

Lawrence Bicycle Parking and Amenities Policy Review

With Citywide and Downtown Recommendations
Fall 2016



Approved by the
Lawrence-Douglas County Bicycle Advisory Committee (BAC)
November 21, 2016

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Introduction

This Bicycle Parking Policy Review builds on two previous versions of the Downtown Bicycle Parking Inventory in 2001 and 2011. The 2001 Inventory was conducted by the KU Transportation Center in coordination with the Bicycle Advisory Committee (BAC) and the 2011 Inventory was conducted by the Metropolitan Planning Organization (MPO) in coordination with the BAC. These reports provided a better understanding of the state of bicycle parking in Downtown Lawrence and made recommendations to improve the quantity and quality of bicycle parking downtown. These efforts were fruitful, resulting in 22 new Inverted U racks and 3 bicycle corrals in the Downtown area. This added parking helped to fulfill another goal of those plans: improving the visibility of short term bicycle parking Downtown.

This document expands the scope beyond Downtown and recognizes that policy and infrastructure gaps remain. It provides guidance on bicycle parking facilities for the Downtown area as well as the entire City of Lawrence. This document uses national guidelines and best practices as guides for developing recommendations.

As the number of bicyclists in Lawrence increases, the following amenities will be an important part of establishing a safe and convenient bicycle network for commuters, everyday riders, and those using the system less frequently.

Secure bicycle parking

The Association of Pedestrian and Bicycle Professionals (APBP) describes secure bicycle parking as racks that support the whole bike in at least two places, not just one wheel. It should enable the user to lock the frame and wheels of the bike with a cable or U-shaped lock. Secure bicycle parking can take many forms such as Inverted U's, bicycle corrals, or bicycle lockers.

In addition to design, secure short-term bicycle parking is typically visible to the public and can be seen from the destination of the bicyclist that is using it. Secure parking for long-term users may include bicycle lockers.

Examples

Short-term parking, secure



Short-term parking, not secure



Long-term parking, secure bike locker



Existing Policies

Current city code states that it is unlawful for any person to:

- (A) Park a bicycle upon the streets, alleys, or sidewalks in such a manner as to cause a significant obstruction to a pedestrian or vehicle such that the pedestrian or vehicle is unable to safely travel upon the streets, alleys or sidewalks or to hinder or restrict access to handrails or ramps; or
- (B) To attach, affix, park, or lock a bicycle to a tree, fire hydrant, traffic control device or sign, street light, utility pole, or parking meter post serving a space designated for disabled parking. Bicycles in violation of this subsection may be removed and stored by the Lawrence Police Department. If the bicycle is not claimed by its rightful owner within a reasonable period, the Police Department may dispose of it in the same manner as it disposes of other unclaimed property.
- (C) It shall not be unlawful to attach, affix, park or lock a bicycle to a parking meter post, other than those parking meter posts serving spaces designated CODE OF THE CITY OF LAWRENCE 17-33 for disabled parking, so long as the person does not violate subsection (a) above.

Because sidewalk space Downtown is limited, new efforts have been made to enforce these policies, encouraging bicyclists to use secure bicycle racks instead of trees, disabled parking meters, and light poles. Bicycles parked illegally will receive tags with the information in Figure 1, along with a map, informing cyclists of legal parking options and encouraging their use.

City code exempts developments in the Downtown Commercial District (CD) from the requirement to provide off-street vehicle parking.¹ This presents a problem because the minimum required bicycle parking spaces based on the number of automobile parking spaces. Current land development code does not have any guidelines or requirements for on-street bicycle parking.

Outside of the CD, off-street bicycle parking minimum requirements vary significantly depending on the type of use. For example, general retail establishments are required to have 1 bicycle parking space for every 10 automobile spaces while other uses do not require any bicycle parking.¹ Current installation guidelines require certain surfacing, lighting, barriers, and structure, although other design guidelines (American Association of State Highway and Transportation Officials [AASHTO]², National Association of City Transportation Officials [NACTO]³, or Association of Pedestrian and Bicycle Professionals [APBP]⁴) are not referenced.

Figure 1: Bicycle Parking Education and Enforcement Tag



Oops...
Please move
your bike to an
approved location
(see map on back).

As a city, we're encouraged to see more cyclists using our streets and shared infrastructure to get around town. Over the past few years, we've installed an increasing amount of bike friendly parking in downtown Lawrence including bike corrals, inverted-U bike racks, and bike repair stations. We wanted you to be aware of the City Ordinances that limit where bicycles can be parked in downtown and hope that you'll understand it's more secure to park your bike in a designated place and keeps our sidewalks less congested.



Riding a bicycle on the sidewalks in downtown is prohibited (the same goes for skateboards, roller skates and rollerblades).



Bicycles cannot be attached to a tree, fire hydrant, traffic control device, street light, utility pole or parking meter post serving as a space for designated or disabled parking. You can attach your bike to a parking meter pole if the space is not designated for a specific use. The city has installed more meter ovals to the meter poles where bicycle parking is preferred.



You can park your bike in any one of our bike racks or bike corrals located in downtown (see map on the back of this flyer).

Bicycles that appear to be abandoned will be tagged, removed and then stored for a reasonable period of time by the Lawrence Police Department.

Thank you. If you have questions, please contact us at cityhall@lawrenceks.org or visit our website <http://www.lawrenceks.org/lprd/bike>.

¹ Lawrence, KS Development Code, Article 9. <http://lawrenceks.org/assets/pds/planning/documents/DevCode.pdf>, pg 272

² AASHTO Guide for the Development of Bicycle Facilities. https://bookstore.transportation.org/collection_detail.aspx?ID=116

³ NACTO Urban Bikeway Design Guide. <http://nacto.org/publication/urban-bikeway-design-guide/>

⁴ APBP Essentials of Bike Parking. http://cymcdn.com/sites/www.apbp.org/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf

Existing Conditions

Types of Bicycle Parking in Downtown Lawrence

The City of Lawrence does not have bicycle parking rack design standards; as a result, there is a large variety of bicycle parking facilities found throughout the city and Downtown. All of the bicycle facilities found in Downtown Lawrence are classified as short term parking. Each type is defined and pictured below.

Inverted U - Shaped like a U but oriented upside down. Each individual U shaped rack element can support two bicycles.

Wave - Similar to the Inverted U; however, this rack is continuous and bicycles are parked perpendicular to the rack rather than parallel. Rack capacity is dependent upon rack size.

Bollard - A single post with an attached oval or circular shape on each side. Each rack element can support two bicycles.

Half-H - This rack looks like the lower half of the letter H. Each rack element can support two bicycles.

Fence - This facility is the typical school yard bicycle rack. It has a comb pattern and provides front wheel support to bicycles. A fence rack requires users to alternate sides of the facility every other slot to reach maximum capacity on each individual rack. Rack capacity is dependent upon rack size.

Parking Meter Ovals - These are designed to support one bicycle or two bicycles if cooperatively locked together. They are added to light or parking meter poles downtown to provide additional bicycle parking. There are 24 parking meter ovals in Downtown Lawrence.

Special - Artistically designed racks with contextual significance. The most recent example of this type of rack is the specially designed Ride Lawrence bicycle racks. Rack capacity is dependent upon design.

Trees, parking meters and other poles are sometimes also used by bicyclists to secure their bikes. Use of makeshift facilities can indicate the need for added bicycle parking capacity and/or the need to relocate some bicycle racks in an area.

Inverted U



Wave



Bollard



Half H



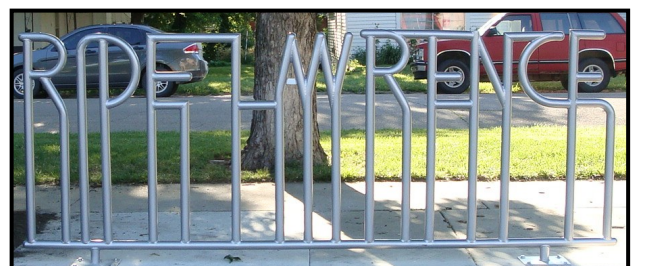
Fence



Meter Oval



Special



Bicycles parked on tree

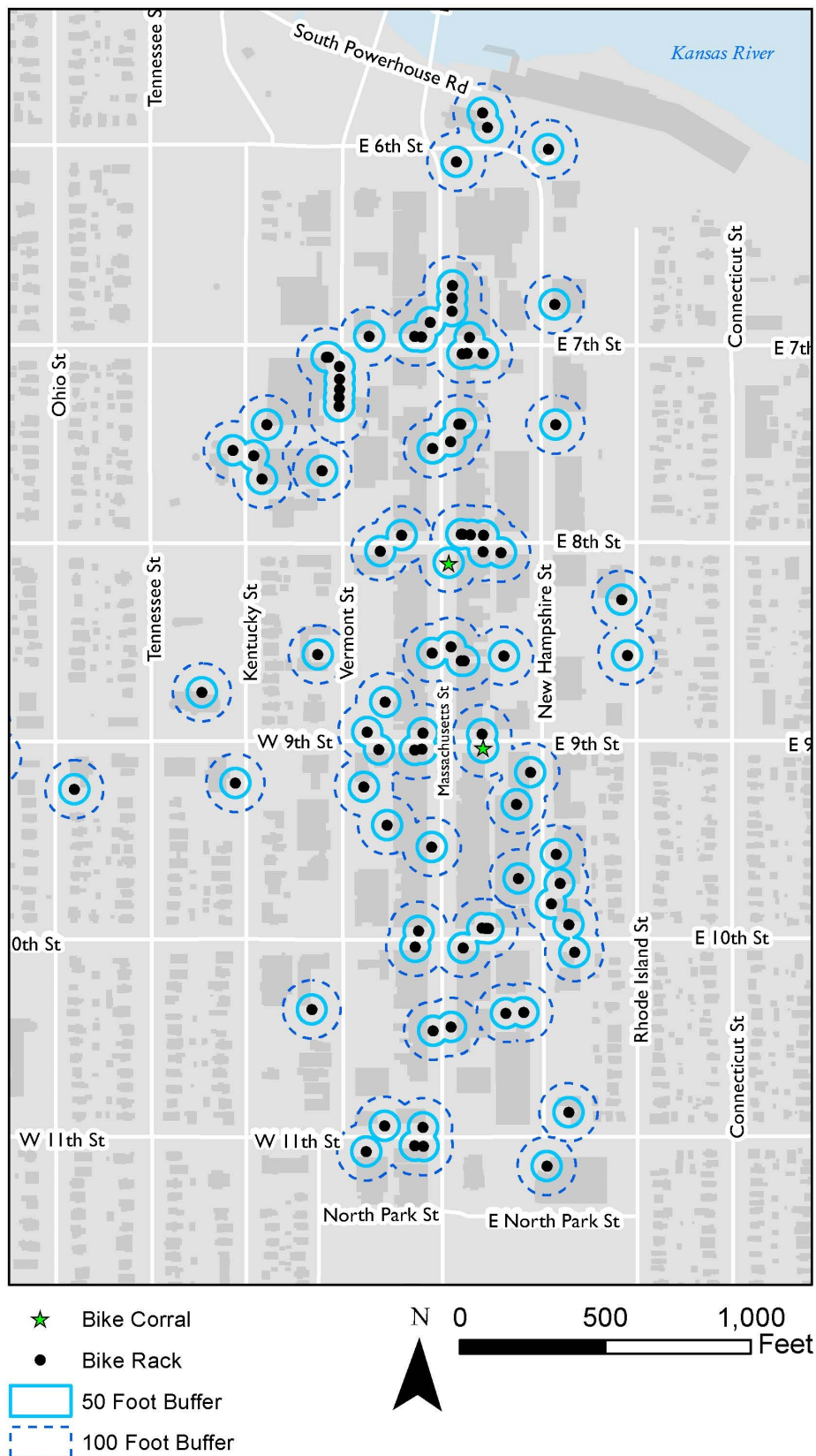


Violation of Article 9, bicycle parking code

Locations of Bicycle Parking in Downtown Lawrence – 2016

The Association of Pedestrian and Bicycle Professionals (APBP) state in their Essentials of Bike Parking publication that short term bicycle parking should be visible from and close to the entrance it serves, ideally 50 feet or less. Based on 50- and 100-foot buffer distances, Figure 2 show gaps in the distribution of bicycle parking Downtown.

Figure 2: Bicycle Parking and Buffers in the Downtown Area



Capacity of Bicycle Parking in Downtown Lawrence

The number of parking spaces calculated for capacity is based upon the functional capacity of the rack element. Capacity is dependent upon the proper use of the facility by each bicyclist.

APBP guidelines recommend Half H, Inverted U, Meter Ovals, and Bike Corrals because they meet all performance standards and support a bike at two points of contact. The guidelines further indicate that racks should have two points of horizontal contact at least 6 inches apart and a high point of at least 32 inches. However, racks that are too tall or too wide may cause difficulty with parking smaller bicycles. Racks of the Bollard, Fence, M, and Wave variety are listed as rack types to avoid because of various performance concerns. For example, Wave racks are not intuitive and often used incorrectly, and Fence racks do not allow locking of the bike frame. While bollards may be a space-saver, they do not appropriately support bike frames at two locations.

Bicycle parking counts were conducted in May 2016 and September 2016 to understand the possible effects of increased bicycle parking capacity in the Downtown area. Between these two counts, 2 bicycle corrals and 20 inverted U racks were installed, adding 60 new parking spaces. May and September were chosen to ensure that both counts took place when university students were still in town.

These counts indicate that bicycle parking on racks has increased while bicycle parking on nearby trees and meters has decreased. This suggests that the addition of secure bicycle racks Downtown may have contributed to greater usage of racks and a reduced usage of trees and meter poles.

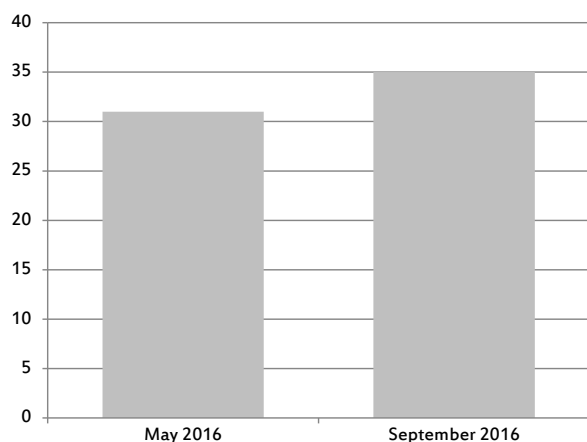
At first glance, it may appear that the capacity exceeds the demand for Downtown bicycle parking. However, counts revealed that nearly every Downtown rack is utilized at some point during the week, and some areas lack parking within convenient distances of businesses. In these cases, bicyclists often resorted to parking on a tree, meter pole, or other non-rack location. While certain areas may need capacity added, more evenly-spaced placement may be just as important at encouraging bicyclists to use legal bicycle racks.

Downtown Parking Space Capacity by Rack Type (2011)	
Bollards	14
Fence	84
Inverted U/Half H	91
M/Wave	84
Special	31
Meter Oval	48
Bike Corral	0
Total	352

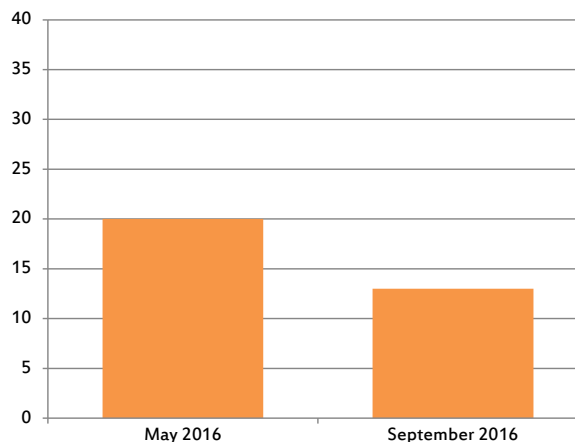
Downtown Parking Space Capacity by Rack Type (September 2016)	
Bollards	16
Fence	29
Inverted U/Half H	184
M/Wave	90
Special	19
Meter Oval	48
Bike Corral	20*
Total	406

* One bicycle corral (10 spaces) pending installation

Number of Bicycles per Day on Racks



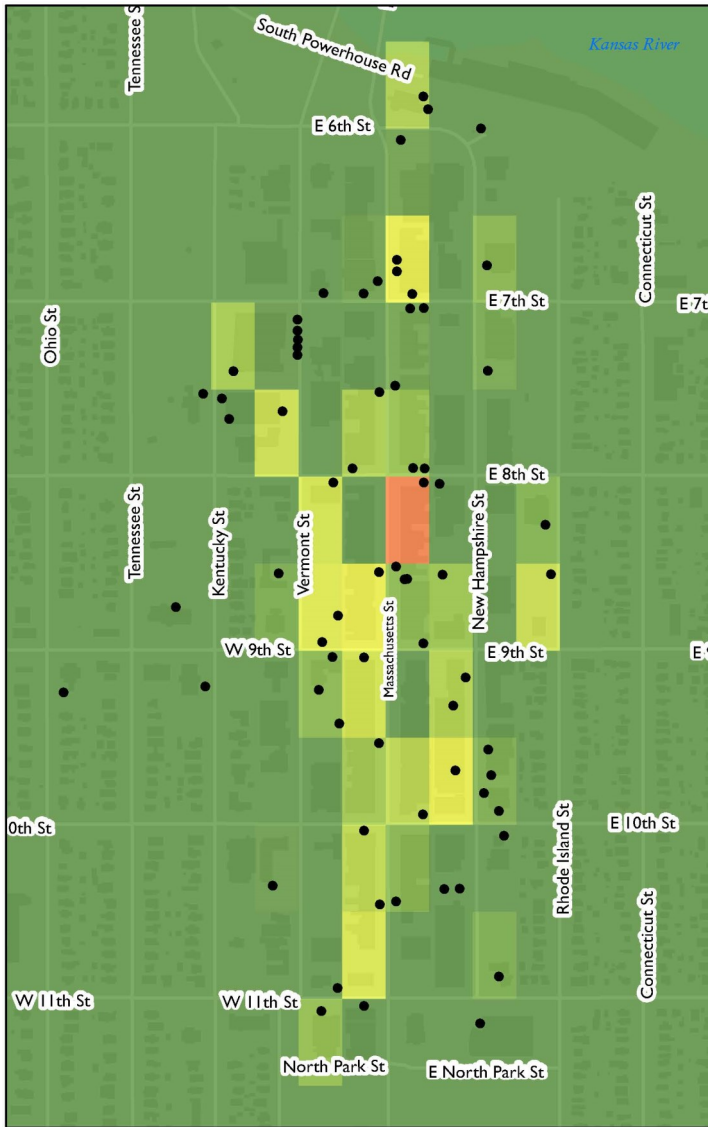
Number of Bicycles per Day on Trees/Meters



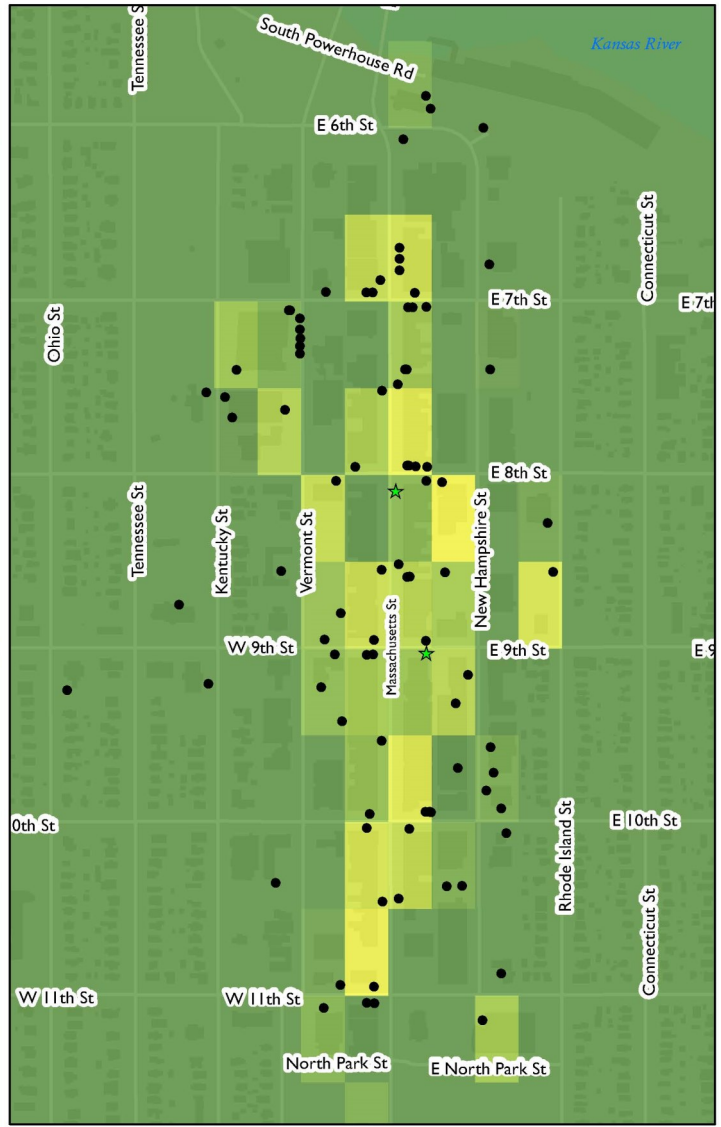
Bike Parking Density: May 2016 vs September 2016

The following maps indicate the density of observed parked bicycles as compared with available bike parking racks in the Downtown area in May 2016 and September 2016. 2 bike corrals (20 spaces) and 20 inverted U racks (40 spaces) were installed between these two count dates. 1 bike corral is pending installation. Areas in green indicate that sufficient bike parking exists to handle the average demand. Yellow areas indicate that available parking is meeting demand, but consideration should be given to increase bike racks in those areas. Red areas indicate that demand is exceeding available bike parking.

May 2016 Bicycle Parking Density



September 2016 Bicycle Parking Density



• Bike Rack

0 500 1,000 Feet



• Bike Rack

★ Bike Corral

0 500 1,000 Feet



National Bicycle Parking Guidelines

The American Association of State Highway and Transportation Officials (AASHTO) produced a report in 1999 titled *Guide for the Development of Bicycle Facilities*. The guide provides general guidelines and recommendations for bicycle facilities on and off road. AASHTO defines two fundamental types of bicycle parking: long term and short term. Short term bicycle parking “provides a means of locking the bicycle frame and both wheels, but does not provide accessory and component security or weather protection (unless covered).” This type of facility is intended for parking where the bicycle is visible and convenient to the building entrance. This is the type of bicycle parking provided in Downtown Lawrence. Long term bicycle parking provides a higher degree of protection and security. These facilities are often “lockers, cages or rooms in buildings.” They are generally located where a bicycle would be unattended for long periods of time, such as a residence, employment location or transit station.

AASHTO recommends that bicycle racks be designed so that they meet the following requirements:

- Do not bend wheels or damage other bicycle parts
- Accommodate high security U-shaped bike locks
- Accommodate locks securing the frame and both wheels (preferably without removing the front wheel from the bicycle)
- Do not impede or interfere with pedestrian traffic
- Are easily accessed from the street and protected from motor vehicles
- Are visible to passers-by to promote usage and enhance security
- Are covered where users will leave their bikes for a long time
- Have as few moving parts as possible

The Association of Pedestrian and Bicycle Professionals (APBP) produced a report in 2015 titled *Essentials of Bike Parking: Selecting and Installing Bike Parking that Works*.¹ The guide specifically addresses the selection and placement of appropriate bicycle racks for short term and long term parking. The guide suggests the rack elements should:

- Support the bike upright without putting stress on wheels
- Accommodate a variety of bicycles and attachments
- Allow locking of frame and at least one wheel with a U-lock
- Provide security and longevity features appropriate for the intended location
- Be intuitive to use

The guidelines also recommend that consideration be given to the amount of spacing surrounding bicycle parking. To maximize the efficiency and use of all the available spaces in the lot, each element of the parking facility must be able to accommodate bicyclists coming and going. If the bicyclist finds it too inconvenient to use the rack, they will look for an alternative place to park and reduce the stated capacity of the rack element by half. Proper use of each rack element is fundamental to ensuring the manufactured capacity for parking. The guide also notes that the rack area should be located within 50 feet or 30- second walk of the entrance it serves.

¹ APBP Essentials of Bike Parking (2015): http://c.ymcdn.com/sites/www.apbp.org/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf

Bicycle Friendly Community Feedback

In 2012, the Lawrence-Douglas County Bicycle Advisory Committee applied for Bicycle Friendly Community designation resulting in a bronze designation. Feedback received included the following recommendations related to bicycle amenities:

- Ensure that the standards for bike parking conform to APBP guidelines.
- Increase the amount of secure bicycle parking at popular destinations such as transit stops, schools, recreation and entertainment facilities, retail and office clusters, churches, and multi-family residential developments throughout the community.
- Consider passing an ordinance or local code that would require larger employers to provide shower facilities and other end-of-trip amenities

The 2016 BFC application resulted in a bronze designation for the City of Lawrence. Feedback indicated:

- Lawrence has completed a number of projects that will eventually form the “Lawrence Loop”, a 22-mile paved off-street path around the city. Continue efforts to complete the Loop and ensure that residents and visitors can safely access the loop and community destinations from the Loop.
- Develop a design manual that meets current NACTO standards or adopt the NACTO Urban Bikeway Design Guide. This will make it easier for city staff to propose and implement bicycle facility designs that have been shown to improve conditions for people who bike in other cities throughout the United States. Your application indicated that many traffic calming and bicycling related designs found in the NACTO guide have not been implemented and implementing a greater variety of treatments may help create context-sensitive improvements for people walking and biking in Lawrence.
- Increase the amount of staff time spent on improving conditions for people who bike and walk. Increasing staff time, either by creating a position or changing the responsibilities of current staff, can have a positive impact on the ability of your community to plan and execute bicycling and walking-related projects and programs.

Discussion

This bicycle parking policy review provides a good basis to assess Downtown bike parking needs and policies that can improve bicycle parking throughout the City of Lawrence. Due to the number of bicycles regularly found locked to trees and non-designated bicycle facilities, it is apparent that the quantity of bicycle parking to meet the demand may not be located in the areas of highest demand. It is also apparent that Downtown Lawrence is missing long term secure bicycle parking; this will become increasingly demanded as the quantity of housing grows in the Downtown area. Based on the observations from this policy review and comments from the Bicycle Advisory Committee, the recommendations to improve bicycle parking in Lawrence are noted below.

Recommendations

Establish design standards for bicycle racks that adhere to national APBP standards.

The Association of Pedestrian and Bicycle Professionals has created a resource titled “Essentials of Bike Parking” that provides guidelines for the installation of secure short-term and long-term bicycle parking. Any installation of bicycle parking in Lawrence should adhere to these guidelines.

Update development code to require on or off-street secure bicycle parking for Downtown development independent of vehicle parking requirements.

Current City code exempts property owners from providing off-street parking for vehicles in the Central Business District. Because bicycle parking requirements are dependent upon the number of vehicle spaces, new Downtown developments are also not required to provide any parking for bicycles. To encourage use of other modes of transportation in denser areas of Lawrence such as the CBD, it seems to make sense to provide the infrastructure to encourage those uses.

Update development code to require a suitable number of on or off-street bicycle parking spaces that depends only on the established zoning and is independent of vehicle parking requirements.

Current City code requires a certain number of bicycle parking spaces for each zoning classification, but is dependent on the number of vehicle spaces. To provide consistent bicycle parking throughout the City of Lawrence, the BAC recommends code-required bicycle parking based only on zoning, independent of vehicle parking requirements. Kansas City, MO requires bike parking spaces based on square footage, number of employees, number of dwelling units, and other factors unrelated to vehicle parking.¹

Develop sufficient capacity and balanced placement of bicycle parking in the Downtown area, especially at each corner and midblock.

The bicycle parking map on page 6 shows that there are still gaps with no secure bicycle parking. In these instances, bicyclists often choose to park at an illegal location (often on the sidewalk) close to their destination rather than find secure parking farther away. To improve circulation on Downtown sidewalks, bicycle parking should be provided at on-street bicycle corrals where feasible and sidewalk locations that are not in the way. To provide a predictable pattern of parking, priority locations for bicycle corrals should include each corner and midblock of Massachusetts Street. Replacing a vehicle parking stall with bicycle parking at these locations has the added benefit of improving vehicle and pedestrian sightlines at crossings.

Educate the public about available and legal bicycle parking options.

Increased efforts to enforce illegal bicycle parking Downtown include positive messaging that encourages riders to move their bicycle to a legal bike rack. Additional features could include signage to direct bicyclists where they can legally park. The Manual of Urban Traffic Control Devices (MUTCD) offers guidelines for bicycle parking signage.²



D4-3

¹ <http://bikewalkkc.org/advocacy/kcmo-bike-parking/kcmo-bike-parking-ordinance/>

² http://mutcd.fhwa.dot.gov/hm/2009/part9/fig9b_04_1_longdesc.htm

The City should incentivize new housing developments to provide secure, long-term bicycle parking options such as bicycle lockers.

Long term parking is needed to encourage bicycling as a primary mode of transportation for people who live in areas of greater density. This is increasingly important as more residential units are built Downtown. Installation of secure, long-term parking such as bicycle lockers should be incentivized at the time of development.

Samples of long term bicycle lockers are pictured at the right. Long term bicycle lockers like those pictured here can be rented and locked to prevent vandalism and theft of the lockers and their contents. This also prevents them from being used in a manner not consistent with their designed purpose (e.g., trash cans, sleeping spaces, flammables storage bins, etc.). A survey should be conducted to determine ideal and available locations for bicycle locker placement. Long term bicycle parking should be considered in new parking facilities .



Bike to
Work
Bicycle
Locker



Bike
Gard
Bicycle
Locker



Cycle
Works
Bicycle
Locker

Appendix A—Review of Bicycle Parking Request Policies

MPO staff anticipates that as increased bicycle parking, and particularly bike corrals, are installed in the Downtown area, businesses may be interested in requesting assistance with installing new bike parking facilities near their property. MPO staff reviewed bicycle parking request policies from the following communities to better understand the variety of mechanisms a city can use to enable business owners to install bike parking, if they so desire:

Columbia, MO

Colorado Springs, CO

Fort Collins, CO

Missoula, MT

San Antonio, TX

The review indicated many different strategies for implementing a bicycle parking request system. Colorado Springs and Missoula focused their programs on downtown businesses, but all five communities provided a mechanism for any business in the city to seek assistance with installing new bicycle parking.

The table below shows that some communities pay for the requested infrastructure while others require the requesting property owner to pay. Some communities provide a formal application process while others simply require that property owners follow design, location, and spacing standards. All communities considered some elements of demand, design standards, and context when considering approval.

	Columbia, MO	Colorado Springs, CO	Fort Collins, CO	Missoula, MT	San Antonio, TX
URL	https://www.como.gov/PublicWorks/GetAboutColumbia/Biking/BikeRackCostShareProgram.php	https://coloradosprings.gov/public-works/page/bike-racks	http://www.fcgov.com/bicycling/pdf/on-street-bicycle-corral-application_final.pdf	http://www.ci.missoula.mt.us/1991/Bike-Parking	http://www.sanantonio.gov/SABikes/Resources/BikeRacks.aspx
Who purchases infrastructure	City	Unknown	City will pay for up to 6 per year	Property owner	Limited # of U racks available for businesses
Who installs infrastructure	Property owner	Unknown	Unknown	Property owner	Property owner
Who maintains the space (includes snow removal)	Property owner	Unknown	Applicant	Property owner	Property owner
Time period from application - installation	Unknown	Unknown	Applications due June/August, review July/September, implementation August/October	No process for on street bike parking. For sidewalk bike parking, businesses are provided with	Unknown
Reasons for approval	Few details. Applicant must call public works staff to see if business qualifies, then they help choose a good location.	City reviews location and determine feasibility based on security, location, need, and traffic	Locations where short term parking demand cannot be accommodated on sidewalk, no safety concerns	design, location, and spacing requirements, and as long as they meet those, businesses are free to install whatever is feasible for them.	Similar to Missoula, property owners are provided with design, location, and spacing standards to follow. Must submit site plan.
Reasons for denial	No further details	No further details	Bus loading zone, fire hydrant zone, tow-away zone, handicapped parking space		
Supporting documentation needed	Unknown	Unknown	Photos demonstrating high demand	Unknown	