



THE UNIVERSITY OF IOWA
Iowa City, Iowa 52242

TO: Director, National Institute for Occupational Safety and Health

FROM: Iowa FACE Program Case No. 01IA02001 Report Date: Jan. 2002

SUBJECT: City Street Worker Was Struck and Killed by a Speeding Car

SUMMARY

A 52-year-old city employee, working on the SW corner of a city sidewalk, was struck and killed by a speeding car at a typical 4-way intersection, which had stop signs. The speed limit on both streets was 25 mph (40 km/h). Two folding barricades were set up in the street at that corner, but the intersection was fully operational.

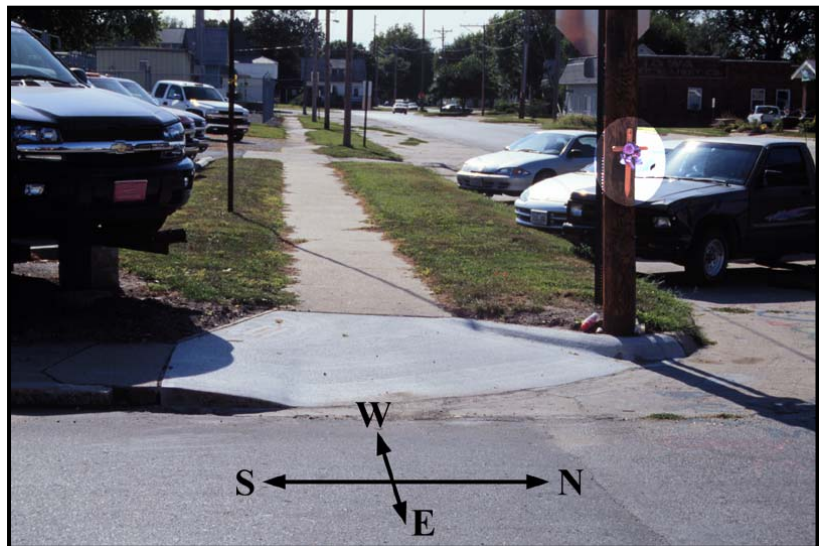


Photo 1 -- View of corner facing west, showing new concrete sidewalk, angled parking, and replaced utility pole.

A teenage boy driving a car at high speed was chasing a girl who was driving another car, both traveling west. She had just stopped at the intersection and was making a left turn. He came racing up behind her, could not stop, then struck her vehicle and shot through the intersection, running over the city worker at the southwest corner. The speeding car also toppled a utility pole, smashed a city truck, and crashed into vehicles at an auto dealership. Two other men working at the site jumped out of the way, but the victim was kneeling down by the sidewalk at the time, and was run over and killed instantly. The teenage boy was arrested and charged with vehicular homicide.

RECOMMENDATIONS based on our investigation are as follows:

- *1. MUTCD (Manual on Uniform Traffic Control Devices) guidelines for closure at side of intersection may apply to this situation, and should be considered as a safety measure.*

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INTRODUCTION

In June 2001, a 52-year-old city maintenance worker was killed while repairing a city sidewalk at a downtown intersection. The Iowa FACE project was notified by Nebraska FACE of this incident, and began an investigation. Information was gathered from newspapers, local police, and the city administrator, and a site visit was conducted one month later by two Iowa FACE investigators. Detailed information and photographs were obtained from the local Chief of Police, and photographs were taken of the finished sidewalk at the intersection.

The employer is a small city government in a county seat of ~6,000 population. The town had been incorporated for the last 145 years, and had a total of 52 employees. The victim had worked for the city for the past eight years, doing general maintenance and repair work. He was one of four employees in the street department, one of two street laborers.

The city had a written safety program, as required by their workers' compensation insurance carrier. They conducted regular monthly meetings with all employees, and discussed safety issues as part of these meetings, but did not conduct specific "safety meetings". Topics regularly covered were hearing and eye protection, machinery guarding, confined space precautions, blood borne pathogens, safety clothing, etc. The victim regularly attended these meeting, and was known as a safe and conscientious worker.

The victim was very experienced with street work, having learned on-the-job for several years. There were no certifications or licenses required for the work involved. This was the first occupational death for this city.

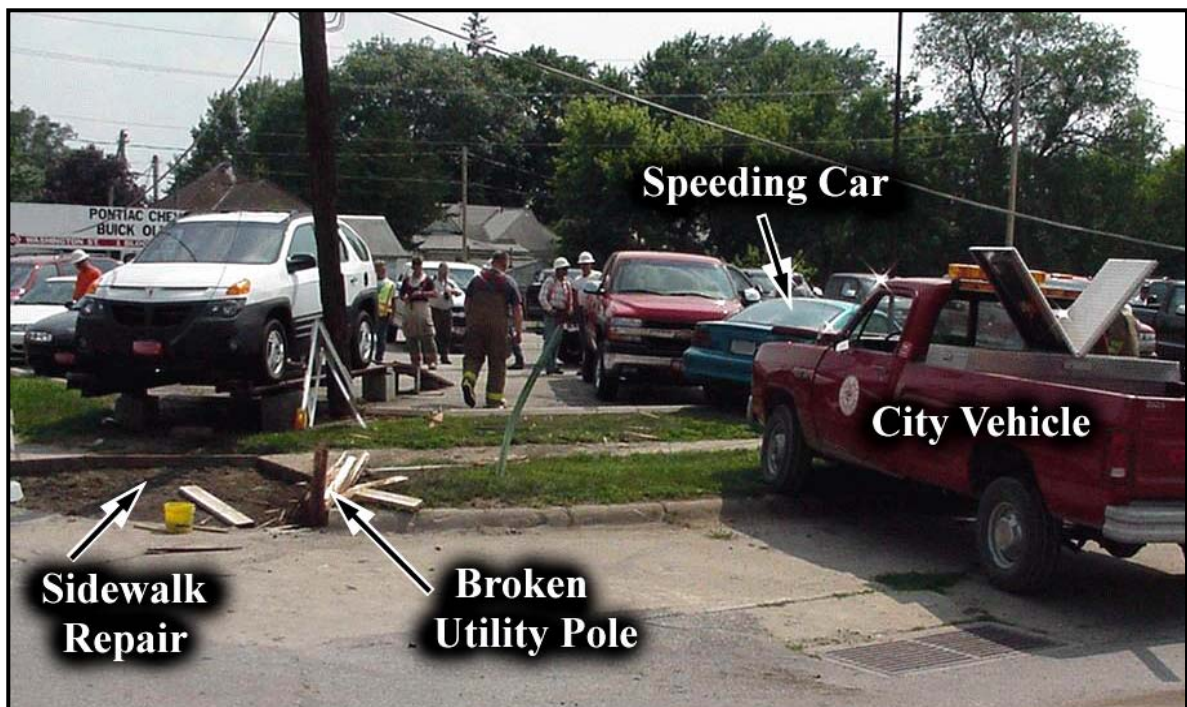


Photo 2 -- Police photograph facing southwest, showing sidewalk repair, path of vehicle and auto dealership where it stopped.

INVESTIGATION

The victim's job title was street maintenance laborer. He was part of a 3-man work crew, who had been working for several months cutting curbs and replacing sidewalks around the community. At this location they had removed the sidewalk at the southwest corner of a city intersection and were in the process of replacing it with concrete handicap accessible ramps. The other two co-workers were the street supervisor and the assistant street supervisor. The street department handled all water and sewer repair in the city, and the men were very accustomed to removing and repairing sidewalks.

This busy intersection received significant foot traffic due to the city library located on the northeast corner. It was a typical intersection of two, 2-lane streets, both of which had a posted speed limit of 25 mph (40 km/h). The intersection was a 4-way stop with stop signs on all four corners. There were no traffic lights present. The day was warm and dry.

The men were working on the southwest corner sidewalk, and did not need to work very far into the street. Two folding barricades were set up in the street, adjacent to the corner, and the remainder of the intersection was open and fully operational from all four directions. A city truck was parked in angle parking northwest of this location, to protect workers from traffic approaching from the west (see Photo 2). The men were wearing safety vests and hard hats. The victim was working in a crouched position with his back toward the traffic.

A car approached from the east, driven by a female teenager. She stopped at the intersection in a normal fashion, planning to turn left. During this time a 17-year-old male teenager approached the corner also from the east, driving his car at high speed, trying to chase the girl. He could not stop and proceeded to pass her on the left side, but she had initiated her left turn, and he struck her car on the driver's side. His vehicle bounced into the work zone striking the victim, a utility pole, the city truck, and several parked cars in an auto dealership. The victim was run over by the speeding car and killed instantly. The teenage boy, who was not injured, was later arrested and charged with vehicular homicide. He had a past record for speeding and reckless driving.

The city administrator states that since they were working on the sidewalk and not the street itself, and since traffic was not interrupted, the city was not required to construct an official work zone. Traffic speed was low, and workers felt relatively safe using only a few barricades. They had been doing this same type of work at many intersections around the city without incident.

CAUSE OF DEATH

The cause of death taken from the Medical Examiner's report was, "*massive chest injuries due to motor vehicle accident*". No autopsy was performed.

RECOMMENDATIONS / DISCUSSION

Recommendation #1 *MUTCD guidelines (Manual on Uniform Traffic Control Devices), for closure at side of intersection may apply to this situation, and should be considered as a safety measure.*

Discussion: This incident is noteworthy in that there are few solid recommendations to prevent it from happening again. The exposure of the city worker on the corner sidewalk, is no greater than a pedestrian waiting to cross the street. Addition of signage and channelizing devices would alert the average driver, but would do little to stop a wild teenager racing through town. To provide concrete barriers to protect city workers would certainly provide sufficient safety, but congest traffic, close lanes, and significantly increase the expense of making multiple sidewalk repairs. Considering the large number of curbs that need to be replaced in this small town, this additional expense to the city would be prohibitive.

According to the MUTCD (Manual on Uniform Traffic Control Devices), work on the side of an intersection requires a flagger, specific signage, and channelizing devices (see Diagram). In the diagram, the intersection is blocked, forcing one-lane traffic on three approaches to the intersection. This degree of traffic control is required when the intersection is partially closed or blocked, however, in our case, since work was actually on the sidewalk, and not the street, the intersection was completely open, and all lanes were operating as usual, yet with caution.

The victim was kneeling at the corner, with his back to the speeding car, and was not able to appreciate the danger or jump out of the way. The truck from the street department was parked to the northwest of the corner, in angle parking. It could easily have been positioned diagonally in the intersection, close to the corner, adjacent to the location where the men were working. While not an approved method of traffic control, this would provide a significant barrier, even from a speeding car.

Addition of a city vehicle as a barrier would be equivalent to closing that side of the intersection, and then the MUTCD guidelines just mentioned would apply, requiring additional equipment, personnel, and expense. Therefore, this is a difficult situation for the city to consider. The only solution to reduce the city's exposure and liability was to hire out this type of concrete work to private contractors, and let them worry about proper signage and protection.

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Notes for Fig. 6H-27
Typical Application 27
Closure at Side of
Intersection

Figure 6H-27. Closure at Side of Intersection (TA-27)

Guidance:

1. The situation depicted can be simplified by closing one or more of the intersection approaches. If this cannot be done, and/or when capacity is a problem, through motor vehicle traffic should be directed to other roads or streets.
2. Depending on road user conditions, flagger(s) or uniformed law enforcement officer(s) should be used to direct road users within the intersection.

Option:

3. ONE LANE ROAD AHEAD signs may also be used to provide adequate advance warning.
4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. For short-duration work operations, the channelizing devices may be eliminated if a vehicle displaying rotating lights or strobe lights is positioned in the work space.
6. A BE PREPARED TO STOP sign may be added to the sign series.

Guidance:

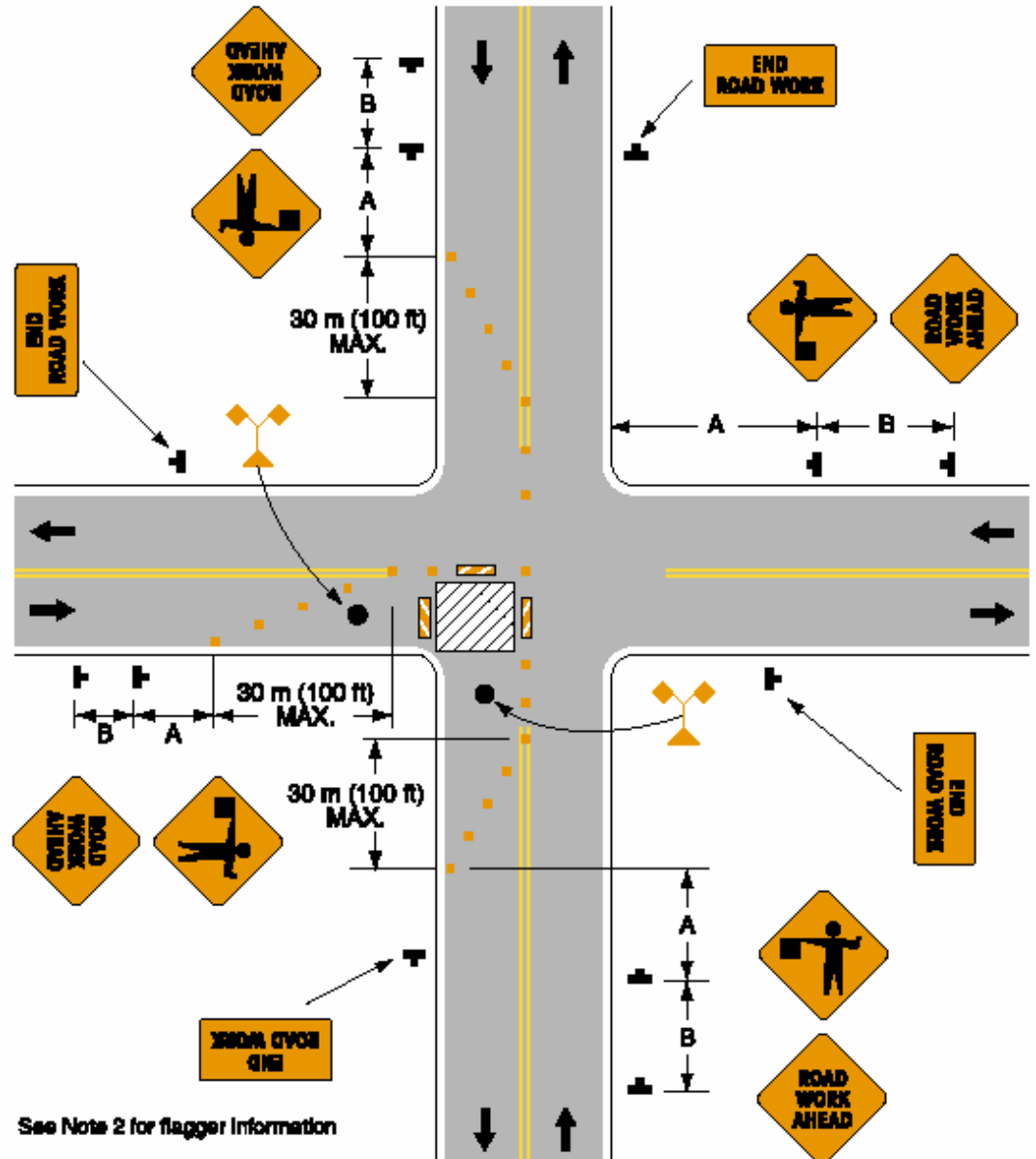
7. When used, the BE PREPARED TO STOP sign should be located before the Flagger symbol sign.

Support:

8. Turns can be prohibited as required by motor vehicle traffic conditions. Unless the streets are wide, it may be physically impossible to make certain turns, especially for large vehicles.

Standard:

9. Although vehicle hazard warning signals can be used to supplement the rotating lights or strobe lights, they shall not be used instead of rotating lights or strobe lights.



Typical Application 27

Fatality Assessment and Control Evaluation FACE

FACE is an occupational fatality investigation and surveillance program of the *National Institute for Occupational Safety and Health* (NIOSH). In the state of Iowa, *The University of Iowa*, in conjunction with the *Iowa Department of Public Health* carries out the FACE program. The NIOSH head office in Morgantown, West Virginia, carries out an intramural FACE program and funds state based programs in Alaska, California, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Texas, Wisconsin, Washington, and Wyoming.

The purpose of FACE is to identify all occupational fatalities in the participating states, conduct in-depth investigations on specific types of fatalities, and make recommendations regarding prevention. NIOSH collects this information nationally and publishes reports and Alerts, which are disseminated widely to the involved industries. NIOSH FACE publications are available from the NIOSH Distribution Center (1-800-35NIOSH).

Iowa FACE publishes case reports, one page Warnings, and articles in trade journals. Most of this information is posted on our web site listed below. Copies of the reports and Warnings are available by contacting our offices in Iowa City, IA.

The Iowa FACE team consists of the following: Craig Zwerling, MD, PhD, MPH, Principal Investigator; Wayne Johnson, MD, Chief Investigator; John Lundell, MA, Coordinator; Lois Etre, PhD, Co-Investigator; Risto Rautiainen, MS, Co-Investigator.



Additional information regarding this report or the Iowa Face Program is available from:

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