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- Facilities Management & Operations
- Informatics & Strategic Initiatives
- Planning, Design & Construction
 - » Annual Capital Projects
 - » Major Projects

Dean of Students Office
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City of Boston:

- Boston Planning & Development Agency (BPDA)
- Boston Transportation Department (BTD)
- Parks & Recreation

Town of Brookline:

- Planning and Community Development
- Transportation Division

Commonwealth of Massachusetts:

- Department of Conservation and Recreation (DCR)
- Massachusetts Department of Transportation (MassDOT)

Private and Nonprofit:

- Emerald Necklace Conservancy, Esplanade Association,
- Lyft
 - » Bluebikes

1. EXECUTIVE SUMMARY

Executive Summary

The thriving urban location and unique linear nature of Boston University's Charles River Campus (CRC) provide an ideal context for travel by micromobility devices – bicycles, scooters, and skateboards. Roughly nine percent of the Charles River Campus population currently travels by bicycle on a regular basis. Boston University (BU) has demonstrated its support and encouragement of bicycling to, from, and on campus by investing in critical infrastructure, such as bike parking, and by partnering with the City of Boston and other stakeholders to implement bicycle infrastructure throughout the campus. In recent years, electrically-powered bikes and scooters, have played a major role in the BU community's transportation behavior.

Today, the use of micromobility devices – everything from traditional bicycles to one-wheeled electric devices – is on the rise across the country, including here at BU. The tangible benefits of these modes, including personal cost-savings, improved health, and reduced environmental impacts, will continue to influence transportation decisions made by the Boston University community. In recognition of this trend, this Micromobility Plan has been prepared for the Charles River Campus to guide future investment by Boston University and to support the continued growth of bicycling (and all micromobility) as a major component of BU's transportation system, and to integrate policies and infrastructure for other emerging devices.



Development of the Plan

This plan was developed by assessing existing conditions on campus with a goal of identifying our strengths and articulating opportunities to improve conditions. An internal assessment on the conditions of bicycling and bike infrastructure was completed in 2018 and led to several improvements including the creation of short and long-term bike parking standards, bike share membership discounts for students, installation of new secure bike parking, public bike repair stations, and the opening of the Boston University Cycle Kitchen (BUCK). Recent and planned enhancements have been analyzed together with recently-collected data to prioritize micromobility accommodations and initiatives.

BU partnered with AECOM in 2022 to inventory all existing bike parking. That updated inventory provided the basis for a parking occupancy survey conducted in Fall of 2023. Many of the observations made during our 2018 assessment remain unchanged. For example, the vast majority (85%) of bike trips are taken for utilitarian purposes, such as commuting to work/class or running an errand - not for recreation. The Boston University community reported an average trip length of just over three miles, with some trips measuring over fifteen miles and many more measuring a half-mile or less. This information helps to define the target population for increasing the bicycle mode share.

This plan is data-driven and the data collection illustrates trends on campus, such as where people park their devices, heavy stress locations, and how people currently use the Bluebikes bike share program. The Boston University Micromobility Plan presents existing conditions and identifies priorities for improving active mobility to, from, and around BU's Charles River Campus. Expected future conditions, including impacts from proposed infrastructure and campus development projects, were considered when targeting initiatives. Proposed initiatives are organized into five categories: Parking, Amenities, Network, Bluebikes, and Culture.

This document recognizes the variety of modalities serving our community and uses an inclusive posture for all users. Uses of the term "bicycle" is a catch-all for any micromobility device and "cyclists" for any micromobility user.

Micromobility at BU

At BU, the term "micromobility device" describes small human and/or electric-powered wheeled conveyances designed for personal transport. It does not include devices powered by internal combustion engines or engines capable of propelling the device in excess of 20mph. This aligns with Federal Highway Administration definitions and is periodically benchmarked against evolving policies concerning these devices. BU's Government & Community Affairs and Transportation Services teams will continue to monitor that space to align the university's guidance with federal, state, and local policies. Companies offering shared micromobility devices ("dockless scooters," for instance) are not currently active in the Boston area but that will likely change as legal definitions and laws change. Introduction of these shared services to our campus will likely require reassessment and revision of our policies. BU's Micromobility Device Guidelines can be accessed online at the [Environmental Health & Safety](#) site.

NEW MICROMOBILITY DEVICE GUIDELINES



Safety is important when riding your bike or scooter. It's also important when storing them. Please be sure to **familiarize yourself with BU's new Micromobility Guidelines.**

Here are the basics:

- bikes and scooters should never be ridden or stored in common areas, hallways, dining halls, or classrooms
- only registered bikes and scooters can be stored in dorm rooms, offices, and secure bike rooms

While dockless "scooter sharing" companies do not currently operate in the area, they may in the future. This document aims to anticipate their needs and challenges as well. Like similar micromobility guidelines established by peer institutions, devices are not allowed to be operated inside university buildings. Safety and respect for other road users is expected when operating them on University Property, and they should not block or obstruct pathways, sidewalks, stairways, ramps, or building entrances or exits. Micromobility devices can be locked to bike racks on campus but should not be locked to trees, railings, fences, or other building structures.

Types of Micromobility Devices



Bicycles



Electric Scooters



Skateboards



Hoverboards



Segways



Electric Bicycles

Device Parking

Device parking of various styles have been woven into the campus fabric over time. The University maintains over 2,700 device parking spaces on campus and recognizes that not all of these spaces are created equal. Recent efforts have focused on redistributing and improving parking with an emphasis on bringing racks up to the standards established in 2018.

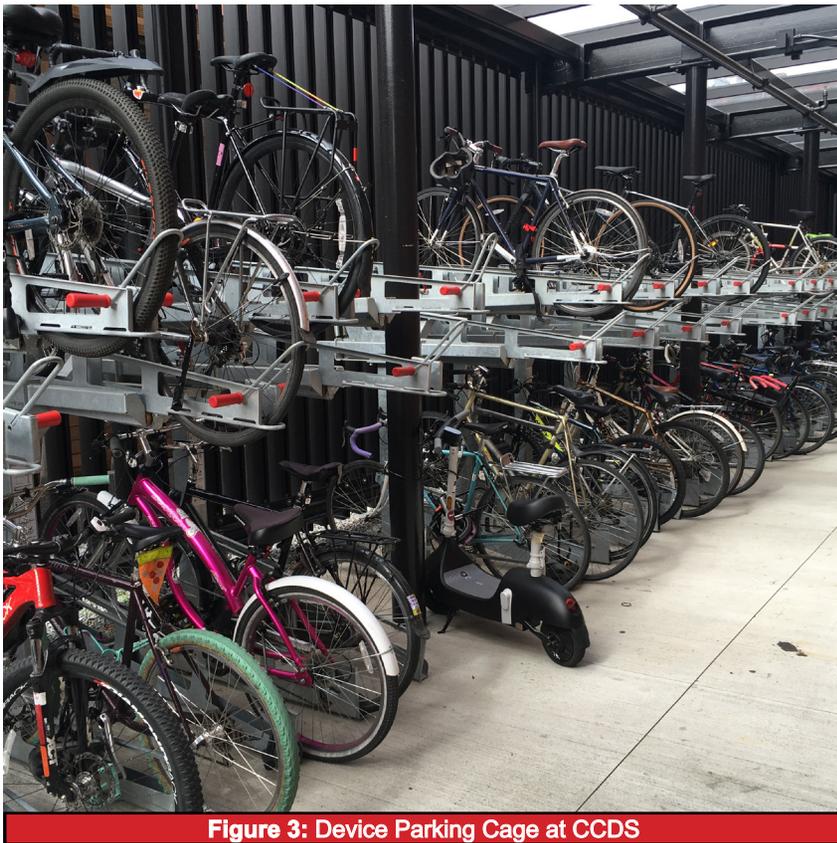


Figure 3: Device Parking Cage at CCDS

In 2018, BU had over 2,500 bike parking spaces on campus, not all of them in useful places and consequently underutilized. Inconveniently located bike parking limited its utility, contributing to a significant volume of bicycles locked to fixed objects – such as poles and fences – throughout the campus. This behavior continues to act as an indicator of high demand in certain areas of campus and will continue to guide our work to increase supply in these locations.

Through a combination of new rack installation, redistribution, maintenance, and modernization, the bicycle parking supply on campus is more efficient in 2024 than it was in 2018. Data collected from the Boston University community in 2018 revealed that over half of people who bike to and from the campus prefer to walk - not bike - around the campus throughout the day. In recognition of this trend secure bike parking and sheltered racks have been added to support people seeking day-long bike parking. The device parking recommendations provided in the plan aim to maintain and provide the Boston University community with a high-quality inventory of bike parking that provides the right parking amenities at the right locations on campus. Device parking priorities include:

- **Increase the supply of bike parking** on campus to meet the recommended standard of one bike parking space per 10 people as per the Association of Pedestrian and Bicycle Professionals.
- **Monitor and manage distribution of existing bike parking** to match demand shifts;
- **Expand access to bike rooms** by incorporating them in all new buildings and major renovations;
- **Increase bike stations** for commuters seeking day-long bike parking and amenities;
- **Provide easy-to-use and accurate tools** to locate bike parking; and
- **Perform periodic bike parking utilization monitoring** to verify racks are deployed to useful locations.

End-of-Trip Amenities

The University currently provides bike pumps, repair stations, showers, and changing facilities for people who bike to campus. Data collected in the 2018 internal assessment revealed that not all amenities are accessible to people wanting to use them. We identified that more centrally-located amenities were needed. Centrally-located showers, lockers, and changing facilities now provide members of the Boston University community with amenities needed to commute by bike, especially throughout months with extreme weather. The end-of-trip amenity priorities are:

- Provide lockers and changing facilities for daily commuters at convenient locations;
- Expand common knowledge of existing end-of-trip resources;
- Integrate end-of-trip amenities into new buildings and major renovations; and
- Combine high-capacity bike parking and end-of-trip amenities to create bike stations.



Figure 4: Bike Repair Station at the BUCK

Campus Bicycle Network

Research across the United States and around the world has demonstrated that a well-connected, safe, and comfortable network of bicycle infrastructure is the single most effective mechanism for increasing travel by bicycle. We know through prior outreach that feeling uncomfortable and unsafe is the BU community's primary barrier to bicycling on and around campus. Commonwealth Avenue is a busy street and, as the spine of the Charles River Campus, it functions as the primary thoroughfare for anyone traveling to, from, and through our campus. Recent improvements made by the state and city have already lowered barriers to walking and biking on the Western end of "Comm Ave" but plenty of work remains to the east. This plan builds on existing infrastructure and planned improvements to enhance safety, comfort, and connectivity for people of all abilities.

Achieving many of the bicycle network recommendations will require close collaboration with the Massachusetts Bay Transportation Authority (MBTA) and several local and state jurisdictions, including the City of Boston, the Massachusetts Department of Transportation, and the Town of Brookline. BU has successfully partnered with the City of Boston to reimagine Commonwealth Avenue with integrated bike lanes and looks forward to continuing this work. The bicycle network priorities include:

- Partner with the relevant jurisdictions to implement well-connected, safe, and comfortable bicycle infrastructure projects;
- Improve safety by leveraging data to prioritize efforts that mitigate high-crash locations on campus;
- Improve connectivity on campus by promoting contraflow bike lanes;
- Mitigate conflicts between people biking and curbside activity with pick-up and drop-off areas;
- Leverage the University's planned public realm improvement projects to expand bicycle network; and
- Clearly delineate and communicate travel paths for bikes and pedestrians on internal campus pathways.

Bluebikes at Boston University

Usage data shows that intra-campus trips (for example, from the dock at Buick Street to the dock at BU Central) are quite popular relative to the entire Bluebikes system. Annual Bluebikes memberships are currently offered to faculty, staff and students at a subsidized rate of \$75.50 as of 2023, a discount from the base price of \$133.50. This has helped to address affordability concerns, but challenges remain for optimizing the system for our users and helping them to embrace it. Bluebikes priorities include:

- Continue to work with Bluebikes and the City of Boston to site new stations where they are most needed;
- Identify permanent locations for temporary stations to sidewalks or University sites to address seasonality limitations; and
- Integrate Bluebikes into the campus culture to expand usage of the Bluebikes system.

Campus Bicycle Culture

A final component of the plan focuses on campus bicycle culture. Based on feedback received from the Boston University community, bicycle safety and ridership would improve with the establishment of a stronger culture of bicycling on campus. In 2019, the University began offering a 1-credit on-bike “Urban Cycling” class through its Fitness and Recreation department. In 2023, BU opened the BU Cycle Kitchen (BUCK), a home for bicycle maintenance, repair, registration, learning, and culture on campus. The BUCK is a fully equipped bike shop, study space, and classroom managed by a professional mechanic with staffing help from students. Upcoming campus culture priorities are:

- Continue providing financial incentives for biking commuters
- Establish a summer bike-storage program;
- Expand awareness of bicycling;
- Establish new ways of disseminating safety education;
- Develop strategies for encouraging bicycle travel to major University events; and
- Establish partnerships to support the bicycling culture on campus.



Figure 5: Student-led “light brigade” handing-out safety accessories for riders

Action Plan

The final chapter of the Micromobility Plan charts the implementation priorities of the plan, guided through overarching priorities:

- Increase the bicycle mode share to reduce our carbon footprint;
- Partner with relevant stakeholders to enhance bicycle safety by targeting high and medium stress areas of the bicycle network at the Charles River Campus;
- Reduce the volume of devices stored in inappropriate locations to better serve the whole community; and
- Increase the number of short-term and long-term bike parking spaces on each section of the Charles River Campus to allow to increase capacity for residents and employees.

The Action Plan summarizes the recommendations and offers a phasing plan for implementation, recognizing that improvements to the campus will necessarily take place over time commensurate with available resources. The Action Plan identifies three phases for implementation: near-term, mid-term and long-term.

2. EXISTING CONDITIONS

Existing Conditions

Existing conditions for the campus were initially established through bicycle parking counts and observations, focus group sessions with members of the Boston University community, an online interactive map, and an online questionnaire, conducted for the 2018 Bike Parking assessment. BU has worked steadily to enhance micromobility infrastructure and review opportunities. The underlying data framework for this plan began in 2022 with an updated campus-wide inventory conducted by AECOM. In turn, BU conducted an internal usage analysis in fall of 2023 to inform the recommendations of this plan. Figure 6 shows an existing conditions map with the current device parking locations distributed across campus, and the Residential and Institutional buildings to which they are closest.

Progress Over the Last Five Years

Since the 2018 Bike Parking Assessment, Boston University has worked steadily to enhance bicycling infrastructure and culture. This section outlines the efforts the University has made to support bicyclists and micromobility device users with improved amenities and expanded parking.

Protected Bike Lanes

Curb-separated, protected bike lanes opened along both directions of Commonwealth Avenue in 2019. Recent studies show that since their implementation, bike ridership on Commonwealth Ave. has tripled, providing hundreds of bicyclists and other device riders with increased safety and access to university facilities and local businesses.

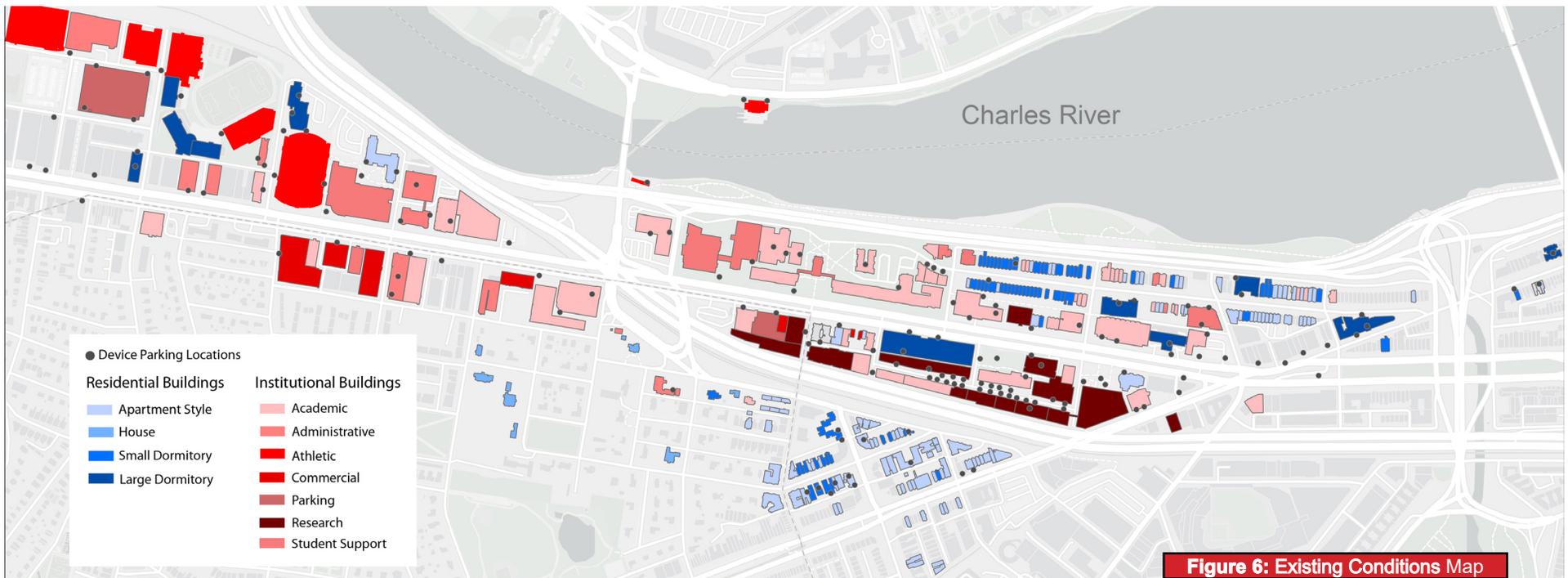


Figure 6: Existing Conditions Map

Bicycle Parking Expansion

Over the last five years, Boston University has increased its bike parking inventory, mainly through major investments aimed at supporting the addition of new bike rooms, the creation of sheltered parking locations, and improvements to previously existing bike racks. Today, the university's device parking inventory totals 2,758 spaces. This figure includes 124 unsheltered and 19 sheltered parking locations, and 13 secured bike rooms, with the bike shelter at Cummington Mall, and secure bike enclosures at 32 Harry Agganis Way and Center for Computing and Data Science being the latest locations to come online.

All outdated, theft-prone rack types (schoolyard, wave, bike root, horizontal rail, etc.) have been replaced with modern racks compliant with university and city standards – mostly inverted-u racks. In some areas, this resulted in a technical reduction in parking capacity because the manufacturer's capacity estimates for the outdated racks did not reflect real-world usage patterns. As a result, the quality of bike parking has increased significantly campuswide.

BU Cycle Kitchen

In September of 2023, the University opened the BU Cycle Kitchen, also known as “the BUCK.”. Located in a storefront retail space on West Campus, this new venue serves as a holistic bike center for the BU community offering tools and training for “do it yourself” bike repair/maintenance, safety gear (free lights, bells, and helmets), classes, and community-building events including free coffee every Thursday morning. It is managed by a professional bike mechanic and staffed by student employees and volunteers.

Repair Stations

Bike repair stations with tools and air pumps have been installed in four publicly-accessible locations and most bike rooms. Student employees at the BUCK are trained to inspect tools and pumps, replace stolen tools, and refurbish worn out pumps.



Figure 7: The BUCK provides bicyclists with tools to repair their bikes

Updated Storage Guidance

Scooters, skateboards, and other small, wheeled personal transportation devices have proliferated at Boston University as they have at campuses across the country. These devices present some storage challenges not covered by established bicycle-focused guidelines. In collaboration with BUPD, Transportation Services, BU Housing, and CPO, Environmental Health & Safety has developed updated guidelines for the safe storage and charging of micromobility devices at BU.



Methodology

The methodology for the existing conditions data collection effort is described below.

Bicycle Resource Inventory

A bicycle resource inventory, inclusive of all bicycle parking and end-of-trip amenities (such as bike repair stations), was developed and evaluated for its overall condition in the Summer of 2022. For bicycle parking, the number and type of rack at each location was collected and evaluated based on several metrics:

- Access: The physical ease of reaching the facility
- Proximity: The facility location relative to destinations
- Condition: The physical condition of the facility
- Lighting: The provision of lighting at the facility
- Coverage: The provision of shelter over the facility
- Installation: Properly secured, tamper-resistant racks and repair stations

Device Parking Counts

Bicycle and device parking counts were collected on three generalizable fall days. Temperatures were mild and classes were in session. These attributes correlate to typical peak demand. Actual dates were October 17th, 18th and 24th. All data collection occurred between 1:00 p.m. to 4:00 p.m. on these days. The location and number of micromobility devices secured to racks, as well as those locked to fixed objects such as fences, poles, and trees, were recorded. Across the Charles River Campus, 840 bikes and 135 e-scooters were secured to racks. 33 bikes and 8 e-scooters were locked to fences, trees, and other fixed objects.

Existing Bicycle Facility Network

Available data, including basic roadway data, crash data, and Bluebikes data, were compiled to review the existing bicycle infrastructure network. AECOM completed a Bicycle Level of Traffic Stress (LTS) analysis for the campus, quantifying the level of stress a person biking is likely to experience while riding in a range of conditions from on-street with vehicular traffic to a separated shared-use path. The analysis correlates stress with the physical and operational characteristics of roadways and crossings, such as the number of vehicle lanes. The analysis is based on the Mineta Transportation Institute's pioneering research on low-stress bicycling and network connectivity and is a principal reference used in the 2015 FHWA Separated Bike Lane Design Guide.

Streets crossing and running parallel to Commonwealth Avenue are relatively low-stress but Commonwealth Avenue east of the BU Bridge and west of Beacon Street is rated as High Stress. The City of Boston's planned conversion of the existing conventional bike lane to a parking- and flex post- protected bike lane is expected to significantly improve that LTS rating, a crucial improvement to the campus bicycling network.

Data from the Metropolitan Area Planning Council's Local Access Score Tool was also reviewed to identify which roads and paths most effectively connect bicyclists to the campus. Using a variety of trip generation and demand analysis tools, the MAPC Local Access Score tool estimates how useful each segment of the roadway network is for connecting residents to their daily destinations. The score for each roadway segment is calculated based on population data and the most direct routes connecting populations to their likely destinations, including schools, shops, transit, work, and parks. For Boston University, this tool was used to identify access points to the campus that people biking are likely to use on an average trip between their home and the campus.

Existing Conditions Results

The results of the existing conditions analysis are provided in the following pages and form the basis for the recommendations of the plan.

Device Parking

Using bike rack manufacturer estimates, the University previously estimated that over 3,000 bike parking spaces were provided on campus. In practice, manufacturer’s estimates are often overstated and do not reflect the real capacity provided by a bike rack. In 2018, through professional best practice guidance and field observations, the University verified 2,394 bike spaces at 130 unique locations, including indoor bike rooms (384 indoor, 1,756 outdoor/uncovered, 254 outdoor/covered). Today, after a substantial improvement in rack quality, quantity and types, the total number of bike spaces has increased to 2,786. With a campus population of nearly 33,000 people, one bike parking space is provided for every 12 people on campus (or just over seven percent of the campus population). According to the Association of Pedestrian and Bicycle Professionals, a minimum of one bike parking space per 10 people is recommended. Table 1 provides a breakdown of the device parking inventory, comparing 2014’s stock with the current 2024 stock.

	Short Term		Long Term	Bike Repair Stations	
	Unsheltered	Sheltered (open air)	Secure	Pumps	Repair Stands
2014	1,756	254	384	8	2
2024	1,775	427	584	12	8

Table 1: Existing Device Parking Inventory

Device Parking Supply

The desirability of bike parking is mostly driven by convenience. Bike parking that provides direct and easy access to a person’s destination is likely to be well-used. Other factors driving the desirability of bike parking include the functionality of the rack design and overall condition of the rack. Bike racks that are cumbersome to use or that are in poor physical condition diminish the desirability of bike parking. Where parking is not convenient, functional, or usable, people lock their bikes to fixed objects. Currently, eleven unique styles of bike parking are provided on the campus as shown in Figure 8. Some styles are consistent with industry best practices for bike parking, while others do not meet basic functionality requirements due to design limitations.

Currently, eleven unique styles of bike parking are provided on the campus as shown in Figure 9. Some styles are consistent with industry best practices for bike parking, while others do not meet basic functionality requirements due to design limitations.

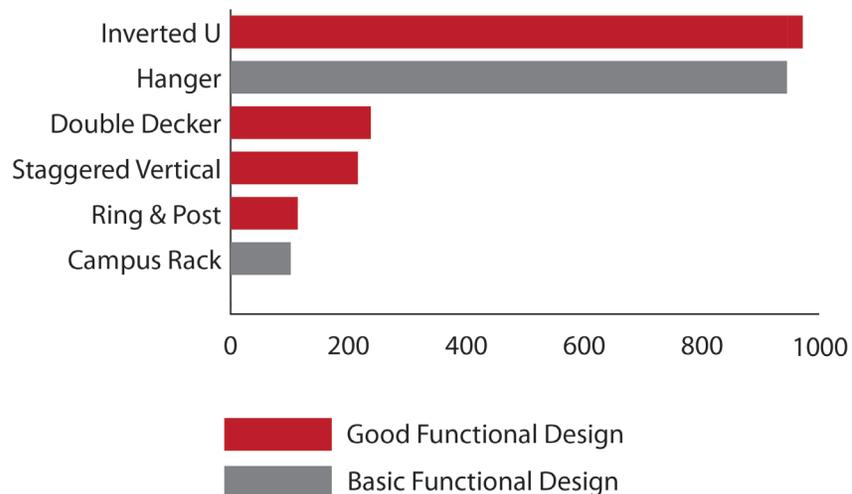


Figure 9: Device Parking Supply by Style

Proximity Analysis

As part of the research conducted for the creation of the Micromobility Plan, a proximity analysis was performed to evaluate how well buildings are serviced by the existing device parking inventory. To appropriately determine how close device parking is to Residential and Institutional buildings, parking locations were counted within a fifty-foot (50') radius around each of the Charles River Campus building footprints. Residential buildings located in distances of 15' or less, such as brownstone buildings, were aggregated into 'residential building blocks' in order to fairly evaluate their proximity to device parking locations. Institutional buildings were evaluated as separate buildings.

Using City of Boston Bike Parking guidelines, parking locations were categorized by short-term, or visitor parking, and long-term parking, also known as resident or employee parking. A table detailing the Boston Transportation Department's Bike Parking Guidelines can be found in the Appendix A.

Results from the analysis show that, while device parking is readily distributed across campus, not every building has sufficient short- or long-term parking spaces within 50' of their site. As shown on figure 10, 22 residential building blocks and 65 institutional buildings have some sort of parking within this distance. Buildings highlighted in green has device parking within 50', and those highlighted in red do not.

The extent of the device parking coverage reflects the growth of the university's inventory, but also accentuates the need for increasing short-term (sheltered and unsheltered), and long-term device parking, particularly on Bay State Road.

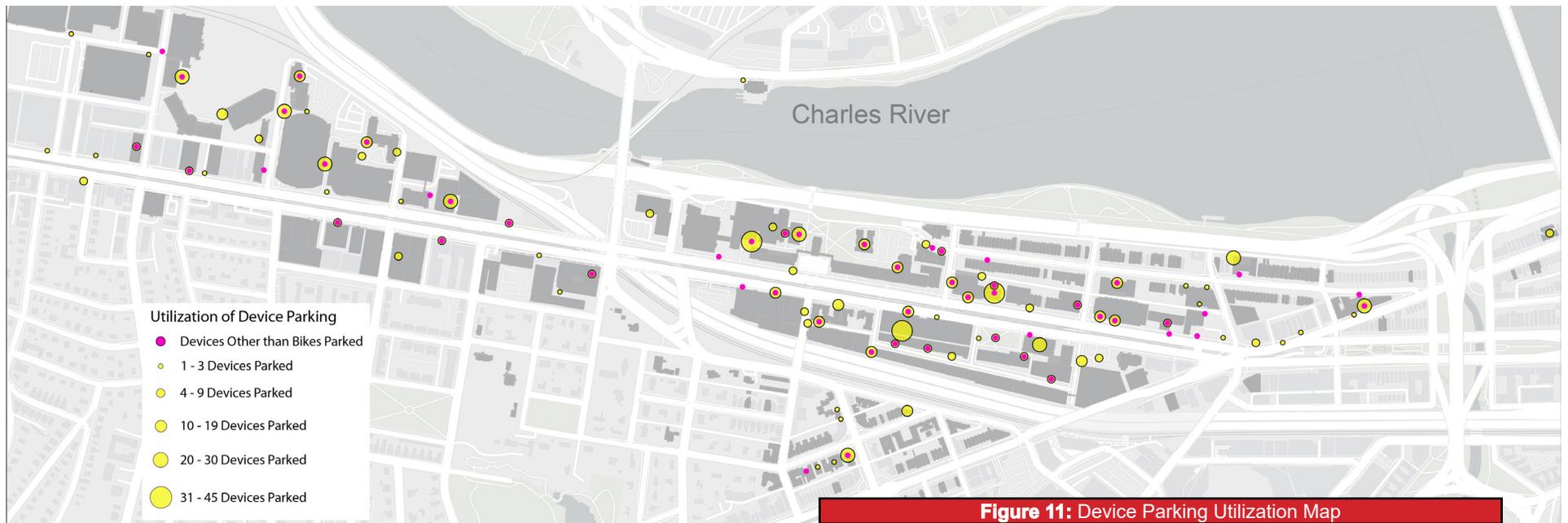


Figure 10: Device Parking by Building Map

Device Parking Utilization Trends

Parking utilization trends have changed throughout the years, resulting from the impacts of the COVID-19 Pandemic on commuting and travel behavior, the expansion of safe bicycling infrastructure, and the improvements made in the quantity, quality, and distribution of the parking inventory. Prior to the relocation of parking, some of the existing bike parking was not conveniently located near campus destinations. This was confirmed during the 2018 internal assessment, which indicated low utilization in some locations. At the same moment, some locations on campus were over-utilized and unable to satisfy the full demand.

At that time, over 120 bicycles were counted locked to fixed objects during the peak hour, accounting for approximately 12% of all bicycles on campus. Bay State Road and Commonwealth Avenue accounted for a significant portion of the bicycles observed locked to fixed objects. Through the Fall 2023 bike count survey, 41 micromobility devices were counted locked to fixed objects (mostly on Bay State Road and Commonwealth Avenue), 33 of which were bikes and 8 electric scooters- a near 65% reduction in wrongfully parked devices. Figure 11 reflects the results from the bike count survey, highlighting the parking locations where devices were parked, proportionally sized by quantity, and the locations where electric devices were parked.



Long Term Device Parking

Long Term bike parking is useful for people who commute to and from the campus each day and either do not make many cross-campus trips or prefer to make those trips by other modes. Data from the online questionnaire suggests that half of the people who bike to and from campus do not use their bicycle to travel between buildings on campus. For these people, a secure, weather-resistant location to store their bike throughout the day is a desirable amenity.

Long-term bike parking is also an important amenity for campus residents. 70+% of BU's undergraduate students live on campus. Dorm rooms do not have much space for bicycles and scooters so, in addition to commuters wishing to park their bike all day, our long-term bike parking is also used by students who wish to store their bike overnight. Some students use their bikes daily; others only take them out a few times each semester.

Some bike rooms located in dormitories are reserved for exclusive use by building residents. This is necessitated either by severely limited space or access

control needs (i.e. access cannot be limited solely to the bike room). Ideally, all bike rooms would be accessible to the whole community thereby allowing greater flexibility to meet demand.

Indoor bike parking is preferred for overnight bike parking and also benefits commuters who need to park their bike for the entire day. Secure day-long and/or overnight bike parking is a frequent request from the BU community. The Fall 2023 Survey counts reveal that, on average, bike room occupancy was at 60% between 1:00 and 3:00pm, compared to 27% and 39% for unsheltered exterior racks and sheltered racks, respectively. High utilization rates of the indoor bike rooms on campus indicate that the supply of long-term, secure bike parking is preferred by bicyclists.

Figure 12 shows the use and availability of sheltered and exterior short-term bike parking within 500' of long-term bike room parking. Given the high utilization numbers of bike rooms, short-term parking effectively becomes "overflow" parking when bike rooms are filled. Secured bike rooms on campus service 5,074 people within a 50ft radius, resulting in approximately 10 people per parking space.

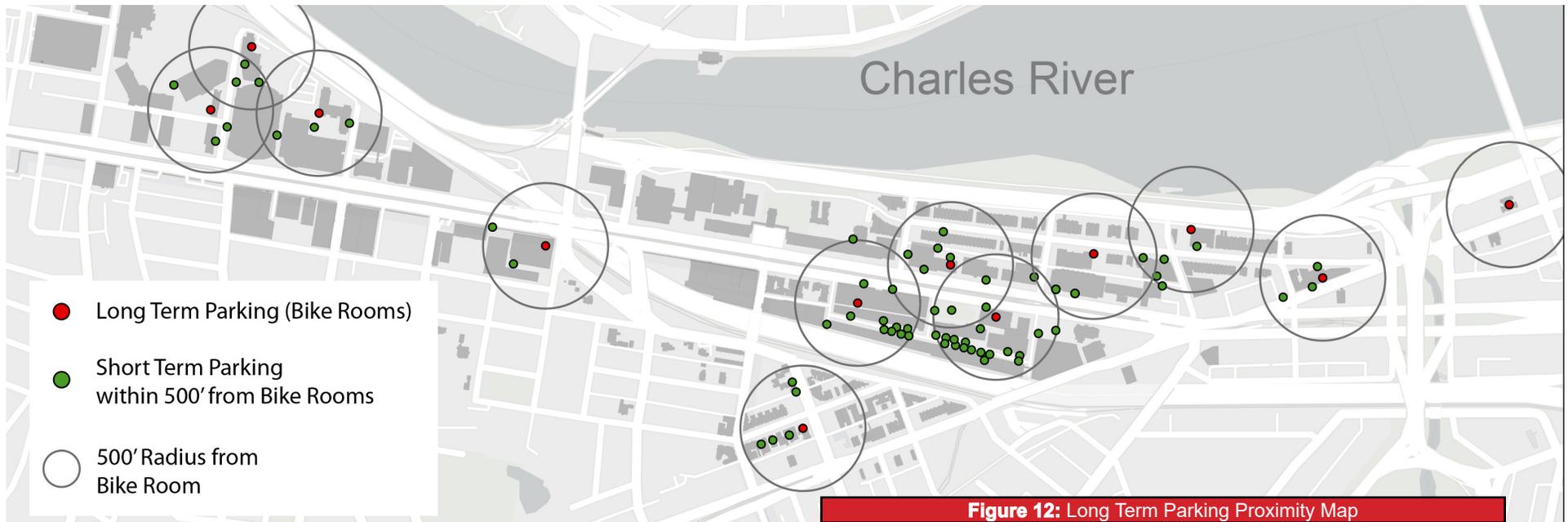


Figure 12: Long Term Parking Proximity Map

End-of-Trip Amenities

End of trip facilities such as bike pumps, repair stations, and shower/locker facilities were also catalogued during the inventory effort. There are twelve bike pump stations throughout the Charles River Campus, nine of which are provided East of the BU Bridge, two in West Campus, and one in South Campus. Bike repair stations are equipped with wrenches, screwdrivers, and bicycle specific tools like tire levers all tethered to a wall or bike stand. Shower repair stations are equipped with wrenches, screwdrivers, and bicycle specific tools like tire levers all tethered to a wall or bike stand.

Based on the online interactive map results from the 2018 internal assessment, there is a strong desire for shower and changing facilities to serve the building users on Cummington Mall and at the College of Arts and Sciences on the north side of Commonwealth Avenue. Members of focus groups – staff and faculty specifically – consulted as part of the same process, indicated that lockers for storage of clothes, bike helmets, and other personal items would be highly valued, even more so than showers.

As shown in Figure 13, shower facilities for bicycle commuters are provided on campus at the following locations:

- Track and Tennis Center at 100 Ashford Street – Left from entrance
- 25 Buick Street – First Floor near Housing & Residence Life
- 808 Commonwealth Avenue – Second Floor near Howard Thurman Center
- Center for Computing and Data Sciences, 665 Commonwealth Avenue – Basement
- Yawkey Center for Student Services, 100 Bay State Road – Basement
- FitRec (requires membership to the gym)
- School of Law (for use by School of Law students only)

Publicly accessible amenities are available to BU students, employees, and visitors. **Restricted** amenities are only available to BU students and employees, and are only available via card access. Certain restricted access amenities are limited to students or staff residing in specific buildings. Please refer to the Transportation Services website for more details.



Figure 13: End-of-Trip Amenities Map

Bike Repair Stations		Bike Pumps		Shower Facilities
Publicly Accessible	Restricted Access	Publicly Accessible	Restricted Access	
<ul style="list-style-type: none"> • George Sherman Union Plaza near the Mugar Library side entrance • Bike Shelter at Cummington Mall • In front of Marciano Commons Facing Bay State Road • Outside the Towers bike room on Bay State Road 	<ul style="list-style-type: none"> • Warren Towers bike room • West Campus bike cage • CCDS bike cage (2 stations) • BU Cycle Kitchen (during open hours) 	<ul style="list-style-type: none"> • Rich Hall facing Nickerson Field • George Sherman Union • Marciano Commons on Bay State Road • Bike shelter on Cummington Mall • Outside Towers bike cage on Bay State Road • BU Cycle Kitchen (during open hours) 	<ul style="list-style-type: none"> • West Campus Bike Cage • 33 Harry Agganis Way bike room • 10 Buick Street bike room • Howard Thurman Center Bike Room • LAW Basement bike room • CCDS bike cage • Warren Towers bike room • South Campus bike room • CILSE bike room • Kilachand Honors College bike room • Myles Standish Hall bike room 	<ul style="list-style-type: none"> • Track and Tennis Center at 100 Ashford Street – Left from entrance • 25 Buick Street – First Floor near Housing & Residence Life • 808 Commonwealth Avenue – Second Floor near Howard Thurman Center • Center for Computing and Data Sciences, 665 Commonwealth Avenue – Basement • Yawkey Center for Student Services, 100 Bay State Road – Basement • FitRec (requires membership to the gym) • School of Law (for use by School of Law students only)

Table 2: End-of-Trip Amenities Throughout Campus

Campus Bicycle Network

Home of the first major bicycle lanes in the City of Boston, Commonwealth Avenue and Boston University share a legacy as early adopters of bicycle infrastructure. The first phase of the Commonwealth Avenue Improvement Project in 2008 represented the first step in the creation of a dedicated bicycle network through Boston University's Charles River Campus. Through a partnership with MassDOT, the City of Boston, and the University, the Commonwealth Avenue Phase 2A Improvement Project continued the streetscape improvements along Commonwealth Avenue from Amory Street to Alcorn Street. The Improvements include fully accessible Green Line stations, separated bicycle lanes, and buffered sidewalks, and protected intersections.

Furthermore, the Commonwealth Avenue Bridge Reconstruction Project replaced the existing superstructure, including the concrete deck and steel beams, that carries Commonwealth Avenue and the MBTA Green Line B Branch over the Turnpike and MBTA Commuter Rail tracks. The project also incorporated several functional and safety improvements including improved pedestrian access and signaling, new bicycle lanes, and better MBTA bus pick-up and drop-off accommodations

Since the creation of protected bicycle lanes, travel by bike has increased significantly. Bicycle volumes counted at select locations around the Charles River Campus in the fall of both 2016 and 2017 showed increases in bicycle traffic by over 15% at Packard's Corner, 27% at the BU Bridge, and over 40% on the Massachusetts Avenue Bridge.

While the infrastructure on campus has improved dramatically over the last decade, concerns about safety and comfort are still prevalent among current bicyclists, and a deterrent among would-be bicyclists (see Figure 14). Fear about traffic safety is the largest challenge facing the Charles River Campus relative to growing the population of people traveling by bike on campus.

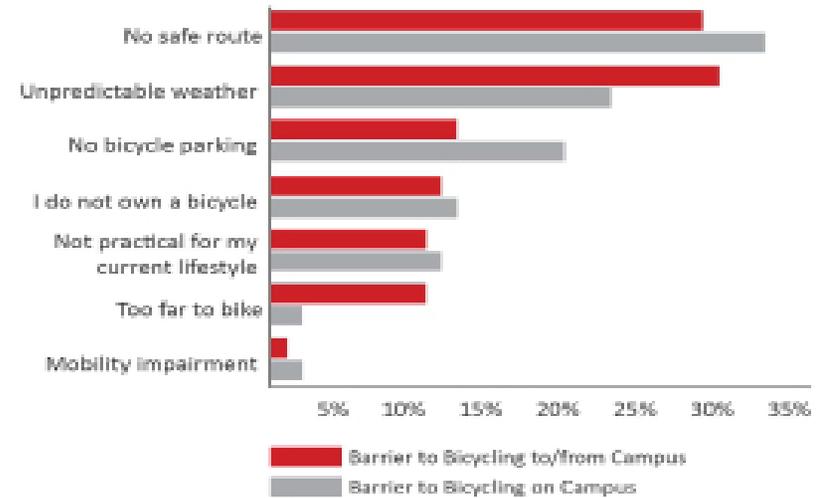


Figure 14: Barriers to Bicycling

Safety

Based on data from the Massachusetts Department of Transportation Crash Portal, crash clusters historically affect vulnerable users (pedestrians and bicyclists) at several locations on campus.

- BU Bridge at Commonwealth Avenue
- Commonwealth Avenue at University Road
- Beacon Street at Park Drive
- Commonwealth Avenue at Silber Way

Serious crashes are usually the result of a conflict with a motor vehicle. This theme emerged as a very important issue for current bicyclists on campus, many of whom cited curbside activity as a major source of discomfort when traveling on campus. Buses, ride-hailing services (such as Uber or Lyft), and delivery vehicles often block unprotected bike lanes, requiring bicyclists to merge into moving traffic. Conflicts with pedestrians stepping off the sidewalk and into the bike lanes were also noted, especially in East Campus near Warren Towers and the Questrom School of Business.

Comfort

Figure 15 shows the results of the bicycle level of stress analysis completed for the existing campus. Curb separated bike lanes on the western end of campus have transformed Commonwealth Avenue from a high-stress route to one of the lowest-stress arterial roadways in the area. East of the BU Bridge however, people biking continue to mix with traffic, a known cause of significant rider discomfort and reduced safety. Results from the online survey showed that ‘No Safe Route’ is the most significant barrier to bicycle travel that the Boston University community faces. Furthermore, the online interactive map prompted users to rank their current bicycle routes on a five-point scale from ‘Very Stressful’ to ‘Very Comfortable.’ Results from this activity indicated that 29% of bicyclists consider their current bicycle route to be ‘Stressful’ or ‘Very Stressful.’

Users of the online interactive map also identified the factors that deter them from riding on their desired bike route. The most commonly selected answers to this prompt revolve around safety and comfort, as shown in Figure 16. These findings are consistent with national and international research, which have shown that increasing separation from motor vehicle traffic reduces the stress and encourages increased travel for micromobility device users, while increasing safety for all roadway users.

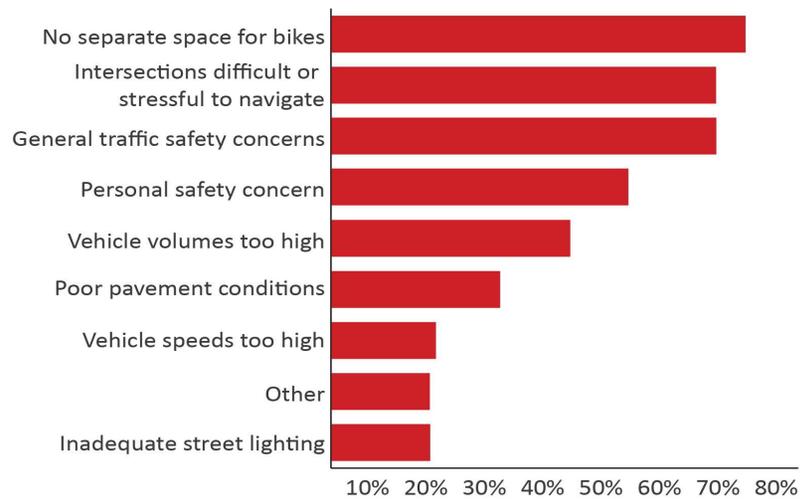


Figure 15: Issues of Bicycling Infrastructure

Connectivity

Often times, people biking will look to an alternative, lower-stress route to reach their destination if the traffic stress threshold is too high. This materializes on campus in several locations where people prefer to ride contraflow (against traffic) or on the sidewalk in order to avoid riding on or crossing Commonwealth Avenue. The existing network of one-way streets prevents bicyclists from confidently and legally taking advantage of these existing alternative low-stress routes. St Mary’s Street and Cummington Mall were frequently mentioned as desired two-way bicycle routes as alternatives to Commonwealth Avenue. Meanwhile, the new bike lanes on West Campus are protected enough that many users feel comfortable riding these one-way lanes in both directions. This appears to be a calculated risk and that is usually only made for a block or two, likely to avoid crossing and re-crossing Commonwealth Avenue.

Similarly, several internal campus pathways that provide direct access to high-demand areas are closed to vehicle traffic, however it is unclear if a bicyclist is permitted to use the space. One example is the pathway connecting the western end of Bay State Road with the George Sherman Union and Mugar Library, which runs between several buildings and is proximate to a number of high-capacity bike parking locations. The pathway connecting Harry Agganis Way to the West Campus Dining Plaza adjacent to Nickerson Field is similarly ambiguous.

The difficulty of reaching the low-stress paths along the banks of the Charles River magnifies this challenge. The campus runs parallel to the Charles River for 1.5 miles, however people biking have only one bicycle-friendly connection to the River at the terminus of Silber Way in the far east end of campus. A set of stairs precludes the pedestrian bridge over Storrow Drive near Marsh Plaza from serving as a true bicycle connection point to the campus, and no connections of any kind are available west of that point. However, a significant opportunity for improved connections from West Campus to the Charles River may be on the horizon; The Allston Multimodal Project, currently seeking federal funding, stands to transform the area directly north of West Campus in Lower Allston. With additional bicycle and pedestrian connections envisioned through the proposed West Station at both Babcock and Malvern streets, the project has the potential to significantly increase the volume of bicycle traffic moving to and through West Campus.

Wayfinding ties together existing bicycle facilities to help people biking become aware of and utilize the best and safest routes for their trip. A select number of wayfinding signs for bike rooms were observed on campus (such as at the Warren Towers bike room and 504 Park Drive bike room). However, limited directional signage for bicycles is currently provided on campus. During focus groups, a common barrier to bicycling noted by participants was not knowing the best way to get around and not being aware of the locations of secure bike rooms and end-of-trip amenities.

Wayfinding is an important component of bicycle infrastructure, particularly for attracting newer riders with limited knowledge of popular city and campus bike routes. With an incoming freshman class each year, wayfinding is especially important on campus. Wayfinding also brands the campus bicycle network and makes it recognizable; it communicates to all roadway users that bicycling is encouraged and that people biking are welcome on the street.

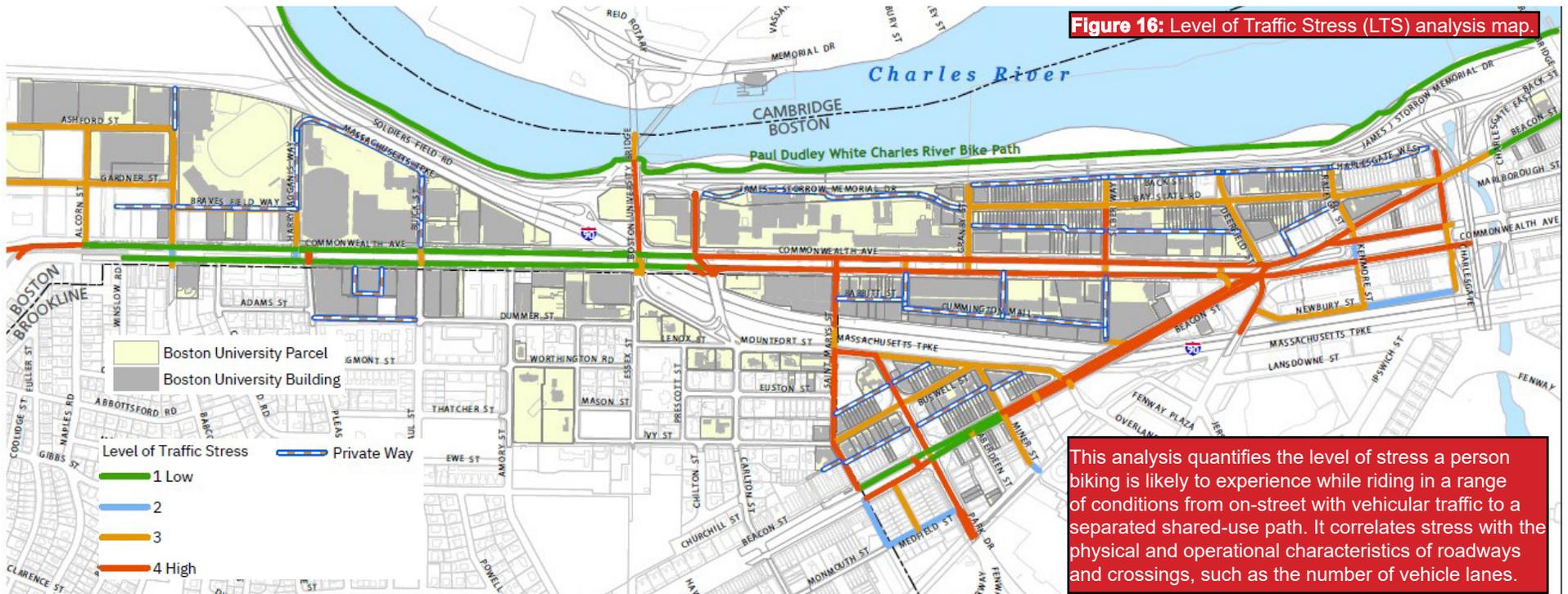


Figure 16: Level of Traffic Stress (LTS) analysis map.

This analysis quantifies the level of stress a person biking is likely to experience while riding in a range of conditions from on-street with vehicular traffic to a separated shared-use path. It correlates stress with the physical and operational characteristics of roadways and crossings, such as the number of vehicle lanes.

Bluebikes at Boston University

The Bluebikes bike share system at Boston University was evaluated based on the most recent available data from 2022. The system has been operating since 2011 and has grown to approximately 4,000 bikes offered at over 400 stations in the cities of Arlington, Boston, Brookline, Cambridge, Chelsea, Everett, Malden, Medford, Newton, Revere, Salem, Somerville, and Watertown. In 2024, Bluebikes introduced electric-assist bicycles to the system fleet and they have proven to be very popular. The Boston University Charles River Campus is served by nine stations including five in East Campus, three in West Campus, and one in South Campus. Two of the existing Bluebikes docks (Babcock Street and Silber Way) were pilot stations and were installed in 2017 as temporary additions to the Bluebikes system. Bluebikes annual memberships are currently \$133.50 but BU offers them to students, staff and faculty at a discounted and subsidized rate of \$75.50. Initially, the discount was only for employees but it was expanded to include students after a 2018 questionnaire identified membership cost as a barrier for twenty percent of student respondents.

The survey data also demonstrated that half of the survey respondents used their Bluebikes membership very infrequently – just a few times each year. However, Bluebikes use on Boston University’s campus is quite popular, and has continued to grow throughout the last few years. According to data collected for all Bluebikes trips in 2023, an average of 236,356 Bluebikes trips ended at a Bluebikes stations on campus accounting for approximately 20,000 trips per month. Figure 14 shows the number of trips per station.

Although Commonwealth Avenue initially experienced a steady increase of Bluebikes stations, progress has slowed. The system’s utility has been hampered by small station sizes and a major coverage gap in the middle of campus between the Agganis Arena and the George Sherman Union. In addition to increasing coverage, demand for strategically located docks for intra-campus travel to and from highly active destinations has uncovered the need for increased volume of Bluebikes stations. The University has identified coverage and volume increase zones to prioritize station expansion efforts in the mid- to short-term, as shown on Figure 13. Implementation of new stations in these zones would further improve bike travel between West and East campus, providing riders with additional options for commuting into and within the University. Specific station siting recommendations can be found in page 38 of the priorities section.



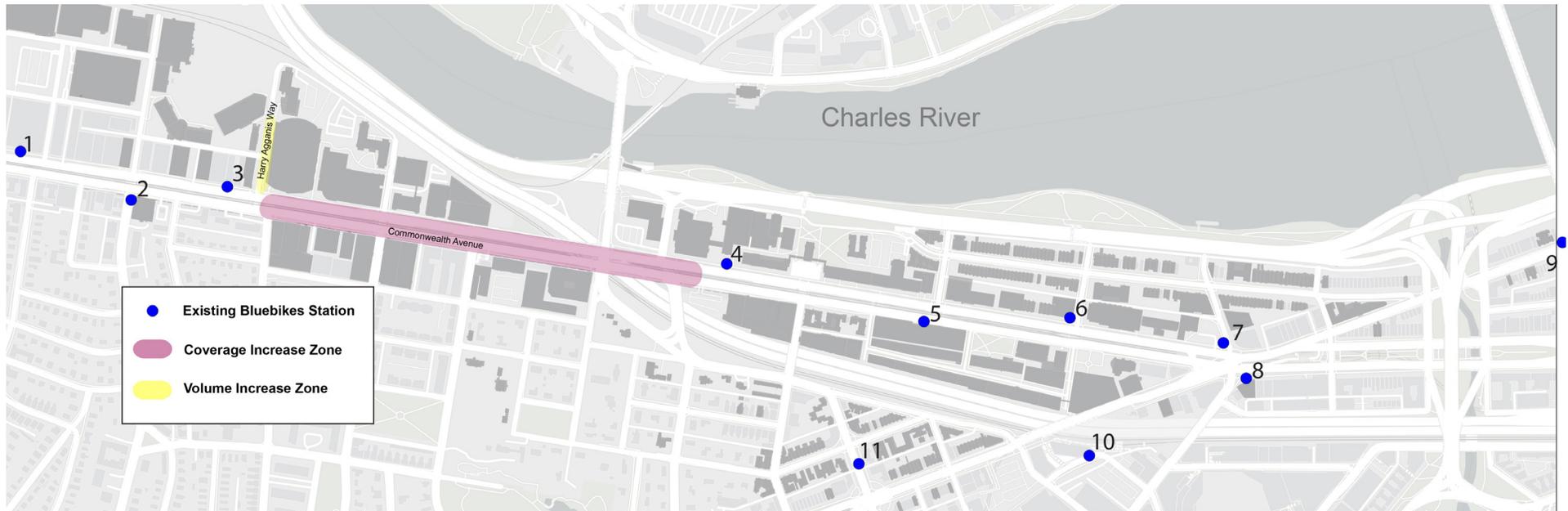


Figure 19: Bluebikes Station Expansion Map

1	Packard's Corner - Commonwealth Ave at Brighton Ave.
2	Commonwealth Ave at Babcock St.
3	Commonwealth Ave at Agganis Way
4	BU Central - 725 Comm. Ave.
5	700 Commonwealth Ave.
6	Silber Way
7	Deerfield St at Commonwealth Ave
8	Kenmore Square
9	Beacon St. at Mass Ave
10	Lansdowne T Stop
11	Park Dr at Buswell St.

End Trips at BU Bluebikes Stations in 2023

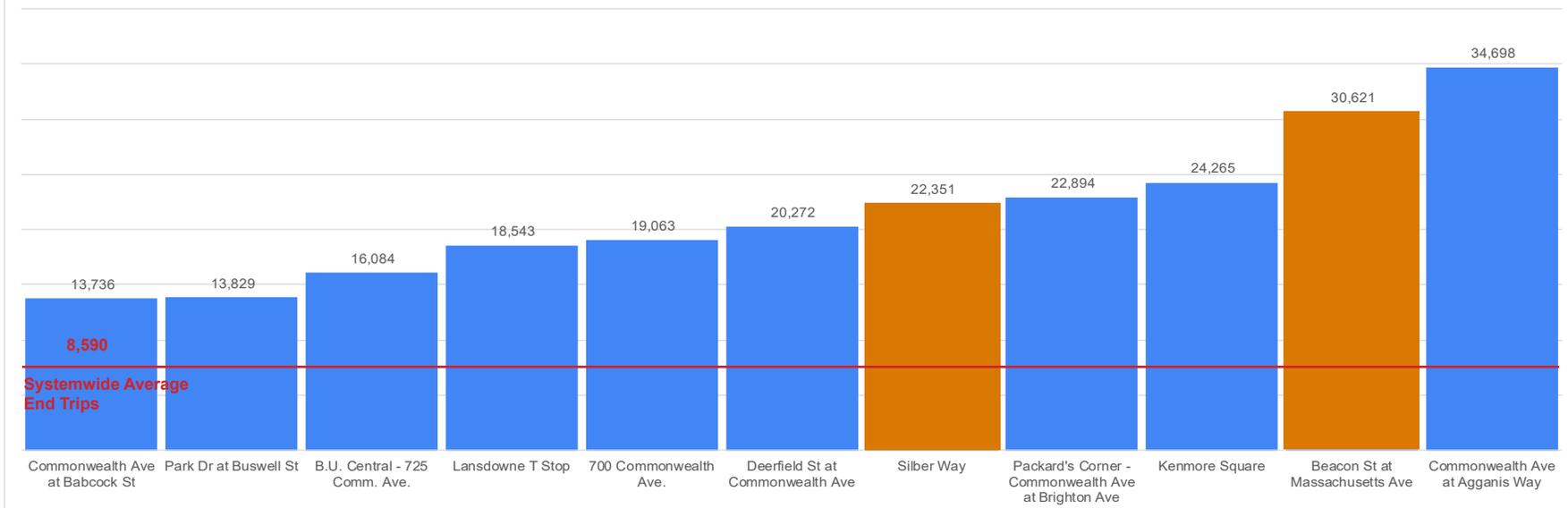


Figure 20: End Trips at Bluebikes Stations

All eleven Bluebikes stations located within the Charles River Campus all registered greater ridership end trips than the majority of Bluebikes stations in 2023, which averaged 8,590 end trips system wide. The Beacon St at Massachusetts Avenue station is a seasonal station, meaning that it is closed during the winter. Nonetheless, it was the second most used station with 30,621 end trips. This number would likely be higher if it became a permanent station providing trips year-round. The University has been substituting seasonal stations with permanent ones over the past five years. The Silber Way station will be replaced by a new permanent station on Blandford Mall.

The Commonwealth Avenue at Agganis Way, with 34,698 end trips, is representative of the travel demand that occurs by the Agganis Arena and the need to address volume at that intersection. More stations along Commonwealth Avenue would provide riders with additional destinations and opportunities to park, further addressing demand in the area.

Campus Bicycle Culture

Boston University currently provides a variety of resources to support the bicycling community and continues to innovate their program offerings. Two ongoing initiatives include an “Urban Bicycling” educational class offered through FitRec and a Bicycle Commuter REimbursement Benefit for employees that repays up to \$300 per year in bicycle-related expenses such as repairs and biking gear. Meanwhile, the BUCK (BU Cycle Kitchen) has proven to be an increasingly popular hub of bike-related activity on campus.

Open five days a week, including Saturdays, as early as 8am and until 7pm on most days, the facility is designed to fit into students and employees’ schedules. For most, the first visit to the BUCK is to register their bike, which provides them with one year of secure bike room access. That visit usually results in their picking up free bike lights, a free bell, and a free helmet. In many cases, BUCK employees are able to engage visitors in conversation about their bicycles and help them address mechanical issues they may or may not have noticed. A visit to the BUCK also serves as a chance to witness campus bike culture in action with faculty, students, and staff working on bicycles, scooters, and skateboards together or just enjoying a cup of coffee on Thursday mornings for “Commuter Coffee.”

The BUCK also serves as a venue for education-oriented and fun-oriented events like bike rides and movie nights. Student groups can reserve use of the BUCK classroom online and it has proven to be a popular meeting place for the BU Cycling Team and Triathlon Team. On warmer nights, BUCK employees and volunteers run “BUCK Stops” adjacent to bike lanes offering free bike lights and chain lube to passers-by. BUCK student staff are responsible for maintaining the pumps and repair stations around campus. In an effort to provide a public forum for campus bike riders, magnet boards have now been installed in all bike rooms. BUCK student staff keep these up to date with relevant notices and bike room users are welcome to post items on them as well.

These programs have helped foster a sense of community and culture among bike riders on campus but work remains to improve the University’s awareness of bicycling as a fast, fun, and affordable way to navigate campus. Previously-discussed infrastructure improvements – parking, end-of-trip facilities, safer street designs – reduce barriers to bicycling but user education is part of the

equation as well. The community needs to be aware of bike parking and end-of-trip facilities, they need to feel comfortable operating the bike racks on the front of BU Shuttles, and they need to feel safe and confident riding on city streets. The logistical challenge of transporting a bike to and from campus between semesters and academic years was also identified as a student-specific barrier during the focus group sessions. Current University policies restrict use of campus facilities for summer storage and bicycles left on campus over the summer are impounded. However, with a campus population comprised of students from all around the country and world, transporting a bike presents a significant financial and logistical hurdle for many.

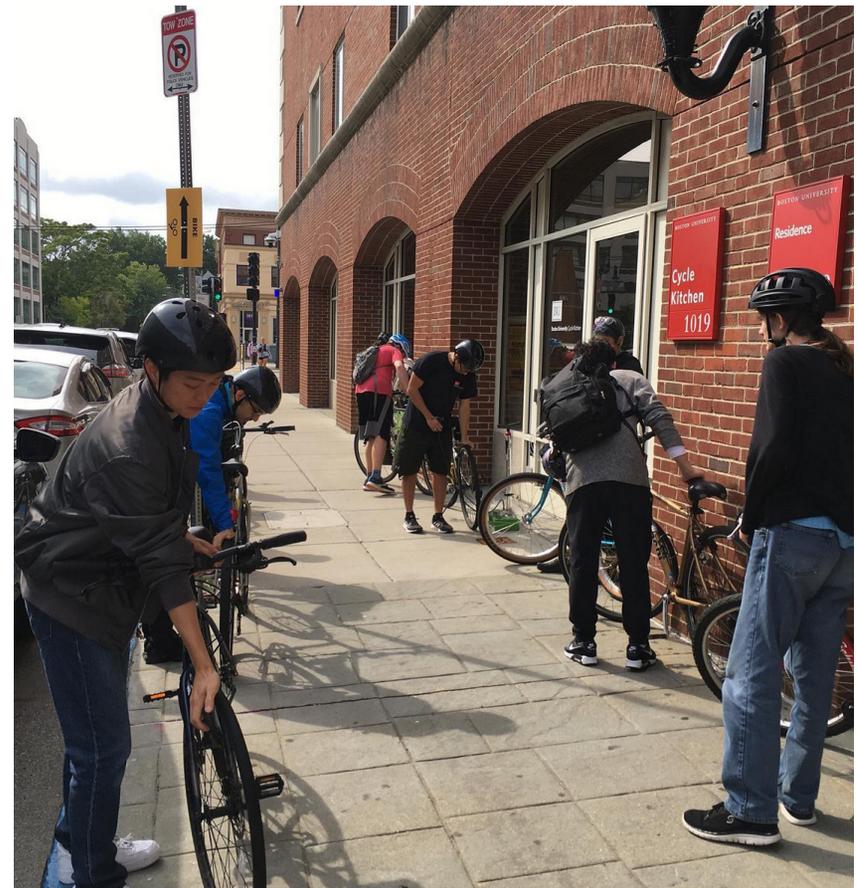


Figure 21: Bicyclists Gather at the BUCK for a Class

3. Priorities

Priorities

The following initiatives are generally ordered in terms of their expected impact to the campus.

Device Parking

Through a combination of new device parking installation, routine redistribution, regular maintenance, and ongoing modernization, the device parking supply is managed to reduce theft and discourage people from locking their bicycles and other micromobility devices to fixed objects. While significant improvements have been made through low-cost efforts, such as redistributing existing underutilized parking to high-demand areas, additional resources, such as shelters for bike parking and the expansion of secure bike rooms, are integral to the inventory supporting day-long bike parking needs. Device parking initiatives are summarized in Table 3: Device Parking Summary Table on page 46.

Device Parking Initiative #1: Increase the supply of Short-term bike parking on campus to meet the increased demand. While the campus supply of bike parking has grown over the past five years, the increased use of micromobility devices is bound to bring a higher demand for parking spaces. To meet demand, the University must increase short-term parking spaces within 50' of residential buildings and institutional buildings, including sheltered spaces. All bike parking installed should comply with the bike parking guidelines developed for the University and provided in Appendix B. As supply increases, the current distribution of approximately 25% indoor bike parking should be maintained. The Boston Transportation Department (BTD) has different guidelines for short-term, or visitor, bike parking spaces within proximity of residential and institutional buildings. Increasing supply and availability of these parking spaces will help the University's inventory to align with the City of Boston's metrics. See Appendix A for additional details.

Device Parking Initiative #2: Expand secure bike room parking and access to all people who register their bikes through Transportation Services. Locations that should be considered for expanded access include the Photonics Center, 24 Cummington Mall, the 890 Commonwealth Avenue garage, and the School of Law. Spaces within institutional and residential buildings that could be adapted into new bike rooms must be identified and evaluated.



Figure 22: Device Shelter at Cummington Mall

Device Parking Initiative #3 Integrate bike parking into new campus development. As the campus continues to grow and change, bicycle parking should be integrated into the planning and design process. The dense and compact nature of Boston University's campus means that bike parking demands overlap and cannot be quantified for a specific building; bike parking on campus likely serves a variety of nearby buildings. However, general guidelines from the Federal Highway Administration, the Association of Pedestrian and Bicycle Professionals, and the League of American Bicyclists' Bicycle-Friendly University program suggest that bike parking accommodate 30% of beds at residential buildings and 25% of building users for other academic and institutional buildings. In addition, Leadership in Energy and Environmental Design (LEED) credits are available for short-term bike parking installed within 100 feet of a building entrance.



Device Parking Initiative #4: Continue to bring bike parking facilities up to campus standards. Based on the standard established through Phase IA of the Commonwealth Avenue Improvement Project and its versatility, Inverted U bike racks have been adopted as the campus standard. Post-and-ring racks are the City of Boston's preferred rack type for streets other than Commonwealth Avenue, where inverted-u racks are the established city standard. For high-density long-term secure parking, lift-assist, two tier racks are the campus standard. To accommodate unconventionally shaped devices, exclusive use of two-tier racks should be avoided. Instead, a 3:1 mix of two-tier and inverted-u racks should be provided. All secure bike rooms should be equipped with security cameras, pumps, and tool stations. Rack and bike room amenity standardization ensures basic functionality, and simplifies the process of procuring, installing, and maintaining the bike parking on campus.

As parking is standardized, unsuitable racks including vertical (hanging) racks and fixed two-tier racks should be replaced with the campus standard. Hanger-style bike racks are very prominent on campus and while these racks are not ideal due to design limitations, they provide basic functionality. As these racks reach the end of their useful life, they should be phased out and replaced with inverted-u racks. In addition, bike parking that received fair or poor scores during the condition assessment should be addressed. Many easy alterations, such as anchoring the rack to the ground to ensure security or reorienting the rack to improve access, can be made without significant cost beyond staff time. Specific guidance on selecting, siting, and spacing standardized bike parking is provided in Appendix B: Bike Parking Selection, Siting, and Spacing Guidelines.

Device Parking Initiative #5: Conduct Periodical Demand Assessments and Establish an Utilization Monitoring Program. In the long-term, demand analysis for device parking should be conducted on a biannual basis to assess underutilization and supply shortages in order to redistribute to locations with a high percentage of bikes locked to fixed objects, and areas on campus that are currently unserved by the existing inventory. Taken together, these racks provide bike parking capacity for nearly 80 bicycles and may provide immediate relief to high-demand areas. Monitoring the ten most popular racks for usage above 90% to target additional capacity. A common target for utilization is 85%, which generally represents an ideal balance where bike parking is readily available without a significant supply of unused bike parking. Collecting bike counts yearly will allow the University to monitor and respond to the changing patterns in on-campus parking, ensuring that the available supply continues to meet demand, even if it rises over time as expected. Counts should be collected on average days while classes are in session during the overall peak hour (2:00-4:00 p.m.) and at 8:00 a.m. when indoor parking reaches its peak. See Appendix C for a sample bike parking count data collection sheet and walking route.

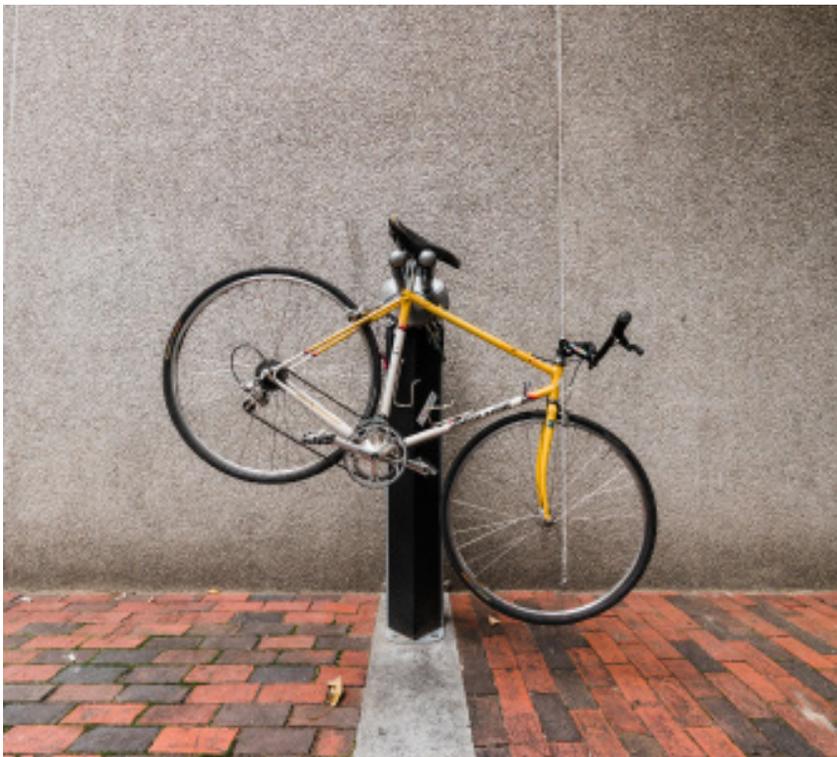
Device Parking Initiative #6: Provide easy-to-use and more accurate tools to locate bike parking. The existing bike parking map provided at the Bike Safety webpage should be updated to reflect the accurate inventory on campus. The University should also consider creative ways of distributing bike parking and amenity information, including highly identifiable wayfinding and signage directing bicyclists from common routes to high-capacity bike parking stations. Conceptual, branded wayfinding signage is provided under the Campus Bicycle Network recommendations on page 47.



End-of-Trip Amenities

Centrally located showers, lockers, and changing facilities will provide members of the Boston University community with the amenities they need to commute by bike, especially throughout months with extreme weather. Bike pump and repair stands are additional resources that are especially useful when co-located with long-term bike parking. Much like bike parking, end-of-trip amenities must be conveniently located and accessible to a wide user group to be effective resources. Further, the availability of these resources should be common knowledge among campus commuters.

Recommendations for providing amenities are provided below. End-of-Trip amenity recommendations are summarized in Table 5: End-of-Trip Amenities Recommendations Summary Table on page 48.



Amenities Initiative #1: Provide lockers and changing facilities for daily commuters at convenient locations. Figure 21 shows locations on campus where the Boston University community requested various amenities. Existing buildings, especially those with a significant volume of staff occupants, should be surveyed to identify potential locations for retrofits. Two to four shower/locker/changing facilities should be provided on each side of the BU Bridge for four to eight locations on campus. Where showers are not feasible, lockers and changing rooms were identified through public outreach as a valuable resource on their own. Some existing buildings may have the space potential to readily accept lockers and a small supply of indoor bike parking. Providing indoor bike parking in small batches (such as under stairwells) is an excellent way to increase the functionality of shower/locker/changing facilities without requiring an entire room for dedicated bicycle storage. At existing showers on campus with use restrictions (such as those in FitRec and the School of Law), consider extending access to a larger population of the campus community.

Amenities Initiative #2: Continue the Development of bike stations. Bike stations, at a minimum, provide sheltered, well-lit bike parking, bike pumps, and bike repair stands. Most importantly, bike stations should be conveniently located. One to two bike stations on each side of Commonwealth Avenue in both East and West Campus are recommended. Other potential locations for bike stations include the GSU plaza, the College of Fine Arts alley, and the West Campus Dining Plaza.

Amenities Initiative #3: Integrate end-of-trip amenities into new development and major renovations. Ensure that end-of-trip amenities are integrated into the planning and design of new capital projects and major renovations on campus.

Amenities Recommendation #4: Add end-of-trip-amenities to existing facilities where possible. As noted in the recommendations for bike parking, end-of-trip amenities should be integrated into bike stations and secure bike rooms to provide additional convenience to daily commuters. At a minimum, a bike pump and repair station should be provided at each bike station and bike room.

Campus Bicycle Network

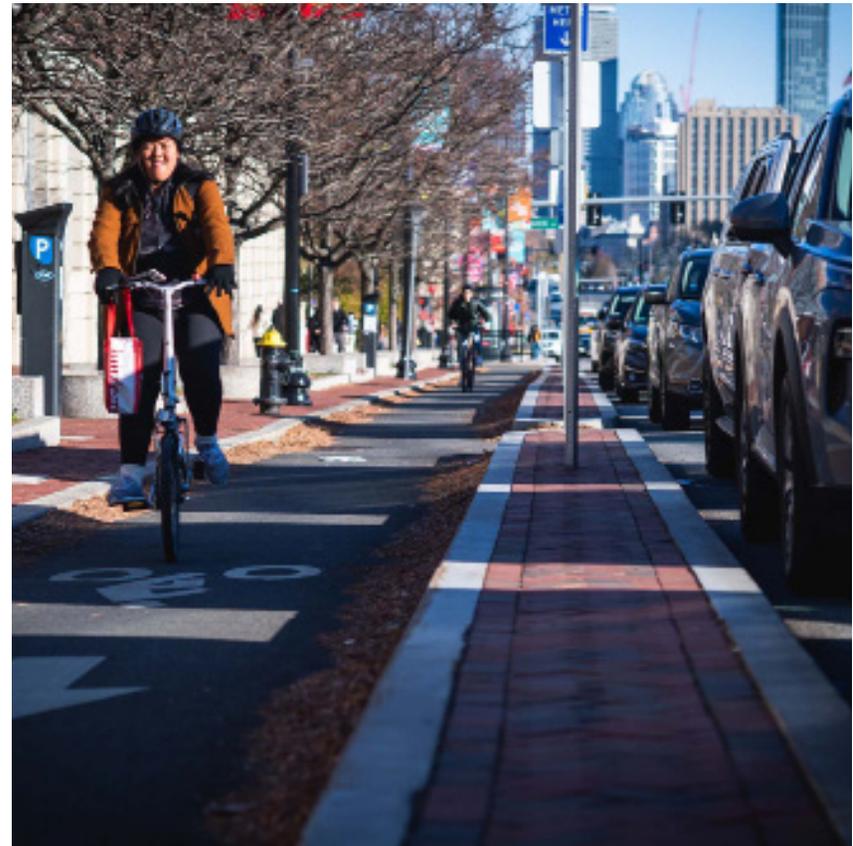
As bicycling and micromobility devices have grown in popularity, so too has the need to provide high-quality infrastructure that meets the needs of a diverse population. The City of Boston, supported by Boston University, responded with a world-class design of separated bike lanes for the second phase of the Commonwealth Avenue Improvement Project. As the spine of the Charles River Campus, Commonwealth Avenue is the primary thoroughfare for all modes traveling to, from, and through the campus. This improvement broke down a significant barrier expressed by the Boston University community: ‘no separate space for bikes.’

However, existing concerns about mixing with traffic in other parts of the campus, including Commonwealth Avenue east of the BU Bridge, persist. Creating a comfortable bicycle infrastructure network that seamlessly connects the campus is the single most effective mechanism that can be implemented to increase bicycle travel on campus. Doing so will directly address the concerns of approximately 2,000 members of the Boston University community who expressed fear for their safety while traveling by bike on and around the campus.

Guiding principles for achieving a comfortable bicycle network have been adopted by the Massachusetts Department of Transportation in their pioneering Separated Bike Lane Planning and Design Guide, and include the following:

- **Safety:** A safe bicycle network protects the roadway users that are most vulnerable through careful design and provision of appropriate roadway facilities.
- **Comfort:** A comfortable bicycle network attracts bicyclists of all ability levels by considering how user comfort is affected by design choices.
- **Connectivity:** A connected bicycle network provides seamless transitions between each segment of the network.

In the context of Boston University’s campus, a low-stress bicycle network will utilize these guiding principles to overcome the specific challenges of the campus identified through the evaluation of existing conditions and public outreach efforts. Many of the bicycle network recommendations that follow will require collaboration with local and state jurisdictions, including the City of Boston, the Massachusetts Department of Transportation, and the Town of Brookline. In addition, the network recommendations are synergistic with established plans and goals adopted by the City of Boston in their recently-released transportation master plan, GoBoston 2030, and the Town of Brookline’s Green Routes plan. Bicycle Network recommendations are summarized in Table 5: Campus Bicycle Network Recommendations Summary Table on page 47.



Network Initiative #1: Work with relevant jurisdictions to adopt and implement a well-connected low-stress network. A conceptual network plan based on the guiding principles identified above is provided in Figure 22 and Figure 23. The plan connects all areas of the campus with a route that is comfortable for bicyclists of all levels. The recommended network aims to connect and improve existing bicycle facilities to reduce the traffic stress experienced by people biking and in turn encourage more travel by bike. The recommended network directly addresses the main concern expressed by the Boston University community through the public engagement process: safety. Adopting a formal network plan will help guide conversations with stakeholders and the community, including the City of Boston and Town of Brookline, as they seek to implement the bicycle infrastructure identified within their respective plans, GoBoston 2030 and Green Routes. The university should continue to support street improvements that adhere to standards laid out in the Commonwealth's Separated Bike Lane Planning & Implementation Guide.



Network Initiative #2: Improve safety by addressing high-crash locations on campus. Working with the City of Boston and other stakeholders, on the high-crash clusters on campus to improve safety for vulnerable roadway users. Short-term intervention may be completed tactically with permanent solutions for the long-term. Areas that should be prioritized include challenging intersections such as Packard's Corner, both ends of the BU Bridge, Charlesgate, Riverway/Fenway/Park Ave., and Kenmore Square.

Network Initiative #3: Support travelling experience of Commonwealth Avenue east of the BU Bridge through public realm improvements. Providing a seamless connection from the separated bike lanes in West Campus to East Campus will make bicycle travel across the BU Bridge and along the entire linear campus feasible for bicyclists of all capabilities. Provision of a low-stress parallel route to Commonwealth Avenue (such as Bay State Road) should be pursued in the interim. In the long-term, maximizing safety, comfort, and connectivity throughout the campus hinges on the provision of continuous, separated facilities along the entire length of Commonwealth Avenue. This includes identifying opportunities for public realm improvements, such as better and more pleasant ground-floor programming, increased street safety, and creative interventions such as tactical urbanism. Commonwealth Avenue east of the BU Bridge is identified in GoBoston 2030 as a bike network project for implementation in the long-term (6 years). The University should focus on leveraging planned projects with direct impacts on improving access to and around the campus. For example, principles of shared streets should be used to plan for and design the proposed pedestrian mall projects.



Network Initiative #4: Improve connectivity on campus and with adjacent communities. Work with the City of Boston, the City of Cambridge, the Massachusetts Department of Transportation, the Massachusetts Department of Conservation & Recreation, and the Town of Brookline to establish better connections between campus and surrounding jurisdictions. Potential improvements include, a contraflow lane on the St. Mary's Street Bridge, completion of connections to the Emerald Necklace path system at Park Ave, and improvements to the Bowker Overpass circle and BU Bridge intersections.

Network Initiative #5: Reconnect the Charles River Campus and the Charles River. On both sides of the BU Bridge, but especially on West Campus, connections to the Charles River should be pursued to facilitate travel along the riverside Paul Dudley White bike path system as a viable low-stress, cross-campus route. The existing pedestrian bridge near Marsh Plaza is not bike friendly and should be reconstructed or outfitted with a bike tunnel to facilitate bicycle travel over Storrow Drive and onto the Esplanade. With the transformative Allston Multimodal Project currently taking shape, additional opportunities for connecting the campus to the River should be explored near the BU Bridge and in West Campus. Although a final alternative for the Allston

Multimodal Project has yet to be selected, all remaining alternatives will deliver significantly improved bicycle connectivity from Lower Allston and Cambridge to the campus via the Grand Junction trail and West Station access points at Babcock and Malvern Streets. The University will continue to work with state and local partners in the context of the Allston Multimodal Project to improve connectivity for pedestrians and bicyclists between the campus and the trail network along the south side of the Charles River.

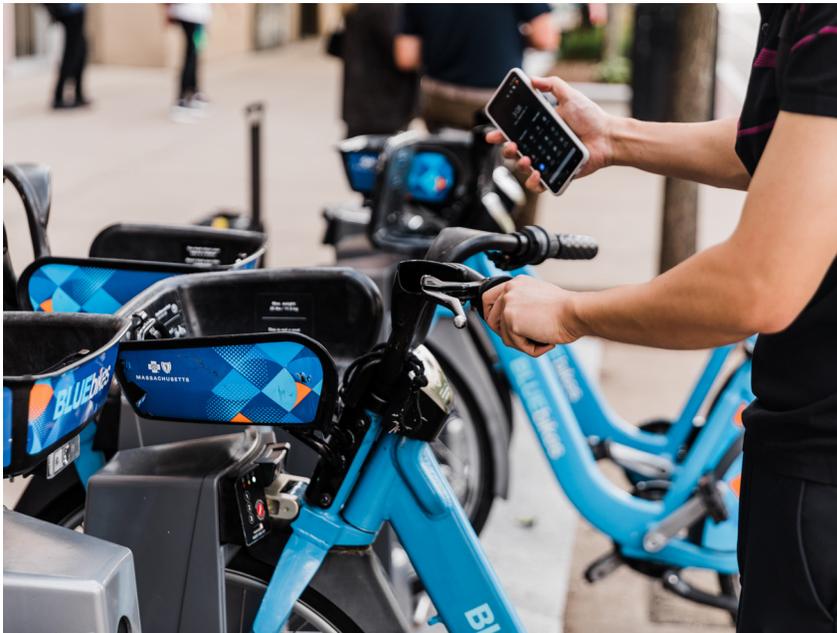
Network Initiative #6: Designate and promote pick-up and drop-off areas to mitigate conflicts between people biking and curbside activity. Frustration and safety concerns about curbside activity around the campus was regularly voiced by the community. As a priority, the University should designate pick-up and drop-off areas proximate to the following high-activity areas: Commonwealth Avenue eastbound in the vicinity of Warren Towers; Commonwealth Avenue eastbound in Kenmore Square; Commonwealth Avenue westbound in the vicinity of the Questrom School of Business; Commonwealth Avenue westbound in the vicinity of the George Sherman Union; and Commonwealth Avenue westbound in the vicinity of FitRec. Once established, these areas should be promoted with an educational campaign. Directly after implementation, the University should enlist the Boston University Police Department and work with local and state jurisdictional agencies to enforce the new pick-up and drop-off areas. Primary targets for this outreach include TNCs (Uber and Lyft), shipping carriers (UPS, FedEx, etc.), and vendors making deliveries to stores and campus buildings.

Network Initiative #7: Designate Pedestrian Priority Zones to reduce pedestrian/micromobility conflicts on interior pathways. Just as fast-moving motor vehicles can make a street feel unsafe for biking, fast-moving bicycles and scooters can degrade pedestrian safety when both are sharing narrow pathways. The University should monitor its internal pathways and designate them as "Pedestrian Priority Zones" as needed. A Pedestrian Priority Zone is an area in which micromobility devices are guests and should only be operated at a walking pace. These zones are typically identified with signs and pavement markings. This will be particularly important as use of scooters, especially shared, dockless scooters, increases in popularity.

Bluebikes at Boston University

Usage data from 2022 suggest that Bluebikes are commonly used as a cross-campus transportation mode. These data indicate a record-high number of Bluebikes trips and miles traveled, with the station at Commonwealth Ave and Agganis Way becoming one of the most popular stations in Boston’s Bluebike network with over 36,000 trips. Furthermore, since the beginning of the COVID-19 pandemic with approximately 75% of Boston University’s undergraduate student population living on campus and many more living very close to campus, students stand to benefit greatly from increased access to the system through a university-sponsored subsidy. Recommendations for capitalizing on opportunities associated with Bluebikes are provided below and summarized in Table 6: Bluebikes Recommendations Summary Table on page 48.

The following initiatives are aimed at preparing Boston University to meet the new demand for Bluebikes by expanding its network on campus.

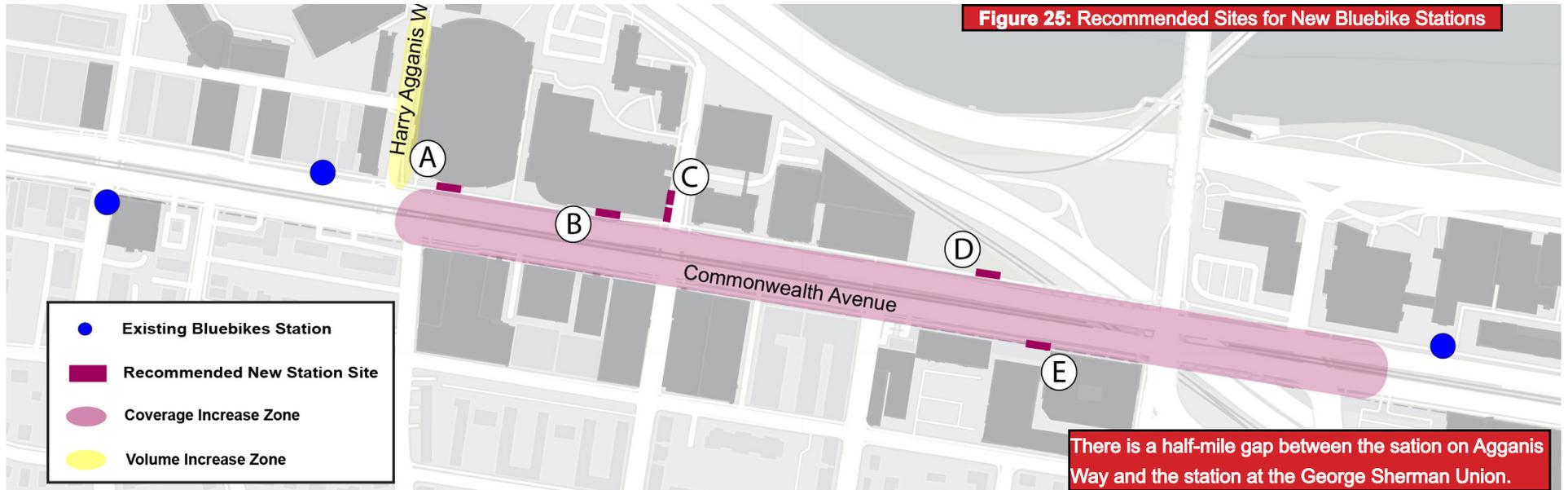


Bluebikes Initiative #1: Continue to work with Bluebikes and the City of Boston to maintain temporary stations and site new stations where they are most needed. As the Bluebikes system continues to expand, including the 70-station expansion currently in process, the University should continue to cooperate with the City of Boston to determine appropriate siting for Bluebikes Stations that will improve functionality of the system on campus. Because crossing Commonwealth Avenue requires a significant amount of time and the trips taken on campus are relatively short, and given the high usage demand, the University should recommend siting stations on both the north and south sides of Commonwealth Avenue. Addition of Bluebikes stations proximate to Langsam and Agganis Garages will assist the university’s efforts to shift car parking west, even for those whose destinations are to the east.

Bluebikes Initiative #2: Identify permanent locations for seasonal stations. The University should continue to explore sites to replace seasonal stations, usually located at the street level, with permanent ones. Permanent locations have reduced maintenance and promote better integration within the built fabric of campus. A newly approved permanent station will be built at the Metcalf Science Center (SCI) Plaza.

Bluebikes Initiative #3: Integrate Bluebikes into the campus culture to expand and sustain the Bluebikes system. The University should promote the Bluebikes resources available on campus by providing free- trials or creating events such as “Bluebikes to Work/School” days throughout the semester, giving newcomers a chance to test ride the system and experience the benefits before signing on as a member. Integration of Bluebikes into the bicycling culture on campus may also help reinforce Bluebikes as a viable cross-campus transportation option. The University may also consider quantitative goals relative to Bluebikes utilization or membership rates to help guide investments.

Potential Bluebikes Station Options to Improve Functionality



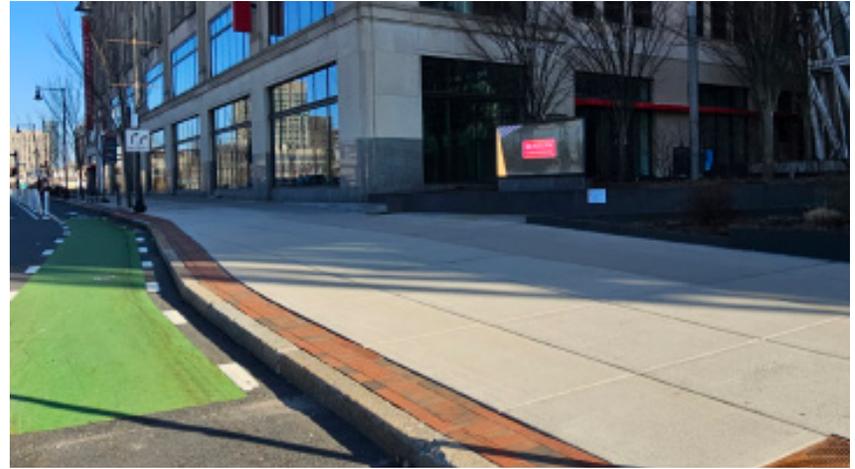
Site A: in front of the Agganis Arena. Located between tree wells, this site allows for a standard 15-dock station while preserving the brick and accessible concrete walkway space for pedestrians. This site would help alleviate demand for bike rideshare in the area by increasing the volume of Bluebikes.



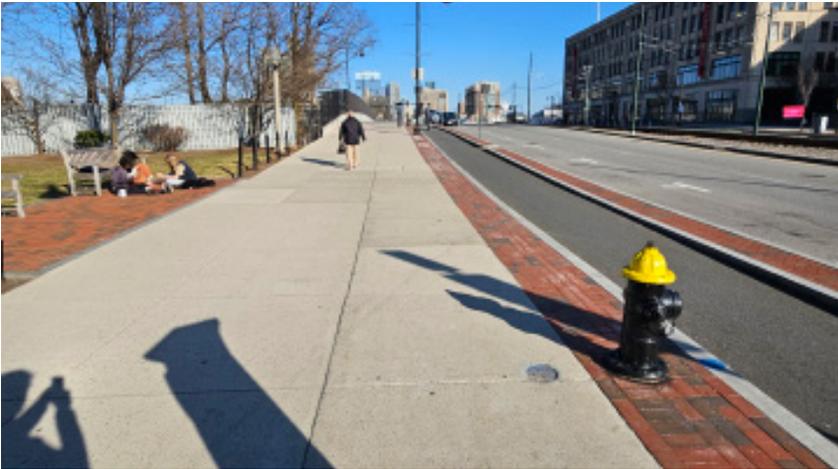
Site B: on the side of the Fitness and Recreation Center, by the bus stop. This location would provide a transition point for commuters, conveniently located by the bus stop.



Site C: on Buick Street, this site would require a smaller station, split between tree wells. This site offers proximity to the FitRec Center, a bus station, and other amenities while closing the existing Bluebikes coverage gap in this area of campus.



Site D: this site is located between the Booth Theatre and the Thurman Center, offering riders strategically positioned station near to some of the most culturally and artistically areas of campus.



Site E: in front of the park, this site would provide riders with a centrally located station between East and West campus. This location would represent an increase in coverage in an underserved part of Commonwealth Avenue.

Campus Bicycle Culture

Incentives, education, and safety can have significant effects on the awareness of bicycling on campus as well as the campus bicycling culture. Based on feedback received from the Boston University community and industry best practices, new and expanded programs as recommended below will help support and expand bicycling culture on campus. Campus Bicycle Culture Recommendations are summarized in Table 7: Campus Bicycle Culture Recommendations Summary Table on page 49.

Culture Initiative #1: Introduce a multi-pronged bike theft reduction program. Boston University Police Department data indicates that bicycles are among the most-stolen items on campus. Bike theft is a complex problem with solutions that stretch far beyond the scope of this document but measures can be taken that would help reduce its incidence on the BU campus. The first step is to convene a bike theft task force drawing members from the student body, Transportation Services, CPO and BUPD. This group would guide development of theft reduction efforts including modernization of the University's micromobility registration system, deployment of education campaigns to promote proper locking, and agile responses to theft patterns as they emerge.

Culture Initiative #2: Establish a summer bike-storage and surrender program. A summer bike-storage program will allow students to drop off their bicycle at a designated time and place on campus for storage over the summer. Similar programs around the country charge \$25 for this benefit. The program has proven to be immensely popular in other university settings. Spaces that do not conflict with regular summer use would be designated for summer bike storage. The University has already identified space within the Fuller Building at 808 Commonwealth Avenue to be utilized as summer bike-storage, serving as the first of its kind in West Campus. Any program initiated by the University should stipulate that bicycles not retrieved by a specific date will be subject to standard impound policies. This program should also provide an opportunity for students, particularly those who are graduating and leaving Boston, to surrender their bikes to the University for repurposing at the BUCK or donation to local charities.



Culture Initiative #3: Expand awareness of intra-campus bike travel and campus bike center. The University should consider creative campaigns that promote safety for all roadway users. 'Look Left for Bikes' is an example of one such campaign. Safety campaigns should seek to be impactful and memorable while also supporting the bicycling community on campus. Campaigns that place blame should be avoided. Campaigns should instead focus on messages that seek to provide objective information about safety or that aim to unify roadway user groups in a collective effort toward increased safety for all users. Additionally, the University should increase visibility of the BU Cycle Kitchen (BUCK) as the official campus bicycling center, highlighting it as a resource for repairing bikes, acquiring safety gear, and participating of bike rides and other community oriented-events. The University should consider classes, informational advertisements, and demonstration days to expand educational opportunities about safe bicycling practices. Strategies employed by other universities to expand bicycle education include integration with student orientation, workshops led by Resident Assistants at scheduled meetings, online and in-person classes, and additional campus-wide events such as "Bike to Work/School Days." Develop and distribute promotional material beyond the Bike Safety website to inform members of the Boston University community of the existing end-of-trip amenities, their location, and any restrictions on use.



Culture Initiative #4: Develop strategies for encouraging bicycle travel to major University events. To encourage higher bicycle ridership to special events and sports games, Boston University should develop a bike valet program. Bike valet programs allow event attendees to drop their bike off with a bike valet when they arrive at the event. An area can be cordoned off for temporary bike storage. Bikes are not locked by valets but are monitored by staff. Valets can be volunteers to minimize costs associated with providing bike valets. Third party vendors may also be hired as staff bike valets. For events that warrant additional bike parking capacity, the University should plan on promoting bicycling as a recommended travel method in advance of the event, especially if capacity that is not usually provided will be added to support the event.

Culture Initiative #5: Establish partnerships to support the bicycling culture on campus. Partnerships may be especially useful for providing creative solutions to challenges identified by the Boston University community that may not be solved by infrastructure or program changes. With a wealth of knowledge on campus, the University should leverage existing resources to provide low-cost and creative solutions to respond to documented challenges and support a bicycling culture on campus. While this list is not exhaustive, a few potential partnership examples include:

- College Competition Partnership: Implement a “University Bike Challenge” to create friendly internal competition among departments or colleges where winners are established based on the number of trips or miles ridden over a given period.
- FitRec Partnership: Provide subsidized or free membership for staff and faculty seeking to utilize lockers, showers, or changing facilities in West Campus. Based on feedback from focus groups and online outreach efforts, expanded access to existing shower facilities may help provide a desired amenity in the short-term.
- Bookstore Partnership: Promote bicycling safety and culture by selling biking gear and equipment at the university Bookstore.
- Student Club and Organization Partnership: Strengthen relationships between student clubs and organizations to promote bicycling on campus through events, gathering and rides. (The BUCK could serve as a key player)
- Bicycle Benefits: Partner with local retailers on and off campus to offer discounts and deals to those who arrive by bike and present a “Bicycle Benefits” decal on their helmet. (i.e. no-charge size upgrade on coffee purchases at a coffee shop, 10% discount on books at a bookstore, etc.)
- Bike Kitchen and Bike Coop Partnership: the BUCK should foster connections with Boston area bike kitchens and bike coops by hosting and crosspromoting events.

4. Action Plan

Action Plan

While improving bicycling and the micromobility experience is a clear priority for Boston University and the City of Boston, implementation of these initiatives will necessarily occur over time commensurate with available resources. The purpose of this chapter is to provide a roadmap of goals for each initiative, and the actions needed for implementing them.

A general timeframe for completing the initiatives of the plan were established using a variety of factors. For device parking and end- of-trip amenities, an analysis of existing device parking utilization rates, instances of bicycles locked to fixed objects, public feedback from the online interactive map, and building uses was used to determine an appropriate implementation term. For bicycle network recommendations, ease of implementation was used to determine the length of time needed to complete implementation. Those projects with low barriers to implementation, such as those located on University-owned streets, are recommended for implementation in the near term while projects that will require significant cooperation with various jurisdictions were suggested for longer-term implementation.

Early Action: Goal Setting

Goal setting is an important part of planning for change, finding the investment to enable it, and celebrating progress. Wherever possible, transportation-related goals should be integrated with other University initiatives to strengthen objectives and encourage cross collaboration. The recommendations in this plan work toward achieving four main goals for the Charles River Campus:

1. Increase the bicycle mode share to reduce our carbon footprint.
2. Partner with relevant stakeholders to enhance bicycle safety by targeting high and medium stress areas of the bicycle network at the Charles River Campus.
3. Reduce the volume of devices stored in inappropriate locations to better serve the whole community.
4. Increase the number of short-term and long-term bike parking spaces on each section of the Charles River Campus to allow to increase capacity for residents and employees.

Implementation of initiatives to achieve these goals will require significant collaboration across University departments, as well as local and state stakeholders. Key partners that will need to be engaged to reach each of the goals are identified Table X: Key Partners for achieving Bicycle- related Goals, however this list is not exhaustive.

Ongoing Action: Data Collection

As the campus evolves, it is important to continue to understand travel preferences and new challenges. Regular data collection efforts will keep the University abreast of changing behaviors and preferences of the micromobility community. The University should leverage existing points of contact with the micromobility community to easily collect additional pertinent information. For example, integrating a brief but pointed survey into the bike and device registration process will help maintain an active conversation on campus about the effectiveness and use of existing infrastructure and requests for changes.

Establishing a device counting program is also recommended. Collecting device traffic data and measuring change over time is an excellent way for the University to measure the impact of their efforts and investments. With a new state-of-the-art bike facility currently under construction, measuring before and after conditions and device volume counts is a rare and important opportunity to evaluate the impact and value of significant infrastructure projects.

Action Plan Implementation

Tables 2 through 6 provide a roadmap for implementation. Broken out into short, mid, and long-term actions, the tables identify implementation goals and the actions needed to complete them.

Short-term actions (to be completed within 1-3 years) and are suggested for full implementation within three years. Mid-term actions are shown are suggested for full implementation within five years. Finally, long-term actions are suggested for completion within ten years. The action items in each table are organized into their respective initiative and goals.



Table 3: Device Parking

Initiative	Goal	Action	Timeline	All Partners
Increase short-term supply	Adequate parking in proximity (within 50') of university buildings	Identify rack locations in proximity to underserved buildings	Short-term	BUTS, CPO
	Optimal supply for residential buildings to align with demand modeling	Install racks (secure authorization, funding, implement)	Mid-term	
		Upgrade existing bike racks to campus standards		
Expand secure bike room parking and access	Maximize availability of shared bike rooms.	Where feasible, universalize access to bike rooms that are currently building-specific	Short-term	BUTS, CPO
	Increased Secure Supply in Strategic Spaces	Add card access control to easily-retrofitted bike parking areas.	Mid-term	
		Adapt identified spaces into secure bike rooms	Long-term	
Integrate device parking into new projects	Guidelines for uniform implementation of device parking in new developments	Standardize parking requirements for new building construction and for building renovations	Short-term	BUTS, CPO, BPDA, BTD
Bring bike parking facilities up to campus standards	Parking Inventory in Optimal Condition	Replace outdated racks and ones in poor conditions, add surveillance cameras in all secure bike rooms, provide horizontal parking options in rooms that currently only have vertical (hanging) racks	Long-term	BUTS, CPO
Demand Assessment	Optimize distribution and quantity of parking across campus	Conduct biannual assessments of demand of device occupancy and usage	Long-term	BUTS
Develop more bike stations	Highly-visible enhanced parking and end-of-trip amenities	Create bike stations by adding shelter, pumps, and repair stations to racks where possible.	Short-term	BUTS, CPO
		Construct new bike stations near high-traffic destinations.	Mid-term	
Maintain tools to locate parking	Easily identifiable device parking	Install wayfinding signage for bike facilities	Long-term	BUTS
		Maintain internal inventory of bike facilities		
		Keep online maps and lists of bike amenities updated		

Note: please refer to the Acknowledgement page for the list of partners and their full names, and to page 44 for details on timelines.

Table 4: Campus Bicycle Network

Initiative	Goal	Action	Timeline	All Partners
Work with relevant jurisdictions to implement improved network	Adoption of conceptual framework for campus bike connections	Promote improvements	Short-term	BTD, Brookline Transportation Division, MassDOT, MBTA
Address high-crash locations	Reduction in crashes and accidents	Implement tactical, temporary interventions and monitor their effectiveness	Short-term	BTD, Brookline Transportation Division, MassDOT, MBTA
		Formalize successful interventions by converting them into permanent ones	Long-term	
Support travelling experience of Commonwealth Avenue east of the BU Bridge through public realm improvements	Better experience for pedestrians and bicyclists	Evaluate the addition of more welcoming ground floor uses in building renovations and new constructions	Short-term	BPDA, Disabilities Commission, BTD, PIC
Improve connectivity	Safe, low-stress access to campus for commuters	Work with state agencies and local municipalities to address safety concerns around access points to campus	Long-term	BTD, Brookline Transportation Division, MassDOT, MBTA
Reconnect Campus to Charles River	Access to the Charles River including the Paul Dudley White Bike Path, BU Sailing Pavillion, Esplanade, etc.	Reconstruct or retrofit the pedestrian bridge by Marsh Plaza to make it accessible for bicyclists	Long-term	BPDA, BTD, DCR, Emerald Necklace Conservancy, Esplanade Association, Parks & Recreation, MassDOT,
		Leverage Allston Multimodal Project for West Campus access to the river		
		Retrofit BU Bridge to provide access to Charles River (on Boston side)		
		Advocate for Grand Junction path and rivercrossing		
Designate and promote pickup/ dropoff areas	Mitigate conflict between people biking and curbsite activity (deliveries, TNCs, etc.)	Designate areas for pick-up and drop-off	Mid-term	BTD, MBTA, TNCs
		Enforce adequate use of designated areas		
Designate pedestrian priority zones	Mitigate conflict between people biking and people walking on campus pathways	Monitor pathways for conflict points	Mid-term	BUPD, BUTS, BTD, CPO
		Designate ped priority zones with signage		
		Create communications campaign to raise awareness		

Note: please refer to the Acknowledgement page for the list of partners and their full names, and to page 44 for details on timelines.

Table 5: End of Trip Amenities

Initiative	Goal	Action	Timeline	All Partners
Lockers and changing facilities	Improve comfort and ease for year-round riders	Install additional lockers and changing facilities in areas of campus that currently lack them.	Long-term	CPO
Integrate EOT amenities into new development	Increase availability of EOT facilities.	Establish goals and equipment standards for EOT facilities (showers, lockers, bike wash stations, bike repair stations, and pumps) in new buildings	Short-term	BUTS, CPO
Create more bike stations (shelter, tools, pumps, etc.)	Increased supply of bike stations	Identify sites for new bike shelters on campus	Short-term	BUTS, CPO
		Install bike pumps and tool facilities in existing shelters and bike rooms		

Note: please refer to the Acknowledgement page for the list of partners and their full names, and to page 44 for details on timelines.

Table 6: Bluebikes

Initiative	Goal	Action	Timeline	All Partners
Work with Bluebikes on new station location	Maintenance of existing stations	Collaborate with City partners to keep current stations maintained	Short-term	Bluebikes, BTD, BU Transportation Services
	Improved Bluebikes access on campus	Identify sites for new Bluebike stations	Long-term	
		Install new Bluebikes stations		
Find permanent locations for existing stations	Year-round system functionality	Replace temporary stations with permanent ones wherever possible	Long-term	Bluebikes, BTD, BU Transportation Services
Promote Bluebikes (campus culture)	Improvement of Bluebike resource awareness	Develop Bluebike signage and wayfinding materials	Mid-term	Bluebikes, Transportation Services

Note: please refer to the Acknowledgement page for the list of partners and their full names, and to page 44 for details on timelines.

Table 7: Campus Bicycle Culture

Initiative	Goal	Action	Timeline	All Partners
Introduce bike theft reduction program	Reduce bike theft	Convene a Bike Theft Task force to develop and deploy bike theft reduction programs like proper-locking education programs, modernization of registration system, improved monitoring of theft patterns	Mid-term	BUPD, Transportation Services
Establish a summer bike-storage and surrender program.	Reduce abandonment of bicycles on campus while improving feasibility of bicycle ownership for students.	Initiate bike-storage and surrender program pilot project at 808 Commonwealth Avenue.	Short-term	Transportation Services
		Expand and improve storage and surrender program as needed		
Expand awareness of bicycling and campus bike programs	Better understanding of BU's bicycling culture and resources	Work to integrate bicycling with Orientation events and RA programming. Work with sports teams to reach student athletes.	Mid-term	Auxiliary Services, Dean of Students Office, Orientation Office, Residence Life, Transportation Services
		Create campaign for the BU community on Bicycling principles		
	Improve bicycling safety on campus	Establish new ways of disseminating safety education		
		Organize fun events at which safe riding is modeled but not centered as a theme.		
Develop strategies for encouraging bicycle travel to major University events	Reduction of car usage for campus events	Provide a device parking valet in the form of cordoned areas or temporary designated spaces close to events to promote bicycling	Mid-term	Auxiliary Services, Transportation Services
		Utilize and highlight existing device parking spaces and rooms as options for events		
Establish partnerships to support the bicycling culture on campus	Broader reach for bicycle safety and encouragement programs	Create a network of partnerships with student organizations, sports teams, local bicycling organizations, school departments, and other bike kitchens.	Short-term	Campus Planning and Operations, Dean of Students Office, Transportation Services

Note: please refer to the Acknowledgement page for the list of partners and their full names, and to page 44 for details on timelines.

Appendix A

BUILDING USE	VISITOR PARKING SPACES [*] (short-term)	EMPLOYEE/ RESIDENT PARKING SPACES [†] (long-term)	SHOWERS [‡]	LOCKERS [‡]	BIKESHARE STATIONS [§]	BIKESHARE CONTRIBUTION
1 to 3-Unit	N/A	1 per unit	N/A	N/A	N/A	N/A
Multi-Unit (4 or more units)	1 per 5 units (4 minimum)	1 per unit (0.5 per unit for senior housing)	N/A	N/A	Space for a 15-dock or 19-dock station	\$275 per unit (\$75K or \$49K minimum)
Institutional Housing (College, university, and other)	1 per 20 beds (4 minimum)	1 per 2 beds	N/A	N/A	Space for a 15-dock or 19-dock station	\$137.50 per bed (\$75K or \$49K minimum)
Office/Admin	1 per 20,000 sf (6 minimum)	1 per 2,500 sf	1 per 60,000 sf (1 minimum)	1 per 6,000 sf (1 minimum)	Space for a 15-dock or 19-dock station	\$0.28 per sf (\$75K or \$49K minimum)
Industrial	1 per 40,000 sf (6 minimum)	1 per 12,000 sf (6 minimum)	1 per 480,000 sf (1 minimum)	1 per 48,000 sf (1 minimum)	Space for a 15-dock or 19-dock station	\$0.10 per sf (\$75K or \$49K minimum)
Retail	1 per 5,000 sf	1 per 3,000 sf	1 per 60,000 sf (1 minimum)	1 per 6,000 sf (1 minimum)	Space for a 15-dock or 19-dock station	\$0.37 per sf (\$75K or \$49K minimum)
Institutional [¶]	1 per 2,500 sf	1 per 2,500 sf	1 per 20,000 sf (1 minimum)	1 per 2,000 sf (1 minimum)	Space for a 15-dock or 19-dock station	\$0.42 per sf (\$75K or \$49K minimum)
Lodging (Hotels, motels, inns, hostels)	1 per 20,000 sf (6 minimum)	1 per 5,000 sf	1 per 20,000 sf (1 minimum)	1 per 2,000 sf (1 minimum)	Space for a 15-dock or 19-dock station	\$75K or \$49K minimum

Figure 1: Boston Transportation Department Bike Parking Rates per Use

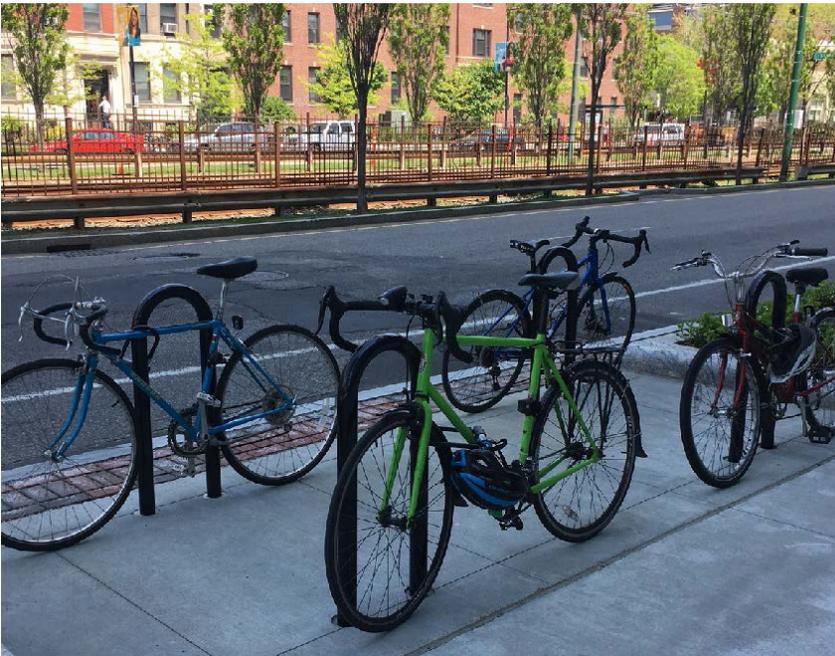
Appendix B

Bike Parking Selection, Siting, and Spacing Guidelines

Inverted-U Bike Parking

A standard bike rack that works for everyone.

Based on its intuitive and effective design, community feedback, and the standards adopted through Phase IA of the Commonwealth Avenue Improvement, expanded use of the inverted U-style bike rack is recommended for both short-term and long-term bike parking. Inverted U-style bike racks accommodate all bicycle styles and locks and may be arranged to provide a parking space for just a few bicycles or many bicycles, as needed. Because of their small size, Inverted-U racks are incredibly versatile. Small spaces on campus that may not be able to accommodate a larger rack style - for example a hanger-style rack - may be able to accommodate one or two inverted-U bike racks. This versatility is a key asset of Inverted-U bike racks in constrained settings like the Boston University Charles River Campus.



This appendix provides guidance to implement a consistent and effective bicycle parking inventory across the campus.

How to Select a Bike Rack

For a bike to be securely and safely locked without damaging the bike, the design and installation of bike racks must:

- Allow a bike of any shape or size to be locked through the frame as well as at least one wheel;
- Support a bicycle at two locations to ensure they do not fall;
- Accommodate a wide range of bicycle sizes and styles; and
- Have an intuitive design that is easy for people to use.

Based on its intuitive and effective design, community feedback, and the standards adopted through Phase IA of the Commonwealth Avenue Improvement, expanded use of the inverted U-style bike rack is recommended for both short-term and long-term bike parking. Inverted U-style bike racks accommodate all bicycle styles and locks and may be arranged to provide a parking space for just a few bicycles or many bicycles, as needed.

For indoor locations where space is limited and high-capacity parking is desired, a mix of staggered vertical and double-decker-style bike parking is recommended. By providing a variety of styles, the University will ensure bicycles of many different shapes, sizes, and weights are accommodated.

Pre-Purchase Bike Rack Checklist

All bike racks selected for purchase should:

- Support a bicycle frame at two locations (there are two points of contact between the bike rack and the bike);
- Accommodate bicycles that are at least 24-inches wide and 72 inches long;
- Accommodate bicycles with baskets or fenders;
- Allow for a single U-lock to secure both the frame and one wheel (bike rack tube diameter of under two-inches is preferred); and
- Be made of stainless steel or galvanized carbon steel.

For Staggered Vertical Bike Racks Only

- Cradle a wheel AND provide at least one point of contact with the frame.

For Double-Decker Bike Racks Only

- Come with lift assist to aide users in securing their bicycles on the top tier.

How to Site Bike Parking

When siting bike parking, the security and proximity to nearby destinations are important considerations for ensuring the bike parking is desirable and likely to be utilized.

Consideration of the elements identified below will help guide adjustments to the existing campus bicycle inventory and bike parking to be installed in the future.

Bike Parking Siting Checklist

- The site is within a high-activity area and is visible to the general public
- The site is well-lit
- The site has a flat surface (concrete or asphalt pad preferred) where bike racks can be bolted or securely fastened to the ground (embedded leg or surface flange anchors are appropriate) or ganged together for instances where additional flexibility for temporary removal is needed.
- The site is proximate to building entrances (preferably within 50 to 75 feet of the main entrance)

Additional Checklist for Long-term Bike Parking

- The site is in a secure location, potentially with access restrictions
- The site is sheltered from weather or located indoors
- The site is located on the ground floor with direct access from the street or sidewalk (if stairs are required, a bike tunnel is recommended)
- The site is co-located with additional amenities such as showers, lockers, a bike pump, or repair stand

How to Space Bike Parking

Bicycles are approximately 24 inches wide and 72 inches long. Providing adequate space between bike racks, edges of buildings or other fixed objects, and pedestrian clear space ensures that bike parking can be used to its full capacity potential and maximizes safety. Bike racks installed too close to each other or other objects, such as the edge of a building, can limit the functionality of many bike rack styles. This section provides guidance on the recommended dimensions to be used when installing bike parking in a variety of common scenarios. See Figure 3 and Figure 4.

Spacing Inverted U Bike Racks Perpendicular to the Curb

To safeguard against car doors opening damaging or injuring a bike or person locking their bike, 48 inches should be provided between the edge of the bike rack closest to the curb and the edge of the curb.

Spacing Inverted U Bike Racks Parallel to the Curb

To safeguard against car doors opening damaging or injuring a bike or person locking their bike, 24 inches should be provided between the edge of the bike rack closest to the curb and the edge of the curb. Bike racks may also be angled to minimize the width needed within the right-of-way.

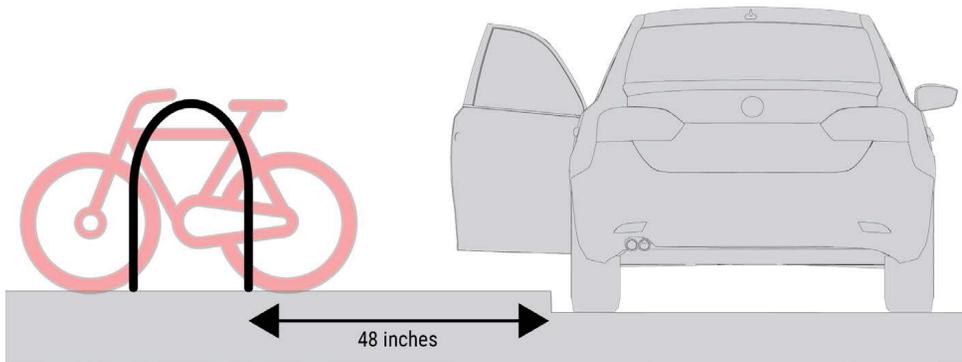


Figure 2: Spacing dimensions for curbside, perpendicular bike parking

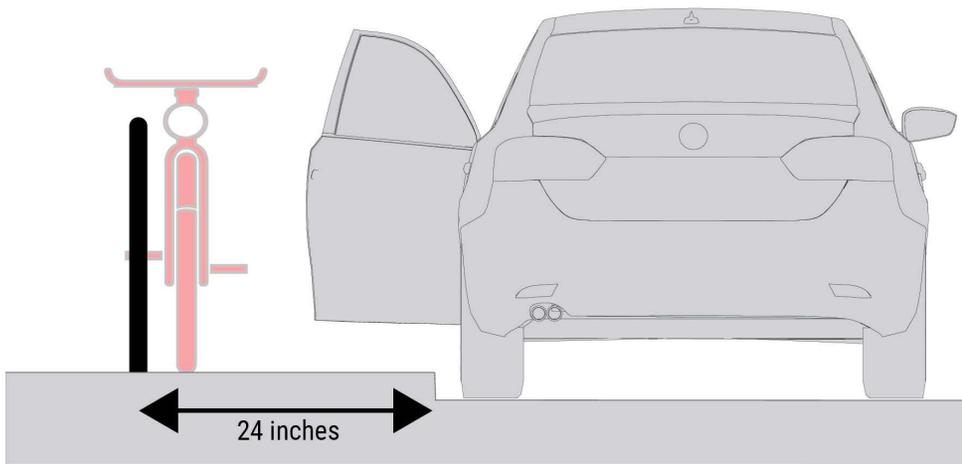


Figure 3: Spacing dimensions for curbside, parallel bike parking

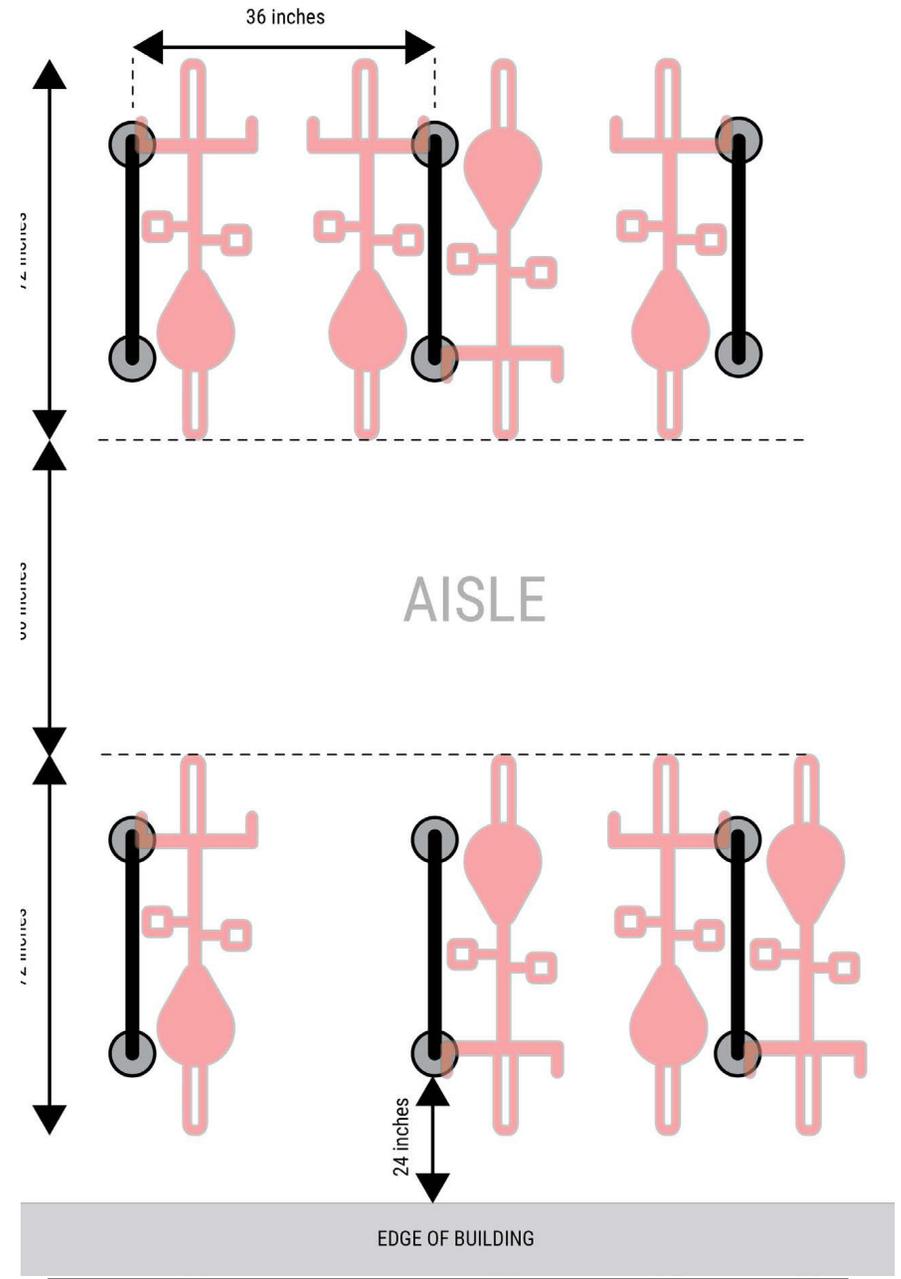


Figure 4: Spacing dimensions for high-capacity inverted-U bike parking

Spacing Inverted U Bike Racks for High-Capacity Use

In high-capacity scenarios, enough space must be provided between bike racks and between rows of bike racks to ensure optimal use. An aisle of 60 inches is recommended to allow for pass-by space and should be completely clear for travel. Bikes should not protrude into the aisle. A minimum of 36 inches should be provided between racks (measured on center) to ensure that bikes can be parked on both sides of the rack and that people will have enough room to stand adjacent to the rack and lock their bicycle. Bike racks should be offset from the nearest edge (such as a wall or building face) by at least 24 inches (see Figure 5).

Spacing Double-Decker Bike Parking for Indoor Use

Double-decker-style bike parking is a space-efficient solution to bike parking for indoor locations. An adequately-sized aisle must be provided to ensure there is room for people to load and unload their bicycles, as well as travel in and out of the room. When the top tray is in an open position, an aisle of five feet should be provided between the outward end of the bike rack and the next closest object, which may be another row of bike racks or a wall (see Figure 6).

Spacing Staggered Vertical Bike Parking for Indoor Use

Vertical bike racks work well for some bicycle styles (such as light-weight and compact bikes), but are difficult to use for bike that are heavy or that have fenders, baskets, or other add-ons. If vertical bike parking is used, it should be paired with another style of bike parking, such as inverted U, in order to accommodate bikes that will that are not easily accommodates by vertical racks. Vertical bike racks come in a wide variety of module types. Some come as a two-pair unit, while other are single unit. Because of the wide range of vertical bike rack styles provided, the manufacturers recommended specifications

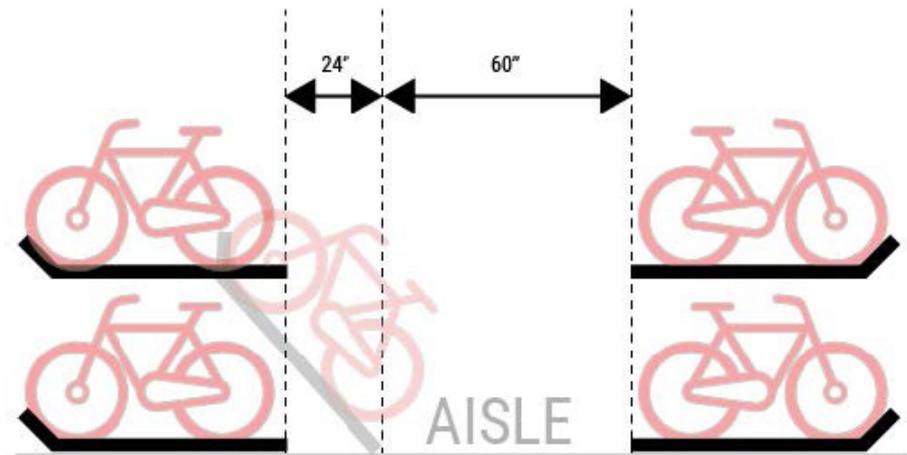


Figure 5: Spacing dimensions for double-decker bike parking

should be followed when installing and siting the bike racks. However, in all cases, a minimum aisle width of 60 inches should be provided. The aisle should be measured from the outward edge of the wheel when the bike is hanging in the rack. When staggering vertical racks, ten to twelve vertical inches should be provided between the wheel hooks, though some models may come with the stagger height predetermined. When positioned next to a wall, 24 inches should be provided between the middle of the rack and the wall. Figure 7 is an example of how staggered vertical bike racks may be installed for efficient use, however manufacturers recommended specifications should be followed for all vertical bike racks due to the significant variability between models.

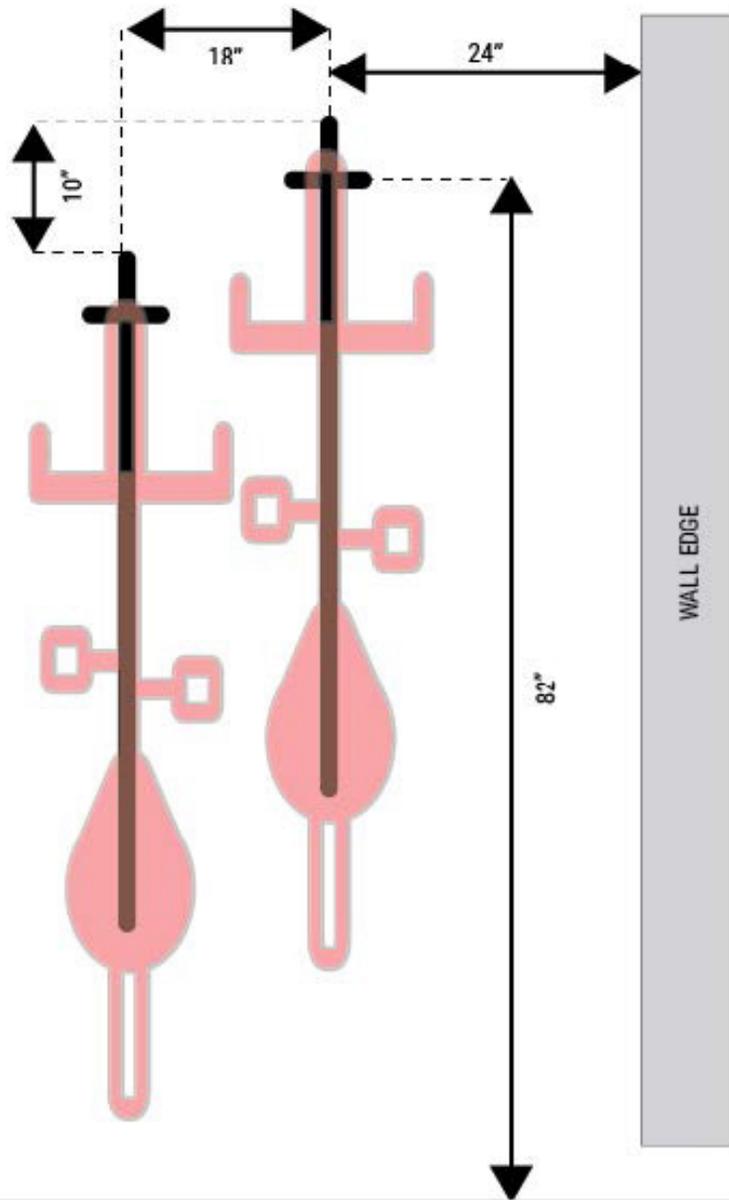


Figure 6: Spacing dimensions for staggered vertical bike parking

In-street Bike Corrals for Constrained Sidewalk Spaces

The on-street space used for a single parallel parking spot may accommodate up to 12 bicycles. At locations with constrained sidewalks, an in-street bike corral may be considered to provide bike parking without interfering with existing sidewalk uses. In-street bike corrals may be situated at an angle to the curb in order to increase the distance between moving vehicle traffic and parked bicycles, however the overall footprint needed to accommodate angled bike parking is greater than what is needed for parking that is parallel or perpendicular to the curb. In-street bike corrals are already used on campus seasonally in front of the college of arts and sciences (see Figure 8).



Appendix C

Inventory Data Upkeep

Bike Count Survey

Boston University's Transportation Services and Campus Planning teams conducted a Bike Count Survey in the Fall of 2023, with the purpose of gathering data on bike parking utilization. The survey revealed that at the peak campus activity hours (1PM -3PM), there were 842 parked bikes and another 133 micromobility devices. 421 devices were located in bikerooms and sheltered exterior spaces, and 554 in unsheltered exterior spaces.

Figure 7 provides a sample survey used to carry out the counts, created through the ArcGIS Survey123 application. The inventory was divided into three routes, one on East Campus, West Campus, and South Campus. Figures 8-10 illustrate the routes and the device parking locations they covered. BU should conduct Device Count surveys on a regular, bi-annual basis to record trends in parking utilization behavior. The implementation of an additional reporting system that students, staff, and faculty can use to notify damaged racks or issues with bike amenities would improve maintenance of the parking inventory.

ArcGIS Survey123 My surveys

Bike Parking Counts Overview

11 **Number of Bikes Parked on Racks***

12 **Number of E-Scooters Parked on Racks***

13 **Additional Vehicles or Observations**

Please record other types of micro-mobility and electric vehicles or devices that were found at this location, specifically non-bike and non-scooter. Also make notable observations about the parking conditions.

14 **Bikes or E-Scooters Locked to other Fixed Objects?**

If applicable, mention the number and to which objects.

15 **Upload Bike Parking Photo***

Please upload a picture of the bike rack or room at this location. Feel free to include more than one photo.

1 Drop image here or select image (number of files allowed: 1 - 5)

Figure 7: Sample Bike Count Survey for Fall 2023

