1.75
	< 15:00 - ≤ 18:00	0.68	1.31	0.75	1.375	2.25
	< 18:00 - ≤ 24:00	0.44	0.70	0.5	1	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 43 (Six Counties): 2x5 with 2-way stop on the minor and AADT (major road) <= 32000 (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 39

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.38	0.48	0.375	0.75	1
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.57	0.79	0.75	1.25	1.25
	Left-turn	0.37	0.42	0.5	0.75	1
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.25	0.00	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.31	0.31	0.25	0.5	0.75
Severity	PDO	0.69	0.85	0.75	1.5	1.5
	Possible Injury	0.61	0.87	0.75	1.25	1.5
	Non-incapacitating	0.43	0.43	0.5	0.75	0.875
	Incapacitating	0.32	0.23	0.5	0.5	0.5
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	0.89	1.41	1	2.25	2.5
	Dusk	0.25	.	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.51	0.66	0.75	1	1.5
	Dark (without Street Light)	0.25	.	0.25	0.25	0.25
Road Surface Condition	Dry	1.09	1.69	1.5	2.25	2.75
	Wet	0.35	0.26	0.5	0.5	0.5
	Slippery	.	.	.	.	.
	Other	1.23	1.88	1.75	2.25	3.25
Road Surface Type	Gravel	0.38	0.50	0.5	0.75	0.75
	Blacktop	1.15	1.73	1.5	2.25	2.5
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	1.23	1.88	1.75	2.25	3.25
Month of Year	January	0.39	0.51	0.5	1	1
	February	0.34	0.25	0.5	0.5	0.5
	March	0.34	0.46	0.25	0.5	1
	April	0.27	0.13	0.25	0.25	0.5
	May	0.31	0.21	0.25	0.5	0.5
	June	0.28	0.16	0.25	0.375	0.5
	July	0.35	0.35	0.5	0.625	0.75
	August	0.38	0.49	0.5	0.75	1
	September	0.25	0.00	0.25	0.25	0.25
	October	0.31	0.22	0.25	0.5	0.5
	November	0.28	0.18	0.25	0.5	0.5
	December	0.33	0.35	0.25	0.75	0.75
Day of Week	Sunday	0.32	0.38	0.25	0.75	0.75
	Monday	0.32	0.32	0.25	0.5	0.75
	Tuesday	0.35	0.42	0.25	0.75	1
	Wednesday	0.35	0.36	0.5	0.75	0.75
	Thursday	0.43	0.60	0.5	1	1.25
	Friday	0.40	0.40	0.5	0.75	0.75
	Saturday	0.42	0.47	0.5	0.75	1
Hour of Day	< 00:00 - ≤ 06:00	0.33	0.34	0.25	0.625	0.75
	< 06:00 - ≤ 09:00	0.31	0.22	0.25	0.5	0.5
	< 09:00 - ≤ 11:00	0.33	0.39	0.25	0.75	0.75
	< 11:00 - ≤ 13:00	0.40	0.48	0.5	0.75	1
	< 13:00 - ≤ 15:00	0.43	0.41	0.5	0.75	0.75
	< 15:00 - ≤ 18:00	0.56	0.61	0.75	0.75	1
	< 18:00 - ≤ 24:00	0.50	0.68	0.75	0.75	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 44 (Six Counties): 2x5 with 2-way stop on the minor and AADT (major road) > 32000 (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 39

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.96	1.62	1.25	2	3.5
	Head-on	0.28	0.17	0.25	0.5	0.5
	Angle	1.29	2.15	1.75	3	3
	Left-turn	0.67	1.54	0.75	1.5	2.75
	Right-turn	0.32	0.24	0.5	0.5	0.5
	Side-swipe	0.45	0.91	0.5	0.75	1.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	1.21	1.93	2	2.5	2.75
Severity	PDO	2.22	4.81	3.25	5	5.5
	Possible Injury	1.28	1.84	2	3	3
	Non-incapacitating	0.70	1.10	0.75	1.5	2.25
	Incapacitating	0.33	0.41	0.25	0.5	1
	Fatal	0.38	0.35	0.5	0.5	0.5
Lighting Condition	Daylight	2.72	5.07	3.5	6.25	9.25
	Dusk	0.29	0.19	0.25	0.5	0.5
	Dawn	0.28	0.17	0.25	0.5	0.5
	Dark (with Street Light)	1.02	1.96	1.5	2	2.5
	Dark (without Street Light)	0.46	1.02	0.25	1.5	1.5
Road Surface Condition	Dry	3.18	5.69	4.5	7.75	9.25
	Wet	0.77	1.38	1.25	1.5	1.75
	Slippery	0.25	0.00	0.25	0.25	0.25
	Other	3.67	6.89	4.5	8.5	10.75
Road Surface Type	Gravel	0.38	0.47	0.5	0.75	1
	Blacktop	3.45	6.42	4.25	8.25	9.75
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	1.00	1.73	1.5	2.25	2.25
	Other	3.67	6.89	4.5	8.5	10.75
Month of Year	January	0.59	0.57	0.75	1	1
	February	0.56	0.82	0.75	1.25	1.5
	March	0.59	0.84	0.75	1.25	1.5
	April	0.52	0.67	0.75	1	1
	May	0.55	0.56	0.75	1	1
	June	0.59	0.87	0.75	1.25	1.25
	July	0.46	0.61	0.5	0.75	1
	August	0.45	0.56	0.75	0.75	0.75
	September	0.68	0.68	0.75	1.25	1.5
	October	0.49	1.01	0.5	0.75	1
	November	0.49	0.97	0.5	0.75	1.5
	December	0.58	0.66	0.75	1	1.25
Day of Week	Sunday	0.53	0.51	0.75	0.75	1
	Monday	0.72	1.15	0.875	1.25	2
	Tuesday	0.84	1.17	1.25	1.75	2
	Wednesday	0.78	1.38	1	2	2
	Thursday	0.82	1.33	0.75	2	2.25
	Friday	0.83	1.45	1	2	2.25
	Saturday	0.77	1.52	0.875	2.25	2.5
Hour of Day	< 00:00 - ≤ 06:00	0.49	0.58	0.5	0.75	0.75
	< 06:00 - ≤ 09:00	0.91	2.41	1.25	2	2.5
	< 09:00 - ≤ 11:00	0.53	0.51	0.75	0.875	1
	< 11:00 - ≤ 13:00	0.68	0.84	0.75	1.25	1.5
	< 13:00 - ≤ 15:00	0.76	1.20	0.75	2	2
	< 15:00 - ≤ 18:00	1.02	1.88	1.5	2	3
	< 18:00 - ≤ 24:00	0.91	1.90	1.125	2.5	2.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 45 (Six Counties): 2x5 with no control and "no control/stop" on the minor (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 19

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.40	0.54	0.5	0.875	1
	Head-on	0.42	0.29	0.5	0.5	0.5
	Angle	0.58	0.49	0.75	1	1
	Left-turn	0.41	0.46	0.625	0.75	0.75
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.29	0.19	0.25	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.36	0.39	0.5	0.75	0.75
Severity	PDO	0.83	1.47	1.25	1.75	2.5
	Possible Injury	0.46	0.63	0.625	0.75	1.25
	Non-incapacitating	0.53	0.72	0.75	1.125	1.25
	Incapacitating	0.25	0.00	0.25	0.25	0.25
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.09	1.42	1.625	1.75	2.75
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.39	0.44	0.5	0.75	0.75
	Dark (without Street Light)	0.58	0.58	0.75	0.75	0.75
Road Surface Condition	Dry	1.28	1.98	1.75	3	3.25
	Wet	0.31	0.25	0.375	0.5	0.5
	Slippery	.	.	.	.	.
	Other	1.37	2.13	1.75	3	3.75
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	1.30	2.15	2.125	3	3.5
	Brick	.	.	.	.	.
	Concrete	0.75	0.71	1	1	1
	Other	1.37	2.13	1.75	3	3.75
Month of Year	January	0.25	0.00	0.25	0.25	0.25
	February	0.42	0.41	0.5	0.75	0.75
	March	0.35	0.27	0.5	0.5	0.5
	April	0.34	0.26	0.5	0.5	0.5
	May	0.36	0.27	0.5	0.5	0.5
	June	0.35	0.27	0.5	0.5	0.5
	July	0.25	0.00	0.25	0.25	0.25
	August	0.31	0.22	0.25	0.5	0.5
	September	0.25	0.00	0.25	0.25	0.25
	October	0.29	0.19	0.25	0.5	0.5
	November	0.45	0.42	0.5	0.75	0.75
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.34	0.37	0.375	0.75	0.75
	Monday	0.33	0.24	0.5	0.5	0.5
	Tuesday	0.36	0.26	0.5	0.5	0.5
	Wednesday	0.31	0.22	0.25	0.5	0.5
	Thursday	0.34	0.37	0.375	0.75	0.75
	Friday	0.53	0.46	0.5	1	1
	Saturday	0.54	0.53	0.75	1	1
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.29	0.19	0.25	0.5	0.5
	< 09:00 - ≤ 11:00	0.33	0.26	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.35	0.35	0.5	0.625	0.75
	< 13:00 - ≤ 15:00	0.56	0.69	0.75	1.25	1.25
	< 15:00 - ≤ 18:00	0.58	0.78	0.75	1.25	1.25
	< 18:00 - ≤ 24:00	0.48	0.64	0.75	1	1

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 46 (Six Counties): 2x6 with 2-way stop on the minor and AADT (major road) <= 55000 (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 41

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.60	0.79	0.75	1.25	1.5
	Head-on	0.32	0.38	0.25	0.75	0.75
	Angle	1.24	2.09	2	2.625	3.25
	Left-turn	0.93	1.54	1.5	2	2.5
	Right-turn	0.34	0.37	0.375	0.75	0.75
	Side-swipe	0.39	0.44	0.5	0.75	0.875
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.79	1.39	1	2	2.25
Severity	PDO	1.77	3.52	2.75	4.5	5.25
	Possible Injury	0.94	2.00	1	1.25	3.25
	Non-incapacitating	0.79	1.44	1.125	1.5	2.75
	Incapacitating	0.42	0.34	0.5	0.75	0.75
	Fatal	0.35	0.27	0.5	0.5	0.5
Lighting Condition	Daylight	2.35	3.94	3.625	5.25	7
	Dusk	0.28	0.17	0.25	0.5	0.5
	Dawn	0.31	0.25	0.375	0.5	0.5
	Dark (with Street Light)	0.95	1.96	1.25	2	3.25
	Dark (without Street Light)	0.41	0.32	0.5	0.5	0.75
Road Surface Condition	Dry	2.81	5.17	4	6.25	7.5
	Wet	0.59	0.70	0.75	1	1.25
	Slippery	0.25	.	0.25	0.25	0.25
	Other	3.24	5.87	4.5	7.25	9
Road Surface Type	Gravel	0.36	0.51	0.25	1	1
	Blacktop	2.99	5.26	4	6.75	7.5
	Brick	0.25	.	0.25	0.25	0.25
	Concrete	0.56	0.88	0.875	1.25	1.25
	Other	3.24	5.87	4.5	7.25	9
Month of Year	January	0.50	0.55	0.75	1	1
	February	0.58	0.85	0.75	1	1.25
	March	0.55	0.77	0.75	1.25	1.25
	April	0.49	1.15	0.5	0.75	2.75
	May	0.42	0.48	0.5	0.75	1
	June	0.38	0.35	0.5	0.75	0.75
	July	0.43	0.56	0.5	0.875	1.125
	August	0.53	0.78	0.75	1.5	1.5
	September	0.45	0.49	0.5	1	1
	October	0.67	1.00	0.75	1.25	1.75
	November	0.49	0.61	0.75	1	1
	December	0.49	0.64	0.625	1	1.25
Day of Week	Sunday	0.46	0.47	0.5	0.75	1
	Monday	0.64	1.08	1	1.25	1.75
	Tuesday	0.69	0.89	1.25	1.25	1.5
	Wednesday	0.70	1.14	0.75	1.75	2
	Thursday	0.76	1.16	1	1.25	1.75
	Friday	0.78	1.12	1	1.75	2
	Saturday	0.62	1.13	0.75	1.5	2
Hour of Day	< 00:00 - ≤ 06:00	0.47	0.50	0.5	1	1
	< 06:00 - ≤ 09:00	0.81	1.19	1.25	1.5	2
	< 09:00 - ≤ 11:00	0.45	0.42	0.5	0.75	0.875
	< 11:00 - ≤ 13:00	0.66	0.96	0.75	1.5	2.25
	< 13:00 - ≤ 15:00	0.63	0.99	0.75	1.5	1.75
	< 15:00 - ≤ 18:00	1.14	1.70	1.875	2.25	2.75
	< 18:00 - ≤ 24:00	0.83	1.66	1	1.75	2

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 47 (Six Counties): 2x6 with 2-way stop on the minor and AADT (major road) > 55000 (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 37

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.88	1.08	1	1.875	2
	Head-on	0.37	0.39	0.5	0.75	0.75
	Angle	1.26	1.95	1.75	3	3.25
	Left-turn	0.66	1.04	0.75	1.5	1.75
	Right-turn	0.45	0.77	0.5	1	1.5
	Side-swipe	0.44	0.58	0.5	0.75	1
	Pedestrian/Bicycle	0.25	0.00	0.25	0.25	0.25
	Other	1.23	2.61	1.5	2.75	4.75
Severity	PDO	2.56	4.77	3.5	6	7.5
	Possible Injury	1.07	1.59	1.5	2	2.5
	Non-incapacitating	0.66	1.01	0.75	1.25	1.5
	Incapacitating	0.35	0.31	0.5	0.5	0.75
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	3.25	5.12	4.875	6.5	8.25
	Dusk	0.41	0.31	0.5	0.5	0.75
	Dawn	0.28	0.18	0.25	0.5	0.5
	Dark (with Street Light)	0.84	1.74	1	1	3.75
	Dark (without Street Light)	0.38	0.35	0.5	0.5	0.5
Road Surface Condition	Dry	3.72	5.58	4.5	8.25	9.75
	Wet	0.66	0.94	1	1.25	1.75
	Slippery	0.25	.	0.25	0.25	0.25
	Other	4.22	6.29	6	9.75	10.25
Road Surface Type	Gravel	0.40	0.40	0.5	0.75	0.75
	Blacktop	3.87	6.01	5.25	9	10
	Brick	.	.	.	.	.
	Concrete	0.54	0.97	0.5	1.5	1.5
	Other	4.22	6.29	6	9.75	10.25
Month of Year	January	0.70	1.21	1	1.25	1.75
	February	0.61	0.79	1	1.125	1.375
	March	0.57	0.86	0.75	0.75	1.5
	April	0.59	0.94	0.625	1.5	1.75
	May	0.50	0.46	0.5	0.75	0.75
	June	0.60	0.86	0.875	1	1.25
	July	0.44	0.56	0.5	0.75	1
	August	0.56	0.87	0.75	1.25	1.75
	September	0.53	0.60	0.75	1	1
	October	0.47	0.62	0.5	1	1
	November	0.43	0.52	0.5	0.75	0.75
	December	0.65	0.82	0.75	1.25	1.5
Day of Week	Sunday	0.55	0.49	0.75	1	1
	Monday	0.76	1.17	1.125	1.5	2
	Tuesday	0.74	1.24	0.875	1.5	1.75
	Wednesday	0.87	1.19	1.25	1.75	1.75
	Thursday	0.81	1.36	1.125	1.5	1.75
	Friday	1.00	1.73	1.25	2	3.25
	Saturday	0.64	0.71	1	1	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.50	0.45	0.5	0.75	1
	< 06:00 - ≤ 09:00	0.82	1.80	1.25	2.5	2.75
	< 09:00 - ≤ 11:00	0.76	1.36	0.75	1.75	2.25
	< 11:00 - ≤ 13:00	0.84	1.23	1.125	1.5	1.75
	< 13:00 - ≤ 15:00	0.64	0.77	1	1.25	1.25
	< 15:00 - ≤ 18:00	1.10	1.54	1.75	2.25	2.75
	< 18:00 - ≤ 24:00	0.67	1.40	0.75	1	2.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 48 (Six Counties): 2x7 with 2-way stop on the minor (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 8

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.84	1.39	1.125	2.25	2.25
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	1.46	2.76	2	4	4
	Left-turn	0.75	0.87	1.25	1.25	1.25
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.25	.	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.70	0.89	1	1.25	1.25
Severity	PDO	2.17	3.01	2.75	4.75	4.75
	Possible Injury	0.96	1.13	1.5	1.75	1.75
	Non-incapacitating	0.75	0.91	1.25	1.5	1.5
	Incapacitating	0.45	0.65	0.5	1	1
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	2.50	4.12	3.25	6.75	6.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.89	1.11	1.25	1.75	1.75
	Dark (without Street Light)	.	.	.	.	.
Road Surface Condition	Dry	3.13	4.82	4	8	8
	Wet	0.56	0.48	0.75	0.75	0.75
	Slippery	.	.	.	.	.
	Other	3.44	5.49	4.375	9	9
Road Surface Type	Gravel	.	.	.	.	.
	Blacktop	3.34	5.26	4.375	8.5	8.5
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	3.44	5.49	4.375	9	9
Month of Year	January	0.50	0.63	0.75	1	1
	February	0.30	0.22	0.25	0.5	0.5
	March	0.36	0.39	0.5	0.75	0.75
	April	0.56	0.63	0.75	1	1
	May	0.30	0.22	0.25	0.5	0.5
	June	0.33	0.29	0.5	0.5	0.5
	July	0.67	0.76	1	1	1
	August	0.65	0.76	0.75	1.25	1.25
	September	0.67	1.04	1.25	1.25	1.25
	October	0.55	0.65	0.75	1	1
	November	0.50	0.55	0.5	1	1
	December	0.55	0.82	1	1	1
Day of Week	Sunday	0.50	0.41	0.625	0.75	0.75
	Monday	0.92	1.37	1.5	2	2
	Tuesday	0.96	1.20	1.25	2	2
	Wednesday	0.54	0.61	0.75	1	1
	Thursday	0.67	0.98	1	1.5	1.5
	Friday	0.63	0.82	1	1.25	1.25
	Saturday	0.69	0.85	1	1.25	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.42	0.41	0.5	0.75	0.75
	< 06:00 - ≤ 09:00	0.63	0.76	0.75	1.25	1.25
	< 09:00 - ≤ 11:00	0.92	0.76	1.25	1.25	1.25
	< 11:00 - ≤ 13:00	0.75	1.32	1.5	1.5	1.5
	< 13:00 - ≤ 15:00	0.79	1.07	1	1.75	1.75
	< 15:00 - ≤ 18:00	1.04	1.54	1.75	2.25	2.25
	< 18:00 - ≤ 24:00	0.85	1.10	0.75	1.75	1.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 49 (Six Counties): 2x6 with "no control/stop" on the minor (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 12

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.64	0.91	1	1.5	1.5
	Head-on	0.38	0.35	0.5	0.5	0.5
	Angle	0.81	1.89	0.875	3	3
	Left-turn	0.34	0.37	0.375	0.75	0.75
	Right-turn	0.33	0.26	0.5	0.5	0.5
	Side-swipe	0.38	0.35	0.5	0.625	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.86	1.25	1.75	1.75	1.75
Severity	PDO	1.46	2.60	2.125	3.5	4.25
	Possible Injury	0.89	1.70	1	2.75	2.75
	Non-incapacitating	0.47	0.56	0.625	1	1
	Incapacitating	0.38	0.42	0.5	0.75	0.75
	Fatal	0.25	.	0.25	0.25	0.25
Lighting Condition	Daylight	1.92	3.71	3	4.25	6.25
	Dusk	0.30	0.22	0.25	0.5	0.5
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.63	0.79	0.75	1.25	1.5
	Dark (without Street Light)	0.33	0.29	0.5	0.5	0.5
Road Surface Condition	Dry	2.27	3.53	3.75	4	6
	Wet	0.57	0.56	0.75	1	1
	Slippery	.	.	.	.	.
	Other	2.67	4.10	4.375	5	7
Road Surface Type	Gravel	0.58	0.76	1	1	1
	Blacktop	2.29	3.23	3.5	4.75	5.25
	Brick	0.25	0.00	0.25	0.25	0.25
	Concrete	0.58	1.15	1.25	1.25	1.25
	Other	2.67	4.10	4.375	5	7
Month of Year	January	0.55	0.42	0.75	0.75	0.75
	February	0.50	0.71	0.75	1	1
	March	0.44	0.44	0.625	0.75	0.75
	April	0.36	0.27	0.5	0.5	0.5
	May	0.36	0.27	0.5	0.5	0.5
	June	0.54	0.74	1	1	1
	July	0.42	0.29	0.5	0.5	0.5
	August	0.33	0.26	0.5	0.5	0.5
	September	0.50	0.58	0.75	1	1
	October	0.46	0.73	0.5	1.25	1.25
	November	0.39	0.39	0.5	0.75	0.75
	December	0.28	0.18	0.25	0.5	0.5
Day of Week	Sunday	0.32	0.24	0.5	0.5	0.5
	Monday	0.69	0.82	0.75	1.5	1.5
	Tuesday	0.68	1.11	1	1.75	1.75
	Wednesday	0.64	1.00	0.75	1.75	1.75
	Thursday	0.61	0.91	1	1.25	1.25
	Friday	0.63	1.07	0.875	1.75	1.75
	Saturday	0.36	0.27	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.39	0.27	0.5	0.5	0.5
	< 06:00 - ≤ 09:00	0.55	1.08	0.5	1.5	1.5
	< 09:00 - ≤ 11:00	0.42	0.41	0.5	0.75	0.75
	< 11:00 - ≤ 13:00	0.39	0.44	0.5	0.75	0.75
	< 13:00 - ≤ 15:00	0.58	0.82	0.75	1.25	1.5
	< 15:00 - ≤ 18:00	0.86	1.90	1	1.5	3.5
	< 18:00 - ≤ 24:00	0.58	0.61	0.75	1.25	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 50 (Six Counties): 2x8 with 2-way stop or "no control/stop" on the minor (for urban 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 3

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	2.17	2.08	3	3	3
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	4.33	4.73	7	7	7
	Left-turn	1.83	1.53	2.5	2.5	2.5
	Right-turn	0.33	0.29	0.5	0.5	0.5
	Side-swipe	0.33	0.29	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.50	0.50	0.75	0.75	0.75
Severity	PDO	5.17	2.57	6.25	6.25	6.25
	Possible Injury	1.75	2.18	3	3	3
	Non-incapacitating	2.25	0.50	2.5	2.5	2.5
	Incapacitating	1.25	0.50	1.5	1.5	1.5
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	7.17	3.69	9.25	9.25	9.25
	Dusk	0.38	0.35	0.5	0.5	0.5
	Dawn	0.50	0.00	0.5	0.5	0.5
	Dark (with Street Light)	2.67	1.89	3.75	3.75	3.75
	Dark (without Street Light)	.	.	.	.	.
Road Surface Condition	Dry	8.58	3.69	10	10	10
	Wet	1.75	1.00	2.25	2.25	2.25
	Slippery	.	.	.	.	.
	Other	10.42	2.75	11.75	11.75	11.75
Road Surface Type	Gravel	0.38	0.35	0.5	0.5	0.5
	Blacktop	10.00	2.78	11.25	11.25	11.25
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	10.42	2.75	11.75	11.75	11.75
Month of Year	January	0.58	0.76	1	1	1
	February	0.83	0.76	1.25	1.25	1.25
	March	0.75	0.50	1	1	1
	April	0.92	1.26	1.5	1.5	1.5
	May	0.83	0.58	1	1	1
	June	1.08	1.15	1.75	1.75	1.75
	July	0.83	0.58	1	1	1
	August	0.67	0.76	1	1	1
	September	0.67	0.29	0.75	0.75	0.75
	October	1.08	0.29	1.25	1.25	1.25
	November	0.92	0.29	1	1	1
	December	1.25	0.87	1.75	1.75	1.75
Day of Week	Sunday	1.33	1.15	2	2	2
	Monday	1.17	0.58	1.5	1.5	1.5
	Tuesday	1.42	0.29	1.5	1.5	1.5
	Wednesday	1.50	1.32	2	2	2
	Thursday	1.92	1.76	2.75	2.75	2.75
	Friday	2.17	1.15	2.5	2.5	2.5
	Saturday	0.92	0.76	1.25	1.25	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.58	0.29	0.75	0.75	0.75
	< 06:00 - ≤ 09:00	3.08	4.65	5.75	5.75	5.75
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	1.33	1.26	2	2	2
	< 13:00 - ≤ 15:00	1.08	1.04	1.5	1.5	1.5
	< 15:00 - ≤ 18:00	1.83	1.61	2.75	2.75	2.75
	< 18:00 - ≤ 24:00	2.33	1.04	2.75	2.75	2.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 51 (Six Counties): 2x2 and 2x4 with no control on the minor (for rural 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 12

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.25	0.00	0.25	0.25	0.25
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	.	.	.	.	.
	Left-turn	0.25	.	0.25	0.25	0.25
	Right-turn	.	.	.	.	.
	Side-swipe	.	.	.	.	.
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.25	.	0.25	0.25	0.25
Severity	PDO	0.25	0.00	0.25	0.25	0.25
	Possible Injury	.	.	.	.	.
	Non-incapacitating	0.50	0.87	1	1	1
	Incapacitating	0.25	0.00	0.25	0.25	0.25
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.25	0.00	0.25	0.25	0.25
	Dusk	0.25	.	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	.	.	.	.	.
	Dark (without Street Light)	0.50	0.71	0.75	0.75	0.75
Road Surface Condition	Dry	0.39	0.76	0.25	1.25	1.25
	Wet	.	.	.	.	.
	Slippery	.	.	.	.	.
	Other	0.39	0.76	0.25	1.25	1.25
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	0.42	0.82	0.25	1.25	1.25
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	0.39	0.76	0.25	1.25	1.25
Month of Year	January	0.25	0.00	0.25	0.25	0.25
	February	0.25	0.00	0.25	0.25	0.25
	March	.	.	.	.	.
	April	.	.	.	.	.
	May	0.25	0.00	0.25	0.25	0.25
	June	.	.	.	.	.
	July	0.25	0.00	0.25	0.25	0.25
	August	.	.	.	.	.
	September	0.25	0.00	0.25	0.25	0.25
	October	.	.	.	.	.
	November	.	.	.	.	.
	December	.	.	.	.	.
Day of Week	Sunday	0.25	.	0.25	0.25	0.25
	Monday	0.25	0.00	0.25	0.25	0.25
	Tuesday	0.33	0.29	0.5	0.5	0.5
	Wednesday	0.25	.	0.25	0.25	0.25
	Thursday	.	.	.	.	.
	Friday	0.25	.	0.25	0.25	0.25
	Saturday	0.25	.	0.25	0.25	0.25
Hour of Day	< 00:00 - ≤ 06:00	0.25	.	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	.	.	.	.	.
	< 09:00 - ≤ 11:00	0.25	.	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	.	.	.	.	.
	< 13:00 - ≤ 15:00	.	.	.	.	.
	< 15:00 - ≤ 18:00	0.30	0.22	0.25	0.5	0.5
	< 18:00 - ≤ 24:00	0.38	0.35	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 52 (Six Counties): 2x2 with 1-way stop on the minor (for rural 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 69

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.45	0.86	0.5	1	1.75
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.35	0.48	0.25	0.75	1
	Left-turn	0.64	1.68	0.75	2.5	2.5
	Right-turn	0.31	0.25	0.375	0.5	0.5
	Side-swipe	0.33	0.41	0.25	0.75	0.75
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.31	0.25	0.375	0.5	0.5
Severity	PDO	0.49	1.30	0.5	0.5	0.75
	Possible Injury	0.50	0.91	0.5	1.125	1.75
	Non-incapacitating	0.33	0.66	0.25	0.25	0.5
	Incapacitating	0.28	0.17	0.25	0.5	0.5
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.63	2.16	0.5	1	1.25
	Dusk	0.29	0.20	0.25	0.5	0.5
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.25	0.00	0.25	0.25	0.25
	Dark (without Street Light)	0.32	0.29	0.25	0.5	0.75
Road Surface Condition	Dry	0.61	1.80	0.75	1	1.25
	Wet	0.54	1.13	0.75	1.75	1.75
	Slippery	.	.	.	.	.
	Other	0.68	2.32	0.75	1	1.5
Road Surface Type	Gravel	0.38	0.35	0.5	0.5	0.5
	Blacktop	0.68	2.13	0.75	1	1.5
	Brick	.	.	.	.	.
	Concrete	0.25	.	0.25	0.25	0.25
	Other	0.68	2.32	0.75	1	1.5
Month of Year	January	0.33	0.29	0.5	0.5	0.5
	February	0.50	0.71	0.75	1	1
	March	0.34	0.37	0.375	0.75	0.75
	April	0.41	0.70	0.375	1.25	1.25
	May	0.25	0.00	0.25	0.25	0.25
	June	0.33	0.41	0.25	0.75	0.75
	July	0.50	0.87	1	1	1
	August	0.38	0.35	0.5	0.5	0.5
	September	0.25	0.00	0.25	0.25	0.25
	October	0.29	0.20	0.25	0.5	0.5
	November	0.28	0.16	0.25	0.375	0.5
	December	0.28	0.16	0.25	0.375	0.5
Day of Week	Sunday	0.41	0.46	0.625	0.75	0.75
	Monday	0.50	1.12	0.5	1.75	1.75
	Tuesday	0.36	0.47	0.5	0.5	1
	Wednesday	0.38	0.38	0.5	0.75	0.75
	Thursday	0.33	0.24	0.5	0.5	0.5
	Friday	0.35	0.58	0.25	0.5	1.25
	Saturday	0.33	0.58	0.25	0.25	1.25
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.38	0.42	0.5	0.75	0.75
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.31	0.22	0.25	0.5	0.5
	< 13:00 - ≤ 15:00	0.60	1.30	0.5	1.75	1.75
	< 15:00 - ≤ 18:00	0.48	1.32	0.25	1	2.75
	< 18:00 - ≤ 24:00	0.40	0.62	0.375	0.75	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 53 (Six Counties): 2x4 with 1-way stop on the minor (for rural 3-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 27

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.42	0.41	0.5	0.75	0.75
	Head-on	0.25	.	0.25	0.25	0.25
	Angle	0.50	0.98	0.5	1	2
	Left-turn	0.75	0.82	1	1.25	1.25
	Right-turn	0.33	0.29	0.5	0.5	0.5
	Side-swipe	0.25	0.00	0.25	0.25	0.25
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.43	0.78	0.5	1	1.5
Severity	PDO	0.89	1.80	1.25	2.5	2.5
	Possible Injury	0.34	0.46	0.25	0.5	1
	Non-incapacitating	0.44	0.62	0.5	0.75	1.25
	Incapacitating	0.41	0.46	0.625	0.75	0.75
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	0.80	1.71	0.75	2.5	3
	Dusk	0.25	.	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.55	0.89	0.75	1.25	1.25
	Dark (without Street Light)	0.53	1.13	0.5	2	2
Road Surface Condition	Dry	0.85	1.94	0.75	2.5	3.375
	Wet	0.57	0.69	1	1	1
	Slippery	.	.	.	.	.
	Other	1.06	2.55	0.875	3.375	4.25
Road Surface Type	Gravel	.	.	.	.	.
	Blacktop	1.03	2.43	0.75	3.25	4
	Brick	.	.	.	.	.
	Concrete	0.25	0.00	0.25	0.25	0.25
	Other	1.06	2.55	0.875	3.375	4.25
Month of Year	January	0.25	0.00	0.25	0.25	0.25
	February	0.35	0.27	0.5	0.5	0.5
	March	0.29	0.19	0.25	0.5	0.5
	April	0.38	0.42	0.5	0.75	0.75
	May	0.31	0.25	0.375	0.5	0.5
	June	0.38	0.35	0.5	0.5	0.5
	July	0.38	0.29	0.5	0.5	0.5
	August	0.42	0.41	0.5	0.75	0.75
	September	0.25	0.00	0.25	0.25	0.25
	October	0.50	0.63	0.75	1	1
	November	0.31	0.25	0.375	0.5	0.5
	December	0.28	0.18	0.25	0.5	0.5
Day of Week	Sunday	0.32	0.24	0.5	0.5	0.5
	Monday	0.50	0.50	0.75	0.75	0.75
	Tuesday	0.35	0.45	0.375	0.5	1
	Wednesday	0.42	0.61	0.5	1	1
	Thursday	0.55	0.55	0.5	1	1
	Friday	0.42	0.61	0.5	1	1
	Saturday	0.45	0.52	0.5	0.875	1
Hour of Day	< 00:00 - ≤ 06:00	0.54	0.93	0.75	1.5	1.5
	< 06:00 - ≤ 09:00	0.36	0.51	0.25	1	1
	< 09:00 - ≤ 11:00	0.38	0.35	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.28	0.18	0.25	0.5	0.5
	< 13:00 - ≤ 15:00	0.32	0.38	0.25	0.75	0.75
	< 15:00 - ≤ 18:00	0.39	0.41	0.5	0.75	0.75
	< 18:00 - ≤ 24:00	0.43	0.64	0.5	0.75	1.25

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 54 (Six Counties): 2x2 and 2x4 with 2-way stop on the minor (for rural 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 14

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.36	0.27	0.5	0.5	0.5
	Head-on	.	.	.	.	.
	Angle	0.63	0.94	0.75	1.5	1.5
	Left-turn	0.25	0.00	0.25	0.25	0.25
	Right-turn	.	.	.	.	.
	Side-swipe	0.25	0.00	0.25	0.25	0.25
	Pedestrian/Bicycle	0.25	.	0.25	0.25	0.25
	Other	0.25	0.00	0.25	0.25	0.25
Severity	PDO	0.40	0.45	0.5	0.75	0.75
	Possible Injury	0.29	0.20	0.25	0.5	0.5
	Non-incapacitating	0.50	0.79	0.5	1.5	1.5
	Incapacitating	0.30	0.22	0.25	0.5	0.5
	Fatal	0.38	0.35	0.5	0.5	0.5
Lighting Condition	Daylight	0.65	0.92	0.75	1.375	1.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.25	.	0.25	0.25	0.25
	Dark (without Street Light)	0.36	0.27	0.5	0.5	0.5
Road Surface Condition	Dry	0.75	1.15	0.875	1.25	2.25
	Wet	0.33	0.29	0.5	0.5	0.5
	Slippery	.	.	.	.	.
	Other	0.88	1.22	1.125	1.5	2.25
Road Surface Type	Gravel	0.25	.	0.25	0.25	0.25
	Blacktop	0.81	1.19	1.125	1.25	2.25
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	0.88	1.22	1.125	1.5	2.25
Month of Year	January	0.30	0.22	0.25	0.5	0.5
	February	0.25	0.00	0.25	0.25	0.25
	March	0.25	0.00	0.25	0.25	0.25
	April	0.38	0.35	0.5	0.5	0.5
	May	0.35	0.27	0.5	0.5	0.5
	June	0.25	0.00	0.25	0.25	0.25
	July	0.25	.	0.25	0.25	0.25
	August	0.25	0.00	0.25	0.25	0.25
	September	0.31	0.25	0.375	0.5	0.5
	October	0.25	0.00	0.25	0.25	0.25
	November	0.25	0.00	0.25	0.25	0.25
	December	0.31	0.25	0.375	0.5	0.5
Day of Week	Sunday	0.31	0.25	0.375	0.5	0.5
	Monday	0.33	0.29	0.5	0.5	0.5
	Tuesday	0.29	0.20	0.25	0.5	0.5
	Wednesday	0.29	0.19	0.25	0.5	0.5
	Thursday	0.38	0.35	0.5	0.5	0.5
	Friday	0.25	0.00	0.25	0.25	0.25
	Saturday	0.36	0.27	0.5	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.31	0.25	0.375	0.5	0.5
	< 09:00 - ≤ 11:00	0.30	0.22	0.25	0.5	0.5
	< 11:00 - ≤ 13:00	0.33	0.29	0.5	0.5	0.5
	< 13:00 - ≤ 15:00	0.50	.	0.5	0.5	0.5
	< 15:00 - ≤ 18:00	0.42	0.35	0.5	0.75	0.75
	< 18:00 - ≤ 24:00	0.33	0.26	0.5	0.5	0.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 55 (Six Counties): 2x2 and 2x4 with "no control/stop" on the minor (for rural 4-legged intersections with open, undivided, two-way left turn lane and markings medians)

Total Number of Intersections Included - 9

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	.	.	.	.	.
	Head-on	.	.	.	.	.
	Angle	0.25	0.00	0.25	0.25	0.25
	Left-turn	0.25	.	0.25	0.25	0.25
	Right-turn	.	.	.	.	.
	Side-swipe	.	.	.	.	.
	Pedestrian/Bicycle	.	.	.	.	.
	Other	.	.	.	.	.
Severity	PDO	0.38	0.35	0.5	0.5	0.5
	Possible Injury	.	.	.	.	.
	Non-incapacitating	0.25	0.00	0.25	0.25	0.25
	Incapacitating	0.25	.	0.25	0.25	0.25
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.29	0.20	0.25	0.5	0.5
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	.	.	.	.	.
	Dark (without Street Light)	0.25	.	0.25	0.25	0.25
Road Surface Condition	Dry	0.29	0.20	0.25	0.5	0.5
	Wet	0.25	.	0.25	0.25	0.25
	Slippery	.	.	.	.	.
	Other	0.33	0.26	0.5	0.5	0.5
Road Surface Type	Gravel	.	.	.	.	.
	Blacktop	0.33	0.26	0.5	0.5	0.5
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	0.33	0.26	0.5	0.5	0.5
Month of Year	January	.	.	.	.	.
	February	.	.	.	.	.
	March	.	.	.	.	.
	April	0.25	.	0.25	0.25	0.25
	May	.	.	.	.	.
	June	0.25	0.00	0.25	0.25	0.25
	July	0.25	.	0.25	0.25	0.25
	August	0.25	.	0.25	0.25	0.25
	September	.	.	.	.	.
	October	0.25	.	0.25	0.25	0.25
	November	.	.	.	.	.
	December	.	.	.	.	.
Day of Week	Sunday	0.25	.	0.25	0.25	0.25
	Monday	0.25	0.00	0.25	0.25	0.25
	Tuesday	0.25	.	0.25	0.25	0.25
	Wednesday	0.25	0.00	0.25	0.25	0.25
	Thursday	0.25	.	0.25	0.25	0.25
	Friday	0.25	.	0.25	0.25	0.25
	Saturday	.	.	.	.	.
Hour of Day	< 00:00 - ≤ 06:00	.	.	.	.	.
	< 06:00 - ≤ 09:00	0.25	.	0.25	0.25	0.25
	< 09:00 - ≤ 11:00	0.25	.	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	.	.	.	.	.
	< 13:00 - ≤ 15:00	0.25	0.00	0.25	0.25	0.25
	< 15:00 - ≤ 18:00	0.25	0.00	0.25	0.25	0.25
	< 18:00 - ≤ 24:00	.	.	.	.	.

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 56 (Six Counties): 2x4 with 1-way stop on the minor (for urban and rural two 3-legged intersections with directional and mixed medians with two-way major road)

Total Number of Intersections Included - 20

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.82	1.54	1	2.5	2.5
	Head-on	0.50	0.00	0.5	0.5	0.5
	Angle	0.50	0.73	0.75	1.25	1.25
	Left-turn	0.50	0.00	0.5	0.5	0.5
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.50	0.00	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.33	0.26	0.5	0.5	0.5
Severity	PDO	0.81	1.63	1	2.75	2.75
	Possible Injury	0.75	1.33	0.75	2.25	2.25
	Non-incapacitating	0.50	0.43	0.75	0.75	0.75
	Incapacitating	0.25	0.00	0.25	0.25	0.25
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.22	2.63	2	4.25	4.25
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.42	0.58	0.5	1	1
	Dark (without Street Light)	0.50	0.38	0.625	0.75	0.75
Road Surface Condition	Dry	1.35	3.18	2	3.75	5.5
	Wet	0.42	0.25	0.5	0.5	0.5
	Slippery	.	.	.	.	.
	Other	1.60	3.47	2.25	4.25	6
Road Surface Type	Gravel	.	.	.	.	.
	Blacktop	1.58	3.49	2.25	4.25	6
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	1.60	3.47	2.25	4.25	6
Month of Year	January	0.25	0.00	0.25	0.25	0.25
	February	0.33	0.26	0.5	0.5	0.5
	March	0.25	0.00	0.25	0.25	0.25
	April	0.33	0.26	0.5	0.5	0.5
	May	0.31	0.23	0.375	0.5	0.5
	June	0.63	0.87	1	1	1
	July	0.35	0.26	0.5	0.5	0.5
	August	0.35	0.26	0.5	0.5	0.5
	September	0.75	1.18	1.5	1.5	1.5
	October	0.25	0.00	0.25	0.25	0.25
	November	0.25	0.00	0.25	0.25	0.25
	December	0.38	0.40	0.5	0.75	0.75
Day of Week	Sunday	0.50	0.65	0.75	1	1
	Monday	0.32	0.36	0.25	0.75	0.75
	Tuesday	0.65	1.18	0.5	1.75	1.75
	Wednesday	0.56	0.23	0.625	0.75	0.75
	Thursday	0.44	0.23	0.5	0.5	0.5
	Friday	0.35	0.42	0.25	0.75	0.75
	Saturday	0.46	0.63	0.75	1	1
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	0.63	0.29	0.75	0.75	0.75
	< 09:00 - ≤ 11:00	0.25	0.00	0.25	0.25	0.25
	< 11:00 - ≤ 13:00	0.50	0.65	0.75	1	1
	< 13:00 - ≤ 15:00	0.58	0.58	0.75	1	1
	< 15:00 - ≤ 18:00	0.90	1.40	1.25	2	2
	< 18:00 - ≤ 24:00	0.67	1.15	1	1.75	1.75

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 57 (Six Counties): 2x6 with 1-way stop on the minor (for urban and rural two 3-legged intersections with directional and mixed medians with two-way major road)

Total Number of Intersections Included - 34

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.53	0.83	0.625	1.5	1.5
	Head-on	0.25	0.00	0.25	0.25	0.25
	Angle	0.56	1.18	0.5	1.25	2.25
	Left-turn	0.58	1.00	0.75	1.75	1.75
	Right-turn	0.25	0.00	0.25	0.25	0.25
	Side-swipe	0.33	0.25	0.5	0.5	0.5
	Pedestrian/Bicycle	.	.	.	.	.
	Other	0.57	0.82	0.5	1.5	1.5
Severity	PDO	1.00	1.85	1.25	1.75	3.5
	Possible Injury	0.68	1.10	0.75	1.625	2
	Non-incapacitating	0.70	1.27	1	1.5	2.25
	Incapacitating	0.29	0.19	0.25	0.5	0.5
	Fatal	0.25	0.00	0.25	0.25	0.25
Lighting Condition	Daylight	1.33	2.53	1.5	3.25	4.75
	Dusk	0.25	0.00	0.25	0.25	0.25
	Dawn	0.25	0.00	0.25	0.25	0.25
	Dark (with Street Light)	0.69	1.65	0.625	2.75	2.75
	Dark (without Street Light)	0.25	0.00	0.25	0.25	0.25
Road Surface Condition	Dry	1.73	3.50	2.25	3.5	7.25
	Wet	0.40	0.42	0.5	0.75	0.75
	Slippery	.	.	.	.	.
	Other	1.87	3.88	2.25	4	8
Road Surface Type	Gravel	0.50	0.00	0.5	0.5	0.5
	Blacktop	1.77	3.91	1.75	4	8
	Brick	.	.	.	.	.
	Concrete	1.00	0.00	1	1	1
	Other	1.87	3.88	2.25	4	8
Month of Year	January	0.33	0.25	0.5	0.5	0.5
	February	0.33	0.26	0.5	0.5	0.5
	March	0.44	0.44	0.625	0.75	0.75
	April	0.35	0.26	0.5	0.5	0.5
	May	0.36	0.26	0.5	0.5	0.5
	June	0.25	0.00	0.25	0.25	0.25
	July	0.42	0.25	0.5	0.5	0.5
	August	0.34	0.36	0.375	0.75	0.75
	September	0.59	0.63	0.875	1	1
	October	0.45	0.39	0.5	0.75	0.75
	November	0.58	1.56	0.25	2.25	2.25
	December	0.40	0.26	0.5	0.5	0.5
Day of Week	Sunday	0.36	0.38	0.5	0.75	0.75
	Monday	0.58	0.69	0.75	1.25	1.25
	Tuesday	0.75	1.65	0.5	2.5	2.5
	Wednesday	0.56	0.80	0.75	1.5	1.5
	Thursday	0.43	0.62	0.5	0.75	1.25
	Friday	0.46	0.70	1	1	1
	Saturday	0.31	0.21	0.25	0.5	0.5
Hour of Day	< 00:00 - ≤ 06:00	0.50	0.74	0.5	1.25	1.25
	< 06:00 - ≤ 09:00	0.56	0.80	1	1.25	1.25
	< 09:00 - ≤ 11:00	0.32	0.23	0.5	0.5	0.5
	< 11:00 - ≤ 13:00	0.50	0.68	0.5	1.25	1.25
	< 13:00 - ≤ 15:00	0.34	0.25	0.5	0.5	0.5
	< 15:00 - ≤ 18:00	0.70	1.52	1	1.875	2.75
	< 18:00 - ≤ 24:00	0.50	0.77	0.5	1.5	1.5

"." Indicates not applicable (N/A)

Expected Annual Crash Profile Table for Category 58 (Six Counties): 2x4 and 2x6 with 1-way stop on the minor (for urban and rural two 3-legged intersections with closed medians with one-way major road)

Total Number of Intersections Included - 6

		Mean crashes per intersection per year	Std Dev	75th Pctl	90th Pctl	95th Pctl
Collision Type	Rear-end	0.25	0.00	0.25	0.25	0.25
	Head-on	.	.	.	.	.
	Angle	0.25	0.00	0.25	0.25	0.25
	Left-turn	0.25	0.00	0.25	0.25	0.25
	Right-turn	.	.	.	.	.
	Side-swipe	.	.	.	.	.
	Pedestrian/Bicycle	.	.	.	.	.
	Other	.	.	.	.	.
Severity	PDO	0.25	0.00	0.25	0.25	0.25
	Possible Injury	0.25	0.00	0.25	0.25	0.25
	Non-incapacitating	0.25	0.00	0.25	0.25	0.25
	Incapacitating	.	.	.	.	.
	Fatal	.	.	.	.	.
Lighting Condition	Daylight	0.25	0.00	0.25	0.25	0.25
	Dusk	.	.	.	.	.
	Dawn	.	.	.	.	.
	Dark (with Street Light)	0.50	0.00	0.5	0.5	0.5
	Dark (without Street Light)	.	.	.	.	.
Road Surface Condition	Dry	0.33	0.26	0.5	0.5	0.5
	Wet	0.25	0.00	0.25	0.25	0.25
	Slippery	.	.	.	.	.
	Other	0.42	0.52	0.75	0.75	0.75
Road Surface Type	Gravel	0.25	0.00	0.25	0.25	0.25
	Blacktop	0.50	0.58	0.75	0.75	0.75
	Brick	.	.	.	.	.
	Concrete	.	.	.	.	.
	Other	0.42	0.52	0.75	0.75	0.75
Month of Year	January	.	.	.	.	.
	February	.	.	.	.	.
	March	.	.	.	.	.
	April	0.50	0.00	0.5	0.5	0.5
	May	.	.	.	.	.
	June	.	.	.	.	.
	July	.	.	.	.	.
	August	.	.	.	.	.
	September	.	.	.	.	.
	October	0.25	0.00	0.25	0.25	0.25
	November	.	.	.	.	.
	December	0.25	0.00	0.25	0.25	0.25
Day of Week	Sunday	0.25	0.00	0.25	0.25	0.25
	Monday	.	.	.	.	.
	Tuesday	0.25	0.00	0.25	0.25	0.25
	Wednesday	.	.	.	.	.
	Thursday	.	.	.	.	.
	Friday	0.25	0.00	0.25	0.25	0.25
	Saturday	0.25	0.00	0.25	0.25	0.25
Hour of Day	< 00:00 - ≤ 06:00	0.25	0.00	0.25	0.25	0.25
	< 06:00 - ≤ 09:00	.	.	.	.	.
	< 09:00 - ≤ 11:00	.	.	.	.	.
	< 11:00 - ≤ 13:00	.	.	.	.	.
	< 13:00 - ≤ 15:00	0.25	0.00	0.25	0.25	0.25
	< 15:00 - ≤ 18:00	.	.	.	.	.
	< 18:00 - ≤ 24:00	0.25	0.00	0.25	0.25	0.25

"." Indicates not applicable (N/A)