CITY OF KIRKLAND
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DEPARTMENT OF PUBLIC WORKS
PRE-APPROVED PLANS POLICY

Policy R-36: Bike Parking Guidelines

1. Introduction/Overview

Bike parking facilities are an essential component of bicycle infrastructure as part of Kirkland's multimodal transportation system. Providing convenient and secure bike parking is critical to support existing cyclists, attract new riders, and reduce the barriers to cycling for all types of trips. Kirkland's Active Transportation Plan recognizes the importance of bike parking in Objective 2-10: Update bicycle parking policy and programs to ensure parking is available at both ends of bike trips. Providing specific design recommendations for bike parking as part of this guide ensures that the constructed bike parking meets the needs of cyclists throughout the city. The Kirkland Zoning Code[1] identifies the number of bike parking spaces that shall be provided with new development throughout the city but offers limited design or performance standards for bike parking. This guide outlines design recommendations for bicycle parking to ensure that new development provides bike parking facilities that align with best practice and provide secure and convenient bike parking options. The content of this guide was developed from best practices contained in the Association of Pedestrian and Bicycle Professionals' Bicycle Parking Guidelines[2,3].

The following design guidelines apply to both bicycle parking provided as part of new development and bicycle parking within the public right-of-way. Acceptable bike parking design varies based on the expected parking duration. Short-term bike parking, typically four hours or less, should provide convenient and highly visible access to destinations while long-term bike parking should emphasize security and weather protection. Table 1 summarizes characteristics of different types of short- and long-term bike parking options that are permitted in the City of Kirkland.

Table 1: Types of Short- and Long-Term Bike Parking

Type of Bike Parking	Permitted Design Option	Characteristics
Short-Term: Bicycle parking designed for visitors to provide convenient options for trips of four hours or less	Sidewalk Bike Racks	• Located within sidewalk furnishing zone • For use by general public • Does not include weather protection
	On-Street Bike Parking Corrals	• Installed by City of Kirkland • Located in the roadway adjacent to the curb in an on-street parking stall or the 30 ft no parking zone approaching a stop sign • For use by general public

Type of Bike Parking	Permitted Design Option	Characteristics
		• Does not include weather protection
	Bike Racks on Private Property	• Installed by developer • Located within private property • For use by visitors to property • Should include weather protection • May include other amenities (see Section 2.4)
	Event Bike Parking	• Provided by event organizers or volunteers • Located within event area • For use by attendees • May include weather protection
Long-Term: Bicycle parking design for residents or employees to provide secure options for storage or trips longer than four hours	Bike Lockers	• Individual locked spaces to store one bicycle • Installed by developer or transit agency • Located within private property (*e.g.* outside, parking garage) • May include weather protection over locker (e.g. canopy)
	Bike Cages	• Common secure areas to store multiple bicycles • Installed by developer • Located within private property (*e.g.* outside, parking garage) • Includes weather protection
	Bike Rooms	• Common secure areas to store multiple bicycles • Installed by developer • Located within private property (*e.g.* parking garage, inside building) • Includes weather protection • May include additional bike amenities (see Section 3.4)

Bicycles comes in many different shapes and sizes, and the provided bicycle parking must be tailored to suit different types of users. In most cases, the provided bicycle parking should be sized to accommodate a standard adult-sized bicycle, typically 6 ft. long by 2 ft. wide by 4 ft. tall. Oversized bicycles (*e.g.* cargo bikes, longtail bikes, recumbents) are becoming increasingly common and require additional design considerations to ensure safe, convenient, and secure bicycle parking that does not impede pedestrian access. These bicycles may be 4 to 6 ft. longer than a standard adult bicycle. Electric bicycles also require special design considerations, including access to charging outlets. These bikes also tend to be heavier due to the included battery, making horizontal (*i.e.,*no lifting required) bike parking preferrable for many users.

2. Short Term Bicycle Parking

Short-term bike parking, typically four hours or less, must be designed to provide secure and convenient bicycle storage options for visitors to businesses and residences. The following sections specify the appropriate design elements for sidewalk bike racks, on-street bike parking corrals, and bike racks installed on private property.

2.1 Acceptable Bicycle Racks

Short-term bicycle parking racks shall be Inverted U type racks. Kirkland's standard bicycle rack is detailed in CK-R.40. All bicycle racks installed in public right-of-way or private property shall be cane detectable. Other bicycle racks may be approved by Public Works provided that they meet the following functional criteria:

- Support the frame of the bicycle in two places
- Prevent the bicycle wheels from tipping
- Allow the frame and one wheel of the bike to be locked when both wheels are left on the bike or the frame and both wheels of the bike to be locked when the front wheel is removed
- Allow locking with a U-shaped lock
- Allow parking by a wide variety of bicycle shapes and sizes including, but not limited to, bicycles without a traditional diamond-shaped frame, oversized bicycles, electric bicycles, bicycles with water bottle cages, or bicycles without kickstands
- Allow for secure anchoring to a hard surface
- Utilize an intuitive design

Bicycle racks that do not support a bicycle's frame (*i.e.,* a wheel-bending type rack) will generally not be approved.

Bicycle racks shall be constructed from either galvanized or stainless steel. Colored thermoplastic coated bicycle racks may be permitted by Public Works provided that an applicant considers longevity and maintenance of the thermoplastic coating. Square tubing is preferred for short-term bicycle racks to resist pipe cutting attacks.

Approved bicycle racks shall be mounted to a hard surface. Concrete is the preferred hard surface for bicycle parking areas although asphalt may be used if a concrete footing is also provided for each anchor point. Bicycle racks shall be anchored using the provided surface flanges with tamper resistant hardware (*e.g.,* security nuts). All bicycle racks shall be installed following the manufacturer's specifications.

On-street bicycle parking corrals may be installed on asphalt surfaces by using a base rail which should be attached to the asphalt pavement per manufacturer specifications.

2.2 Bicycle Parking Location and Design

Bicycle parking shall generally be located to provide adequate clearance from sidewalks, street or property furnishings, buildings, streets, and driveways while still providing convenient access to building entrances. Designated micromobility parking may be located next to bicycle parking to facilitate appropriate parking. Short-term bicycle parking racks installed by the City of Kirkland shall be located in either existing, on-street parking spaces as a bike corral, or within the sidewalk furnishing zone as a sidewalk bike rack. Short-term bicycle racks installed as part of a new development shall be located on private property and within 50 feet of each public building entrance. Short-term bicycle racks required for new development may be permitted within the public right-of-way in urban centers (*i.e.,* Totem Lake, Juanita Business District, Central Business District, or NE 85th Street Station Area) provided that the rack is within 50 feet of a public, pedestrian-oriented building entrance and there is adequate space within the right-of-way (see Figure 1 or 2).

The configuration of bike parking and any required clearances depends on the orientation of bike racks within the bike parking area. Parallel bike parking installations (see Figure 1) arrange bike racks end to end and are typically seen in the sidewalk furnishing zone to minimize encroachment into the pedestrian clear zone, the primary, accessible portion of the sidewalk that runs parallel to the street. Perpendicular bike parking installations (see Figure 2) group bike racks side to side and require a greater clear zone on each side of the rack to accommodate bikes of different shapes and sizes. Parallel bike parking installations require a minimum 6 ft. between racks while perpendicular bike parking installations require a minimum 3 ft. between racks. Bike racks should also be installed at least 2 ft. from building walls or the edge of curb although 3 ft. is preferred where feasible. A 3 ft. clearance from the edge of curb is required whenever bike parking is adjacent to a parking lane.

Bike parking should generally be located outside of the pedestrian clear zone, typically the required sidewalk width, in line with other street or property furnishings, and should be accessible from the sidewalk. In locations with wide sidewalks or pedestrian plazas, bike parking may be permitted to intrude within the pedestrian zone although a minimum 5 ft. pedestrian clear zone must be maintained. Bike parking within a plaza should be strategically located next to building entrances and away from major pedestrian flows.

Short-term bike parking should also be placed to avoid conflicts with vehicles accessing a site. Bike parking within the street furnishing zone should be located at least 5 ft. from driveways. Bike parking accessible from a vehicle driveway shall be designed such that parked bicycles do not extend into the minimum required vehicle drive aisle. Typical short-term bike parking configurations are seen below:

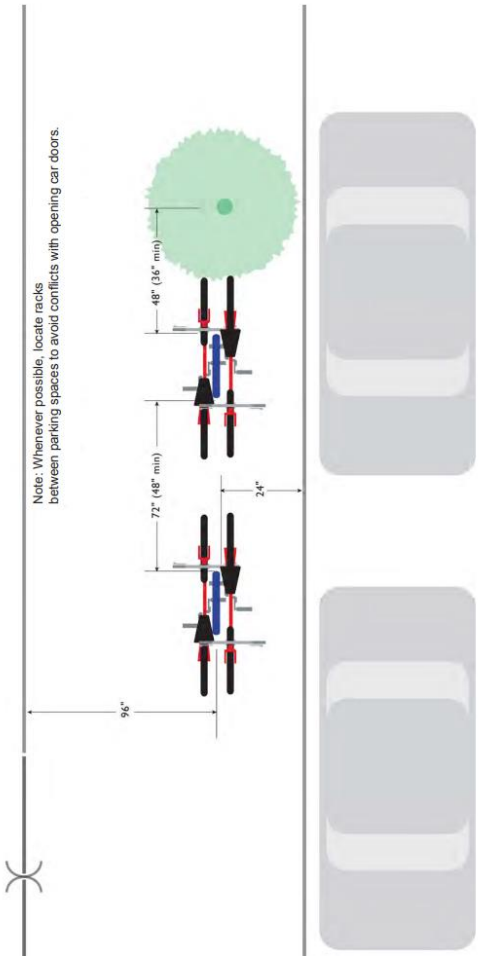

Figure 1: Typical Layout of Parallel Sidewalk Bike Parking Installations (Source: APBP[2])

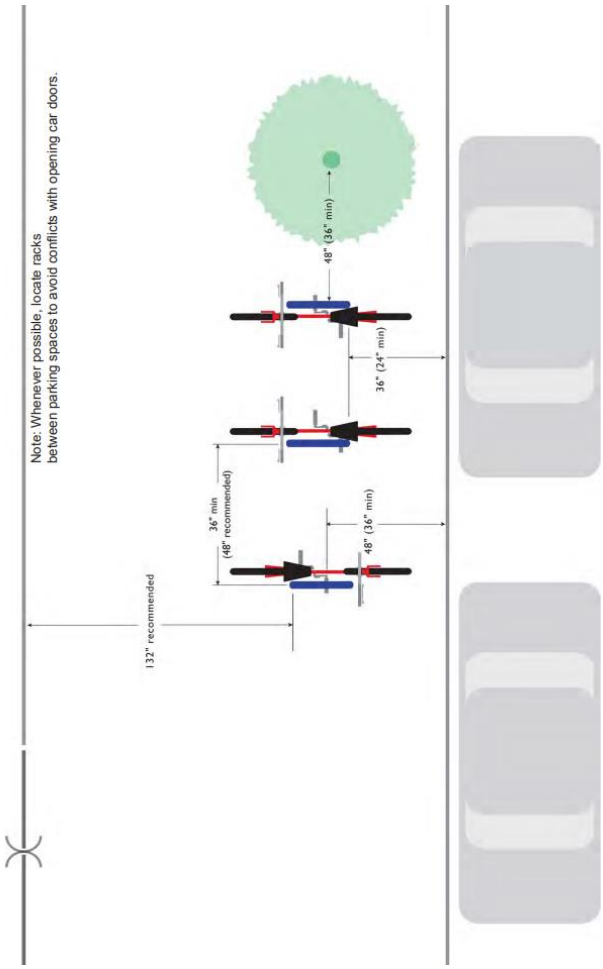

Figure 2: Typical Layout of Perpendicular Sidewalk Bike Parking Installations (Source: APBP[2])

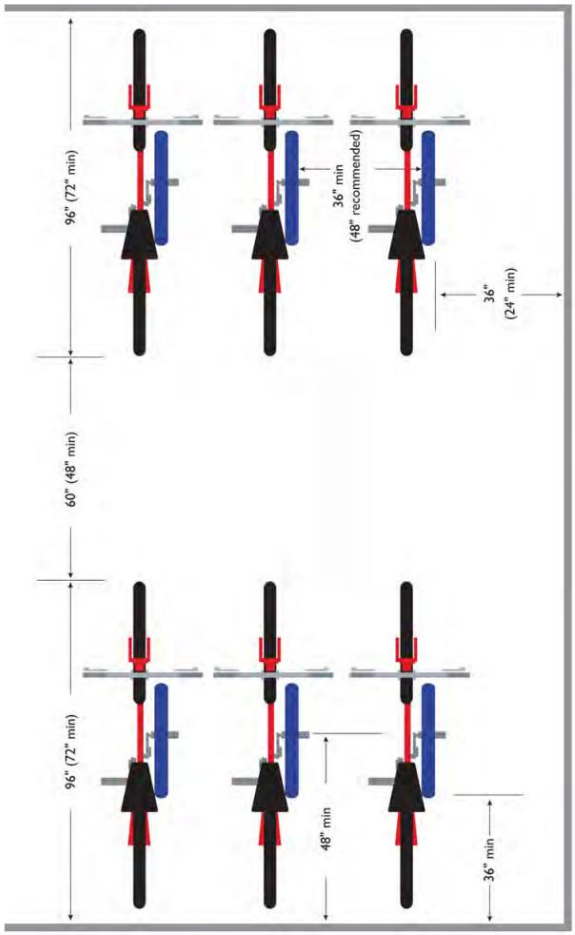

Figure 3: Typical Layout of a Bike Parking Area on Private Property (Source: APBP[2])

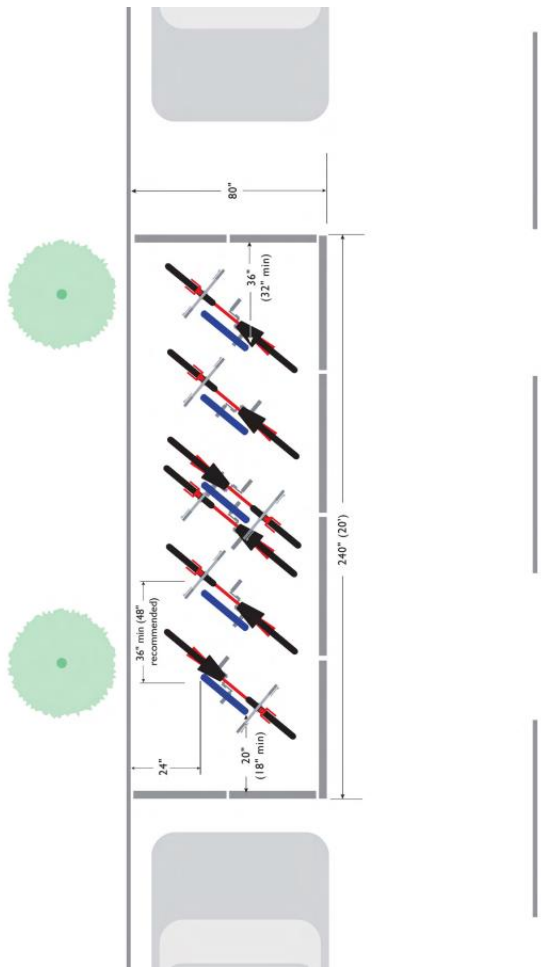

Figure 4: Typical Layout of a Bike Parking Corral (Source: APBP[2])

2.3 Additional Short-Term Bicycle Parking Requirements

Short-term bicycle parking located on private property shall typically include weather protection. When short-term bike parking is provided within a plaza, it should be strategically located to utilize available weather protection, such as building overhangs, without introducing new structures. Bike parking located in central plaza areas may be exempt from weather protection requirements. The provided weather protection shall cover the required bike parking and circulation area with a minimum 8 ft. clearance between the ground and bottom of weather protection. The weather protection shall include a separate drain which directs water away from the provided bicycle parking area. All weather protection shall be designed to meet applicable structural and building codes.

2.4 Optional Short-Term Bicycle Parking Amenities

Short-term bicycle parking may also include a bike repair station or charging outlets for electric bicycles on private property. Bike repair stations may be used by cyclists to make minor tune ups and can include elements like a stand to hold the bicycle, tire pump, and tools. Repair stations should be installed according to the manufacturer's specifications, and all individual components (*e.g.,* repair tools) should be attached to the stand body in a secure manner to minimize potential theft. If provided, the repair station should be located underneath the required weather protection. The bike repair station shall be

situated to provide sufficient clearance between the repair station and adjacent racks or walls so that a user may freely work on their bike without reducing the availability of bike parking. The final position of any repair station must be approved by Public Works as part of the design process.

New developments may also install exterior charging outlets on private property to charge electric bicycle batteries. The design of charging outlets shall consider the security of a users' battery pack, required weather protection, and the universality of the provided charging ports. External charging outlets shall be constructed to meet all applicable codes and house cords internally to minimize potential tripping hazards. Maintenance of the provided charging outlets is the sole responsibility of the property owner.

3. Long Term Bicycle Parking

Long-term bike parking, typically for more than four hours, must be designed to provide secure and convenient bicycle storage options for employees and residents. The following sections specify the appropriate design elements for bike lockers, bike cages, and bike rooms installed on private property.

3.1 Acceptable Bike Parking Types

Long-term bicycle parking includes bike lockers, bike cages, or bike rooms. Bike lockers are small and secure bicycle storage areas that can accommodate up to two bicycles per locker. Individual bike lockers can be arranged in groups or stacked to provide bike parking for multiple users in a smaller footprint. Bike cages or rooms provide a controlled-access bike parking area that contains racks for multiple bicycles. Bike cages typically use metal fencing to create a secure area for bike parking within a parking garage or outdoors and can be easier to expand. Bike rooms are typically incorporated into a building design as a standalone room.

Bike lockers can be made from metal, molded plastic, or plastic or fiberglass on metal frames. Bicycle lockers are generally secure, but they can be cut or pried open if improperly designed or made of soft plastic. Security windows may be included in bike lockers provided that they do not introduce additional security vulnerabilities. Bike lockers shall be securely mounted to a hard surface following the manufacturer's specifications to prevent the lockers from being carried away. Concrete is the preferred hard surface for bicycle parking areas although asphalt may be used if a concrete footing is also provided for each anchor point. Bicycle lockers shall be anchored following manufacturer standards.

Bike cages shall be constructed from wire mesh or perforated steel as recommended by a manufacturer to be theft-resistant and allow for adequate visibility of the interior space. The enclosure shall be securely mounted to a hard, concrete surface and include a roof with a minimum 8 ft. clearance if located outside as a separate structure. Greater vertical clearances may be required if two-tier or hanging racks used. The wire mesh or perforated steel surrounding the bike cage shall be extended from the floor to the roof or ceiling of the bike cage. Since bike rooms are integrated into the building design, these enclosures provide additional security. However, windows should be provided in the door or entry area so users may feel more secure and allow for outside surveillance from building security.

All long-term bicycle parking should also provide adequate security measures to deter bicycle theft. Bike lockers may be secured through private locker keys, individual locks, or smart locks using either a keypad or a key card. An on-demand locker provides the most flexibility to users, secures the lockers while not in use, and allows for access by building personnel as needed. Utilizing individual locks also

provides flexibility to users, but individual locks cannot secure the lockers while not in use. Individual locks may also be vulnerable to theft if the lockers are located in secluded areas. Individual keys provide a guaranteed space for bicycle parking but can pose key management challenges for building personnel and may require lockers to be re-keyed if the keys are lost or not returned. Bike cages or rooms can also be secured through individual keys or smart locks. Individual keys may pose long-term security challenges compared to smart locks if not carefully managed to ensure that only authorized individuals have access to the secure bike parking.

Given the potential security limitations of some long-term bike parking access methods, additional security measures, like monitoring the parking area with active security cameras or an attendant are also recommended. Using security cameras to monitor long-term bike parking areas also provides evidence for police in the event a bicycle is stolen.

3.2 Bicycle Parking Location and Design

Long-term bicycle parking shall generally be located to provide adequate clearance from sidewalks or designated pedestrian pathways, vehicle circulation, and parking areas and should be located in an area that provides convenient access for travelers arriving by bike. Bicycle parking that requires cyclists to carry their bicyclists up or down a set of stairs to access the parking is not acceptable. Long-term bicycle parking may be provided in the parking garage (typically as a bike cage or set of bike lockers), inside the building (as a bike room), or as a separate, stand-alone structure or bike cage. All long-term bicycle parking shall include weather protection.

Bicycle parking located within a parking garage shall be located to ensure that bike parking is accessible as possible from building entrances and minimizes the distance travelled by cyclists through the parking garage. Bicycle entry to the garage shall not be restricted by the use of gates or other barricades intended to restrict vehicle access, and if used to control vehicle access, a minimum 5 ft. clear pathway must be provided for bicyclists around the gate or barricade. If the bicycle parking location requires cyclists to travel on parking garage ramps that exceed 5% grade, a minimum 5 ft. bike lane shall be provided for cyclists travelling uphill outside of the required vehicle drive aisle and pedestrian clear zone. The ramp shall be designed to ensure that vehicles do not need to encroach into the uphill bike lane as demonstrated by vehicle turning templates, and additional width may be required to ensure a clear vehicle path. If the bicycle parking is located within the building, the parking should be clearly identified and located within 50 ft. of the primary building entry. Otherwise, bicycle wayfinding shall be required. Stand-alone bicycle parking must be accessible from a designated bicycle path or the sidewalk and should be situated to be highly visible to cyclists accessing the site and the primary building entry.

Bike lockers are ordered directly from manufacturers and can be installed on any level surface. Bike lockers should be installed in an area that is large enough to accommodate the locker's footprint and provide adequate clearance around the locker since most lockers can be accessed from both sides, allowing for two bikes to be stored in one locker. The size of a bike locker varies between manufacturers, but is around 40 inches wide, 75 inches long, and 50 inches tall. The following performance criteria shall be used to evaluate the arrangement of bike lockers:

- All bike lockers shall be placed to provide sufficient clearance from walls and other bike lockers to allow the door to fully open. If the bike lockers are arranged in parallel rows, bike lockers

located on a center aisle shall be placed to provide sufficient clearance for doors on each side to fully open.

- Bike lockers that open towards a wall, vehicle parking space, or other obstruction (*e.g.* a column) shall be located at least 6 ft. from the obstruction
- Bike lockers that open towards other bike lockers shall provide a minimum 7 ft. access aisle between the bike lockers
- Bike lockers that open towards pedestrian or vehicle circulation areas shall provide a minimum 8 ft. between the bike locker and the pedestrian clear zone or vehicle travelled way
- Bike lockers shall be located to provide a minimum 5 ft. clear aisle to access the bike parking
- At least 10% of the bike lockers shall be sized to accommodate oversized bicycles
- At least 50% of the bike lockers shall include power outlets for electric bike charging

A sample bike locker layout is provided below in Figure 5:

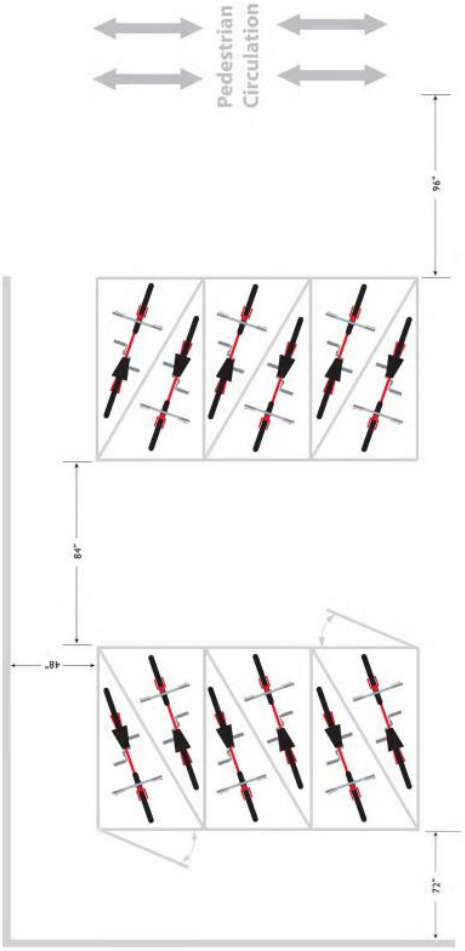

Figure 5: Typical Layout of a Bike Locker Bank (Source: APBP[2])

Bike cages or rooms provide bicycle racks within a secure space to organize bicycle storage and provide additional security. Inverted U type bike racks are the preferred choice for long-term bike parking in bike cages or rooms. Other bicycle racks may be approved by Public Works provided that they meet the functional criteria for bike racks in Section 2.1 of this guide although vertical/hanging bike racks are not

acceptable to accommodate oversized or electric bicycles. All bicycle racks used in bike cages or rooms shall be installed with tamper resistant hardware following the manufacturer's specifications. The arrangement of bicycle racks within a bike cage or room shall be reviewed and approved by the Public Works department. The following performance criteria shall be used to evaluate the arrangement of bicycle parking within bike cages or rooms:

- Horizontal bike racks shall be spaced to provide a minimum 3 ft. between racks
- Vertical/hanging bike racks shall be spaced to provide a minimum 3 ft. between racks if racks are mounted at the same height and a minimum 2 ft. between racks if racks are staggered vertically
- Horizontal bike racks shall be installed at least 2 ft. from room or cage walls although 3 ft. is preferred where feasible
- Vertical/hanging bike racks shall be installed at least 1.5 ft. from room walls or other obstructions (*e.g.,* pipes)
- Vertical/hanging bike racks shall be installed at a height to meet the recommended floor and ceiling clearances as specified by the rack manufacturer
- Racks shall be installed to provide a minimum 5 ft. clear aisle to access the bike parking
- At least 10% of the bike racks shall be placed with greater clearances to accommodate oversized bicycles
- At least 50% of the bike racks shall have access to electric outlets (*i.e.,* an electric outlet shall be located within 3 ft. of the rack.
- No more than 50% of the bike racks shall requiring lifting (*e.g.,* vertical or hanging racks)

A sample bike room layout is provided below in Figure 6:

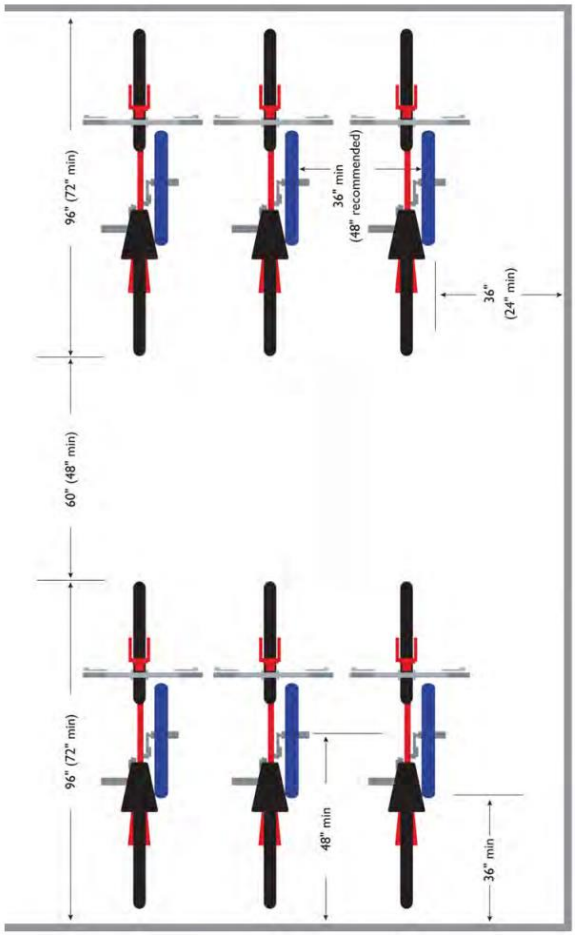

Figure 6: Typical Layout of a Bike Parking Room (Source: APBP[2])

Up to 50% of the required long-term residential bike parking may be provided in unit provided that the following performance standards are met:

- The bicycle parking area is located within 15 ft. of the entrance to the dwelling unit and accessible from a minimum 5 ft. clear pathway that does not include stairs
- The bicycle parking area for one bicycle is a minimum 3 ft. by 6 ft.

3.3 Additional Long-Term Bicycle Parking Requirements

Since long-term bike parking is intended to primarily serve employees and residents, this parking may be located more than 50 ft. away from building entrances. Bike parking signage and wayfinding is required for any long-term bike parking that is not visible from a public building entrance. The design of the signage and wayfinding shall be coordinated with the Public Works department but should include the following elements at minimum:

- Signage that directs bicyclists from primary site access point(s) for bicyclists to the bike parking
- Building maps that identify the bicycle parking location
- New employee and resident information that identifies the bicycle parking location

3.4 Optional Additional Amenities

Long-term bicycle parking may also include a bike repair station. Bike repair stations may be used by cyclists to make minor tune ups and can include elements like a stand to hold the bicycle, tire pump, and tools. Repair stations should be installed according to the manufacturer's specifications, and all individual components (*e.g.* repair tools) should be attached to the stand body in a secure manner to minimize potential theft. The bike repair station shall be situated to provide sufficient clearance between the repair station and adjacent racks or walls so that a user may freely work on their bike without reducing the availability of bike parking. The final position of any repair station must be approved by Public Works as part of the design process.

Providing shower or changing facilities may make bicycle commuting more appealing for workers, beyond having a secure bike storage option, and may be required for commercial or institutional developments of a certain size. Showers or changing facilities could be installed as part of the bike parking room or utilize other shower or changing facilities already provided on-site. Where feasible, these facilities should be co-located with the bike parking to enhance the visibility of these options for cyclists. If the provided shower or changing facilities are not located within 50 ft. of the provided bicycle parking, additional wayfinding should be provided. Showers or changing facilities shall be designed to meet all relevant building codes.

4. Temporary (Event)

Additional temporary bicycle parking may be required for special events within the City of Kirkland. Temporary event parking requirements must be coordinated directly with the Department of Public Works and the Special Events Team.

5. References

1. Kirkland Zoning Code. https://www.codepublishing.com/WA/Kirkland/?html/KirklandZNT.html
2. Association of Pedestrian and Bicycle Professionals. *Bicycle Parking Guidelines, 2nd Ed.* 2010.
3. Association of Pedestrian and Bicycle Professionals. *Essentials of Bike Parking.* 2015. https://www.apbp.org/assets/docs/EssentialsofBikeParking_FINA.pdf