walkBoston®

courtesy of MA SRTS

Walk to school?
But how do I find the front door?

Strategies for designing a walkable school campus

April 2016
Prepared for Mass in Motion, an initiative of the MA Dept. of Public Health

MAKING MASSACHUSETTS MORE WALKABLE
Old City Hall | 45 School Street | Boston, MA 02108 | T: 617.367.9255 | info@walkboston.org | www.walkboston.org

Introduction

Walking rarely enters the conversation when new schools are planned. In fact, the regulatory and approval processes focus on facilitating bus and automobile access to schools, and ensuring that there is sufficient parking. Public meetings are usually dominated by those who complain about traffic volumes or inadequate parking – not by those who seek a safe walking route to school. It happens in wealthy communities and in low-income communities alike.

> In most cases, it's not that drivers are given priority over walkers. It's that nobody is thinking about walking. And that needs to change.

School campuses should welcome children whether they arrive on foot, by bike, bus, or car. Too often, a student walking to school is confronted with traffic congestion, unsafe crossings and a circuitous route to the front door. As documented by the Safe Routes to School movement, children who travel by "active transportation modes" are more likely to get the physical activity they need every day, arrive at school ready to learn, and gain independence through mastery over their own environment.

Since 2002, when the National Trust for Historic Preservation published their influential report "Why Johnny Can't Walk to School," educators, community activists, and school committees across the country have made progress both in choosing walkable, central locations for new schools, and in realizing the benefits of either renovating, retrofitting, or expanding existing neighborhood schools. Communities have begun to:

- Reinvest in existing school properties before seeking new campuses
- Relax acreage and building square footage requirements for new schools to allow smaller, centrally located sites to be considered
- Choose locations for new schools in existing neighborhoods where pedestrian infrastructure already exists

However, as WalkBoston discovered in our work with communities across Massachusetts, even when communities build new schools in the right place, the design of school campuses still provides only limited support for walkers, and too often favors vehicles over walkers in their site layout.

Purpose

When we searched for guidance on walkable campus planning principles for K-12 schools, we found little published information about best design practices that encourage walking. This document is intended to help fill that gap. The content and level of information is designed to be useful for a wide variety of decision makers and professionals, including school administrators and school boards; municipal planners, engineers, and transportation professionals; municipal government representatives, selectmen, town boards, mayors, and/or city managers; and design professionals, such as architects, landscape architects and civil engineers. The methodology described below may also be helpful to existing schools struggling with similar challenges.

Our goal is to provide a succinct set of best practices to help guide decision makers and design professionals to build school campuses that favor walking to school.[1]

This document is organized into four parts:

1. Definition of a walkable campus – a basis for redefining transportation priorities
2. Walkable campus design principles – general tenets and issues to consider when organizing campus uses, transportation patterns, parking and play spaces
3. Application of principles – assessment of two elementary school campuses using the design principles
4. Case studies – examples of walkable school campuses from across the country

This is a work in progress and we are looking for feedback on its usefulness. We welcome comments, contributions and criticism.

[1] Bicycling to school is also an important component of active transportation in many communities. Strategies to promote pedestrian safety will also increase bicyclists safety. However, this document does not address bicycling specific strategies.

Definition of a Walkable Campus

A brief search of adjectives and phrases used to describe a "walkable campus" yielded the list below:

Ease of access

Safe

Pathway network

Clear wayfinding

Consistent paving materials according to use

Places to wait

Adequate shade

Memorable

Human scale

Campus core as vehicle-free as possible

Limited vehicular through traffic

Minimize conflicts with pedestrians and vehicles

Clearly defined routes

Pedestrian movement as primary mode of transportation

Clear points of entry

Parking on the periphery

Reduced parking

All of the words describe the characteristics of what we imagine as a walkable campus. We offer the following as a working definition:

A walkable campus considers the needs of walkers first when organizing the movement of people, bicycles, buses and cars on the school grounds.

Ideally, children walking to school would arrive on campus and reach the building's front door on a clearly defined, continuous, smooth sidewalk separated from motor vehicle traffic, parking lots and drop-off.

credit: MA SRTS

credit: http://ww2.kqed.org/mindshift/wp-content/

Walkable Campus Design Principles

These campus design principles provide guidance on prioritizing conditions for walkers as they approach the campus; navigate across driveways and through parking lots; encounter drop-off zones; reach the front door; and, access playgrounds and other outdoor spaces. The principles outline issues to consider when organizing campus uses, transportation patterns, parking, and play spaces.

The principles are organized into six categories:

1. Safe Streets
2. Safe Crossings
3. Safe Drop-off Zones
4. Safe Parking Lots
5. Safe Front Doors
6. Safe Outdoor Spaces

They may be used in a variety of ways:

- Initial requests for proposals issued for school building design could require that respondents address principles of walkable campus design
- Decision makers could use the principles as a checklist to foster discussion with the project team early in the design process
- Designers (architects, landscape architects, and civil engineers) could evaluate their design concepts against these principles to measure their success in creating a walkable campus
- Parents, advocates and community members can use them to review and discuss design decisions to ensure that walking to school is as safe as possible on the new campus

credit: http://www.blogcdn.com/slideshows/images

Safe Streets

This category of principles addresses the safety and condition of streets and street crossings outside the school site boundaries. Generally, the scope of a school building project does not include these critical neighborhood connections. Without a safe route to the school campus, children and their parents will not walk. It is important to coordinate school building projects with other municipal planning efforts, such as road and sidewalk capital planning, and establish partnerships between municipal offices to support walk to school efforts. While the school building project may not have funding available to repair or complete sidewalk networks, coordinated efforts may lead to funding streams not imagined at the project's onset.

- Provide a connected sidewalk network
  - » Provide continuous sidewalks on both sides of the street that connect the school and residential areas within at least a half-mile walk of the school. The goal should be to make sure that student-friendly walking conditions extend to a one-mile distance, but the minimum area covered should reach at least a half-mile
  - » If a significant number of students attend an after school program nearby (e.g., at a youth center), examine the pedestrian link between the school and the after school program's location

- Build sidewalks wide enough to accommodate people walking in groups
  - » A typical minimum sidewalk width is 5 feet; the recommended width is 8 to 10 feet where larger numbers of walkers are anticipated. Students like to walk side by side; and parents are often holding hands with one or more children on their walk to school
  - » A planting strip wide enough to accommodate shade trees between the sidewalk and the roadbed is recommended where space allows; regularly spaced trunks form a barrier between pedestrians and vehicles

- Illuminate the sidewalks that connect the school to nearby residential areas. School schedules require students to walk to and from school during early mornings and late afternoons that are dark for a number of months during the academic year
  - » Street lights should provide light on the sidewalks and at crosswalks. Poles may be lower (15 feet tall) to provide pedestrian scale lighting
  - » Consider lighting any multimodal trails that connect to the school

The safety of crosswalks both on the school campus and in the surrounding neighborhood is a key component of encouraging students to walk to school.

- Ensure well-marked street crossings
  - » Complete the sidewalk network by providing crosswalks at all intersections within at least a half-mile walk of the school. If the intersections are not signalized, drivers need visual cues, such as marked crosswalks and pedestrian crossing signs, to slow and stop
  - » Consider mid-block crosswalks when they provide the most direct route to a point of interest (e.g., a school's main entrance), and when a neighborhood's blocks are especially long. Raised crosswalks are more visible to drivers and may be appropriate in places where the volume of pedestrians is high (e.g., near a school's main entrance)

- Maintain sidewalks throughout the school year
  - » Clear sidewalks and curb ramps of snow and ice and ensure that crosswalks are visible in the winter
  - » Trim foliage, collect fallen leaves and branches, and sweep sidewalks of sand and debris after snow has melted

- Maintain crosswalks regularly
  - » Re-paint crosswalks near schools on an annual basis to ensure brightness and high visibility. If using thermoplastic paint, reapply on the manufacturer's time line which may be less often than every year
  - » If students ride a public bus to and from school, ensure that there is a convenient crosswalk and safe walking route between the school and the public bus stop

Curb extension at a mid-block crossing

Raised mid-block crossing (source: Safe Routes to School)

- Consider traffic calming strategies along heavily used walking routes
  - » Curb extensions, also known as bulb-outs, are used to shorten crossing distances and improve visibility of pedestrians. Additionally, extending a portion of the sidewalk into the street helps narrow the roadway and encourages slower vehicle speeds
  - » Raised crossings improve safety by providing a cue to motorists that they should slow their speed. Elevating a crosswalk also improves visibility of pedestrians

Safe Crossings

In addition to providing a connected, continuous sidewalk network from neighborhood streets to the school campus, street crossings must have adequate crosswalk markings, functioning pedestrian signals (at signalized intersections), and include curb ramps to make sidewalks accessible for all. Just one poorly designed intersection or unmarked crossing could be the difference in encouraging students to walk to school.

- Make all crosswalks leading to the school campus safe and child-friendly
  - » Provide pedestrian countdown signals at signalized intersections
  - » Shorten crossing distances by narrowing travel lanes and installing curb bump-outs
  - » Maintain clear lines of sight – e.g., trim vegetation
  - » Install signs or flashing beacons warning drivers of crosswalks ahead

- Do not allow parking near intersections or crosswalks to ensure good visibility (within 20' as a general rule; some Massachusetts municipalities have crosswalk ordinances that address parking distances)

- Minimize the need to cross driveways on the walk to the front door once on school grounds
- Provide continuous sidewalks across all campus driveways (retain sidewalk paving material and maintain gentle cross-slope to maintain level walking path). Continuous sidewalks are a signal to drivers that walkers have priority and drivers must slow down and check first before proceeding onto a driveway
- Use high visibility crosswalks, such as ladder or continental markings. Research showed an estimated 37% increase in safety at the intersections with high-visibility markings.[2]
    - » Decorative crosswalks, including impressed or inlaid preformed thermoplastic (e.g., may imitate the look of a brick crosswalk in between two, parallel white lines) help to define a district or zone where more pedestrians may be present

[2] McGrane, Ann and Meghan Mitman. "An Overview and Recommendations of High-Visibility Crosswalk Markings Styles." Pedestrian and Bicycle Information Center. August 2013.

Continuous sidewalk across a driveway

Whimsical crosswalk painting near a park

Marked crosswalk (continental design) across a campus driveway

Safe Drop-off Zones

Ensuring student safety is especially critical during student arrival and dismissal times due to the increased automobile and bus traffic volume, and the potential for conflicts between different modes of transportation. Walkers and bikers are particularly vulnerable during these stressful times of the day. The following overall principles suggest ways to make this most dangerous time safer:

- Separate walkers primary path to the front door from bus and vehicle drop-off lanes
- Consider closing neighborhood streets during school arrival and dismissal times rather than dedicating campus green space to drop-off zones
- Install signs to help define areas in drop-off and pick-up zones and their proper use; signs should be standard, highly visible, properly installed, and well maintained

The principles below are specific to the drop-off mode:

Car drop-off zones

- Design a simple approach that leaves little room for driver interpretation, such as:
  - » Employ curb striping and pavement markings
  - » Install signs indicating drop-off location and appropriate behavior (e.g, “do not leave your car unattended” or “no idling zone”)
  - » Establish a one-way circulation pattern to ensure children are dropped off on the curbside of the travel lane

Clearly defined drop-off zones and walking routes improve pedestrian safety
Credit: Google Maps Streetview

- Establish a parent drop-off lane or location away from where walkers and bus riders enter, and guide students dropped-off from their parents' vehicles to the primary pedestrian path
- Locate the student loading/unloading area at the far end of the drop-off lane to maximize the number of vehicles at the curb at any one time
- Prevent students from walking in between vehicles in the parent drop-off lane; employ a crossing guard if needed
- Do NOT encourage more parents to drive students to school; but do increase safety

Bus drop-off

- Designate exclusive "bus only" lanes or driveways separate from car drop-off. Signs, pavement markings, gates or orange cones may be used, but education and enforcement will also be needed[3]
- Ensure that the drop-off area design does not require students to walk between buses
- Locate pedestrian crossings outside of bus-loading zone; buses should not straddle crosswalks
- Locate bus area so that buses exit upstream of cars and gain priority

[3] http://guide.saferoutesinfo.org/dropoff_pickup/student_drop-off_and_pick-up_tools.cfm

Example of a car drop-off zone

Example of a bus drop-off zone

Safe Parking Lots

Parking lots are almost always designed to maximize the number of parking spaces, often at the expense of delineated crossing zones, adequate sidewalks, planted medians and efficient, logical drive lanes. Parking lots that also double as drop off zones present additional hazards and opportunities for vehicular back-ups. When thinking about the location and design of parking lots, consider the following principles:

- Locate parking lots and access drives away from walking routes
- Eliminate parking spaces near driveways and crossings to ensure good visibility for pedestrians
- Avoid locating driveways and establishing traffic patterns that facilitate shortcuts through parking lots
- Reduce the number of parking spaces or share parking with neighboring uses
  - » Plan parking for daily needs, not for graduation, sporting events, or concerts, to reduce the size of on-site parking lots
  - » Explore the possibility of issuing faculty and staff permits to park on neighborhood streets during school hours to reduce the need for a large, on-site parking lot
  - » Consider the use of off-site parking lots (e.g., at churches or other community facilities that are not heavily used during school hours)

- Mark walkways through parking lots and employ traffic calming strategies, such as raised crossings, to reduce driving speeds[4]

[4] http://guide.saferoutesinfo.org/dropoff_pickup/separating_motor_vehicles_from_pedestrians_and_bicyclists.cfm

Raised crossing from a school parking lot to the front door

Size of a typical elementary school student compared to an SUV (credit: MA SRTS)

Safe Front Doors

For a walker, a safe front door is one that can be reached along a smooth, continuous pathway, without interruptions from parking lots, drop off zones and driveways. It is obvious, recognizable and given a prominent location that invites people in. The front yards of our schools should be built for children to run in circles, not for us to drive our cars in circles.

- Give the school building a presence on the street and make it multi-story, if appropriate, minimizing the school footprint to maximize green space
- Locate building entrances along obvious pedestrian desire lines
- Design the facade to be welcoming to walkers
- Post a sign with the school's name
- Use pedestrian paths, the location of the school's main entrance, and the placement of playgrounds, outdoor classrooms, and green spaces to receive and welcome students approaching from all directions
- Connect the main entrance to the street with a plaza, where possible; make this plaza welcoming by creating a sense of enclosure and by furnishing it with benches and planters; ensure that it is well-lit

Buildings with street presence where cars do not dominate the front yard

Safe Outdoor Spaces

Outdoor spaces in this context include play spaces, playgrounds, play fields, outdoor classrooms, and campus walkways or trail networks connecting these spaces. As school building footprints have continued to grow, outdoor spaces have become smaller and often bisected with roads. The principles in this section highlight the need for good lighting and adequate visibility from the street and buildings in these important outdoor spaces.

- Use site design principles that promote "eyes on the street"
  - » Locate walkways and gathering spaces in areas that are visible and central to school activity
  - » If the school grounds are fenced in, ensure that the location of any gates correspond to pedestrian paths and are unlocked during arrival and dismissal; post signs to inform students when the gates will be locked

- Install good lighting at the following locations throughout campus:
  - » Walkways
  - » Parking lots
  - » Building entrances
  - » Play fields

- Locate outdoor play spaces where children can reach them without crossing active driveways
- Reclaim space previously dedicated to cars for outdoor education and play

Playground at the main entrance where staff can observe students from the school windows
Credit: https://www.playlsi.com/globalassets/slideshows-design-files/playgrounds/east-somerville-school/somervillehero.jpg?width=1440&height=560&mode=crop

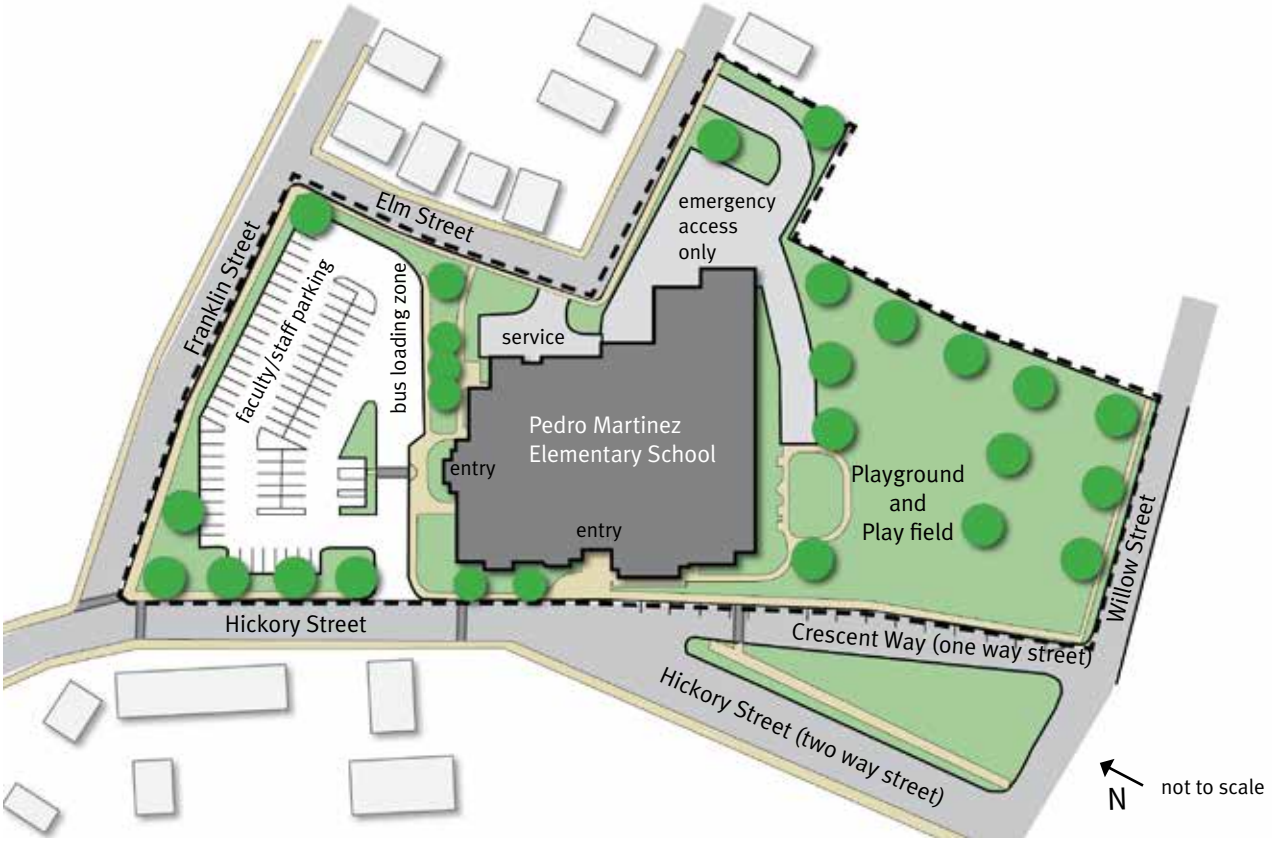
Application of Walkable Campus Design Principles at Two Elementary School Campuses

Proposed campus plans for the Pedro Martinez Elementary School in White Oak, MA, and the Toni Morrison Elementary School in Red Oak, MA, exemplify some of the common pitfalls in school campus design. While the names and locations of these schools have been changed, the campuses and the issues they face are NOT fictional.

Pedro Martinez Elementary School

School profile: Pedro Martinez (PM) Elementary School enrolls approximately 365 students ranging in age from pre-K to 5th grade. Over 85 percent of the students are considered "walkers," meaning they live within 1.5 miles of the school and are not eligible for yellow bus service. Only about 50 students ride the bus to school, and some local day care centers drop off and pick up students using minivans. Any student not eligible for yellow bus service is officially tracked as a "walker." Of those children considered "walkers," many are driven to school and picked up at dismissal. Traffic congestion around the school in the morning and at dismissal is intense and often fosters unsafe and dangerous driving and walking behaviors. Those students who do walk to school come from all directions and cross many complicated intersections before arriving at the school.

The new PM school plan demonstrates many of the hazards that students walking to school face. Using the walkable campus design principles, the discussion below provides potential solutions to the described hazards.



Proposed site plan at Pedro Martinez Elementary School

Safe Streets

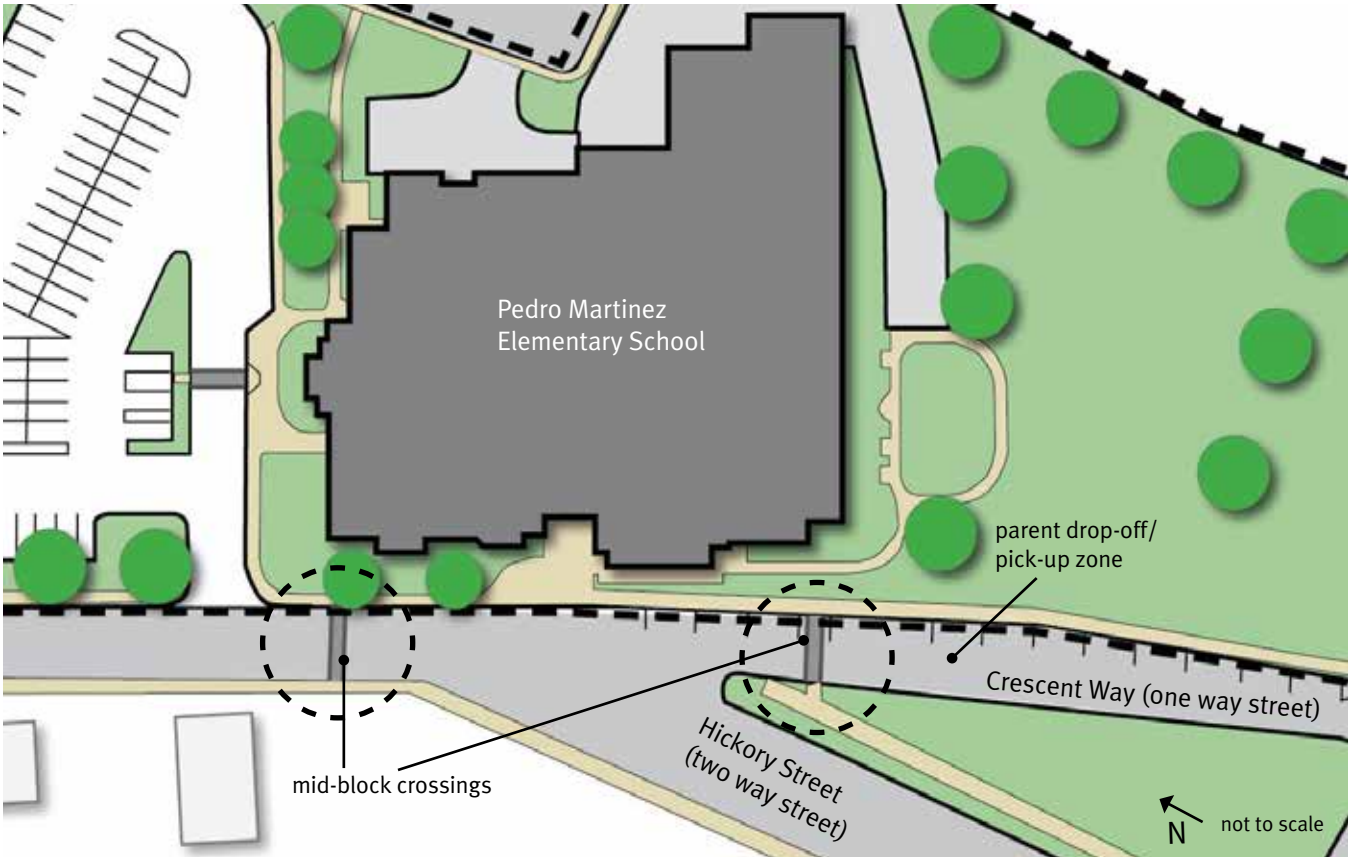
These principles addresses the safety and condition of streets and street crossings outside the school boundaries. Generally, the scope of a school building project does not include these critical neighborhood connections. The importance of building partnerships among municipal offices is vital to maintaining safe streets for students to continue walking to PM Elementary.

The street network within a half-mile of PM Elementary is full of complicated crossings, fast-moving traffic, and discontinuous sidewalks. The city is in the process of redesigning several of the worst intersections and installing pedestrian signals. However, the primary goal is still to improve traffic flow.

Safe Crossings

The primary crossing points for students living on the southwest side of Hickory Street are mid-block crosswalks (with no pedestrian signals) leading to the building's front door. The convergence of Hickory Street and Crescent Way, combined with the parent drop-off zone on this section of road makes these crosswalk locations potentially dangerous. Parents dropping off their children or waiting to pick up their children will queue in front of the main entrance limiting the visibility of walkers in the crosswalk.

While the crosswalks respect pedestrian desire lines, the vehicular traffic pattern and location of the car drop-off zone may jeopardize safety. Traffic calming devices, such as raised



Pedestrian crossings of Hickory Street occur within the parent drop-off/pick-up zone and at a location with compromised sight lines

crossings and curb extensions, can improve pedestrian safety and slow vehicle speeds. Raised crossings make pedestrians more visible and drivers are reportedly more likely to yield to pedestrians. Curb extensions shorten crossing distances and protect crosswalks from encroaching parked cars and idling vehicles.

Students walking from the residential neighborhood north of PM Elementary walk along the eastern side of Hickory Street and must cross the driveway leading to the bus drop-off zone and faculty/staff parking lot to reach the school's front door. Drivers entering and exiting this driveway may be more focused on the traffic on Hickory Street and not aware of children crossing in front of them. Ideally, children walking to school would arrive on campus and reach the building's front door on a clearly defined, smooth, uninterrupted sidewalk.

Given the decision to arrange the building and parking lot as shown, the site's elevation changes precluded moving the parking lot driveway to either of the other two adjacent streets. In part, the hilly site and size of each campus use (building and parking) determined the campus organization. It is hard to say whether an emphasis on creating a walkable campus would have altered the final plan. Steps such as a boldly painted crosswalk, stationing of a crossing guard, and narrowing curb radii on the driveway will improve walker safety at this driveway location.

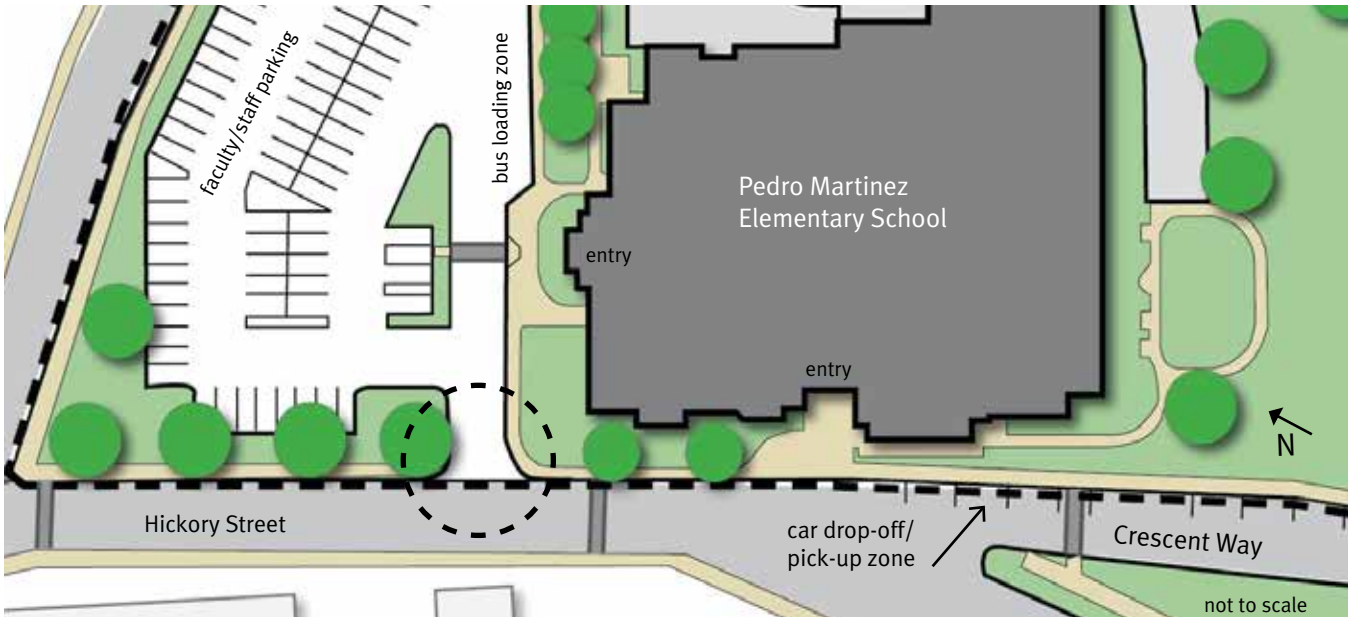


Diagram showing issues related to car and bus drop-off zones

Safe Drop-off Zones – Car drop-off

The car drop-off zone at PM Elementary is along the eastern edge of Crescent Way that runs along the front of the school building. The one-way traffic on the Crescent Way facilitates drop-off and pick-up with children unloading and loading directly to the sidewalk, and those students do not have to cross a vehicular path before reaching the front door. However, drivers leaving Crescent Way must drive north on Hickory Street encountering the primary crossing point for walkers and the staff parking lot entrance. The high volumes of cars, multiple turning movements and children crossing in this tight location increase the potential for conflicts.

The car drop-off/pick-up zone has marked parking stalls where drivers pull up and unload their passengers, and park and wait for their students at dismissal. The parking spaces are close to the crosswalk leading to the front door and cars parked in the first two spaces block the view of oncoming traffic for students trying to cross. Curb extensions would improve sight lines for students and enhance their visibility, and shorten the crossing distance. The wider curbs would also discourage drivers from parking in or close to the crosswalk. Ideally, the car drop-off and pick-up zone would be farther from the front door, clearing the way for walkers to enter without crossing the drop-off zone.

Safe Parking Lots

The parking lot is another potential barrier to students walking to school. As described in the Safe Crossings section, the parking lot driveway interrupts the sidewalk on which walkers from the residential neighborhoods to the north and west of the school reach the front door. This is the only instance when students are exposed to parking lot traffic flow when entering the school. The parking lot is for staff and visitors only. Buses come into the parking lot to drop off and pick up students along the school building's northern edge. The parking lot has only one point of egress, so cut-through traffic is not an issue.

Within the parking lot, there is no clearly defined walkway to the building. Staff and visitors can funnel to the accessible parking spaces where a marked crosswalk leads to the new school. However, additional sidewalks and marked crossings would provide drivers and walkers with a heightened awareness of each other's travel patterns.

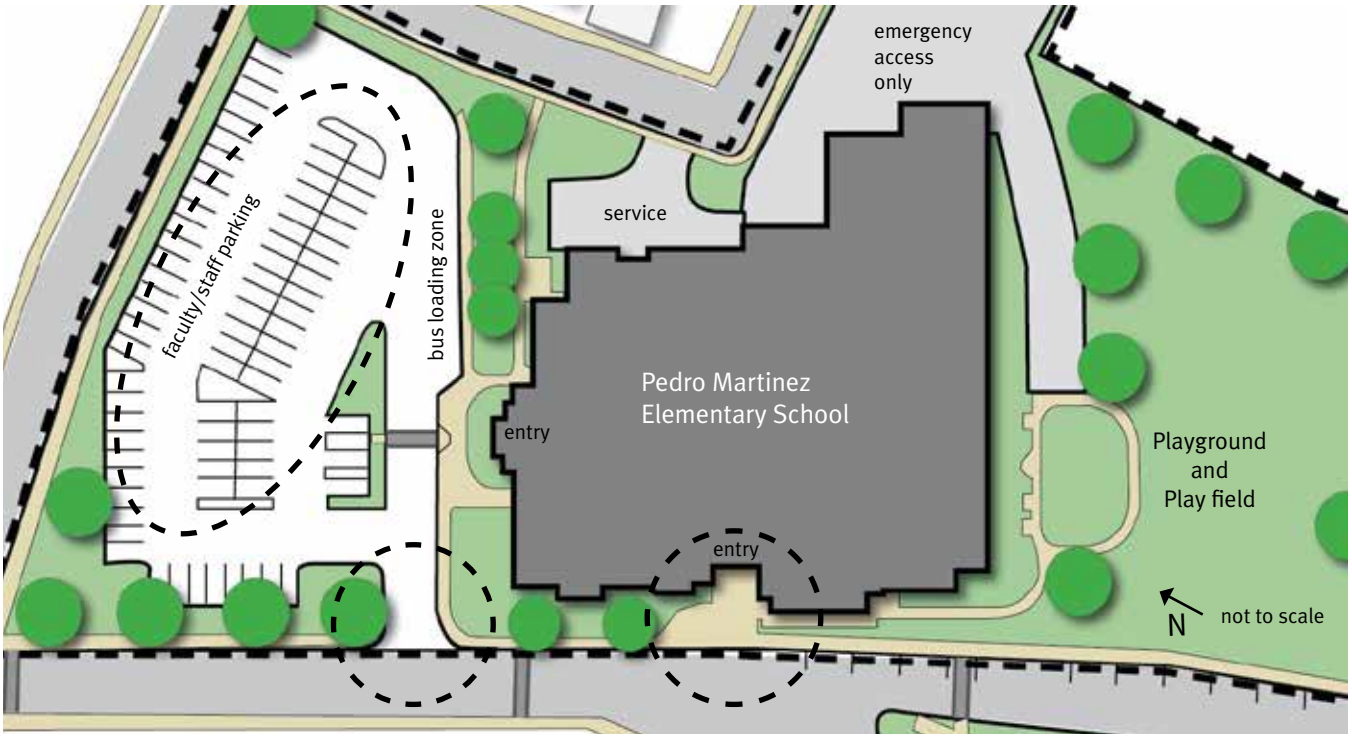


Diagram showing issues related to parking lots

Safe Front Doors

The new PM Elementary School has a real presence on Hickory Street. Its height and active, colorful facade announce the institution as a welcoming, prominent building of learning in the neighborhood. It is visible to all walking toward it and the location of the front door is obvious with a clear path of arrival.

As noted in the Safe Drop-off Zones section, the confluence of the car drop-off zone, primary crosswalk and parking lot driveway at the school's front door create congestion at arrival and dismissal. Separating the drop-off zone and parking lot entrance from the front door would provide a safer, less hectic path for walkers.

Safe Outdoor Spaces

Children do not cross any active driveways or parking lots to reach the play space behind the school. It is adjacent to the building and fenced from the neighborhood, in part due to the grade changes between the school grounds and the neighborhood below. There is a paved access road to the playground, but it is for fire access and maintenance activities only.

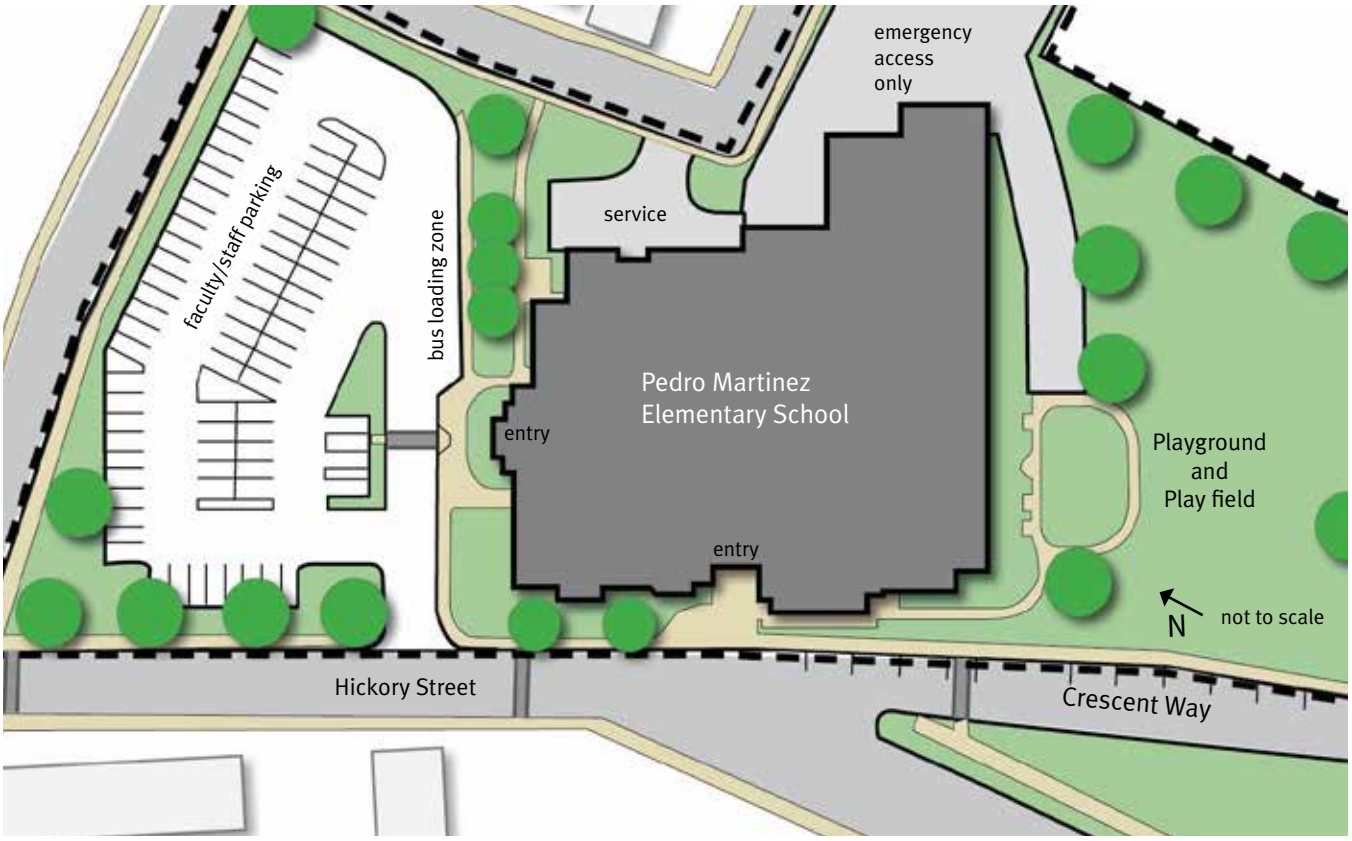
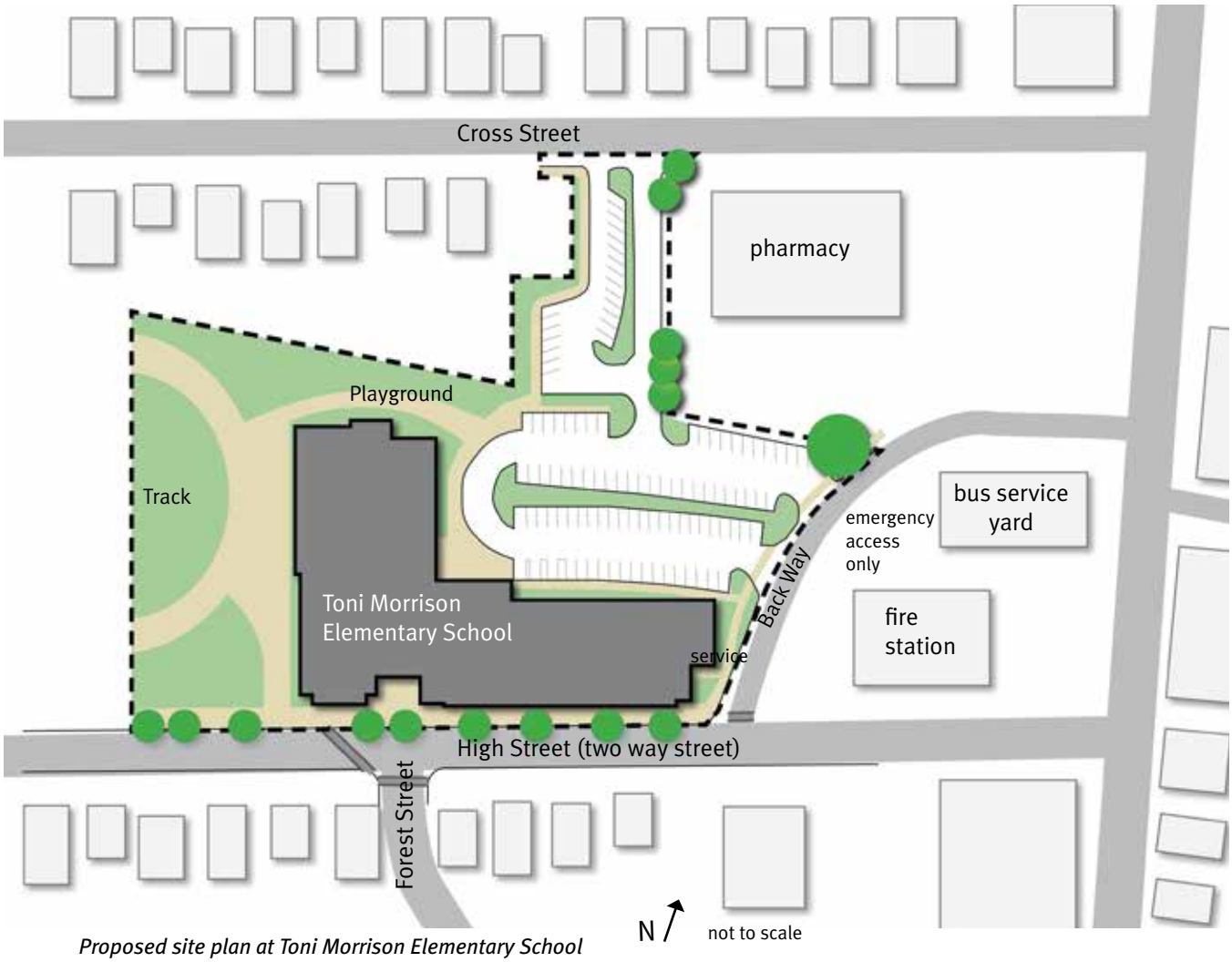


Diagram showing issues related to front doors and outdoor spaces

Toni Morrison Elementary School

School profile: The Toni Morrison Elementary School enrolls approximately 550 students with all students living within a mile of the school. Survey data shows that more than half of the students currently walk to and from school daily, indicating that walking to school is the preferred travel mode. Many families at the Toni Morrison School have only one family vehicle (45%) or no vehicle (16%), and therefore have no other option but to walk to school. Others with access to a car often choose to walk because of successful walk-to-school campaign efforts and the heavy traffic congestion around the school campus at arrival and dismissal times.

The new Toni Morrison School will be across the street from the existing school and enroll approximately 150 more students. The new Toni Morrison School campus plan raises some safety concerns for walkers and illustrates a planning process that did not prioritize walking to school despite the high numbers of students walking.



Proposed site plan at Toni Morrison Elementary School

Safe Streets

As discussed above, these principles address the safety and condition of streets and street crossings outside the school boundaries. Generally, the scope of a school building project does not include these critical neighborhood connections. The importance of building partnerships among city offices and private land owners is vital to maintaining safe streets for students to continue walking to the Toni Morrison School.

The Toni Morrison School will be built along a major arterial road (High Street) that carries high volumes of vehicular traffic in and out of the city. The neighborhoods on the south side of High Street have a dense street network with continuous sidewalks and relatively slow traffic – good conditions for a safe walking environment. Strategic placement of crosswalks and crossing guards can improve the safety of crossing High Street and help to discourage students from crossing between cars when traffic is idle.

In addition to High Street, students coming from the neighborhoods to the east must cross a service road (Back Way) that provides access to a fire station, bus service yard, and a chain pharmacy store. Proper crosswalks, sight lines and sidewalks along this road are critical to maintaining safe access to the school. Given the varied owners and the shared responsibility of road improvement costs (since it is not a city-owned road), implementation of these changes will most likely involve a lot of coordination and compromise.

Neighboring streets at Toni Morrison Elementary School

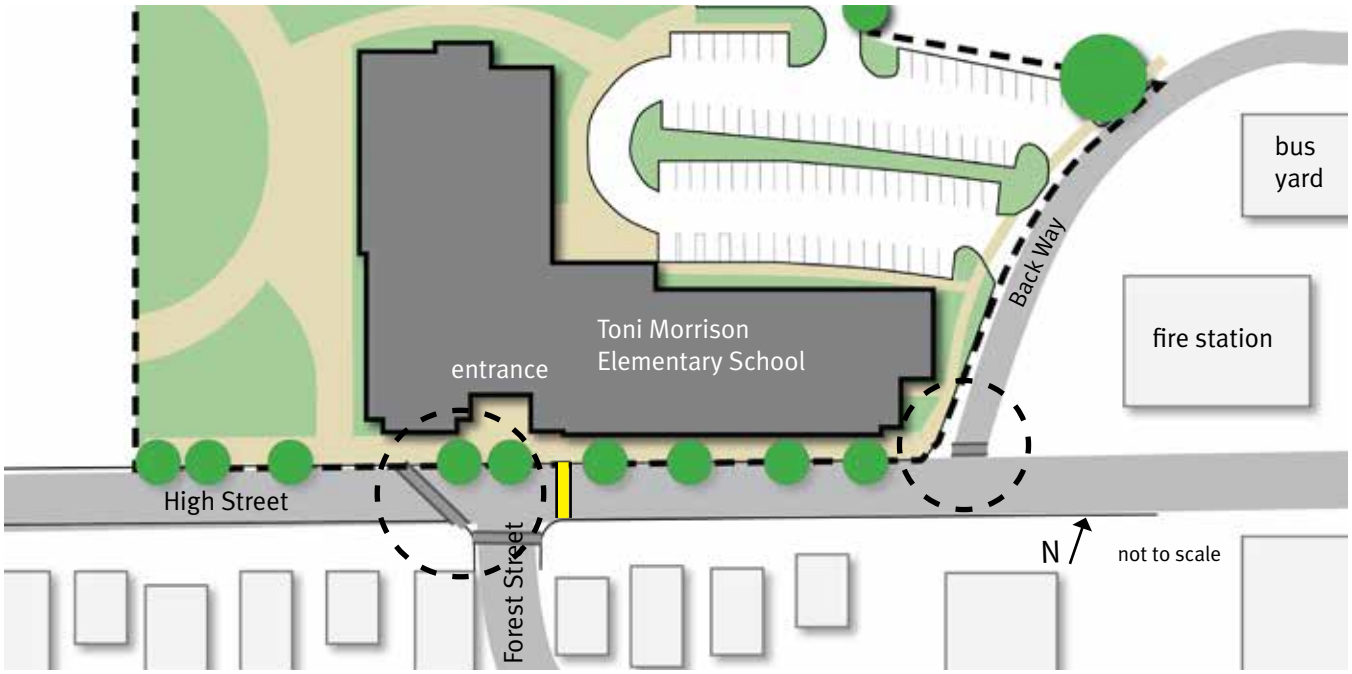
Safe Crossings

The new school building entrance is planned across the street from the intersection of High Street and Forest Street. This intersection is currently unsignalized with one diagonal crosswalk painted across High Street. This crossing will be the primary walking path to the school for students living on the south side of High Street. Therefore, at a minimum, the proposed plans should show three crosswalks with curb ramps at this intersection. One large raised crossing on High Street would further slow traffic and better accommodate groups of students crossing at one time.

Since there are no plans to signalize the intersection, a crossing guard at this location is critical to assist in stopping traffic and in encouraging children to use the crosswalk, rather than darting between idling cars. Other traffic calming techniques, such as an in-street pedestrian sign, should be used to highlight this crossing (could be stored in the school to be used only at arrival and dismissal if there are concerns about it disappearing). Parking should be prohibited within 20' of the crosswalk. School zone signage should be in place along with advance crosswalk signage.

A prominent crosswalk and stop line should be painted across Back Way to improve the safety of students walking to Toni Morrison from the east along High Street. Given the need for daily fire truck and bus access, the curb radii cannot be shortened, nor can a raised crossing be placed across Back Way.

Back Way also provides access to the new school's parking lot and planned bus and car drop-off zone. It is possible to access the parking lot from Cross Street to the north of the school, but this is undesirable for drivers who would have to navigate along other high volume arterials to reach the north side of the school. However, it would be prudent to consider restricting access to the parking lot from High Street to minimize the safety risk for those walking along High Street to reach the school.



Proposed crossing locations at Toni Morrison Elementary School

Safe Drop-off Zones

The planned drop-off/pick-up routes for cars and buses are not clearly defined and the proposed layout suggests many points of conflict. Diagram A shows the potential combinations. If the proposed on-site circulation and parking plan remains as shown, clearly defining the direction of traffic, the location of official drop-off and pick-up zones, and points of entry would greatly improve pedestrian safety and ensure that students are not left wandering through active parking lots with little protection (Diagram B).

Access to the Cross Street staff parking lot should be limited to staff only. Limited access will prevent parents from using staff parking spaces. It will eliminate children being let out of cars in the middle of the parking lot and crossing through parked cars unprotected. Furthermore, it will eliminate cars from proceeding from the Cross Street staff parking lot into the main parking and drop-off zone.

The second driveway on Cross Street should be the main car drop-off access point. Drivers should proceed down the driveway to the semi-circle in front of the school before allowing their children to get out of the car. Drivers would then exit onto Back Way and either continue on Back Way to Main Street or proceed back through the parking lot and exit onto Cross Street.

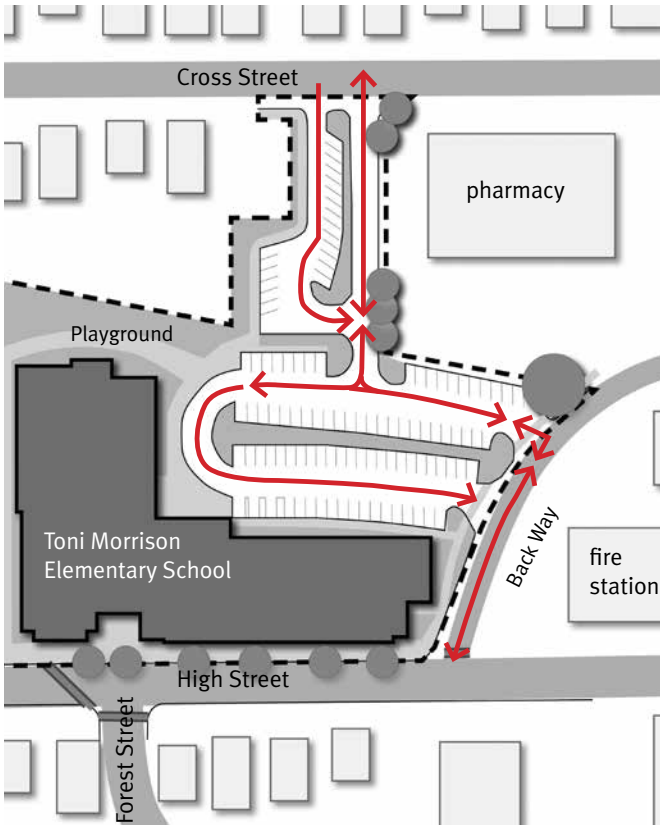


Diagram A - Unrestricted circulation

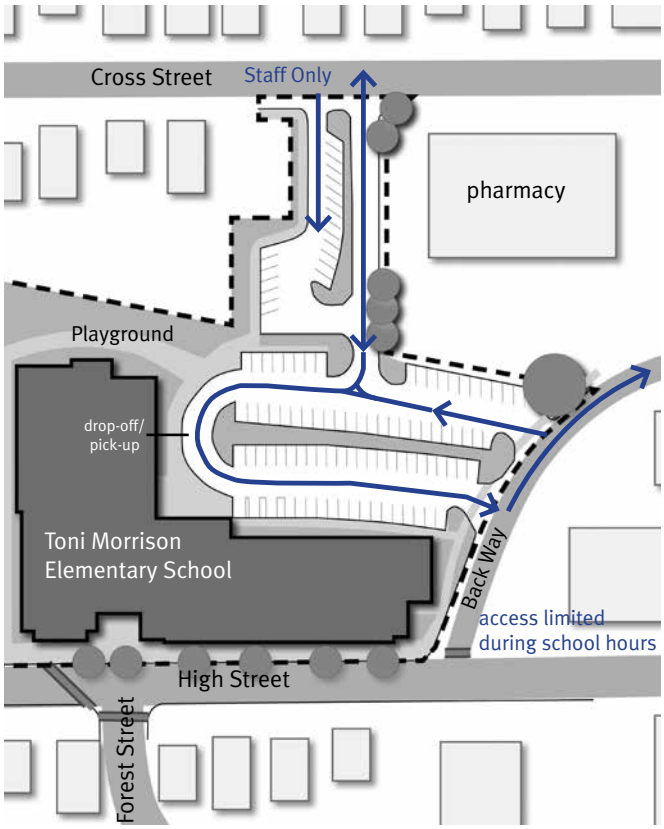


Diagram B - Restricted circulation

Access to the parking lot from High Street should be restricted to staff and buses only during arrival and dismissal hours. Drivers dropping students off must not be allowed to enter the school grounds from this entrance. If drivers enter from High Street, they may try to circumvent the supervised drop-off area leaving their children on the opposite side of the parking lot without a protected crossing. Furthermore, traffic entering from the south could cause a back-up on High Street.

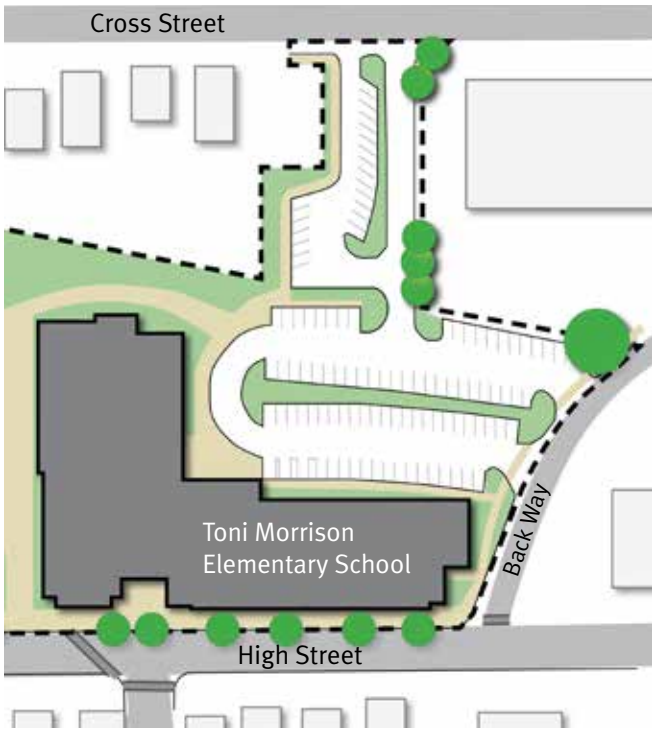
In general, it should be a goal to separate drop-off zones from parking areas whenever possible. The car drop-off approach should be simple and leave little room for driver interpretation. Traffic should flow in one direction allowing children to get out of the car on the sidewalk side and never be forced to cross a driving lane. The proposed traffic flow diagram (Diagram B) above makes the best out of a tough situation. Prioritizing a safe drop-off procedure over maximizing parking would have generated a different site plan.

Safe Parking Lots

The proposed parking lot at Toni Morrison was designed to maximize the number of spaces on the school property. The parking lot will double as event parking for the stadium adjacent to the school. This begins to explain the limited pedestrian infrastructure and the circuitous drive lanes planned on the site.

While most students will not be walking through the parking lot, staff and visitors will be and also need a delineated path network as far from the drop-off traffic as possible. A sidewalk should be considered within the large island and a curb ramp and crosswalk should be provided across the drop-off circle to the school's front door. A crosswalk should also be considered at the south end of the driveway connecting to Cross Street for those parking in the spaces closest to Back Way. While space is tight, a sidewalk connecting the parking spaces to the driveway would also help to improve pedestrian safety.

As mentioned above in the drop-off zone discussion, the proposed traffic flow within the parking lots seems problematic. Typically, it is best to keep drop-off and pick-up loops outside of the drive lanes in the parking areas. Given the site constraints, the proposed changes to the traffic flows discussed above may be the best solutions to the situation.



Proposed parking lots at Toni Morrison Elementary School

Safe Front Doors

The new Toni Morrison School sits right on High Street in keeping with the urban character of the street. The parking is tucked behind. Walkers coming from the neighborhoods to the south of the school have a great landmark to see as they come out to High Street and cross at the proposed Forest Street crosswalk (see description of proposed improvement in the discussion of Safe Crossings). The wide sidewalks and front entrance plaza provide space for children to congregate. The other front door to Toni Morrison (near the drop-off circle on the opposite side of the school) also has a welcoming plaza space with benches for students to gather before and after school.

Safe Outdoor Spaces

Given the demand for parking spaces at the school and for the adjacent stadium, there was not much space left over to dedicate to outdoor play. A playground is proposed at the northwest corner of the school building. A service drive separates the play space from the school, but it will not be active while children are using the playground. There is a direct line of sight from the school building and from the stadium, which contributes to a feeling of safety while using the playground.

Conclusion

The analysis of both the Pedro Martinez and Toni Morrison Elementary School site plans illustrates a methodology for applying the walkable campus design principles discussed in this report. It provides an active transportation approach to a process typically dominated by vehicle-based thinking. Walkability is not the only priority when designing an elementary school campus. But, if the needs of children walking to school are considered at the outset, and continue to be represented throughout the design process, then all students, staff, faculty and parents will benefit from a school that is safer and more welcoming to all.

Case Studies

The following case studies exemplify some of the walkable campus design principles summarized in this document. Under each category of principles, we have listed the specific characteristics of that campus plan that meet our criteria for a walkable campus. We identified these schools from guidance documents and through internet research. This is by no means an exhaustive list, and we invite you to submit other schools you feel should be featured. Please contact us at info@walkboston.org with nominations.

School Walkability Summary Table

Schools	Safe streets	Safe crosswalks	Safe drop-off zones	Safe parking lots	Safe front doors	Safe outdoor spaces
Bethesda-Chevy Chase High School	•	•	•	•	•	
Bush Elementary School	•	•	•	•	•	•
Cherry Crest Elementary School		•	•	•	•	•
Christa McAuliffe Elementary School	•		•	•		•
Daybreak Elementary	•	•	•	•		•
Eastlake Elementary	•	•	•	•	•	•
Emerson Elementary	•	•	•	•	•	•
Ensworth Elementary School	•	•		•		•
Geer Park Elementary School	•		•		•	•
Gray Middle School		•	•	•	•	•
Hood River Middle School	•	•		•		
Martin Luther King Jr. Elementary	•	•	•	•		•
Rosa Parks Elementary School	•	•			•	•

Bethesda-Chevy Chase High School

4301 East-West Hwy Bethesda, MD 20814
Grades: 9-12
Population: 1,875

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Connected side-walk network from neighbor-hood to school	Crosswalks painted and marked with signs; curb bump-outs at major crossing	Bus and vehicle drop-off zones are separated from pedestrian arrival	Pedestrian path-ways from near-by parking lots lead straight to school	Distinct front door to indicate “eyes on the street”	

Bush Elementary School

410 14th St SE, Salem, OR 97301
Grades: K-5
Population: 320

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Connected side-walk network from neighbor-hoods to school	Well-marked crosswalks lead directly to front door	Use street net-work for drop-off and queuing	Majority of parking spaces located near pe-destrian paths	Building scales fits with neigh-borhood context	School rebuilt on site adjacent to park, easy ac-cess to outdoor space

Cherry Crest Elementary School

12400 NE 32nd St, Bellevue, WA 98005
Grades: K-5
Population: 670

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
	Speed tables in front of main entrance	Modest-sized drop-off zone; adjacent to front door	Majority of parking in island, accessible by crosswalk	Front door has gathering space, landscaping, bike racks	Adjacent to neighborhood park

Christa McAuliffe Elementary School

Tomashaw St, Lenexa, KS 66219
Grades: Pre-K-6
Population: 460

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Good sidewalk/ walking path network leading to the school		Satellite drop-off/pick-up zone at adjacent community center; bus drop-off separated from pedestrian routes	On-site parking lot separate from primary pedestrian paths; additional satellite parking at community center connected by walking path		Directly adjacent to green space and multi-use path network

Daybreak Elementary School

4544 Harvest Moon Dr, South Jordan, UT 84095
Grades: K-6
Population: 1,100

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Sidewalks well-connected throughout campus	Crosswalks clear and defined	Bus and car drop-off zones clearly separat-ed from primary walking path	Parking lot sep-arate from main entrance		Outdoor space on school grounds and safely accessi-ble

Eastlake Elementary School

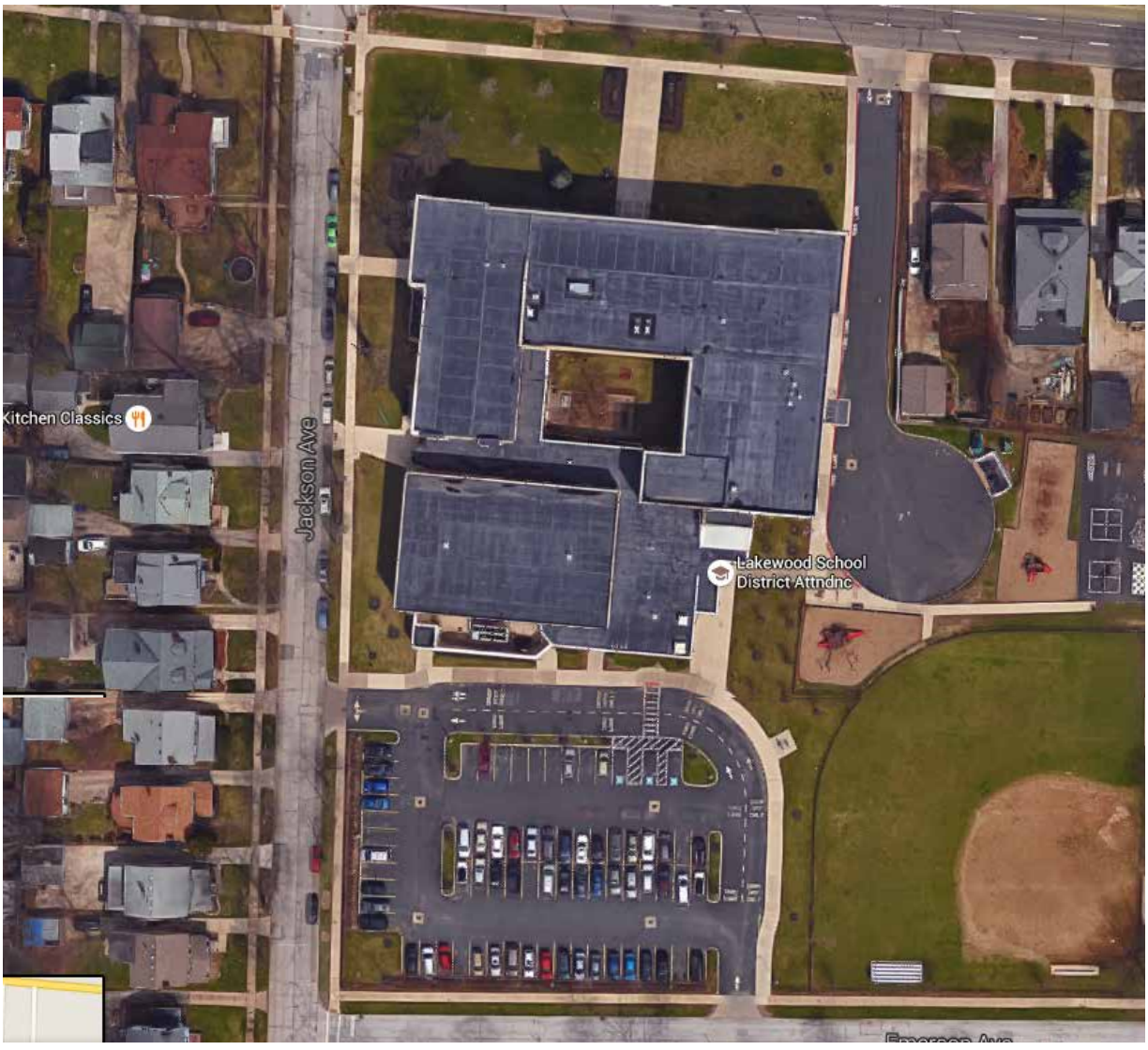
4389 Isla Daybreak Rd, South Jordan, UT 84095
Grades: K-6
Population: 1,070

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Sidewalks well-connected throughout campus	Crosswalks clear and defined	Bus and car drop-off zones clearly separat-ed from main entrance	Parking lots straddle build-ing's edges, away from walk-ing routes	Large, distinc-tive entrance among green space	Outdoor space accessible by sidewalk with-out crossing a street

Emerson Elementary School

13439 Clifton Blvd, Lakewood, OH 44107
Grades: K-5
Population: 300

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Connected side-walk network from neighbor-hoods to school	Crosswalks well marked, pedes-trian signal at intersection	Parking and drop off zone located in the back corner of the site		Front door built close to the street edge, set in green tree lawn	Green space accessible by sidewalk with-out crossing a street



Ensworth Elementary School

2150 NE Daggett Ln, Bend, OR 97701
Grades: K-5
Population: 233

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Location in res-idential neigh-borhood with good sidewalk connectivity	Elevated speed tables at major crosswalks near school		Protected side-walks around parking lot		Open space ac-cessible without crossing active travel lanes

Geer Park Elementary School

14767 Prospect St, Dearborn, MI 48126
Grades: K-5
Population: 330

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
School inte-grated into neighborhood residential setting		Drop-off zones along neighbor-hood streets preserving site for play		Front door built close to the street edge with large plaza at building en-trance	Adjacent to Geer Park, can access without crossing an active travel lane

Gray Middle School

6229 S Tyler St, Tacoma, WA 98409
Grades: 6-8
Population: 600

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
	Crossings are prominent; flashing bea-cons	Circular drive-way attached to parking lot (pre-sumably used for drop-off) separately from main entry	Parking lot is relatively small and located ad-jacent to pedes-trian plaza; does not separate the school building from the street	Large entry plaza runs down entire western side of school	Can access open space without crossing an active travel lane; landscape spaces contrib-ute to building site design

Hood River Middle School

1602 May St, Hood River, OR 97031
Grades: 6-8
Population: 540

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Located within neighborhood center; chose to renovate rather than move from convenient location when space became an issue; connected sidewalk network	Well-defined crosswalks at main points of entry		Parking located across the street; preserving site for play and mission-related uses	Multiple front doors with large green spaces and paved areas with benches to facilitate gatherings; traditional entry ways	Can access track and green space without crossing an active travel lane

Martin Luther King Jr. Elementary

1108 Fairview Ave, Urbana, IL 61801
Grades: K-5
Population: 300

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Connected side-walk network throughout residential neighbor-hood; pathway network from local park to the school	Crossings are well-marked on road surround-ing the school and across driveways on school grounds	Use remote drop off point to pro-mote walking to school	Parking lot adja-cent to, but not in front of main entrance		Playground and hardtop adja-cent to school and pathways connect to neighboring park; students do not have to cross an active travel lane

Rosa Parks Elementary

8960 N Woolsey Ave, Portland, OR 97203
Grades: K-5
Population: 367

Safe Streets	Safe Cross-walks	Safe Drop-off Zones	Safe Parking Lots	Safe Front Doors	Safe Outdoor Spaces
Connected side-walk network throughout residential neighborhoods; school connect-ed to other com-munity services	Crosswalks are well-marked, use curb bump-outs, located at pedestrian desire lines			Building along street edge with green tree lawn	Access to green space without crossing active travel lanes