05 Determining Placement of Crossing Guards

The proper placement of well-trained crossing guards is one of the most effective methods to improve student and crossing guard safety at crossings. There are many factors that contribute to the need for a crossing guard at a particular location, including the age of students, road conditions (width, number of lanes), sight distances, presence or absence of traffic control devices, vehicle speed, traffic and pedestrian volumes, truck traffic, location of crossing, and crash history.

How to Identify the Locations where Crossing Guards are Needed

Provisions for hiring and training qualified crossing guards have long been established in New Jersey State Law (N.J.S.A. 40A:9-154.1 - 40A:9-154.4). According to State statute, "*the chief of police or other chief law enforcement officer of a municipality shall have the right to position school crossing guards on any street or highway within the municipality; provided, however, that such guards may be stationed only when it is necessary to control or direct vehicular or pedestrian traffic during those time periods of a school How to Identify the Locations where Crossing Guards are Needed day when it is necessary to control traffic.*" It is recommended that the identification of adult school crossing guard locations involve not only the police department, but also the traffic engineering and/or planning departments, school representatives, and parents.

According to the NJ Safe Routes to School Resource Center, "Every school day, over 6,400 crossing guards throughout New Jersey assist hundreds of thousands of children walking and biking to and from school."

There are no specific state guidelines or criteria in New Jersey to determine which crossings require an adult crossing guard (though a Model Policy can be found at www.njcrossingguards.org and MUTCD guidance can be found on the following page). The design and implementation of an adult school crossing guard program is largely a local decision and no set of guidelines can cover all the unique conditions that may describe crossing locations. The police department along with the municipality's traffic engineering and/or planning department and school representatives should determine the criteria for locations that need crossing guards, and then gather the information about local conditions that will be used to determine the need for the crossing guards.



A crossing guard stops traffic for pedestrians in a school zone.

MUTCD ADULT CROSSING GUARDS - WHO SHOULD DO IT AND WHERE SHOULD THEY GO?

The 2023 Manual on Uniform Traffic Control Devices (MUTCD) provides the following guidance relating to crossing guards:

- Who should be a crossing guard
- The equipment a crossing guard must use
- Where crossing guards should be assigned

Who should be a crossing guard?

Section 7D.01
"High standards for selection of adult crossing guards are essential because they are responsible for the safety of and the efficient crossing of the street by school children within and in the immediate vicinity of school crosswalks."

Section 7D.01
"Jurisdictions should have policies and procedures for the qualifications, selection, and training of adult crossing guards."



A high-visibility vest and stop paddle.
Source: www.njcrossingguards.org

What equipment must crossing guards use?

Section 7D.02.01 - 05
"Law enforcement officers performing school crossing supervision and adult crossing guards shall wear high-visibility retroreflective safety apparel labeled as ANSI 107-2020 standard performance for Class 2, Type R, as described in Section 6C.05.

Adult crossing guards shall not direct traffic in the usual law enforcement regulatory sense. In the control of traffic, they shall pick opportune times to create a sufficient gap in the traffic flow. At these times, they shall stand in the roadway to indicate that pedestrians are about to use or are using the crosswalk, and that all vehicular traffic must stop.

Adult crossing guards shall use a STOP paddle. The STOP paddle shall be the primary hand-signaling device.

The STOP paddle shall comply with the provisions for a STOP/SLOW paddle except both sides shall be a STOP face.

The paddle shall be retroreflective or illuminated when used during hours of darkness."

Where should crossing guards be placed?

Section 7D.01.01
"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."

Section 7A.02.07
"The frequency of gaps in the traffic stream that are sufficient for student crossing is different at each crossing location. When the delay between the occurrences of adequate gaps becomes excessive, students might become impatient and endanger themselves by attempting to cross the street during an inadequate gap. In these instances, the creation of sufficient gaps needs to be considered to accommodate the crossing demand."



A New Jersey crossing guard.
Source: www.njcrossingguards.org

What information should be collected when identifying the locations where crossing guards are needed?

Adult school crossing guards should be assigned to school crossings only after the need is established. While there are a variety of criteria that can be applied to determine the need for a crossing guard, the criteria utilized must be applied consistently to allow a community to provide crossing guards where schools need them the most. In order to guarantee that the criteria are applied consistently, it is recommended that the municipality adopt a policy outlining the guidelines. Developing a uniform procedure of study and analysis can also help the municipality avoid complaints and questions surrounding crossing guard site selection.

The Safe Routes to School National Partnership recommends that local communities consider collecting the following information when identifying guard placement:

The age of the students who are crossing

Generally, younger children need more assistance than older children because they have a more difficult time judging the speed and distance of approaching vehicles and may be tempted to cross when it is unsafe.

The width of the street and the number of lanes of traffic students must cross

Wide streets with multiple lanes of traffic typically require the use of two or more adult school crossing guards. If only one crossing guard is assigned to a multi-lane street, it is important for the crossing guard to remain in the center of the roadway while assisting students and be aware of what is happening in every lane before directing students to enter the crosswalk.

The sight distance at the crossing

These conditions are measured from the students' and drivers' perspectives using actual vehicle operating speeds. Sight distance can be affected by temporary obstructions, such as parked vehicles and piled snow near the crossing.

Safe gaps in traffic

Available gaps in traffic are a primary factor in determining the need for a crossing guard. Start by identifying if the gaps are long and frequent enough to allow safe crossing opportunities. The Institute of Transportation Engineer (ITE) School Trip Safety Program Guidelines state that on average, at least one adequate gap should occur each minute to allow for children to cross without undue delay or risk. However, other factors, such as volume of child pedestrians, should also be considered when determining the need for adult school crossing guards or other traffic control. If traffic volumes during crossing hours do not correspond to enough safe gaps, some method to interrupt traffic should be considered, such as a crossing guard or traffic signal. See the following section on How to Conduct a Gap Study.



Crossing guard at an unsignalized mid-block crossing.

Presence of traffic control devices, including traffic signals, signs and pavement markings

The sufficiency of traffic control devices, if present, should be evaluated to determine if they allow enough time for safe pedestrian crossing. For example, a signalized intersection at a school crossing location should always have WALK/DON'T WALK signals.

The speed of vehicles at the crossing

Vehicles that travel faster require greater stopping distances, and younger children have more difficulty than adults in judging the speed of a fast-approaching vehicle.



Younger students walking to school.

MODEL MUNICIPAL CROSSING GUARD POLICY
HTTPS://WWW.NJCROSSINGGUARDS.ORG/

The model policy was developed as a guide for New Jersey municipalities seeking to adopt a School Crossing Guard Policy and can be downloaded at https://www.njcrossingguards.org/tools/. The model policy includes the following section on crossing guard placement.

In New Jersey, crossing guard placement is determined by the municipality through traffic engineering studies and consultation with the local school district. Sites where a school crossing guard may be needed are surveyed by the Police Department and the Engineering Department following requests or observations made by the school crossing guard supervisor, school officials, and/or concerned parents.

1. The request for establishing a new school crossing guard post should be put in writing to the school crossing guard supervisor who, in response, conducts an observational survey of the location during key times.

2. The request for a school crossing guard at a prospective location will be approved or denied based on the evaluation of all available data. The school crossing guard supervisor will coordinate all studies to be conducted and confer with the appropriate transportation authority (i.e., municipal, county, state).

3. The Police Department will conduct an annual survey to identify locations requiring school crossing guards or the police department will use school district attendee addresses to determine crossing guard posts on an annual basis.

Volumes of traffic and pedestrians

Local transportation planning or engineering departments can provide or help collect this data. Vehicle counts may be readily available, but pedestrian counts will likely need to be collected. The number of students currently using pedestrian facilities as well as the projected pedestrian demand based on school demographics or improvements to infrastructure should be determined.

The attendance boundary and walk zone for each school

The distances that walk zones extend from schools as well as policies regarding the provision of bus service can impact the number of children walking to school and the routes they take.

Crash history of the crossing

The type and time of day that each crash occurs at a specific location should be recorded and analyzed.

The distance the crossing is from a school and the type of adjacent land use

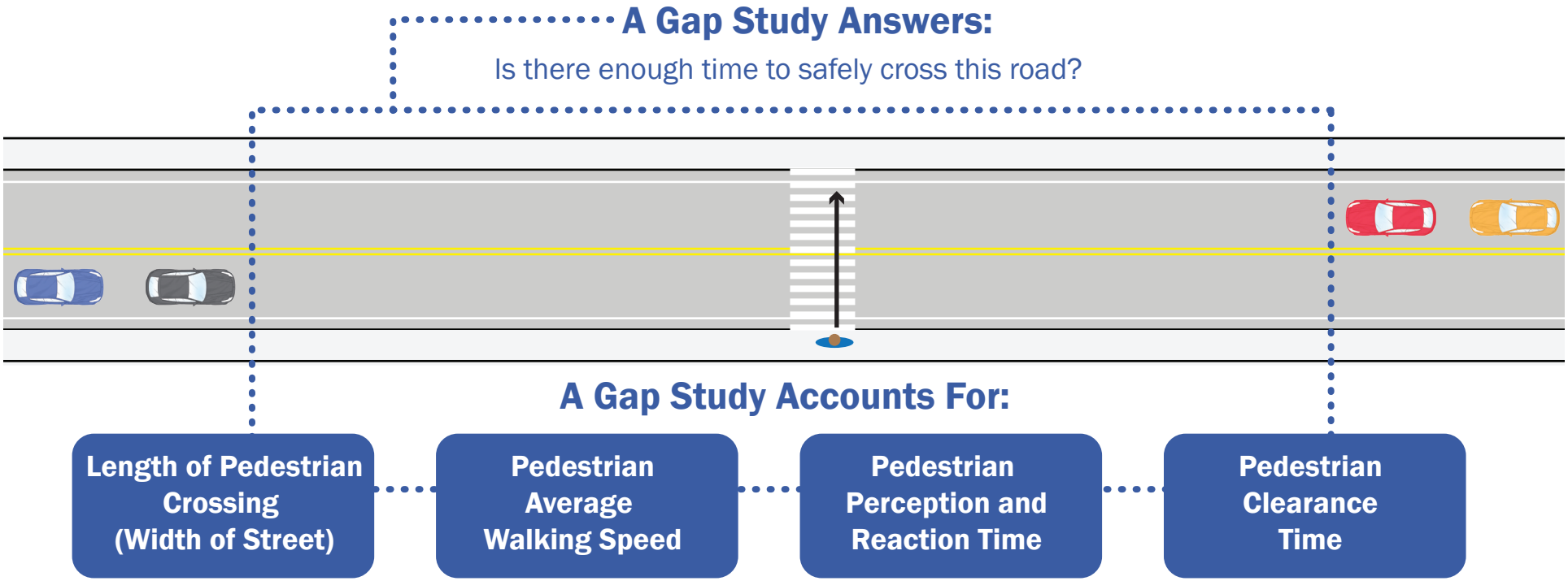
A crossing in close proximity to a school within a residential neighborhood may attract more student pedestrians than, for example, a crossing located farther from a school surrounded by non-residential land uses.



High volume student crossing in Collingswood, NJ.

How to Conduct a Gap Study

Available gaps in traffic are a primary factor in determining the need for a crossing guard. Gap studies provide a method of quantitative analysis for road crossing opportunities accounting for the duration of gaps in motor vehicle traffic, the length of the pedestrian crossing (width of street), and pedestrian average walking speed, perception and reaction time, and clearance time in order to determine where crossing guards are needed to ensure safe crossing. According to the Institute of Transportation Engineer (ITE) School Trip Safety Program Guidelines, an acceptable gap may be defined as the minimum time between vehicles that 85% of all groups of pedestrians waiting to cross a street will accept as adequate to cross the street. On average, at least one gap should occur each minute to allow for children to cross without undue delay or risk.



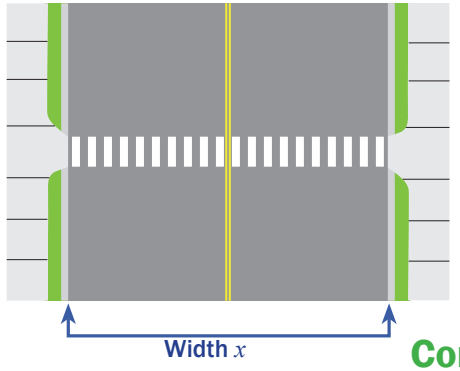
Gap studies consist of determining the number of rows of pedestrians in the predominant (85th percentile) pedestrian group size, determining the length of a minimum adequate gap, measuring the number and size of gaps in the traffic stream, and determining the sufficiency of adequate gaps. The minimum safe crossing time, the gap, is calculated using the following formula:

$$\text{Gap} = \frac{\text{Width of Street}}{\text{Average Walking Speed}} + \text{Perception and Reaction Time} + \text{Pedestrian Clearance Time}$$

Width of Street

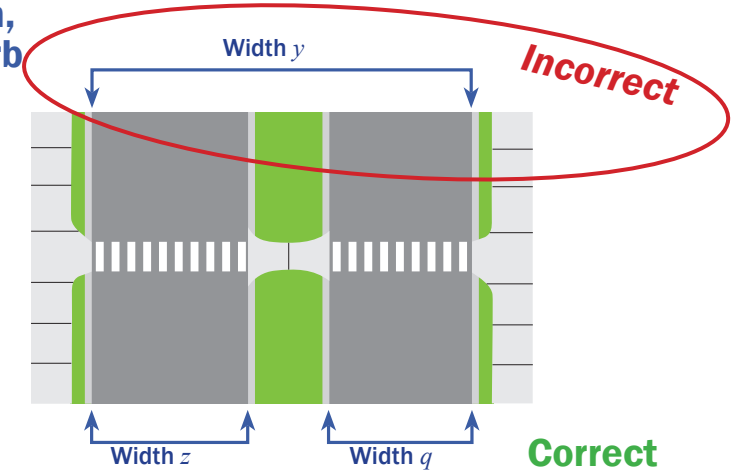
The crossing distance is normally measured from one curb to the other. If the roadway is divided such that the median provides a safe haven for the school crossing, a minimum adequate gap will be determined for each half of the crossing.

Without median, measure curb to curb.



Correct

With median, measure curb to curb on either side.



Correct

Average Walking Speed

The 2009 MUTCD assumes a walking speed of 3.5 feet per second, but allows consideration of slower walking speeds to accommodate slower pedestrians such as those in wheelchairs or those with visual impairments. Large groups of children as well as children hand-assisted by adults also have slower walking speeds. Therefore, the slower 3 feet per second walking speed should be assumed as the average walking speed (MUTCD Section 4E.06).

3
feet per second

Perception and Reaction Time

Physical and cognitive abilities of young children differ from the abilities of adults. In general, gap studies add 3 seconds to account for the time required for a child to look both ways, make a decision, and begin walking across the street.

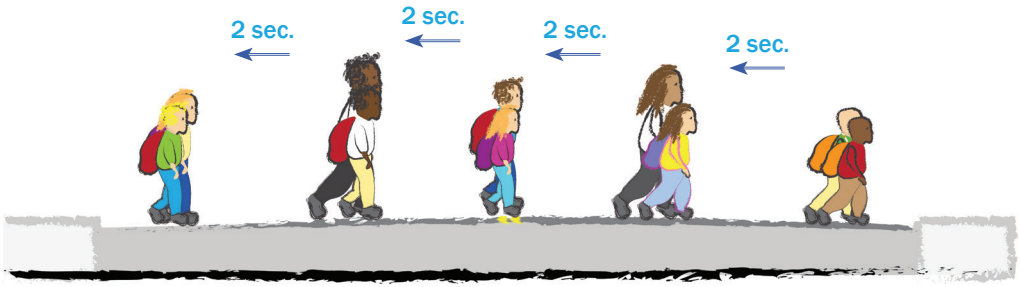
3
seconds

Pedestrian Clearance Time

Pedestrian clearance time is the additional time (in seconds) required to clear large groups of students from the roadway. Children are assumed to cross the roadway in rows of five with two-second time intervals between each row. The clearance time is equal to 2(N - 1) where N is the number of rows in 85th percentile group size, 1 represents the first row and 2 is the time interval between rows in seconds.

$$2(N-1)$$

- 2: seconds between each row
- N: number of rows in 85th percentile of group size
- 1: first row is subtracted from calculation



Calculating Pedestrian Clearance Time: How to determine "N", the number of rows in the 85th percentile pedestrian group size

The survey should begin upon arrival of the first child and end when the last one has crossed the street. The field survey portion of the study must be done under normal conditions involving the weather, school schedule, nearby traffic generator schedule, etc.



Pedestrian Group Survey Size

The observer should count the students as they gather into groups to wait for a gap in the traffic and record the sizes of the groups in the table below. It is important to record the number of children because the school crossing signal warrant in the MUTCD includes a requirement of a minimum of 20 students during the highest crossing hour (MUTCD Section 4C.06 Warrant 5, School Crossing).

Pedestrian Group Size Survey

Location: Crossing Main St @ Maple Ave, Anytown, NJ

Date: 05/15/13 | Time from: 7:30 AM | Time to: 9:00 AM | Observer: Liz W.

Street Width: 35' | Raised Median: No | Width of median: N/A

Notes:

Group Size	Number of Students in Each Group	Number of Groups	Cumulative Number of Groups	# of Rows (N)
5 or less	2, 2, 4, 3, 5, 2, 3, 4	8	8	1
6 – 10	6, 8, 6, 7, 7	5	13	2
11 – 15	12, 11, 14	3	16	3
16 – 20	17, 19	2	18	4
21 – 25				5
26 – 30				6
31 – 35				7
36 – 40				8
41 – 45				9
46 – 50				10
	Total Students:	**Total Number of Groups:**	18 × 0.85 = 15.3	**N =** 3

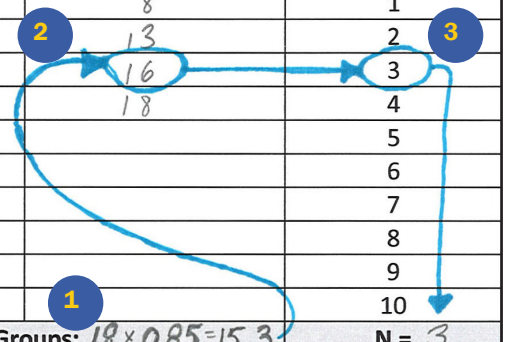
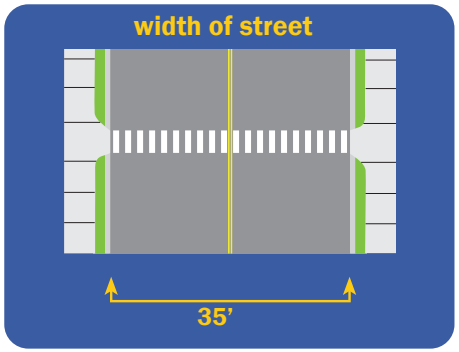


Table adapted from Iowa DOT's Office of Traffic Safety Form 1 – Pedestrian Group Size Survey

In order to obtain the 85th percentile group size:

1. Multiply the cumulative total number of groups by 0.85.
2. Fit the product of 1 within the series of ranges established in the Cumulative Number of Groups column. In this case, 15.3 fits between 13 and 16, so assign it to the row with 16.
3. The N value for 16 groups is 3. The N value of 3 will be used to complete your Gap Study.

Example: Determining the Minimum Adequate Gap



average walking speed: **3** feet per second

perception and reaction time: **3** seconds

pedestrian clearance time: **2(N-1)** where N=3 (see calculation on previous page)

$$\text{Gap} = \frac{\text{Width of Street}}{\text{Average Walking Speed}} + \text{Perception and Reaction Time} + \text{Pedestrian Clearance Time}$$

$$= \frac{35}{3} + 3 + 2(3-1)$$

$$= 18.67$$

$$\approx 19 \text{ seconds}$$ **Minimum Adequate Gap for Safe Crossing**

After the minimum adequate gap is calculated, the actual gaps in traffic must be measured. The length of each gap greater than the minimum (19 seconds in the example above) is recorded. If there is at least one safe gap per minute of crossing time, there may be no need for any special traffic controls. If, however, there is not at least one safe gap per minute, officials should consider using an adult crossing guard or traffic signal to create safe gaps.

What are the Guidelines for School Crossing Guard Use?

As is true for all traffic control measures, certain warrants must be met before adult guards are employed. An adult crossing guard should be considered when:

1. A school crossing guard is more feasible and economical than either a pedestrian bridge or tunnel or a traffic signal specifically installed to handle the crossing problem; and/or

2. There are special hazards, at either signalized or non-signalized locations, which 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; and/or

3. A change in school routes 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.

Specific criteria regarding number of students, traffic volume and roadway condition vary depending on location. In addition to providing guidelines from New Jersey, the following section of this chapter contains information regarding adult crossing guards produced by the State of California.



Crossing guard wearing a retroreflective jacket. Image: Newton Police Department, NJ



Crossing guard wearing a retroreflective jacket and helping children cross the street in Montclair, NJ. Image: VTC



A retroreflective safety vest. Image: VTC

Examples of Guidelines for Crossing Guard Deployment

CALIFORNIA CRITERIA FOR ADULT CROSSING GUARDS (CALIFORNIA MUTCD 2026 EDITION, SECTION 7D.01 ADULT CROSSING GUARDS)

Adult Crossing Guards normally are assigned where official supervision of school pedestrians is desirable, while they cross a public highway, and at least 40 school pedestrians for each of any two hours (not necessarily consecutive) daily use the crossing, while going to, or from, school.

Adult crossing guards can be considered under the following conditions:

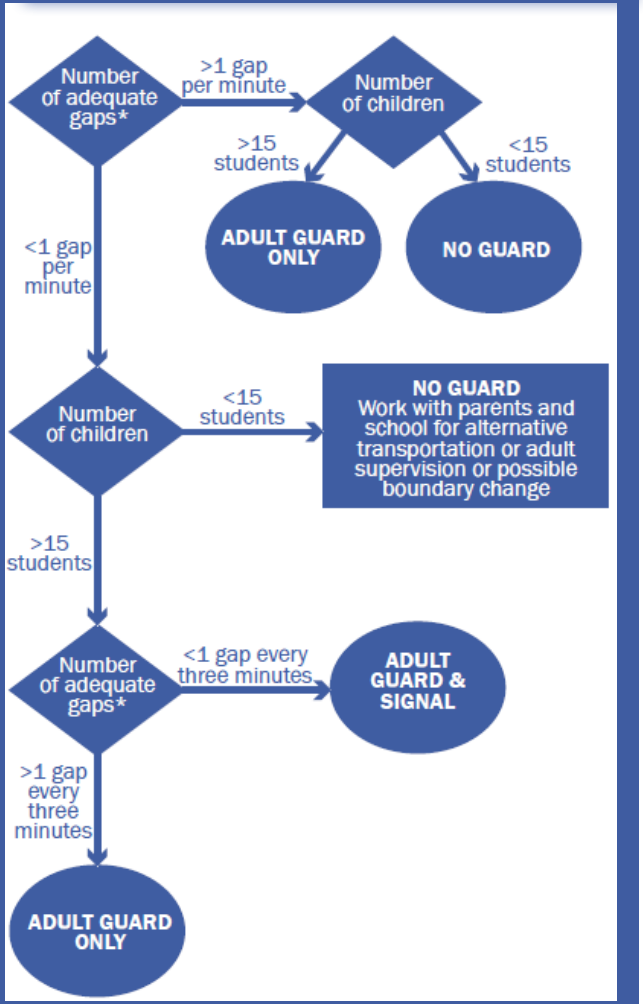
1. At uncontrolled crossings where there is no alternate controlled crossing within 600 feet; and
   a. In urban areas where the vehicular traffic volume exceeds 350 during each of any two hours (not necessarily consecutive) in which 40 or more school pedestrians cross daily while going to or from school; or
   b. In rural areas where the vehicular traffic volume exceeds 300 during each of any two hours (not necessarily consecutive) in which 30 or more school pedestrians cross daily while going to or from school. Whenever the critical (85th percentile) approach speed exceeds 40 mph, the guidelines for rural areas should be applied.
2. At stop sign-controlled crossings:

Where the vehicular traffic volumes on undivided highways of four or more lanes exceeds 500 per hour during any period when the school pedestrians are going to or from school.

3. At traffic signal-controlled crossings:
   a. Where the number of vehicular turning movements through the school crosswalk exceeds 300 per hour while school pedestrians are going to or from school; or
   b. Where justified through analysis of the operations of the intersection.
4. At pedestrian hybrid beacon-controlled crossings.

Consider discontinuing the use of Adult Crossing Guards at crossings when they no longer meet the conditions under which they were initially used.

FLOW CHART DEPICTING THE PROCESS FOR PLACEMENT OF A SCHOOL CROSSING GUARD IN THE CITY OF SPRINGFIELD, MO



Source: Training Manual for School Crossing Guards

What is the process for requesting new adult crossing guards?

All requests for new adult crossing guards should be directed to the school district or the police department. The school district will make the request to the police department, who will arrange the collection of the necessary data to thoroughly study the location. The school crossing guard supervisor within the police department will coordinate all studies to be conducted and confer with the appropriate transportation authority (i.e., municipal, county, state).

If the standards are met for placing a crossing guard, the police department will explore funding options available for hiring a new crossing guard. When the funds are budgeted, the new adult crossing guard will be placed. If the standards for a new crossing guard are not met, the police department will notify the school district that the standards were not met.

Annual Reviews

In New Jersey, the governing body of any municipality may appoint school crossing guards for terms not exceeding one year and may revoke such appointments for cause and after proper hearing before the chief of police or other chief law enforcement officer of the municipality (N.J.S.A. 40A:9-154.1). In order to allocate crossing guards in the most effective manner, the police department should conduct an annual survey to identify locations that require school crossing guards. During these annual reviews the placement and/or removal of school crossing guards should be reviewed by both a representative of the engineering department and the school district. It is important for police officers to document their process and decisions for assigning or removing a crossing guard post.

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 pedestrians' 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, the reasons behind the decision, and to inform the community of the change in a timely manner.



A crossing guard helps students cross the street. Image: www.njcrossingguards.org

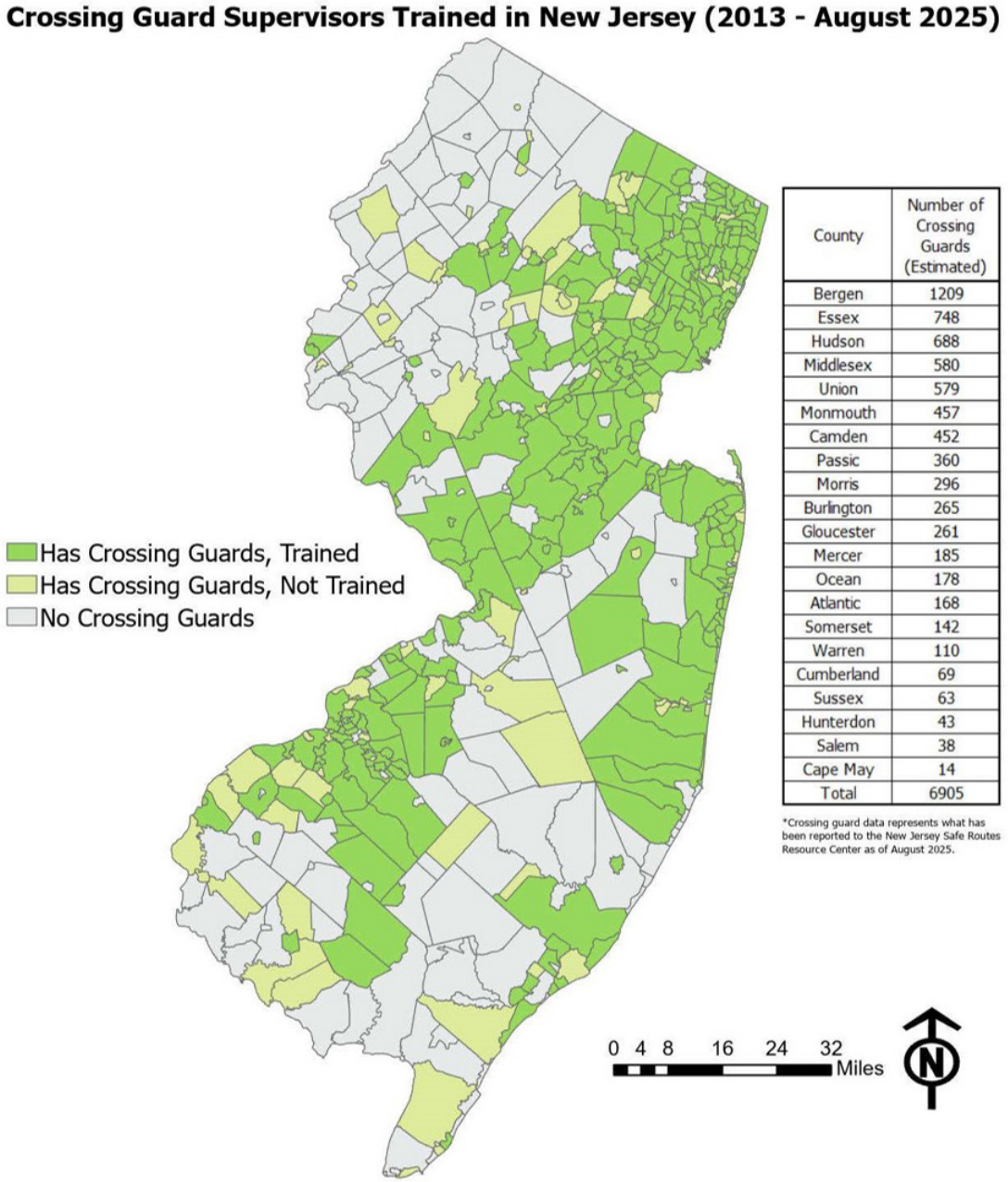
WANT TO LEARN MORE? CHECK OUT: WWW.NJCROSSINGGUARDS.ORG

The NJ Safe Routes Resource Center compiles resources and tools to support school crossing guards and to assist traffic safety officers at www.njcrossingguards.org. New Jersey Safe Routes to School conducts training programs for Municipal Police Traffic Safety Officers that supervise school crossing guards. This program is jointly sponsored by NJDOT and NJDHTS. The "*Crossing Guard Train the Trainer*" class instructs supervisors on uniform and comprehensive training to help crossing guards perform their duties more effectively and safely. The website is a comprehensive source of information for supervisors and crossing guards, containing reports, relevant laws and guidance, training schedule and sign-up, educational videos, and tools.

The website also provides information for scheduling direct, in-person training for crossing guards[1]. The training includes a discussion of traffic laws, gap assessment, proper crossing procedures, uniforms and equipment, expectations, duties, and conditions at the post.

All of this information is available at https://www.njcrossingguards.org/

1 Note that while the supervisor "Train the Trainer" program is funded by the NJDOT and NJDHTS at no cost to participants, direct training for crossing guards requires a fee and is not a free service.



County	Number of Crossing Guards (Estimated)
Bergen	1209
Essex	748
Hudson	688
Middlesex	580
Union	579
Monmouth	457
Camden	452
Passic	360
Morris	296
Burlington	265
Gloucester	261
Mercer	185
Ocean	178
Atlantic	168
Somerset	142
Warren	110
Cumberland	69
Sussex	63
Hunterdon	43
Salem	38
Cape May	14
Total	6905

*Crossing guard data represents what has been reported to the New Jersey Safe Routes Resource Center as of August 2025.

Crossing Guard Supervisors Trained in New Jersey from 2013 - 2025. Image: New Jersey Safe Routes to School