



STREET TYPOLOGY

UC	E/F	MS	NB	CB	CC	NN	EN	LN
Req.	Req.	Req.	Rec.	Rec.	Rec.	Opt.	Lim.	Lim.

MOBILITY SUPPORT

BICYCLE RACKS

DESCRIPTION & INTENT

Bicycle parking provides cyclists with a safe, secure, and reliable place to park bicycles whether commuting, running errands, or patronizing businesses. Bicycle parking is an essential component of the city’s multi-modal transportation network.

USE & APPLICATION

This design element section primarily considered short-term bicycle parking (type C) provided by bicycle racks located within the street right-of-way.

Location

- Bicycle parking should be plentiful, dispersed, visible and conveniently located near nodes, parks, schools and mixed-use districts.
- Bicycle parking should facilitate transfers between modes. It should be accessible to major bus stops and transfer points
- Locating bicycle parking near to corners improves visibility, access to curb ramps, and accessibility to more block frontages. Parking should be located far enough away from the corner to avoid conflicts with curb ramps or sight lines.
- **Bicycle Lanes:** Bicycle parking complements bicycle travel facilities and should be amply located along bicycle routes, lanes, separated bicycle lanes, and trails.

Related Design Elements

- **Pedestrian Area:** Bicycle parking must be located and aligned in a way that does not impede the pedestrian sidewalk zone or block access between the curbside and clear walking zone.
- **Bumpouts:** Bicycle parking works well in bumpouts or bicycle corrals that extend the pedestrian environment into the parking lane, freeing up space on the sidewalk for circulation or other amenities.
- **Loading Zones:** Bicycle parking should avoid being placed next to loading zones (when possible) in order to minimize impacts to loading operations or damage to bicycles.

DESIGN & OPERATIONS

Design Requirements

- **Bicycle Rack Orientation and Clearance: Bicycle racks may be placed parallel, perpendicular, or at an angle to the curb line singly or in groups of two or more.**
 - A** **When perpendicular to the curb,** racks shall be at least 36 inches apart on center and shall be at least 36 inches from the face of curb and edge of the sidewalk.
 - B** **When placed parallel to the curb,** racks shall be at least 5 feet apart at their nearest point. Bicycle racks shall be at least 24 inches from the face of curb (30 inches is preferred where width permits) and 18 inches from the edge of the sidewalk.

- » **When at a 45-degree angle**, hoops should be at least 42 inches apart at center and shall be at least 34 inches from the face of curb at the closest point.

C Clearance from Other Objects: Install racks with a minimum clearance of at least 36 inches between the center of the rack and any other fixed object.

- **Bicycle Rack Durability:** Racks shall provide secure parking for a bicycle. Bolted down racks (utilizing anti-theft bolts) are preferred. In brick environments, embedding poles into concrete will be necessary. Racks shall resist cutting, damage, or disassembly with typically available implements.
- **Bicycle Rack Design:** Racks shall support a bicycle in an upright position, supporting a bicycle frame in at least two places for common bicycle frame types.
 - » Rack design and installation shall enable bicycles to be easily, intuitively, and securely locked. If artistic bicycle rack designs are used, ensure that U-locks or other typical locking devices can be conveniently used securing both wheels and frame of a bicycle.

Additional Design Considerations

- Bicycle parking may be integrated with other street features such as parking meter posts, light poles, planters, parklets or tree guards.
- **Lighting:** Adequate lighting around bicycle parking is important for safety and security.
- Consider unobtrusive ways to provide cover or shelter to bicycle parking.

Utility Considerations

- Ensure that bicycle racks do not block access to utility boxes or hand holes.

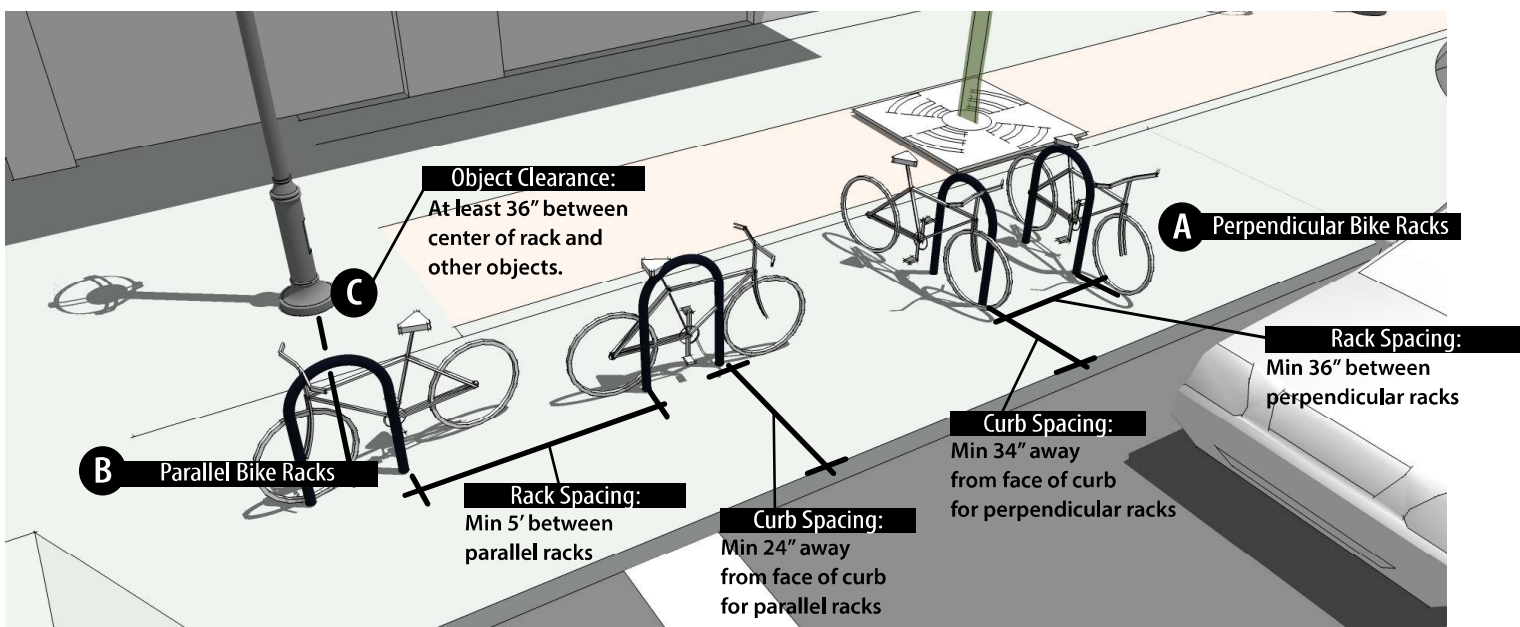
Sustainability Considerations

- Bicycle parking promotes and enables human-powered, emission-free travel options, providing a number of environmental benefits.
- Bicycle parking should be located proximate to street trees to avoid the temptation to lock bicycles to street trees and reduce damage to the tree.
- Where bicycle parking is covered, consider incorporating solar panels, green roofs, and white roofs.

MAINTENANCE & MANAGEMENT

Seasonal Use and Maintenance

- Bicycle parking should be available year-round and in all types of weather. Covered bicycle parking can promote year-round cycling.
- Property owners are responsible for snow removal adjacent to their property; bicycle parking should be kept clear after a snow event.





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MOBILITY SUPPORT

BICYCLE CORRALS

DESCRIPTION & INTENT

A bicycle corral is a designated area for short-term bicycle parking. Bicycle corrals provide parking for a number of bicycles in a compact area. Bicycle corrals may be located on sidewalks, in parking lots, or other areas behind the curb, but are often placed in the curbside zone of the street.

By converting a parking space into space for a bicycle corral, cities can accommodate parking for 12 to 20 patrons on bicycles in the space typically used to park one automobile.

Bicycle corrals can replace bicycle hoops, bicycle racks, freeing up sidewalk space for other uses such as additional pedestrian space or cafe dining. Bicycle corrals are an excellent solution for accommodating a large number of bicycles near specific activity areas and in areas with narrow sidewalks.

Bicycle corrals can be used seasonally where there is greater demand for bicycle parking. During colder months, the space can be converted back to other curbside zone uses.

Bicycle corrals are often highly valued by ground floor businesses. Despite removing a valuable curbside parking space, many businesses have found that bicycle corrals improve accessibility and visibility to their establishment(s) in addition to relieving pressure on limited sidewalk space.



USE & APPLICATION

Location

- Bicycle corrals should be used in areas of high volume of bicycle traffic, or near significant destinations such as mixed-use districts/nodes, schools, civic buildings and parks.
- Bicycle corrals shall be placed within a standard on-street parking space. Corrals placed at the end of a bank of parking can prevent parked cars from creeping too close to the intersection area.

Related Design Elements

- **Bicycle Lanes:** Bicycle parking complements bicycle travel facilities and should be amply located along bicycle routes and facilities proximate to major generators or destinations.
- **Bumpouts:** Bicycle parking works well in bumpouts that extend the pedestrian environment into the parking lane, freeing up space on the sidewalk for circulation or other amenities.
- **On-Street Parking:** On-street bicycle corrals may only be used on streets where the curb lane is not used for travel.
- **Loading Zones:** While bicycle corrals convert an on-street parking space, they should not be located in spaces reserved for loading.
- **Bus Stops:** On-street bicycle corrals should not be placed adjacent to locations where large trucks or transit vehicles stop, such as loading zones or bus stops.

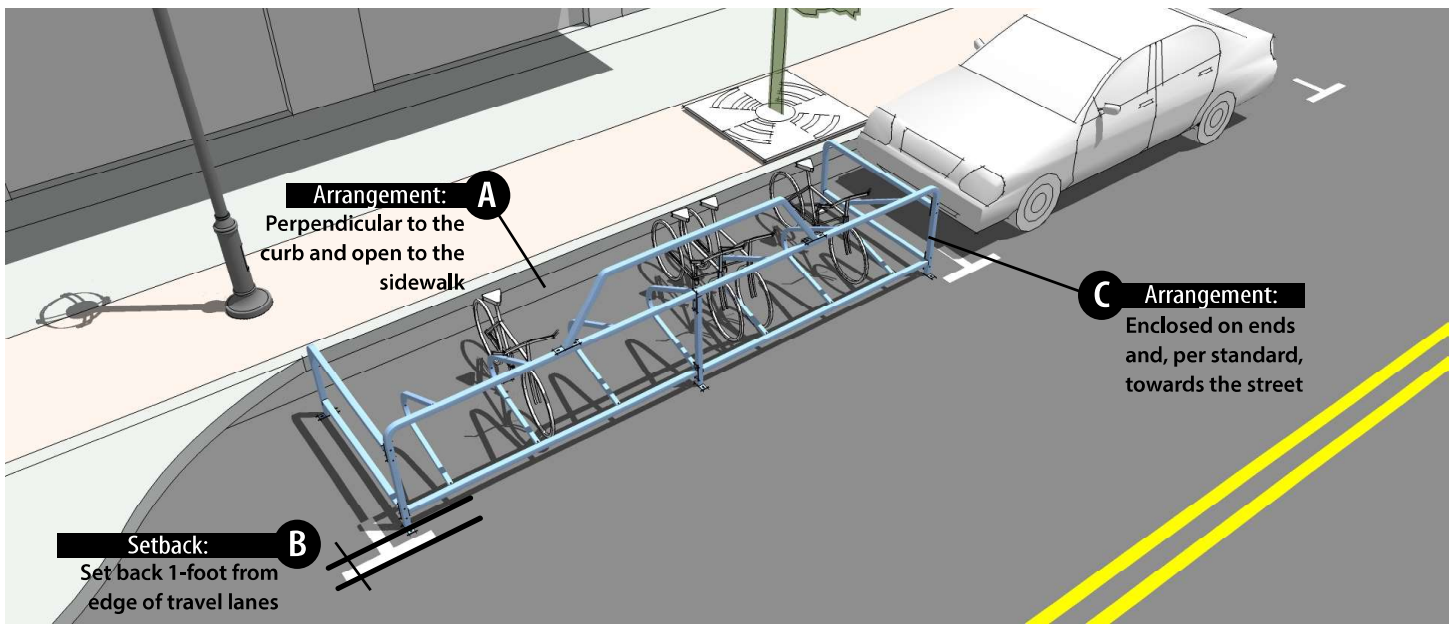
DESIGN & OPERATIONS

Design Requirements

- A** Racks shall be oriented perpendicular to the curb. There should be openings facing the sidewalk to enter the corral and secure bicycles.
- B** Corrals should fit into a parking space comfortably and set back from the edge of the nearest travel lane by a minimum of 1-foot.
 - Bicycle corrals shall be immovable once placed, but capable of being removed and stored during winter months.
- C** The ends of the bicycle corral should provide a barrier or fencing to prevent vehicles from pulling into it.

Additional Design Considerations

- **Shelters:** Bicycle corrals with roofs may provide sheltered bicycle parking as long as they do not interfere with sight lines.
- **Bumpouts:** Bicycle corrals may be located on bumpouts or where there is adequate space outside of the roadway or curbside zone.
- **Bicycle Repair Stations:** Consider placing a bicycle repair station adjacent to or integrated with the corral. A repair station is an outdoor frame that contains tools for fixing a bicycle, such as a tire pump. Individual tools can be secured to the station with a flexible band that allows cyclists to use them on their bicycle without the potential for theft.



Utility Considerations

- Do not locate bicycle corrals over utility vaults that need frequent access.
- Consider stormwater facilities when siting. Corrals should not obstruct stormwater flows.

Sustainability Considerations

- Bicycle corrals not only accommodate demand for bicycle parking but also promote the visibility of this low-emission form of travel.
- If bicycle corrals are covered, consider incorporating solar panels, green roofs, and white roofs.

MAINTENANCE & MANAGEMENT

Special Maintenance

- Durable material and quality installation can reduce maintenance demands for bicycle corrals.

Seasonal Use and Maintenance

- On-street bicycle corrals are typically removed and stored during winter months to facilitate snow removal.



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MOBILITY SUPPORT

MICRO-MOBILITY

DESCRIPTION & INTENT

Micro-mobility provides access to goods and services through personal, non-motorized modes of transit like shareable bicycles, e-bicycles, scooters, and e-scooters. Micro-mobility helps to address issues of sustainability, public health, environmental justice, and transportation equity within the city system.

Bicycle or scooter sharing is a system that uses affordable, for-rent bicycles/scooters for point-to-point trips throughout the city. They are intended to connect with other transportation services like transit, parking, and ride sharing.

Various communities have introduced year-long pilot projects for bicycle/scooter sharing within a specific service area of the city, collecting bicycle ridership data and implementing a more permanent solution based on demographic and destination data accumulated.

USE & APPLICATION

Location

- Identify optimum locations for micro-mobility docking stations based on population density, job rates, car ownership rates, commercial activity, and pedestrian frequency.
- Locate docking stations near frequently traveled areas like colleges/universities, residential linkages, hospitals, employment centers and recreational, and tourist destinations.
- Micro-mobility docking stations may be located in areas typically used for on-street parking or in the amenity or frontage zones of the sidewalk.

Related Design Elements

- **Bicycle Lanes:** Micro-mobility relies on adjacent bicycle lanes to provide accessibility and safety for its users. Micro-mobility docking stations should be amply located along bicycle lanes proximate to major destinations.
- **Dedicated Transit Lanes:** Dedicated transit lanes allow buses to run more efficiently and reliably, better managing street space for bikers and micro-mobility users.
- **On-Street Parking:** On-street micro-mobility docking stations may only be used on streets where the curb lane is not used for travel.



- **Pedestrian Area:** Micro-mobility docking stations must be located and aligned in a way that does not impede the pedestrian clear zone or block access between the curbside and clear walking zone.
- **Bumpouts:** Micro-mobility docking stations work well in bumpouts that extend the pedestrian environment into the parking lane, freeing up space on the sidewalk for circulation or other amenities.

Incompatible Elements

- **Loading Zones:** Docking stations should not be located next to loading zones due to potential conflicts with vehicles loading or unloading materials.
- **Cafe Seating:** Docking stations can compete with other amenity zone uses such as sidewalk cafes or sidewalk vending or retail.
- **Bus Stops:** On-street docking stations should not be placed adjacent to locations where large trucks or transit vehicles stop, such as loading zones or bus stops.

DESIGN & OPERATIONS

Design Requirements

- Micro-mobility docking stations should observe similar design requirements as the bicycle corral design elements.

Additional Design Considerations

- E-scooter/e-bicycle charging stations may be located outside of the right-of-way within public parking lots/garages. If this applies, ensure visibility and identifying signage from the right-of-way.

Utility Considerations

- Locate docking stations at least 1-foot from manholes and other utility access and 10-feet from fire hydrants.

Sustainability Considerations

- Consider providing solar-powered charging and docking stations.

MAINTENANCE & MANAGEMENT

Seasonal Use and Maintenance

- On-street bicycle/scooter docking stations are typically removed and stored during winter months to facilitate snow removal.

