

Montgomery County Planning Department

bicycle parking guidelines

(draft)

September 2016

abstract

Abstract: These bicycle parking guidelines are intended as a resource to help developers, planners, architects and property owners provide high-quality bicycle parking in Montgomery County. The guidelines summarize the bicycle parking requirements in Section 59 of the County Code and identify recommended practices and practices to avoid. The full text of the County Code is available online at: http://www.montgomerycountymd.gov/mcg/countycode.html.

Note: References to the County Code are current as of February 17, 2016 and should be verified.

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RIPLEY

introduction

01

Bicycling is increasing in Montgomery County and across the region[1]. As the number of cyclists grows, the need for safe, secure and accessible bicycle parking is becoming more apparent. Recognizing this need, Montgomery County included a major overhaul to the bicycle parking required of new developments in its 2014 zoning ordinance. Whereas the previous ordinance calculated bicycle parking requirements as a percentage of automobile parking with a maximum of 20 bicycle parking spaces, the new ordinance calculates bicycle parking requirements based on land use category with a maximum of 100 bicycle parking spaces. This change to the zoning code will help ensure appropriate levels of bicycle parking for Montgomery County employees and residents as part of new development projects.

These bicycle parking guidelines are intended as a resource to help developers, planners, architects and property owners provide high-quality bicycle parking in Montgomery County. The guidelines summarize the requirements in the County Code with citations and identify recommended practices and practices to avoid. The full text of the County Code is available online at: http://www.montgomerycountymd.gov/mcg/countycode.html.

The guidelines are divided into five sections:

1. Short-Term Bicycle Parking
2. Long-Term Bicycle Parking
3. Wayfinding
4. Security
5. Bicycle Support Facilities

[1] *Trends and Determinants of Cycling in the Washington, DC Region*, Mid-Atlantic Universities Transportation Center
http://ntl.bts.gov/lib/47000/47100/47120/VT-2009-05.pdf

short-term bicycle parking

Short-term bicycle parking is intended to provide **quick access** to short-term destinations, such as shops, offices and civic facilities, and therefore should be convenient and easy to use. It is typically located in highly visible locations, in front of building entrances and along streets and bikeways, and is available for public use. (6.2.6.B.1.a.i)

02

2.1 types of short-term bicycle parking

Short-term bicycle parking is typically located in two locations:

- Sidewalk: Many communities begin their short-term bicycle parking programs by installing bicycle racks on sidewalks or adjacent to sidewalks. In locations without on-street parking, sidewalks may be the only space available for bicycle racks. Bicycle parking on the sidewalk should be located at a sufficient distance from the intersection so that it does not inhibit a motorist's ability to see what is happening around the corner or obstruct pedestrian movement.

- On-Street Parking: Since sidewalk space is often limited in commercial areas, in some instances it may be more appropriate to locate bicycle parking in an on-street parking space. On-street parking, also known as "bike corrals," increases parking capacity for all users, since one car space is equivalent to 8 to 12 bicycle spaces, and increases the visibility of bicycling. Bike corrals are non-standard for Montgomery County and must be approved by the Montgomery County Department of Transportation to be installed.

A conventional inverted-u rack (left).

A temporary bike corral installed in Downtown Silver Spring (right).

2.2

bicycle parking requirements

Total bicycle parking space requirements are based on a metric specific to each use, a maximum number of total bicycle parking spaces and a percent of the total spaces that are intended for short-term and long-term use. The bicycle parking space table is provided in Appendix A and Appendix B.

2.3

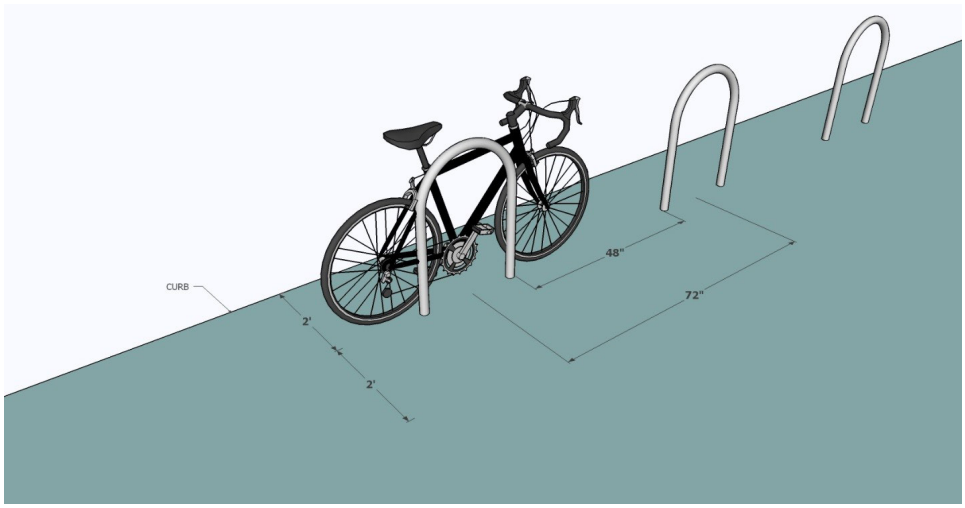
relationship to the street

A lack of convenient bicycle racks often results in bicycles locked to sign posts, trees and street furniture. Bicycles locked to these objects are vulnerable to damage and theft, and can damage the object to which they are locked. If not properly located, bicycle racks can impede pedestrian travel on the sidewalk, access to buildings and emergency responders. Therefore:

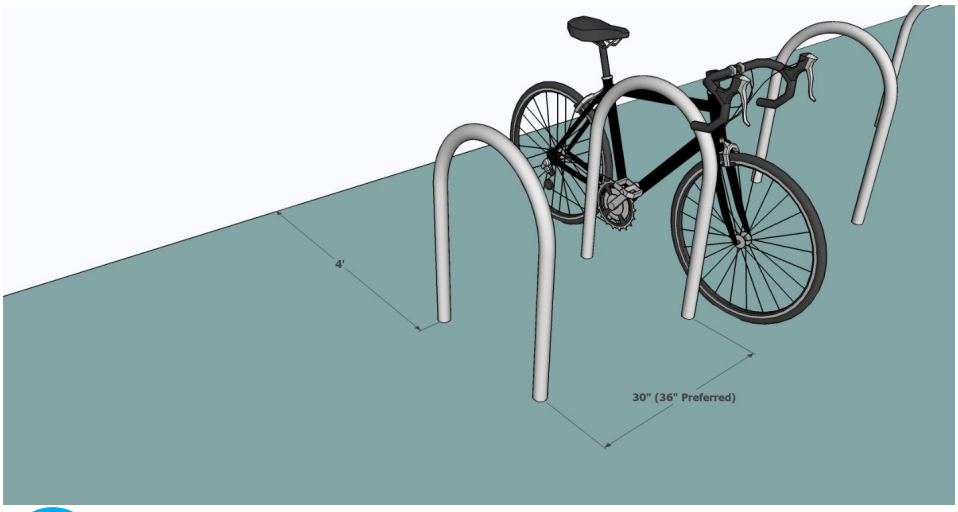
- Each bicycle parking facility is prohibited from obstructing pedestrian traffic or interfering with the use of the pedestrian area. (6.2.6.B.1.b)
- Each parked bicycle must be accessible without moving another bicycle. (6.2.6.B.1.f)
- Any sidewalk rack that is parallel to the curb must be located 2 feet from the curb face. (6.2.6.B.1.c)
- Any sidewalk rack aligned perpendicular to the curb must be located so that the nearest vertical component of the rack is a minimum of 4 feet from the curb. (6.2.6.B.1.d)
- Each sidewalk rack must be a minimum of 14 feet from any stand alone fire hydrant. (6.2.6.B.1.e)
- A bicycle parking facility must have an aisle a minimum of 4 feet in width behind all occupied parking racks to allow room for bicycle maneuvering. (6.2.6.B.1.g) This will also provide clear space for ADA accessibility along the sidewalk.

Short-term bicycle parking adjacent to the street is typically located parallel, perpendicular or diagonal to the curb.

- Parallel to the curb: Short-term bicycle parking is located parallel to the curb when there is a desire to limit the amount that bicycles protrude into the sidewalk.
- Perpendicular to the curb: Short-term bicycle parking is located perpendicular to the curb when more parking spaces are desired and when there is sufficient sidewalk space.
- Diagonal to the curb: Short-term bicycle parking is located diagonal to the curb when more parking spaces are desired and sidewalk space is somewhat limited.



Minimum Dimensions for short-term bicycle parking parallel to the curb.



Minimum Dimensions for short-term bicycle parking perpendicular to the curb.

2.4

relationship to the building

The location of short-term bicycle parking is an important determinant of how well the parking space is used. Bicycle racks that are located in convenient, well-lit and visible locations will have greater use. Short-term bicycle parking spaces must therefore be located:

- In a convenient, well-lit area that is clearly visible to both a visitor to the building and a person who is on the sidewalk that accesses the building's main entrance. (6.2.6.B.1.a.ii)
- Within 90 feet from: 1) the main entrance of any building; or, 2) at least one main entrance of a building with more than one main entrance; unless 3) the applicable deciding body approves an alternative location during the site plan or conditional use process. (6.2.6.B.1.a.iii)
- At least 42 inches from the building, measured from the center of the bike rack.

2.5 rack selection

Accessibility to and proper location of parking facilities are not the only requirements in the provision of high-quality bicycle parking. The most accessible and well-located bicycle parking is insufficient if bicyclists are concerned about their security or the security of their bicycles. Bicycles parked in both short- and long-term spaces benefit from being in a visible location with moderate to high levels of pedestrian traffic. The presence of people diminishes the risks of theft and damage. Bicycle parking located in well-lit, high-visibility areas can increase the safety of people using the bicycle parking.

Proper rack selection is essential for secure bicycle parking. The requirements specified in the Montgomery County Zoning Ordinance reflect best practices recognized by the Association of Pedestrian and Bicycle Professionals (APBP), rack manufacturers and other bicycle-friendly jurisdictions. Secure bicycle racks tend to be fairly straightforward. In fact, a simple, easy-to-use rack is inherently more secure because a typical bicyclist is more likely to use it properly. Racks known as "inverted-u" racks are the preferred style in most cases. Other considerations that enhance the security of bicycle parking include:

- **Anchors and installation:** Installing bicycle racks into concrete is the most secure option. If bicycle racks are being installed after concrete has been poured, or in an interior space that cannot be drilled, the racks should be affixed with tamper-resistant hardware. Anchor bolts should be approximately 6 inches long and drilled into a concrete base.
- **Bicycle rack materials:** Bicycle racks are now available in a range of materials and finishes. It is important to select racks manufactured with thick exterior walls that resist cutting by tools commonly used by thieves, including bolt cutters and hand saws. The rack finish should be rust-resistant, as rusting can compromise the strength of the rack over time. Powdercoat or thermoplastic finish options are available.
- **Type of lock:** Bicyclists are expected to provide their own locks to secure their bicycle to a rack, but developers and property management companies can provide signage to educate users about the proper way to lock a bicycle. As required by the Montgomery County Zoning Ordinance, all bicycle racks must be compatible with a standard U-lock, which is much more difficult to sever than a cable lock.

According to the Montgomery County Zoning Ordinance, bicycle racks must:

- Permit a bicycle frame and one wheel to be locked to the rack with a high security lock. (6.2.6.B.2.a)
- Permit a bicycle to be securely held with its frame supported in at least 2 places. (6.2.6.B.2.b)
- Be durable and securely anchored. (6.2.6.B.2.d)
- Have a locking surface thin enough to allow standard u-locks to be used, but thick enough so the rack cannot be cut with bolt cutters. (6.2.6.B.2.e)
- Perform as well as an inverted-u. (6.2.6.B.2.h)

The Montgomery County Department of Transportation maintains guidelines on the selection of bicycle racks at: www.bikemontgomery.com.

The Essentials of Bike Parking, prepared by the Association of Pedestrian and Bicycle Professionals, identifies several styles of bike racks that are not recommended.

Schoolyard racks (top) and wave racks (bottom) do not support a bicycle with two points of contact leading to inefficient, haphazard parking that can damage bicycles.

2.6 rack installation

The Montgomery County Zoning Ordinance includes dimensions for the placement of bicycle racks, which must:

- Be offset a minimum of 30 inches on center (6.2.6.B.2.c) when parallel to each other.
- Have aisles a minimum width of 48 inches between racks. (6.2.6.B.2.f)
- Have a minimum depth of 72 inches between each row of parked bicycles (6.2.6.B.2.g) when in line with each other.

Additionally, the Montgomery County Department of Transportation requires bicycle racks to be installed on a stable concrete or asphalt surface with a security bolt to prevent tampering and provide stability. Installing bicycle racks into concrete is the most secure option. If bicycle racks are being installed after concrete has been poured, or in an interior space that cannot be drilled, the racks should be affixed with tamper-resistant hardware. Bicycle racks should not be anchored to bricks or pavers but they can be anchored through bricks or pavers so long as they are anchored into concrete underneath.

The Montgomery County Department of Transportation maintains guidelines on the installation of bicycle racks at: www.bikemontgomery.com

2.7 custom designs

On occasion, property owners request permission to install custom-designed bike racks. These bike racks must meet the requirements set forth in the Montgomery County Zoning Ordinance and must be approved by the Montgomery County Department of Transportation and Department of Permitting Services.

A custom bike rack in Rockville Town Center.

2.8 recommended practices

A number of recommended practices can enhance the quality of short-term bicycle parking, but are not required in the Montgomery County Zoning Ordinance.

2.8.1 sheltered bicycle parking

Sheltered bicycle racks help to protect cyclists and their bicycles from rain and snow, and can make bicycling a year-round mode of transportation. Shelters can include awnings, roofs or enclosed structures. Location selection should consider how the structure affects sight distances and pedestrian travel.

Sheltered bicycle parking in Seattle. Source: Dan Malouff

2.8.2 elongated racks

Elongated U-racks, like the one shown below, provide additional support and points of contact for bicycles with longer frames or trailers. The ability to lock both the frame of the bicycle and add-on accessories helps prevent damage and improves security.

Elongated-U racks like this at the Silver Spring Metrorail Station accommodate a variety of bicycle types.

03 long-term bicycle parking

Long-term bicycle parking is intended to provide sheltered and secure bicycle storage for residents, employees and long-term visitors who are leaving their bicycles in a residential or commercial building for several hours or longer and therefore need their bicycles to be protected from vandalism, theft and the elements.

3.1 types of long-term bicycle parking

There are five types of bicycle parking in residential and commercial buildings:

- Bicycle rooms on the ground floor.
- Bicycle rooms in a parking garage.
- Bicycle cages in a parking garage.
- Bicycle lockers.
- Bicycle racks in a parking garage.

3.1.1
bicycle rooms on ground floor

A bicycle room located on the ground floor of a commercial or residential building is the preferred form of long-term bicycle parking because it provides:

- Highly secure bicycle storage in an enclosed facility.
- Direct access to the street or sidewalk.
- Little or no conflict with automobiles.

Requirements:

- Clearly marked as a long-term bicycle parking space. (6.2.6.A.1.c.i)
- Available and accessible to all building tenants during the building's hours of operation. For residential tenants, each space must be accessible 24 hours a day, 7 days a week. (6.2.6.A.1.b)
- Located in a well-lit, visible location near the main entrance or elevators. (6.2.6.A.1.c.iii)
- Must not be accessible to anyone without authorized access. (6.2.6.A.1.d)
- Must be well-maintained and well lit. (6.2.6.A.1.f)

Recommended:

- Ability to communicate between bicyclists and building security.

3.1.2
bicycle rooms in a parking garage

A bicycle room with stacked bike racks.

A bicycle room located in the parking garage of a commercial or residential building is the second best form of long-term bicycle parking because it provides:

- Highly secure bicycle storage in an enclosed facility.
- Indirect access to the street or sidewalk through a parking garage.
- Some conflict with automobiles as cyclists navigate through the parking garage.

Requirements:

- Clearly marked as a long-term bicycle parking space. (6.2.6.A.1.c.i)
- Located no lower than the first complete parking level below grade, and no higher than the first complete parking level above grade. (6.2.6.A.1.c.ii)
- Available and accessible to all building tenants during the building's hours of operation. For residential tenants, each space must be accessible 24 hours a day, 7 days a week. (6.2.6.A.1.b)
- Located in a well-lit, visible location near the main entrance or elevators. (6.2.6.A.1.c.iii)
- Must not be accessible to anyone without authorized access. (6.2.6.A.1.d)
- Must be well-maintained and well lit. (6.2.6.A.1.f)

Recommended:

- Ability to communicate between bicyclists and building security.
- Bicyclists should have direct bicycle access to bicycle room so that they do not need to take their bicycles through building lobbies. However, if garage ramps are excessively steep, elevators should be sized to accommodate bicycles.
- Parking garage gate arms should be positioned to allow bicycles to pass by.

3.1.3

bicycle cages in a parking garage

A bicycle cage located in the parking garage of a commercial or residential building is the third best form of long-term bicycle parking because it provides:

- Secure bicycle storage in a facility typically constructed of chain-link fence, which can be cut and leaves bicycles visible to vandals and thieves.
- Indirect access to the street or sidewalk through a parking garage.
- Some conflict with automobiles as cyclists navigate through the parking garage.

A bike cage at The Citron in Downtown Silver Spring.

Requirements:

- Clearly marked as a long-term bicycle parking space. (6.2.6.A.1.c.i)
- Located no lower than the first complete parking level below grade, and no higher than the first complete parking level above grade. (6.2.6.A.1.c.ii)
- Available and accessible to all building tenants during the building's hours of operation. For residential tenants, each space must be accessible 24 hours a day, 7 days a week. (6.2.6.A.1.b)
- Located in a well-lit, visible location near the main entrance or elevators. (6.2.6.A.1.c.iii)
- Must not be accessible to anyone without authorized access. (6.2.6.A.1.d)
- Must be well-maintained and well lit. (6.2.6.A.1.f)

Recommended:

- Bicyclists should have direct bicycle access to bicycle room so that they do not need to take their bicycles through building lobbies. However, if garage ramps are excessively steep, elevators should be sized to accommodate bicycles.
- Parking garage gate arms should be positioned to allow bicycles to pass by.

3.1.4
bicycle lockers

A secure, locked box that stores a single bicycle is the fourth best form of long-term bicycle parking because it provides:

- Highly secure bicycle storage in an enclosed box.
- Direct or indirect access to the street or sidewalk depending on whether it is located in a parking garage or at street level.
- Varying amount of conflict with automobiles depending on whether it is located in a parking garage or at street level.
- Typically an inefficient use of space.

Requirements

- Clearly marked as a long-term bicycle parking space. (6.2.6.A.1.c.i)
- Located no lower than the first complete parking level below grade, and no higher than the first complete parking level above grade. (6.2.6.A.1.c.ii)
- Available and accessible to all building tenants during the buildings hours of operation and at all times for residents in residential contexts. (6.2.6.A.1.b)
- Located in a well-lit, visible location near the main entrance or elevators. (6.2.6.A.1.c.iii)
- Separated from vehicle parking by a barrier that minimizes the possibility of a parked bicycle being hit by a car. (6.2.6.A.1.c.iv)
- Must be securely anchored. (6.2.6.A.1.d)
- Must be well-maintained and well lit. (6.2.6.A.1.f)

Recommended:

- Bicyclists should have direct bicycle access to bicycle room so that they do not need to take their bicycles through building lobbies.
- Bicyclists should have direct bicycle access to bicycle room so that they do not need to take their bicycles through building lobbies. However, if garage ramps are excessively steep, elevators should be sized to accommodate bicycles.
- Parking garage gate arms should be positioned to allow bicycles to pass by.
- Bike lockers should not be stacked unless a ramp is provided to allow the user to roll their bicycle into the stacked lockers.

See Appendix C for a discussion of the advantages and disadvantages of using bicycle lockers.

A bike locker at the Silver Spring Transit Center.

3.1.5
bicycle racks in a parking garage

Bicycle racks located in a parking garage of a commercial or a residential building is the least preferred form of long-term bicycle parking because it provides:

- Less secure bicycle storage because bicycles are accessible to vandals and thieves.
- Indirect access to the street or sidewalk through a parking garage.
- Some conflict with automobiles as cyclists navigate through the parking garage.

Requirements

- Clearly marked as a long-term bicycle parking space. (6.2.6.A.1.c.i)
- Located no lower than the first complete parking level below grade, and no higher than the first complete parking level above grade. (6.2.6.A.1.c.ii)
- Available and accessible to all building tenants during the buildings hours of operation and at all times for residents in residential contexts. (6.2.6.A.1.b)
- Located in a well-lit, visible location near the main entrance or elevators. (6.2.6.A.1.c.iii)
- Separated from vehicle parking by a barrier that minimizes the possibility of a parked bicycle being hit by a car. (6.2.6.A.1.c.iv)
- Must be well-maintained and well lit. (6.2.6.A.1.f)

Recommended:

- Bicyclists should have direct bicycle access to bicycle room so that they do not need to take their bicycles through building lobbies. However, if garage ramps are excessively steep, elevators should be sized to accommodate bicycles.
- Parking garage gate arms should be positioned to allow bicycles to pass by.

3.2 bicycle parking requirements

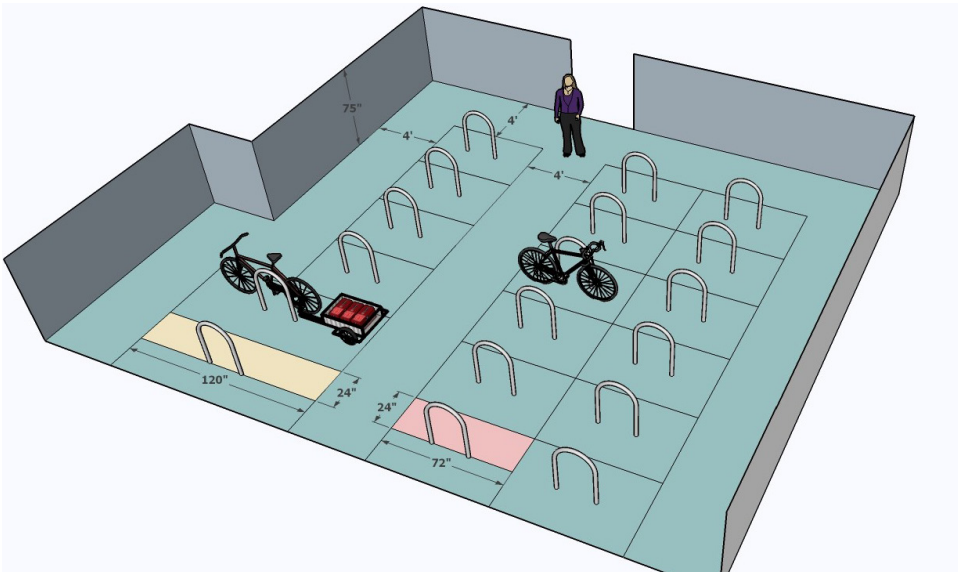
Total bicycle parking space requirements are based on a metric specific to each use, a maximum number of total bicycle parking spaces and a percent of the total spaces that are intended for short-term and long-term use. The bicycle parking space table is provided in Appendix A and Appendix B.

3.3 dimensions

The Montgomery County Zoning Ordinance specifies minimum dimensions for long-term bicycle parking.

- Each long-term bicycle parking space must have:
  - A minimum vertical clearance of 75 inches for spaces other than lockers. (6.2.6.A.2.a.i.)
  - A minimum vertical clearance of 48 inches for a locker. (6.2.6.A.2.a.ii.)
  - A minimum length of 72 inches and width of 24 inches if a bicycle is placed horizontally. (6.2.6.A.2.a.iii.)
  - A minimum length of 40 inches and width of 24 inches if a bicycle is placed vertically. (6.2.6.A.2.a.iv.)
- A bicycle parking facility must have an aisle a minimum of 4 feet in width between rows of bicycle parking spaces and the perimeter of the area devoted to bicycle parking. (6.2.6.A.2.b.)
- If a room or common locker is not divided into individual spaces, each 12 square feet of floor area is counted as one bicycle parking space.

An example of the dimensions of a bicycle room with inverted-u racks is shown below.



Example of long-term bicycle parking.

3.4

recommended practices

A number of recommended practices can enhance the quality of long-term bicycle parking, but are not required by the Montgomery County Zoning Ordinance.

3.4.1

entrances

Entrances to long-term bicycle parking locations should be designed with bicyclist's needs in mind:

- Doorways should be wide enough for a bicyclist to comfortably walk through with a bicycle and a trailer.
- Automated doors should be considered, as they eliminate the need for a bicyclist to hold the door open while maneuvering a bicycle through the doorway.
- There should be adequate space on either side of the door for a bicycle to maneuver and bicyclists to wait for someone else to enter or exit.
- The panel for the key fob or access code should be visible and easily accessed by the user, who will be simultaneously maneuvering a bicycle and operating the door.

3.4.2

wayfinding

Since long-term bicycle parking is often not visible from the street or building entrance, wayfinding should be provided to direct bicyclists to the appropriate location. Pavement markings and signage should be used to identify the routes bicyclists will use to access the long-term parking area. The signs and markings also serve as visual reminders to other garage users to expect bicyclists.

Stacked bike racks at The Citron, Silver Spring, Maryland.

3.4.3
stacked racks

Stacked bicycle racks are a common way to provide a large number of long-term bicycle parking spaces in less space. However, they can exclude some users based on their age, ability or bicycle type. One way to mitigate is to provide lift assist for upper-level parking.

Vertical racks are challenging for some people to use and do not accommodate all types of bicycles.

3.4.4
vertical racks

While the zoning code permits both standard inverted-u racks and vertical racks on the wall, it is recommended that vertical racks only be used as overflow parking beyond the typical demand. Vertical racks are commonly used as a way to incorporate bicycle parking in a smaller footprint, however, they have several disadvantages:

- They can be a challenge for some users to lift their bikes onto these racks.
- They do not fit many non-standard bicycles, including children's bicycles.
- They require removing accessories.

3.4.5
building management policies

Bicycle parking in commercial and residential buildings can be compromised if building owners do not communicate their bicycle parking policies and requirements to building managers and security employees.

3.4.6
physical barriers

While the County Code indicates that there should be barriers to minimize the possibility of a parked bicycle being hit by a car, it does not specify the type of barrier. Bollards are an example of a heavy barrier that provide adequate physical protection from cars.

These bicycle racks are separated from motor vehicles by bollards.

3.4.7
security cameras

Security cameras can assist with monitoring use of bicycle parking areas and may be helpful in the event a theft does occur, as well as for deterrence. If a building has a system of cameras for security monitoring, incorporating additional cameras for this purpose will generally be of small incremental cost and can provide bicycle owners an added measure of comfort.

3.4.8
accommodating longer bicycles

The footprint of a standard bicycle parking space is 24 inches wide by 72 inches deep. While a standard bicycle fits comfortably within that footprint, non-standard bicycles, such as tricycles, cargo bicycles, tandems and recumbents, require additional space (see Appendix E for examples). These non-standard bicycles are likely to become more common over time because a variety of bicycle models accommodates a diverse range of various ages, abilities, needs and interests. Furthermore, accessories, such as baskets, rear racks, child seats and trailers, can also increase the footprint of a standard bicycle.

In order to accommodate non-standard bicycles and accessories, 10 percent of long-term parking spaces should be 8 feet long[2]. These larger spaces will help prevent spillover into access aisles and ensure racks are used as efficiently as possible.

Longer bicycle racks should also include signs that asks bicyclists to reserve these spaces for longer bicycles unless no other space is available.

[2] There are no national best practices for the amount of parking that should accommodate larger bicycles. The bicycle parking standards in Cambridge, Massachusetts require enclosed rack areas with 20 or more racks to provide at least 5 percent of spaces an additional 2 feet in length to accommodate tandem bicycles and bicycles with trailers. As interest in bicycling for all utilitarian purposes grows, the need for larger bicycle parking spaces in Montgomery County will increase.

bicycle parking wayfinding

04

Bicycle signs are required to direct bicyclists to bicycle parking spaces and can be used to provide bicyclists with information about bicycle support facilities and bicycle routes.

Required

- If a long-term bicycle parking facility is not visible from the street or main building entrance, the property owner must post a sign in a lobby or common area indicating the location of the bicycle parking. (6.2.6.A.3.)

Recommendation

- In addition to indicating the location of bicycle parking, signs and pavement markings can be used to inform bicyclists and other users of the location of other bicycle support facilities, such as showers, lockers, changing rooms and repair stations, and provide information about bicycle routes in the surrounding area.

Signs direct bicyclists to parking at this Target in Seattle. Source: Google Maps.

The 2011 Maryland Manual of Uniform Traffic Control Devices (MUTCD) includes D4-3 is the bicycle parking sign.

bicycling support facilities

05

Bicycling support facilities include lockers for storing helmets and clothes, changing rooms, showers and bicycle repair stations with air pumps and tools to complete simple repairs. These types of facilities encourage bicycle use by addressing potential concerns, such as physical appearance and hygiene after a bicycle commute and bicycle maintenance.

While bicycling support facilities encourage longer-distance bicycle commutes by providing a place for employees to change clothing, and can extend the commuting season by providing a place to store the extra gear needed for riding in inclement weather, bicyclists are not the only beneficiaries. In an office setting, showers and lockers can also be used by employees who walk to work, commute using a combination of transit and walking or biking, or who may go to the gym or exercise before or during the workday. Overall, physically active employees are more productive, take fewer sick days and can help lower health insurance costs, all of which improve a company's bottom line.

5.1 showers

Showers allow bicycle commuters to refresh and change clothes after their ride to work, so that they can maintain a professional appearance.

Required

- Any individual tenant space with more than 50,000 square feet of nonresidential gross floor area (excluding retail or uses with less than 50 employees during the largest shift), must have one shower changing facility for each gender, unless the development has shower and changing facilities in a common area that is available to all tenants. One additional shower and changing facility per gender must be installed for every additional 50,000 square feet of nonresidential gross floor area (excluding retail), up to a maximum of 3 for each gender. (6.2.6.A.4.a)

Recommended

- Provide mirrors, sinks, toilets in close proximity, outlets for electric razors and hair dryers, iron and ironing boards, first-aid kits, hooks for towels and clothes. Shower rooms should have non-slip surfaces, adequate lighting and ventilation, and be included in regular cleaning and maintenance programs.

5.2 lockers

Lockers provide a space to store clothing, tools and supplies away from work areas.

Required

- If a long-term bicycle storage facility is required for a nonresidential use, the facility must have a minimum of 0.3 clothing lockers for each required long-term storage space for each gender. Each clothing locker must be:
    - A minimum of 12 inches wide, 18 inches deep, and 36 inches high.
    - Available for use during all hours that employees are on-site.
    - Installed adjacent to the showers and changing facilities in a safe and secured area. (6.2.6.A.4.b)

Recommended

- All lockers should be secure and designed to ensure proper ventilation. Additional lockers can be provided for those who walk or jog to work, or exercise during the workday. Locker use should be monitored on a regular basis to ensure cleanliness and availability. The dimensions specified in the Montgomery County Zoning Ordinance will accommodate most hangers, which are about 18 inches in length. However, taller, deeper lockers better accommodate hanging clothing.

5.3 repair stations

Repair stations help bicyclists complete routine maintenance tasks.

- Repair stations: While the Montgomery County Zoning Ordinance does not require repair stations, the stations support and encourage bicycle use by providing the tools necessary to perform simple bicycle repairs. Repair stations can be installed indoors or outdoors and do not take up much space. For adequate clearance to maneuver and make bicycle repairs, a repair stand needs a clear area measuring 90 inches by 45 inches, with the back of the repair stand placed at least 12 inches from the wall. Repair stations are a relatively low-cost bicycle support facility. A basic repair stand should have:
    - Supporting arm to hold a bicycle without causing damage.
    - Basic tools attached to the stand with tamper-proof hardware.
    - An air pump attached to the stand with tamper-proof hardware.

A self-service bicycle repair station at the Blair's in Silver Spring.

Appendix A: Bicycle Parking Spaces – Ag, Rural Residential, Residential & Industrial Zones[3]

USE or USE GROUP	Metric	Minimum (Maximum)	% Long Term
RESIDENTIAL			
Household Living			
Multi-Unit Living	Dwelling Unit (20+ Units Only)	0.35 (100 max)	95%
Group Living			
Dormitory Independent Living Facility for Seniors or Persons with Disabilities Personal Living Quarters Residential Care Facility	Dwelling Unit (20+ Units Only)	0.25 (50 max)	95%
CIVIC AND INSTITUTIONAL			
Charitable, Philanthropic Institution	5,000 SF of GFA	1.00 (5 max)	85%
Cultural Institution	10,000 SF of GFA	0.50 (10 max)	15%
Day Care Facility			
Group Day Care Day Care Center	5,000 SF of GFA	1.00 (5 max)	85%
Educational Institution (Private)	5,000 SF of GFA	1.00 (50 max)	15%
Hospital	25,000 SF of GFA	1.00 (50 max)	85%
Private Club, Service Organization	10,000 SF of GFA	0.50 (10 max)	15%
Swimming Pool (Community)	5,000 SF of GFA	1.00 (25 max)	15%
COMMERCIAL			
Eating and Drinking			
Restaurant	10,000 SF of GFA	1.00 (10 max)	15%
Lodging			
Hotel, Motel	10 Guest Rooms	--	--
Medical and Dental			
Clinic Medical, Dental Laboratory	5,000 SF of GFA	0.50 (25 max)	85%
Office and Professional			
Life Sciences Office Research and Development	5,000 SF of GFA	0.50 (100 max)	85%
Recreation and Entertainment			
Conference Center Health Clubs and Facilities Recreation and Entertainment Facility	10,000 SF of GFA	0.50 (50 max)	15%
Retail Sales and Service			
Retail/Service Establishment	10,000 SF of GFA	0.75 (50 max)	15%
INDUSTRIAL			
Manufacturing and Production			
Light Manufacturing and Production Medical/Scientific Manufacturing and Production	10,000 SF of GFA	0.50 (15 max)	100%
Bus, Rail Terminal/Station	100 average daily riders	3.5 (100 max)	85%

[3] Requirements are current as of August 1, 2016. Please verify the numbers in Section 59 of the County Code (Section 6.2.4.C) at http://www.amlegal.com/codes/client/montgomery-county_md/

Appendix B: Bicycle Parking Spaces – Commercial / Residential & Employment Zones[4]

USE or USE GROUP	Metric	Minimum (Maximum)	% Long Term
RESIDENTIAL			
Household Living			
Multi-Unit Living	Dwelling Unit (20+ Units Only)	0.50 (100 max)	95%
Group Living			
Dormitory Independent Living Facility for Seniors or Persons with Disabilities Personal Living Quarters Residential Care Facility	Dwelling Unit (20+ Units Only)	0.25 (50 max)	95%
CIVIC AND INSTITUTIONAL			
Charitable, Philanthropic Institution	5,000 SF of GFA	1.00 (5 max)	85%
Cultural Institution	10,000 SF of GFA	1.00 (10 max)	15%
Day Care Facility			
Group Day Care Day Care Center	5,000 SF of GFA	1.00 (5 max)	85%
Educational Institution (Private)	5,000 SF of GFA	1.00 (50 max)	15%
Hospital	25,000 SF of GFA	1.00 (50 max)	85%
Private Club, Service Organization	10,000 SF of GFA	1.00 (10 max)	15%
Swimming Pool (Community)	5,000 SF of GFA	0.50 (25 max)	15%
COMMERCIAL			
Eating and Drinking			
Restaurant	10,000 SF of GFA	1.00 (10 max)	15%
Lodging			
Hotel, Motel	10 Guest Rooms	1.00 (25 max)	100%
Medical and Dental			
Clinic Medical, Dental Laboratory	5,000 SF of GFA	1.00 (25 max)	85%
Office and Professional			
Life Sciences Office Research and Development	5,000 SF of GFA	1.00 (100 max)	85%
Recreation and Entertainment			
Conference Center Health Clubs and Facilities Recreation and Entertainment Facility	10,000 SF of GFA	1.00 (50 max)	15%
Retail Sales and Service			
Retail/Service Establishment	10,000 SF of GFA	1.00 (50 max)	15%
INDUSTRIAL			
Manufacturing and Production			
Light Manufacturing and Production Medical/Scientific Manufacturing and Production	10,000 SF of GFA	1.00 (25 max)	100%
Transportation			
Bus, Rail Terminal/Station	100 average daily riders	7.0 (100 max)	85%

[4] Requirements are current as of August 1, 2016. Please verify the numbers in Section 59 of the County Code (Section 6.2.4.C) at http://www.amlegal.com/codes/client/montgomery-county_md/

Appendix C: Advantages and Disadvantages of Bicycle Lockers

While bicycle lockers have some advantages, they also present some specific challenges that make them less desirable than other types of long-term bicycle parking.

The advantages of bicycle lockers include:

- Flexibility: Bicycle lockers can be used indoors or outdoors, and can be moved to a different location if demand changes or construction requires a temporary relocation. Bicycle lockers can be co-located with other bicycle racks to provide short-term and long-term bicycle parking in the same location.
- Additional storage: Bicycle lockers allow bicyclists to secure helmets and other bicycling gear with their bicycle. Bicycles and bicycle gear are protected from the elements.
- Transit integration: In some cities, bicycle lockers are available on demand and can be paid for with a transit card. Providing bicycle lockers at transit centers can help reduce demand for vehicular parking by offering an alternate way to make the first/last mile connections between transit and users' final destinations.

Some of the challenges unique to bicycle lockers are:

- Security:
    - Bicycle lockers should have built-in locking mechanisms. Lockers that require users to provide their own locks are less secure as padlocks are easily cut, and the locker remains unsecured when not in use.
    - Lockers are often disfavored at federal facilities, especially when the contents inside are not visible. Lockers built with a security window or grate for viewing contents can increase safety and ensure the locker is being used for bicycle parking.
- Space efficiency: Bicycle lockers are larger than a standard bicycle parking space and can take up a considerable amount of space when several are located in the same area.
    - Bicycle lockers with only long-term leasing options are a poor utilization of space when only one person can rent them, since that person may only use the locker part of the time. Bicycle lockers with an on-demand rental system – rather than assigning a locker to a single person – are a more efficient use of space, since they can accommodate multiple users at different times (i.e., a daytime commuter and a nighttime resident).
    - Although bicycle lockers can sometimes be stacked, this practice is discouraged unless a ramp is provided to allow users to roll bicycles up to lockers on the second level.
- Ease of use: Information regarding how to rent a locker for either short-term or long-term use should be provided on or nearby the locker. The process to rent a locker should be straightforward and keys or access codes should be provided within a reasonable time frame of the request.
- Monitoring utilization: Bicycle locker usage should be monitored in terms of both appropriateness and frequency. Any lockers being used for non-bicycling related activities should be cleared out and made available again for bicycling-related use.

Appendix D: Types of Bicycles

Type of Bicycle	Description	Photo	Approximate Dimensions (L x W x H)
Standard bicycle	• Designed for a single rider. • May have racks or panniers that add extra width. • Different frame styles and materials.		72" x 24" x 48"
Recumbent bicycle	• Pedals are located in front of rider, rather than below. • Seated position allows the rider's weight to be more evenly distributed over a larger area. • May be difficult to lock using a standard U-lock.		82" length
Adult tricycle	• Have three wheels to provide more stability than a standard bicycle. • Many have racks in the back for carrying cargo. • Wider than a standard bicycle, which may make it difficult to lock using a standard U lock.		72" x 30" x 48"
Cargo bicycles	• Single set of pedals. • May carry goods or children. • May have a compartment in front or rear. • Longer and heavier than a standard bicycle.		96" x 24" x 43"

Type of Bicycle	Description	Photo	Approximate Dimensions (L x W x H)
Tandem bicycles	• Designed for two riders with two sets of pedals. • Longer and heavier than standard bicycle.		96" x 24" x 48"
Electric bicycles	• Designed for a single rider. • Battery pack to help conquer inclines. The battery pack may detach or be fixed to the bicycle. • May be heavier than a standard bicycle.		72" x 24" x 48"
Children's bicycles	• Smaller and lighter than adult bicycles. • Frame design may make it difficult to secure with a standard U-lock.		Balance bike 34" x 18" x 24"
Bicycle Trailers	• Attaches to the back of a bicycle. • May carry goods or children. • Makes bicycle longer.		Cargo Trailer – size varies 27" x 34" x 24" Child Trailer – size varies 50" x 35" x 33" Bicycle and trailer 117" length

Type of Bicycle	Description	Photo	Approximate Dimensions (L x W x H)
Trailer bike for children	• Attaches to the back of a bicycle. • Has smaller handlebars, seat, pedals and rear wheel. • Makes bicycle longer.		Adds approximately 36" in length

Appendix E: Examples of Long Bicycles

Tricycle Approximate Dimensions - 72" x 30" x 48"	Cargo Bicycle Approximate Dimensions - 96" x 24" x 43"
	
Tandem Bicycle **Approximate Dimensions - 96" x 24" x 48"**	**Recumbent Bicycle** **Approximate Dimensions – (length) - 82"**
	
Child Trailer **Approximate Dimensions - 50" x 35" x 33"**	**Trailer Bicycle** **Adds approximately 36" in length**
	

Appendix F: Additional Resources and Guides

1. American Association of State Highway and Transportation Officials. Guide to Bicycle Facilities, 4th Edition, 2012. https://bookstore.transportation.org/item_details.aspx?ID=1943
2. Association of Pedestrian and Bicycle Professionals. Essentials of Bicycle Parking, 2015. https://apbp.site-ym.com/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf
3. Association of Pedestrian and Bicycle Professionals. Bicycle Parking Guidelines, 2nd Edition, 2010. https://apbp.site-ym.com/store/ViewProduct.aspx?id=502098
4. Arlington County, Virginia. Arlington Master Transportation Plan – Bicycle Element, July 2008. http://arlingtonva.s3.amazonaws.com/wp-content/uploads/sites/31/2014/02/DES-MTP-Bicycle-Element.pdf
5. Arlington County, Virginia. Guide to Effective Bicycle Parking, February 2014. http://www.commuterpage.com/tasks/sites/cp/assets/File/Arlington_Bicycle_Parking.pdf
6. City of Davis, California. Beyond Platinum, Bicycle Action Plan, 2014. http://cityofdavis.org/home/showdocument?id=979
7. City of Portland, Oregon. Bicycle Parking. http://cityofdavis.org/home/showdocument?id=979
8. City of Somerville, Massachusetts. Bicycle Parking and Installation Guide for Development and Redevelopment Projects. http://www.ci.somerville.ma.us/sites/default/files/BicycleParkingGuide_0.pdf

Montgomery County Planning Department

draft bicycle parking guidelines

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