



REIMAGINE SUBURBAN BIKE PARKING

A how-to guide to creating accessible, safe,
and attractive bicycle parking in Washington County



Westside
Transportation
Alliance

Acknowledgments

Guidance provided by:

Hal Ballard, Community Member

Brad Choi, City of Hillsboro

Scott Cohen, Portland Bureau of Transportation

Mike Dahlstrom, Washington County

Jabra Khasho, City of Beaverton

Jeff Owen, TriMet

Shelley Oylear, Washington County

Luke Pelz, City of Beaverton

Created by:

Rae-Leigh Stark, Program Manager

Westside Transportation Alliance

Edited by:

Ross Peizer, Business Relations Manager

Westside Transportation Alliance

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Determine what your bike parking needs are and what type will best suit them. Is this customer or employee parking? Or both?

Get inspired! There are ways to provide the best designed bike parking and some great examples located in Washington County.

Read and understand the requirements of your jurisdiction.

Find a manufacturer that produces the bike parking you're looking for and follow this guide for a smooth installation process.

Reach out to these organizations for help promoting use.

Vision

While there are people in Washington County who get to work or access their daily needs by bike, there are still many barriers that haven't been addressed and prohibit others from riding bicycles for work or recreation. The region is continually moving forward to help people travel from point A to B by bike, but when you arrive at the destination, bike parking is at a minimum. As the momentum for building infrastructure continues, it is a crucial time to complement that infrastructure with high quality bike parking at destinations.

Much guidance has been presented to address bike parking on the street or adjacent to the sidewalk in urban areas. Suburban regions, however present their own difficulties. Most suburban bike parking is located on private property due to the development form and prevalence of automobile parking lots. Reimagine Suburban Bike Parking is a design guide created to specifically address this issue and to help people reimagine what suburban bike parking could look like. This design guide not only provides guidance to Washington County, but can serve as a guiding document for other suburban regions as well.

Washington County created a Bicycle Facility Design Toolkit in 2012 and a Neighborhood Bikeway Concept Plan and Treatment Toolkit in 2014, Metro adopted a Regional Active Transportation Plan in 2014, and just about every city in the County is planning for infrastructure to encourage biking. This guide will support ongoing efforts and serve as a tool to carry out the goal of reducing single occupancy car use in Washington County.

Economic Benefits of Biking

Supporting bicycling by building protected facilities, creating safer routes, and installing bike parking benefits the economy. A report, **Protected Bike Lanes Mean Business**¹ created by People for Bikes and the Alliance for Biking and Walking, outlines these economic benefits. The graphics below, derived from the report, show snapshots of the findings on economic growth, which include fueling redevelopment to boost real estate value, helping companies attract talented workers, making workers healthier and more productive, and increasing retail visibility and sales volume.

SMALLER PARKING SPACE, MORE VALUE

19 cents: retail revenue per hour per square foot of on-street auto parking.
69 cents: retail revenue per hour per square foot of bike parking.

Melbourne, Australia, 2008



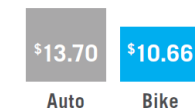
BIKE SHOPPING: SMALLER TRIPS, MORE VISITS

People who arrive to a business on bike spend less per visit but visit more often, resulting in more money spent overall per month.

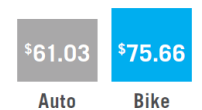
In Portland, OR, people who traveled to a shopping area by bike spent 24% more per month than those who traveled by car.

Studies found similar trends in Toronto and three cities in New Zealand.

AVERAGE SPENDING PER TRIP



AVERAGE SPENDING PER MONTH



BETTER SAFETY, MORE BIKING

Physical fitness improves work. People who ride their bike regularly benefit in many different ways.

UP TO 32%
USE FEWER SICK DAYS

UP TO 55%
HAVE LOWER HEALTH COSTS

UP TO 52%
INCREASE PRODUCTIVITY

Long-Term Employee Parking

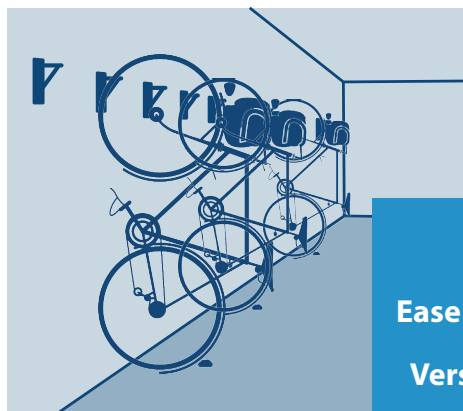
In this guide, bike parking is broken down into two types 1) Long-term employee parking, and 2) Short-term customer parking. Note that the cost estimates are for materials only and do not include the cost of installation. First we'll discuss long-term. Long-term bike parking is located at businesses, schools, or universities, for example. They're intended for a covered, secure option for people who will be leaving their bikes throughout the day. The most important part of long-term parking is to eliminate the need for the bike owner to worry about their bike. To do that, make sure the parking is lit, secure, covered, and within sight. The following are long-term bike parking options: interior bike storage room, bike lockers, and exterior shelters.

Interior Bike Storage Room

Building a bike storage room provides the best solution for long-term bike parking. The parking remains secure and is only accessible to those who are permitted.

Cost: The cost depends on factors including rack types, amenities and available space. If you have a large business or a room or space available, and it is financially feasible, this is the best option.

Ease of Use: Bike rooms should be designed to be easy to use. Many storage options in bike rooms require bikes to hang from the wall. Keep in mind that this doesn't work for every person or every bike, so there must be level bike parking spaces available too.



Versatility: A bike room isn't for every business as it requires the space within the building, a high amount of use, and financial ability.

Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★

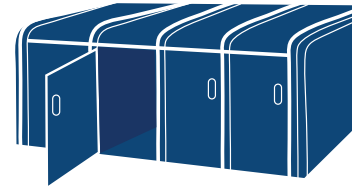
Bike Lockers

Bike lockers provide secure, individual spots for bikes. While bike lockers do provide the security and cover, they lack other qualities.

Cost: Lockers can range between \$500-\$3,000 per locker.

Ease of Use: Lockers aren't as easy as bike racks. They are assigned to individuals and keep the bikes hidden, which results in people not knowing where the bike parking is. However, lockers are now including see-through panels or windows to increase visibility and security concerns.

Versatility: Lockers can fit in parking lots or on sides of buildings, but are still large and require installation.



Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★

Exterior Shelters

Exterior bike shelters provide long-term bike parking with high capacity, attractiveness, and use.

Cost: The cost of shelters ranges depending on size from \$5,000-\$20,000+ for materials.

Ease of Use: Bike shelters should be located in a visible place. They're easy to use and provide great cover. Bike shelters are out in the open increasing the curiosity of others who may give it a try.

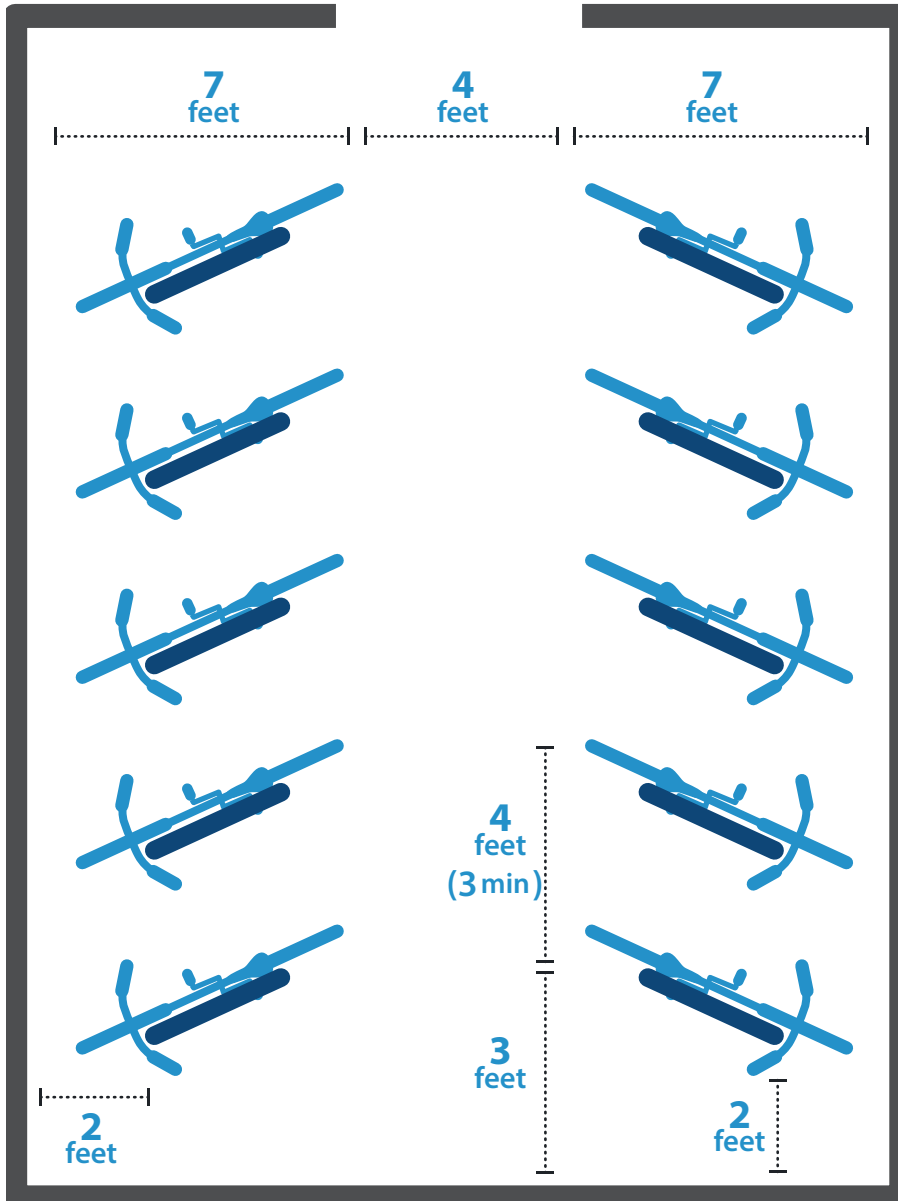
Versatility: Bike shelters need space, but can easily be installed within an existing parking space, for example.

Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★



Interior Bike Storage Room Installation Dimensions

There are many ways to design a bike room and companies available to provide assistance. Below is a basic layout to help understand the recommended dimensions of aisle widths and space between racks. This example is angled parking - refer to page 11 for straight parking.



Amenities

Amenities that complement long-term bike parking can encourage people to bike. These amenities increase comfort and convenience if they bike. Amenities can include a place to perform basic bike maintenance, showers, and lockers to store gear and a change of clothes.

Bike Repair Station



Compact bike repair stations can be purchased through manufacturers who also sell bike racks. These bike repair stations act as a stand to support the bike during repair. The repair stations also include an air pump and several tools to perform basic bike maintenance when needed.

Showers



For people traveling 5+ miles to work, having a shower available is really important. In Washington County, the nature of the development and the location of existing industry results in many commuters biking 5+ miles to work.

Lockers



Providing basic lockers for employees to store their items is an important and affordable way to support people to commute to work or school by bike. When considering lockers for professional offices and work places, choose a design that accommodates daily professional attire as well as a secure area for damp/wet bicycling clothing. The more thoughtful the locker/shower area design, the more employees may be encouraged to bicycle to work.

Short-Term Customer Parking

Providing bike parking for customers supports and increases clientele. Short-term bike parking should be located by the entrance and easy for people to use. There are many options for short-term bike parking and there are bike racks that should be avoided. For all racks, tamper resistant bolts and/or security nuts are very important to keep the rack from easily being removed from the mounting surface or ground.

Staple Rack

Staple racks are a standard rack that holds two bikes. These racks are about as basic as you can get and the best design for bikes as they support the bicycle in two places so they do not fall over.

Cost: These racks typically cost \$90-\$150 each.

Ease of Use: This is the widest rack of all the individual short-term racks. Its width makes parking a bike easier, because there is more room to support the bike and more locations to lock up the bike.

Versatility: These staple racks are easy to install and can fit anywhere.

Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★



Inverted U and A Racks

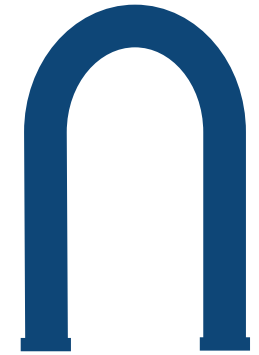
Inverted U and A racks are some of the most common racks.

Cost: Inverted U and A racks typically cost \$100-\$200 each.

Ease of Use: Inverted U and A racks are easy to use when they're designed right. Sometimes they can be too narrow causing difficulties supporting the bike. A racks have the cross bar for extra space for locking the bike.

Versatility: Inverted U racks are easy to install and can fit anywhere.

Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★



Post and Loop Rack

Post and Loop racks are not very common and slowly phasing out.

Cost: Probably the cheapest option and cost between \$80-150.

Ease of Use: These racks can function poorly if not designed wide enough, making it difficult to support a bike

Versatility: Post and Loop racks are easy to install and can fit in just about any location.

Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★



Custom Artistic Racks

Custom, artistic racks are a fun way to be creative with bike parking.

Cost: More expensive than standard racks.

Ease of Use: It is important to keep the design simple and easy to use, and include two points of contact to support a bike safely.

Versatility: Dependent on the design.

Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★



Bike Corral

Bike corrals are a simple way of providing a lot of bike parking in one space. With many bikes parked together, you get the added benefit of increased safety.

Cost: These racks cost between \$1,000-\$3,500, but hold 10-12 bikes.

Ease of Use: Bike corrals are easy to use and can come assembled with the recommended space in between the racks built into the design, or individual racks can be installed next to each other.

Versatility: Bike corrals that are already assembled can be installed on asphalt. This is different than most racks which have to be installed on concrete.

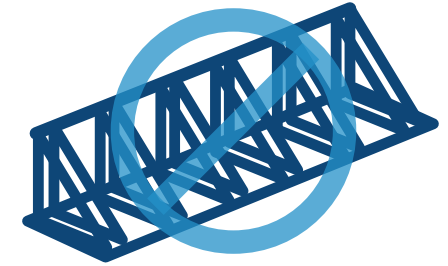
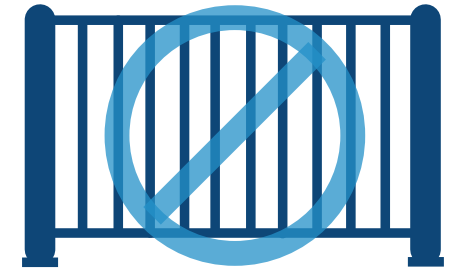


Cost:	\$	\$	\$	\$
Ease of Use:	★	★	★	★
Versatility:	★	★	★	★



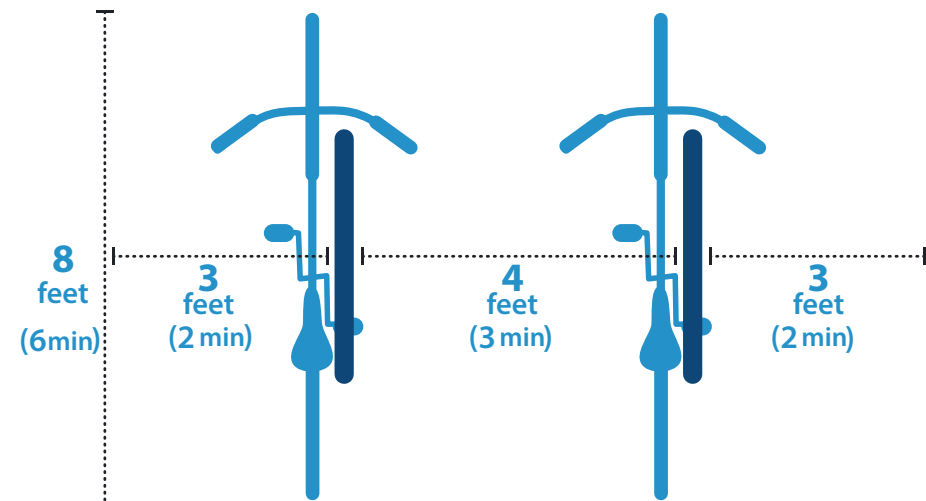
Do Not Install Racks

These racks are all examples of those that shouldn't be used. Even though they look like they can hold many bikes, the way they're designed makes using them hard and can result in damage to the bike.



Installation Dimensions

Below are the basic dimensions any bike rack installation should follow. There should ideally be a 3 foot by 8 foot clear zone surrounding each individual rack. When installing multiple racks, the same guidance should be followed.



How to Retrofit

Retrofitting existing strip malls and suburban development is a crucial aspect of developing bike parking in Washington County. Due to the development pattern, there isn't much right of way available for bike parking. Instead there is space for development within parking lots and private property. Below are a few options depicting how this can be achieved. Additionally, it is important to adhere to the following, 1) connect to pedestrian facilities, and 2) keep in mind "safety in numbers."

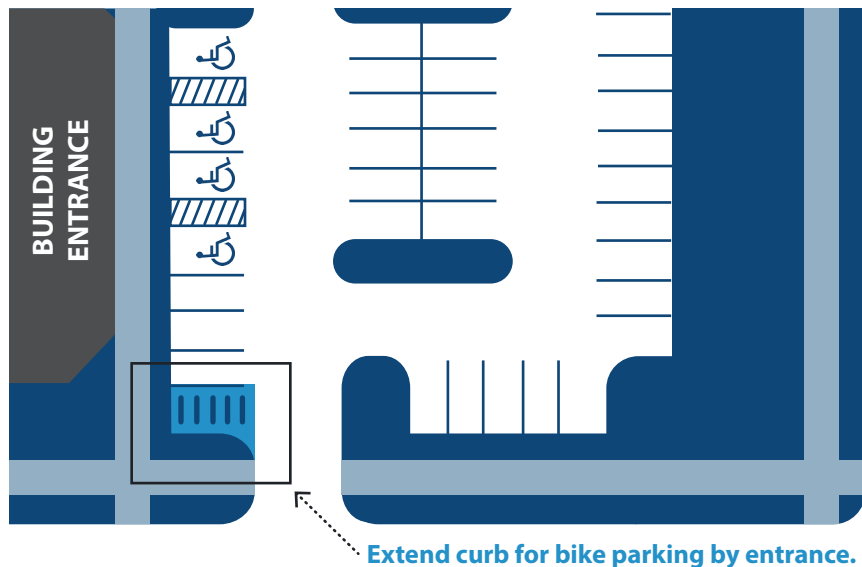
Connect to Pedestrian Facilities

Build pedestrian connections from the bike parking to give people a more comfortable option than walking through the parking lot.

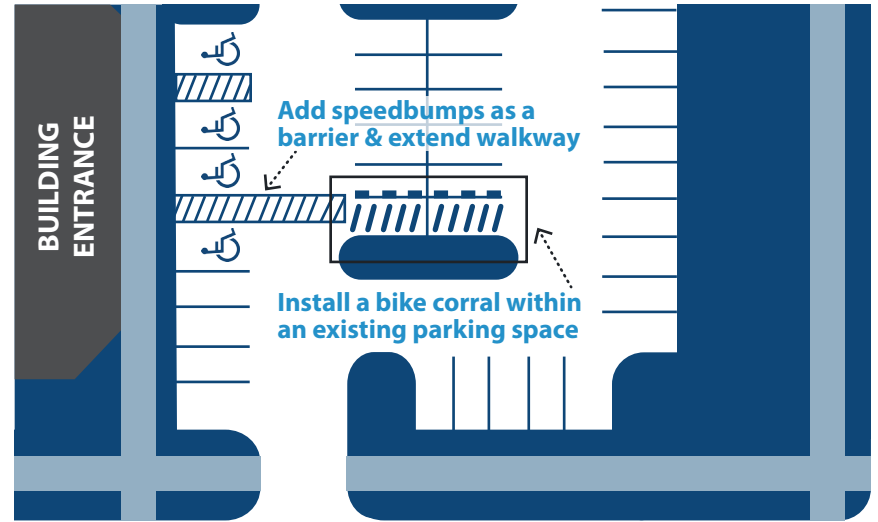
Safety in Numbers

When bike parking is built for large quantities it increases safety and deters theft. Enhancing infrastructure can lead to an increase in the number of people who bike, making all of the parked bikes more secure than if they were locked up in isolation.

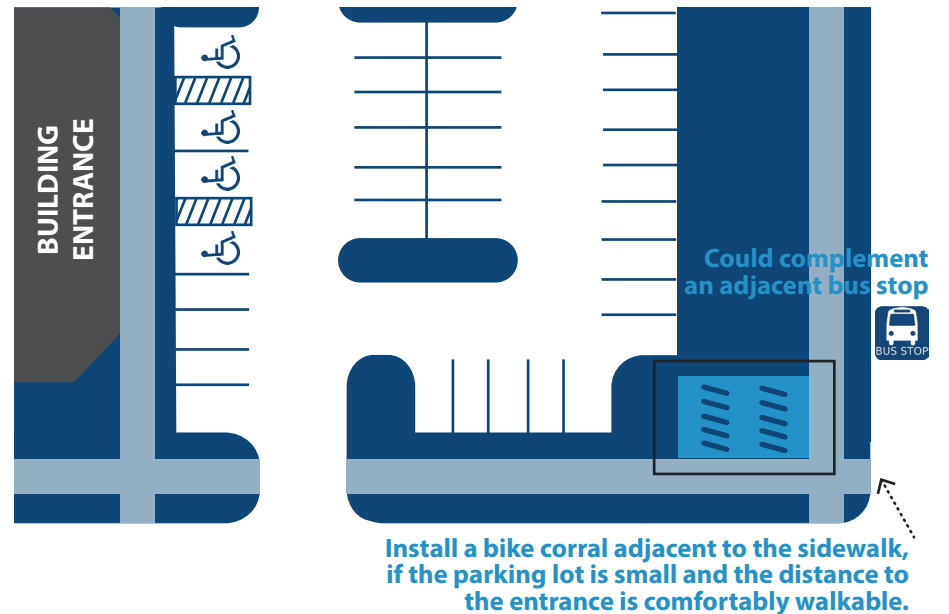
Build Curb Extensions



Use Parking Spaces



Build Adjacent to the Sidewalk



Local Examples

There are examples of great bike parking in Washington County and the Portland area. Visit these locations for inspiration and to learn from others who have successfully implemented bike parking. The following are examples of short-term bike parking, long-term employee parking, and an exterior shelter.

Customer Bike Parking

East Portland Pilot Project - Portland



Photo credit: David Hampsten, PBOT

In 2014, the Portland Bureau of Transportation implemented a pilot project in East Portland. Their goal was to assist business owners to bring bike parking to the area. The development patterns of the area are similar to Washington County's. The bike parking was installed in existing parking spaces and within private property. Eighty four spaces were installed during this pilot. More information about the project can be found in the Sources and Resources on page 25 of this guide.

Employee Bike Parking

The Round - Beaverton



Photo credit: Westside Transportation Alliance

At the Beaverton Round, located at the Beaverton Central MAX Station, bike parking has been installed to support the employees at the Round. This bike parking is a good example of a bike room that supports a large number of bikes. The bike room is secure and can only be accessed using a passcode. It was built centrally within the development and is located adjacent to the parking garage.

Sheltered Bike Parking

Pacific University - Forest Grove



Photo credit: Shelley Oylear, Washington County

Sheltered bike parking has been installed in Forest Grove in conjunction with Pacific University, TriMet, and GroveLink Transit. This is an example of attractive, sheltered bike parking that supports a lot of use due to the proximity to transit and a university.

Jurisdictional Requirements

Washington County and several of the cities within the County have minimum requirements for bike parking. Following are links where you can find jurisdictional requirements for Beaverton, Hillsboro, Tigard, Washington County, and Wilsonville. Review your jurisdictional requirements and consult with staff at the individual jurisdiction before making the final determination.



City of Beaverton

Chapter 60.30.05 of the City of Beaverton's Community Development Code

<http://www.beavertonoregon.gov/index.aspx?nid=463>
(503) 526-2222

City of Hillsboro

Chapter 12.50.410 of the City of Hillsboro's Community Development Code

<http://www.ci.hillsboro.or.us/index.aspx?page=94>
(503) 681-6153

City of Tigard

Chapter 18.765.050 of the City of Tigard's Community Development Code

http://www.tigard-or.gov/business/title_18.php
(503) 718-2419

City of Wilsonville

Section 4.155 of the City of Wilsonville's Development Code

<http://or-wilsonville.civicplus.com/278/Development-Code>
(503) 682-4960

Washington County

Section 429 of Washington County's Community Development Code

<http://www.co.washington.or.us/LUT/Divisions/LongRangePlanning/Publications/cdc-community-development-code.cfm>
(503) 846-8761

Effective November 27, 2015:

Section 413-11 of Washington County's Community Development Code

Reduction of Minimum Off-Street Automobile Parking Based on Bicycle Parking

Bike Parking Manufacturers

There are a number of companies, locally and across the US, that provide high quality bike parking and accessories. Listed below are some of those companies with their corresponding services.

Albina Pipe Bending Co., Inc.

12080 SW Myslony St. Tualatin, OR. 97062 (866)252.4628
albinapipebending.com

Bike Arc

102 University Ave. Palo Alto, CA 94301 (877)545.5303
bikearc.com

Columbia Cascade

1300 SW 6th Ave. #310 Portland, OR 97201 (503)223.1157
columbia-cascade.com

Cora Bike Rack Inc.

PO Box 9844 Seattle, WA 98109 (800)354 8624
cora.com

Creative Metalworks

P.O. Box 565 Dayton, OR 97115 (888)245.3729
creativemetalworksllc.com

CycleSafe, Inc.

5211 Cascade Rd. Suite 210 Grand Rapids, MI 49546 (888)950.6531
cyclesafe.com

Dero Bike Racks

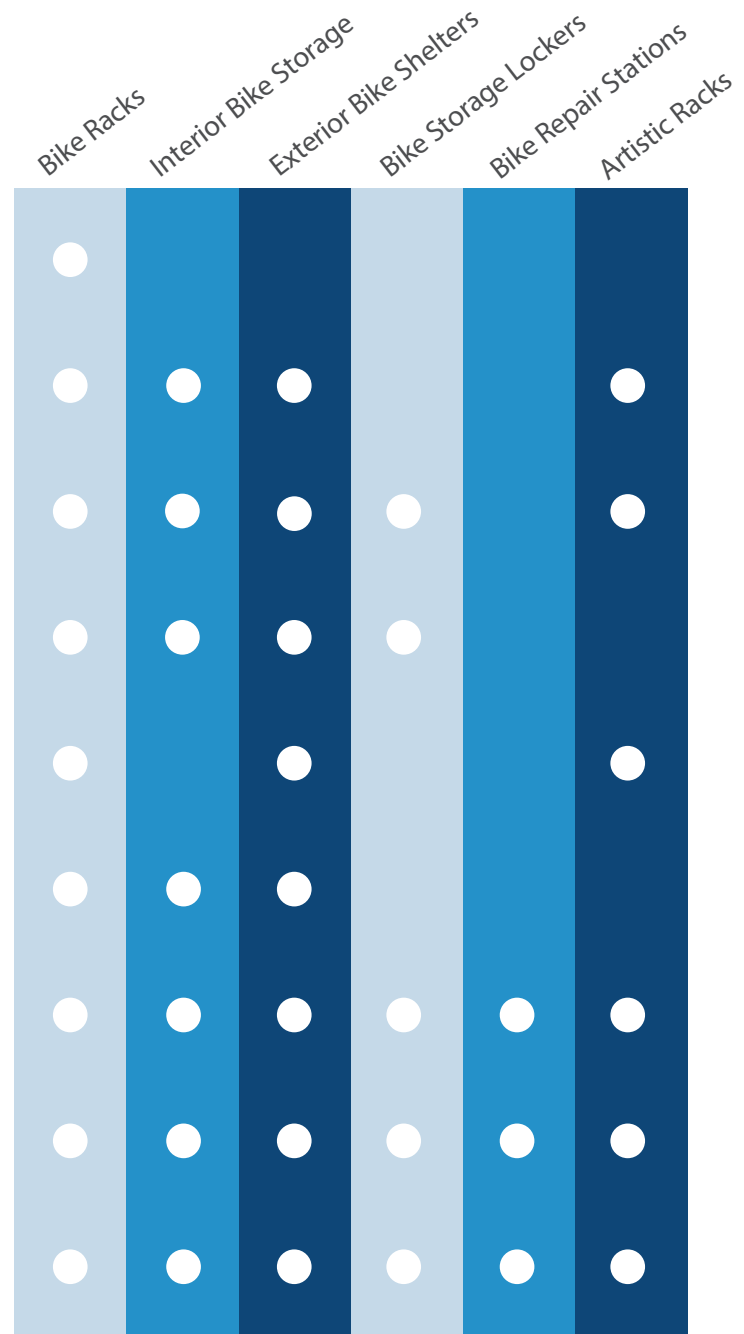
2657 32nd Ave S Minneapolis MN 55406 (800)891.9298
dero.com

Huntco Supply Co.

PO Box 10385 Portland OR 97201 (503)224.8700
huntco.com

Madrax

1080 Uniek Dr. Waunakee, WI 53597 (800)448.793
madrax.com



Bike Parking Manufacturers Continued

Palmer Group

1072 Folsom Suite 328 San Francisco, CA 94103 (888)764.2453
bikeparking.com

Park-a-Bike

2021 Arden Way Sacramento, CA 95825 (800)481.8524
parkabike.com

Parkit Bike Racks

20 N Lincoln St. Batavia, IL 60510 (877)249.0479
parkitbikeracks.com

Peak Racks

637 Woodbridge St. San Luis Obispo, CA 93401 (805)235.8812
peakracks.com

Radius Pipe Bending

93192 Prairie Rd. Junction City, OR 97448 (541)998.9700
radiuspipe.com

Saris Cycling Group

5253 Verona Rd. Madison WI 53711 (800)783.7257
sarisparking.com

Sportworks Northwest Inc.

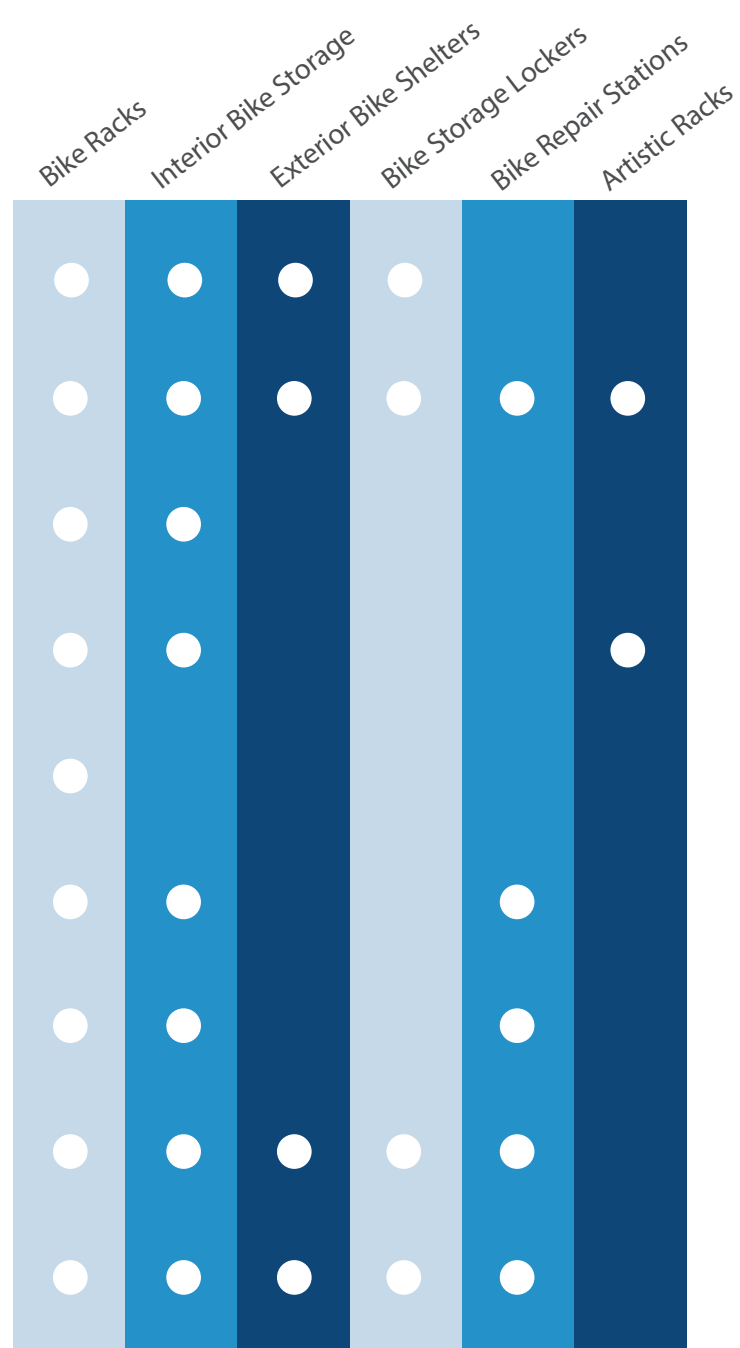
15540 Wood-Red Rd Woodinville, WA 98072 (425)483.7000
sportworks.com

Urban Racks

177-936 Peace Portal Drive Blain, WA 98230 (888)717.8881
urbanracks.com

Velodrome Shelters

32 Ann Street Clifton, New Jersey 07130 (973)264.9100
velodomeselters.com



Installation Procedures

You have the bike rack, what's next?

- 1. Review installation procedures delineated within the Community Development Code of the local jurisdiction.**
- 2. Contact manufacturer who sold the bike racks. Some of the manufacturers offer installation services, in addition to their product.**
- 3. New Development – If installing bike parking as part of a new development, all bike parking will be reviewed at the time of the site plan application.**

- 4. Existing Development – If installing bike parking as part of an existing development, contact the local jurisdiction for the permitting process.**
- 5. Pay any associated permitting fees.**
- 6. Additional tips – It is important for bike parking to be secure to the ground. Most of the racks are only secure when installed with concrete. Be sure to review the construction material required (concrete or asphalt), the thickness of the concrete or asphalt, and the size of the hardware.**

Supporting Organizations

In Washington County there are a few organizations that provide bike safety and education programs, can engage with employees, or promote biking at events. Westside Transportation Alliance, Washington County Bicycle Transportation Coalition and the Bicycle Transportation Alliance are all available as resources as you're installing bike parking, encouraging customers or employees to use them, or educating the bike rack users on biking safely.

Westside Transportation Alliance (WTA)

Mission: To work directly with employers and employees to enhance economic opportunity, improve health, and foster a livable community via transportation options.

Website: www.wta-tma.org

Contact Information: (503)906.7961 or wta@wta-tma.org

Washington County Bicycle Transportation Coalition (WashCoBTC)

Mission: To promote bicycle transportation, protect bicyclists' rights and improve bicycling conditions throughout Washington County, Oregon through education, advocacy and community.

Website: www.washcobtc.org

Contact Information: (503)844.9740 or info@washcobtc.org

Bicycle Transportation Alliance (BTA)

Mission: To create healthy, sustainable communities by making bicycling safe, convenient and accessible.

Website: www.btaoregon.org

Contact Information: (503)226.0676 or membership@btaoregon.org

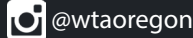
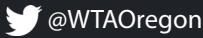
Sources & Resources

1. Andersen, Michael, and Mary Lauran Hall. Protected Bike Lanes Mean Business. Portland, OR: People for Bikes and Alliance for Walking and Biking, 2014. https://www.sfbike.org/wp-content/uploads/2014/04/Protected_Bike_Lanes_Mean_Business.pdf
2. Anderson, Eric. Bicycle Parking Guidelines. 2nd ed. Cedarburg, WI: Association of Pedestrian and Bicycle Professionals, 2010. <http://www.apbp.org/default.asp?page=publications>
3. Broom, Nathan. Essentials of Bike Parking: Selecting and Installing Bike Parking that Works. Association of Pedestrian and Bicycle Professionals, 2015. http://c.yimcdn.com/sites/www.apbp.org/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf
4. Cohen, Scott. Transportation and community partnership delivers 84 new parking spaces to East Portland commercial areas. PBOT Active Transportation News. City of Portland Bureau of Transportation, 21 July 2014. Web. 22 June 2015. <https://www.portlandoregon.gov/transportation/article/496633>
5. Portland Bureau of Transportation. Art Racks (Non-standard Bicycle Racks). <https://www.portlandoregon.gov/transportation/article/184578>



**Westside
Transportation
Alliance**

www.wta-tma.org (503)906.7941
12752 SW Millikan Way, Ste. 300 Beaverton, OR 97005



METRO

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