



Tip Sheet #3 Bike Parking, Storage and Security

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Learning to ride a bicycle can be one of the most exhilarating moments in a child's life. Providing safe and accessible bicycle parking at schools and in the community is one way to ensure that the exhilaration of riding a bicycle continues beyond that first ride. Schools interested in being supportive of children riding bicycles, scooters and skateboards to the school should make bicycle parking and storage at the school a priority. The following tip sheet provides guidance to districts, school staff, and parents in either building or improving school bicycle and skateboard parking and storage that accommodates students who choose to wheel their way to school.

Getting Started

The idea of approaching a project such as the installation of bicycle or skateboard racks can sometimes deter advocates from further pursuit. There are various factors to consider from funding, to design, to installation, and if the process is approached strategically, achieving great and accommodating bicycle racks can actually be a snap.

Talk to the Right People

If you believe there is a need for bicycle racks or storage at your school you'll want to make sure that you are talking to the right people. Presenting the topic at a PTA meeting, for instance, can help draw in important partners and energize them around the benefits of bicycle parking. The school principal will provide ultimate approval so it is good to approach them after garnering some parental or even staff support. Before approaching the principal, do your research. Why does the school need bicycle racks? What are some of the best solutions for the school? How will these solutions benefit the principal and their school? Oftentimes partnering with the city during the process can be of benefit as it may offer design advice, free racks to schools and possibly even pay for the installation.



Roosevelt Middle School
Eugene, OR

One of the first Safe Routes to School projects in Eugene, Oregon was addressing the bicycle parking issues at Roosevelt Middle School. The school originally had 15-20 wheel bender bike racks that met capacity but provided what was considered sub-par bicycle parking. After struggling to fund the project with Safe Routes to School federal money, local advocates connected with the nearby University of Oregon architecture program, Design Bridge. Working with the middle school students, Design Bridge students conducted planning charrettes and created several possible bicycle parking designs. They then worked with the city to permit the racks, and ultimately rewrote the racks into a federal infrastructure grant request that was funded. The new staple racks have a 120-bicycle capacity with almost half of the racks covered, to protect bicycles from inclement weather. Since the installation of the racks at Roosevelt Middle School student ridership has more than doubled from seven percent to 15 percent of the schools population.

Planning for Bicycle Racks

Once you have gathered support for new racks, planning for the ultimate installation includes several additional steps. To ensure that bicycle parking is in plain view, easy to use, ample and safe, work with stakeholders and the principal to investigate how the racks can be funded, the types of racks to be installed, as well as number and location of the racks.

Funding Bicycle Racks or Storage

There are numerous ways to fund school bicycle racks, the following list is just a start, and the only limit is one's creativity:

- Safe Routes to School, Transportation Enhancements or other federal funding grants or mini-grants
- City or County programs that offer free bike racks
- Foundations whose goals include addressing childhood obesity, active lifestyles, environment, etc.
- Parent-led fundraising efforts such as a bicycle ride event
- The school district or transportation departments
- Volunteer installation with material donation

from local hardware, steel manufacturer, etc.

- Individual donors
- Local corporations or retail businesses such as bicycle clubs, team, shops, outdoor retailers
- Student built racks: high school bicycle, art or welding classes, clubs, etc.
- Work creatively with community groups to fund and/or build racks
- Consider funding the donation of locks for low-income students, or a long cable to secure an entire rack

Finding the Right Location

Unfortunately, many school bicycle racks have been known to be relegated to the back of the school, behind dumpsters, across parking lots, in isolated, quiet areas around the school where they are not visible to students and are less secure. Schools that prioritize bicycling and want to advocate for students and staff using bicycles for transportation will locate bicycle racks near a main entrance where frequent foot traffic will deter would-be thieves or vandals and help to promote bicycling. (Racks should be placed where they will not block the normal path of pedestrian foot traffic). Locating the racks on a concrete slab (instead of dirt) in locations that don't require students to interact with automobile traffic is ideal. In areas with frequent snow and/or rain during the school year, racks that include protection from inclement weather are also helpful. Bicycle racks do not have to be placed on school property if there is space next to the school that is easily and safely accessible. For instance, a community center, library or YMCA next door to the school may be an ideal place for racks, especially if the school property is small and there isn't enough appropriate space on campus for racks.

Deciding How Many Racks to Install

There are existing formulas to aid communities in deciding on the number of racks to provide at any given facility. The formulas, which are generally based on the percentage of commuters in the community and the facility's use, cover a broad range that ultimately can only be refined locally through trial and error. In general, formulas are outlined in the school district and/or city policy. Inquire at the city

Casey Middle School

Boulder, CO

In 2009, Casey Middle School received a school bond-funded redesign that gave a complete makeover to the entire school. The building contractor, who was pursuing a gold level Leadership in Energy and Environmental Design (LEED) certification for the building, implemented a unique bicycle rack. The 50 staple racks were installed underneath the framework of an elevated solar panel system that supports the school's energy needs and protects bicycles from the elements. Since the school has reopened, Casey Middle School has seen an over three-fold increase in the number of students bicycling to school.

or district to investigate the details of your local formula. This formula should be used as a starting point, and when necessary, bicycle rack capacity should be expanded to accommodate growing numbers of bicyclists.



Grid racks can cause toppled and inadequately locked bicycles.

Beach Elementary

Portland, OR

After parent advocates successfully advocated to overturn the principal's "no bicycling" policy at Beach Elementary, the school sought to install bicycle racks for the growing number of students and families in the neighborhood interested in bicycling. The City of Portland, which installs free bicycle racks on request, installed three racks in front of the school to accommodate new bicyclists and Beach Elementary's burgeoning 'Bike Train' program. The three racks were immediately filled with bicycles so the City added another four racks, which were also immediately filled. Finally, the City expanded bicycle parking to 20 inverted U-shaped, or staple racks that are filled to capacity almost every school day, securing up to forty bicycles.

Choosing the Right Style Rack

Historically, the most common bicycle rack found in school yards is a grid rack, often referred to as a "wheelbender". While these racks are easy for students to roll their bicycles in and out of, they don't have two contact points to rest the bicycle against, which easily allows bicycles to fall over on each other, sometimes bending the front wheel. The grid racks also make it very difficult to lock both the bicycle frame and wheel(s) to the rack (and virtually impossible with a U-lock). This is especially important for modern bicycles that have a quick-release front and/or rear wheel. It is quite easy to remove a quick-release front or rear wheel from the bicycle by hand (even with a lock attached to it) and simply walk away with the rest of the bicycle if the frame is not also locked.

Alternatives to the grid rack are abundant. There are many styles of racks that can be installed at schools depending on the amount of space and number of users. While options include staple racks (inverted U or 'staple' shape), wave racks and custom designs, schools should be certain to only install racks that:

- Support the bicycle frame at two touch points, allowing at least one of the frame's main triangles and front wheel to be locked to the rack

- Have enough space in between racks and bicycles to allow students to move freely and to prevent bicycles from touching each other.
- Are securely mounted into the ground or bolted to the sidewalk or concrete slab
- Are resistant to cutting, rusting, or bending.

Because of these considerations, bicycle "parking lots" filled with staple racks have become a favorite of schools installing new bicycle racks.

Rack Installation

Your school or school district may have strict rules about who can install facilities such as bicycle racks on the school campus. Usually, a district's school facilities management staff have the authority to install bicycle racks on a school campus. However, in some cases a principal can authorize parent/community volunteers, and/or a licensed volunteer contractor (who could be a parent donating services), or a paid contractor to install the rack(s). Check with your school to see who can install bicycle racks, and if there is a policy concerning the type, placement and installation of racks on the campus.

Rack Maintenance and Education

Well-used bicycle racks don't exist just because someone installed quality racks. Taking time at the beginning of the school year to educate students and staff on effective use and access of the racks, good bicycle locking techniques, and common rack courtesy is a wise investment in a year of burgeoning bicycle use. Planting a knowledgeable staff member or parent volunteer at the racks at the beginning of the year to assist students and educate on proper usage is a great technique to avoid a mess of improperly secured bicycles.



In 2003, Ashland, Oregon resident Denny Graham noticed that there was a problem with student skateboarders getting their boards taken on the campus of Ashland High School. "...they provided parking spaces for cars, racks for bikes, but there [was] no place to put a skateboard, which is a legitimate mode of transportation." Skateboarding is very popular in this scenic and bike-friendly southern Oregon tourist town of 20,000, which also has its own public skate park. Graham's wife Sue, a long-time Ashland School District volunteer and the volunteer coordinator, approached Principal Jeff Schlecht to see if the school would be interested in finding a resolution. Ultimately, the school installed 12 racks, designed by Graham, bolted into cement next to the school's bicycle racks and securing up to 48 skateboards. Ashland Middle School quickly followed suit. Schlecht said the innovation was "a welcome addition to the campus. Skateboarders have felt as if they are harassed or picked on," he said, "And, I'm talking to skateboarders and they seem to be kind of relieved." The racks have also improved skateboarder behaviors on campus at both schools.

Scooters and Skateboards

While considering bicycle racks at your school is important, inclusion of space for those using scooters and skateboards is ideal, as many students prefer scooters and skateboards. Schools can provide outdoor scooter/skateboard specific racks at the school, or skateboard and scooter lockers or rooms indoors that allow students to safely store their wheels during the school day without taking up space in classrooms. There are a number of skateboard rack vendors available, offering free standing and wall mount racks for multiple skateboards. Students must use a padlock to secure their board to the rack, which a school or PTA may decide to donate, especially for low-income students. A secure skateboard rack will cover both the 'chucks' and screw heads on the board to prevent removal of one or both chucks with a screwdriver, thereby freeing the skateboard from the rack.

Security

Providing safe, accessible, well designed and built racks is only the first piece of the equation. Students need a reliable and easily transportable way to secure their bicycles to the rack. For adults this step is fairly straightforward but for students, there are additional considerations for each solution.

U Locks

Arguably the most secure option for locking a bicycle, the U-lock, named for its shape, is a strong but moderately heavy solution that works well for locking both the frame and the wheel of a bicycle to the rack. Many U-locks come with a mount that allows the bicyclist to attach the lock to their bicycle for transport. Albeit a more costly solution than other locks, the U-lock is a great option for students with quality bicycles that they intend to keep. Parents should consider the combination U-lock over the key U-lock for children who frequently lose things like keys.

Cable Locks

Cable locks, which are usually several feet of braided cable with a built in locking mechanism, are fairly light and can be wrapped around many different objects. Slightly more affordable than a U-lock, cable locks are often the preferred method of students and parents



because of their weight, cost, and ability to attach to most objects easily. But depending on the quality of the cable lock, many can be easily cut with garden shears or wire cutters and are therefore less secure and not advised for more expensive bicycles. Parents should consider the combination cable lock over the key cable lock for children who frequently lose things like keys.

Creative Solutions for Low Income Schools

In many situations it is unrealistic to depend on the students to buy their own quality locks. Schools with these types of concerns can approach this with several creative (and effective) solutions.



Cages

Schools with a lot of bicycling students and staff can surround their bicycle parking area with fencing, acting as a security cage, or within a common area surrounded by walls on up to three sides, such as a courtyard. The fencing can be from three feet to over six feet high, and can even be locked during the school day. In this scenario, at the beginning of the school day, after classes start, one of the school staff or a volunteer locks the cage door or gate and reopens the cage at the end of the school day, or when a student needs to leave school early; however, this aspect can be time-consuming for the school personnel throughout the day. For students who don't own a lock, such as at schools with low-income students, and in high crime neighborhoods, this solution provides students with the opportunity to ride a bicycle to school.

Other Solutions

In other instances, schools with inadequate bicycle parking and no access to cages have engaged a temporary solution of utilizing a very long heavy braided cable lock to lock many student bicycles together at the beginning of the school day. In the total absence of outdoor parking, some schools have allowed students to park their bicycles in an empty classroom, basement, behind the theater stage, in the school gym, or other areas with unused space. This solution is especially prevalent in schools with a high number of scooter or skateboard users, and schools with a lot of bicyclists, and on a small school campus.

Bicycle Parking Policies

While many cities institute bicycle parking formulas and rules within their city's policies, most schools and their districts have no blueprint for the installation of parking facilities for students at schools. Positive bicycle parking policies can be extremely influential on the mode choice of students and parents and is an important piece in the overall puzzle that creates opportunities for students to arrive at school by something other than a car or bus. At the district level, it is beneficial to work towards adopting a unified policy on bicycle parking standards that will promise adequate parking for all schools.

Many schools also institute a bicycle, skateboard or scooter policy not allowing students to use these modes on campus to protect pedestrian safety. In these cases, the school can offer a route through campus, if possible, for bicycles, skateboards and scooters to get to the racks, cage or other type of storage area.



photo : pedbikeimages.org - MikeCynecki

Resources

Bicycle Parking Guidelines 2nd Edition 2010 (\$) by Association of Pedestrian and Bicycle Professionals

<http://www.apbp.org/?page=Publications>

Bicycle Parking Guidelines 1st Edition 2002 (Free) by Association of Pedestrian and Bicycle Professionals

<http://www.apbp.org/link.asp?ymlink=17534>

Safe Routes to School Bicycle Parking Guide by Dero

<http://www.dero.com/brochures/srts.pdf>

Bicycle Parking

<http://www.bicyclinginfo.org/engineering/parking.cfm>

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The mission of the Safe Routes to School National Partnership is to advocate for safe walking and bicycling to and from schools, and in daily life, to improve the health and well-being of America's children and to foster the creation of livable, sustainable communities. More information can be found at www.saferoutespartnership.org.