

### INTRODUCTION

High volumes of traffic at schools during arrival and pick-up times can lead to poor traffic circulation and often unsafe conditions for bicyclists and pedestrians. For example, vehicle congestion and queuing during drop-off and pick-up times can conflict with pedestrian and bicycling circulation; students walking or bicycling to or from school may not use or have access to sidewalks or crosswalks; school parking areas may be unorganized and lack traffic controls and markings; buses may block visibility of pedestrians and bicyclists. Parents may engage in a variety of illegal or unsafe behaviors, including parking in a crosswalk, double-parking, speeding, parking in NO PARKING areas or fire lanes, ignoring turn restrictions, or parking in locations that encourage their children to cross a travel lane.

Safe Routes to School (SRTS) programs aim to improve safety for pedestrians and bicyclists. Changes to traffic operations during arrival and release can make a difference in safety for these modes. They may also improve traffic congestion, which can have the negative consequence of increasing traffic speeds and thus increasing risk for student pedestrians and bicyclists (see ITE Briefing Sheet—*Reduced School Area Speed Limits*). Therefore, before making changes to traffic operations, a thorough understanding of the dynamics of traffic operations around a school is needed. While traffic control and operations on a school campus are the responsibility of the school or school district, the local agency can provide school officials with guidance on how to better control and organize traffic on campus.

This briefing sheet discusses ways of improving traffic operations on the school grounds, outlining how issues are identified, how policies and engineering solutions are developed, and how solutions can be selected to address the issues. Solutions considered include valets, safety patrols, traffic enforcement, designated drop-off/pick-up sites, school policies, traffic control, and dedicated routes for pedestrians and bicyclists to the school.

### IDENTIFYING ISSUES

The existing circulation patterns at schools should be evaluated to identify specific issues and problem areas. The evaluation should include either a walking or bicycling audit or interviews of relevant stakeholders and observations of school arrival or release procedures and behaviors. See ITE Briefing Sheet—*Walking and Bicycling Audits* for information to collect during an audit and the National Center for Safe Routes to School *Assessing Walking and Bicycling Routes: A Selection of Tools* for audits to consider using.<sup>1</sup> Participants may include school officials, parents and students, crossing guards, bicycle and trail groups, city traffic engineers, police officers, and local government officials.

### DEVELOPING POLICIES AND SOLUTIONS

Treatments to address circulation issues include engineering, education, encouragement, and enforcement solutions, as well as school policies that address arrival and dismissal times and define expectations for parents and students.

Policies should be developed collectively with parent-teacher organizations, the local community, and the school board, as well as other stakeholders. Engineers can recommend policies related to arrival and dismissal, which complement infrastructure modifications. The group should convene to identify the issues, discuss solutions, and draft policy language. Parents should be notified about new policies via mailings, calls, meetings, e-mail, and/or social media.

In order for policies to be successful, the school site should be evaluated to maximize safety and clarity of traffic circulation. Extraneous signs should be removed and traffic control that is ignored should be removed or enforced. Education and encouragement programs can improve motorist and student compliance with traffic regulations and facilitate good behaviors.

**Table 1: Standard solutions for common pedestrian and bicyclist/motor vehicle conflicts.**

Conflicts between pedestrians/bicyclists/motor vehicles on school grounds	Potential Solutions
	Provide a sidewalk or pathway for students who are walking and bicycling
	Define a drop-off/pick-up site
	Designate access points for bus drivers, school staff, and parent drivers that are separated from pedestrians and bicyclists
	Vary dismissal time or location by mode or grade to reduce the number of students arriving at or leaving school simultaneously
	Reroute or restrict automobile access during key times in the day when conflicts occur
	Define zones within the school campus (student drop-off/pick-up, short-term parking, bus waiting area, etc.) and identify student and parent rules in each zone
	Use a platooning drop-off/pick-up system in which all vehicles unload/load simultaneously, and all drivers must wait for the front vehicles
	Require pedestrians and bicyclists to use the crosswalks
	Require students to enter and exit the vehicle on the same side of the street as the school
	Require parents of kindergarteners to park and walk their students to and from school
	See the ITE Briefing Sheet— <i>The Use of Traffic Calming Near Schools</i> for more information

Conflicts between pedestrians or bicyclists and motor vehicles on the school grounds can be caused by an undesirable school campus layout, which may require students walking or bicycling to cross the school driveway or parking lot. This problem can be addressed by developing, clarifying, or improving walking and bicycling routes through the school grounds. If possible, drop-off/pick-up areas should be separated from walking and bicycling routes.

Poor motorist behavior can be due to parent drivers ignoring or disobeying traffic controls. Clarifying and enforcing traffic controls should discourage parents from engaging in unsafe behaviors. Parents should be educated about proper behavior and the impacts of incorrect behavior through a variety of media, including mailings, discussions at Back to School Night with information in a parent handbook, and/or automated phone calls. Unsafe behaviors include double-parking, blocking the crosswalk, making U-turns, stopping in a traffic lane to drop off/pick up a student, parking in the drop-off area to walk a student into school, speeding, and using a cell phone while driving. Law enforcement or a school safety patrol can reinforce these rules, and parents who comply can be rewarded with incentives.

**Table 2: Potential solutions for poor motorist behavior.**

Poor Motorist Behavior	Potential Solutions
	Improve traffic controls—repaint or provide crosswalks, post speed limit signs, signalize pedestrian crossings, clarify and simplify traffic control, as appropriate
	Redesign circulation by designating one-way flow and pull-through lanes, or by realigning or constricting automobile access
	Discourage use of cell phones in the school parking lot
	Educate parents about unsafe driving behaviors and school transportation policies; reinforce these messages with regular communications about the rules and with driveway monitors
	Have parents pledge to abide by the laws and drive safely
	Encourage parents to comply with traffic controls with random rewards
	Educate school bus drivers about pedestrian and bicyclist safety issues, including maintaining slow speeds on streets surrounding the school
	Provide safety vests to crossing guards/student valets to reinforce authority
	Employ targeted police enforcement
	Issue school parking lot “citations” or warnings designed to look like actual police tickets

Poor student behavior may be due to a lack of awareness of “rules of the road,” distractions, lack of student discipline, and unwillingness to travel out-of-direction. Education and encouragement strategies such as issuing paper “citations” for students dropped off in the wrong location or organizing walking school buses can inform students of correct behavior and train them to act in a safer and more consistent way.

**Table 3: Potential solutions for poor student behavior.**

Poor Student Behavior	Potential Solutions
	Provide supervision during arrival and release
	Move the crosswalk to a location where students currently cross
	Improve crosswalk visibility/repaint crosswalks; use signs, plantings, and other barriers to direct pedestrians to use the crosswalk
	Evaluate pedestrian signal timing to provide sufficient time for pedestrians to cross and to minimize pedestrian wait time
	Educate students in proper walking and bicycling rules of the road; provide yearly lessons that build safety skills
	Encourage walking school buses and bike trains
	Install fences to prohibit students from crossing at inappropriate locations

Congestion at the school inconveniences parents and is a safety concern for pedestrians and bicyclists due to distracted driving and queued vehicles blocking intersections and inhibiting visibility. However, when congestion results in slower motor vehicle speeds, it can have a beneficial effect on pedestrians. **It is important to remember that SRTS programs are not geared toward making it more convenient for parents to drop off and pick up children in private automobiles.**

However, sometimes traffic congestion is a hazard to pedestrians and bicyclists during arrival and pick-up times, especially when motorists exhibit noncompliant or erratic behaviors. When automobiles are queued up, students may have to cross between cars, where they are less visible to other drivers. A solution to this problem is the use of student valets who can open car doors for students and help them in or out of the vehicle, encouraging parents to stay in their vehicles. Additional operational modifications can improve traffic flow, thus reducing congestion. Policies and programs that encourage walking, bicycling, busing, and carpooling will also reduce congestion and improve safety at schools.

**Table 4: Potential solutions for traffic congestion.**

Congestion	Potential Solutions
	Encourage students who live near school to walk or bike
	Establish a priority parking and loading zone for carpool vehicles
	Allow students who live farther than 3 miles from school to ride a school bus
	Lengthen or reconfigure drop-off/pick-up area
	Provide a pull-through lane to the left side of the drop-off zone to allow drivers to drive past cars waiting at the curb and fill all curb drop-off/pick-up spots
	Designate a remote drop-off/pick-up area where students can walk to or from school
	Use student valets to streamline the drop-off/pick-up process
	Restrict parking in the neighborhood during school hours

Establishing a school transportation safety committee can help engage stakeholders and provide ongoing monitoring of traffic operations issues.

For more information, see also ITE Briefing Sheet—*School On-site Design*.

## REFERENCE

1. <http://www.saferoutesinfo.org/program-tools/engineering-tip-sheets-assessing-walking-and-bicycling-routes-selection-tools>.