California Science Center

CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)

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Science Fair Use Only

J1110

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)

Do Traffic Signals Decrease the Amount of Auto Accidents?

Division

X **Junior (6-8)** _ **Senior (9-12)**

Preferred Category (See page 5 for descriptions.)

11 - Mathematics & Software

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

The topic of my project is traffic accidents and what effect traffic signals have on them. My hypothesis is: Traffic signals do reduce the number of collisions. I chose this topic because of the number of traffic accidents that occur and my interest in traffic signals versus stop signs.

I found that the county keeps data on collisions, and decided to try to get data to do a before and after study to test the results. I went to the County of Riverside Transportation Department and asked permission to use their accident database. I made two charts, one that showed accidents for the year before the traffic signal was installed and one for the year after. Then I made a third summary chart that compared the differences between the two charts and the percent of change.

After analyzing the data, I found that my hypothesis was correct, but by only 3%, which is not a big change. In analyzing the rest of the accident data, I found that injury accidents increased by 30%, going from ten accidents to 13 accidents. Primary Collision Factors of excessive speed, violation of right-of-way, and running stop signs/signals at these intersections had the most collisions before and after the signals were installed. The after study shows that there was a decrease in excessive speed (18%) and violation of right-of-way (13%). Based on California collsions in 1994, these Primary Collision Factors caused about 42% of all injury accidents. Collision types of broadside and rear-end also had the most collisions before and after the signal was installed.

Summary Statement (In one sentence, state what your project is about.)

By comparing data for before and after traffic signals were installed, I calculated the percentage of change in the occurance of accidents at selected intersections.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

My father introduced me to the head of the transportation department in Riverside County, who helped me retreive data from the computer for my analysis.