

## Traffic Safety Plans for Schools

By Mike Spack, PE

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*According to the Centers for Disease Control and Prevention, more than half of the kids who die each year in the United States are killed in a motor vehicle crash.*

Schools are responsible for the safety of their students once they enter the school grounds and some parents would argue the school is responsible even before the child enters the school grounds. This article presents ideas for improving the safety of students when they enter the school grounds as well as ways to improve routes for walking and bicycling students.

Most schools have developed plans to deal with many types of emergencies, most commonly the fire drill. The same level of planning should be applied to developing a traffic safety plan for the school. The strategies for improving traffic safety within the school grounds can be developed solely by school staff, but we have found parent involvement to be very helpful in creating and implementing the plan. A sound traffic safety plan will have the following components:

1. Documenting existing traffic conditions.
2. Strategies for minimizing the interaction between students and moving vehicles.
3. Strategies for minimizing the traffic impacts of school generated traffic on the local street system.
4. Strategies for increasing the visibility of students when they are required to mix with vehicles.
5. Strategies for slowing down traffic when students are near vehicles.
6. Strategies for controlling the arrival and departure of students.
7. Educating students about traffic safety.

### **Analysis of Existing Conditions**

The first step in any planning exercise should be determining your current situation. Then you can develop alternatives for changing the existing system. Here is a checklist for documenting your existing transportation system:

- How do your parking lot/lots currently function?
  - Bus circulation
  - Parent parking
  - Student parking (if high school)
  - Parent drop-off/pick-up procedure

- Students walking in parking lot?
- Where are students outside of adult supervision?
- Document the number of vehicles and students involved with the above maneuvers.
- What routes do kids use when they walk or bicycle to school?
  - Are there sidewalks or trails along the whole route?
  - Is there a map of the sidewalk/trail system published for parents and students?
  - How many students come along each route?
  - Where do routes cross streets?
  - What signs, pavement markings, and signals are within the routes and school zone?
  - Do you have school crossing guards?
  - Do you have “walking school buses” or “bicycling trains”?
- Street network
  - Turn lanes
  - Speed limits
  - Traffic control in place at intersections
  - Traffic volume counts
- Do student groups leave the campus for any events?

### **Minimizing Vehicle/Student Interaction**

Minimizing the amount of time students mix with vehicles is the low hanging fruit of the traffic safety plan. These measures typically don't cost anything, but they are usually specific to each school. You are trying to control where students come into the school and leave the school so they don't mix with a lot of vehicles. An example would be having parents drop off their kids at a school entrance instead of letting them out on the street. Another example is loading students into buses or vehicles in a tightly controlled manner: (1) no vehicles are allowed to move in the loading area while students are being loaded, (2) an adult is in charge who signals the vehicles or buses when all of the students are loaded, (3) the vehicles leave in a single file line and (4) the next platoon of vehicles or buses are loaded.

### **Minimizing the Impacts of School Traffic**

This area of your plan requires working with the city engineering department and possibly hiring a consultant traffic engineer. The plan will analyze the operations of your driveways onto the public street system and the nearby public street intersections. You will need to work with your city's engineering department if your plan is looking at changing any physical features such as sidewalks, signs, or traffic signals. Possible outcomes of this analysis may be:

- Installing signs per Chapter 7 of the Federal Highway Administration's *Manual on Uniform Traffic Control Devices* which covers traffic control specific to school areas.
- Changing stop sign configurations.
- Adding turn lanes.
- Changing pavement markings.

- Banning certain turning maneuvers (to eliminate a “shortcut”).
- Adding a traffic signal.
- Changing the operation of a traffic signal.
- Constructing a roundabout.
- Constructing traffic calming measures such as speed bumps.
- Adding pedestrian ramps at intersections.
- Constructing trails or sidewalks.
- Building “bumpouts” to extend the sidewalks toward each other at intersections to shorten the crossing distance.

### **Increasing Student Visibility**

Trees, shrubs, fences, buses, and parked vehicles should be limited in crossing areas so kids can be seen by vehicles in time for the vehicles to stop for them. Obstructions should be removed within the school grounds and along the school routes to school. This is most important at elementary schools because the children are smaller. A three foot high shrub would be a problem at an elementary school where it wouldn't be a problem at a high school.

When possible, students should cross traffic in groups so they will be more visible. If there are concentrations of students who walk or bicycle along the same route, a “walking school bus” or “bicycle train” system can be developed. The students go to their corner at a certain time and get “picked-up” by the group in the same fashion a school bus operates. These work best if an adult volunteer goes with the group, starting at the first “stop.”

If adult crossing guards or student patrols are used, they should have whistles to catch the attention of motorists and/or students. They are also required to wear high visibility apparel (per the Federal Highway Administration's *Manual on Uniform Traffic Control Devices*). This apparel (safety vests) should comply with ANSI 107-1999. AAA is a great resource for developing your school patrol procedures.

### **Slowing Down Traffic**

The speed of a vehicle in a crash greatly determines the severity of injuries. Slowing down vehicles within the school grounds and on the streets adjacent to the school is a significant way to improve safety. Coordinating your efforts to slow traffic on the adjacent streets with the city's police and engineering departments is important to the success of your plan. Traffic signs have little impact unless the police routinely enforce them. Police departments are usually willing to increase their speed enforcement within school zones if you remind them of the importance of low speeds. Speed bumps and blocking off through routes within the parking lot may be needed to slow down traffic. Physical devices like roundabouts are the best way to slow down vehicles on the adjacent streets. Engineering department cooperation will be needed if this type of change is warranted. Physical devices in the parking lot and on the adjacent streets need to be well thought out because they can pose significant problems

for handicapped persons and may also cause unnecessary delays if used inappropriately.

### **Controlling Arrivals and Departures**

The most dangerous situation is to have students, cars, and buses all mixing in the same physical space. If possible, buses, vehicles, and pedestrians should be segregated. The next best thing is to control the school grounds so only two of the three modes can mix at a time. Developing a controlled procedure for student pick-ups and drop-offs is a key element of the overall traffic safety plan. Every effort should be made to avoid having kids entering a public street to enter or exit a school bus or a parent's car. These maneuvers should happen in the low speed parking lot if at all possible. If the buses or vehicles need to park on a public street, they should park so they are loaded from the school grounds. The students should not walk across the street to get to the school bus door or passenger car door.

### **Traffic Safety Education**

Hopefully you have a liaison from the police department who works with your students. They are best able to command the respect of the students. Whether it is staff or the police officer, the students should be taught the following basics:

- Never assume a car is going to stop for you.
- "Stranger Danger" – avoiding adults they don't know.
- Look both ways before stepping into a street.
- Never run out between cars.
- Cross streets at 90 degree angles at intersections.
- Use sidewalks and trails whenever available.
- Always wear a helmet when bicycling.
- Always wear a seatbelt in a car.
- Little kids must always be in a car seat.
- How push buttons and pedestrian indications work at a traffic signal.
- Your school's specific traffic safety plan.

### **Conclusions**

Motor vehicle crashes are the leading cause of death for student age children. Teaching children about traffic safety and developing a traffic safety plan for your school is the best way to protect them. As with everything schools do, parents play an important role. Ideally, parents will be involved with developing your plan as well as your local police and engineering staff. The traffic safety plan needs to be clearly communicated to parents and students at the beginning of the year, especially the drop-off and pick-up procedures. The plan should also be posted on the school's website. With a well designed school traffic safety plan in place, you can create a safer school environment for your students.

### **Bibliography/Further Resources**

1. *School Zone Safety and Operational Problems at Existing Elementary Schools*, by Isebrands and Hallmark, ITE Journal, March 2007.

2. Centers for Disease Control and Prevention, [http://www.cdc.gov/ncipc/duip/spotlite/walk\\_to\\_school.htm](http://www.cdc.gov/ncipc/duip/spotlite/walk_to_school.htm)
3. FHWA's Safe Routes to School, <http://safety.fhwa.dot.gov/saferoutes/>
4. Mn/DOT's Safe Routes to School, <http://www.dot.state.mn.us/saferoutes/>