Keep Calm and Carry On to School:
Improving Arrival and Dismissal for Walking and Biking

A student's experience arriving at school sets the tone for the entire school day. But often, the last block of the school commute is challenging and unwelcoming, in particular for students arriving on foot or by bicycle. School travel by family cars accounts for 10 to 14 percent of vehicle trips made during morning rush hour.[1] High traffic volumes near schools and disorganized drop offs and pick-ups mean that families feel afraid to let children walk or bicycle—resulting in even more cars at schools. Chaotic drop offs and pick-ups make the front of the school into a high stress environment, with negative effects on student safety and the learning environment. How can we improve safety and comfort during school arrival and dismissal for students walking and bicycling, encouraging more active travel versus drop off and pick up by car?

This infobrief provides information on how schools, school districts, cities and counties, and community partners can address arrival and dismissal in developing school travel plans, as well as other planning, policy, and programming efforts. While each school needs to employ specific approaches customized for its particular site configuration, adjacent street network, and surrounding neighborhood, this infobrief outlines general strategies, best practices, and considerations to improve school arrival and dismissal. We begin with an overview of key principles for a successful arrival and dismissal program and then describe specific strategies and techniques in three categories: engineering, operations and programming, and education and reinforcement.

Key Concepts

When developing and implementing a school arrival and dismissal program, keep in mind the following key overarching principles that apply to all school settings.

1. **Prioritize walking and biking:** When developing and implementing strategies, take care to prioritize walking and bicycling over cars. Vehicle drop offs create a variety of problems, endangering students walking and biking along the route to school, threatening those who have exited other cars or buses, and creating air pollution near schools that can worsen asthma and other chronic lung conditions. Improving arrival and dismissal for students walking and bicycling may have a secondary effect of improving traffic operations overall. But if an arrival and dismissal program makes drop off and pick up easier to the point that it encourages more families to drive their students to school, the overall effect is to worsen health, safety, and air quality for students. To support the well-being of students, strategies need to place the safety and comfort of students walking and bicycling first.

2. **Use a variety of approaches together:** A successful arrival and dismissal program requires using strategies that encompass multiple approaches from the 6 E's of Safe Routes to School: Engineering (changes to street design, parking lots, and the physical infrastructure or layout on and off campus), Education (providing information to and promoting awareness of proper behaviors by people driving, walking, and biking), Encouragement (programs that make it easier to and incentivize walking and biking), Engagement (listening to and working with students, families, teachers, and school leaders to create solutions), Evaluation (periodically assessing effectiveness of the program and adjusting as needed), and Equity (ensuring all students benefit from, and no groups are negatively affected by, the infrastructure, policies, and programs). Using just one approach is unlikely to address all of the issues – a strategy that involves engineering approaches coordinated with approaches from the other E's is often needed.

3. **Separate modes:** The biggest danger to children at arrival and dismissal comes when cars get close to children walking, biking, or exiting the bus. Separating the different modes of travel (private vehicles, buses, people walking, people bicycling) through engineering strategies, operational strategies, or both, is crucial in reducing conflicts in school zones and improving safety and comfort for everyone. Each mode needs a well-defined path of travel across school grounds. This includes making the paths for walking and bicycles highly recognizable and visible for children.

4. **Clearly communicate about who goes where:** An arrival and dismissal program should communicate who (people walking, biking, buses, cars) goes where clearly and consistently, through signs, pavement markings and other indicators at the school site, as well as through informational materials and messaging distributed to families and students.

Taking Steps to Improve Arrival and Dismissal

Improving arrival and dismissal at your individual school will require assessing what changes will be most appropriate, implementing changes with partners, and evaluating and adjusting. Here are some key steps.

1. **Assess existing conditions.** Observe school arrival and dismissal. Document challenges, including areas that are particularly congested or uncomfortable, as well as unsafe behaviors by drivers and students. Talk with families, students, bus drivers, and crossing guards and capture their thoughts as well. Worksheet such as this one from the Virginia Safe Routes to School Program can be used to document observations and input.

2. **Work with partners to identify potential solutions.** Key stakeholders to involve include school district facilities and transportation staff, school administration, and city or county transportation or public works staff.

3. **Create a plan.** This can be a formal document such as a circulation plan that with specific details regarding engineering changes and anticipated paths of travel, or a less formal plan that lays out key actions and steps each stakeholder will take.

4. **Implement changes.** Put engineering, operational and programmatic, and education strategies in motion. Permanent engineering changes may take longer to implement, but operational, programmatic and even temporary infrastructure changes using cones or other low-cost materials can often be put into place quickly.

5. **Evaluate and adjust.** Conduct follow up arrival and dismissal observations. Document what is working well and any areas that may not be working as anticipated. If there are aspects that can still be improved, work with partners to adjust, change, or add strategies.

School districts can support strong arrival and dismissal at new schools and improvements across existing schools by updating transportation policies and facilities planning and design policies and requirements to include provisions for students walking and biking that address the key concepts described in this infobrief.

Strategies and Techniques

School arrival and dismissal can be improved through strategies that include programming and changes to the infrastructure at and around the school. A combination of strategies is needed at most schools to successfully improve arrival and dismissal. The remainder of this infobrief describes best practices, considerations, and strategies and techniques in three categories: engineering; operations and programming; and education. These strategies are intended to address issues at existing school sites, but the underlying principles and concepts can be considered when designing new school sites in order to make arrival and dismissal safe and pleasant from the start.

Street Design/Engineering Strategies

Making sure that our physical spaces – streets and schools – are designed to be safe and comfortable for students walking and biking is at the heart of the engineering strategies discussed in this section. Engineering strategies are used to reduce or eliminate interaction between the different modes of travel at and around the school campus, and to improve comfort of students walking and biking. Each school site is different and the appropriate engineering strategies will depend on the school location and building layout, adjacent roads, and neighborhood context. This section starts with general best practices and considerations to support students walking and bicycling and then describes considerations for on-site as well as on-street/off-campus vehicle drop off and pick up areas.

### 1. Best Practices to Support Students Walking and Bicycling

Here are best practices to support students walking and bicycling on and around the school campus.

- Walkways should be a minimum of eight feet wide to accommodate groups walking together.[2]

- Shared paths should be a minimum of 11 feet wide to accommodate both walking and biking.[3]

- Walkways should provide direct, easy access for people walking, avoiding inconvenience or cutting across areas that may be more dangerous.

- Illuminate walkways with pedestrian-oriented lights (not just high lights that illuminate the street for cars) that will be used in early or later dark hours.

- Design walkways to eliminate or minimize crossing driveways.

- Designate walking and bicycling routes that do not cross parking lots or vehicle drop off/pick up areas.

- Provide a continuous walkway across driveways. Retain sidewalk paving and level walking path.

- Provide high-visibility crosswalks when walkways have to cross driveways, parking lots, or other vehicle areas.

Left: Level walking path provides a continuous walkway across a driveway. Right: Trees improve the attractiveness of the walking path, and pedestrian-oriented lighting ensures visibility for people walking in early or later hours.

- Minimize driveway width to reduce exposure time for pedestrians and slow speeds of cars turning.[4]

- Provide easy and direct access to bike parking without requiring people biking to dismount until they reach the bike racks.

- Families may prefer to walk with their student all the way to the school door. Entrances should have space around them to accommodate this.

- Consider landscaping, shade elements such as canopies, art features, and other ways to make walkways attractive and welcoming for people on foot.

- Consider destinations where students may go before or after school, whether adjacent, across the street, or nearby. Assess the pedestrian and bicycle linkages to nearby parks, libraries, community centers, food retail locations, and other facilities that attract students.
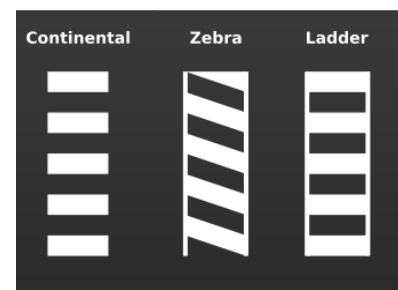
Examples of crosswalk treatments that improve visibility when walkways cross driveways, parking lots, or other vehicle areas.

2. Best Practices and Considerations for On-Site Vehicle Drop Off and Pick Up Areas

- When the school layout allows for it, provide paths for students to enter campus on foot or by bike from the neighborhood that are completely separated from parking lots, car drop off and pick up areas, and bus loading. This addresses many safety issues and creates a more comfortable environment for students walking and bicycling.

- Separating drop off and pick up areas, parking lots, and bus loading is the most desirable configuration, where space allows. This prevents parents from bypassing the drop off/pick up area and using the parking lot or bus area where students would need to walk between parking cars or buses. Use cones or signage to let parents know to not enter the parking lot or bus area.

- Some schools across the country have received approval to use the fire lane as a temporary pick up/drop off lane. This requires approval from the fire marshal.

- Vehicles should move through the drop off/pick up area counterclockwise and students should be able to enter and exit directly to the sidewalk without having to walk around or between cars. This should also be done for bus loading and unloading.

- A single drop off/pick up line is most desirable to prevent students from having to walk between cars. If absolutely necessary, a second line can be formed, but staff or volunteers need to assist students with crossing between cars.

- Plan adequate space to queue vehicles without blocking sidewalks, crosswalks, and walkways. The space needed will depend on how many cars are expected at the individual school. If adequate space is not available for queuing, consider adding off-site areas. If queuing potentially crosses sidewalks, crosswalks, or walkways, assign a person to keep these areas clear of cars.

- One way to allow for off-site queuing is to stripe a center turn lane for cars to pull into and wait while not blocking through traffic.

- Moving thorough the drop off/pick up area should never require a car to back up.

- Drop off/pick up areas should have all or most vehicles exit by making a right turn, avoiding left turns that require cutting over a lane of traffic. Avoid having crosswalks close to the driveway exit where drivers may be more focused on turning and less likely to be watching for people crossing the street.

- The grade for all vehicle paths on-campus should be a maximum of 5 percent to prevent visibility issues caused by slope.[5]

- Ensure adequate sight lines by prohibiting parking or stopping in or near intersections and crosswalks. Twenty feet from intersections and crosswalks is generally acceptable. Also take into consideration height of children when determining sight line needs.
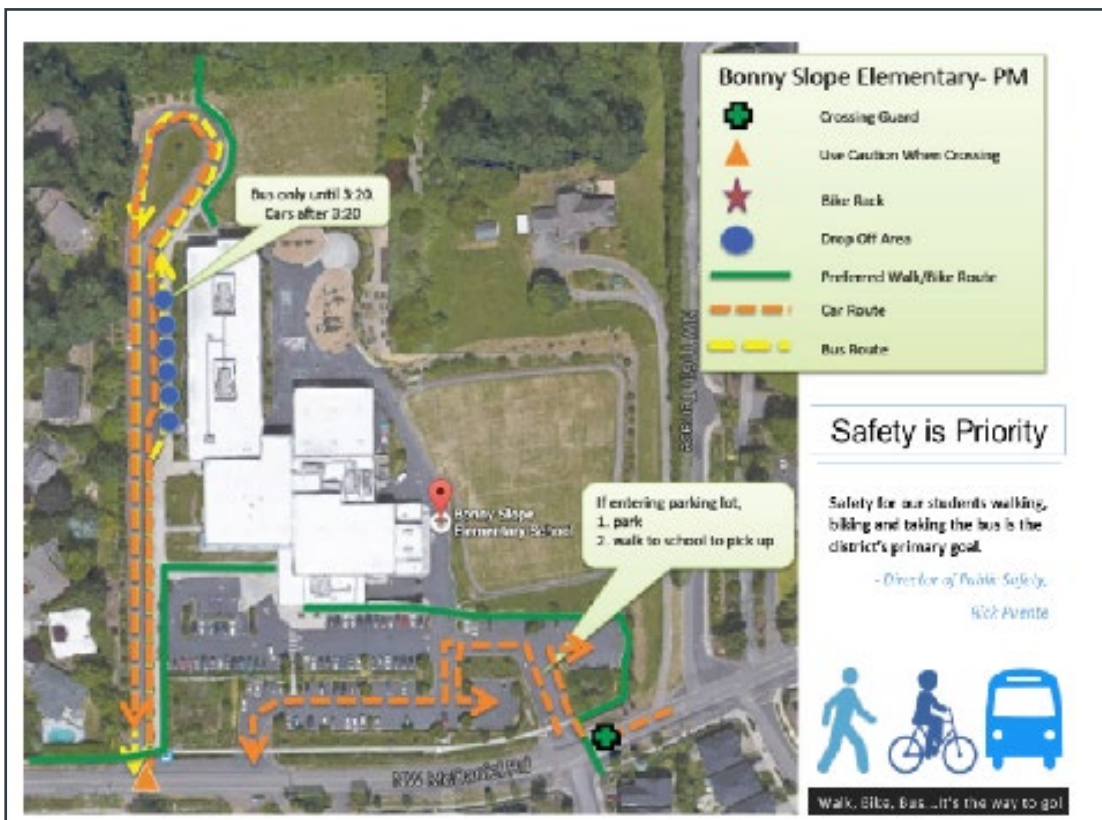

Left: An example of on-site pick up. Circulation plan shows cars are only allowed on campus after buses leave. Pick up lane is separated from parking area. Students are able to leave the campus on foot or bike in different directions. From Beaverton Safe Routes to School.

3. Best Practices and Considerations for On-Street (Off-Campus) Drop Off and Pick Up Areas

As an alternative to on-campus pick up and drop off areas, on-street (off-campus) areas can be designated. This requires working with the local traffic engineering or public works department that controls the streets adjacent to the school to design a plan that considers other property owners and traffic patterns.

- On-street drop off and pick up areas are most appropriate when there is not a lot of other non-school traffic and when the drop off and pick up areas can function without blocking driveways and access to other properties.[6]

- Treat on-street drop off and pick up areas as you would do on-campus areas. Provide very clear travel paths for vehicles as well as students walking and bicycling. Use a single drop off/pick up lane and only allow students to enter/exit from the curb. See the section above for other best practices and considerations for on-campus areas.

- Be sure to consider the flow of non-school traffic and other neighbors. Frustration can lead to angry neighbors, drivers cutting around other cars, and unsafe behaviors that endanger students.

- Preferred strategies and configurations will depend on the local context. Options include creating one-way streets, partial road closures, or full road closures. These could be done temporarily by using cones, signage, and blockades during arrival and dismissal, or may be permanent changes.

- A clear plan should be provided to drivers that shows where and how to drop off/pick up. Without a clear plan, unsafe behaviors such as double parking, cars making unsafe U-turns, and students walking between cars can become concerns.

- Signs and markings should follow consistent general standards to ensure that users understand them easily and avoid confusion. On-street curb markings, pavement markings, and signs should, and are likely legally obligated to, follow adopted standards, such as those in the Manual on Uniform Traffic Control Devices (MUTCD). This promotes clear messages to drivers, pedestrians, and bicyclists that are consistent with signage and markings that they see elsewhere.
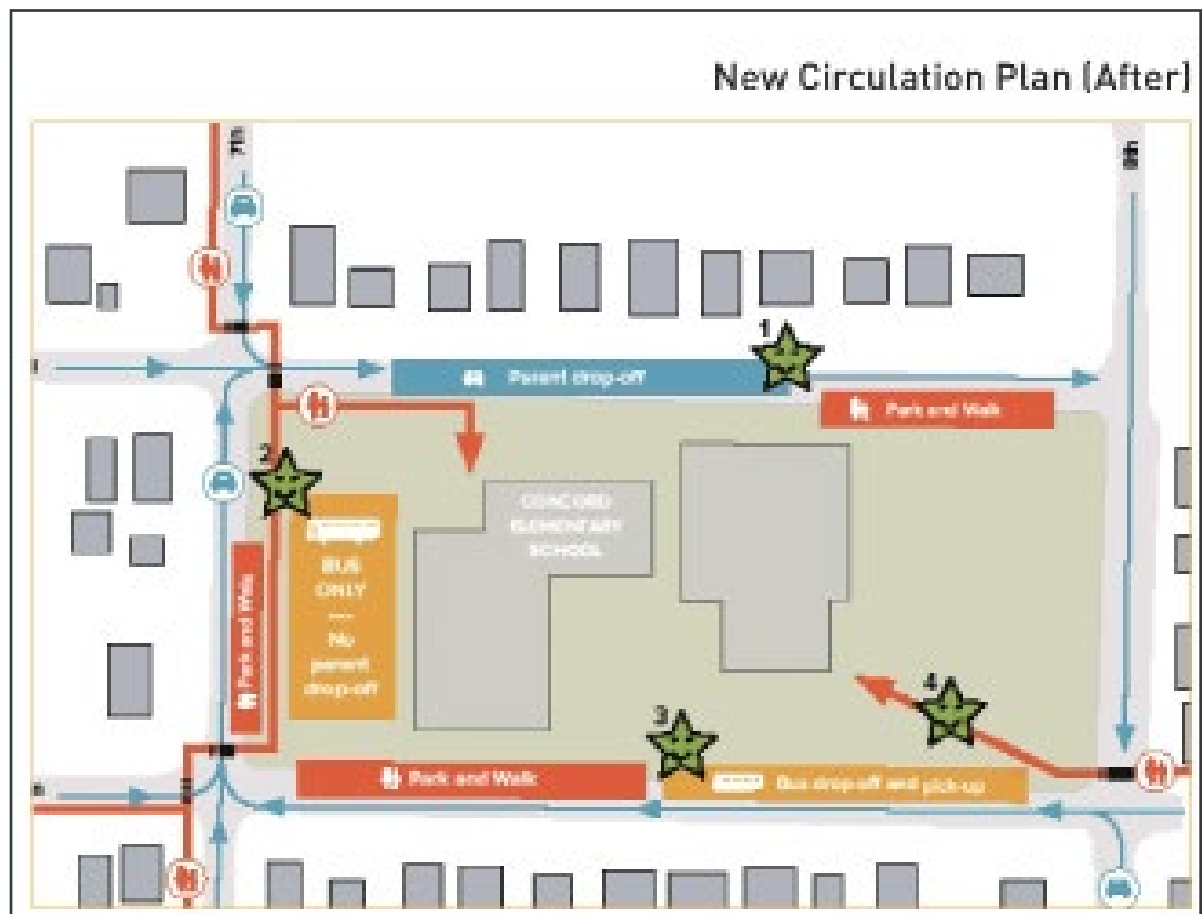
Right: An example of on-street drop off. Circulation plan shows parent drop off is only on the north side of the school, separate from bus loading. The parking lot is closed to families. There are designated walkways outside of the drop off areas for students to walk. From Improve Your School Arrival and Departure Procedures: A Toolkit for School Safety Committees, Feet First.

Operational and Programmatic Strategies

Operational and programmatic strategies include arrival and dismissal procedures and supportive programs that can improve driver behavior, reduce or eliminate interaction between cars and students walking and bicycling, and promote more walking and bicycling overall. Operational and programmatic approaches encompass strategies from the Encouragement "E" of Safe Routes to School. Here are some operational and programmatic strategies that can be considered.

1. Staggered Dismissal

Staggering dismissal times reduces the amount of congestion at and around the school during peak times. Dismissal times can be staggered by grade to reduce the number of parents picking up at once. Dismissal times can also be staggered by mode of travel to reduce conflicts between the different modes. If you are staggering dismissal by mode of travel, walkers and bicyclists should always be dismissed first as to not discourage walking and biking.

2. Remote Drop Off/Pick Up

One way to reduce traffic congestion at the school campus is to designate areas away from the campus for parents to drop off and pick up their children. These are also called "walk on in" programs. In a remote drop off program, children are driven most of the way to school, but are then dropped off a short distance from school – often a quarter mile – so they can walk the remainder of the way. A remote drop off site may be a park, a parking lot, a church, or anywhere else where students can be easily dropped off, can safely congregate, and can follow a relatively safe route to the school.

Once children are dropped off, they may be accompanied to school by a school bus driver, teacher, or adult volunteer, or may walk on their own, depending on their age and how the program is structured. Some school transportation departments have school buses drop students off at remote drop off sites as well.

Besides reducing traffic congestion at the school campus, remote drop off programs can have a physical activity goal. In such programs, the remote drop off locations may be located further away to increase the distance students are walking.

Above: Dismissal procedures from Langston Hughes Elementary

Image: Orange County Health Care Agency

3. Walking School Bus

A walking school bus is a way for children to travel to and from school on foot with adult supervision. It offers a safe, dependable, active way for children to get to school versus being driven in a car. It reduces the number of cars at and around the school, while encouraging students to walk. Each "bus" walks along a set route with one or more adults leading it, picking children up at designated stops along a predetermined route and walking them to school. The process is reversed in the afternoons on the way home from school. Refer to Step by Step: How to Start a Walking School Bus at Your School for more information.

4. Assisting Students with Exiting/Entering Cars (Valet System)

While a valet system on its own does not improve arrival and dismissal for walking and bicycling, in can lead to more organized drop off and pick up and reinforce proper driver behavior. In a valet system, staff, volunteers, or older students help students enter and exit cars by prompting cars to move forward in the line, opening doors, and helping students enter/exit safely to/from the curb. The valets can encourage students to exit on the right side of the car and discourage cars from cutting around one another. A best practice to reduce delays and promote organization is to load and unload multiple cars at a time by having three to four cars pull into the designated area at once.

5. Encouraging Carpooling

Carpooling does not necessarily encourage walking and bicycling, but it can reduce the number of cars at and around the school during peak hours, which can reduce conflicts and improve safety and comfort overall. Some schools encourage carpooling by creating a priority lane for carpool pick up/drop off or only allowing carpool cars to enter the lane during certain hours (i.e. first at pick up). An online or other matching program can help families find carpool partners.

Additional Resources

- School On-Site Design from Institute of Transportation Engineers provides additional information on engineering strategies to improve school campuses for students walking and bicycling.

- Walk to school? But how do I find the front door from WalkBoston provides guidance on creating a walkable school campus.

- Improve Your School Arrival and Departure Procedures: A Toolkit for School Safety Committees from Feet First provides worksheets and templates for school and parent groups to assess and implement changes to school arrival and dismissal.

- Best Practices Guide for School Carpool Lines from Clean Air Carolina provides additional information about organizing a successful carpool program.

Education Strategies

A successful arrival and dismissal program must include educating students and families on the arrival and dismissal procedures and proper behaviors. Here are some strategies to provide education around arrival and dismissal.

1. Education

Education should include clear and consistent communication on procedures to both students and families. We all need reminders! Communication should happen multiple times a year: when school starts, at the start of a new term, and periodically throughout the year as needed. To reach every family, a good rule of thumb is to use at least five different communication methods.[7] What works best for each school may vary.

Strategies include:

- Automated phone calls
- Information tables at school events
- PTA meeting presentations
- Website
- Social media
- Listserv or other email reminders
- Flyers
- School newsletters
- Signs on campus

In addition to these, the information should be provided in start of the year paperwork, enrollment packets and/or school handbooks. Circulation plans are helpful in providing clear direction to families and students. It may be best to have a graphic designer or someone with graphic communications experience create the plans to ensure they are easy for families understand. Make sure to provide materials in the languages spoken by your school's families.

Other educational program strategies include:

- **Student safety patrols.** Upper grade students are trained to assist other students with navigating challenging areas like driveways and reinforcing safe behaviors with the support of school staff, adult volunteers or crossing guards.

- **Crossing guards.** Crossing guards can promote safe behaviors of students walking and biking as well as remind drivers of the rules.

- **Verbal and written reminders from school staff.** This could include "reminder slips" that are placed on cars or handed out by school staff or verbal reminders for drivers as well as students.

Conclusion

Improving school arrival and dismissal can be transformative, changing the critical time at the start and end of the school day from a chaotic, stressful experience to one where students and families feel comfortable, relaxed, and welcomed. By taking the steps suggested in this resource, you can assess existing conditions, identify areas that could be improved, and work with partners to make change.

References

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