BIKE & SCOOTER PARKING IN BALTIMORE CITY

Baltimore City Department of Transportation

March 2021

DEPARTMENT OF TRANSPORTATION
BALTIMORE CITY

MANUAL TABLE OF CONTENTS

MORE INFORMATION

The Bicycle Parking Manual is for reference only. For legal aspects of bicycle and scooter parking please reference the following:

- **Zoning Code** defines when and where bicycle parking is required.
    - Baltimore City Code- Article 32 Zoning §16-701 and Table §16-705: https://ca.baltimorecity.gov/codes/Art%2032%20-%20Zoning.pdf

- **Transportation Code** regulates the use and parking of bicycles and dockless vehicles for hire, including e-scooters, on the public right of way.
    - Baltimore City Code – Article 31 Transit and Traffic § 38-19: https://ca.baltimorecity.gov/codes/Art%2031%20-%20Transit&Traff.pdf

- **Complete Streets Manual** outlines the preferred location to install parking on the sidewalk.
    - See “Sidewalk Zone” section and “Furnishing Zone” sub-section: https://transportation.baltimorecity.gov/draft-complete-streets-manual

For specific questions contact the Department of Transportation Planning Division at: dot-community@baltimorecity.gov, or https://transportation.baltimorecity.gov/bikebaltimore

On the cover: Bike and Scooter parking at Upton Metro Station.

1. THE BASICS OF BIKE AND SCOOTER PARKING

Using a bicycle or e-scooter for daily transportation and recreation has become increasingly popular in Baltimore City. As Baltimore City implements the 2018 Complete Streets Ordinance and subsequent manual, DOT is actively promoting the use and safety of active transportation modes, including walking, bicycling, and e-scooters. The purpose of this manual is to ensure that people on a bicycle or scooter have adequate parking, illustrate to property owners and managers how easy it is to provide bike parking and ensure any privately-installed bike or scooter parking supports the complete streets guidelines for safety and the protection of vulnerable roadway users.

Bike and scooter parking differs from motor vehicle parking in many ways. A bicycle can be parked just about anywhere in an urban setting, but people parking bikes or scooters must follow relevant laws to leave the curb space accessible for all users. Providing ample bike and scooter parking can help encourage ridership, increase patronage at businesses, and allow for proper parking when sited correctly. Developers and property owners performing significant renovations to property also must follow zoning code to meet minimum standards for adequate and accessible parking. *Please note that this manual does not provide an exhaustive or detailed list of parking laws and should be treated only as a reference.*

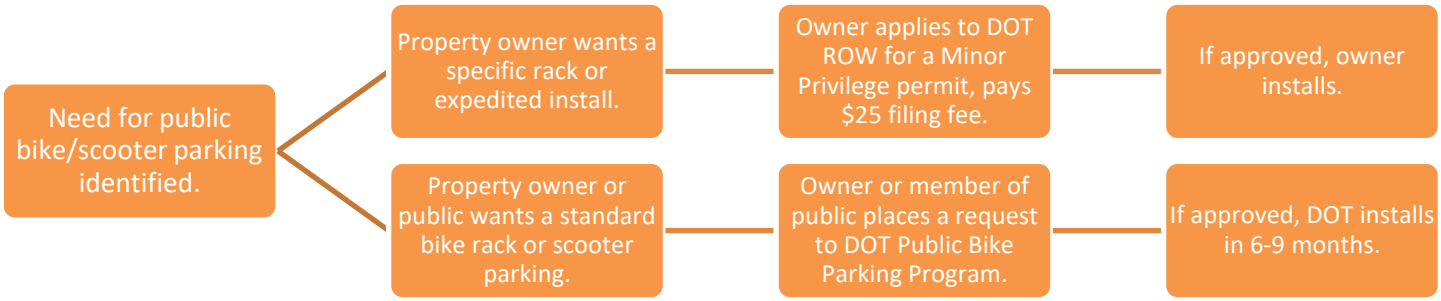
A. Parking a Bicycle or Scooter

Bicycles and scooters may be parked in the public right-of-way in an upright position, provided certain guidelines are followed. These guidelines allow for all roadway users to share the space:

- Bicycles and scooters may not be parked within the road or alley unless there is a designated area specifically designed to accommodate the vehicles.
- Bicycles and scooters may not be parked or locked to private property without the explicit consent of the property owner. For example, bikes should not be locked to personal porches or business awnings.
- Bicycles and scooters may be parked on the sidewalk and should be locked to designated racks, where available.
- **On sidewalks, bicycles and scooters should not be parked in a manner that interferes with the flow of pedestrian traffic; parked vehicles must leave at least 4 feet of passable space on the sidewalk.**
- When parking a bicycle or scooter, be careful not to block:
    - Curb cuts, ramps, or railings.
    - Driveways or motor vehicle parking spaces.
    - Designated curb space, such as bus stops, loading areas, or passenger waiting areas.
    - Areas reserved for sidewalk dining.
    - Doors, including emergency exits or hidden entrances.

B. Bike and/or Scooter Parking Installation Options in Baltimore City

Property owners, managers, or the general public can initiate bike or scooter parking where they see a need in Baltimore City. In most cases, bike and scooter parking is intended for public use and should be installed in visible locations within the public right-of-way (ROW), such as on the sidewalk or in the roadway. To install parking on the public ROW, a property owner must obtain a Minor Privilege Permit from DOT to install the parking themselves, or any member of the public may place a request to DOT's Public Bike Parking Program for review. For installation on private property, owners may install racks at their discretion, but this guide should be used for recommendations for optimal placement.



If a property owner wants to provide bike parking for the public, they can install it themselves or request that DOT installs it. To install a specific rack or to expedite install, the property owner should self-install. Before installation, the owner needs to apply for a Minor Privilege Permit, which requires a $25 filing fee unless waived by the Board of Estimates. There are various "Façade Improvement Grants" offered by local business districts and Community Development Corporations that may defer the costs of the racks and/or installation.

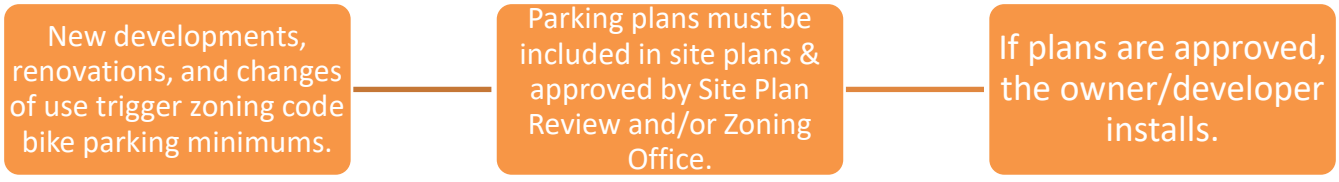
- Minor Privilege Information: https://transportation.baltimorecity.gov/right-way-services/minor-privilege

If the property owner or a member of the public wants bike parking in the public ROW, they may also apply through DOT's Public Bike Parking Program for standard green U racks. DOT will review the site and inform the requestor if the site can accommodate a rack with 60 days. If the request is placed by a member of the public and not placed by the property owner, DOT will attempt to contact the owner and allow them 30 days to decline the installation or weigh in on the placement. Racks are installed as staff capacity and priority allow, currently with a 6- to 9-month queue for approved installations. DOT installs a maximum of 3 standard green U bike racks per location.

- Bike Rack Request form: https://transportation.baltimorecity.gov/bikerackrequestform

Bike parking may be required for new property developments, substantial redevelopments, or changes in use—the zoning code dictates the minimum spaces required based on the use and square footage of the building. When required by zoning, bike parking may be installed in the ROW or on the private property. DOT recommends only placing short-term parking on the private property or in less immediately visible locations on larger campuses or when there is a very specific use population in mind (like employees or students). Parking plans should be included in site plans for review by Site Plan Review and/or the Zoning Office.

- A summary of the zoning code's bike parking minimums can be found in section 6 of this manual, but any developer should reference the full zoning code to ensure bike parking meets the requirements.



DOT may also prioritize or initiate the installation of public racks and parking corrals based on metrics such as adjacent bike facilities, commercial density, transit connections, and ridership counts. In this case, DOT will solicit approval from adjacent property owners before installing bike or scooter parking.

2. RACKS AND CORRALS

A bike rack must support the bike in at least two places to prevent it from falling over. Racks should be able to support bikes of multiple shapes and sizes. For security, racks should be anchored to the ground and resist cutting, rusting, bending, or deformation. **Please see the "Corral" section for notes about multiple bike racks installed together.**

A. Bike Rack Types

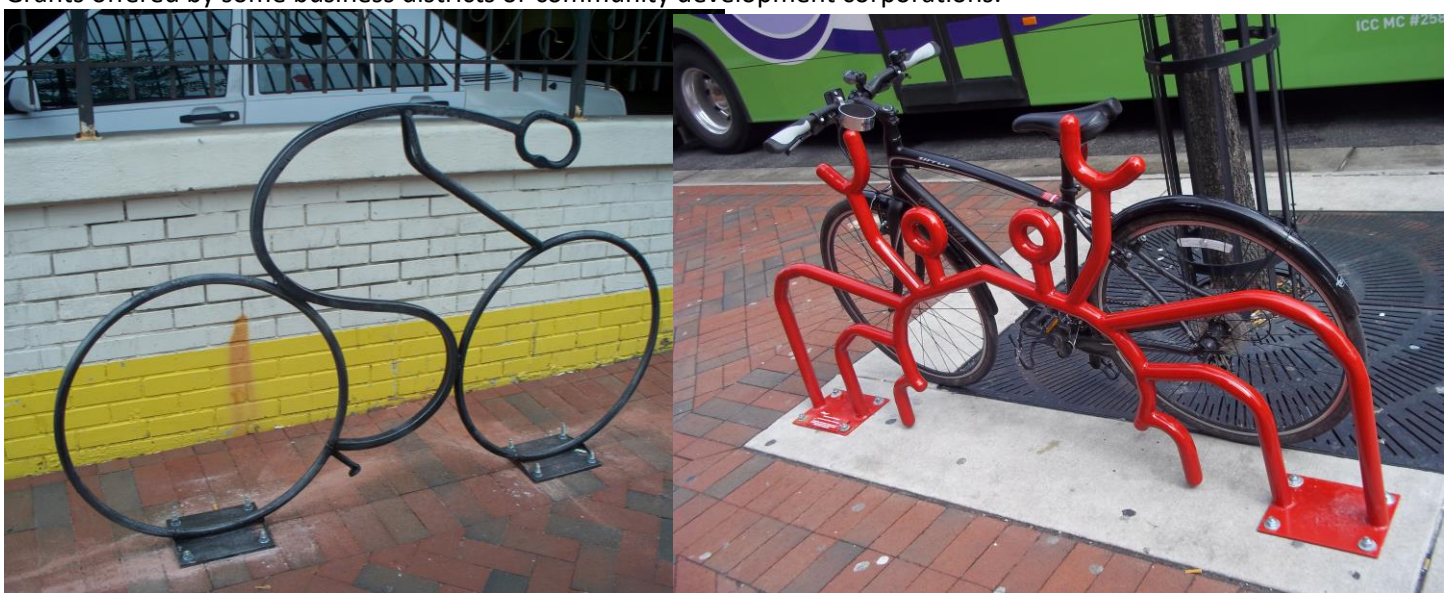
Standard Baltimore City DOT Racks: DOT installs basic green inverted "U" racks with square tubing to reduce theft (round tubing is easier to cut with pipe-cutters). These racks accommodate a minimum of 2 bicycles.

Images: Baltimore City-installed bicycle racks.

Basic Racks: Basic racks can take a variety of forms, but they should always support the bicycle in two places and be bolted or secured to the ground in two places.

Images: Basic racks in Baltimore may match aesthetics and still provide simple secure parking.

Decorative racks: Businesses may also install decorative racks at their own expense or through Façade Improvement Grants offered by some business districts or community development corporations.



Images: Decorative racks installed by the Baltimore Development Corporation's Façade Improvement Grant are unique and allow for locking at multiple parts of the bike frame. http://baltimoredevelopment.com/incentives/facade-grant/

B. Racks to Avoid

Bicyclists should be able to lock up quickly and easily. Complicated racks or those that do not support the bike in at least two places should be avoided. Racks that only bolt to the ground in one location should also be avoided, as they can easily be knocked over if they are not in-ground mounted. To ensure ADA compliance, decorative racks must follow specific guidelines to be detected by a white cane. The leading edges of the rack base must be less than 27 inches above the sidewalk. Any parts of the rack between 27 inches and 80 inches above the sidewalk surface may overhang the base by no more than 12 inches.

Old-fashioned "schoolyard" or "fence" racks and multi-bicycle "rolling" racks are an example of racks that only hold the wheel of the bike and do not support it in at least two places. Narrow "post" or "hitch" racks are an example of racks that are only bolted in one location and can become insecure.

Images: Fence and rolling racks do not support the bicycle in two places and, sometimes, only the wheel can be locked to the rack, creating a security issue. They also do not leave adequate space between bikes for many bike models.

C. Multi-Rack Corrals for Bicycles and/or Scooters

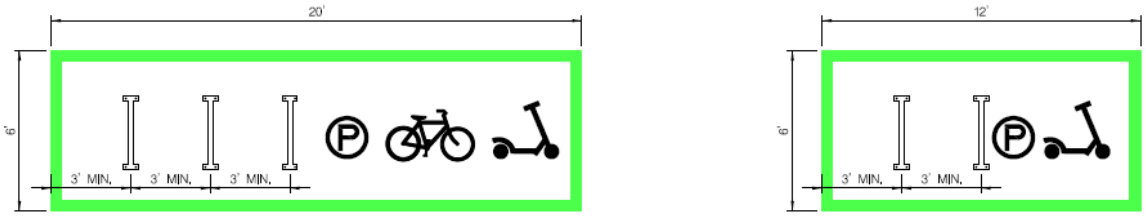
Short-term parking can also be designed to accommodate multiple bike racks and/or scooters; these are called parking corrals. Corrals may be located on private property, on the public sidewalk, or in the roadway when approved by DOT.

To accommodate bikes, parking corrals can use any acceptable rack style. The sidewalk footprint of a rack with two bikes locked on either side is 3.5 feet by 6 feet. This footprint should be kept clear and must remain outside of the 4-foot minimum pedestrian clear path. Parallel racks may be spaced at an interval of 3 feet. To accommodate scooters, there should be, at minimum, an outlined and stenciled area to indicate scooter parking. Scooter-specific racks that keep scooters upright are optional corral upgrades.

DOT's standard bike and scooter corrals have a minimum footprint of 6 feet by 12 feet but can be adapted to be different sizes. Corrals must include a sign, at least two bike racks for public use, and a painted area for scooter parking. For parking corrals in the roadway, DOT also installs flex posts and allows the adjacent property owner to upgrade to aesthetic barriers, such as planters, instead of flex posts. Through coordination with DOT, these parking areas can also appear in the mobile applications for rented vehicles (such as the Lime and Spin apps for e-scooters).

Image: DOT Corral at Northeast Market.

DOT basic corral design with bike racks and scooter parking.



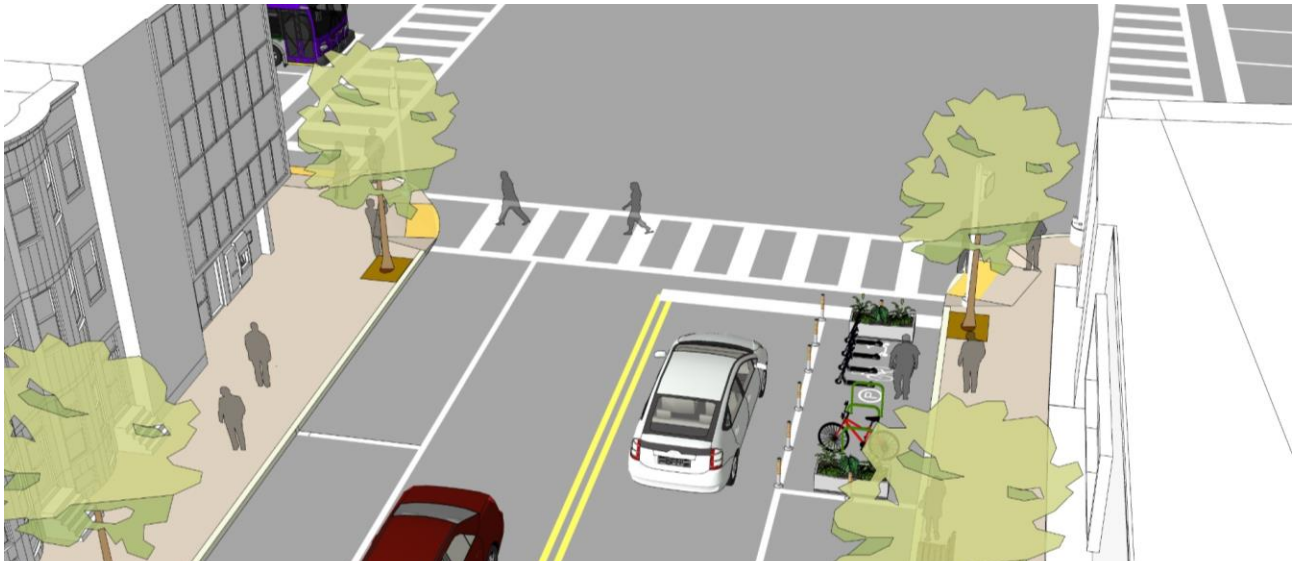


Image: Potential modifications to a DOT corral for installation in the roadway include planters and flex posts.

3. RACK PLACEMENT AND INSTALLATION

Bike racks and corrals should be located in areas that encourage use. This includes locations where they are visible from the roadway, alongside motor vehicle parking, or close to the entrance of the sponsoring building. Top considerations for placement should be ease of use, access for other modes (walking, driving), and security. Further:

- Bike and scooter parking should be located within 50 feet of the main entrance.
- For buildings with multiple entrances that face public streets, racks may be installed in multiple locations.
- Placement of racks should consider connections to adjacent facilities/roadways.
- If not visible from the street, signs must indicate the parking location.
- Scooter corrals should never be located inside of parking garages—since most scooters are rented, ridership in garages is not encouraged.

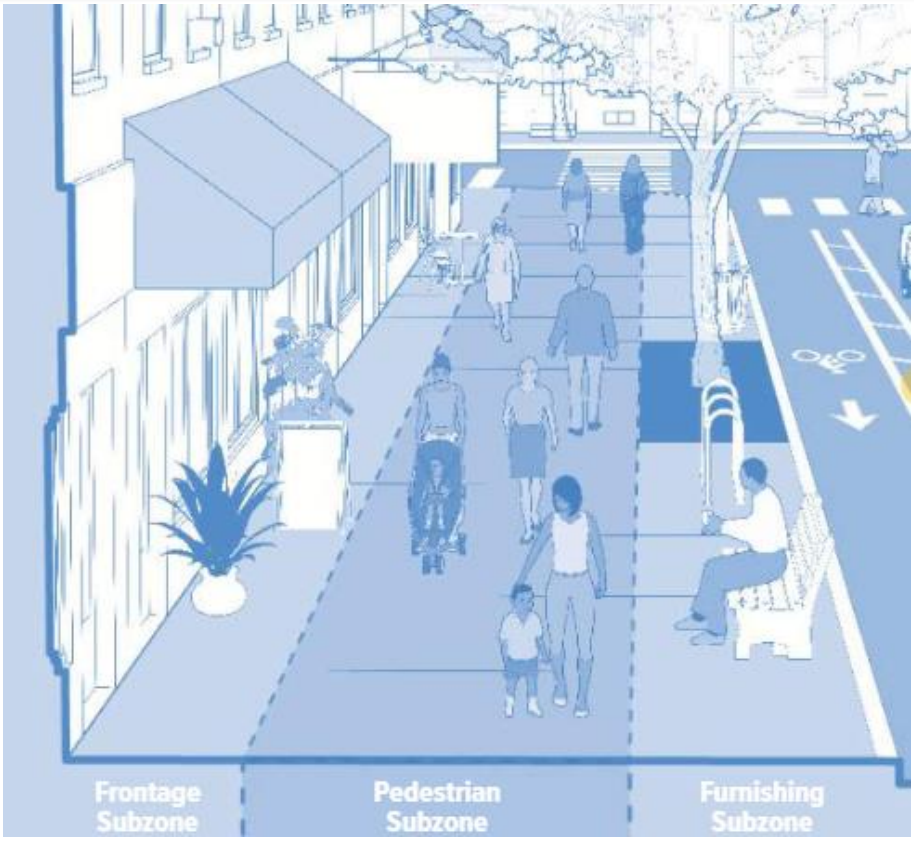


Image: Sidewalk Zones defined by the Baltimore City Complete Streets Manual.

A. On Sidewalk

If installed on the sidewalk, the ideal placement for bike and scooter parking is in the "Furnishing Subzone." Racks and corrals should be installed in line with other elements, such as benches, poles, or tree pits. Racks may be installed parallel, perpendicular, or angled from the curb based on the room available and the pedestrian zone on the sidewalk. Racks mounted parallel to the curb provide greater pedestrian clearance adjacent to a locked bicycle but require more space along the curb for the same number of bikes that could be served by perpendicular racks. The clear zone for pedestrians on the sidewalk must be a minimum of 4 feet, even when two bikes are locked to the rack.

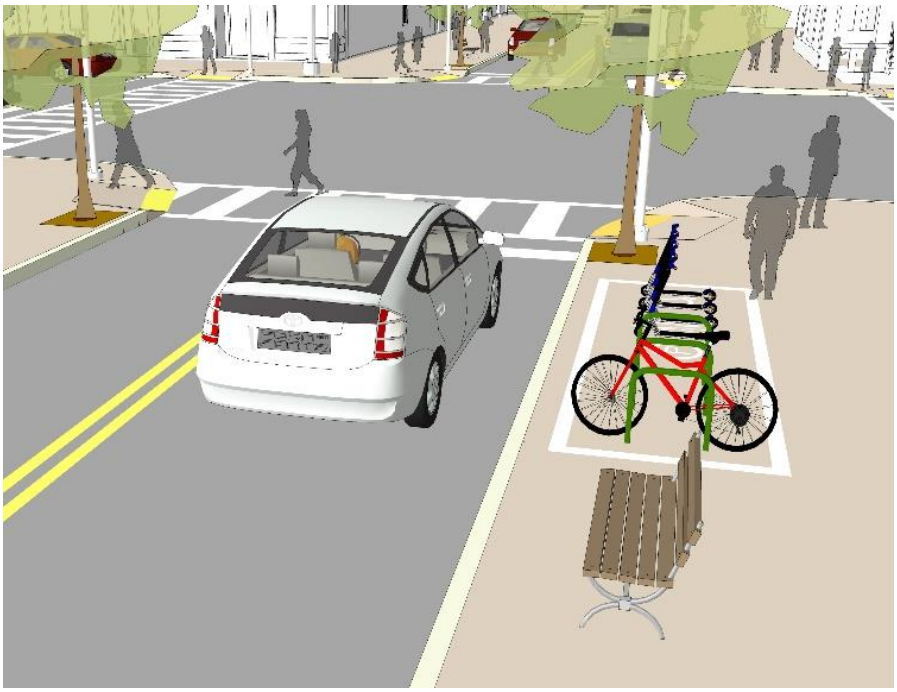


Image: Scooter Corral in line with other sidewalk elements.

Standard DOT racks are 30 inches long and 6 inches wide, and the footprint of a rack with two bikes locked is 6 feet by 3.5 feet. In order to maintain a 4-foot clear path, there should be 70 inches of passable sidewalk as measured from the outer edge of the rack base—note this measurement may vary based on rack design.

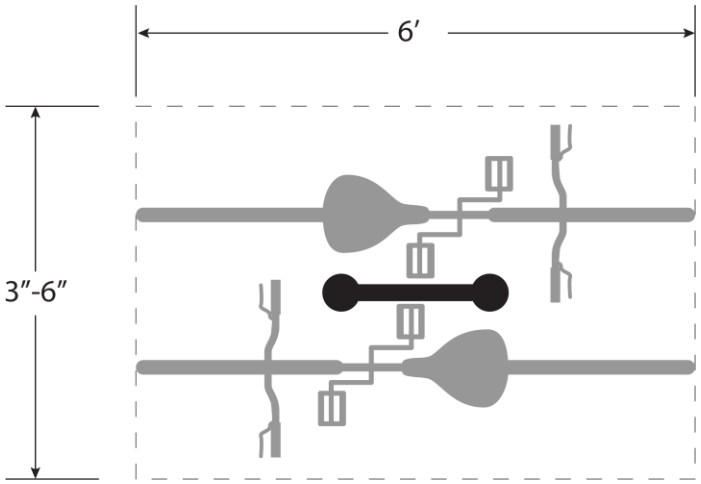


Image: Footprint of a standard bike rack with bikes.

When installing on the sidewalk, parking must:

- Leave about 5-6 feet on the sidewalk or walkway so that there are 4 feet of passable space when bikes are locked to the rack.
- Leave a minimum of 2 feet of space between the rack and the curb so that bikes are not hit by opening car doors and do not overhang the curb into the street.
- Leave bus stops clear—racks should be at least 5 feet beyond the "No Stopping" area for cars, as indicated by signs and/or the presence of a concrete bus stop.
- Leave 5 feet of space between the rack and important sidewalk amenities such as fire hydrants.
- Leave 3 feet of space between the rack and other sidewalk amenities, like benches or trash cans.
- Avoid mid-block locations that encourage bike riding on busy and/or narrow walkways shared with pedestrians.

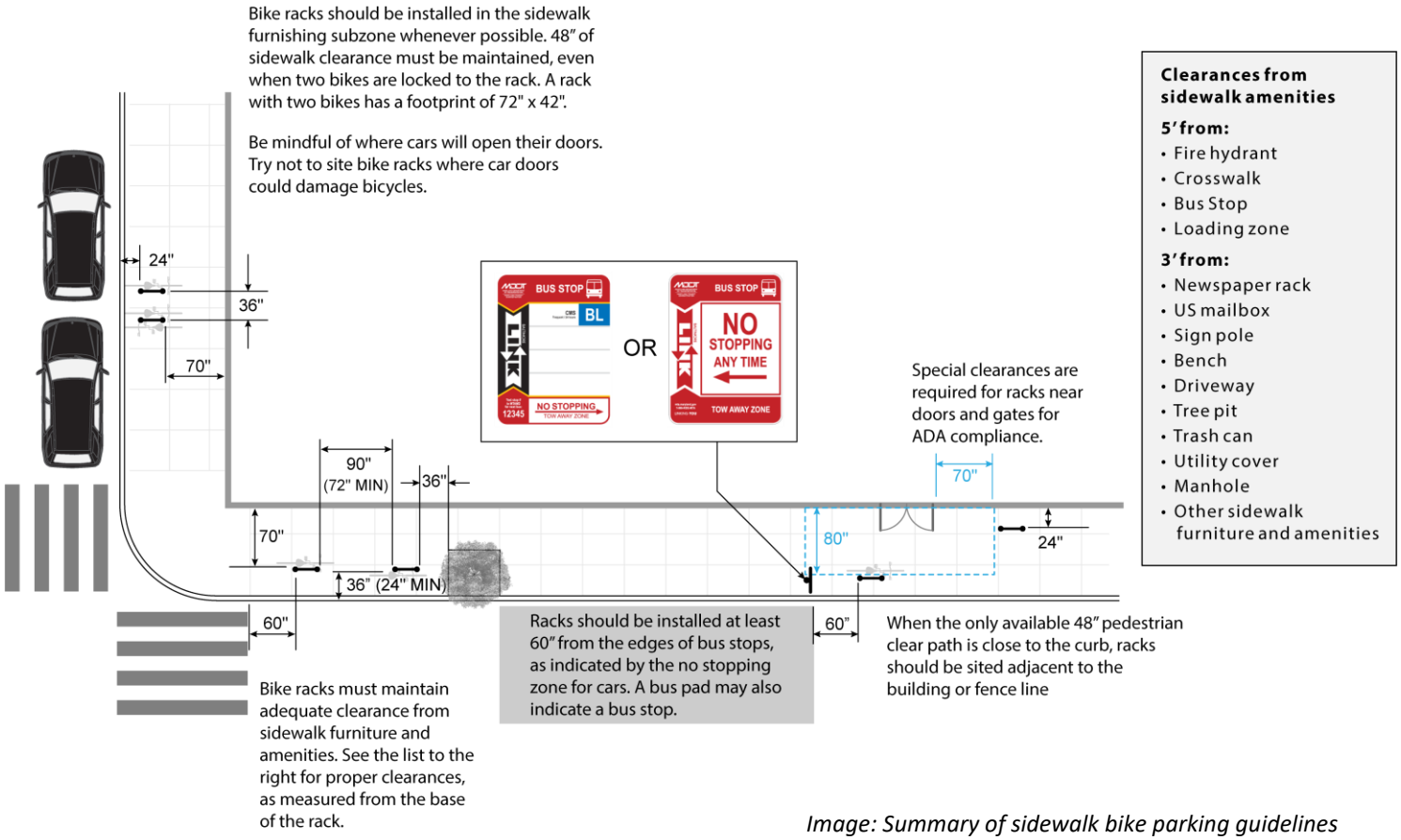


Image: Summary of sidewalk bike parking guidelines

B. In-Street

Bike parking should only be installed in the street if the location warrants a parking corral for multiple bike racks and/or scooter parking. These installations require review and approval from the DOT Traffic Division. For any proposed in-street installation, DOT will evaluate parking usage, emergency vehicle usage, utility needs, and bus routes to avoid conflicts.

When installed in-street, corrals require physical separation, such as flex posts or planters. Corrals should not use wheelstops, as they present a crash hazard to bikes and scooters.

Corrals may be located in the corner zone where no motor vehicle parking is allowed. The preferred corner is on approaches where traffic enters an intersection—this helps improve sightlines by preventing stopping, idling, or turning vehicles from pulling into this space and blocking the view of pedestrians.

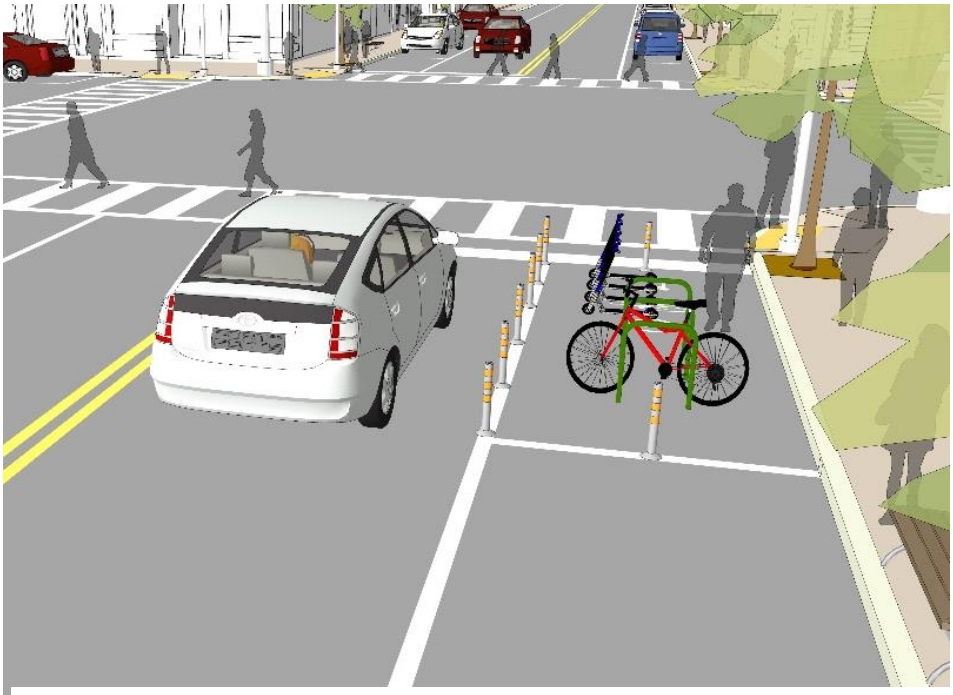


Image: In-street bicycle and scooter corral with flex posts, located on the end of a block (the approach where traffic enters the intersection).

C. Installation

Bike racks vary in their base types, and installation methods are determined by the surface where the rack is installed.

Surface	Rack Base	Anchoring Methods
Concrete	Embedded Leg	- Embed rack legs for an in-ground mount by digging a post hole, placing the rack in the hole, and then setting with concrete. This is a more permanent option.
	Surface flange or base rail/frame	- Using wedge anchor bolts to bolt the rack to the concrete, and weld the bolts to avoid theft. Stainless steel flanges are recommended to avoid rust. This is a less permanent installation option.
Asphalt or brick	Embedded leg or surface flange	- Do not anchor individual racks into asphalt or brick. Create a concrete footing for either embedding or bolting.
	Base rail/frame	- Drill a pilot hole and secure it with 6-12-foot landscape nails. This is not as secure as bolting to concrete but may secure a larger rack that is difficult to move.
Unpaved	Any	- Create concrete footing for either embedding or bolting the rack.

4. LONG-TERM PARKING

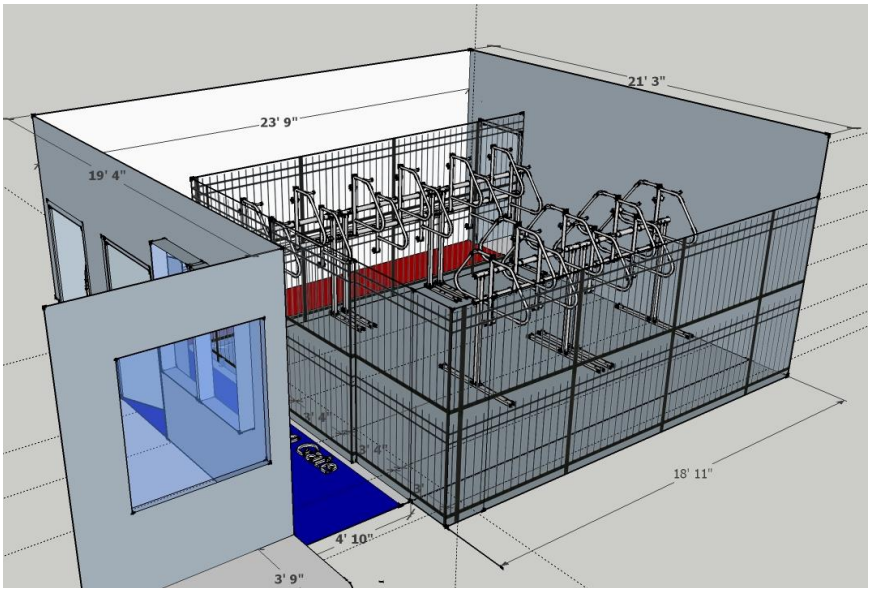
Long-term bicycle parking requires more secure and protected bicycle parking for when the bike is expected to be parked for more than two hours. Long-term parking may be required by zoning or installed if residents, employees/employers, and/or students anticipate demand. 10% of parking should be for alternative bikes. Possible long-term bicycle parking solutions include installation of bicycle lockers, which are sold as self-contained units, or construction of a bicycle parking room using racks that maximize spaces, such as wall racks or two-tier racks.

Bicycle lockers are generally sold as self-contained units that can be secured to paved surfaces. Each locker needs about 3 feet of width as well as 7 feet of length and height. Bike lockers can be installed alongside motor vehicle parking.

Bicycle parking rooms can be better long-term solutions for large workplaces. They can be installed in garages or even in office spaces. The key element for bicycle rooms is protection from weather and some form of security in addition to the rack. A gated, limited-access area, or an area with security cameras, can provide the security long-term parking requires. For each parking space, about 15 cubic feet are needed, and wall- or ceiling-mounted racks can maximize space for bicycles.

Image: Long-term bicycle parking may include a lid for weather protection.

If long-term bike parking is located in a parking garage, it should be placed on the ground floor. Avoid requiring bicyclists to ride up or down parking garage ramps to reach long-term bike parking.



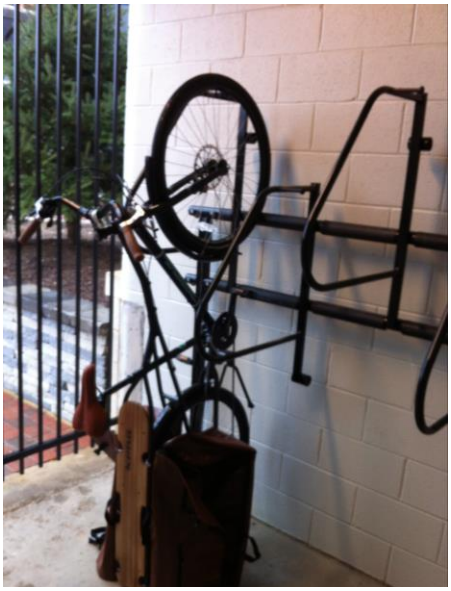


Image: A bicycle room indoors or protected by a security gate may provide long-term parking. Upright parking may increase the room's capacity for bicycles but should not be the only option provided. At least 10% of racks should accommodate alternative bikes, such as adaptive or cargo bikes, and provide places for riders who cannot lift their bikes into upright racks.

5. SPECIAL EVENTS AND TEMPORARY PARKING

Providing bicycle and scooter parking for special events can reduce motor vehicle traffic congestion, reduce clutter from bicycles and scooters parked randomly, and raise awareness of bicycle transportation. This can be achieved by providing a dedicated area or areas for parking, which can be attended or unattended.

A. Unattended Temporary Bike Parking

Unattended parking should only be considered if there is a low risk of bicycle theft. Consider the following steps for temporary parking:

- Designate a convenient area for bike parking that leaves 4 feet of passable space on any adjacent sidewalk or walkway.
- Provide 5-6-foot aisles between racks for users to maneuver bicycles.
- Provide fence/barricade racks that can be used temporarily and that allow for frame locking—do not expect, allow, or encourage locking to any fence or barricade that needs to be moved for emergency access.
- For security, make sure the location is in a public area, and enclose as many sides of the area with temporary fencing as possible to limit the possibility of theft.
- Install temporary signage to denote the parking location.
- Include directions to bike parking alongside any other directions distributed to attendees.

Image: Signage used to denote the location of temporary bike parking for the Baltimore Farmers' Market.

Image: Temporary bike parking on moveable racks should be situated in a secure location.

B. Attended Bicycle Valet

A bike parking valet service model is suitable for events that expect or want to promote arrival by bicycle. Under this model, parking is "we park it, we watch it" and concentrates parking in one location. For bike valet services, the following steps should be considered:

- Designate an enclosed and attended area for storage during event hours.
- Use temporary racks to store bikes with 5-6-foot aisles for attendants to maneuver bicycles.
- Train attendants to check-in, secure, and retrieve bikes so that locks are not required.
- Require contact information at check-in and provide a ticket to the bicycle owner.
- Store the bikes according to ticket number so that retrieval can be organized and quick.
- If applicable, charge a small fee or collect tips for attendant compensation.

Image: Bike valet check-in.

Image: Temporary rack used for a bike valet.

C. Temporary Scooter Parking

Parking for rented scooters may also be designated for major events that expect or want to promote arrival by scooter. For temporary scooter parking, the following steps should be considered:

- Designate a convenient area for scooter parking that leaves 4 feet of passable space on any adjacent sidewalk or walkway.
- Install temporary signage to denote the parking location.
- Include directions to scooter parking alongside any other directions distributed to attendees.
- Coordinate with DOT to designate the scooter parking area in the scooter mobile applications at least two weeks before major events.

Image: Scooter parking in Camden Yards. Photo by Todd Olszewski/Baltimore Orioles

6. ZONING PARKING MINIMUM SUMMARY

Zoning requirements detail how many short- or long-term bicycle parking spaces are required for new developments or significant redevelopments in Baltimore City. Developers and construction managers must include the minimum number of bicycle parking spaces to receive building permits. The following lists are summaries only—developers should refer to Baltimore City *Zoning Code §16-701* and the parking minimum *Table §16-705* to verify all zoning requirements for bicycle parking.

Basic zoning requirements for all bicycle parking**:**

- All required bicycle parking spaces must be used solely for parking bicycles.
- Bicycle parking facilities that are not visible from the street must have posted signs indicating their location.
- Bicycle parking must be designed so that bicycles may be securely locked without undue inconvenience and will be reasonably safeguarded from intentional or accidental damage.
- Bicycle parking must be positioned to minimize interference with pedestrian movements and to provide for ADA compliance.

A. Short-Term vs Long-Term Parking

The zoning code prescribes short-term and/or long-term parking depending on land use. Short-term parking provides a convenient place to park a bicycle for less than two hours; these parking locations should provide convenience and utility for users. Long-term parking provides parking for longer than two hours; these parking locations should be protected from the weather and provide security for an extended amount of time. The following table details the difference between short-term and long-term parking.

	Short-Term Parking Requirements	Long-Term Parking Requirements
Purpose	- Provides a convenient place to park a bicycle for less than two hours. - Is usually associated with shopping, errands, and socializing**.** - Should provide convenience and utility for users.	- Provides parking for longer than two hours. - Is usually associated with residents, employees/employers, and students. - Should be protected from the weather and provide security for an extended amount of time.
Description	- Simple racks located within 50 feet of destination. - Weather protection is preferred, but not required.	- Controlled access area (room or secured and covered location) or bicycle lockers. - Weather protection is required.
Basic Design	- Simple ground bike racks that provide at least two points of contact with the bicycle. - Racks require 1.5 feet of width and 6 feet of length per bicycle. - Painted scooter parking “corrals” may also be installed next to the racks in high scooter traffic areas.	- Ground-, wall-, or ceiling-mounted racks or individual bike lockers. - Grounded bicycle racks each need 2 feet of width, 6 feet of length, and 7.5 feet of height to accommodate parking. - Wall and ceiling mounted parking should also allow for 7.5 feet of height, 3.5 feet of length, and 2 feet of width.
Siting	- Identify location with a sign. - Safeguard for security include lighting and placement in visible locations.	- Identify location with signage. - Safeguard for security in long-term parking areas include lighting, surveillance cameras, and/or security guards. - Bicycle parking shall be provided at ground level unless an elevator is easily accessible to an approved bicycle storage area.

B. Zoning Code-Required Bicycle Spaces

Based on land use and metrics such as unit of gross floor area, developments have a different number of required bicycle parking spaces. Bicycle space requirements for select land uses are summarized below.

Select Bicycle Space Minimums from Baltimore City Code Table §16-705		
Use	**Long-Term Spaces**	**Short-Term Spaces**
Dwelling: Multi-Family	1 per 4 dwelling units	1 per 12 dwelling units
Office	1 per 10,000 sq. ft. of GFA	1 per 25,000 sq. ft. of GFA
Place of Worship	1 per 15,000 sq. ft. of GFA	1 per 7,500 sq. ft. of GFA
Restaurant	1 per 4,000 sq. ft. of GFA	1 per 4,000 sq. ft. of GFA
Retail Goods Establishment	1 per 10,000 sq. ft. of GFA	1 per 5,000 sq. ft. of GFA
Tavern	1 per 4,000 sq. ft. of GFA	1 per 4,000 sq. ft. of GFA
Please note that this is not an extensive list. Requirements are subject to change, and developers should review requirements at the time they are seeking permits.		