

Attachment B

City of Minneapolis

School Pedestrian Safety Review

Review Process:

It is the goal of the Public Works Department to systematically complete reviews of the traffic safety and controls at all schools within the City of Minneapolis. Given the already high volume of general traffic requests that are received weekly and assuming that one person would be primarily responsible for the school reviews, it is estimated that Public Works could conduct reviews for a maximum of two schools per month, during the months when school is in session. At this rate, the process of reviewing the traffic control at all the schools in the City is estimated to take 4 to 5 years to complete, but ensures that every school is evaluated at least every 5 years. An inventory of all the primary and secondary schools within the City of Minneapolis is shown in Table 1.

Table 1. Minneapolis Schools

Public ¹	
Elementary	30
Middle	13
K-8	26
K-12	1
High School	8
Total	78
Private	
K-8	4
K-12	5
Total	9
Total Schools	87

¹ Includes charter, magnet, and alternative public schools.

Of the 87 public and private schools in the City of Minneapolis, the systematic on-going traffic control reviews will begin with the elementary schools, followed by the middle and high schools. To ensure that all areas of the City are evaluated on an equal basis, the City will be divided into four quadrants, and the reviews will rotate through the quadrants on a monthly basis beginning with the elementary schools. This on-going review process does not preclude the investigation of individual requests that are received regarding schools.

The following describes the key components of the review framework that will be used at each school:

1. Meet with school administrators and safety patrol officers.

Existing pedestrian facilities and pedestrian safety education at the school will be discussed with school staff and School Safety officer. The school's concerns and issues will be identified and documented.

2. Review of streets, intersection geometrics and traffic control characteristics.

The characteristics of the roadway network adjacent to the school will be noted, including type of control (two-way stop, all-way stop, or signalized), intersection sight distance, on-street parking, roadway type and width, etc.

3. Review of street and intersection histories.

The Public Works files for the blocks and intersections adjacent to the school will be reviewed to identify any history of traffic requests, a significant crash history, or past changes in traffic control. The roadway functional classification will also be considered, as well as the current and historic traffic volumes, where they have previously been collected.

4. Documentation of school-patrolled intersections.

The number and location of school-patrolled intersections will be identified and considered with respect to the intersection traffic control and the functional classification of the roadways. In addition, the location of school-patrolled intersections will be updated on the current Public Works Signs and Signals map, which documents the traffic control at every intersection within the City.

5. Review of sign and pavement marking conditions.

Signs and pavement markings adjacent to the school will be qualitatively evaluated for visibility, reflectivity, and any damage.

6. Observations before and after school.

Staff will observe the pedestrian and vehicle operations at the intersections adjacent to the school for one hour before and after school. The observation will include, but not limited to, the following:

- Pedestrians (child and adult) behaviors
- Motorist behaviors
- Primary pedestrian routes and approximate pedestrian flows
- Bus staging and bus circulation routes
- Parent pick up and drop off patterns, including vehicle circulation
- Nearby neighborhood attractions such as lakes or parks
- Adjacent businesses generating significant vehicle or pedestrian traffic
- Traffic flow or congestion on adjacent streets
- Other environmental features such as fencing and sidewalk condition, width, and location

7. Recommendation for improvements.

Based on the review and observations completed in the first six steps, recommendations will be made, as appropriate. In some cases, it may be determined that existing signing or striping

should be replaced or upgraded, but no changes are necessary. If changes are appropriate, the following measures will be considered (listed in order of priority):

- Changes to on-street parking or traffic control
- Additional curb-side signing for school zone
- Zebra crosswalk (see Figure 1)
- Centerline marking changes
- Additional lane markings for school zone
- Centerline pedestrian signing (see Figure 2)
- Countdown pedestrian signals (at signalized intersections only with wide crossing distances – see countdown pedestrian signal standard)
- Speed bumps (if speeding problem is identified)
- Curb extensions (bump-outs)
- Patterned concrete crosswalks

8. Before and After Analysis.

Before and after observations and analyses will be conducted to determine the effectiveness of the measure(s). This effort will focus on the measures that have not extensively been used in the City of Minneapolis: the zebra crosswalk, school zone pavement markings, and centerline marking changes. At least 10 schools will be selected for before and after studies to provide feedback on the effectiveness of the individual measures. The schools selected for before and after studies will represent some of the typical locations and issues existing at Minneapolis schools, including a school next to an arterial, a school in a residential neighborhood, and a school with pedestrians crossing at mid-block locations.

As part of each before and after analysis, data will be collected the week before the installation of the measure or measures. The after analysis, allowing for drivers and pedestrians to adjust to the change, will be conducted approximately two to three weeks after the change. Data to be collected may include the following, at the appropriate intersections where changes were implemented:

- Pedestrian and motorist behaviors
- Pedestrian volumes
- Pedestrian routes (channelization)
- Vehicle turning movement volumes
- Spot vehicle speeds
- Vehicle queue lengths
- Crash history
- Conflict analysis

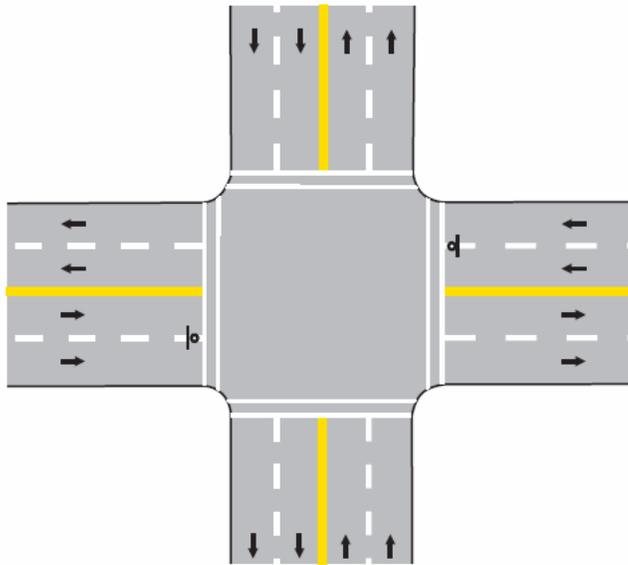
The analysis results will be used to update and refine the School Pedestrian Safety Review process by identifying which improvements are most successful in addressing specific issues near the schools.

Figure 1
Example of Zebra Crosswalk

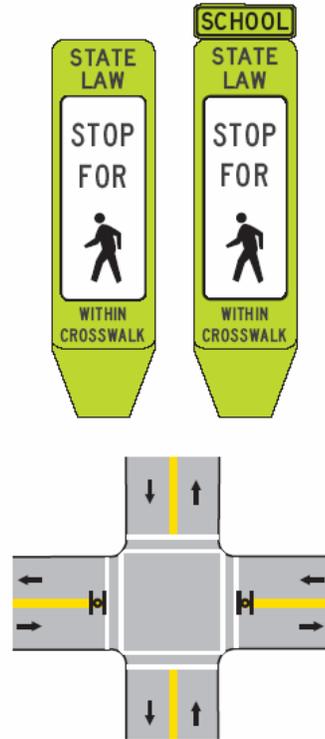


Example of zebra type crosswalk at unsignalized intersection.

Typical Placement of In-Street Pedestrian Crossing Signs



Four-Lane Undivided Roadway



Two-Lane, Two-Way Roadway



This type of signing is being evaluated for use at uncontrolled pedestrian crossings.



Photograph of an installed in-street pedestrian crossing sign.