

AURORA POLICE DEPARTMENT PROBLEM-ORIENTED POLICING TRAFFIC CRASH PROJECT 2002-99

SUMMARY

The city of Aurora is the second largest city in the state of Illinois with a population of approximately **150,000**. Located about 40 miles west of Chicago, Aurora is one of the fastest growing cities in Illinois. Aurora's Police Department consists of approximately 270 sworn officers and 80 civilians. Although the department maintains a full time **16** officer Community Policing Unit, The Community Policing Philosophy is instilled in all divisions of the department.

In January 2002, Patrol Officers Hector Benavides and Paul Rygh were given the task of evaluating the number of traffic crashes that had occurred during calendar year **2001** at the intersection of Galena **Blvd** and Highland Ave. This intersection consists ~~of~~ a four lane heavily traveled section of divided roadway (Galena Blvd) which intersects with a lesser traveled two lane roadway (Highland Ave) and is controlled by a standard traffic signal. Benavides and Rygh obtained the calls for service for the intersection which indicated that there had been **21** motor vehicle crashes that occurred at the intersection during **2001**. Recognizing that there was an inordinate number of traffic crashes associated with the intersection, when compared to similar intersections, the officers continued the Scanning process of the P.O.P model. Benavides and Rygh then obtained all **21** of the crash reports and began to analyze the compiled data. They also drove the roadways leading to the intersection at different times of the day in various weather conditions in order to make accurate observations of the intersection. The intersection was also monitored with the assistance of the City Engineering Department in order to measure the timing of the traffic lights. The speed of the motorists was also measured on all three shifts with the assistance of the Traffic Division.

Based on the compiled data, Benavides and Rygh constructed a multifaceted response that was designed to reduce the number of crashes at the intersection. Some of the strategies employed concentrated on improving physical conditions at the intersection such as the placement of warning signs and the cutting down of tree limbs that partially obstructed the view of approaching motorists. In addition to changing the timing of the signal, the officers also added a warning strobe light that automatically activated when the signal changed to yellow. Traffic enforcement operations were also implemented near the intersection on all three patrol shifts.

These operations targeted the motorists that were historically responsible for the greatest number of crashes (east bound motorists on Galena Blvd). The Beacon News, a Chicago suburban paper, featured several stories on the project which may have been responsible for educating motorists that frequently travel through the intersection.

In January of 2003, the officers began to tally the number of traffic crashes that had occurred at the intersection during 2002. In short, the total number of crashes at the intersection during 2002 totaled 5, compared to 21 total crashes in 2001. This equates to a year over year 75.7 % reduction in traffic crashes at the intersection. The data clearly indicated that the **project** had significantly improved travel conditions near the intersection.

DESCRIPTION

SCANNING:

During the calendar year of 2001, the four way intersection of W Galena Blvd and Highland Ave was the location for many severe traffic crashes. West Galena Blvd is a heavily traveled four lane roadway that intersects with Highland ave which is a lesser traveled two lane roadway. (See Figure A). As mentioned previously, there were 21 traffic crashes associated with the intersection during 2001. When compared to other similar intersections, during the same calendar year, it became apparent that the intersection of Galena and Highland was the location for an inordinate number of traffic crashes. For instance, the intersection of Galena Blvd and Elmwood ave is similar in its physical configuration as well as the volume of traffic that passes through the intersection on Galena Blvd. (See Figure B). Despite the similarity of the two intersections, Galena and Highland had about a 50% greater occurrence of traffic crashes during 2001. This obvious disparity as well as the high number of serious traffic crashes associated with the intersection compelled Officers Benavides and Rygh to examine conditions at the intersection further. The officers examined all 21 traffic crash reports that had been generated during 2001. The data contained within the crash reports did not provide the officers with any obvious causes for the large number of traffic crashes at the intersection. As such, the officers determined that it was very likely that many measurable factors were responsible for the collisions.

ANALYSIS:

Officers Benavides and Rygh believed that they had identified a hazardous intersection on the West side of Aurora that significantly impacted motorists traveling through the area. The officers began to undertake an extensive diagnosis of this problem intersection.

Crash Report Analysis: The officers closely examined all 21 crash reports that had been generated in 2001. The officers determined that the majority of the at fault crashes were occurring as a result of east bound motorists running the traffic signal. This usually resulted in a serious Tee Bone type of crash in the middle of the intersection. It was also determined that 13 crashes occurred between 0700 Hrs and 1500 Hrs and 7 crashes occurred between 1500 and 2300 Hrs. There did not seem to be a significant correlation between the crashes and other factors such as weather conditions and days of the week.

Field Observation Analysis: The officers employed several Field Observation techniques that afforded them the ability to observe the traffic flow at the intersection. At times the officers observed the intersection on foot in an effort to keep a low profile. At other times the officers traveled through the intersection in an unmarked car, approaching the intersection in all four directions, in an effort to achieve the same visual perspective as the motorists that pass through the intersection on a daily basis. The officers were able to identify several problems associated with the intersection based on their observations.

The first problem identified by the officers was that the light cycle was too short in duration when changing from green to red. It was apparent to the officers that the short duration of the yellow light did not provide an adequate warning that the light was about to turn red. As a result, motorists often slammed on the brakes or passed through a red light.

The officers also identified several physical characteristics associated with the intersection that impaired the ability of approaching motorists to clearly see the traffic signal. While approaching the intersection in an easterly direction on W Galena Blvd, it became evident to officers that the grade of the road as well as some low tree limbs partially blocked the vision of approaching motorists.

Benavides and Rygh began to monitor the speed of motorists with the assistance of traffic division. The monitoring clearly indicated that the majority of motorists traveling on Galena Blvd were exceeding the 30 MPH posted speed limit by 10-15 MPH.

While conducting the field observation study, the officers were able to observe the traffic signal in low light and inclement weather conditions. The officers noticed that the yellow light was difficult to see in these conditions. This was particularly true when approaching the intersection on Galena Blvd in a Westerly and Easterly direction.

City Engineering Analysis: City Engineer Christopher Lirot was contacted by the Officers in order to make a collaborative decision as to studying the timing of the lights. After researching the proposal, Mr Lirot authorized the change in the timing of the lights. The engineer also studied the concept of installing a strobe light at the intersection that would activate when the light changed to yellow for traffic on Galena Blvd.

After carefully studying the data collected, Officers Benavides and Rygh concluded the following:

- 1.) The majority of the crashes occurred as a result of east bound motorists disobeying the traffic signal.

- 2.) The motorists traveling on Galena Blvd were traveling at excessive speeds.
- 3.) Several tree limbs partially obstructed the view of eastbound motorists.
- 4.) The Yellow warning light of the signal was too short in duration.
- 5.) The Yellow warning light was difficult to see in low light or inclement weather.
- 6.) Many motorists approaching the intersection failed to exercise due care .
- 7.) Motorists that frequent the area on a regular basis are unaware as to the Hazardous nature of the intersection.

The Officers strongly believed that it would be possible to significantly reduce the number of traffic crashes at the intersection if they could address the above listed concerns.

RESPONSE:

The officers immediately implemented a traffic enforcement detail which was run on first and second shift in an effort to reduce the speed of motorists traveling through the intersection. The traffic detail was employed on a daily basis with the assistance of patrol officers and traffic officers. In addition, officers discreetly monitored the intersection, issuing citations to motorists that disobeyed the red light. The officers were encouraged to take a zero tolerance approach and were required to document any enforcement activity taken. The officers were also directed to educate the motorists as to the hazards associated with the intersection.

The next step the officers took was to improve line of sight that motorists had of the traffic signal. Working in conjunction with Aurora City maintenance personnel the officers facilitated the cutting down of several tree limbs that partially obstructed the traffic signal.

The officers next goal was to adjust the timing of the traffic signal. In order to explore the feasibility of this change, they consulted city engineer Christopher Lirot who approved the change. The change insured that the yellow light would stay activated for a full second longer than it had previously.

Benavides and Rygh then consulted City electrical worker Lloyd Stringer in order to explore options that would make the yellow light more visible to motorists in low light and inclement

weather. The officers learned that a strobe light could be installed that would activate when the signal changed to yellow. The idea was presented to Alderman Chuck Nelson who approved a \$931.00 expenditure for two strobe lights. Shortly thereafter the strobe lights arrived and were installed at the intersection.

Benavides and Rygh decided that erecting some highly visible signage would probably be an effective method of warning motorists that travel through the intersection. The officers met with Aurora Street Department workers Frank Goetzinger and Rosario DeLeon who indicated that it would be feasible for the signs to be put into place as long as they were installed in accordance with Federal guidelines. Two acceptable configurations were approved (figure c). The signs were put into place in conspicuous locations along Galena Blvd.

In an effort to further educate the public, Benavides and Rygh contacted newspaper reporter Kelly Quinn from the Beacon News. As a result, a front page story was published that outlined the hazards of the intersection as well as the goals of the project (figure d).

ASSESSMENT:

In January of 2003, the officers began to measure the overall effectiveness of the project. The officers documented the following results with the assistance of APD statistician Nancy Smith.

- 1.) The overall number of crashes at the intersection during 2002 had been reduced by 75.9% when compared to the number of crashes during 2001.
- 2.) Injury crashes at the intersection during 2002 had been reduced by 80% when compared to 2001 injury crashes.
- 3.) Approximately 350 traffic citations had been issued near the intersection during 2002 as a result of proactive traffic details.

Based on the above results, it was clear to the officers that they had been very **successful** in their efforts. As such, the overall travel conditions in and around the intersection have been dramatically improved for motorists traveling through the intersection.

Although the officers have closed the project, the intersection will be monitored on a regular basis in order to ensure that the instruments and devices that have been placed at the intersection continue to function properly. Radar details will also be instituted on a sporadic basis in order to serve as a maintenance measure. The methodology that was employed by Officers Benavides and Rygh will no doubt serve as a blue print for other problem intersections throughout the City of

Aurora.

REFERENCE LIST

Manual of Transportation Engineering Studies , 2000, Institute of Transportation Engineers, Prentice-Hall Inc.

Traffic Calming for Communities, 2000, Institute of Transportation Engineers

Traffic Control Corporation, Addison II; provider of "Barlo Retrofit Strobe Kit"

AGENCY INFORMATION

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(630)859-1700

Chief: William Lawler

Project Commander: Michael Gilloffo

Project Sergeant: William Hall #462

Project Officers: Hector Benavides #226 Paul Rygh #248

Figure A

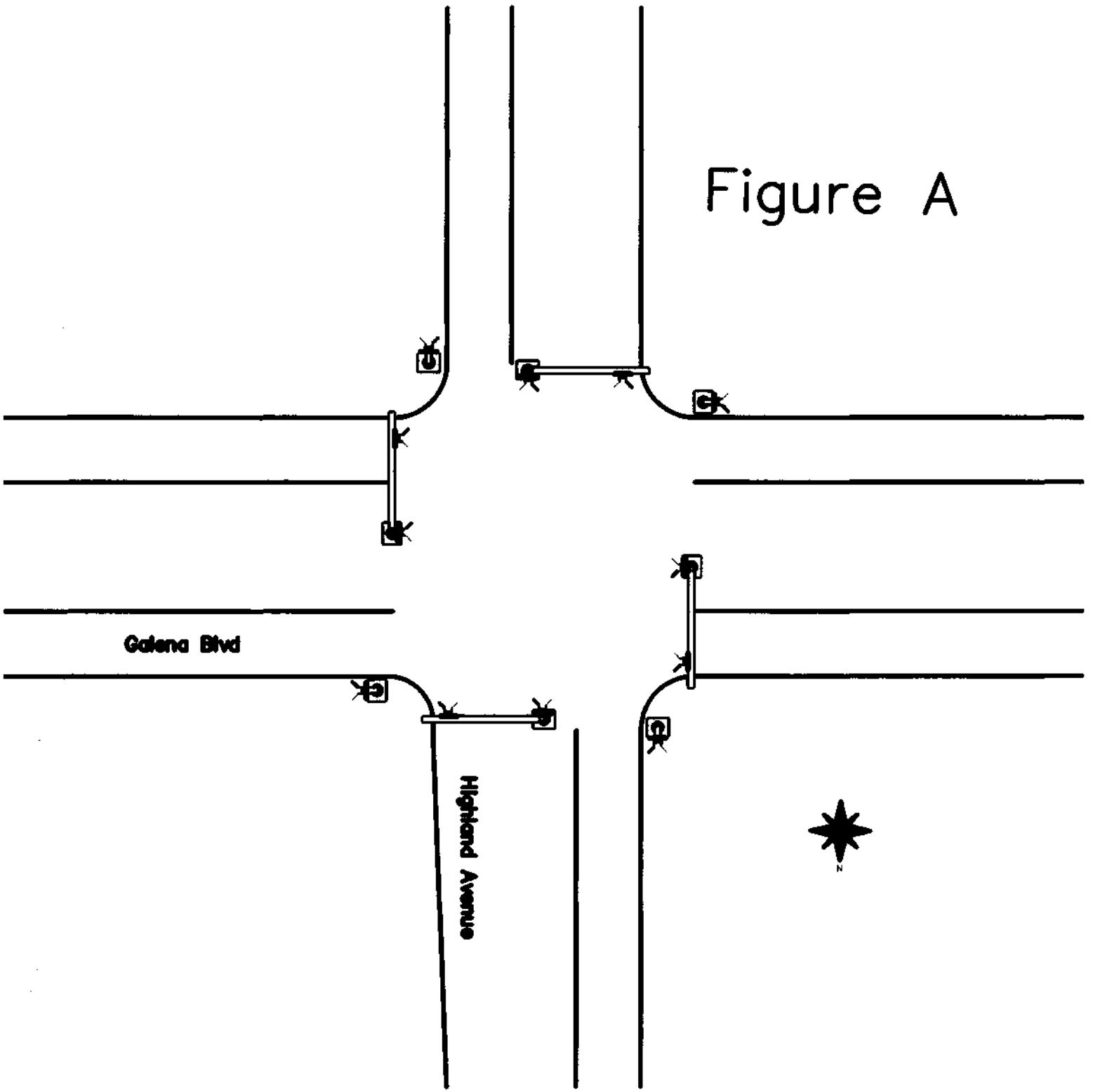


Figure B

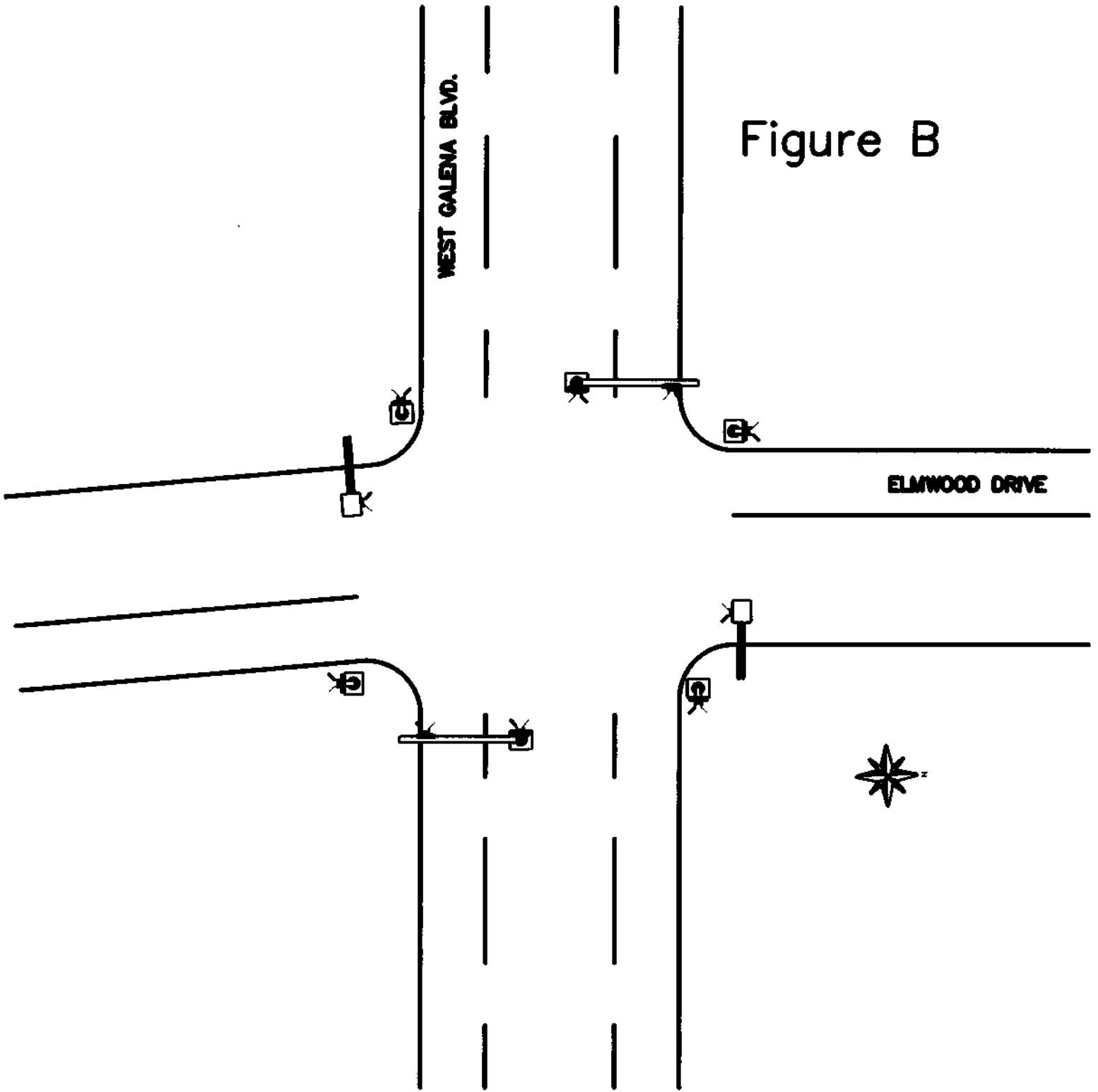
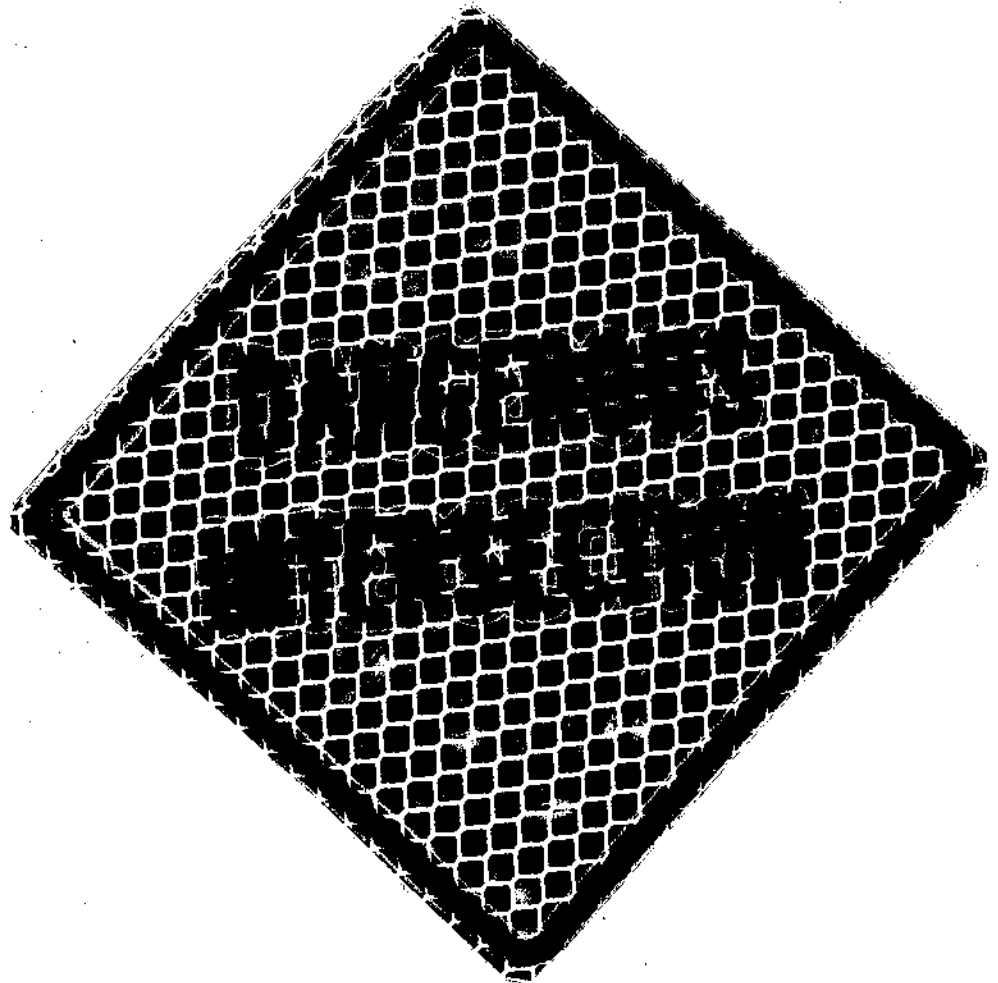
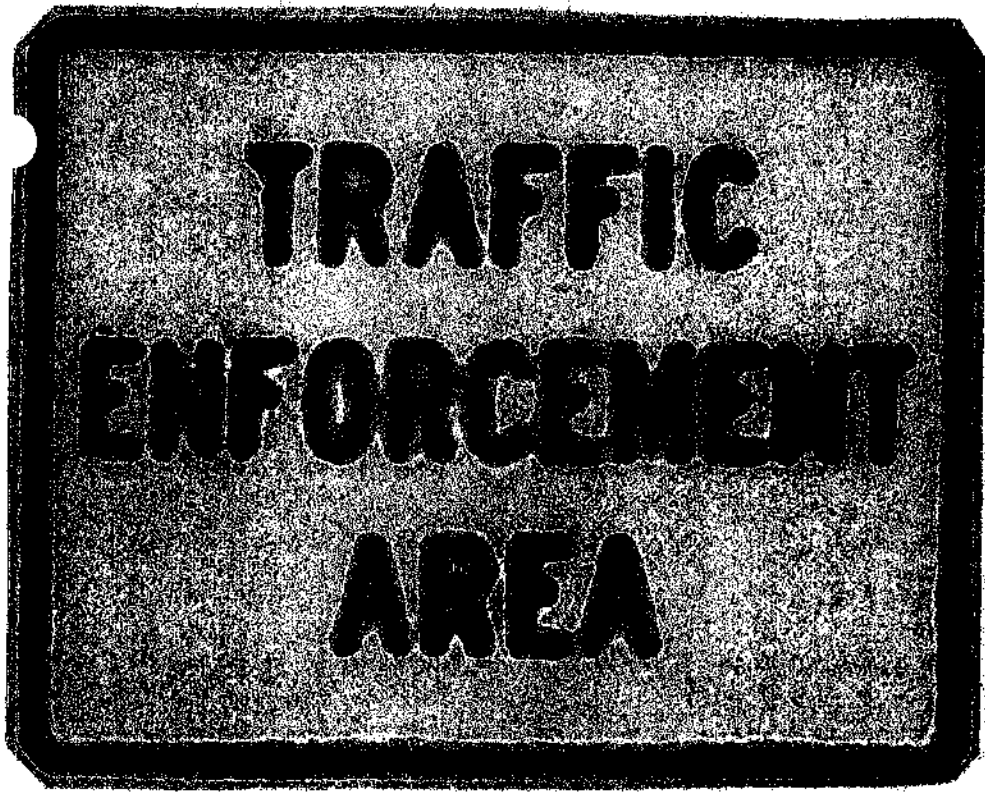
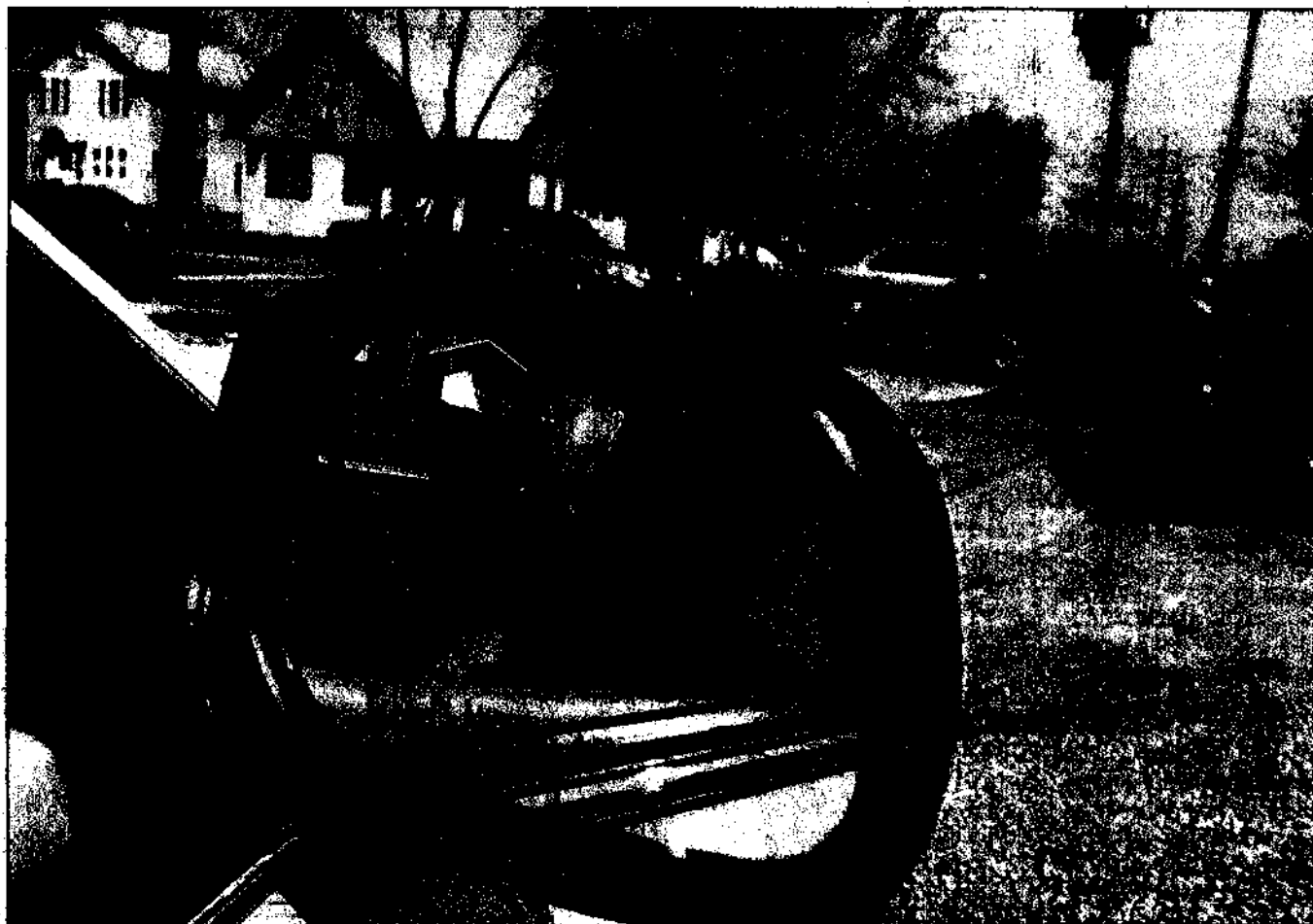


FIGURE C





PHOTOS BY STEVE ROSENBERG/STAFF PHOTOGRAPHER

Aurora police Officer Hector Benavides watches for speeders Wednesday as traffic moves on West Galena Boulevard. Benavides and Officer Paul Rygh have convinced the city of the need for improved traffic control at Galena and Highland Avenue.

Galena-Highland changes ahead

Officers working to cut down on number of collisions at speed-affected intersection

By Kelley Quinn
STAFF WRITER

AURORA — When Aurora police officers Hector Benavides and Paul Rygh clocked motorists' speeds at Galena Boulevard and Highland Avenue, they couldn't believe what they saw.

Drivers were cruising 12 to 35 mph over the 30 mph limit. To Benavides and Rygh, it was obvious why so many collisions have occurred at the intersection.

"People were driving on Galena like it was a speedway," Benavides said.

Last year, there were 21 motor vehicle crashes at the intersection, Rygh said. The majority of the drivers at fault were driving east or west on

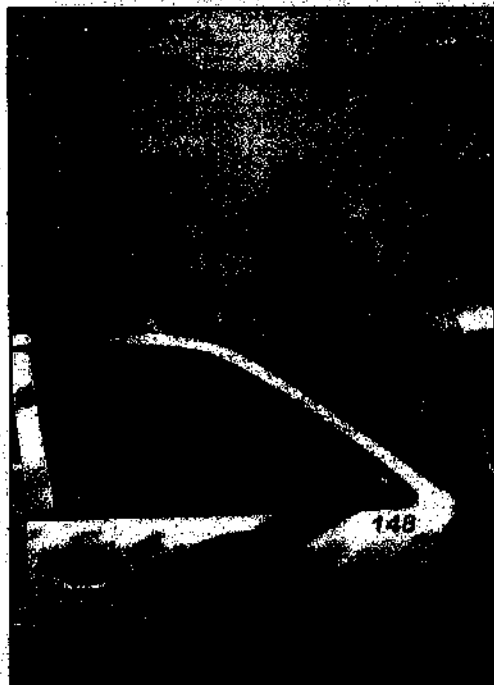
was too high," Benavides said. "And that there was a problem with the delay when the light changed from red to green. People driving on Galena would try to beat the light."

The officers took Lloyd Stringer, a city electrician, to the intersection. While there, a motorist blew through the red light. After that, the city quickly lengthened the delay between light changes.

But the improvements aren't going to stop there.

"We felt the public had to be more aware that the intersection is hazardous," Benavides said.

In the next few weeks, fluorescent green "Dangerous Intersection" signs will be posted on Galena near Lancaster



GALENA

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seven speeding tickets in less than two hours at or near the intersection. "The lowest was going 13 mph over the speed limit," Rygh said. "The highest was 20 mph over."

In March, officers wrote 66 speeding tickets on Galena between Lancaster and View. Last Monday alone, Rygh and Benavides wrote 26.

Since February, when the officers started their investigation and began patrolling the area more,

there have been no collisions, Benavides said.

To further ensure motorists' safety, a flashing strobe light will be added to the yellow portion of the traffic signal on the east and west portion of Galena. The light will flash 120 times per minute, Rygh said.

Additionally, the red light will be enhanced so it's brighter.

The officers agree that the changes wouldn't be possible without help from the city's engineering and streets departments. Money for the changes — approximately \$3,000 — will come from the streets department's budget, Benavides said.



ORDER ACKNOWLEDGEMENT

Traffic Control Corporation
780 West Belden Avenue Suite D
Addison, IL 60101
PH: 630-543-4300
Fax: 630-543-6080

Sales Order Number

IL8261

Customer: AURORA, CITY OF

*ATTN: Bruce Lawrie
Highland & Salera*

We have received your order **203030**
in the amount of **\$2,576.00**

and have scheduled your job based on the information you have provided us with. Please review the following information for accuracy and if you find any of the information is not correct please correct and fax back to us at:

630-543-5050 ATTN: Order Department

Delivery Status: RELEASED

**Description: 4-BARLO RETROFIT KIT & YELLOW
LED, 4-12" RED LED DR6-RTFB-20A**

Requested Ship Date: ASAP

Scheduled to ship the Week of: 4/29/2002

April 16, 2002

City of Aurora
Attn: Lloyd Stringer

RE: LED'S/Flashing Beacons

QUOTATION

4	Barlo Retrofit Kit and Yellow LED (For Existing Signal)	562.00	2248.00
4	DR6-RTFB-20A 12" Red LED (For Existing Signal)	82.00	328.00

Above prices do not include sales tax.
Terms Net 30 Days With Approved **Credit**.
Prices are firm for .60 days
Prices are based on purchasing all items in quantities listed.

Quoted by
Ed **McChrystal**