# School Traffic and Pedestrian Safety

Risk Control from Liberty Mutual Insurance

High volumes of traffic at schools during arrival and pick-up times can lead to poor traffic circulation and often unsafe conditions.

Changes to traffic operations may help reduce traffic congestion, but can also increase traffic speeds and the risk for vehicle, pedestrian, and bicyclist interactions. Before making changes to traffic operations, work to understand the dynamics of school traffic operations.

Consult this material prior to completing the accompanying survey checklist.

## Traffic Planning

It is important for schools to have a transportation/traffic plan for each building. Each school building will present its own unique challenges in individual site constraints as well as differing ages and sizes of school children. High school students can also contribute to traffic flow and congestion issues when they operate vehicles.

A safe school transportation plan should be regularly reviewed for improvement and contain:

- The elements of safe parking lot and traffic flow design,
- Effective protocols for safe school bus loading and unloading,
- Adequate premises signage and communication,
- Guidelines for supervision, and
- A safe plan for parent pick up and drop off for each school building.

Involvement of traffic experts as well as the local municipality and law enforcement is recommended to assist in the planning efforts for a school, but can also be beneficial in helping to address issues regarding adjacent roadways not owned by the school and enforcement of traffic violations near the school property and in school zones.

## Parking Lot Design and Traffic Flow

Parking lots and traffic flow should be designed to not interfere with major pedestrian traffic patterns and should be kept separate as much as is practical. The use of one-way lanes of travel can be effective for both vehicular and pedestrian safety. To address speed issues, entry roads and travel lanes in parking lots should be designed to avoid long, straight-line approaches or lanes of long, straight travel. For older, existing situations with speed issues, speed-calming devices can be installed to reduce speed on adjacent roads or parking lot lanes. Such calming devices can include speed bumps, speed humps, safety islands, landscape buffers, and differing pavement surfacing.

The separation of parking areas (students, staff, visitors, and buses) from student loading/unloading areas enhances safety. Short-term visitor parking should be clearly identified and located in close proximity to the main entrance. Parallel parking adjacent to curbs (especially near entrances, crosswalks, and exits) should be avoided, as it restricts natural surveillance for both moving vehicles and pedestrians.

In cold-weather climates, placement of snow piles needs to be incorporated into a building's traffic plan as well as the school safety plan. Snow piles can reduce the available parking in a parking lot and can obstruct the view of traffic. Thawing and refreezing of snow piles can be a slip, trip, and fall hazard in the parking lot.

Parking and travel areas, walkways, and entrances should be well-lit and illuminated when conditions warrant.



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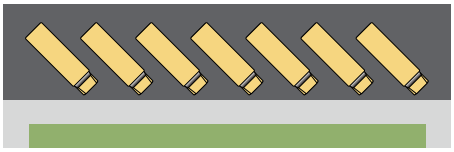
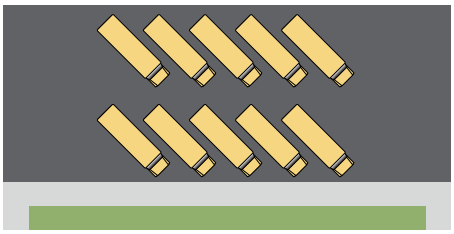
Table 1

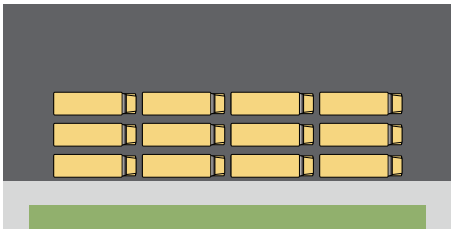
**Single-File, Door Parallel to Curb:** This is the preferred boarding arrangement, as it doesn't require students to pass between buses.



**Single-Lane Chevron:** This arrangement keeps students from crossing between buses while efficiently managing space.



**Multiple-Lane Chevron:** While this method is an efficient use of space, it requires students to walk between buses, which is not preferred.



**Multiple-Lane Parallel:** This is the least preferred boarding arrangement because it requires students to walk between buses.

## Bus Loading and Unloading

School bus loading areas should be designed for single-file bus staging in a one-way, counterclockwise direction. The facility should be sized for the expected number of buses. This allows curbside pick up for the students and is a safer configuration, as students are not required to pass between or in front of buses to load. If space is a constraint, the single-lane chevron configuration can be considered (see Table 1). This configuration does not require students to pass between buses to load.

Table 1 illustrates the various bus staging configurations. Other additional configurations identified (Multiple-Lane Chevron and Multiple-Lane Parallel) provide less safety for students since they require students to pass in between or in front of buses to load and are not recommended. If these configurations are utilized, increased supervision and effective communication are essential to ensure safety.

Bus travel lanes should be separated as much as possible from other vehicles and pedestrians. On-site bus loading zones should have two lanes; one for travel and one for stopping. Bus area pickups should be positioned so buses exit upstream of automobiles and gain priority, thereby reducing delay. For all traffic, two outbound lanes are preferred; one for buses turning left and one for buses turning right.

## Signage and Pavement Markings

Signage and pavement markings are an often underutilized tool but can be an effective means in providing information, helping to direct traffic flow, and enhancing transportation safety for vehicles and pedestrians. They should be posted at all vehicular access points with rules as to who is allowed to use parking facilities and when they are allowed to do so. "Bus Only" or "No Entry" signs should be posted at the entrance to bus-only loops. Signage should be simple, and standardized in size, shape, and wording to what is utilized on public roadways, and have reflective or lighted markings along with the necessary level of clarity. Homemade signs should not be utilized. Signs need to be regularly maintained and replaced when necessary. Visibility is important with signage; signs need to be visible and need to be placed in locations where they do not obstruct vision, or where they may be obstructed by trees, shrubs, plants, etc.

## Parent Drop Off/Pick Up

Parent drop off/pick up and bus loading areas should be separated and appropriately signed to minimize traffic conflicts and to allow for effective supervision of waiting areas. The school transportation plan, which includes the school's traffic drop-off and pick-up procedures and parking lot rules and policies, should be provided to parents and students prior to the start of the school year. These rules should include such items as use of cell phones and other distractions while driving, speed limits and traffic flow expectations, as well as consequences for violations.

Effective traffic-flow design would allow drop off and pick up of students curbside only in approved zones. Schools should discourage the practice of parent pick up or drop off that requires the students to cross roadways, travel through parking lots, or generally require a student to cross a vehicular path before entering the school building.

If a school-approved loading/unloading zone requires students to cross roadways or parking lots, designated pedestrian walkways along with crosswalks need to be utilized. These walkways and cross walks should be marked and signed, as well as an area for increased supervision or utilization of traffic-control guards.

## Parking Lot Supervision

Parking lot supervision is an important element of a school traffic plan. The number and location of supervisors will vary according to age and mobility of the children supervised, traffic flow design, and individual site challenges and constraints. Supervision is needed to monitor traffic flow and pedestrian movement in and out of the parking lots (vehicles) and in and out of buildings (students, staff, and visitors). Supervisors can be important in communicating and reporting traffic issues and concerns as well as policy violations.

## Resources


- Arizona Department of Transportation. (October 2006). *Traffic safety for school area guidelines* (Publication No. 30-012). Retrieved from https://www.azdot.gov
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- Defronzo, D., et al. (June 2014). Report of the school safety infrastructure council. *State of Connecticut Department of Administrative Services: School Safety Infrastructure Council.* Retrieved from http://das.ct.gov
- Pedestrian and Bicycle Information Center. (February 2007). *Safe routes to school guide: Student drop-off and pick-up.* Retrieved from http://saferoutesinfo.org