The Bicycle Parking Guide offers simple tips and tools to plan out a successful bike parking project.

1. Index
2. The Benefits of Bicycle Parking
3. Ordinances
4. Location
   5. Spacing
   6. Layouts
   7. Surfaces & Mounting Options
8. Choosing A Bike Rack
   9. Good Racks & Bad Racks
   10. Materials & Finishes
11. Funding
12. Resources
THE BENEFITS OF BICYCLE PARKING

CURB APPEAL
People appreciate attractive facilities, millennials in particular are drawn in by businesses or housing units that offer amenities and support active transportation. Bicycle parking adds appeal to infrastructure.

REPUTATION
Gain positive exposure by staying in tune with the bicycle-friendly movement. Recognition by The League of American Bicyclists and earning LEED Credits are a way to bolster your reputation. Investing in bicycle parking and supporting cyclists is great PR.

COMMUTER BENEFITS
Qualified employers and employees can be reimbursed for commuting expenses. The National Center for Transit Research is a good place to start for employers to support their employees with commuting costs, like providing $20 a month for cycling, that may be claimed as business expenses.

REVENUE
The economic impact of cycling and cycling infrastructure has been widely studied, and has proven to not only benefit businesses, but also the entire city. Cyclists spend more money at businesses, save the city money, increase tourism, and sales tax revenue.

AMENITIES & LONG-TERM BIKE PARKING
Bicycle parking can be treated as an amenity, not just a requirement. Apartments and multi-family housing can incorporate long-term, bicycle parking as a benefit for the tenants. Luxury apartment buildings in particular, include bicycle parking as a feature alongside pools and gyms.

REPLACING CAR PARKING
Bicycle parking is less expensive than car parking, which is better for businesses. City governments worried that transportation revenue will be reduced by replacing car parking will find that bicycle parking makes up for it with increased sales taxes. One shopper in a single car can be replaced by 8-12 shoppers in a single bicycle corral.

HEALTH & WELLNESS
Encouraging cycling amongst employees means happy, productive, healthy employees. Over long periods of time health costs are reduced.

ENVIRONMENTAL IMPACT
Alternative and active transportation can largely reduce vehicle carbon emissions, but it needs the support to get there. Increasing bicycle parking, bike lanes, and other infrastructure by extension will encourage more cycling, which encourages a greener world.
ORDINANCES

The first item to cross off your to-do-list is checking ordinances and meeting those requirements. Ordinances vary by location and building type, but there are tools to help get the planning started.

WHAT ORDINANCES WILL TELL YOU:

- The number of bicycles needed to be parked.
- If you need to provide Class 1 bike parking, Class 2, or both.
- Misc additional requirements, like location or types of racks.

WHAT TO LOOK FOR:

Look for these specifications when browsing ordinances to find what applies to your project.

- Bikes per square feet minimums, esp. for offices, retail, financial services, restaurants, and more
- Bikes per dwelling unit ratios, including student housing or other group housing buildings
- Minimum bikes per vehicle parking ratios & percentages
- Bikes per employee or guest ratios, esp. for arenas or other large venues

LONG-TERM PARKING

Class 1 bicycle parking is considered long-term parking and requires shelter from most, if not all, elements. Long-term parking caters to residents, public transit users, employees, or similar riders. Bike lockers, or any bike rack may be used in conjunction with rooms, cages, supervised spaces, or other facilities, as long as weather-protection and security needs are met.

Density: If high quantities of bikes need to be parked, two-tier or vertical racks are recommended. Lift-assist racks or on-ground racks may be needed to accommodate elderly, disabled, or non-standard bicycle types.

Security: People need to feel comfortable leaving their bicycles for over 2 hours. Not only should racks be U-lock compatible, but the storage facility containing the racks should also be lockable.

SHORT-TERM PARKING

Short-term parking, or Class 2 bicycle parking, is intended for a couple of hours. Class 2 parking caters to riders visiting businesses, institutions, event centers, or other short-term trips.

LOCATION: The right location is necessary for success of short-term parking. High-traffic, well-lit areas that are obvious to a rider and next to building entrances will ensure people are using the bike racks.

SECURITY: Bike racks that are made of sturdy materials and U-lock compatible design will help riders secure their bikes in public places. Location is also vital for security; parking should be next to highly visible and well-lit areas.

USER-FRIENDLY: Riders will neglect racks that are difficult to use or placed in an inconvenient spot.
Local ordinances vary in requirements, so it is important to confirm that you have met those specific ordinances when choosing a location. The right location is crucial for successful parking.

**IS YOUR LOCATION A PROBLEM AREA?**

Even the best racks will go unused if they are installed in the wrong location. Areas that are hidden, out of sight, or inconvenient will be avoided.

However, if people are leaning bicycles against rails, trees, or buildings, consider placing bike parking there to solve a problem.

**ARE YOU PARKING INDOORS OR OUTDOORS?**

If your parking is indoors, visibility is lessened, so proper signage must lead riders to their destination.

Outdoor parking should be visible and a natural place for riders to park their bikes as they arrive at their destination.

**DOES OUTDOOR SEATING WORK WITH BIKE PARKING?**

Yes, and no. If your project has a lot of outdoor seating, like a business front, consider indoor parking. If you must park outdoors, racks cannot interfere with walkways and should be orderly and high-density.

**ORDINANCE & LOCATION SUMMARY**

This graphic summarizes the Ordinances & Location info, based on innovative cities that, across-the-board, use good practices for any bicycle parking environment.

- Not impeding pedestrian traffic on sidewalks or conflicting with ADA (Americans with Disability Act) spacing requirements
- Away from areas unsafe for pedestrians, avoid motor traffic
- Close to building entrances
- Well-lit areas
- Marked with signs
- Easily accessible, no stairs
- Class 1 requires protection from elements
Determine how many bikes per square foot you need, then what type of bike rack suits those spacing requirements. The following spacing dimensions are using average bicycles, more room may be needed for cargo or e-bikes.

**FREE-STANDING VERTICAL BIKE RACK**
- 20 bikes
- 48” - 72” loading zone
- 92” min ceiling height

**WALL-MOUNTED VERTICAL BIKE RACK**
- 2 bikes
- 48” min loading zone
- 92” min ceiling height

**BIKE DOCK**
- 2 bikes
- 48” - 60” loading zone

**INVERTED-U**
- 2 bikes
- 48” - 60” loading zone
- 36” rack-to-rack spacing

*Racks without wheel docks leave room for imperfect parking or bikes that slip and fall. Bikes that slip and tip could cause liability issues as well as a bad rider experience.*

**TWO-TIERED BIKE RACK**
- 10 bikes
- 48” - 72” loading zone
- 102” min ceiling height

**WALL-MOUNTED VERTICAL BIKE RACK**
- 2 bikes
- 48” min loading zone
- 92” min ceiling height

**FREE-STANDING VERTICAL BIKE RACK**
- 2 bikes
- 48” - 60” loading zone
- 32” rack-to-rack spacing
GET YOUR LAYOUT RIGHT, THE FIRST TIME

- For outdoor parking, plan around trees, planters, curbs, benches, or other objects.
- For indoor parking, plan around HVAC ducts, fire hydrants, containers, or other objects.
- Confirm ceiling height is compatible with vertical and two-tier bike racks for indoor parking.
- Cargo bikes, e-bikes, or bikes with trailers may need to be accommodated.

INVERTED U & POST RACKS

- 24” from the rack to the street will allow 2 bikes to be parked.
- 36” is needed to park 2 bikes if the rack is placed by a wall or next to another rack.
- 72” from rack tip to rack tip is APBP recommended, 86” spacing is often successful account for user parking errors on racks without controlled footprints.

STREET CORRALS

Although APBP recommends 96”-120” walkways, the reality is that paths and sidewalks are not often that wide. Bicycle corrals give room for pedestrians by replacing on average 1 car with 8-12 bikes.
Finding the right location also depends on the surfaces in the environment. Concrete surfaces are great for all racks and installations, but it may not always be available. The information provided here outlines what racks and anchors work with each surface type.

**SURFACES**

**CONCRETE**
Compatible with all surface mounted racks. Inexpensive and easy to work with.

**INSTALLATION:** Wedge Anchor or Drop-in anchors.

**ASPHALT OR PAVERS OVER CONCRETE**
If concrete is underneath, use free-standing or specialty anchor systems.

**USE:** Asphalt Anchor with epoxy.

**PAVERS**
Without concrete, use a free-standing surface mounted rack or pour concrete to use an in-ground mount.

**USE:** Rack embedment or additional stingers.

**GRASS OR DIRT**
Without a stable base to anchor a rack, use a free-standing surface mounted rack or pour concrete to use an in-ground mount.

**USE:** In-ground stingers

**WALLS**

**CONCRETE**
Compatible with all wall mounted racks.

**USE:** Strike Anchor or Wedge Anchors.

**BRICK OR BLOCKS**
Compatible with all wall mounted racks.

**USE:** Strike anchor.

**WOOD STUDDED WALLS**
Properly engineered for cantilever loads. Simple to mount to.

**USE:** Ledger boards need to be used with lag screws.

**STEEL STUDDED WALLS**
Properly engineered for cantilever loads. Simple to mount to.

**USE:** Toggle nut style fasteners. Must use a unistrut style rails or ledger boards.
CHOOSING A BIKE RACK

WHAT DOES IT MEAN TO BE USER-FRIENDLY?

Bicycle racks that are user-friendly are easy to operate and access. A rack is not user-friendly if bike handlebars are in constant conflict, spacing is difficult to navigate, or the rack may even damage the bicycle (wheel-bending or scraping).

Accommodating all demographics, based on age, ability, or bicycle type, is another part of user-friendly bicycle parking.

DO YOU WANT EXTRA CUSTOMERS?

Eye-catching and colorful racks may be the first choice for businesses, thinking the extra style will pull in customers. These racks may look good, but if the purpose is to support cycling customers, they fall short.

Customers value convenience over appearance, so choose functional and recognizable bike racks over fun shaped ones.

DOES YOUR BIKE RACK SERVE ITS PURPOSE?

A bike rack is much more than a bent piece of metal. Racks can serve a purpose beyond a place to park a bike; if chosen carefully, they can significantly benefit a project.

ARE HIGH-SECURITY RACKS WORTH IT?

Cyclists heavily rely on U-locks to secure their property. U-locks should wrap around the frame of the bicycle, at least one tire, and the bike rack at the same time. If a rack is not U-lock compatible, it may go unused.

In addition, racks with hollow or round tubing are easily cut and should be avoided, so look for square tubing, steel or solid materials.

THE BASICS OF GOOD BIKE PARKING

U-locks can be locked to the frame, rack, and one wheel at the same time

At least two points of contact with the bike

Wheel troughs prevent bikes from slipping and tipping
GOOD RACKS & DOCKS

TWO-TIERED & VERTICAL
These racks are optimal for high-density parking, often used in long-term storage when high quantity parking is important.

PREFERRED VS. ACCEPTABLE
Acceptable bike racks have two points of contact and U-lock compatibility. For the best performance, bike docks also have wheel wells.

BAD RACKS
These racks have a “bad” label from their long history of damaging bikes, being low-security, and generally difficult to use.
MATERIALS & FINISHES

WHAT TO LOOK FOR

AVOID RUST & CORROSION

Hollow racks with a closed base often build moisture internally and rust from the inside-out, reducing the lifespan of the product.

Look for racks with an open-design, that not only drain moisture, but allow the interior to be coated with a protective finish to prevent corrosion.

WHAT’S BEST FOR THE BIKE?

Metal bike racks can scrape, dent, or chip bicycle frames.

Look for products that have protective guards around lockable loops to prevent metal-to-metal contact.

If the product doesn’t have the loops, thermoplastic finishes are more bicycle-friendly than galvanized or steel.

PREVENTING THEFT

Square tubing is more difficult to cut than round, but solid materials will be the most theft-resistant.

Dock, post, and ring racks have lockable loops to lean bikes against. Look for solid steel loops for highest security.

FINISHES

THERMOPLASTIC

• Highest rating in marine or snowy landscapes, helps prevent rust for long periods of time.

• Withstands direct impact and damage from elements.

• Typically available in black or silver.

STANDARD WARRANTY: 20 years

HOT-DIPPED GALVANIZED

• Abrasion-resistant, durable finish.

• Low maintenance, rarely requires touch-ups.

• Slightly rough texture.

• Common in environments with harsh conditions.

STANDARD WARRANTY: 10 years

STAINLESS STEEL

• Extremely durable, long lifespan, low-maintenance.

• May have smooth or mirror shine finish.

• More expensive than other finishes.

• Most resistant to cutting.

STANDARD WARRANTY: 20 years

POWDER COAT

• Comes in many different colors.

• Inexpensive finish.

• Low durability, chips and peels to expose metal.

• Needs regular maintenance.

STANDARD WARRANTY: 1 year

WHAT’S BEST FOR THE BIKE?

Metal bike racks can scrape, dent, or chip bicycle frames.

Look for products that have protective guards around lockable loops to prevent metal-to-metal contact.

If the product doesn’t have the loops, thermoplastic finishes are more bicycle-friendly than galvanized or steel.

Advised finishes:

Solid tubing

Square tubing

Round tubing

Square tubing is more difficult to cut than round, but solid materials will be the most theft-resistant.

Dock, post, and ring racks have lockable loops to lean bikes against. Look for solid steel loops for highest security.

AVOID RUST & CORROSION

Hollow racks with a closed base often build moisture internally and rust from the inside-out, reducing the lifespan of the product.

Look for racks with an open-design, that not only drain moisture, but allow the interior to be coated with a protective finish to prevent corrosion.

FINISHES

THERMOPLASTIC

• Highest rating in marine or snowy landscapes, helps prevent rust for long periods of time.

• Withstands direct impact and damage from elements.

• Typically available in black or silver.

STANDARD WARRANTY: 20 years

HOT-DIPPED GALVANIZED

• Abrasion-resistant, durable finish.

• Low maintenance, rarely requires touch-ups.

• Slightly rough texture.

• Common in environments with harsh conditions.

STANDARD WARRANTY: 10 years

STAINLESS STEEL

• Extremely durable, long lifespan, low-maintenance.

• May have smooth or mirror shine finish.

• More expensive than other finishes.

• Most resistant to cutting.

STANDARD WARRANTY: 20 years

POWDER COAT

• Comes in many different colors.

• Inexpensive finish.

• Low durability, chips and peels to expose metal.

• Needs regular maintenance.

STANDARD WARRANTY: 1 year

WHAT’S BEST FOR THE BIKE?

Metal bike racks can scrape, dent, or chip bicycle frames.

Look for products that have protective guards around lockable loops to prevent metal-to-metal contact.

If the product doesn’t have the loops, thermoplastic finishes are more bicycle-friendly than galvanized or steel.

Advised finishes:

Solid tubing

Square tubing

Round tubing

Square tubing is more difficult to cut than round, but solid materials will be the most theft-resistant.

Dock, post, and ring racks have lockable loops to lean bikes against. Look for solid steel loops for highest security.
FUNDING OPTIONS

PUBLIC FUNDING
Work with your local bike advocates to win public funding for bike parking. Many states and cities will pay for bike parking out of their transportation budget, but only in response to public demand. Your local advocacy organization can create that demand by emphasizing bicycling’s high value for the public tax dollar. Find an advocacy organization near you to begin a public funding strategy. Use best practices and examples of funding and advocacy campaigns for inspiration.

DONORS, BRANDING, & SPONSORSHIP
Use donations, like San Luis Obispo's Racks with Plaques program, to fund bicycle parking. With custom messaging opportunities, a rack can display a company brand or sponsor for additional revenue.

GRANTS
Organizations such as People for Bikes offers grant opportunities for businesses or that focus on bicycling and active transportation development.

ANCILLARY REVENUE
Bicycle parking can pay for itself! Compared to car parking, bicycle parking is cheap and will create more business revenue over time.

Each city and project is different, so additional ancillary revenue methods may not always apply or be appropriate for the situation. For example, if car parking is free, bicycle parking should be free; so other methods generating ancillary revenue could benefit your project.

Some facilities have successfully increased revenue by creating valet parking, absorbing the costs of parking into rent, or adding storage fees. Bike sharing may be another way to add parking, but also increase revenue.
RESOURCES

Helpful Organizations

Association of Pedestrian and Bicycle Professionals
http://www.apbp.org/
EssentialsofBikeParking_FINA.pdf

People for Bikes
http://www.peopleforbikes.org/

The League of American Bicyclists
http://www.bikeleague.org/

Leadership in Energy and Environmental Design
http://www.usgbc.org/leed

Municode
https://www.municode.com/library/

Benefits Of Bicycle Parking Links

http://www.bikeleague.org/bfa
http://www.usgbc.org/leed
https://www.nctr.usf.edu/programs/clearinghouse/commutebenefits/
https://www.nytimes.com/2016/05/08/realestate/catering-to-new-yorkers-with-bike-rooms.html?_r=0
http://www.marketwatch.com/story/for-luxury-apartment-buildings-bike-rooms-become-a-must-have-amenity-2016-09-15
http://www.advocacyadvance.org/site_images/content/Final_Econ_Update%28small%29.pdf

Choosing A Bike Rack

https://www.groundcontrolsystems.com/resources/tools-assets/how-to-choose-a-bike-rack/

Funding Links

https://drive.google.com/file/d/0Bwim4iZE7J1RRUFuWGFvU2tlWEE/view
https://en.wikipedia.org/wiki/List_of_United_States_bicycle_advocacy_organizations#California
http://www.peopleforbikes.org/pages/grant-guidelines
http://www.pedbikeinfo.org/planning/funding.cfm

groundcontrolsystems.com
info@groundcontrolsystems.com
800.630.7225