

Bike Parking at Southwest Vermont Supervisory Union Schools



Bennington County Regional Commission
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Bike parking outside an elementary school in Cambridge, MA (on a Sunday). Variation on Post & Ring bike parking.



Post & Ring Bike parking outside a high school in Cambridge, MA (on a Sunday).



Ring Bike parking outside a junior high school in Cambridge, MA (on a Sunday).

Introduction

The Southwest Vermont Supervisory Union (SVSU) asked the Bennington County Regional Commission (BCRC) to evaluate school bike parking at SVSU's eight schools. Active school transportation, such as walking or biking, increases physical activity levels which has health and academic benefits for children. Bike parking has been shown to increase the number of students who bike to school (CDC).

Good bike parking is an inexpensive way to increase active transportation trips to school. According to a 2014 [CDC study](#), after adjusting for factors such as distance students live from school, three factors were shown to significantly affect the percentage of students walking or biking to school: paid or volunteer crossing guards, providing promotional materials to students and families on walking or biking to school, and **bike racks**. The adjusted odds of having 26% or more students walk or bike to school was significantly higher among schools with bike racks.

Six of the eight schools we evaluated have bike parking. (Woodford and Pownal elementary schools are on state highways and are not safe for students to bike to and do not have bike racks.) While all six of the schools that *are* safe to bike to have bike racks, the bike parking is poor quality. For example, all six schools use bike rack types that are listed as "AVOID" by the Association of Pedestrian and Bicycle Professionals (APBP). One school stood out in its lack of adequate bike parking – Mt. Anthony Union High School has only one small substandard rack inconveniently located at the rear of the school, a situation that likely discourages students from biking to school. When we visited, more bikes were locked to bleachers and signs than to the bike rack. Since many of MAUHS' students live within easy cycling distance from school, the lack of quality bike parking seems like a missed opportunity to develop good active transportation habits among its students.

Overall Recommendations

Bike parking should be secure, convenient, and visible from the entrance it serves. Weather protected parking makes bicycle transportation more viable for daily and year-round use.

Bike parking should have two points of contact with the bicycle frame, should be intuitive to use, and accommodate a variety of bicycles and attachments.

[Recommended Bike Racks \(APBP\)](#)

Post & Ring Common style appropriate for many uses; one point of ground contact. Compared to inverted-U racks, these are less prone to unintended perpendicular parking.



Inverted U, Ring Common style appropriate for many uses; two points of ground contact. They can be installed in series on rails to create a free-standing parking area in variable quantities. Available in many variations.



Racks to Avoid

Wave Not intuitive or user-friendly; real-world use of this style often falls short of expectations; supports bike frame at only one location when used as intended.



Schoolyard/Grid/ Does not allow locking of frame and can lead to wheel damage. Inappropriate for most public uses, but useful for temporary attended bike storage at events and in locations with no theft concerns.



Schoolyard racks are intended to be used from both sides. For example, the MAUHS rack is too close to the wall so part of it cannot be used.

Capacity

There is little guidance in planning literature about the number of bike parking spaces needed for schools. We did find a recommended requirement in the Institute of *Transportation Engineer's Promoting Sustainable Transportation Through Site Design* which recommends bike parking to accommodate 10% of a school's students and 3% of its employees. In our rural and cold region, bike parking that accommodates just 5% of a school's students may be adequate. If the SVSU had a comprehen-

sive program to promote active transportation, it seems reasonable that at least 5% of students might bike to school on a nice day.

The key factor for bike parking capacity is that there are always a few spaces available on peak days and that the lack of bike parking is not a deterrent for students or staff who want to bike to school. We recommend that schools have bike parking to accommodate at least 5% of the student population and that additional bike parking is added if needed.

Resources:

[Essentials of Bike Parking](#): Association of Pedestrian and Bicycle Professionals

[School Bike Parking Guide](#): New Jersey Department of Transportation and the Federal Highway Administration



MAUHS' inconveniently located bike rack does not allow locking of the frame and can cause front wheel damage.

Mount Anthony Union High School

Bike Parking Grade: F

The lack of adequate bike parking at the high school is a deterrent to biking to school.

Rack Quality

The rack is a Schoolyard rack which is not recommended because it does not allow locking of the frame and can lead to wheel damage. In addition, MAUHS' rack is too close to the wall, so only part of the rack can be used.

Parking Location

MAUHS' bike rack is in a remote, inconvenient spot behind the school, far from the main entrance. Many students may not even be aware of the rack because it is in such an inconspicuous location.

Parking Capacity

846 students (last year)

4 bike parking spots (approximately)

<1% capacity (1 bike parking spot for every 212 students)

The bike rack is too small for such a large school.

Recommendations

MAUHS is located in Bennington's largest residential neighborhood and within easy cycling distance from many students' homes. Installing convenient, safe and attractive bike parking will encourage more students to bike to school (see CDC report).

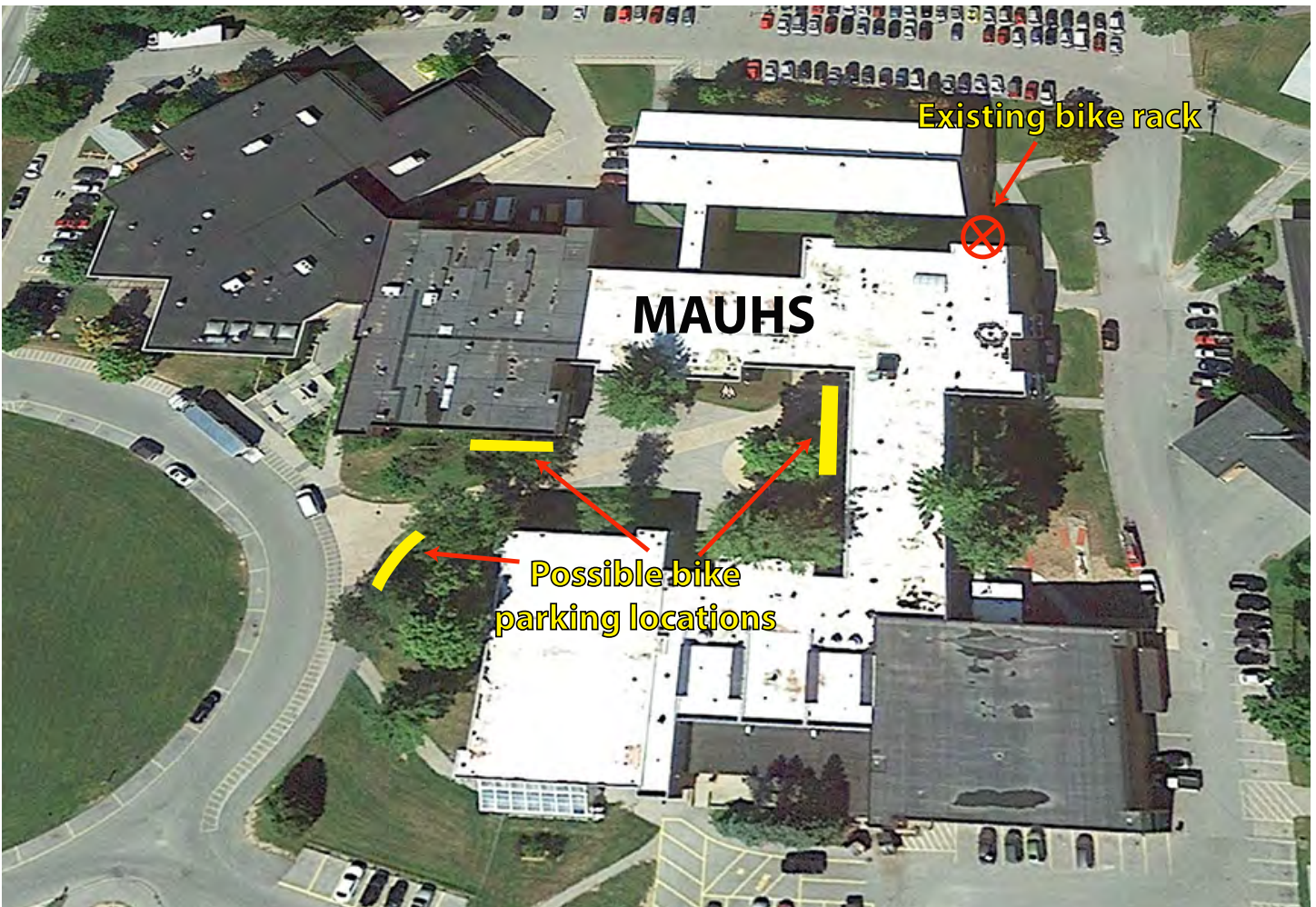


Most students who bike to MAUHS don't use the school's bike rack, which is located far from the main entrance.



Potential locations for bike parking at MAUHS

- Short-term: move existing rack to a location near the front entrance and install so both sides can be used.
- Install new Post & Ring, Ring, or Inverted U bike parking in a site that is convenient to the main entrance. We have identified some possible locations for bike parking (see illustrations).
- Install an adequate amount of bike parking. While it is hard to say what capacity is needed, parking for 20-25 bikes may be a good starting point. More should be added if needed with a long term-goal of enough bike parking for 5% of the student population. There should always be a few empty spots available at peak parking times.
- Consider covering the bike parking to protect it from rain and snow.



Molly Stark School

Bike Parking Grade: C-

Rack Quality

The rack is a Schoolyard rack which is not recommended because it does not allow locking of the frame and can lead to wheel damage.

Parking Location

The bike parking is conveniently located next to the main entrance and is properly installed with plenty of clearance.

Bike Parking Capacity

379 students (last year)

8 bike parking spots (approximately)

2% capacity (5% or greater recommended)

Recommendations

- Replace the Schoolyard racks with Post & Ring, Ring, or Inverted U bike racks.
- Install enough bike parking to accommodate 5% or more of the student population.
- Consider covering the bike parking to protect it from rain and snow.



Molly Stark's bike rack is conveniently located but does not allow locking of the frame and can cause front wheel damage.

Shaftsbury Elementary

Bike Parking Grade: C-

Rack Quality

The school has Wave racks installed which are not recommended because they are unintuitive and only have one touch point to the bike frame and are more difficult to use than Post & Ring, Ring, or Inverted U parking.

Parking Location

The school's bike parking is near the basketball court and public playground approximately 250' from the main entrance – a good location for the playground, but fairly far from the school's main entrance, windows, and security cameras.

Parking Capacity

221 students (last year)

8 bike parking spots (approximately)

4% capacity (5% or greater recommended)



Shaftsbury Elementary's bike rack is a Wave Rack which only supports the bike frame in one location and is not recommended.

Recommendations

- Replace the Wave racks with Post & Ring, Ring, or Inverted U bike racks.
- Retain existing bike parking near the playground but add additional bike parking closer to the main entrance where it can be easily seen from windows within the school or by security cameras.
- Install enough bike parking to accommodate 5% or more of the student population.
- Consider covering the bike parking to protect it from rain and snow.

Mount Anthony Union Middle School

Bicycle Parking Grade: C-

Rack Quality

The school has Wave racks installed which are not recommended because they are unintuitive and only have one touch point to the bike frame and are more difficult to use than Post & Ring, Ring, or Inverted U parking.

Parking Location

The bike parking is conveniently located in sight of the main entrance and is properly installed with plenty of clearance. A negative is the racks are in the open and not covered.

Parking Capacity

610 students (last year)

15 bike parking spots (approximately)

2% capacity (5% or greater recommended)

Recommendations

- Replace the Wave racks with Post & Ring, Ring, or Inverted U bike racks.
- Install enough bike parking to accommodate 5% or more of the student population.
- Consider covering the bike parking to protect it from rain and snow.

Monument Elementary

Bicycle Parking Grade: C

Rack Quality

The rack is a Schoolyard rack which is not recommended because it does not allow locking of the frame and can lead to wheel damage.



MAUMS bike rack is a Wave Rack which only supports the bike frame in one location and is not recommended.



Monument Elementary's bike rack does not allow locking of the frame and can cause front wheel damage.

Parking Location

The rack is located near the rear entrance to the school. The rack is installed properly. Both sides of the rack can be used.

Bike Parking Capacity

139 students (last year)

8 bike parking spots (approximately)

6% capacity (5% or greater recommended)

Recommendations

- Replace the Schoolyard racks with Post & Ring, Ring, or Inverted U bike racks.
- Consider relocating the racks so they are within sight of the main entrance in front of the school.
- Consider covering the bike parking to protect it from rain and snow.

Bennington Elementary

Bicycle Parking Grade: C

Rack Quality

The rack is a Schoolyard rack which is not recommended because it does not allow locking of the frame and can lead to wheel damage.

Parking Location

The school's bike rack is fairly convenient. It is located approximately 150' north of the school entrance, and while not completely visible from the entrance it is visible from the sidewalk in front of the school. A negative is security – the rack is not highly visible from windows. There are security cameras nearby, but it is not clear if they show the bike parking. The rack is not protected from rain or snow.

Parking Capacity

255 students (last year)

14 bike parking spots (approximately)

5% capacity (5% or greater recommended)

Recommendations

- Replace schoolyard style rack with Post & Ring, Ring, or Inverted U racks.
- Move the bike parking so that it is visible from the main entrance and can be easily seen from windows within the school.
- Consider covering the bike parking to protect it from rain and snow.



Bennington Elementary's bike rack does not allow locking of the frame and can cause front wheel damage.

Woodford Hollow Elementary

There is no bike parking. The school is located on Route VT9 and there is no safe biking route to school.

Pownal Elementary

There is no bike parking. The school is located on Route VT7 and there is no safe biking route to school.

Summary Table

School	Bike parking grade	Students in '18	Bike Parking Capacity	% Spaces per student (5% or > recommended)	Rack Type	Recommended
MAUHS	F	846	4	<1%	Schoolyard	No
Molly Stark	C-	379	8	2%	Schoolyard	No
Shaftsbury	C-	221	8	4%	Wave	No
MAUMS	C-	610	15	2%	Wave	No
Monument	C	139	8	6%	Schoolyard	No
Benn El	C	255	14	5%	Schoolyard	No