



City of
SACRAMENTO

Bike Rack Design and Placement Design Standards

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Overview

Sacramento has been a city supportive of bicycling for over 40 years, since the 1975 “Sacramento Bikeways Master Plan” and since then, the City and its partners have been installing bicycling parking. This Guide outlines how bicycle parking is installed in Sacramento and provides specific design guidelines for the type of bicycle parking permitted.

Bicycle parking in the City is installed one of three ways:

1. City installation as part of the *Public Bicycle Rack Program*
2. Installation on public and private property with new development projects
3. Installation on public and private property at existing buildings by property/building owner

Public Bicycle Rack Program

The Public Bicycle Rack Program installs new bicycle parking racks on City owned property (or right-of-way, ROW) free to businesses and property owners. The program process includes:

- Submission of an [application](#)
- City staff review of site for meeting qualifying criteria
- Installation, if feasible and available funding

Through this program, the City will install available bicycle racks which may be one of the approved designs illustrated on page 3.

Installation with New Development

Sacramento City Code [17.608.030](#) requires bicycle parking installation with new development. Bicycle racks installed as part of new development should meet the design and placement guidelines outlined here.

Installation at Existing Buildings

Some property and building owners want to encourage bicycle travel and install bicycle parking and racks on their property. Private property owners can also install bicycle parking on the public ROW with an encroachment permit.

Design Specifications

Bicycle racks can be designed to suit specific needs and aesthetic preferences

Bicycle rack design criteria described below applies to all bicycle racks installed in the public ROW and those required as part of new development. The criteria below is strongly informed by the Association of Pedestrian and Bicycle Professionals (APBP) 2015 [Essentials of Bike Parking](#).

Table 1: Bike Rack Design Criteria

Criteria	Description
Supports the bike upright without putting stress on wheels	The rack should provide two points of contact with the frame. The rack's high point should be at least 32" high.
Accommodates a variety of bicycles and attachments	The racks recommended on page 3 serve nearly all common types of bicycle styles and attachments (baskets, racks, etc.) – if installed with proper clearances.
Allows locking of frame and at least one wheel with a u-lock	A closed loop of the rack should allow a single u-lock to capture one wheel and one closed section of the bike frame. Rack tubes with a cross section larger than 2" can complicate the use of smaller u-locks.
Provides security and longevity features appropriate for the intended location	Steel and stainless steel are common and appropriate materials for most general-use racks. Use tamper-resistant mounting hardware.
Rack use is intuitive	First-time users should recognize the rack as bicycle parking and should be able to use it without the need for written instructions.
Ensure each short-term space is accessible	The short-term rack should not require the user to lift the bicycle or move another bicycle.

The racks shown on the following page meet these criteria.

Short Term Parking

Short term bike parking serves those who leave their bicycles for relatively short periods of time, typically for shopping or errands, eating or recreation. Bicycle racks provide a high level of convenience by being readily visible and moderate level of security.

Rack Styles

The follow racks styles are approved for use in Sacramento.

RACKS FOR ALL APPLICATIONS

When properly designed and installed, these rack styles typically meet all performance criteria and are appropriate for use in nearly any application.

INVERTED U

also called
staple, loop



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

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. Products exist for converting unused parking meter posts.

WHEELWELL-SECURE



Includes an element that cradles one wheel. Design and performance vary by manufacturer; typically contains bikes well, which is desirable for long-term parking and in large-scale installations (e.g. campus); accommodates fewer bicycle types and attachments than the two styles above.

Source: *Essentials of Bike Parking, APBP 2015*

Bicycle racks can be a great opportunity to add art to our streets. The City encourages art bicycle racks as long as it meets the design criteria in Table 1: Bike Rack Design Criteria on page 2. To ensure art racks function, any rack not of the design shown above must be approved by the City's Active Transportation Program Specialist prior to installation.

Racks NOT Approved

These racks may **not** be installed in the public ROW or as part of an approvals process.

WAVE
also called undulating
or serpentine



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
also called
comb, 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. Sometimes preferred by recreational riders, who may travel without locks and tend to monitor their bikes while parked.

COATHANGER



This style has a top bar that limits the types of bikes it can accommodate.

WHEELWELL



Racks that cradle bicycles with only a wheelwell do not provide suitable security, pose a tripping hazard, and can lead to wheel damage.

BOLLARD



This style typically does not appropriately support a bike's frame at two separate locations.

SPIRAL



Despite possible aesthetic appeal, spiral racks have functional downsides related to access, real-world use, and the need to lift a wheel to park.

**SWING ARM
SECURED**



These racks are intended to capture a bike's frame and both wheels with a pivoting arm. In practice, they accommodate only limited bike types and have moving parts that create unneeded complications.

Placement

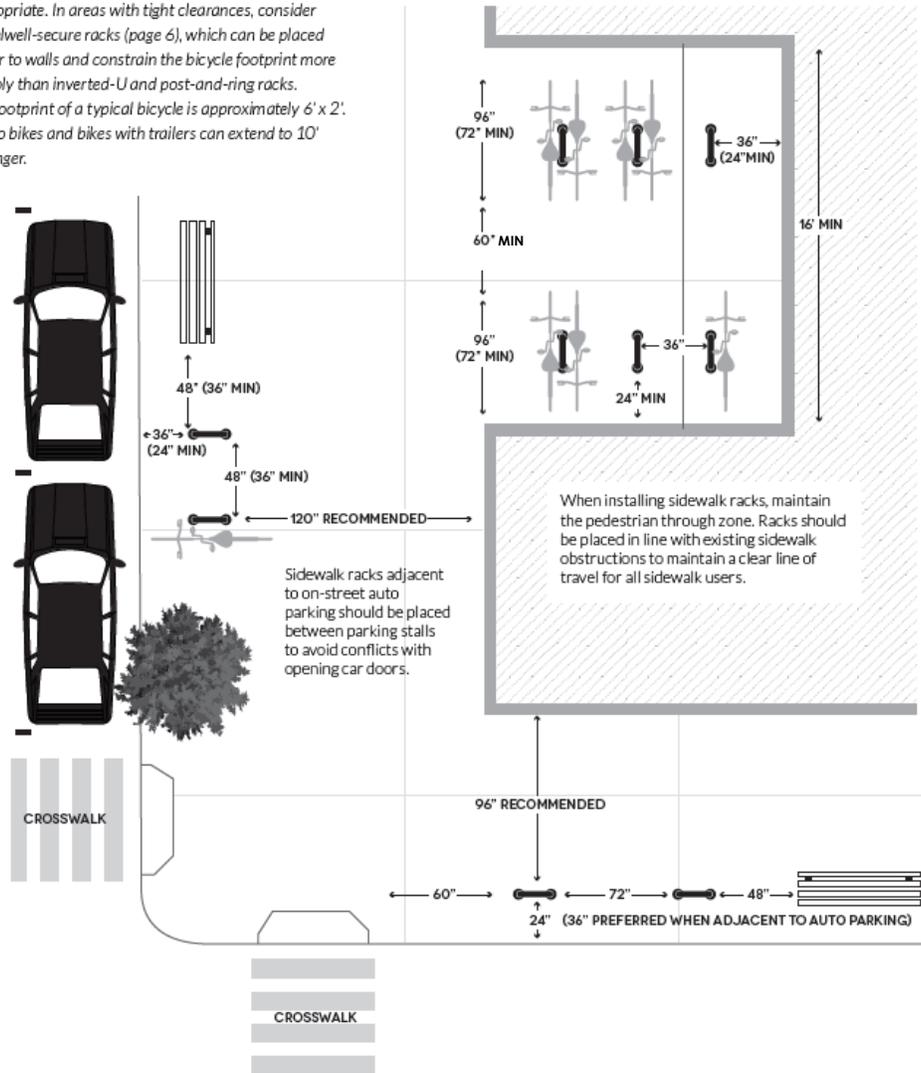
Bicycle racks installed in the public ROW and as part of new development should be:

- Located within 200 feet of the destination they serve.
- Placed in a visible and well-lit area
- Placed with considerations for site conditions (trees, street furniture, etc.)

Weather protection, such as covered bike parking, makes travel by bicycle more viable year round, and should be considered.

The following provides design guidance. Site conditions should be considered when developing the specific design.

The following minimum spacing requirements apply to some common installations of fixtures like inverted-U or post-and-ring racks that park one bicycle roughly centered on each side of the rack. Recommended clearances are given first, with minimums in parentheses where appropriate. In areas with tight clearances, consider wheelwell-secure racks (page 6), which can be placed closer to walls and constrain the bicycle footprint more reliably than inverted-U and post-and-ring racks. The footprint of a typical bicycle is approximately 6' x 2'. Cargo bikes and bikes with trailers can extend to 10' or longer.



Source: *Essentials of Bike Parking, APBP 2015*

Long Term Parking

Long-term bike parking includes bike lockers and secure parking areas (SPAs) and serves those who intend to leave their bicycles for longer periods of time and are typically found at transit stations, multifamily residential buildings and commercial buildings. These facilities provide a higher level of security than racks.

Rack Styles

In addition to the approved short term rack styles shown on page 3, the following high density racks may be used for long-term parking.

HIGH-DENSITY RACKS

These rack styles do not meet all performance criteria but may be appropriate in certain constrained situations.

High-density rack systems can maximize the use of limited parking space, but they don't work for all users or bicycles. If installing these racks, reserve additional parking that accommodates bicycles with both wheels on the ground for users who are not able to lift a bicycle or operate a two-tier rack, or for bikes that are not compatible with two-tier or vertical racks.

STAGGERED WHEELWELL-SECURE



Variation of the wheelwell-secure rack designed to stagger handlebars vertically or horizontally to increase parking density. Reduces usability and limits kinds of bikes accommodated, but contains bikes well and aids in fitting more parking in constrained spaces.

VERTICAL



Typically used for high-density indoor parking. Not accessible to all users or all bikes, but can be used in combination with on-ground parking to increase overall parking density. Creates safety concerns not inherent to on-ground parking.

TWO-TIER

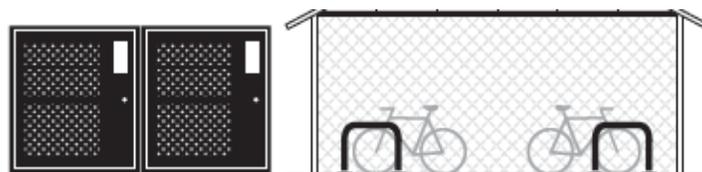


Typically used for high-density indoor parking. Performance varies widely. Models for public use include lift assist for upper-tier parking. Recommend testing before purchasing. Creates safety concerns not inherent to on-ground parking, and requires maintenance for moving parts.

Source: *Essentials of Bike Parking*, APBP 2015

Long term parking may be provided in two forms: locker or SPA (Secure Parking Area). Lockers are only appropriate when the number of required long term spaces is minimal. This is because lockers require a large amount of space and when high numbers of long term spaces are required, it is more efficient to provide a SPA.

SPA's may provide the racks described on pages 2 and 3 as long as the room is controlled access.



Source: *Essentials of Bike Parking*, APBP 2015

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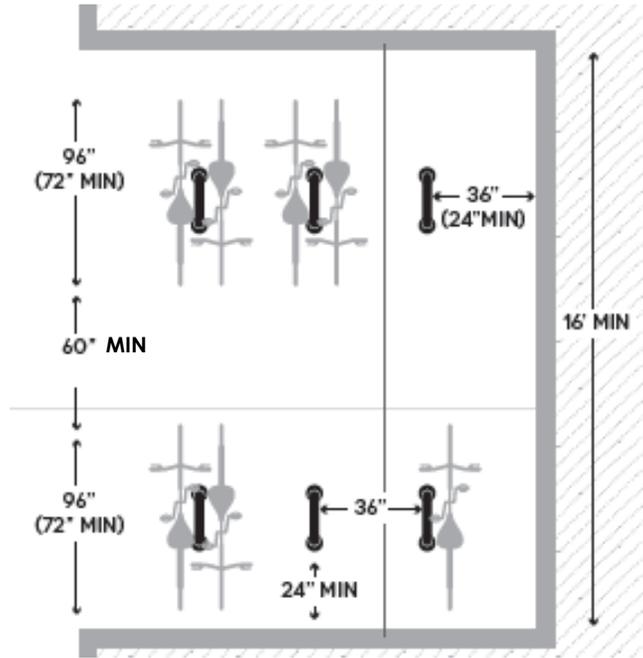


These racks are intended to capture a bike's frame and both wheels with a pivoting arm. In practice, they accommodate only limited bike types and have moving parts that create unneeded complications.

Source: *Essentials of Bike Parking*, APBP 2015

Placement

Long term or high density bike parking should be located in an area visible to the building it serves or a visible, safe, and signed access route should be provided. Lockers should only be used when the required number of spaces is minimal. When placing multiple lockers, a minimum 5-ft aisle for maneuvering and door access shall be provided. When implemented a SPA, a minimum 5-ft maneuvering aisle shall be provided.



Example SPA Layout

Source: *Essentials of Bike Parking*, APBP 2015