CROSSING GUARD PLACEMENT CONSIDERATIONS AND GAP ASSESSMENT

Many factors contribute to the need for a Crossing Guard. General federal guidance, provided by the FHWA *MUTCD*, states that "adult crossing guards may be used to provide gaps in traffic at school crossings where an engineering study has shown that adequate gaps need to be created and where authorized by law."

"The frequency of gaps in the traffic stream that are sufficient for student crossing is different at each crossing location." (FHWA *MUTCD* 2009 Section 7D.02 Federal guidance Section 7A.03 states)

The Institute of Transportation Engineers provides the following guidance to help determine if a particular location requires the use of an adult crossing guard or police officer:

- An adult crossing guard or police officer is more feasible and economical than either a pedestrian grade separation structure or a traffic control signal specifically installed to handle the crossing problem.
- There are special hazards, at either signalized or non-signalized locations that can be properly handled only by adult supervision. These hazards include unusual conditions such as complicated intersections, heavy vehicular turning movements and high vehicular approach speeds.
- A change in school routes or school districts is imminent, thus requiring protection at the location for only a limited time. An example would include construction within a city which detours the preferred school route to another location that may need additional control.
- Adult crossing guards are normally assigned where official supervision of elementary school pedestrians is desirable while they cross a public street or highway and at least 40 elementary school pedestrians for each of two hours (not necessarily consecutive) daily use the crossing while going to and from school. Some additional guidelines regarding the need for adult crossing guards include the following:
    1. At uncontrolled crossings (no traffic signal) where there is no alternate controlled crossing (traffic signal present) within 600 feet; and
        a. In urban areas where the number of adequate gaps in traffic during the period the children are using the crossing, is less than the number of minutes in that same time period (ex: less than 60 adequate gaps within

an hour) and where 40 or more school pedestrians cross daily while going to or from school; or

b. In rural areas where the number of adequate gaps in traffic during the period the children are using the crossing, is less than the number of minutes in that same time period (ex: less than 60 adequate gaps within an hour) and where 30 or more school pedestrians cross daily while going to or from school; or

c. Whenever the critical (85 percentile) approach speed exceeds 40 miles per hour (mph), the guidelines for rural areas should be applied.

Placement Considerations

Traffic Surveys

Sites where a School Crossing Guard may be needed are surveyed by the Police Department and the municipal Engineering Department following requests or observations made by the School Crossing Guard Supervisor, school officials, or concerned parents.

Given changes in school-age population from year to year, the Police Department may find it necessary to conduct an annual survey to identify locations requiring crossing guard supervision.

Additional Factors

The Institute of Transportation Engineers lists additional factors that may affect the determination of placement for an Adult School Crossing Guards.

- Age of students Younger students have a harder time judging the safety of an intersection, as they have more difficulty judging the speed and distance of approaching vehicles. They may be more tempted to cross during an unsafe gap in traffic.
- Road conditions (width, number of lanes) The complexity of the crossing may warrant the need for a crossing guard. Wide streets with multiple lanes of traffic may require the use of multiple crossing guards.
- Sight distance These conditions are measured from a student's and driver's perspectives and calculated using actual vehicle operating speeds. Temporary obstructions (such as parked cars or snow) may also be factors.
- Presence or absence of traffic control devices Determine if the existing traffic control devices are appropriate. Does a signalized

intersection at a school crossing location have a Walk/Don't Walk signal, and if so, does that signal have a push button?

- Vehicle speed Crossing of a higher speed roadway may require a crossing guard because children have a harder time judging necessary stopping distance than adults and may have a harder time identifying safe gaps in traffic.
- Volumes of traffic and pedestrians Traffic volumes at the intersections should be monitored, as should current and projected pedestrian demand based on school demographics.
- Attendance boundary and walk zone for school The distances that walk zones extend from schools and policies for school bus transportation affect the number of children walking to school and the routes they take.
- Distance of crossing from school, and adjacent land use Proximity of a school to residential neighborhoods may increase the potential number of student pedestrians, more so than proximity to other uses.
- Crash history All crashes along the roadways included on the school route plan should be reviewed and analyzed. Various attributes of these crashes (type, frequency, time of day, etc.) should be analyzed to determine their relevance to school safety.

Decommissioning a Crossing Guard Post

As student populations shift or age out of the need for crossing guard assistance with crossing streets, crossing guard posts may need to be moved or decommissioned. When decommissioning a post, the municipality should use the same criteria used to determine if a crossing guard is necessary at a particular location. Factors should include the number of students, the age of students, road conditions (width, number of lanes), sight distances, presence or absence of traffic control devices, vehicle speeds, traffic and pedestrian volumes, truck traffic, location of crossing, and crash history.

If appropriate, the municipality should perform a gap study of the crossing location to look at the width of the street and the pedestrian average walking speed, perception and reaction time, and clearance time. If officials find that there is at least one adequate gap in the traffic per minute to allow for safe crossing, the decommissioning may be justified on this basis.

Officers may work with the schools and/or may contact the families affected to explain the change and to inform walkers of alternative routes to school. The critical points to remember when decommissioning a post are to document the decision made and the reasons behind the decision, and to inform the community of the change in a timely manner.

GAP ASSESSMENT

Observing Traffic Flow and Conditions

Crossing guards assist children by identifying adequate gaps in traffic or by creating adequate gaps by entering the crosswalk with the STOP paddle. The Institute of Transportation Engineer's "School Trip Safety Program Guidelines" defines an acceptable gap as the minimum time between vehicles that 85 percent of all groups of pedestrians waiting to cross a street will accept as adequate to cross the street and that at least one adequate gap should occur each minute to allow for children to cross without undue delay. If forced to wait too long at a crosswalk, children may become impatient. Typically, crossing guards are placed at intersections where there is sufficient traffic to require the creation of gaps.

Ultimately, local criteria, traffic engineering, judgment and analysis are needed to determine when and where an adult school crossing guard is needed.

Stopping Distance

The crossing guard must be able to predict the vehicle stopping distance, or the distance required for motorists to see the crossing guard, to recognize the need to stop, to apply the brake in a reasonable manner, and to bring the vehicle to a halt.

A marker on the roadway or roadside may help with deciding when a gap is sufficient to stop traffic. Although establishing such a marker will be useful for most traffic, vehicles moving faster than normal will require more distance to stop safely. Stopping distance will also be affected by weather conditions. Using a mark in combination with practical experience will help to avoid conflicts. The following table provides guidance on stopping distances at specific vehicle speeds.

Distances are measured from the nearest crosswalk line to where a cone or marker is to be placed. These distances hold for dry pavement and daylight and suggest a point from which a car HAS TIME to stop. This does not mean that a car WILL stop. It simply provides a visual cue from which the crossing guard can activate the crosswalk and wait until the near lane of travel stops. The distance is based on the yellow light signal timing formula. The prescribed distance represents the distance where a motorist has ample time to perceive and stop for the crossing guard.

As guards look for gaps in traffic, they should be aware that approaching vehicles may be traveling at different speeds. As they watch traffic, they will get a feel for the range of normal speeds and be able to make good decisions about when to step into traffic.

Cone/Marker Placement

Speed Limit (mph)	15	20	25	30	35	40
Distance (ft)	46	73	102	140	183	234

Example: 25 mph (actual speed, dry road conditions)