07 Along the Street

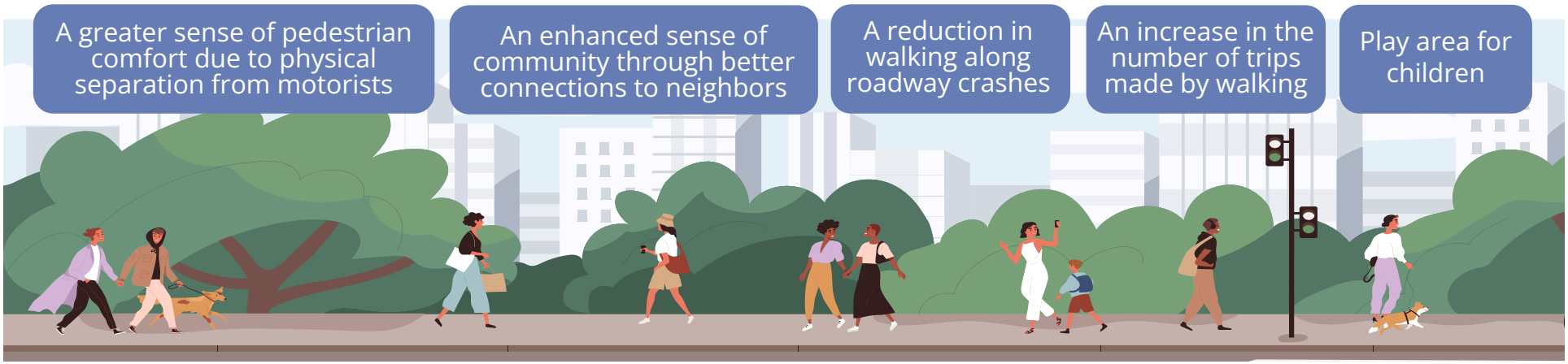
This section describes the types of infrastructure that should be in place along school routes to make walking and bicycling to school safer.

Sidewalks

In communities with sidewalks, it is often more convenient to choose walking as a transportation mode or a recreational activity. For children, sidewalks provide an essential environment for safe, independent mobility. In addition, sidewalks can provide a safe, communal play area for a variety of games and activities including drawing with chalk, playing hopscotch, and learning to bicycle or roller skate, among others.

Most sidewalks in New Jersey are constructed by landowners as part of the development process. They may also be built by a state, county, or local agency in connection with roadway construction or reconstruction or as an independent project. The State's Residential Site Improvement Standards (RSIS) set forth sidewalk requirements for residential development in the state. No comparable set of standards exists for non-residential developments. Streets that do not have sidewalks, particularly those on routes where children walk or bicycle to school, should be identified and assessed to determine if retrofitting these streets with sidewalks is appropriate. It is possible that a street with a very low volume of traffic and low vehicle speeds may not need sidewalks in order to be a safe route for pedestrians. Where feasible, sidewalks should be provided on both sides of the street. A sidewalk on only one side forces pedestrians to either walk in the street or cross the street twice to get to the side with a sidewalk and back again.

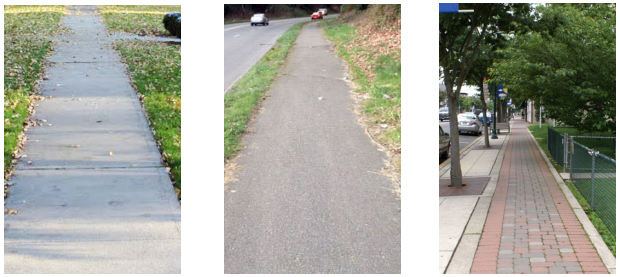
Sidewalk Benefits



Considerations for Sidewalks

Sidewalk Surface Types

Sidewalks can be surfaced with a variety of materials to accommodate varying budgets and contexts. While urban, suburban, and heavily used sidewalks are typically made of concrete, less expensive walkways may be constructed of asphalt, crushed stone, or other materials if they are properly maintained and accessible (usable by those with disabilities or those pushing carts or strollers). Concrete is more expensive than asphalt to install, but it lasts longer and requires less maintenance, which may make it a better value in the long run. Although brick pavers may appeal to some designers, they can require more maintenance and create a tripping hazard condition. Pavers may also pose a problem to pedestrians in wheelchairs if the bricks settle or become lifted. Safe sidewalk surfaces should be firm, stable, and slip-resistant.



Examples of concrete, asphalt and brick paver sidewalks.

Sidewalk Widths

The width of a sidewalk depends primarily on the number of pedestrians who are expected to use the sidewalk at a given time — high-use sidewalks should be wider than low-use sidewalks. According to the AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities (2021), recommended sidewalk widths are as follows:

- 5 feet pedestrian zone if a buffer is present between the sidewalk and roadway.
- 6 feet where the sidewalk is directly adjacent to the curb.
- 8 feet or more in dense urban or commercial environments or near high pedestrian volumes.

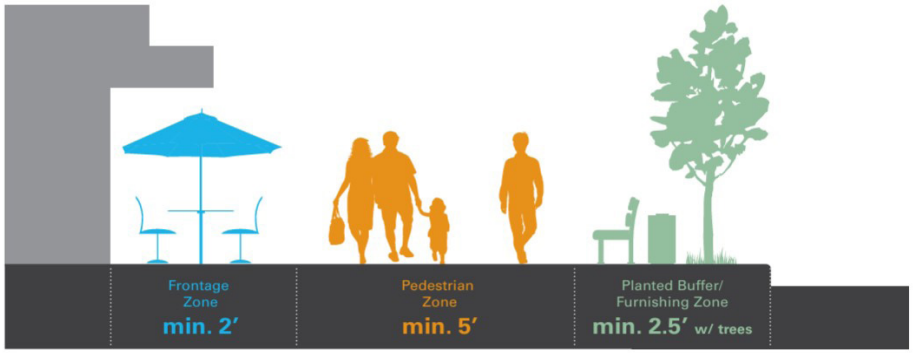
Every attempt should be made to locate streetlights, utility poles, sign posts, fire hydrants, mail boxes, parking meters, bus benches, and other street furniture out of the sidewalk.

When that is not possible, sidewalk furnishings and other obstructions should be located consistently so that there is a clear travel zone for pedestrians with visual impairments. A wider sidewalk should be provided to accommodate this line of obstructions.

While wider sidewalks are strongly recommended, minimum accessibility standards are established by PROWAG:

- The continuous clear width of pedestrian access routes shall be 48 inches (1220 mm) minimum, exclusive of the width of any curb.
- Where the pedestrian access route is less than 5 feet wide, PROWAG also requires 5’ x 5’ turning spaces every 200 ft if sidewalk is less than 5 feet wide.

At a State level, the NJDOT Complete Streets Design Guide also provides guidance for sidewalk widths, as can be seen in the following image.



Sidewalk Zones. Image: New Jersey Complete Streets Design Guide

Sidewalk Buffer Zones

Buffers between pedestrians and motor vehicle traffic are important to provide greater levels of comfort, security, and safety to pedestrians. Consistent with the AASHTO 2021 Guide for Planning, Design, and Operation of Pedestrian Facilities, sidewalk buffers are part of a three-zone sidewalk corridor that includes the buffer zone, pedestrian through zone, and frontage zone. The buffer zone serves both a functional and safety role. Plantings, utilities, transit stops, signage, and lighting provide useful amenities for pedestrians while also serving as a barrier between people and automobiles.

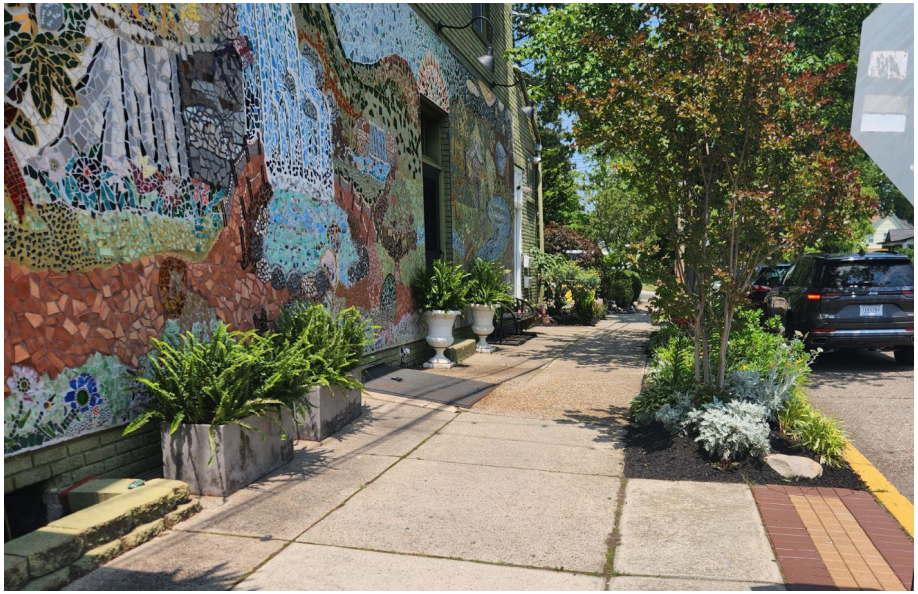
Buffer width should vary based on street context, speed, and traffic volume to achieve desired pedestrian level of service (LOS). The buffer zone also emphasizes vertical elements such as trees, bollard, parked cars, and their influence on perceived safety and comfort rather than prescribing only physical distance.

In general, there are four types of sidewalk buffers:

1. Planting strip of grass and trees - This is the preferred buffer as it provides a more pleasant, shaded environment for walking.
2. Bicycle lane - Whether or not a planting strip is possible, a bicycle lane can provide or add to an acceptable buffer between pedestrians and motor vehicles.
3. Parked cars - Parking spaces, especially when parked vehicles are present, provide a great buffer between pedestrians and moving vehicles; however, parked cars also create a visual screen for motorists who are not looking for pedestrians that want to cross midblock.
4. Street furniture - Examples include benches, newspaper boxes, street lighting, and public art.

If a sidewalk buffer does not exist, an effort should be made to provide a wider sidewalk. A wider sidewalk allows pedestrians to better avoid the splash zone (area subjected to spray from vehicles traveling through water). It also provides a snow storage area and a more comfortable separation between moving vehicles and pedestrians. At minimum, sidewalks should be 5 feet wide when a buffer is provided, and 6 feet wide when directly adjacent to the curb.

Guidelines for sidewalk buffers are available in the FHWA's Designing Sidewalks and Trails for Access (Section 4.1.2) at www.fhwa.dot.gov/environment/sidewalk2/sidewalks204.htm and AASHTO's Guide for the Planning, Design, and Operation of Pedestrian Facilities (Section 3.3.2.1).



Sidewalk with a planting strip on Stratford Avenue in Haddon Township, NJ.

Other Sidewalk Design Considerations

- Objects such as signs placed in or adjacent to sidewalks should maintain sufficient vertical clearance to avoid injury to pedestrians. In general, PROWAG allows signs lower than 7' to protrude up to 4" into a pedestrian circulation route. For accessibility reasons, e.g., to accommodate people who are blind or have low vision, it may be appropriate to place pedestrian wayfinding and information signs where they can be more easily read.

- Bushes, trees, and other landscaping should be maintained to prevent encroachment into the sidewalk. Jurisdictions should adopt ordinances requiring local property owners to trim the landscaping along their frontage to maintain clear and unobstructed sidewalks.

- Per FHWA guidelines, guy wires and utility tie-downs should not be located in or across sidewalks at heights below seven feet. When placed adjacent to sidewalks or pedestrian walkways, the guy wires should be covered with a bright yellow (or other high-visibility) plastic guard to make the wire more visible to pedestrians. Guy wires of any color will not be visible to blind pedestrians and must not be located within the pedestrian route.



Sidewalk in Somerville, NJ. Image: VTC

- Bus shelters should be placed beyond the pedestrian walking zone and should not obstruct the flow of pedestrians along the sidewalk. Where buses are unable to pull to the curb due to parking, jurisdictions should consider installation of bus bulbs to enable buses to stop in-lane or location bus stops near intersections and crossings where curb ramps are already present, rather than introducing curb ramps that confuse pedestrians who are blind or have low vision.

- Benches and other street furniture should be placed outside the walking paths to maintain the accessibility of the walkway and to provide good pedestrian service.

- Street lighting improves pedestrian visibility and personal security and should be provided on school access routes. On streets with a large number of trees, street lighting scaled to pedestrians (low lights) illuminates the sidewalks even after the trees grow quite large. Street lighting improves safety by allowing pedestrians and motorists to see each other. It also contributes to aesthetics. Two-sided lighting should be considered along wide streets. Two-sided lighting consists of two light fixtures on one light pole. One fixture illuminates the roadway and the other illuminates the sidewalk or pedestrian realm. It is especially important to provide lighting at pedestrian crossings. Lighting can also be helpful along streets adjacent to the school grounds to minimize vandalism and improve security. While most school walking activity occurs during daylight hours, the morning school trip in the middle of winter often occurs during hours of darkness, and school activities often occur during nighttime hours.

On-Street Bicycling Facilities

Bicycling is an important way for children to travel to and from school. Bicycling can help students who live too far from school to walk comfortably to participate in active transportation. An important thing to remember is that the use of on-street facilities is more appropriate for older children who have sufficient bicycle handling skills and knowledge of bicycle and traffic safety rules than it is for young children just learning to ride.

A considerable amount of all bicycling occurs on the street system, and for children especially, most will occur in the streets near where they live. Children of all ages will bicycle to school if given the opportunity. When designating bicycle routes to encourage bicycling to school, all age groups should be targeted including elementary, middle, and high school students.

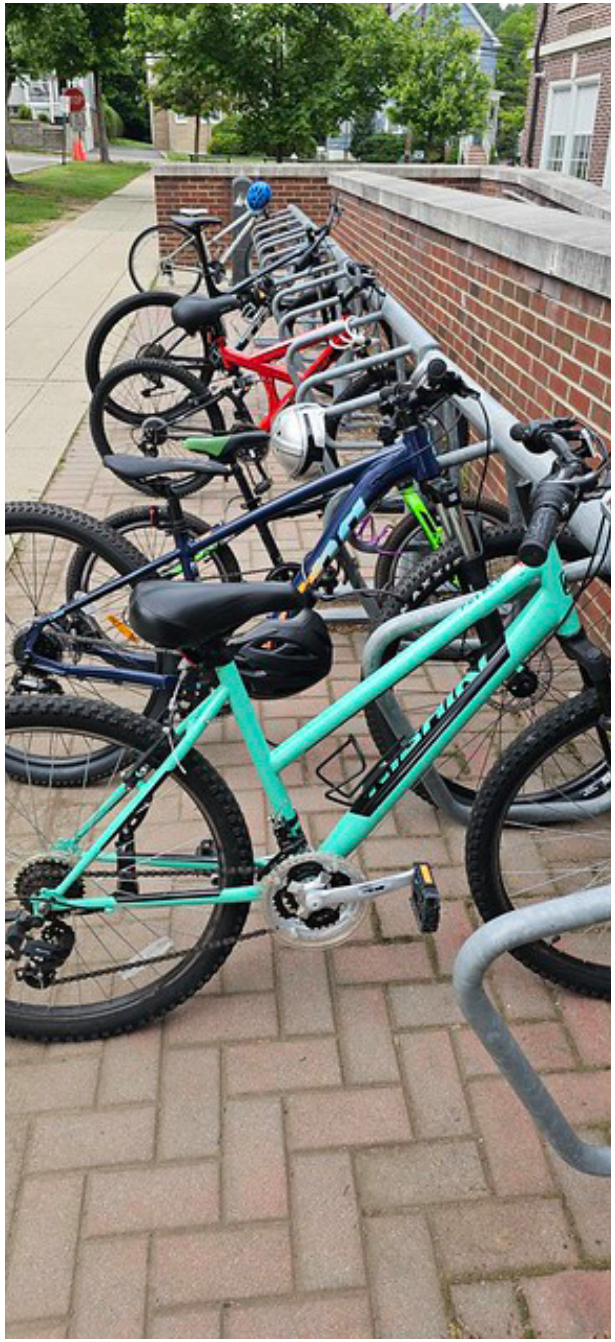


The Montclair Bike Bus.
Image: montclairbikebus.org

Young students often have minimal riding skills, little experience, and limited physical capabilities. Students also often have an inappropriately high level of confidence, or at least fearlessness, in their riding skill and lack judgment regarding safe bicycling practices. To support bicycle use rather than auto travel for short local trips by students and others, enhanced bicycle accommodations must be provided. On-street facilities, such as bicycle lanes, are more appropriate for upper elementary school, junior high and high school students who have sufficient bicycle-handling skills and knowledge of bicycle and traffic safety rules. Off-street or separated facilities such as trails and cycle tracks are more appropriate for younger elementary school students.



On-street bicycle facilities in Asbury Park.
Image: VTC



On-street bicycle facilities in Asbury Park.
Image: VTC

Bicycle Lanes

Bike lanes provide a striped and stenciled lane for one-way bicycle travel on roadways. They offer a comfortable space for older or more experienced children to ride. Typically, bicycle lanes are installed on roadways with higher traffic speeds and volumes than residential streets. Where bike lanes are directly serving a school, however, communities may elect to stripe them on low-traffic residential streets to provide an additional level of visibility for younger cyclists. Per the Safe Routes to School Guide from the National Center for SRTS, NJDOT CSDG, and the AASHTO Bike Guide 2024:

- The preferred width of bicycle lanes next to a curb should be five feet.
- Bicycle lanes located next to motor vehicle parking should be at least seven feet wide.
- Bicycle lanes can be four feet wide on streets.
- Bicycle lanes located between through lanes and turn lanes should be at least five feet wide.
- To allow occasional passing or side-by-side bicycling, bicycle lanes should be at least six and one half feet wide.
- Bicycle lanes should not be wide enough to accommodate a motor vehicle, as drivers may attempt to use a wide bicycle lane as a travel lane.
- Bicycle lanes should be designated through the use of signs or painted symbols and, if appropriate, motor vehicle parking restrictions.



Painted Bicycle Lane in Hoboken. Image: VTC



Bicycle Lane in Asbury Park. Image: VTC

Shared Lane Markings

Shared Lane Markings (SLM) (sometimes known as "sharrows") are placed in a travel lane to indicate that motorists and bicyclists are sharing the road. Sharrows assist bicyclists by helping them to position themselves in the appropriate part of the travel lane, away from the curb, or, where there is parking and opening of car doors. They also help motorists by alerting them that bicyclists are likely to be using the lane with them. More experienced bicyclists have comfort with this action, while less experienced bicyclists, including children, may not have the ability, confidence, or comfort to do so making sharrows less ideal for these riders.

Shared lanes are different than a dedicated bicycle lane, which has a solid white line separating the car lane from the bicycle lane. Sharrows are used when the roadway width is insufficient for a dedicated lane. According to the NJDOT CSDG sharrows should be placed on roadways with a speed limit of 25 mph or less. Information on Shared Lane Markings, including proper placement, can be found in Section 9E.09 of the 2023 Manual on Uniform Traffic Control Devices (MUTCD).



"Sharrow" in Hackettstown, NJ.

The use of SLMs on school bicycling routes should be carefully evaluated, as they may not provide sufficient comfort or safety for children biking to school. Communities should prioritize lower-speed environments or the provision of separated bicycle facilities where feasible.

Paved shoulders

Paved shoulders can provide safety and operational benefits for road users. They help reduce edge deterioration, minimize ongoing maintenance needs, and provide space for temporary vehicle storage. However, paved shoulders are not bikeways or travel lanes, and are typically not an appropriate bicycling facility for children. Based on AASHTO 2024 Bike Guide, paved shoulders may be used by stopped vehicles, pedestrians, slow-moving vehicles. The Guide recommends the following shoulder widths for accommodating bicycling, where practical considering terrain and motor vehicle volumes:

- On roads with high motor vehicle volumes or a high percentage of heavy vehicles (10 percent of AADT), a shoulder width of 10 feet recommended, with 12 feet preferred.
- Where bicyclists are intended to be fully accommodated within a shoulder, a minimum usable shoulder width of 4 feet (paved and clear of rumble strips) should be provided to accommodate the bicyclists' operating space.



Paved shoulder in Warren County.

Shared-Use or Multi-Use Paths

Multi-use paths, sometimes known as shared-use paths, are parallel and adjacent to a roadway or on their own separated right of way and add to the connectivity of the pedestrian and bicycle network. Paths can sometimes connect neighborhoods directly with schools and thereby shorten the distance children must walk or bicycle. However, paths must be designed properly, especially where they intersect roadways, to minimize the risk of pedestrian and bicyclist crashes. Guidelines for designing paths are available in the FHWA Designing Sidewalks and Trails for Access Part 2 and in the American Association of State Highway and Transportation Officials' (AASHTO) Guide for the Development of Bicycle Facilities, 2024 edition.

- A minimum width of 10 feet is recommended under most conditions for two-directional shared-use paths
- Widths less than 11 feet can significantly limit passing and side-by-side social use and are generally appropriate only in constrained conditions or for lower-volume paths.
- Widths of 11 to 12 feet or greater are recommended where higher user volumes are anticipated and three operational lanes are desired.
- According to the NJDOT CSDG, 8 feet can be considered in certain circumstances such as places with low bicycle traffic, pedestrian use is not frequent, and for a short distance due to physical constraints.

According to the Safe Routes to School Guide from the National Center for SRTS:

- Abandoned rail lines and utility corridors often make excellent corridors for multi-use paths.
- Pavement for multi-use paths can be asphalt or concrete.
- Measures should be taken to keep motor vehicles off of the path, while maintaining access for maintenance vehicles.
- Agencies should monitor conditions along the path for maintenance and repair.



Students use a multi-use path. Images: VTC



Students use a multi-use path to get to school in Chesterfield, NJ. Images: NJDOT

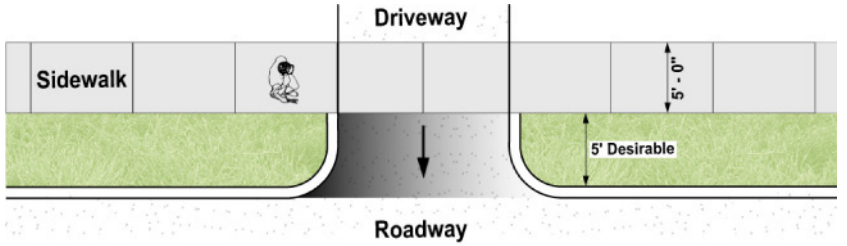
Driveways

Designing driveway crossings for pedestrians can improve the walking environment, improve visibility and reduce conflicts between drivers and pedestrians. Reducing the number of driveways can make it easier for people with disabilities to access and walk on the sidewalk. Per the National Safe Routes to School Guide, the following principles should be applied to driveway design in the areas around schools:

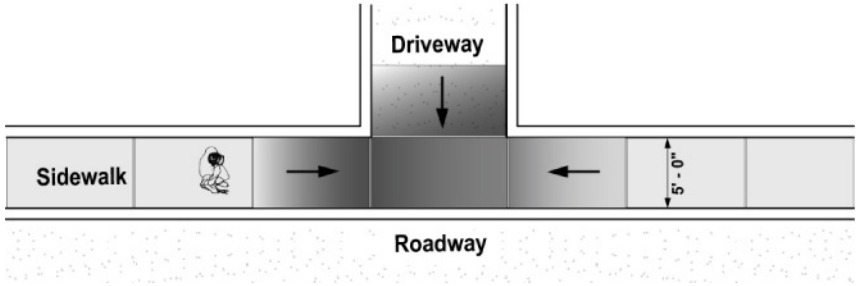
- The sidewalk continues across the driveway at the same elevation or level.
- The driveway apron does not go through the sidewalk.

Ramps may be necessary for pedestrians to cross the street at intersections but the rest of the sidewalk network should be continuous and at one level. Providing a level, continuous sidewalk not only brings the sidewalk up to the standards of universal access for persons in wheelchairs or on crutches, but also changes driver behavior. The driver exiting or entering such a driveway is more aware that they are crossing a sidewalk, will proceed more slowly and is more likely to stop.

Fewer driveways and narrower driveway crossings provide improved pedestrian safety, especially in busy commercial zones. School walking routes should keep busy driveway crossings to a minimum. If young students are required to cross a busy school driveway, an adult should be assigned to monitor or direct the students at the driveway.



Good example - sidewalk continues across driveway apron.



Bad example – driveway apron goes through the sidewalk.

Wayfinding Along School Routes

Wayfinding signage and markings provide direction to students and parents and mark roads as preferred travel routes. Wayfinding could include paint markings designating preferred corridors by color or markers, such as the one pictured to the right, that designate safe travel routes. These markings and signs also increase visibility of walking routes among the community and encourage more children to walk or bike to school. This guide recommends wayfinding markings or signage to be placed on primary school travel corridors.



Fizzy the Dragon points the way for students on Walk and Bike to School Day in Chesterfield, NJ. Image: NJDOT



Pavement markings indicate the school walking route in Trenton. Image: VTC

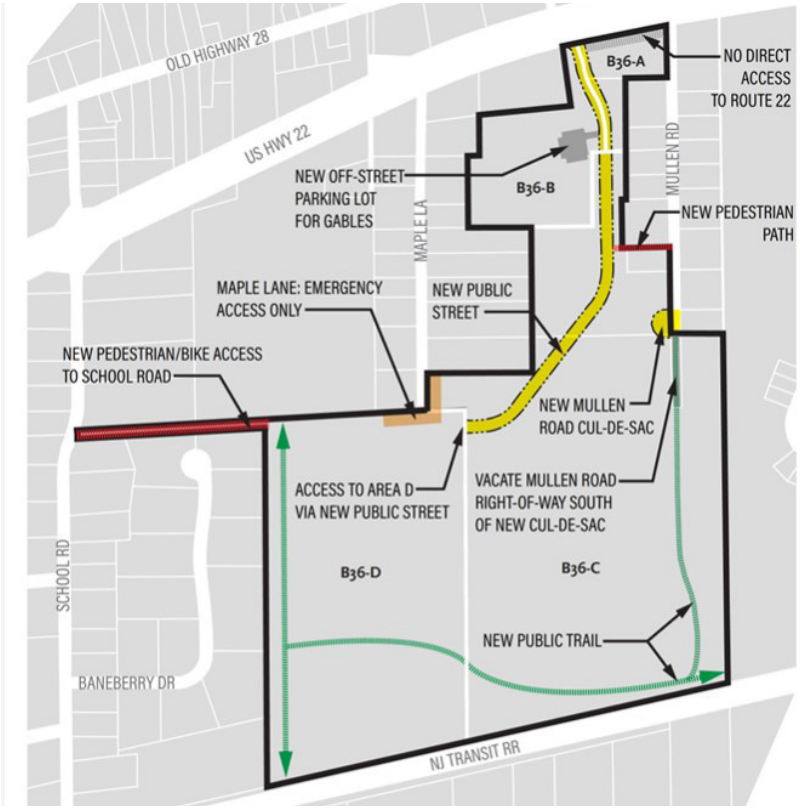


School wayfinding sign in Canada. Image: Ontario Active School Travel

Along the Trail

Trails can serve as important transportation corridors for students traveling to and from school. Currently, multi-use trails are eligible for both Safe Routes to School (SRTS) funding and the Transportation Alternatives Set-Aside (TA) Program, making them an important component of active transportation planning.

Some communities have also found success using New Jersey's Local Redevelopment and Housing Law to implement creative transportation solutions involving trails. The Block 36 Redevelopment Plan in Readington, New Jersey envisions a mixed-use, mixed-income residential development with a public trail and pedestrian and bicycle connection to School Road. School Road has a sidewalk that leads to the Whitehouse School at the intersection of School Road and Whitehouse Avenue.



The Block 36 Redevelopment Plan contains a new public trail (green) and a new pedestrian and bicycle connection (red) to School Road.

Image: Clarke Caton Hintz and Readington Township, NJ.

THE WOODBINE SCHOOL DISTRICT TRAVEL PLAN CONTAINS TRAIL CONNECTIONS FOR STUDENTS

The Woodbine School District in Cape May County provides an example of how trails can support student travel. Located in a small, rural community in northwestern Cape May County, the district developed a Student Travel Plan that incorporates trail-based recommendations.

In 2024, the school reported that approximately 40% of students walk or bike to school. To grow the number of students that feel comfortable walking to school, the plan contains trail-related infrastructure recommendations to enhance safety and accessibility for students:

- Install a Rectangular Rapid Flashing Beacon (RRFB) at the Woodbine Railroad Trail crossing at Dehirsch Avenue and Washington Avenue to improve visibility and driver awareness.
- Stripe and clearly mark crosswalks at trail access points along Lincoln Avenue, Jefferson Avenue, Monroe Avenue, and Heilprin Avenue to strengthen connections between neighborhoods, trails, and the school.
- Install trail crossing warning signage to alert motorists at key trail–road intersections.
- Extend existing multi-use trails to improve continuity and access.