



*Proposed Changes to
Cambridge Zoning Ordinance
Bicycle Parking Requirements*

City of Cambridge
Community Development Department
Draft Report – May, 2012

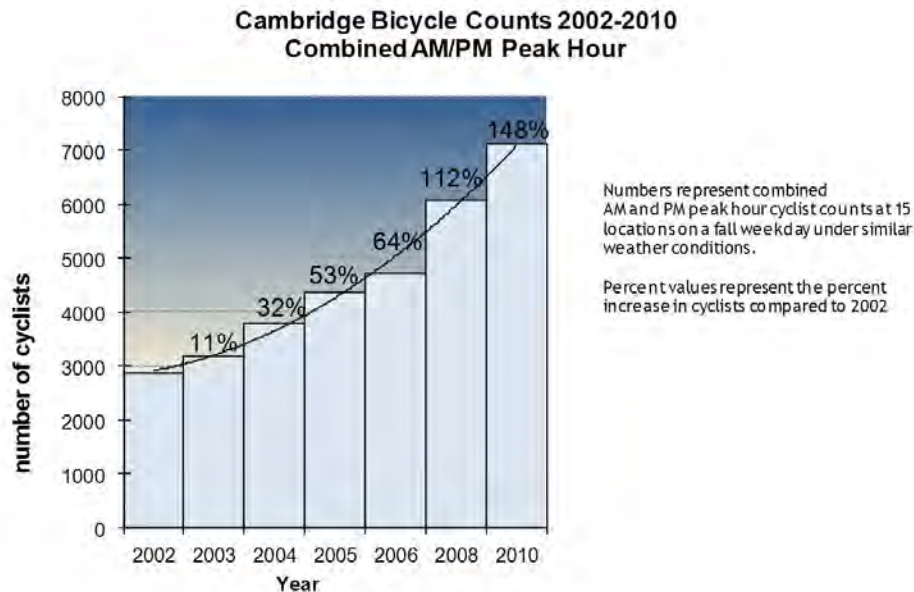
Background

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The City of Cambridge has formally committed, through policies and actions, to increasing the use of bicycles as a sustainable form of transportation. The 1992 Vehicle Trip Reduction Ordinance, 1993 and 2007 Growth Policy Documents, and 2002 Climate Protection Action Plan all include goals of encouraging additional bicycle use. City infrastructure has been built to support and enhance conditions for bicycling. Educational and encouragement programs foster the increased use of bicycles for all travel purposes.

The tangible success of Cambridge’s bicycle program can be measured in the form of skyrocketing numbers of cyclists in Cambridge. Between 2002 and 2010, peak hour cycling numbers increased by 150%. Bicycle commuting increased from 4% in 2000 to 7% in 2009. The ever-increasing demand for bicycle parking is apparent to anyone walking the city streets.



Although there are presently over 1,000 bicycle parking racks on the public right of way throughout the city, ongoing needs assessment surveys show that there is extensive demand for additional spaces. Based on a demand survey conducted in 2011, about 1,500 additional bicycle racks (or 3,000 spaces) are needed to meet the projected demand over the next few years in business districts, parks and public buildings alone.

Current zoning requirements for bicycle parking were adopted in 1981 and have not been substantially modified since that time. This early adoption of bicycle parking has benefitted Cambridge’s ability to support increased bicycling over time. However, in many key ways, the current requirements do not adequately meet today’s needs. The provision of inadequate or insufficient private bicycle parking is of concern because it increases the pressure to accommodate bicycles within the public realm, where space is already limited.

The proposed zoning changes intend to clarify the appropriate standards for bicycle parking design, layout and location, and to require quantities of bicycle parking that better meet today’s demand as well as the City’s future goals. By requiring appropriate types and quantities of bicycle parking, we will be

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able to more effectively, systematically and efficiently manage the needs of the bicycling population, as well as to support the goal of increasing and promoting sustainable transportation use.

Key Elements of Proposed Changes

Clarification of Design and Dimensional Layout Standards

The technical requirements for appropriate bicycle parking racks and placement are critical to ensuring useful and useable facilities. Clarification of those requirements in the zoning language will ensure a smoother process and successful outcomes in new buildings.



Examples of bicycle racks that do not meet the demand and that do not physically support the bicycles



Supportive racks with the benefit of weather protection (above) and garage security with bollards to protect bicycles from cars (below)

One section of the proposed zoning changes relates to the physical requirements for adequate bicycle parking. These requirements were developed relying on the City’s own extensive experience of installing and assisting with bicycle parking layouts on public and private property over the past two decades, as well as the experiences from other localities around the country. The requirements are not significantly altered from what has been standard practice, but are clarified and more detailed.

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Matching Required Bicycle Parking to Demand

Bike parking requirements for residential units have remained constant, although bicycle ownership has been rising dramatically, both nationally and in Cambridge. For example, a survey of households done through the City’s CitySmart program indicated that two-thirds of Cambridge households own at least one bicycle and, of those, they own on average, 2.6 bicycles. This means that for every 100 households, there would be 169 bicycles; current zoning would require only 50 bicycle parking spaces for 100 units of housing. Proposed requirements for residential buildings come closer to meeting the demand for space based on bicycle ownership data.

The current requirements for non-residential bicycle parking require that bicycle parking be provided as a percentage of automobile parking spaces. This is problematic because when required automobile parking spaces are reduced, required bicycle parking spaces are reduced commensurately. For example, with the citywide rezoning of a decade ago, parking requirements were reduced, inadvertently resulting in a reduction in bike parking requirements. Because Cambridge’s goal is to reduce automobile travel while supporting an increase in bicycle travel, it makes more sense to adopt an approach by which bicycle parking requirements are distinct from automobile parking.

The proposed bicycle parking requirements are based on the assumption that 10% of trips will be made by bicycle. This is a goal that is both rational and within reach. Travel studies in Cambridge show that 16% of residents use a bicycle for taking a trip and 7% of all trips were made by bicycle. Several sites that have surveyed users through Parking and Transportation Demand Management (PTDM) studies show that already more than 10% of people are traveling to those sites by bicycle. For universities, the goal is 20%; this is based on data that show a higher percentage of trips already at those venues.

The proposed requirements also distinguish between long-term spaces, which are provided in secure indoor locations, and short-term spaces, which are available to the general public. Long-term and short-term bicycle parking should be required for all uses, but the proportions will vary depending on the type of use (e.g., retail uses will need predominantly short-term spaces, while office buildings will need predominantly long-term spaces).



Secure, long-term bicycle parking in a residential garage



High-quality, covered, visible short-term bicycle parking

Background

Benefits of Proposed Changes

Supporting Economic Development and Local Business in Cambridge

Local businesses fare well when people can easily access them on foot or on bike; studies have shown that cyclists make more frequent local trips and also spend more on the local economy.

Easing Demand on Public Space

As noted above, there is a high demand for bicycle parking and a limited supply of public spaces. Just as private development is expected to provide an appropriate amount of parking for automobiles, so should they provide the appropriate amount for bicycles.

Supporting City Policies for Encouraging Sustainable Transportation

Public policies are pushing even further in the direction of taking serious action to address global climate change and so it is anticipated that promoting bicycling will continue to be part of the solution for the foreseeable future.

Supporting City Residents and Residential and Commercial Properties

More and more people are voluntarily choosing to bicycle, for whatever reason, and demanding more extensive facilities to support that mode. Sufficient and high quality bicycle parking is a proven attraction for housing in urban areas and developers report that providing good bike parking facilities have been helpful to them in marketing their residential and commercial properties.

Enabling Reductions in Single Occupancy Vehicle Use

The easier and more inviting it is to bicycle, the more likely it is that the City can achieve its goal of significantly reducing the number of single occupancy automobile trips in the city.



Outline of Proposed Zoning Changes

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The purpose of these proposed changes is to better address the observed and anticipated need for bicycle parking in Cambridge, as described in the previous section. By codifying the standards that have already been in practice in Cambridge for many years, developers will be able to consider those standards early in the process of designing and developing projects.

The proposed regulations are intended to establish minimum standards that will apply broadly to all new development and changes to the type or intensity of uses throughout the city. It is expected that certain types of development, such as those requiring Planning Board Project Review or Parking and Transportation Demand Management plans, will be analyzed on a project-by-project basis and may be expected to meet higher standards in order to mitigate their transportation impacts.

The changes are presented in outline form. Following discussion of the proposed changes, formal zoning language will be drafted for the Planning Board’s review.

Summary of Proposed Changes

1. New Zoning Section for Bicycle Parking

The Zoning Ordinance currently treats bicycle parking as an adjunct to accessory motor vehicle parking. A clear, stand-alone definition for accessory bicycle parking is proposed, with its own standards for applicability, and a distinction between long-term and short-term bicycle parking.

2. Requirements for the Design and Location of Bicycle Parking

Current zoning requirements have often been applied in a way that is not consistent with standards that have been accepted and implemented for many years both in Cambridge and nationwide. The proposed new regulations are meant to be more consistent with those standards.

3. Requirements for the Quantity of Bicycle Parking

In most cases, current zoning requirements associate the minimum quantity of bicycle spaces with the minimum quantity of automobile parking spaces. Since the goal (and current trend) in Cambridge is to reduce auto use while increasing bicycle use, it is logical to establish bicycle parking requirements that are independent and distinct from auto parking.

4. Relief from Bicycle Parking Requirements

Except for seeking a variance, current zoning provides no mechanism to modify bicycle parking requirements in specific cases where it would be unreasonable or undesirable to apply the exact regulations as written. For such cases, alternative paths to compliance are proposed, either by right (for small change-of-use projects) or by Planning Board Special Permit (for larger developments).

5. Clarifying and Procedural Zoning Changes

There are several “housekeeping” modifications that will help to clarify and streamline the application of zoning regulations that relate to bicycle parking.

Outline of Proposed Zoning Changes

1. New Zoning Section for Bicycle Parking

Current Zoning

- Requirements for bicycle parking are specified in Section 6.37 (quantity requirements) and Section 6.49 (design requirements).
- In general, bicycle parking requirements are treated as a component of the motor vehicle parking requirements for a particular use in a particular district.
- Parking requirements do not apply to all types of new development, but depend on the extent of the change in intensity of the use.

Proposed Zoning Changes

A. Establish a new section for **Bicycle Parking**:

- Clarify that Bicycle Parking requirements are separate and distinct from motor vehicle parking requirements.
- Clarify that where “parking” is otherwise mentioned in the ordinance, it refers to motor vehicle parking.
- Clarify that Bicycle Parking requirements apply to all new development and changes of use, and apply to the entire extent of the use (notwithstanding the limited applicability of parking and loading requirements in Section 6.12).

B. Create **New Definitions**:

- A **Bicycle Parking Space** is an accessible area within which one bicycle can be stored and secured in an upright position with both wheels on a stable surface. (*Variations may be allowed by special permit – see further.*)
- **Long-Term Bicycle Parking** refers to Bicycle Parking Spaces located within a facility that is enclosed, limited-access, and protected from the elements. Examples include bicycle rooms within a building or garage, bicycle sheds, bicycle cages and bicycle lockers. It is intended for use by building occupants such as residents or employees and must be conveniently accessible to those users, although it may also be used by authorized visitors. It should primarily serve trips of more than two hours.
- **Short-Term Bicycle Parking** refers to Bicycle Parking Spaces located in publicly-accessible areas, either indoor or outdoor, near the entrances to buildings or other uses. Examples include outdoor bicycle racks. It is intended for use by visitors, building occupants and the general public. It should primarily serve trips of about two hours or less, although it may be used for longer periods of time.

Outline of Proposed Zoning Changes

2. Requirements for the Design and Location of Bicycle Parking

Current Zoning Requirements

- A bicycle parking space requires accommodation of a 6' by 2' bicycle and a stable, anchored frame. There are no more specific design and spacing requirements.
- Bicycle parking must be in the same general location as auto parking (*i.e.*, bicycle parking must be indoor and secured if auto parking is indoor and secured; bicycle parking can be outdoor if auto parking is also outdoor).

Proposed Zoning Changes

A. Design Standards for Bicycle Racks

- Define a Bicycle Rack as a frame that can accommodate up to two Bicycle Parking Spaces if it meets the specified design and layout standards.
- Establish simple design and layout standards based on *Bicycle Parking Guide* (see next page).
- At least 5% of spaces must accommodate a bicycle with a trailer or a hand cycle.

B. Design Standards for Bicycle Lockers or Other Bicycle Storage (Not Bicycle Racks)

- Bicycle lockers or other individual storage spaces of adequate size are allowed only if designated exclusively for bicycle storage.

C. Location Standards for Long-Term Bicycle Parking

- Must be located within the same building as the use being served, or within a separate structure that is within 100' of a pedestrian entrance to any use being served.
- Must provide a clear, accessible path of travel at least 5' wide from the public way to any long-term spaces.
- Changes of grade may be accommodated only by elevator (80" by 54" minimum dimension) or ramps (5% maximum slope for a continuous ramp or 8% maximum slope with level landings every 30 feet). Secondary access to spaces may be provided via a stairway of no more than 9 steps with a stairway channel with 25% maximum slope.

D. Location Standards for Short-Term Bicycle Parking

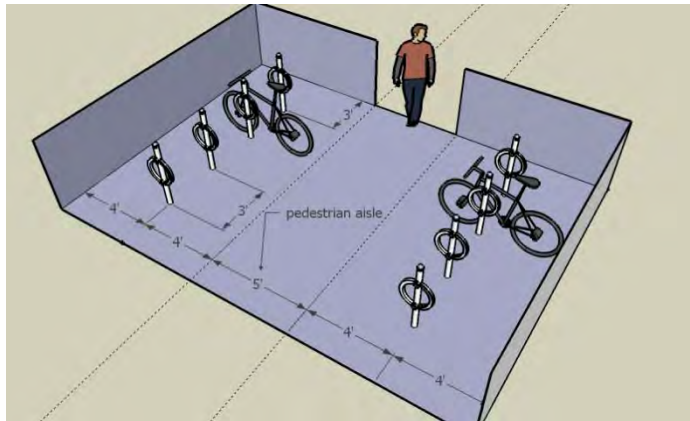
- Must be located at-grade and within 50' of the main pedestrian-accessible public building entrance. If more than 10 short-term spaces are required, the additional spaces may be distributed at a greater distance, so long as at least 2 spaces are located within 50' of each pedestrian-accessible public building entrance.
- Must provide a clear, paved, accessible path of travel at least 4' wide from the public way to any short-term spaces.
- Required short-term spaces may be satisfied by Bicycle Racks installed in the public way (*e.g.*, sidewalk) at the owner's expense, subject to approval by the City.

Illustrations of Bicycle Parking Design Standards



Bicycle Rack Design Standards

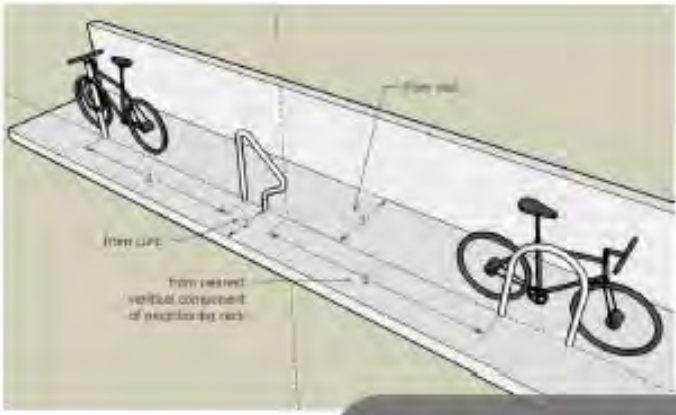
- Stand must be anchored to the ground or floor.
- Stand must make contact with the bicycle frame at two points lengthwise.



Bicycle Rack Layout Requirements

Long-Term (Indoor) Bicycle Parking in a Secure Room, *Arranged Side-to-Side:*

- Minimum 36" spacing side-to-side
- Minimum 48" spacing front-to-back
- Minimum 60" access aisle width



Bicycle Rack Layout Requirements

Short-Term (Outdoor) Bicycle Parking along Sidewalk, *Arranged End-to-End:*

- Minimum 96" between racks (48" between a rack and another sidewalk object)
- Minimum 36" from walls
- Minimum 24" from curbs
- Minimum 48" accessible path

3. Requirements for the Quantity of Bicycle Parking

Required Bicycle Parking for Residential Uses

Current Zoning Requirements

- For multifamily housing, one bicycle space is required for every two dwelling units.
- For townhouses or elderly housing, there is no requirement for bicycle parking.
- For other housing types, one bicycle space is required for every 10 automobile parking spaces required.

Proposed Zoning Requirements – Long-Term Bicycle Parking

- For family housing, require one bicycle space per dwelling unit minimum. For lots with more than 20 units, require one additional bicycle space for every additional 20 units. *Cambridge CitySmart data estimates bicycle ownership at about 1.1–1.6 bicycles per household across many housing types.*
- For non-family housing (e.g., dormitories), require one bicycle space for every two beds/bedrooms.
- One space per 50 rooms for transient accommodation (e.g., hotel) – primarily for staff.

Proposed Zoning Requirements – Short-Term Bicycle Parking

- Require one bicycle space for every 10 family units or every 20 beds/rooms of non-family housing.
- Two bicycle spaces is the baseline minimum standard for any lot with at least four units.

Residential Uses	Current Minimum (Total Spaces)	Proposed Minimum Long-Term Spaces	Proposed Minimum Short-Term Spaces
Family Housing (single-family, two-family, multifamily, townhouse)	0.50 per unit (multifamily only)	1.00 per unit + 1 for every 20 units over 20	0.10 per unit (applied only to lots with 4+ units)
Elderly Housing (incl. assisted living, but not nursing care)	No requirement	0.50 per unit	0.05 per unit
Group Housing (e.g. dormitory, lodging)	0.014–0.025 per bed	0.50 per bed	0.05 per bed
Transient Accommodations (e.g. hotel, motel)	0.05 per room	0.02 per room	0.05 per room

Notes

- *Current zoning minimums based on 10% of parking requirements as established in the Schedule of Parking and Loading Requirements (Section 6.36), except for multifamily housing as specified in Subsection 6.37.1. In some cases, a range or estimate is given.*
- *Figures have been converted into more easily comparable units of measurement.*
- *Hotels and motels are classified as residential uses in the Zoning Ordinance.*

Required Bicycle Parking for Non-Residential Uses (except Educational)

Current Zoning Requirements

- One bicycle space is required for every 10 automobile parking spaces required.

Proposed Zoning Requirements – Long-Term Bicycle Parking

Minimum requirements are based on a goal of accommodating bicycle parking for 10% of employees:

Approximate Employee Density (per 1,000 SF)	Use Types	Minimum Long-Term Bicycle Parking (per 1,000 SF)
3 employees	<ul style="list-style-type: none"> • Offices (most types, including government) 	0.30
2.2 employees	<ul style="list-style-type: none"> • Technical offices (commercial R&D labs) 	0.22
2 employees	<ul style="list-style-type: none"> • Hospitals, clinics • Restaurants 	0.20
1 employee	<ul style="list-style-type: none"> • Retail stores, grocery stores, consumer service, commercial recreation 	0.10
< 1 employee	<ul style="list-style-type: none"> • Industrial, utilities • Auto-related uses • Public assembly, civic, cultural (e.g. churches, community centers, libraries, museums) 	0.08

Employee density sources: Cambridge PTDM, ITE Trip Generation, DOE Building Activities (see Appendix).

Proposed Zoning Requirements – Short-Term Bicycle Parking

Minimum requirements are based on a goal of accommodating approximately 10% of all visitor trips:

Visitor Density Category	Use Types	Minimum Short-Term Bicycle Parking (per 1,000 SF)
High	<ul style="list-style-type: none"> • Grocery/convenience stores, restaurants, commercial recreation, entertainment 	1.00
Moderate-high	<ul style="list-style-type: none"> • Retail stores, consumer service 	0.60
Moderate	<ul style="list-style-type: none"> • Offices open to the public (e.g., retail banks) • Government offices, social services • Medical clinics, doctors’ offices • Public assembly, civic, cultural (e.g. churches, community centers, libraries, museums) 	0.50
Low-moderate	<ul style="list-style-type: none"> • Hospitals 	0.10
Low	<ul style="list-style-type: none"> • Offices (not generally open to the public, including technical office) • Industrial, utilities • Auto-related uses 	0.06

Visitor demand estimation sources: ITE Parking Generation figures, APBP Bicycle Parking Guidelines (see Appendix).

Proposed Changes to Cambridge Zoning Ordinance – Bicycle Parking Requirements
Outline of Proposed Zoning Changes

Proposed Zoning Requirements – Non-Residential Uses (except Educational)

The following table combines the long-term and short-term requirements from the previous page, and compares both to the current requirements for non-residential uses (with the exception of educational).

Non-Residential Uses	Current Minimum (Total Spaces)	Proposed Minimum Long-Term Spaces	Proposed Minimum Short-Term Spaces
General Office (typical office functions)	0.10-0.13 / 1,000 SF	0.30 / 1,000 SF	0.06 / 1,000 SF
Medical Office (e.g. doctor, dentist, therapist)	0.20 / 1,000 SF	0.30 / 1,000 SF	0.50 / 1,000 SF
Private Office Open to the Public (e.g. retail bank, real estate)	0.11-0.25 / 1,000 SF	0.30 / 1,000 SF	0.50 / 1,000 SF
Government/Public Office (e.g. permits, social services)	0.10-0.17 / 1,000 SF	0.30 / 1,000 SF	0.50 / 1,000 SF
Technical Office (e.g. commercial labs)	0.07 / 1,000 SF	0.22 / 1,000 SF	0.06 / 1,000 SF
Hospital/Inpatient Clinic	app. 0.20 / 1,000 SF	0.20 / 1,000 SF	0.10 / 1,000 SF
Outpatient Health Clinic	app. 0.20 / 1,000 SF	0.20 / 1,000 SF	0.50 / 1,000 SF
Restaurant (incl. bar, fast-order food)	1 per 50-150 seats	0.20 / 1,000 SF	1.00 / 1,000 SF
Retail Store (household goods)	0.11-0.20 / 1,000 SF	0.10 / 1,000 SF	0.60 / 1,000 SF
Consumer Service (e.g. barber, tailor, repair)	0.05-0.10 / 1,000 SF	0.10 / 1,000 SF	0.60 / 1,000 SF
Grocery/Food Store (incl. supermarket, liquor)	0.05-0.10 / 1,000 SF	0.10 / 1,000 SF	1.00 / 1,000 SF
Commercial Recreation (e.g. fitness, bowling, theater or other entertainment)	1 per 60 pers. Capacity	0.10 / 1,000 SF	1.00 / 1,000 SF
Industrial or Utility Uses (e.g. storage, phone exchange)	0.05-0.08 / 1,000 SF	0.08 / 1,000 SF	0.06 / 1,000 SF
Auto-Related Uses (e.g. auto sales, service, repair)	No requirement	0.08 / 1,000 SF	0.06 / 1,000 SF
Public Assembly, Civic, Cultural (e.g. church, community center, library, museum)	0.12-0.17 / 1,000 SF	0.08 / 1,000 SF	0.50 / 1,000 SF

Notes

- *Current zoning minimums based on 10% of parking requirements as established in the Schedule of Parking and Loading Requirements (Section 6.36). In some cases, a range or estimate is given.*
- *Figures have been converted to more easily comparable units of measurement.*

Required Bicycle Parking for Educational Uses

Current Zoning Requirements

- One bicycle space is required for every 10 automobile parking spaces required.

Proposed Zoning Changes

- Required bicycle parking for primary and secondary school (pre-kindergarten through grade 12) uses intended to accommodate 10% of staff (long-term spaces) and students (short-term spaces), with estimates based on Cambridge Public Schools employment/enrollment data.
- Required bicycle parking for higher education (college and university, excluding dormitory) uses intended to accommodate 20% of staff (long-term spaces) and students (short-term spaces), with estimates based on Town-Gown reports and other data provided by universities.

Educational Uses	Current Minimum (Total Spaces)	Proposed Minimum Long-Term Spaces	Proposed Minimum Short-Term Spaces
Primary or Secondary School (PreK-12)	0.15 / classroom or 0.02 / aud. seat*	0.30 / classroom or 0.015 / aud. seat*	0.70 / classroom or 0.085 / aud. seat*
College/University Academic Facilities (e.g. offices, labs, classrooms, libraries)	0.05 / 1,000 SF	0.20 / 1,000 SF	0.40 / 1,000 SF
College/University Student Activity Facilities (e.g. dining, athletics, theater, other)	1 per 200-600 seats or 0.08-0.25 per 1,000 SF (net)	0.20 / 1,000 SF	1.00 / 1,000 SF

* *Whichever is larger*

Notes

- *Current zoning minimums based on 10% of parking requirements as established in the Schedule of Parking and Loading Requirements (Section 6.36). In some cases, a range or estimate is given.*
- *Figures have been converted to more easily comparable units of measurement.*

General Requirements for Quantity of Bicycle Parking (for all uses)

- Requirements are the same citywide across all zoning districts.
- For mixed-use sites, the required quantity of Bicycle Parking Spaces is the sum of the requirements for all uses (*except as may be modified by Planning Board – see further below*).
- Fractional quantities round up to the nearest bicycle parking space.
- Two short-term parking spaces is the baseline minimum requirement for any individual non-residential use or establishment or any residential lot with four or more dwelling units.

Outline of Proposed Zoning Changes

4. Relief from Bicycle Parking Requirements

Current Zoning

- No as-of-right or special permit relief is provided for bicycle parking.

Proposed Zoning Changes

A. Relief for Change of Use within Existing Buildings Only (as-of-right)

- **Long-Term Bicycle Parking for Small Businesses:** For the establishment of a non-residential use that would require two or fewer Long-Term Bicycle Parking Spaces, the requirement can be satisfied by providing Short-Term Bicycle Parking Spaces, as long as the total number of required long-term and short-term spaces are provided.
- **Location of Short-Term Parking:** The distance of short-term parking from a building entrance may be increased to 100' if the City determines that a bicycle rack cannot be accommodated within 50' of the building entrance within the public way.
- **Existing Site Constraints:** Where short-term spaces meeting the required standards cannot be provided on-site due to existing buildings or site conditions, and the City has determined that bicycle racks meeting the required standards cannot be provided on the public sidewalk within 100' of a building entrance, then the requirements for short-term parking may be satisfied by making a contribution to a Bicycle Parking Fund for the installation and maintenance of bicycle parking elsewhere in the city.

B. Relief by Special Permit from the Planning Board

The Planning Board may grant relief from any Bicycle Parking requirements, with guidance from the Community Development Department and Traffic, Parking and Transportation Department, upon finding that the proposed supply, location and design of bicycle parking provides equal or greater benefits to bicycle users than if the requirements were met, and upon making one or more of the following specific determinations:

- **Innovative Design / Location:** If the Board finds that the proposed alternate design/location provides equal convenience to all bicycle users, variations may be allowed.
- **Short-Term / Long-Term Flexibility:** If the Board finds that the proposed bicycle parking will meet the basic standards for long-term (reasonably secure, protected) and short-term (visible, available to the public) bicycle users, the distinction may be waived.
- **Shared / Pooled Facilities:** If the proponent submits a bicycle parking facilities plan serving multiple uses, and quantitative evidence demonstrating that fewer bicycle parking spaces would be needed to meet the demand for that specific set of uses (for example, because the uses have different peak demand times, or because a given visitor is likely to visit multiple nearby uses with one bicycle trip), the total number of bicycle parking spaces required to serve all uses may be reduced to an amount the Board determines to be appropriate.

5. Clarifying and Procedural Zoning Changes

Clarification of Existing Policies and Procedures

- Covered or enclosed bicycle parking facilities are not counted as Gross Floor Area (GFA) for the purpose of calculating floor area limitations. Clarify that the exempted GFA shall include Bicycle Parking Spaces and any aisles or pathways that are provided only for the purpose of accessing Bicycle Parking Spaces, but shall not include hallways or other spaces intended for general circulation.
- Clarify that bicycle parking facilities, including enclosures, overhangs or other coverings directly overhead, are not considered obstructions within a required yard setback.

Administrative Issues

- Ensure that Bicycle Parking Spaces, drawn at an appropriate scale, are included in the Parking Plan Information Requirements (Section 6.50) and are reviewed by the Traffic, Parking and Transportation Department and Community Development Department as appropriate for projects seeking a building permit, special permit or variance.
- Ensure that the numbers of Long-Term and Short-Term Bicycle Parking Spaces are included in the dimensional form for building permit applications as well as special permit and variance applications.

Illustrative Examples of Proposed Requirements

In order to illustrate the impact of the proposed zoning changes, some recently-built projects representing a variety of different uses have been selected, and the current and proposed bicycle parking zoning requirements have been applied to those projects. For most of these examples, information is also provided on the actual number of long-term and short-term bicycle parking spaces that were constructed on the site. These examples allow for realistic comparisons to be made between the current zoning requirements, the proposed zoning requirements, and the practice of constructing bicycle parking over about the past decade.

In some cases, the number of employees or other quantitative information about the use is provided, in order to provide additional ways of comparing the proposed zoning requirements to the City's goals for accommodating bicycle trips.

PLEASE NOTE: These examples are intended only to illustrate how the proposed zoning requirements would be applied to future developments that are similar the ones listed. Since the example projects were built in accordance with the applicable zoning regulations at the time when the uses were established, those specific projects would not be required to create additional bicycle parking if the new zoning were adopted.

PLEASE ALSO NOTE that **ALL FIGURES ARE APPROXIMATE.**



61 Bolton Street Condos

Use Category: Multi-family residential (4-20 units)
 Approximate GFA: 26,436 square feet
 Units: 20
 Year built: [currently in construction]

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1 per 2 dwelling units	10 total	5 total
Required Minimum: Proposed Zoning	1 per unit long-term 0.10 per unit short-term	20 long-term 2 short-term	10 long-term 1 short-term
Actual Spaces		20 long-term 0 short-term	10 long-term 0 short-term



One First Street Residential

Use Category: Multi-family residential (>20 units)
 Approximate GFA: 294,100 square feet residential
(retail not included in calculations)
 Units: 199
 Year built: 2005

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1 per 2 dwelling units	100 total	50 total
Required Minimum: Proposed Zoning	1 per unit + 1 per 20 units over 20 long-term 0.10 per unit short-term	208 long-term 20 short-term	104 long-term 10 short-term
Actual Spaces		100 long-term [N/A] short-term	50 long-term [N/A] short-term



New Ashdown House (MIT Graduate Student Housing)

Use Category: dormitory
 Approximate GFA: 246,900 square feet
 Beds: 560
 Year built: 2008

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	15 total	8 total
Required Minimum: Proposed Zoning	0.50/bed long-term 0.05/bed short-term	280 long-term 28 short-term	140 long-term 14 short-term
Actual Spaces		160 long-term [N/A] short-term	80 long-term [N/A] short-term



Veritas Hotel

Use Category: transient accommodations
 Approximate GFA: 24,000 square feet
 Employees: about 13
 Rooms: about 32
 Year built: 2008

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	2 total	1 total
Required Minimum: Proposed Zoning	0.02/room long-term 0.05/room short-term	1 long-term 2 short-term	1 long-term 1 short-term
Actual Spaces		4 long-term 2 short-term	2 long-term 1 short-term



210 Broadway

Use Category: General Office
 Approximate GFA: 69,000 square feet
 Year built: 1999

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	7 total	4 total
Required Minimum: Proposed Zoning	0.30/1,000 SF long-term 0.06/1,000 SF short-term	21 long-term 5 short-term	11 long-term 3 short-term
Actual Spaces		12 long-term 18 short-term	6 long-term 9 short-term



150 Second Street (Skanska)

Use Category: Technical Office (R&D)
 Approximate GFA: 108,600 square feet
 Year built: [currently in construction]

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	11 total	6 total
Required Minimum: Proposed Zoning	0.22/1,000 SF long-term 0.06/1,000 SF short-term	24 long-term 7 short-term	12 long-term 4 short-term
Actual Spaces		22 long-term 8 short-term	11 long-term 4 short-term



Cambridgeside Dental (77 Hurley Street)

Use Category: Medical office
 Approximate GFA: 10,800 square feet
 Employees: N/A
 Year built: 2011 [full renovation]

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	2 total	1 total
Required Minimum: Proposed Zoning	0.30/1,000 SF long-term 0.50/1,000 SF short-term	4 long-term 6 short-term	2 long-term 3 short-term
Actual Spaces		4 long-term 4 short-term	2 long-term 2 short-term



City Hall Annex

Use Category: Government/public office
 Approximate GFA: 28,400 square feet
 Employees: about 80
 Year built: 2004 [full renovation]

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	3 total	2 total
Required Minimum: Proposed Zoning	0.30/1,000 SF long-term 0.50/1,000 SF short-term	9 long-term 15 short-term	5 long-term 6 short-term
Actual Spaces		18 long-term 14 short-term	9 long-term 7 short-term



East Coast Grill

Use Category: Restaurant
 Approximate GFA: 2,500 square feet
 Seats: 118 sitting, 35 standing
 Employees: about 42

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	2 total	1 total
Required Minimum: Proposed Zoning	0.20/1,000 SF long-term 1.00/1,000 SF short-term	1 long-term 3 short-term	1 long-term 2 short-term
Actual Spaces		0 long-term 4 short-term	0 long-term 2 short-term



Linear Retail Properties (incl. Trader Joe’s, CVS)

Use Category: Mixed retail:
 ~ 65% grocery, pharmacy, liquor
 ~ 10% restaurant
 ~ 15% stores
 ~ 10% bank
 Approximate GFA: 47,000 square feet total
 Year built: 2009

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	3 total	2 total
Required Minimum: Proposed Zoning	~0.13/1,000 SF long-term ~ 0.89/1,000 SF short-term (by use mix)	7 long-term 42 short-term	4 long-term 21 short-term
Actual Spaces		0 long-term 28 short-term*	0 long-term 14 short-term*

* Some short-term spaces are weather-protected



Mt. Auburn Hospital

Use Category: Hospital
 Approximate GFA: 498,700 square feet
 Employees: about 2,011
 Year built: major expansion in 2008

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	74 total	37 total
Required Minimum: Proposed Zoning	0.20/1,000 SF long-term 0.10/1,000 SF short-term	100 long-term 50 short-term	50 long-term 25 short-term
Actual Spaces		86 long-term 26 short-term	43 long-term 13 short-term



West Cambridge Youth Center

Use Category: Community center
 Approximate GFA: 31,000 square feet
 Year built: 2009

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	2 total	1 total
Required Minimum: Proposed Zoning	0.08/1,000 SF long-term 0.50/1,000 SF short-term	3 long-term 16 short-term	2 long-term 8 short-term
Actual Spaces		2 long-term 14 short-term	1 long-term 7 short-term



Shady Hill School

Use Category: Primary school
 Approximate GFA: 153,000 square feet
 Classrooms: 51
 Employees: about 146
 Students: about 515

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	11 total	6 total
Required Minimum: Proposed Zoning	0.30/classroom long-term 0.70/classroom short-term	16 long-term 36 short-term	8 long-term 18 short-term
Actual Spaces		10 long-term 70 short-term	5 long-term 35 short-term



Wasserstein Hall (Harvard Law School)

Use Category: University
 Approximate GFA: 238,000 square feet
 Employees: 668 faculty and staff (entire school)
 Students: 1,984 (entire school)
 Year built: 2011

	Required Rate	Bicycle Parking Spaces	Bicycle Racks
Required Minimum: Current Zoning	1/10 car spaces	13 total	7 total
Required Minimum: Proposed Zoning	0.20/1,000 SF long-term 0.40/1,000 SF short-term	48 long-term 96 short-term	24 long-term 48 short-term
Actual Spaces		0 long-term 104 short-term*	0 long-term 52 short-term*

* Most short-term spaces are weather-protected

Appendix: Resources

The following is a list of informational resources that were used in the development of the proposed bicycle parking requirements. Many of these resources are referenced in the preceding recommendations. This list is not comprehensive.

- **CitySmart Program Surveys.** These surveys provide Cambridge-specific information about resident bicycle ownership and mode choices across different types of trips.
- **Cambridge PTDM Reports.** These reports, submitted by business owners as required by the Parking and Transportation Demand Management Ordinance, provide Cambridge-specific information about commuter mode choices of employees, particularly for high-intensity uses such as offices and commercial laboratories.
- **Institute of Traffic Engineers (ITE), *Parking Generation Manual, 3rd Edition.*** This manual provides nationwide standards for vehicle parking generation across a variety of different uses. It has been used to verify basic assumptions for visitor, employee and resident parking demand.
- **Institute of Traffic Engineers (ITE), *Trip Generation, 8th edition.*** This manual provides nationwide vehicle trip generation rates for a variety of different uses.
- **Association of Pedestrian and Bicycle Professionals (APBP), *Bicycle Parking Guidelines, 2nd Edition.*** This set of guidelines provides information on accepted nationwide standards for bicycle parking design and layout as well as quantitative demand.
- **Energy Information Administration, U.S. Department of Energy (DOE), *Summary of Principal Building Activities in Commercial Buildings.*** This information database provides nationwide employee density statistics across a variety of uses.
- **Alta Planning + Design, *Cambridge Bike Parking Methodology Report.*** January, 2010.