

# Putting Safety in the Safe Routes to School Program<sup>®</sup>

A School Administrator's Guide





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Washington, DC 20515

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David Brynfield, Democratic Chief of Staff

Dear School Administrator:

We're delighted that the American Traffic Safety Services Association (ATSSA) is helping to "get the word out" to local school administrators about the new *Safe Routes to School Program*.

This new, federally funded program was created as part of the federal surface transportation bill, the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). Its primary purpose is to encourage elementary and middle school children to safely walk and bike to school, thereby promoting a healthier lifestyle, and reduced traffic congestion and air pollution. This program has the potential to improve the living habits of an entire generation of school children.

Each state may set its own application processes and criteria. We expect that there will be a lot of attention paid to making walkways and bikeways safe for all children. This booklet will help you plan how to do this and how to take other safety measures for our nation's children. We encourage you to contact your state program administrator and make Safe Routes to School a reality in your community.

Thomas E. Petri  
Chairman, Subcommittee  
on Highways, Transit and Pipelines

James L. Oberstar, M.C.  
Ranking Democratic Member

# Safe Routes to School

## What is Safe Routes to School?

Safe Routes to School (SRTS) was created by a special provision of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). Members of Congress wanted to include an opportunity to promote safe walking and bicycling to school for school children.

## What are the Purposes of the Program?

The Safe Routes to School Program has three specific goals:

1. Encourage children to walk and bike to school.
2. Make it safe for children to do so.
3. Help with planning projects that will improve safety and reduce traffic, fuel consumption, and air pollution.

## How is the Program Funded?

Congress provided funding to states through SAFETEA-LU for Federal fiscal years 2005 – 2009. Each state has at least \$1 million; some have much more.

## How Can My School System Participate?

Each state can establish its own application process. You should call your state SRTS Administrator to find out the process in your state. To identify your administrator, go to <http://www.saferoutesinfo.org/contacts/index.cfm>.

## **Are There Restrictions on How the Money Can be Spent?**

Yes. Between 10% and 30% of the funds in a state must be spent on public awareness and educational campaigns. Between 70% and 90% of the total state funds must be spent on actual project planning and construction activities that will improve the ability of children to walk to school.

## **What Types of “Projects” Can be Built?**

The law allows wide discretion on the local level as to what would be best for the children. Eligible activities include upgrading signs, road markings, using safety devices, and building sidewalks where none exist.

## **How Can this Booklet Help?**

Many school administrators are unfamiliar with traffic control and safety devices. Also, many smaller communities do not have a traffic engineer or planner on staff. The purpose of this booklet is to give school administrators a brief overview of safety devices that might be incorporated into a local plan. We hope that you will find this booklet of use in planning your community’s Safe Routes to School program.

# The Manual on Uniform Traffic Control Devices

## **What is the Manual on Uniform Traffic Control Devices?**

The Manual on Uniform Traffic Control Devices (MUTCD) is a publication issued by the Federal Highway Administration (FHWA) of the United States Department of Transportation that sets forth the basic principles that govern the design and use of traffic control devices. Traffic control devices are signs, signals, pavement markings, and other devices used to communicate to the users of the nation's roadway system.

## **What is the Purpose of the MUTCD?**

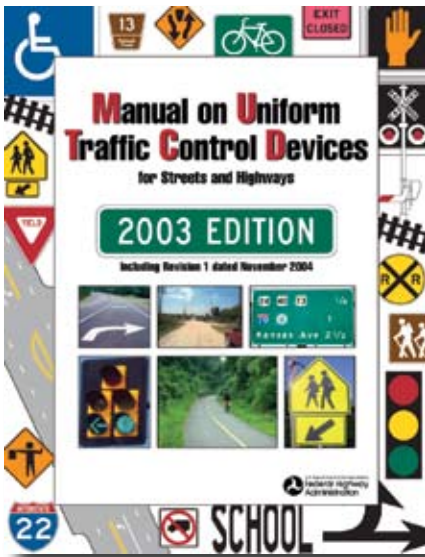
The MUTCD is the national standard for all traffic control devices installed on any street, highway, or bike trail open to public travel. The material contained within the MUTCD ensures the basic uniformity of traffic control devices on these facilities.

## **Who Uses the MUTCD?**

The most obvious MUTCD users are state and local transportation engineers who design roads and determine when and where to use traffic control devices. Construction and engineering contractors who design and build roads also rely on the MUTCD. Other entities that use the MUTCD include law enforcement agencies, researchers, insurance agencies, legal organizations, and various other professional organizations.

## What Version of the MUTCD Do I Use?

The MUTCD is a complex and evolving publication. There were eight editions prior to the most current version (dated 2003), and several of those editions were revised one or more times. For the most current electronic version of the MUTCD, go to <http://mutcd.fhwa.dot.gov>. Chapter 7 of the MUTCD deals specifically on “Traffic Controls for School Areas.” To view this chapter online, visit <http://mutcd.fhwa.dot.gov/pdfs/2003/ch7.pdf>. To order a printed copy of the MUTCD, or one on CD, call ATSSA at (877) 642-4637.



Even though the MUTCD is the authorized national standard for all traffic control devices, some states adopt the national MUTCD along with a state specific supplement. Still, other states use the national MUTCD as the basis for developing their own state traffic control device manuals (which must be in strict conformance to the national MUTCD). Your state SRTS Administrator can assist you with your state’s traffic control device standards.

# Which Safety Devices Should I Use?



A variety of traffic control and safety devices that can increase the safety of students who walk and bike to school are presented on the following pages of this booklet. Some of these devices improve conditions by increasing the visibility of signs and crosswalks, while others improve conditions by reducing speeds or physically separating students from vehicular traffic. The devices chosen by your school will depend on the desired outcome.

Since the desired outcome may vary from site to site, so will the selected devices. At some sites, the implementation of one device may suffice, while at other sites a combination of devices may be required. Overall, multiple devices implemented at one site, as well as across sites, along school routes and at school crossings should be viewed as a “system of devices” that improves the safety of students who walk and bike to school.

For example, fluorescent yellow-green signs and reflective sleeves, as well as flashing warning beacons, can be used to alert

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drivers sooner to situations that require special caution or reduced speeds. At school crossings, in-street pedestrian crossing signs and crosswalk marking upgrades could be used to increase the visibility of the crossing. To reduce speeds along school routes and at school crossings, vehicle speed feedback signs and speed humps may be used.

It is important to consult with a local traffic engineer and/or public works agency about installing traffic control and safety devices. In some cases, a location may need to meet certain criteria to qualify for a specific treatment. Also, the device itself may need to meet certain design criteria. Furthermore, pedestrian safety depends upon public understanding of the traffic control devices; therefore, uniform application of traffic control and safety devices is desired. To achieve uniformity along school routes and at school crossings, comparable traffic situations need to be treated in a consistent manner.

For additional information about the SRTS Program and devices that can be used to improve the safety of students who walk and bike to school, please visit the following websites:

American Traffic Safety Services Association  
[ATSSA.com](http://ATSSA.com)

Federal Highway Administration Safe Routes to School  
[safety.fhwa.dot.gov/saferoutes](http://safety.fhwa.dot.gov/saferoutes)

Manual on Uniform Traffic Control Devices for Streets and Highways  
[mutcd.fhwa.dot.gov](http://mutcd.fhwa.dot.gov)

National Center for Safe Routes to School  
[www.saferoutesinfo.org](http://www.saferoutesinfo.org)

# Fluorescent Yellow-Green Signs

## What are Fluorescent Yellow-Green Signs?

The MUTCD requires that all warning signs have a yellow background with a black legend, however, the MUTCD provides the option for *all school warning signs* to have a fluorescent yellow-green background with a black legend. The MUTCD recommends a systematic approach featuring one background color (either fluorescent yellow-green or standard yellow) within a school zone. Mixing of the two colors should be avoided.

## What is the Benefit of Fluorescent Yellow-Green Signs?

Fluorescent yellow-green signs are more conspicuous than standard yellow signs, especially at dawn and dusk, as well as during inclement weather. As a result, drivers detect fluorescent yellow-green signs from greater distances, which enables drivers

to respond to situations earlier (i.e., slowing down or yielding to a pedestrian). By alerting drivers sooner that special caution is needed, fluorescent yellow-green signs significantly improve the safety of students who walk and bike to school.



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# Reflective Sleeves on Sign Posts



## What are Reflective Sleeves on Sign Posts?

Reflective sleeves are panels of reflective sheeting that attach to sign posts. According to the MUTCD, the reflective sleeve must be at least two inches in width and be placed the full length of the post from the sign to within two feet above the edge of the roadway. The color of the reflective sleeve must match the background color of the sign. Reflective sleeves are available in all MUTCD sign colors, including yellow and fluorescent yellow-green.

## What is the Benefit of Reflective Sleeves on Sign Posts?

Reflective sleeves enhance the visibility of traffic signs by converting the sign post area into a reflective surface. This is especially beneficial at night and during low light conditions. With respect to schools, reflective sleeves can help alert drivers to school zone speed limit signs and crosswalk warning signs, thereby, increasing the safety of students who walk and bike to school.

# Flashing Warning Beacons



## What are Flashing Warning Beacons?

A flashing warning beacon is a blinking, circular yellow light that can be used with school speed limit signs that include a WHEN FLASHING legend. Flashing beacons may also be used with warning signs.

## What is the Benefit of Flashing Warning Beacons?

Flashing warning beacons are used to draw driver attention to unexpected conditions, such as school zone speed limits and upcoming crosswalks. Drivers can then respond appropriately by slowing down or being prepared to yield to pedestrians. Studies have shown that school zone speed limit signs with flashing warning beacons are effective in reducing school zone speeds. By alerting drivers to situations that require special caution or a speed reduction, flashing warning beacons improve the ability of students to safely walk or bike to school.

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# LED School Crosswalk Warning Signs

## What are LED School Crosswalk Warning Signs?

A LED school crosswalk warning sign is a typical school crosswalk warning sign with flashing light-emitting diode (LED) lights embedded around the edge of the sign. The LED lights match the sign's background color. Solar/battery-powered LED school crosswalk warning signs are easily installed on a sign post without the costs associated with permanently installed electrical service.

## What is the Benefit of LED School Crosswalk Warning Signs?

The LED lights in school crosswalk warning signs increase the sign's visibility range during the day and at night; therefore, drivers notice them farther in advance than conventional signs. In addition, the LED lights help drivers recognize the pentagon shape of the sign, which itself indicates a school area. By commanding the attention of drivers more quickly, LED school crosswalk warning signs direct drivers to be prepared to yield to pedestrians sooner; thus, improving the safety of students who walk and bike to school.



# In-Street Pedestrian Crossing Signs

## What are In-Street Pedestrian Crossing Signs?

In-street pedestrian crossing signs are signs placed in the street (on edge lines, center lines, or in medians) at unsignalized pedestrian crossings. In-street pedestrian crossing signs cannot be used at signalized locations. Typically, these signs are viewed as an appropriate treatment for roadways with speed limits less than or equal to 30 mph.

## What is the Benefit of In-Street Pedestrian Crossing Signs?

In-street pedestrian crossing signs are used to remind drivers of their legal obligation with respect to pedestrians (i.e., either to yield or stop depending on state law). Research shows that the application of in-street pedestrian crossing signs increases driver yielding/stopping compliance at unsignalized pedestrian crossings. By reminding drivers to stop or yield for pedestrians, in-street pedestrian crossing signs increase the safety of students who walk and bike to school.



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# Crosswalk Marking Upgrades



## What are Crosswalk Marking Upgrades?

According to the MUTCD, standard crosswalk markings consist of two solid white transverse lines perpendicular to traffic. However, the MUTCD provides the option for crosswalk marking upgrades including white diagonal lines at a 45 degree angle to the transverse crosswalk lines, or white longitudinal lines parallel to traffic. When diagonal or longitudinal lines are used to mark a crosswalk, the transverse crosswalk lines may be omitted.

## What is the Benefit of Crosswalk Marking Upgrades?

Crosswalk markings define and delineate paths for pedestrians to use when crossing the road and serve to alert drivers of a pedestrian crossing. Crosswalk marking upgrades are used for added visibility and are therefore appropriate at locations where substantial numbers of pedestrians cross without other traffic control devices, at sites where physical conditions necessitate added visibility, or at places where a pedestrian crosswalk might not be expected. By increasing the visibility of crosswalks, crosswalk marking upgrades increase the safety of students who walk and bike to school.

# High Visibility Crosswalks



## **What are High Visibility Crosswalks?**

High visibility crosswalks are standard transverse crosswalk markings with colored pavement between the crosswalk lines. Around schools, fluorescent yellow-green pavement could be used.

## **What is the Benefit of High Visibility Crosswalks?**

Adding colored pavement between the crosswalk lines emphasizes the presence of a crosswalk to both pedestrians and drivers. In addition, the colored pavement increases the visibility of the crosswalk. By drawing the driver's attention to the crosswalk, high visibility crosswalks increase the safety of students who walk and bike to school.

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# High Visibility Garments

## What are High Visibility Garments?

High visibility garments are safety apparel, such as vests, that are worn by workers in a variety of industries. High visibility garments are classified in three classes which are based on worker hazards and tasks, complexity of the work environment or background, and vehicular traffic and speed. The MUTCD requires adult crossing guards to wear Class 2 high visibility garments. Class 2 garments are worn by workers who require high visibility in inclement weather and who work near traffic that exceeds 25 mph.

## What is the Benefit of High Visibility Garments?

High visibility garments help drivers distinguish adult crossing guards from their background. In addition, the reflective material on the garments increases the visibility of adult crossing guards at dawn and dusk, as well as during inclement weather. By drawing a drivers' attention to adult crossing guards, high visibility garments increase the safety of students who walk and bike to school.



# LED STOP Paddles

## What are LED STOP Paddles?

A LED STOP paddle is a typical octagonal shaped STOP paddle with flashing light-emitting diode (LED) lights. According to the MUTCD, the LED lights can be red or white and arranged in any of the following patterns:

- Two red or white lights centered vertically above and below the STOP legend,
- Two red or white lights centered horizontally on each side of the STOP legend,
- One red or white light centered below the STOP legend,
- A series of eight or more red or white lights along the outer edge of the paddle arranged in an octagonal pattern, or
- A series of white lights forming the shapes of the letter in the STOP legend.

## What is the Benefit of LED STOP Paddles?



The LED lights in STOP paddles increase the paddle's visibility range during the day and at night; therefore, drivers notice them farther in advance than conventional STOP paddles. By drawing the driver's attention to the STOP message sooner, drivers are able to react more quickly. LED STOP paddles increase the safety of students who walk and bike to school.

# Channelizing Devices



## What are Channelizing Devices?

Channelizing devices include, but are not limited to, cones, tubular markers, vertical panels, drums, barricades, and temporary raised islands. More recently, interlocking longitudinal channelizers (or curb systems) have been developed for more long-term applications.

## What is the Benefit of Channelizing Devices?

Channelizing devices are used to warn, alert, and guide drivers. Around schools, channelizing devices can be used to separate vehicular traffic from pedestrian and bike paths. In addition, channelizing devices can be used to restrict vehicular traffic movements that conflict with pedestrian movements. Overall, channelizing devices increase the safety of students who walk and bike to school by creating a physical barrier between the students and vehicular traffic.

# Vehicle Speed Feedback Signs



## What are Vehicle Speed Feedback Signs?

Vehicle speed feedback signs are signs that utilize radar to measure and record the speed of approaching vehicles. The measured speeds are then displayed to approaching drivers. Vehicle speed feedback signs may be installed in conjunction with a school zone speed limit sign.

## What is the Benefit of Vehicle Speed Feedback Signs?

Vehicle speed feedback signs are used to notify drivers of their speed in an effort to decrease speeds and increase compliance with school zone speed limits. Studies show that vehicle speed feedback signs typically reduce vehicle speeds by about 10 mph and decrease the proportion of drivers exceeding the school zone speed limit. By increasing compliance with school zone speed limits, vehicle speed feedback signs increase the safety of students who walk and bike to school.

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# Pavement Markings for Speed Management

## What are Pavement Markings for Speed Management?

Pavement markings for speed management are perceptual techniques that attempt to passively influence speed behavior. Examples include markings that narrow travel lanes (shown in picture below), optical speed bars, and converging chevrons.

## What is the Benefit of Pavement Markings for Speed Management?

Pavement markings for speed management give drivers visual indications that the roadway is intended for lower speed operations; therefore, these perceptual techniques encourage drivers to slow down. Experience indicates that these methods can reduce vehicle speeds by about five mph. By reducing speeds around schools, pavement markings for speed management increase the safety of students who walk and bike to school.



# Speed Humps with Pavement Markings

## What are Speed Humps with Pavement Markings?

A speed hump is a raised area of pavement on the roadway surface that extends across the pavement width. Typically, speed humps are 12-14 feet long and three to four inches high. Speed “humps” are different from speed “bumps,” which are used in many private parking lots. Speed “humps” are a gradual rise and fall of the pavement, while speed “bumps” are more abrupt since they are only one to three feet long.

According to the MUTCD, speed hump pavement markings are white markings placed on the speed hump to identify its location. Advance speed hump pavement markings may also be used. Speed humps may be used with crosswalks.

## What is the Benefit of Speed Humps with Pavement Markings?

Speed humps with pavement markings are used to reduce traffic speeds in the immediate vicinity of the speed hump and between

successive humps. Speed humps may also decrease the amount of traffic on the roadway. By slowing drivers down in the immediate vicinity of a crosswalk, speed humps increase the safety of students who walk and bike to school.



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# Pedestrian Countdown Signals



## What are Pedestrian Countdown Signals?

Pedestrian countdown signals are special types of traffic signals used to control pedestrian traffic. According to the MUTCD, pedestrian countdown signals include three indications: a steady WALKING PERSON, a flashing UPRAISED HAND, and a steady UPRAISED HAND. Pedestrian countdown signals also display numbers immediately adjacent to the UPRAISED HAND symbol.

## What is the Benefit of Pedestrian Countdown Signals?

Between the “walk” and “don’t walk” indications, there is a time period when a pedestrian should not start to cross the roadway, but any pedestrian who has already started to cross should proceed (indicated by the flashing UPRAISED HAND). Typically, the length of this time period is unknown to pedestrians. Pedestrian countdown signals display numbers that count down to zero to indicate the amount of time remaining (in seconds) for a pedestrian to finish crossing the road. By providing students with this information, pedestrian countdown signals can increase the safety of students who walk and bike to school.







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