TAPCO
Safe travels.

HOW TO IMPROVE SCHOOL ZONE SAFETY IN A COVID AND POST-COVID WORLD

The importance of school zone safety cannot be overstated. With so many lives at stake, school officials and transportation professionals have a responsibility to protect students – as well as teachers, staff and parents – in school zones using the best methods available.

However, between time and budget constraints and a global pandemic, maximizing school zone safety comes with major challenges.

Fortunately, those challenges present valuable and potentially lifesaving opportunities.

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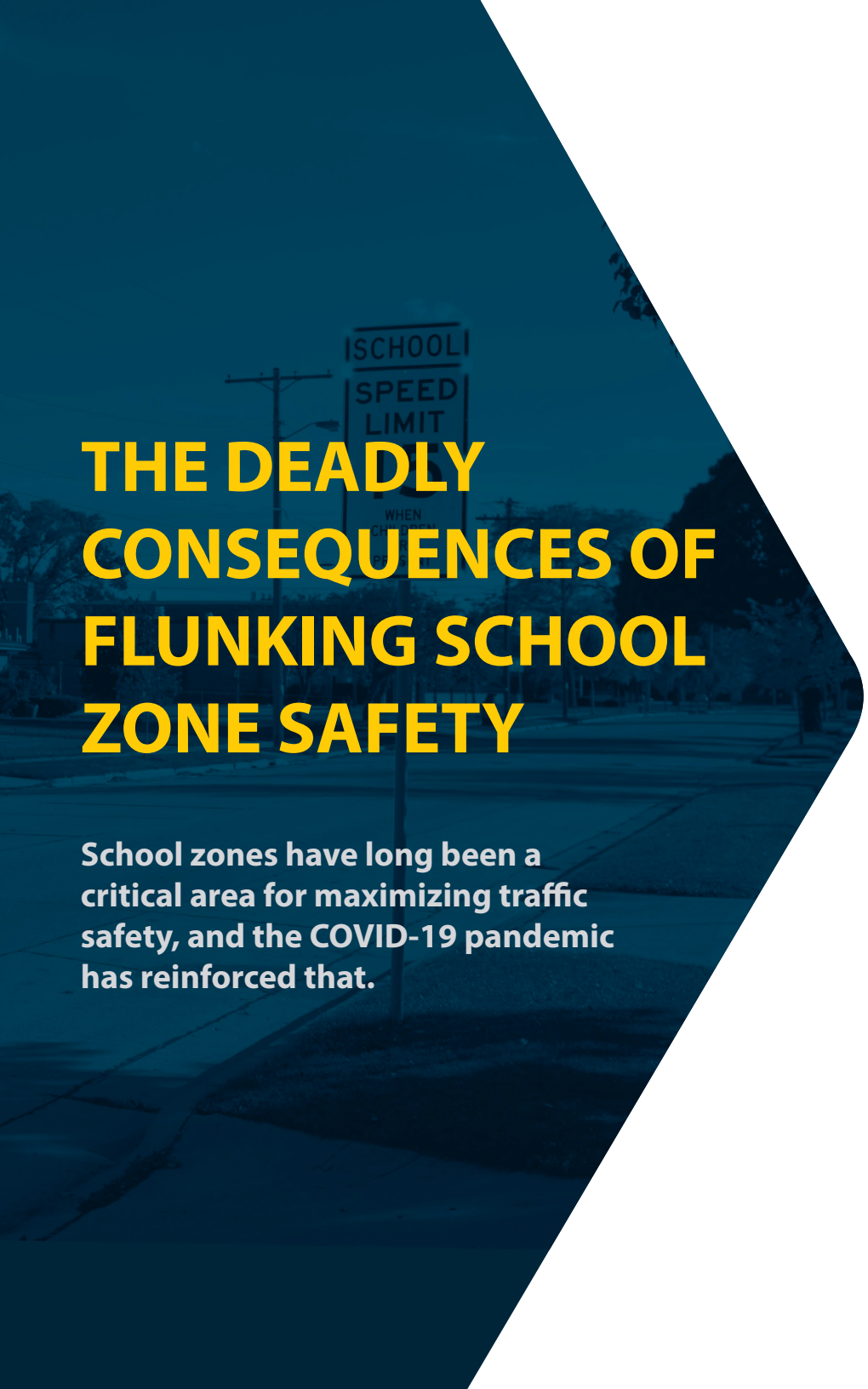


THE DEADLY CONSEQUENCES OF FLUNKING SCHOOL ZONE SAFETY

School zones have long been a critical area for maximizing traffic safety, and the COVID-19 pandemic has reinforced that.

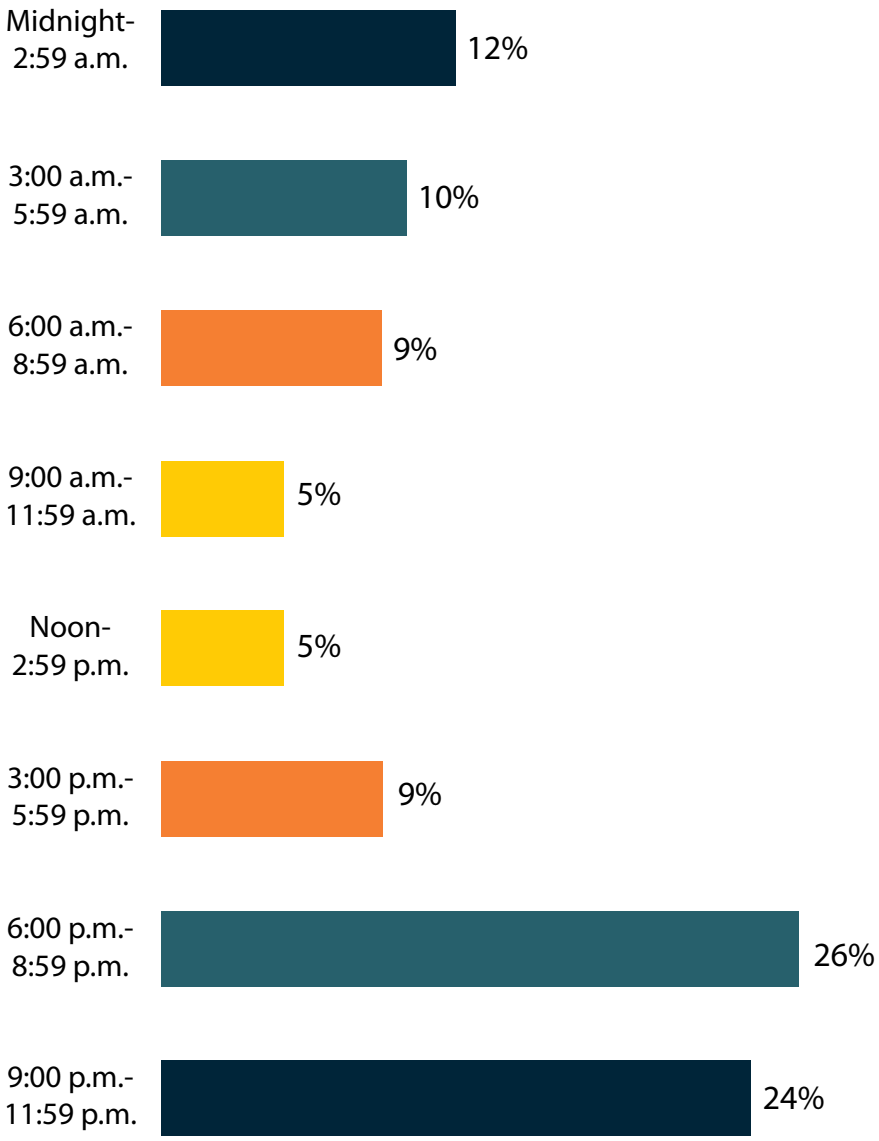
While data on school zone fatalities and injuries is not yet available for 2020, approximately 800 school-age children are killed in motor vehicle crashes during normal school travel hours each year.

An additional 152,000 school-age children are injured during those hours annually. Over 80 percent of these injuries occur in passenger vehicles, with just four percent being school bus–related.[1]

The issue of school zone safety extends beyond normal school hours. Many extracurricular activities occur on school grounds well into the evening, resulting in heavy school zone traffic in low light conditions.

Low light conditions are associated with higher pedestrian fatalities.

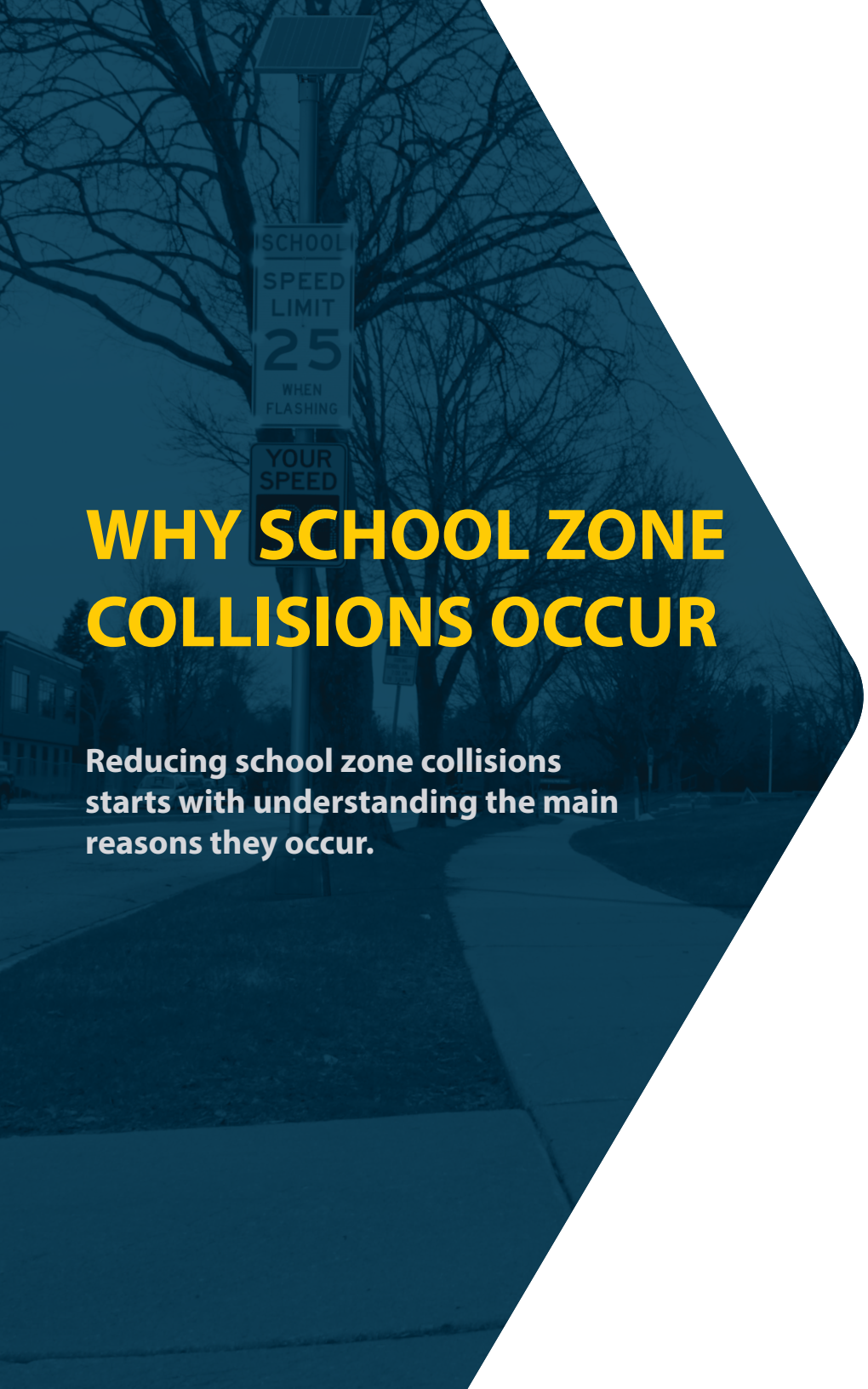
PERCENTAGE OF PEDESTRIAN FATALITIES BY TIME OF DAY IN 2017



According to the National Highway Traffic Safety Administration (NHTSA)[2]

Now is the ideal time to reassess school zone safety and ask some important questions.

How has the pandemic impacted your school zones? How can safety be improved for the COVID and post-COVID world to reduce school zone collisions and save lives?



WHY SCHOOL ZONE COLLISIONS OCCUR

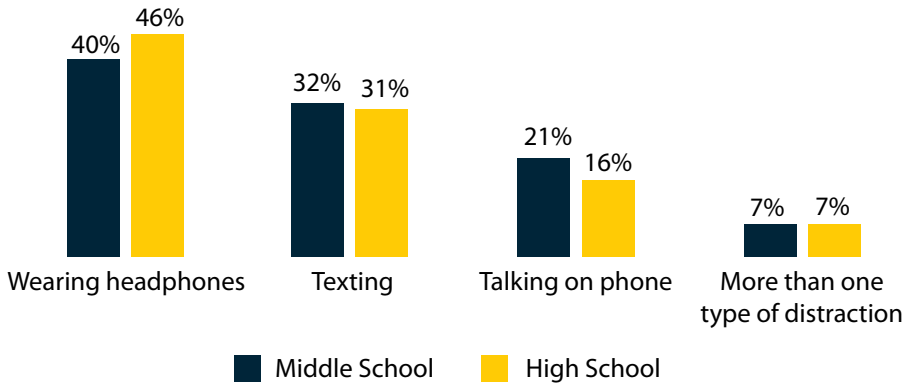
Reducing school zone collisions starts with understanding the main reasons they occur.

1

STUDENTS ARE DISTRACTED

Out of 39,000 middle and high school students observed in a study, 80 percent engaged in unsafe street crossing behavior, such as wearing headphones or looking down at phones. Research has shown walking while distracted by technology is a key factor in many pedestrian injuries.[3]

LEADING CAUSES OF DISTRACTION OBSERVED WHILE TEENS CROSSED THE STREET

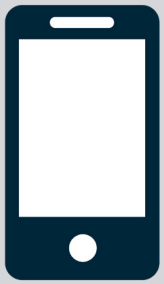


According to SafeKids.org

2

DRIVERS ARE NOT BEING SAFE

Unsafe drop-off or pick-up behavior – such as double parking and stopping in the middle of a crosswalk – was observed in nearly one in three drivers. On top of that, one in 10 were distracted by mobile devices while arriving or departing from school.[4]



3

MANY DRIVERS ARE INEXPERIENCED

School zones are frequented by high school students with new driver's licenses, which can be a major risk factor. In fact, about 55 percent of school-aged deaths in the U.S. occur when a teenager is driving.[5]

4

SCHOOL ZONE SPEED LIMITS CHANGE

Because speed limits in school zones are often reduced during certain hours only, drivers do not always know about or pay attention to these changes. As a result, they drive too fast in school zones and put others at risk.

RURAL STUDENTS ARE AT GREATER RISK

While only 19 percent of the U.S. population lives in rural areas, 64 percent of teen pedestrian fatalities occur there. On top of a lack of sidewalks and traffic control devices, reasons for this include faster speeds and less lighting.[6]

5

SIDEWALKS AND TRAFFIC CONTROL DEVICES ARE LACKING

Some rural school zones do not have any sidewalks, and roughly one-quarter of pedestrian crossings at high schools do not have at least one traffic control device, such as a traffic light or pedestrian signal. These devices have been found to decrease pedestrian collisions by 15 percent.[7]

HOW TO FIND THE RIGHT SOLUTIONS

Follow these simple steps to find the right safety solutions for your school zone.

1

GATHER KEY INFORMATION

Conduct walk audits virtually or in person to identify issues with safety and mobility.

Evaluate whether the pandemic has changed traffic volumes and speeds around your school at certain times of day or in particular areas.

Then, distribute brief digital surveys to students and families about their transportation challenges, including questions about any potential problems you observed during your walk audit. Make sure to gather feedback from students with disabilities about unique problems they may be facing.[8]

2

CONSIDER LOW-COST SOLUTIONS

School budgets can be tight, and the pandemic has made many even tighter. Fortunately, there are a few school zone solutions that do not come with a high sticker price.

ESTABLISH NEW PICK-UP AND DROP-OFF POLICIES

While the majority of schools have some sort of policy for drop-offs and pick-ups, a SafeKids study found that about four out of 10 middle schools and six out of 10 high schools do not enforce their policies. Drivers at schools with enforced policies were far less likely to engage in unsafe behavior than drivers at schools with unenforced policies.[9]

Take a fresh look at your policies and how they are enforced, then evaluate how they may need to be updated.

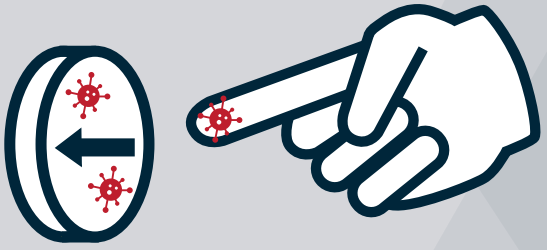
PRIORITIZE BICYLISTS AND PEDESTRIANS

Work with students and families to create bike trains in which groups of students ride their bikes to school together.[10]

Also, take advantage of the decrease in vehicle traffic to coordinate roadway changes with local government, using their funds whenever possible.

For example, you could create pop-up bike lanes for the duration of the pandemic, or convert some roads into Complete Streets, which are "streets designed and operated to enable safe use and support mobility for all users," according to the USDOT.[11]

You could even establish a bike-sharing program if there is a need in your community.



TWEAK TRAFFIC SIGNALS

Each day, hundreds or even thousands of students press the same push buttons on pedestrian crosswalk systems, aiding in the spread of viruses and bacteria.

While hands-free activation options are available, a low-cost option is to work with local government to reprogram pedestrian crosswalk signals from user actuated to fixed.

At signalized intersections near school zones, city engineers can also adjust signal timing to create leading pedestrian intervals (LPIs). They provide pedestrians with a head start of three to seven seconds before vehicles enter a signalized intersection parallel to them. This greatly reduces interaction between pedestrians and turning vehicles.[12]

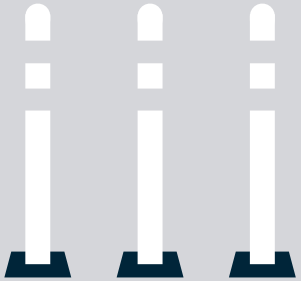
3

CONSIDER COST-EFFECTIVE SOLUTIONS

Stretch your budget the farthest with school zone safety solutions that will not break the bank.

INSTALL MORE BIKE RACKS

Account for increases in bike traffic by installing more bike racks around school, focusing on locations away from areas prone to gathering and crowding.



USE DELINEATORS

Create clear pick-up and drop-off zones and make navigation easier with impact-resistant delineators. Look for cost-effective options that are very quick and easy to replace.

ENHANCE CROSSWALK MARKINGS

Three out of 10 school zone crossings observed in a SafeKids study were not clearly marked.[13] Yet, crosswalk visibility enhancements can reduce crashes by 23 to 48 percent, according to the FHWA.[14] Evaluate whether school zone crossing enhancements are necessary.

Enhancements include making all crosswalks ladder-style and embedding reflective glass beads into crosswalk markings. In addition, you can replace old traffic signs, such as school crossing signs, to meet retroreflectivity ratings and be fluorescent yellow-green (FYG).

Lastly, in-street pedestrian signs are ideal for school zone crosswalks because they alert drivers of local laws about yielding to or stopping for pedestrians. They also draw more attention to the crosswalk.[15]

HELP OUT CROSSING GUARDS

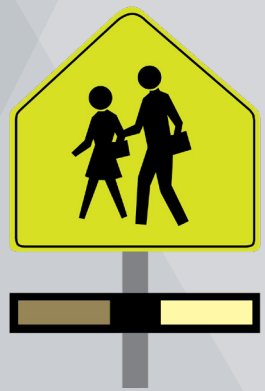
According to the FHWA, "the use of well-trained adult crossing guards has been found to be one of the most effective measures for assisting children with crossing streets safely."[16]

Make crossing guards' jobs easier, safer and more effective with Visual Alert™ LED paddles, which are lightweight, handheld signs with flashing LEDs on the sign face. Proven to increase driver awareness, the paddles can feature STOP on both sides or STOP on one and SLOW on the other.

Add another layer of safety with high-visibility LED vests and portable, temporary in-street school zone crossing signs.

CONSIDER SCHOOL CROSSWALK SYSTEMS

Prevent dangerous collisions by bringing more attention to pedestrians when they are in or about to enter crosswalks.



Rectangular Rapid-Flashing Beacons (RRFB) School Crosswalk Systems

Rectangular Rapid-Flashing Beacon (RRFB) School Crosswalk Systems feature amber LED light bars that flashto increase drivers' awareness of pedestrians.

A Florida study found RRFBs to bring driver yield rates from one percent up to an astounding 92 percent at a multi-lane crosswalk.[17]

While RRFBs can flash in a variety of patterns, look for ones that use the wig-way plus simultaneous (WW+S) flash pattern outlined by Interim Approval 21 (IA-21).

Click here for activation options.

BlinkerSign® School Crosswalk Systems

BlinkerSign® School Crosswalk Systems feature flashing amber LEDs embedded into the perimeter of the sign face that warn drivers of pedestrians up ahead, increasing yield rates at crosswalks.

The LEDs on these MUTCD-compliant signs even dim automatically based on ambient light and are engineered to withstand harsh weather conditions.

BlinkerSign® LED-Enhanced Signs can flash 24/7 or be activated in a variety of ways.

Click here for activation options.

ENHANCE SCHOOL CROSSWALK SYSTEMS

There are three key enhancements to school crosswalk systems proven to boost safety.

In-Road Warning Light Systems

Embedded in the pavement to outline the crosswalk and oriented to face oncoming traffic, in-road warning lights (IRWLs) flash in unison to alert drivers of pedestrians actively crossing the road ahead.

IRWLs have a low profile, allowing all road users to pass over them safely.

SafeWalk® Crosswalk Illuminators

For two-lane crossings with insufficient lighting, there is the SafeWalk® Crosswalk Illuminator. It uses a flood light to illuminate the approach area of the crosswalk and a beam light to illuminate the center, ensuring motorists can see pedestrians throughout the crosswalk.

SafeWalk® is activated by pedestrians and only illuminates in the dark. Exceeding the FHWA's 20 LUX requirement, it activates concurrently with LED-enhanced warning alerts during very low light conditions via passive or user actuation.

Connected Vehicle Interface

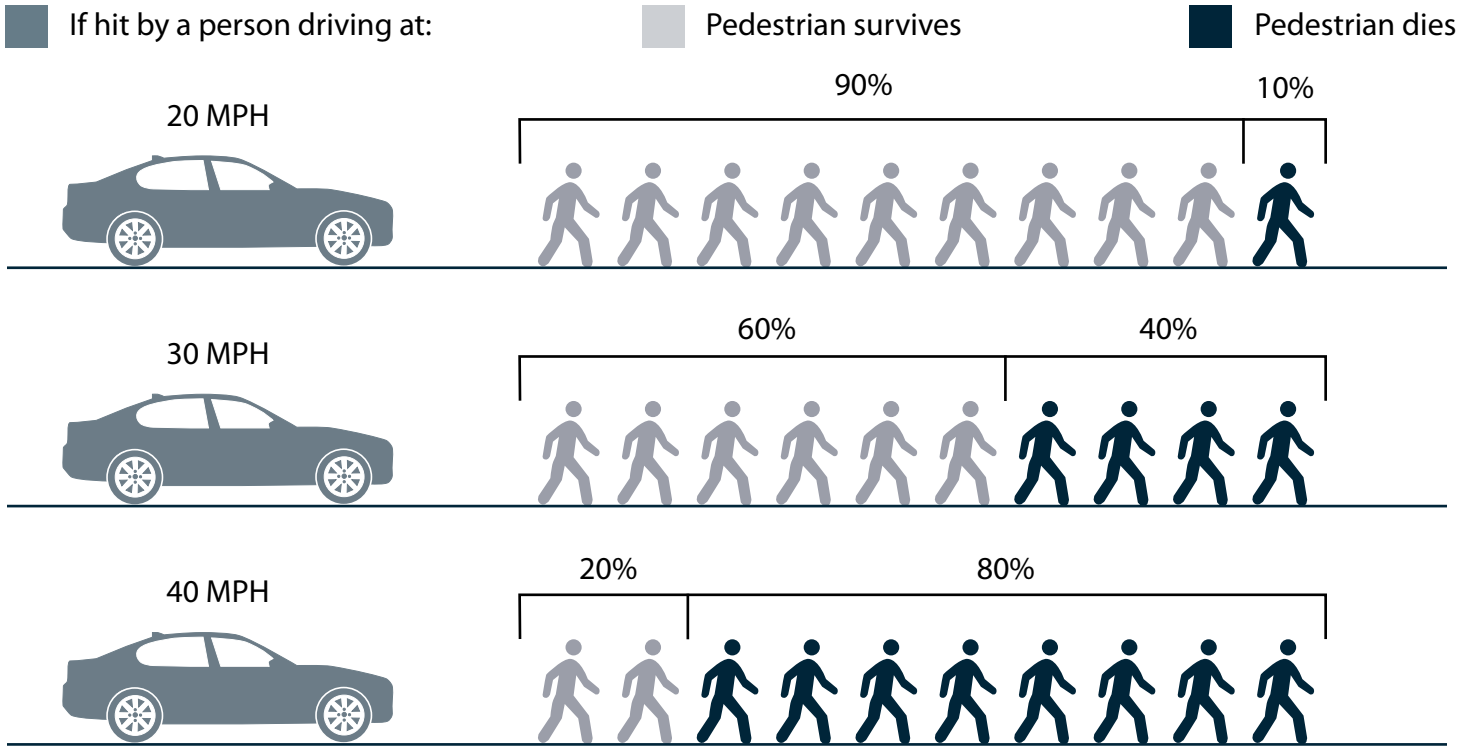
A connected vehicle interface (CVI) is an innovative enhancement to crosswalk or school zone systems that increases traffic safety. The CVI works with roadside units (RSUs) to relay Intelligent Warning System data to connected vehicles via dedicated short-range communication (DSRC) or cellular networks.

Connected vehicle drivers receive timely alerts about hazards – such as pedestrians in a crosswalk up ahead or the reduced speed limit in a school zone – via an onboard mobile device, dashboard screen or smart rearview mirror.

REDUCE DRIVERS' SPEEDS

With less students in school, drivers may be growing accustomed to ignoring school zone speed limits, and even a small increase in speed can be deadly. A pedestrian who collides with a car traveling 40 miles per hour has only a 20 percent chance of survival, according to the NHTSA. However, if that car is traveling 20 miles per hour, the chance surges to 90 percent.[18]

In addition, speed has a tremendous impact on drivers' field of vision and stopping distance. Fortunately, there are two solutions designed specifically for school zones that can help.



According to the National Highway Transportation Safety Administration (NHTSA)[19]

BlinkerSign® School Zone Speed Limit Systems

School zone speed limit warning alerts combine posted school zone speed limit signs with LED-enhanced warning alerts that flash to draw attention to the active school zone speed limit and increase driver compliance.

When working with TAPCO, the warning alerts can be BlinkerSign® LED-Enhanced Signs or BlinkerBeacon™ LED Beacons that flash 24/7 or when scheduled via a time clock controller. Remote scheduling is also available using BlinkLink® traffic device-monitoring software (see page 17).

BlinkerBeacon™ with BlinkerRadar™ School Zone Speed Limit Systems

By combining driver feedback signs with BlinkerSign® LED-Enhanced Signs or BlinkerBeacon™ LED Beacons, the MUTCD-compliant BlinkerRadar™ Driver Feedback System draws attention to speed limits and reduces average speeds.

If drop-off and pick-ups times are staggered and/or dynamic, the system's time clock scheduling feature ensures the driver feedback functionality and flashing alerts only activate during set periods.

Standalone driver feedback signs have also been proven effective at increasing driver compliance, lowering speeds by an average of nine miles per hour in school zones.[20]

REMOTELY MONITOR SAFETY SOLUTIONS

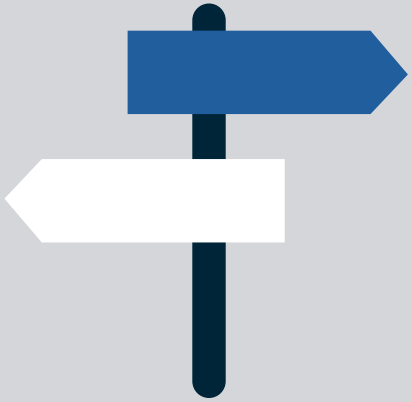
Managing and monitoring school zone safety systems remotely saves school personnel an incredible amount of time and expense. Remote traffic device-monitoring software like BlinkLink® from TAPCO make that possible.

Create calendars for eight unique day types, with up to 16 activations per day for two years. Schedule times for different days, weeks and months. Remotely override schedules to turn the system on and off. Users can even upgrade third-party manual time clock systems to remote scheduling via BlinkLink® using the 4G time clock retrofit kit.

Plus, with the Lights Out alert feature, select users can be notified if a school zone system's beacon is not operating.

Securely connected through reliable cellular or fiber networks, BlinkLink® is available for all TAPCO systems. The software collects real-time data on incidents and sends out voice, email and SMS alert notifications to pre-determined recipients. Use this information to analyze trends and gain valuable insight into problem areas.

Crucially, BlinkLink® can also be accessed on any web-enabled device and programmed easily.



INCREASE AND UPGRADE SIGNAGE

Drop-off and pick-up congestion can make it difficult for students to socially distance, and it slows everyone down right when school zones are at their busiest. Use wayfinding signage to seamlessly direct drivers and reduce congestion.

Wayfinding signage can even be used indoors to help students navigate through large buildings and campuses, especially when class and activity locations have shifted due to the pandemic.

In addition, improve driver compliance by upgrading existing signage – such as school crossing and stop signs – to be BlinkerSign® LED-Enhanced Signs.

Both static and LED-enhanced signs can be standard or customized by vendors like TAPCO.

4

LEVERAGE PREVENTATIVE MAINTENANCE CONTRACTS

Once school zone safety systems are installed, they still need to be maintained to ensure peak performance and maximize lifespans. However, finding the technical resources to conduct such routine maintenance can be difficult.

With TAPCO preventative maintenance contracts, expert service technicians and industry-leading asset management software take care of everything. Technicians conduct full system testing and inspections providing complete documentation after every visit.

Plus, preventative maintenance contracts come with added bonuses, including "no questions asked" warranty extensions, discounted BlinkLink® subscriptions, maintenance contractor technical support and more.

5

GET FUNDING

After evaluating your options, take a fresh look at your budget. Is there money set aside for something, such as events or programming, that is no longer needed? Can it be redirected toward school zone safety expenses?

Next, prioritize the aspects of school zone safety that are most important based off your walk audit and digital surveys, and consider what local, state and federal grants are available. Some major federal grants include USDOT general grants, Highway Safety Improvement Program grants and FHWA Bicycle and Pedestrian Program grants.

Then, work on getting decision makers and stakeholders on board, and consult reputable vendors who can assist with budgetary planning.

Use this pandemic as an opportunity to reassess school zone safety, leveraging solutions that fit your school's budget and unique needs.

Get started by visiting the TAPCO website to learn more >

1: http://onlinepubs.trb.org/onlinepubs/sr/sr269.pdf

2: https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812681

3: https://www.safekids.org/sites/default/files/alarming_dangers_in_school_zones.pdf

4: https://www.safekids.org/sites/default/files/alarming_dangers_in_school_zones.pdf

5: http://onlinepubs.trb.org/onlinepubs/sr/sr269.pdf

6: https://www.safekids.org/sites/default/files/alarming_dangers_in_school_zones.pdf

7: https://www.safekids.org/sites/default/files/alarming_dangers_in_school_zones.pdf

8: https://americawalks.org/how-to-conduct-a-walk-audit-in-your-community-quick-guide-for-assessing-your-neighborhood-walkability/

9: https://www.safekids.org/sites/default/files/alarming_dangers_in_school_zones.pdf

10: https://www.saferoutespartnership.org/sites/default/files/pdf/back_to_school_2020_final.pdf

11: https://www.transportation.gov/mission/health/complete-streets

12: https://nacto.org/publication/urban-street-design-guide/intersection-design-elements/traffic-signals/leading-pedestrian-interval/

13: https://www.safekids.org/sites/default/files/alarming_dangers_in_school_zones.pdf

14: https://safety.fhwa.dot.gov/ped_bike/step/docs/TechSheet_VizEnhancemt_508compliant.pdf

15: http://www.pedbikesafe.org/pedsafe/countermeasures_detail.cfm?CM_NUM=69

16: https://safety.fhwa.dot.gov/saferjourney1/library/countermeasures/51.htm

17: http://pedbikesafe.org/PEDSAFE/casestudies_detail.cfm?CM_NUM=54&CS_NUM=101

18: https://one.nhtsa.gov/people/injury/research/pub/hs809012.html

19: https://one.nhtsa.gov/people/injury/research/pub/hs809012.html

20: https://static.tti.tamu.edu/tti.tamu.edu/documents/0-4475-1.pdf