

COUNTYWIDE



BICYCLE PARKING



GUIDE LINES



RECOMMENDED POLICIES
& REQUIREMENTS



HCAOG
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HCAOG

COUNTYWIDE BICYCLE PARKING GUIDELINES
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INTRODUCTION

These bicycle parking guidelines are lifted out of the “**Bike Parking Sourcebook**,” which HCAOG (Humboldt County Association of Governments) staff prepared as part of implementing the *Humboldt Regional Bicycle Plan (Update 2012)*.

The Sourcebook compiles from several municipalities sample bicycle policies, codes, and programs. The Sourcebook also includes, by reference, the comprehensive **APBP Bicycle Parking Guidelines** (2010). Both documents are available on the website: hcaog.net. The 2014/15 ad-hoc Bicycle Advisory Committee reviewed and refined these guidelines, and the HCAOG Board approved them on June 18, 2015.



GOAL & PURPOSE

HCAOG serves as the regional transportation planning agency in Humboldt County, and its basic goal is to help create a safe, sustainable, balanced multi-modal transportation system that serves the entire region, and serves all system users.

The goal of the Countywide Bicycle Parking Guidelines is to give guidance for requirements that jurisdictions may adopt, and thereby build consistent standards—and bike facilities—throughout Humboldt. The purpose of requirements is to ensure adequate bicycle parking that is conveniently located and sufficiently secure from theft and damage. Most bicycle parking requirements are assumed to be minimums; we encourage you to go beyond minimums whenever possible in order to integrate bicycle parking facilities to be as functional and accommodating as possible.

The guidelines outline requirements for the following:

- ◆ Bike Parking: Site location
- ◆ Parking Space: Dimensions, Clearance
- ◆ Required Number of Spaces
- ◆ Event Bicycle Parking
- ◆ Bike Corrals (In-Street Bicycle Parking)
- ◆ Recommended Bicycle Racks
- ◆ Bicycle Repair Stations

RECOMMENDED REQUIREMENTS

BIKE PARKING—SITE LOCATION



Experience has shown that cyclists prefer modest amounts of bicycle parking at many dispersed locations over having a few high-capacity facilities. If bicycle parking facilities are not close to their destination, cyclists tend to improvise alternative bike parking that is very close. The best way to determine the need and amount of bicycle parking is to identify those locations where parked bikes exceed the available parking, and to find those locations where bikes are parked and no parking is provided. In this manner, parking can be

provided to meet the need. The relocation of unused parking facilities to higher demand locations can help make available resources go farther. (Davis)

Consider bicycle parking locations that best fit these descriptions:

- **Location:** Bicycle parking is located in a clearly designated, convenient, and safe, location. A “safe parking location” is defined as an area where activity around bicycle parking is easily observable, parking is located near the entrance of the bicyclist’s destination, and bicycle parking spaces are adequately separated from motor vehicles and pedestrians. (Calistoga)

Bicycle parking is situated at least as conveniently as the most convenient motor vehicle parking (besides ADA disabled parking).

Bicycle parking and automobile parking is separated by a physical barrier or sufficient distance to protect parking bicycles from damage. (Menlo Park)

- **Ingress/Egress:** The bicycle parking facility has safe and convenient ingress and egress. Means of ingress and egress include, but are not limited to, stairways, elevators, and escalators. (Menlo Park)
- **Visibility:** Bicycle racks for short-term parking are located in highly visible areas to minimize theft and vandalism. (Menlo Park) The bicycle rack is located in clear sight from within the building. Placement near a main entrance or a front window is often the best solution. (Sacramento)

Where bicycle parking areas are not clearly visible to approaching bicyclists, well-placed, unobstructed signs indicate the parking locations. (Menlo Park)

- **Surface Conditions:** Surfaces of and around bicycle parking spaces are finished and maintained to avoid mud and dust. (Menlo Park) The ground surface for the rack may









be mowed lawn, decomposed granite, or any walkable paved surface. The surface is flat enough to properly park bicycles. The surface slope and drainage prevents puddling in the parking area. (Sacramento)

- ❑ Lighting: Bicycle parking is illuminated at night. (Davis)
- ❑ Covered: Bicycle parking is sheltered, whenever possible. (Davis)

PARKING SPACE—DIMENSIONS

Typical adult bicycles are six feet long and two feet wide at the handle bars (6' x 2'). Generally, one generic bicycle parking space should have a footprint six feet long and two feet wide, with 7 feet vertical clearance (6' x 2' x 7'). The layout requirements recommended herein are based on these standard measurements. However, when designing a bicycle parking space, project sponsors are encouraged to consider other types of bicycles, including bicycles with trailers or child seats. Especially for long-term parking, more clearance is recommended to accommodate bicycles that are longer and/or wider than a typical bicycle.

In a bicycle parking space, the area perpendicular to the rack must include space for bicycle wheels; the area parallel to the rack must include space for handlebars, and ideally panniers, baskets, child seats, and DIY (do-it-yourself) milk crate racks.

		DIMENSIONS (FEET)		
BICYCLE TYPE		Length	Height	Width
Standard Bicycle		6	4	2
Child Bicycle		5	2-3	2
Tandem Bicycle		9	4	2
Cargo Bicycle		8	4	3
Bicycle+Trailer Bike		10	4	2
Bicycle + Child Trailer		10	4	3
Bicycle and Child Seat		6	5	2
Recumbent Bicycle		7	4	3

Source: City and County of San Francisco

Figure 1. Bicycle Dimensions



Photo credit: Marta Lindsey, S.F. Chronicle 2015

Bikes for children of ages two to seven years old generally range from twelve to twenty-four inches tall (12"–24"). Standard sizes are:

Kids' Age, Height	Recommended Bike Height
2-4 years, 26"- 34" tall	12"
3-6 years, 34"- 44" tall	16"
4-8 years, 44"- 56" tall	20"
7+ years, 56"- 62" tall	24"

PARKING SPACE—CLEARANCE

Adequate clearance around a rack ensures that cyclists have enough space to maneuver and lock their bikes, and not obstruct adjacent activity.

- The bicycle rack and secured bicycles cannot interfere with pedestrian circulation.
- Installation of racks must not create a hazard or impediment to any existing uses.
- The bicycle rack shall not be located to impede access to a store/building entrance or exit.

Municipal codes range from requiring 1.5 feet (18 inches) to three feet minimum clearances. Most codes we reviewed require two feet clearance between bike racks and curbs, walls, fences or other vertical obstructions. The *APBP Bicycle Parking Guidelines* (2010) recommend a default two-foot clearance around a standard rack.

Recommended Clearances

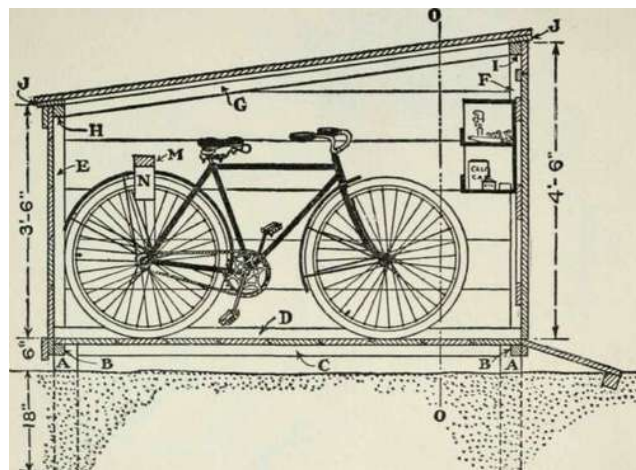
Table 1 shows the recommended clearances that should be required for installing safe and functional bicycle racks. The recommendations are based on a synthesis of the regulations that are surveyed in the “Bike Parking Sourcebook.” In the table, the letters in parentheses correspond to Figure 2, below, which illustrates how measurements relate to the bicycle and bike rack.

Table 1. Recommended Clearances for Bicycle Racks

Adjacent structure/obstruction	Clearance parallel to rack: Recommended [minimum]*	Clearance perpendicular to rack: Recommended [minimum]*
Wall, curb, bollard, fence	(a) $\geq 3'$ <i>If rack is 2' from wall, it will equal one bike parking space.</i>	(b) $\geq 3'$ [2']
Roof, ceiling, tree branches, or other overhead element	(c) 8' [7'] (Vertical clearance from ground to ceiling/overhang.)	(c) 8' [7'] (Vertical clearance from ground to ceiling/overhang.)
Aisles (for pedestrian circulation) between rack and wall or curb	(f) 6' [5']	(d) 8' [6']
Aisles (for pedestrian circulation) in center, between racks ¹	(g) 8' [6']	(e) 10' [8']
Bike rack	(f) 4' [3']	(d) 5' [4']
Fire hydrant or stand pipe (near street)	7' [5']	8' [5']
Street furniture (tree, tree well, news rack, bench, trash can, light pole, utility vaults) or curbcut, driveway	5' [2']	6' [3']

¹ Maintain a minimum of six feet (6') clearance for pedestrians to walk next to a bicycle rack, unless existing adjacent sidewalk furnishings have already reduced clearance to less than this distance, and the new bicycle rack does not reduce this clearance more.

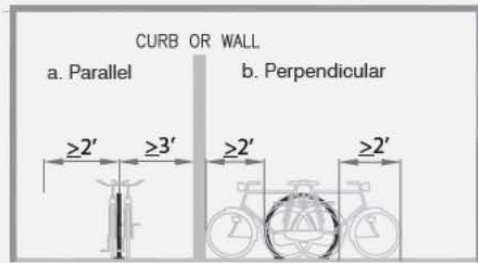
* Letters in parentheses correspond to the graphics in Figure 2 (below).



<http://stpln.se/event/window-project-peter-jeppson>

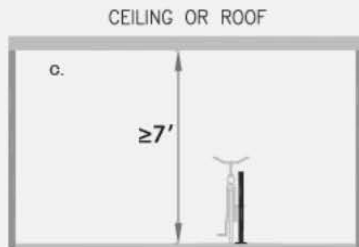
CLEARANCE REQUIREMENTS FOR BICYCLE RACKS

I. Clearance from a vertical obstruction (wall, curb, bollards) for parallel and perpendicular racks



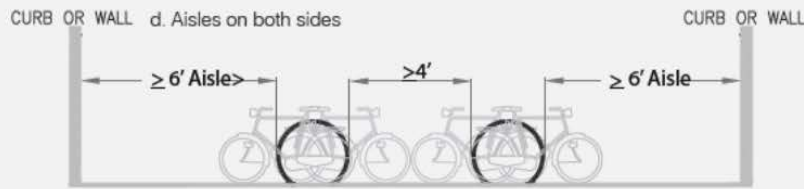
- a. When placed parallel to a wall, a rack must be at least three feet away from any vertical obstruction. If the bicycle rack is only two feet away, such rack would only satisfy one required bicycle parking space.
- b. When placed perpendicular to a wall, the rack must be at least two feet and preferably three feet away from the vertical obstruction. A standard bicycle sticks out about two feet from a standard inverted U or circular rack.

II. Minimum Vertical Clearance

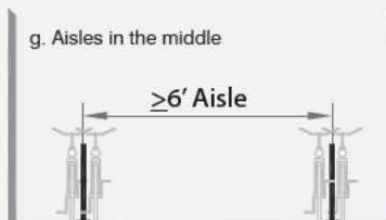
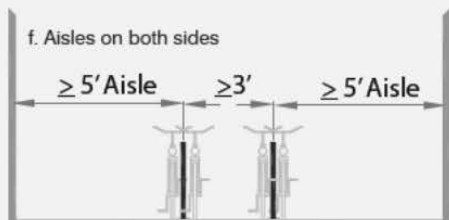


- c. Bicycle racks must be located in areas with at least seven feet of clearance between the ground and the ceiling or any elevated obstruction. Bicycle racks also should be installed on surfaces with minimal slopes, preferably as close to 0% grade as possible.

III. Layout of racks perpendicular to the aisles



IV. Layout of racks parallel to the aisles



In cases shown in illustration (g) racks must be at least three feet from the wall to allow two bikes parked to one rack. If this distance is lower than three feet, such rack would only count for one bicycle parking space.

Illustration (d) through (g)- An aisle is the space used to provide access for bicycles in and out of the racks. Aisles may be provided on both sides of the rack as shown in Illustrations (d) and (f) or in the middle of racks as shown in Illustrations (e) and (g).

A four foot continuous clear space for pedestrian circulation - from the front of a bike on one side to the front of the bike on the other side - must be maintained in all aisles. Each bicycle rack shall have at least one such aisle on its side.

Illustration (d) & (e)- When racks are placed perpendicular to the aisles (III), a standard parked bicycle sticks out of the rack and intrudes into the aisle space about two feet. Therefore, in order to maintain the four feet wide pedestrian circulation, the aisles must be at least 6 feet wide when placed on the sides (d), and at least 8 feet wide when placed in the middle (e). The recommended aisle width for these cases are 8 feet and 10 feet respectively.

Illustration (f) & (g)-When racks are placed parallel to the aisles, each parked bicycle in the aisle zone consumes about one foot of the aisle width. In order to maintain the four foot wide pedestrian circulation space, the aisles must be at least 5 feet wide when placed on the sides (f), and 6 feet wide when placed in the middle (g). The recommended aisle width for these cases are 7 feet and 8 feet respectively.

Source: City and County of San Francisco.

Figure 2. Illustrative of Bicycle Parking Clearances

REQUIRED NUMBER OF SPACES



Photo credit: citymetric.com

The amount of bicycle parking needed for a particular project and a particular location depends on a variety of factors, such as the prevalent uses in the vicinity (residential, industrial, commercial, recreational, etc.), proximity to streets with heavy bicycle traffic, proximity to public transit, nearby businesses, and the relationship to adjacent uses, etc.

In the “Bike Parking Sourcebook” we offer examples from several municipalities’ bicycle parking requirements. Some cities require minimum bicycle parking spaces as a percentage of the required off-street motorized parking (City of Arcata, City of Palo Alto, City of Menlo Park). Some cities use different multipliers for different land uses; for example, they require a minimum of spaces per dwelling unit (residential), per employee and visitor (commercial/business), and per student enrollment (schools) (Cities of Calistoga, Davis, Emeryville). Additionally, some codes designate parking minimums for short-term and long-term bicycle parking (Cities of Emeryville, Palo Alto, and Menlo Park).

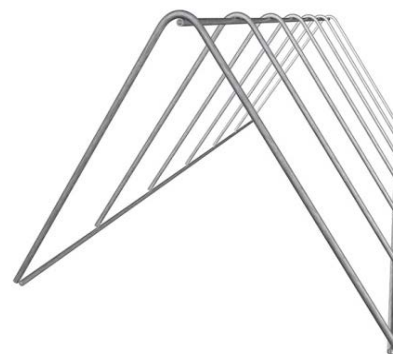
Refer to the “Bike Parking Sourcebook” for examples from the cities noted. Also refer to the *APBP Bicycle Parking Guidelines* (2010) for their “Sample Basic Parking Requirements” (which are categorized by land use, and include requirements for long-term and short-term bicycle parking).

EVENT BICYCLE PARKING

Bicycle parking should be required for special events that are expected to draw a large crowd and increase traffic congestion and/or parking demand. Event bicycle parking can be monitored or not. Monitored parking can be operated by valets who park the bikes in a secured area (locks not required), or by attendants who monitor the area where bicyclists self-park and lock their own bikes. Event bicycle parking can also be unattended, providing conventional short-term parking racks without people monitoring them.

The City of Arcata requires bicycle parking for special events. The city administers a Major Special Event Permit, which says:

‘Major events’ are those involving more than 50 participants, and/or require City services. Additional bicycle parking and/or lock-up space must be provided for all events.



The Dero Event Rack parks fourteen bikes.

The City received a grant to purchase two event-parking bike racks and a canopy to use at major events. The event sponsor (permit holder) can use the City's portable bike racks, or must supply their own. The permit holder is responsible for placing bike racks for the event.

The *APBP Bicycle Parking Guidelines* point out the following benefits of providing additional bicycle parking:

- Significantly reduce the number of motor vehicle trips generated by the event.
- Encourage attendees to enjoy bicycling to the event, creating a community experience they will wish to repeat.
- Deter bicyclists from locking their bicycles at random locations around the venue.
- Reduce the number people who walk their bicycles through crowded spaces, such as street fairs.
- Raise the visibility and acceptance of bicycling for transportation.

RECOMMENDED BICYCLE RACKS

The most approved rack design is the inverted “U” rack. Inverted “U” racks support the bicycle upright by its frame, prevent the bicycle from tipping over, and allow cyclists to lock the bike frame and at least one wheel to the rack with just one lock. When installed properly (i.e., within the parameters set for location, surface, and clearance dimensions, etc.) each “U” rack will count as two bicycle parking spaces.

Recommended bicycle racks meet the following specifications. They:

- Support bicycles at two points of contact in order to prevent bicycles from tipping or falling;
- Accommodate locking a bicycle frame and one wheel with a U-lock;
- Are made of square tubes or another non-round shape (even an ellipse) to resist illegal rack cutting;
- Minimize maintenance costs (e.g., galvanized finish resists corrosion);
- Do not require lifting the bicycle to securely lock it;
- Have a minimum height of 32 inches to increase visibility to approaching cyclists and pedestrians; and
- Are anchored securely to the ground or building structure to resist illegal removal of rack. Rack legs are embedded in concrete footings, or are anchored in



Inverted “U” bicycle rack

concrete with wedge anchor bolts, tamper-proof spikes or industrial adhesive. In asphalt or unpaved surfaces, bike racks with base rails or frame bases are anchored with landscape nails (6” to 12” long, 1/4” to 3/8” diameter).



Bike rack on H Street, Arcata



Bike racks can also be artistic and thematic, while still meeting the recommended specifications for functionality, installation, and theft-resistance.



ABOVE & BEYOND THE BASICS

BICYCLE CORRALS (IN-STREET BICYCLE PARKING)

An in-street bicycle parking corral (“corral”) is a group of racks installed in the vehicular right-of-way, next to the curb. Bike corrals typically provide parking for 12 to 16 bicycles within the equivalent parking space for one car. Bike corrals can be good solutions in areas with narrow sidewalks or areas heavily trafficked by pedestrians, where it would be impractical or obstructive to install a sidewalk rack. Bike corrals are becoming more and more popular with merchants who offer sidewalk seating, or who want to increase their interface with pedestrians and foot traffic on their block.

The “Bike Parking Sourcebook” has examples from Sacramento, Oakland, and Los Angeles. These cities have established bicycle rack programs whereby business owners/tenants or building owners can request bike corrals adjacent to their properties. The Sourcebook includes program requirements and applications.



Photo credit: Joseph Rose/The Oregonian 2010

PUBLIC BIKE REPAIR STATIONS



A very bike-friendly amenity is a public bike tire pump and repair station for “do-it-yourself” bicycle repairs. A bike repair station includes the basic tools for routine bike repairs and maintenance (e.g., changing a flat, adjusting brakes, gears, and derailleurs). The tools are securely attached to the stand, usually with stainless steel cables and tamper-proof fasteners. The public bike tire pump should be a floor pump with a universal pump head for both schrader and presta valves. These amenities do not need to be supervised if they are permanently mounted to the ground. Several commercial bike companies manufacture bike repair stations that are ready to install.



Public bike pump and bike repair station, City of Darebin, Victoria, Australia

REFERENCES

Association of Pedestrian and Bicycle Professionals. 2010. *APBP Bicycle Parking Guidelines*. (www.abpb.org)

City and County of San Francisco, Planning Department. August 2013. “Zoning Administrator Bulletin No. 9: Bicycle Parking Requirements: Design and Layout.”

HCAOG. June 2015. “Bike Parking Sourcebook: Sample Policies, Municipal Codes & Programs.”