



APPENDIX D: BIKE PARKING RESOURCES

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Appendix D: Bike Parking Resources

Bicycle parking represents a critical component of the bicycle transportation system. To assist the Village of Northbrook in the development of policies and design standards to guide the selection, placement, and installation of bicycle facilities, the following materials are provided in this appendix:

- » The Association of Pedestrian and Bicycle Professionals' *Essentials of Bike Parking: Selecting and installing Bike Parking that Works* (2015). Access: <http://www.apbp.org/?page=publications>.
- » Public Health Law & Policy's *Model Bicycle Parking Ordinance (for communities in Illinois)* (2011). Access: <https://www.changelabsolutions.org/publications/bike-parking>.
- » A Sample concept for a bike corral installation, as used by Great Rivers Greenway District and the City of St. Louis for locations throughout the City.
- » Sample images of covered bike parking (bike parking shelters) for consideration when selecting or designing bicycle parking facilities for destinations with high existing, anticipated, or desired volumes of bicycle trips. These bicycle parking facilities provide extra protection from the elements and can serve both short-term and long-term (full-day) bicycle parking. Potential locations for covered bike parking may include Metra stations, major employment centers, Northbrook Court, and Village Green Park.

These resources are intended to serve as starting points for the development of design standards and policies to regulate and support bicycle parking. These materials can be tailored to reflect current conditions and desired outcomes for the Village of Northbrook. Original PDF and Microsoft Word versions of the first two resources can be accessed by the links provided above.

ESSENTIALS OF

BIKE PARKING

Selecting and installing bicycle parking that works



apbp

Association of Pedestrian
and Bicycle Professionals

Expertise for Active
Transportation

Essentials of Bike Parking

Revision 1.0, September 2015

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Acknowledgments

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Alta Planning + Design donated their expertise in the design and illustration of this guide. Cat Cheng, lead designer, Jillian Portelance, production designer.

Cover image: Sign D4-3 from *Standard Highway Signs*, 2004 Edition, http://mutcd.fhwa.dot.gov/ser-shs_millennium_eng.htm

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APBP is an association of professionals who plan, implement and advocate for walkable and bicycle-friendly places.

Association of Pedestrian and Bicycle Professionals

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TABLE OF CONTENTS

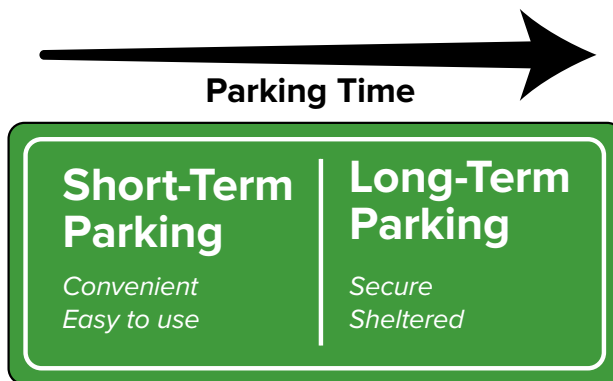
- 01 INTRODUCTION**
- 02 SHORT-TERM PARKING**
 - Site planning
 - Bike corrals
- 03 LONG-TERM PARKING**
 - Site planning
 - Special considerations for long-term parking
- 04 INSTALLATION**
 - Installation surface
 - Installation fasteners
 - Installation techniques
- 05 BICYCLE RACK SELECTION**
 - Performance criteria for bike parking racks
 - Rack styles
 - Rack materials and coatings
- 10 PLACEMENT**

INTRODUCTION

Among the necessary supports for bicycle transportation, bike parking stands out for being both vital and easy. Still, it requires some attention to get it right. Bike parking may go unused if it's not more appealing to users than the nearest sign post. A minor mistake in installation can make a quality rack unusable. The variety of bicycle sizes, shapes, and attachments continues to increase, and good bike parking should accommodate all types.

The Association of Pedestrian and Bicycle Professionals (APBP) prepared this guide for people planning to purchase or install bike parking fixtures on a limited scale. It is a brief overview of APBP's comprehensive *Bicycle Parking Guidelines* handbook, available at www.apbp.org.

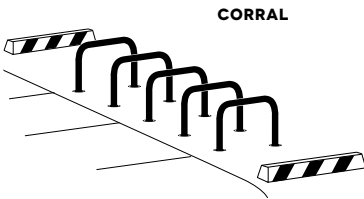
This guide divides bike parking into short-term and long-term installations. These two kinds of parking serve different needs, and the starting point for most bike parking projects is recognizing whether the installation should serve short-term users, long-term users, or both. If users will typically be parking for two hours or longer, they are likely to value security and shelter above the convenience and ease that should characterize short-term parking.



SHORT-TERM PARKING

Effective bike parking for short-term users depends on two main factors: 1) proximity to the destination and 2) ease of use.

Short-term parking is designed to meet the needs of people visiting businesses and institutions, and others with similar needs—typically lasting up to two hours. Short-term users may be infrequent visitors to a location, so the parking installation needs to be readily visible and self-explanatory.



SITE PLANNING

Location

Short-term bike parking should be visible from and close to the entrance it serves—50' or less is a good benchmark. Weather-protected parking makes bicycle transportation more viable for daily and year-round use, and it can reduce the motivation for users to bring wet bicycles into buildings. Area lighting is important for any location likely to see use outside of daylight hours.

Security

All racks must be sturdy and well-anchored, but location determines the security of short-term parking as much as any other factor. Users seek out parking that is visible to the public, and they particularly value racks that can be seen from within the destination. Areas with high incidence of bicycle theft may justify specific security features such as specialty racks, tamper-proof mounting techniques, or active surveillance.

Quantity

Many jurisdictions have ordinances governing bike parking quantity. APBP's full *Bicycle Parking Guidelines* offers complete recommendations for the amount and type of parking required in various contexts. In the absence of requirements, it's okay to start small—but bear in mind that perceived demand may be lower than the demand that develops once quality parking appears.

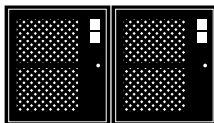
BIKE CORRALS

Some cities with limited sidewalk space and strong bicycle activity place bike parking in on-street "bike corrals" located in the street area adjacent to the curb. Bike corrals can sometimes make use of on-street areas that are unsuitable for auto parking. When replacing a single auto parking space, a corral can generally fit 8 to 12 bicycles. APBP's full *Bicycle Parking Guidelines* provides details about designing and siting bike corrals. ➡ apbp.org

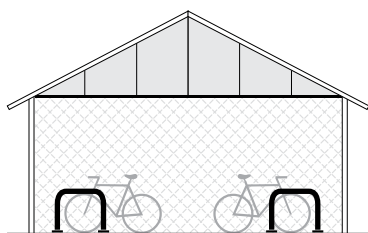
LONG-TERM PARKING

Users of long-term parking generally place high value on security and weather protection. Long-term parking is designed to meet the needs of employees, residents, public transit users, and others with similar needs. These users typically park either at home or at a routine destination such as a workplace. They often leave their bicycles unmonitored for a period of several hours or longer, so they require security and weather protection that let them park without unreasonable concern for loss or damage.

Long-term parking can take a variety of forms, including a room within a residential building or workplace, a secure enclosure within a parking garage, or a cluster of bike lockers at a transit center. Some long-term parking is open to the public—such as a staffed secure enclosure at a transit hub—and some of it is on private property with access limited to employees, residents, or other defined user groups.



BIKE LOCKERS



SHELTERED SECURE ENCLOSURE

SITE PLANNING

Location

Appropriate locations for long-term parking vary with context. Long-term parking users are typically willing to trade a degree of convenience for weather protection and increased security. Long-term installations emphasize physical security above public visibility. Signage may be needed for first-time users.

Security

Security is paramount for quality long-term parking. Access to parked bicycles can be limited individually (as with lockers) or in groups (as with locked bike rooms or other secure enclosures). Options for access control include user-supplied locks, keys, smart cards, and other technologies.

Quantity

Refer to local ordinances or the comprehensive APBP *Bicycle Parking Guidelines* to determine the amount and type of parking required for various contexts.

SPECIAL CONSIDERATIONS FOR LONG-TERM PARKING

In many ways, short-term and long-term parking function similarly and are served by the same guidelines. Some exceptions are noted below.

Density

The competition of uses for high-security and sheltered locations creates particular pressure on long-term parking to fit more bicycles in less space. When parking needs cannot be met with standard racks and spacing recommended in this guide, consider rack systems designed to increase parking density. See the high-density racks table on page 7. Note that increasing density without careful attention to user needs can create parking that excludes people because of age, ability, or bicycle type. This may result in people parking bicycles in other less desirable places or choosing not to bike at all.

Bicycle design variety

Long-term parking facilities should anticipate the presence of a variety of bicycles and accessories, including—depending on context—recumbents, trailers, children’s bikes, long-tails, and others. To accommodate trailers and long bikes, a portion of the racks should be on the ground and should have an additional 36” of in-line clearance.

Performance criteria

The bike rack criteria in the next section apply to racks used in any installation, regardless of its purpose. Long-term installations often use lockers and group enclosures not discussed in this guide. Such equipment raises additional considerations that are discussed in detail in APBP’s full *Bicycle Parking Guidelines*. ➡ apbp.org

INSTALLATION

Selecting an appropriate installation surface and technique is key to creating bicycle parking that remains secure and attractive over time.

INSTALLATION SURFACE

A sturdy concrete pad is an ideal surface for installing bicycle parking. Other surfaces often encountered include asphalt, pavers, and soft surfaces such as earth or mulch. These surfaces can accommodate in-ground mounting or freestanding bike racks such as inverted-U racks mounted to rails. See APBP’s *Bicycle Parking Guidelines* for details. ➡ apbp.org

INSTALLATION FASTENERS

When installing racks on existing concrete, consider the location and select appropriate fasteners. Drill any holes at least three inches from concrete edges or joints. Some locations benefit from security fasteners such as concrete spikes or tamper-resistant nuts on wedge anchors. Asphalt is too soft to hold wedge and spike anchors designed for use in concrete. Installing bike parking on asphalt typically requires freestanding racks and anchor techniques specific to asphalt.

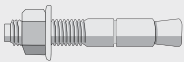
FASTENERS

CONCRETE SPIKE



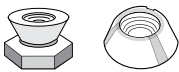
Installs quickly in concrete with a hammer. Tamper-resistant. Removal may damage concrete and/or rack.

CONCRETE WEDGE ANCHOR



Allows for rack removal as needed. Not tamper-resistant, but can accommodate security nuts (below).

SECURITY NUTS



Use with concrete wedge anchors. Security nuts prevent removal with common hand tools.

INSTALLATION TECHNIQUES

When installing racks on existing concrete, choose those with a surface-mount flange and install with a hammer drill according to the specifications of the mounting hardware selected. When pouring a new concrete pad, consider bike parking fixtures designed to be embedded in the concrete. Because replacing or modifying an embedded rack is complicated and costly, this installation technique requires particular attention to location, spacing, rack quantity, and material.



BICYCLE RACK SELECTION

PERFORMANCE CRITERIA FOR BIKE PARKING RACKS

These criteria apply to any rack for short- or long-term use.

CRITERIA	DETAILS
Supports bike upright without putting stress on wheels	The rack should provide two points of contact with the frame—at least 6” apart horizontally. Or, if a rack cradles a bicycle’s wheel, it must also support the frame securely at one point or more. The rack’s high point should be at least 32”.
Accommodates a variety of bicycles and attachments	The racks recommended on page 6 (“racks for all applications”) serve nearly all common bike styles and attachments—if installed with proper clearances (see placement section). Avoid designs and spacing that restrict the length, height, or width of bicycles, attachments, or wheels.
Allows locking of frame and at least one wheel with a U-lock	A closed loop of the rack should allow a single U-lock to capture one wheel and a closed section of the bike frame. Rack tubes with a cross section larger than 2” can complicate the use of smaller U-locks.
Provides security and longevity features appropriate for the intended location	Steel and stainless steel are common and appropriate materials for most general-use racks. Use tamper-resistant mounting hardware in vulnerable locations. Rack finish must be appropriate to the location (see materials and coatings section).
Rack use is intuitive	First-time users should recognize the rack as bicycle parking and should be able to use it as intended without the need for written instructions.



RACK STYLES

The majority of manufactured bike racks fall into one of the categories on pages 6-8. Within a given style, there is wide variation among specific racks, resulting in inconsistent usability and durability. APBP recommends testing a rack before committing broadly to it.

RACKS FOR ALL APPLICATIONS

When properly designed and installed, these rack styles typically meet all performance criteria and are appropriate for use in nearly any application.

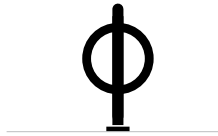
INVERTED U

also called
staple, loop



Common style appropriate for many uses; two points of ground contact. Can be installed in series on rails to create a free-standing parking area in variable quantities. Available in many variations.

POST & RING



Common style appropriate for many uses; one point of ground contact. Compared to inverted-U racks, these are less prone to unintended perpendicular parking. Products exist for converting unused parking meter posts.

WHEELWELL- SECURE



Includes an element that cradles one wheel. Design and performance vary by manufacturer; typically contains bikes well, which is desirable for long-term parking and in large-scale installations (e.g. campus); accommodates fewer bicycle types and attachments than the two styles above.

This guide analyzes the most common styles of bike racks, but it is not exhaustive. Use the performance criteria on page 5 to evaluate rack styles not mentioned. Custom and artistic racks can contribute to site identity and appearance, but take care that such racks don't emphasize appearance over function or durability.

HIGH-DENSITY RACKS

These rack styles do not meet all performance criteria but may be appropriate in certain constrained situations.

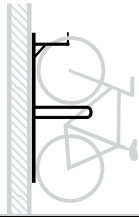
High-density rack systems can maximize the use of limited parking space, but they don't work for all users or bicycles. If installing these racks, reserve additional parking that accommodates bicycles with both wheels on the ground for users who are not able to lift a bicycle or operate a two-tier rack, or for bikes that are not compatible with two-tier or vertical racks.

STAGGERED WHEELWELL-SECURE



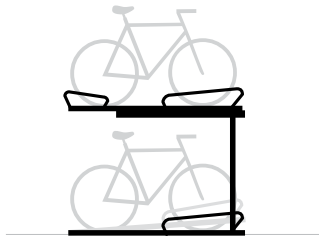
Variation of the wheelwell-secure rack designed to stagger handlebars vertically or horizontally to increase parking density. Reduces usability and limits kinds of bikes accommodated, but contains bikes well and aids in fitting more parking in constrained spaces.

VERTICAL



Typically used for high-density indoor parking. Not accessible to all users or all bikes, but can be used in combination with on-ground parking to increase overall parking density. Creates safety concerns not inherent to on-ground parking.

TWO-TIER



Typically used for high-density indoor parking. Performance varies widely. Models for public use include lift assist for upper-tier parking. Recommend testing before purchasing. Creates safety concerns not inherent to on-ground parking, and requires maintenance for moving parts.

RACKS TO AVOID

Because of performance concerns, APBP recommends selecting other racks instead of these.

WAVE

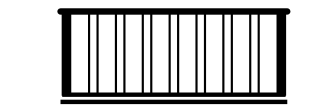
also called undulating or serpentine



Not intuitive or user-friendly; real-world use of this style often falls short of expectations; supports bike frame at only one location when used as intended.

SCHOOLYARD

also called comb, grid



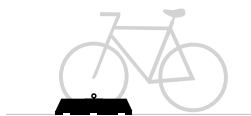
Does not allow locking of frame and can lead to wheel damage. Inappropriate for most public uses, but useful for temporary attended bike storage at events and in locations with no theft concerns. Sometimes preferred by recreational riders, who may travel without locks and tend to monitor their bikes while parked.

COATHANGER



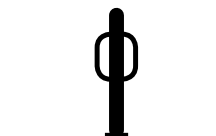
This style has a top bar that limits the types of bikes it can accommodate.

WHEELWELL



Racks that cradle bicycles with only a wheelwell do not provide suitable security, pose a tripping hazard, and can lead to wheel damage.

BOLLARD



This style typically does not appropriately support a bike's frame at two separate locations.

SPIRAL



Despite possible aesthetic appeal, spiral racks have functional downsides related to access, real-world use, and the need to lift a wheel to park.

SWING ARM SECURED



These racks are intended to capture a bike's frame and both wheels with a pivoting arm. In practice, they accommodate only limited bike types and have moving parts that create unneeded complications.

RACK MATERIALS & COATINGS

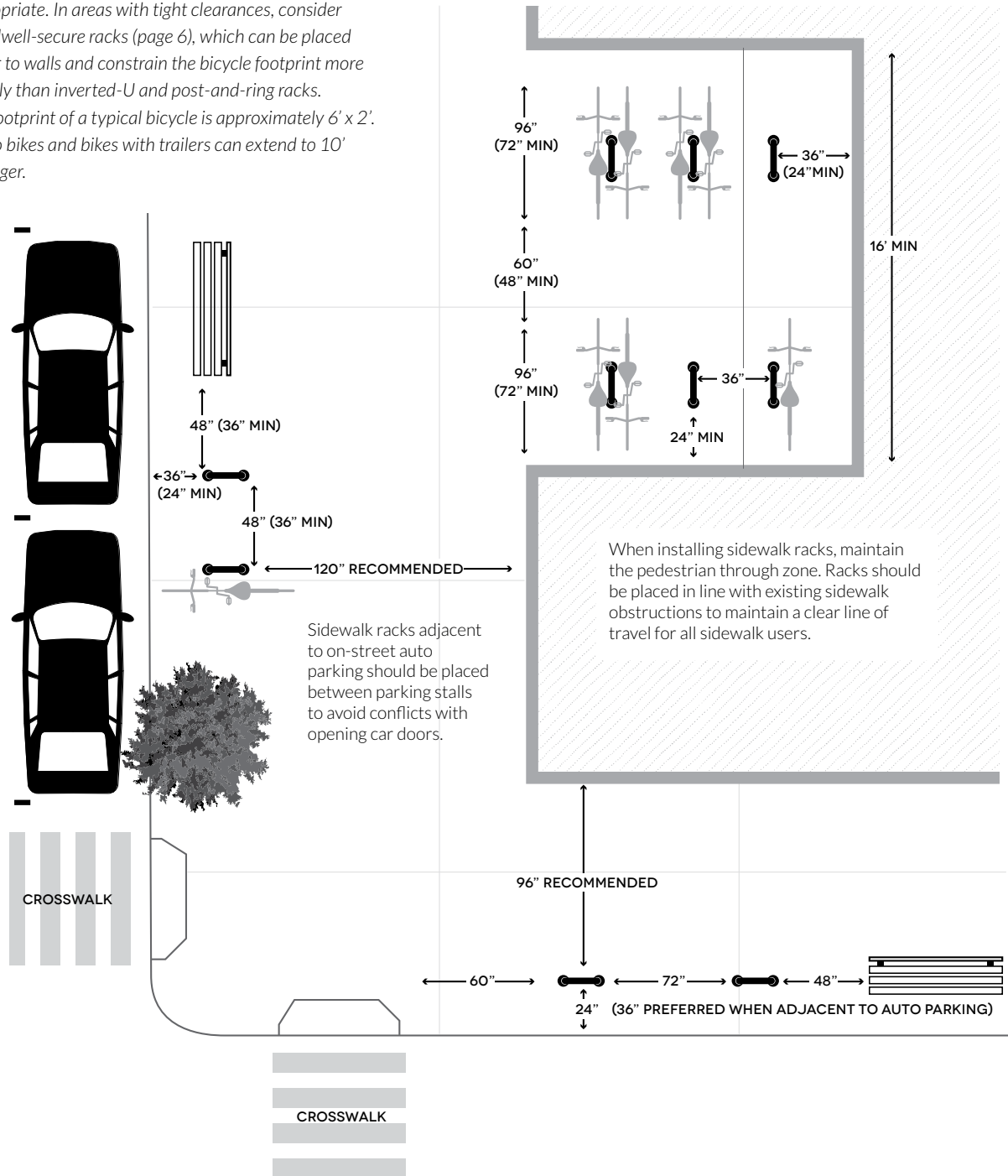
Most bicycle parking racks are made of carbon steel or stainless steel. Carbon steel requires a surface coating to resist rust while appropriate grades of stainless steel need no coating. Not all materials and coatings with the same name perform equally. Square tubing provides a security advantage as round tubing can be cut quietly with a hand-held pipe cutter. Before purchasing racks, talk to suppliers about your particular conditions and choose a material and coating that suit your needs. The following are common choices, depending on local considerations and preferences.

RACK MATERIAL – COATING	RELATIVE PURCHASE COST	DURABILITY	CAUTIONS
Carbon steel - galvanized	Usually lowest	Highly durable and low-maintenance; touch-up, if required, is easy and blends seamlessly	Utilitarian appearance; can be slightly rough to the touch
Carbon steel - powder coat* (TGIC or similar)	Generally marginally higher than galvanized	Poor durability	Requires ongoing maintenance; generally not durable enough for long service exposed to weather; not durable enough for large-scale public installations
Carbon steel - thermoplastic	Intermediate	Good durability	Appearance degrades over time with scratches and wear; not as durable as galvanized or stainless
Stainless steel - no coating needed, but may be machined for appearance	Highest	Low-maintenance and highest durability; most resistant to cutting	Can be a target for theft because of salvage value; maintaining appearance can be difficult in some locations

* When applied to carbon steel, TGIC powder coat should be applied over a zinc-rich primer or galvanization to prevent the spread of rust beneath the surface or at nicks in the finish.

PLACEMENT

The following minimum spacing requirements apply to some common installations of fixtures like inverted-U or post-and-ring racks that park one bicycle roughly centered on each side of the rack. Recommended clearances are given first, with minimums in parentheses where appropriate. In areas with tight clearances, consider wheelwell-secure racks (page 6), which can be placed closer to walls and constrain the bicycle footprint more reliably than inverted-U and post-and-ring racks. The footprint of a typical bicycle is approximately 6' x 2'. Cargo bikes and bikes with trailers can extend to 10' or longer.



Model Bicycle Parking Ordinance (with Annotations)

This model ordinance was developed for communities in the state of Illinois.
October 2011.

www.phlpnet.org

PHLP is a nonprofit organization that provides legal information on matters relating to public health. The legal information provided in this document does not constitute legal advice or legal representation. For legal advice, readers should consult a lawyer licensed to practice law in Illinois.

This tool was developed with support from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

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[CITY/VILLAGE/TOWNSHIP] OF _____
ORDINANCE NO: _____

A draft ordinance based on this model may include “findings” of fact (“whereas” clauses) that support the need for the municipality to adopt the ordinance. The findings section is part of the ordinance, but it usually does not become codified in the local government code. The findings contain factual information supporting the need for the law – in this case, documenting the need for bicycle parking. An adopting body should select those findings it views as most significant for its community and add findings related to local conditions or concerns. The footnotes are provided in order to assist those who wish to understand the evidence for a given finding, and are not intended to be included in the adopted Ordinance.

FINDINGS. [The City/Village/Township] hereby finds and declares as follows:

1. **WHEREAS**, the [Adopting Body] has a goal of improving the health of its residents and the air quality of the community; and
2. **WHEREAS**, obesity has become a significant health concern for our nation, with overweight and obesity leading to increased risk of heart disease; diabetes; endometrial, breast, and colon cancers; high blood pressure; high cholesterol; stroke; liver and gallbladder disease; sleep apnea and respiratory problems; osteoarthritis (a degeneration of cartilage and its underlying bone within a joint); and gynecological problems;¹ and
3. **WHEREAS**, obesity is often caused in part by lack of sufficient physical activity;² and
4. **WHEREAS**, bicycling is a safe, low-impact aerobic activity, enjoyed by millions of Americans, which can provide an ideal opportunity to obtain physical exercise while traveling to work, shops, restaurants, and many other frequent destinations;³ and

5. **WHEREAS**, bicycling is a feasible alternative to driving in many cases since 25 percent of all car trips are to destinations within one mile of home,⁴ 40 percent of all trips taken are two miles or less,⁵ and around 30 percent of the working population travels five miles or less to work;⁶ and
6. **WHEREAS**, replacing car trips with bicycle trips can also reduce pollution and congestion and increase air quality, given that transportation accounts for nearly one-third of all carbon dioxide emissions in the United States and an average motor vehicle emits 8.8 kilograms of carbon dioxide per gallon of gasoline that it burns, while biking emits none;⁷ and
7. **WHEREAS**, providing safe, convenient, and adequate bicycle parking is necessary to encourage increased use of bicycles as a form of transportation;⁸ and
8. **WHEREAS**, cities that have improved bicycle infrastructure, including parking, have seen a measurable increase in bicycle trips;⁹ and
9. **WHEREAS**, it is advisable, for all of the reasons stated above, to add new bicycle parking requirements designed to provide increased safe, convenient, and adequate bicycle parking;

NOW THEREFORE, BE IT ORDAINED BY [THE CITY/VILLAGE/TOWNSHIP] as follows:

SECTION 1: THAT [TITLE AND/OR CHAPTER OF CODE] IS AMENDED BY [AMENDING/ENACTING] A NEW CHAPTER [1] THEREOF, “BICYCLE PARKING REQUIREMENTS FOR NEW DEVELOPMENT AND MAJOR RENOVATIONS,” TO READ AS FOLLOWS:

Chapter [1-1]: PURPOSE: The purpose of this [Title/Chapter] is to provide sufficient safe and convenient bicycle parking in new development and major renovations so as to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, pollution, and wear and tear on roads, and fosters healthy physical activity.

COMMENT: Municipalities may include additional reasons or tailor these reasons to their individual community.

Chapter [1- 2]: DEFINITIONS: Unless the context clearly requires otherwise, the following terms shall have the following meanings:

- A. “Bicycle Parking Space”:** A physical space that is a minimum of [2.5] feet in width by [6] feet in length with a vertical clearance of at least [7] feet that allows for the parking of one bicycle.
- B. “Bike Rack”:** A device consistent with industry standards that (i) is capable of supporting a bicycle in a stable position, (ii) is made of durable materials, (iii) is no less than [36] inches tall (from base to top of rack) and no less than [2] feet in length, (iv) permits the securing of the bicycle frame and one wheel with a U-shaped lock, and (v) is of a character and color that adds aesthetically to the immediate environment.

COMMENT: U-shaped locks are one of the most effective bike locks.

- C. “Bike Locker”:** A lockable enclosure consistent with industry standards that (i) can hold one bicycle, (ii) is made of durable material, (iii) is designed to fully protect the bicycle against [*insert specific local weather concerns, e.g.: rain, snow, ice, high winds*], (iv) provides secure protection from theft, (v) opens sufficiently to allow bicyclists easy access, and (vi) is of a character and color that adds aesthetically to the immediate environment.

COMMENT: If improper use of lockers is a concern in a particular community, this definition could be amended to expressly allow for an optional opening of up to nine inches at the base of the locker to allow for security inspections.

- D. “Short-Term Bicycle Parking”:** Bicycle parking primarily intended for bicyclists who need bicycle parking for three hours or less.
- E. “Short-Term Bicycle Parking Space”:** A Bicycle Parking Space that provides Short-Term Bicycle Parking.
- F. “Long-Term Bicycle Parking”:** Bicycle parking that is primarily intended for bicyclists who need bicycle parking for more than three hours and is fully protected from the weather.
- G. “Long-Term Bicycle Parking Space”:** A Bicycle Parking Space that provides Long Term Bicycle Parking.

COMMENT: Most bicycle parking laws enacted in recent years recognize the need to distinguish between the short-term bicycle parking needs of community residents out shopping, eating, attending appointments, etc., and the long-term bicycle parking needs of employees, multifamily housing residents, and students who park their bikes at work, school, or home for many hours or overnight. The critical difference between short-term and long-term bicycle parking is that the former is not required to protect bicycles from the weather while the latter must provide full weather protection. In addition, security is a heightened concern for long-term bicycle parking, while immediate proximity to the destination is somewhat less important.

H. “In-Street Bicycle Parking”: A portion of a vehicle parking lane or other area on a roadway that is set aside for the parking of bicycles.

Chapter [1-3]: BICYCLE PARKING SPACES REQUIRED: Short-Term and Long-Term Bicycle Parking Spaces shall be required for all new development, with the exception of single-family housing, in the amounts identified in the table below.

A. Required Bicycle Parking Spaces:

GENERAL USE CATEGORY	SPECIFIC USE	NUMBER OF MINIMUM SHORT-TERM BICYCLE PARKING SPACES REQUIRED	NUMBER OF MINIMUM LONG-TERM BICYCLE PARKING SPACES REQUIRED
RESIDENTIAL	Multifamily without private garages for each unit	[.05–.1] per bedroom <i>or</i> [1] per [20] units	[.5] per bedroom <i>or</i> [1–4] per [4] units
COMMERCIAL	Office Building	[1] per each [20,000] sq. ft. of floor area	[1–1.5] per [10,000] sq. ft. of floor area
	General Retail	[1] per each [5,000] sq. ft. of floor area.	[1] per [10,000–12,000] sq. ft. of floor area
	Restaurant/Grocery	[1] per each [2,000] sq. ft. of floor area	[1] per [10,000–12,000] sq. ft. of floor area
	Indoor Parking Garage	None	[1] per [20] motor vehicle spaces (min. 6)

	Outdoor Parking Lot	[1] per [20] motor vehicle spaces (min. 6)	None
CIVIC	Non-assembly cultural (library, government buildings)	[1] per each [8,000–10,000] sq. ft. of floor area	[1–1.5] per each [10–20] employees
	Assembly (church, theater, stadiums, parks)	Spaces for [2–5] percent of maximum expected daily attendance	[1–1.5] per each [20] employees
	Schools	[1] per each [20] students of planned capacity	[1] per each [10–20] employees and [1] per each [20] students of planned capacity for grades 6–12
	Colleges and universities	[1] space per each [10] students of planned capacity	[1] per each [10–20] employees and [1] per each [10] students of planned capacity <i>or</i> [1] per each [20,000] sq. ft. of floor area, whichever is greater
INDUSTRIAL	Manufacturing and production, agriculture	Minimum [2] (can be increased at discretion of Planning Director/Zoning Administrator)	[1] per [12,000–15,000] sq. ft. of floor area

- B.** Unless otherwise stated, there shall be a minimum of [2] Short-Term and [2] Long-Term Bicycle Parking Spaces for each specific use category above.
- C.** Where the calculation of total required spaces results in a fractional number, the nearest whole number shall be used. If the fraction is one-half, the number shall be rounded up to the next whole number.
- D.** Up to half of the required Short-Term Bicycle Parking Spaces may be substituted with Long-Term Bicycle Parking Spaces.

- E. If the new building or facility is for a use not listed in the above table, the number of Bicycle Parking Spaces required shall be calculated on the basis of a similar use, as determined by the [Planning Director/Zoning Administrator].

COMMENT: The number of spaces required typically varies by general land use (e.g., residential, commercial, industrial) as well as specific land use (e.g., restaurant, hotel, senior center), with the level of detail usually increasing as the size of the city increases. Cities usually link the number of spaces required to one or more of the following measurements that are already used in their zoning process: residential dwelling unit or number of bedrooms, square footage, building occupancy/number of employees, or automobile parking spaces. This allows for easy incorporation of bicycle parking into the planning process.

Thus, if a city's zoning law uses different measurements than those utilized in this table, the city may want to modify the above table to reflect the measurements used by its specific zoning law – with one caveat. Linking bicycle parking spaces to the number of vehicle parking spaces is not recommended because if vehicle parking requirements decrease over time (because alternative transportation forms are encouraged and become more popular), this would perversely *reduce* the amount of bicycle parking available.

In some cities, the public schools, colleges, and/or universities may operate under a separate jurisdiction in which case the above requirements will not apply. Also some cities may prefer to address bicycle parking requirements for city-owned property by internal regulation.

The recommended number of required spaces in this table is based on the Bicycle Parking Guidelines, 2nd ed., prepared by the Association of Pedestrian and Bicycle Professionals, as well as a review of bicycle parking ordinances adopted in various locales around the country. Where ranges are provided, the higher range is recommended for areas that are more urban or have (or anticipate having) high levels of bicycle use.

Chapter [1-4]: MAJOR REMODELS OR RENOVATIONS:

- A. **Major Remodels or Renovations over [\$1,000,000].** The requirements of this section shall apply to any proposed physical improvement of any existing structure that requires a building permit for which the proposed remodel or renovation has an estimated construction cost (excluding seismic or other structural safety retrofit costs) greater than [\$1,000,000].

- B. Major Remodels or Renovations between [\$250,000 and \$1,000,000].** The requirements of this section shall apply to any proposed physical improvement of any existing structure that requires a building permit for which the proposed remodel or renovation has an estimated construction cost (excluding seismic or other structural safety retrofit costs) greater than [\$250,000] but less than [\$1,000,000], except that the required minimum Bicycle Parking Spaces set forth in the table in [Chapter 1-3 (A)] shall be reduced by 50 percent.

COMMENT: Some cities, like San Francisco and Oakland, Calif., extend bike parking requirements to major remodels or renovations, which can be particularly important if a city or town is already extensively built-out. If inflation is a concern, the municipality may also want to indicate that the dollar amounts will be adjusted based on a particular index, such as a regional building cost index.

Chapter [1-5]: REQUIREMENTS APPLICABLE TO ALL SHORT-TERM AND LONG-TERM BICYCLE PARKING:

- A.** All Bicycle Parking Spaces shall be:

1. Well lit if accessible to the public or bicyclists after dark;
2. Sited to ensure significant visibility by the public or by building users, except in the case of Long-Term Bicycle Parking that is located in secure areas only accessible to employees, staff, or residents;

COMMENT: Good lighting and a general sense that the area is publicly visible (often known as “eyes on the street”) provide a strong deterrent against theft, attacks, and vandalism.

3. Accessible without climbing stairs, going up or down a slope in excess of [12] percent, and via a route on the property that is designed to minimize conflicts with motor vehicles and pedestrians.

- B.** All In-Street Bicycle Parking and Bicycle Parking Spaces located in a parking facility shall be:

1. Clearly marked; and

2. Separated from motor vehicles by some form of physical barrier (such as bollards, concrete or rubber curbing or pads, reflective wands, a wall, or a combination thereof) designed to adequately protect the safety of bicyclists and bicycles.
- C. All Bike Racks shall be located at least [36] inches in all directions from any obstruction, including but not limited to other Bike Racks, walls, doors, posts, columns, or exterior or interior landscaping.

COMMENT: The 36 inch clearance requirement allows for easy access for bikes with all kinds of handlebars and panniers and is best practice.

- D. Unless clearly visible from the main entrance, a sign indicating the location of all Bicycle Parking Spaces shall be prominently displayed near the main entrance to the building or facility, and additional signs shall be provided as necessary to ensure easy wayfinding. A “Bicycle Parking” sign shall also be displayed on or adjacent to any indoor room or area designated for bicycle parking.

Chapter [1-6]: ADDITIONAL REQUIREMENTS APPLICABLE TO SHORT-TERM BICYCLE PARKING ONLY: All Short-Term Bicycle Parking Spaces shall contain Bike Racks and shall meet the following requirements, in addition to the requirements in Chapter [1-3] above:

A. Location:

1. Short-Term Bicycle Parking must be located either (a) within [50] feet of the main public entrance of the building or facility or (b) no farther than the nearest motor vehicle parking space to the main public entrance (excluding disabled parking), whichever is closer. If the development contains multiple buildings or facilities, the required Short-Term Bicycle Parking shall be distributed so as to maximize convenience and use.

COMMENT: Convenience is the most important factor for bicyclists after security. Fifty feet is generally considered the maximum distance cyclists are willing to lock their bikes up to a rack before looking for another object to lock to. Many municipalities, including Fort Worth, Palo Alto, and Emeryville, require that the farthest bicycle parking rack be no farther away from an entrance than the nearest vehicle parking space.

2. Short-Term Bicycle Parking Spaces may be located either (a) on-site or (b) in the public right-of-way (e.g., sidewalk or In-Street Bicycle Parking), provided that an encroachment permit is obtained for the installation and the installation meets all other requirements of the law. If Bike Racks are located on public sidewalks, they must provide at least [6] feet of pedestrian clearance and be at least [2] feet from the curb.

COMMENT: Sufficient clearance requirements are necessary to ensure that bicyclists can easily access and lock their bikes while avoiding interference with pedestrians. Six feet for pedestrian clearance is best practice, and is particularly important in areas with many pedestrians; an acceptable alternative is four feet.

In-street bicycle parking (in place of one or more vehicle parking spaces) can be an attractive option in dense commercial areas where demand for bicycle parking is high and there are limited off-street options or sidewalk clearance. In-street bicycle parking provides commercial districts with roughly eight parking spaces to each vehicle space and clearly advertises that it is a bike-friendly area.

- B. Bike Rack Requirements:** Bike Racks used for Short-Term Bicycle Parking must be securely attached to concrete footings, and made to withstand severe weather and permanent exposure to the elements.

COMMENT: Bike racks bolted to asphalt, dirt, or grass can become dislodged with time or intentionally dislodged, and do not provide secure parking. Where bike racks are used for in-street bicycle parking, and the street is asphalt, they can be securely installed using the steel railing method. Bike racks made with powder-coated metal or stainless steel can withstand severe weather and permanent exposure to the elements.

While more expensive up front, high-quality racks require less maintenance, last longer, and look better. Also, even a good-quality bike rack costs a fraction of a vehicle parking space. The cost to purchase and install a bike rack or bike locker (for two bikes, a bike rack generally costs \$150–\$300 and a bike locker generally costs \$1,000–\$4,000) is generally far lower than the cost of a vehicle parking space (\$2,200 per space in a surface lot to \$12,500 per space in a garage), particularly considering that 8–12 bicycle parking spaces can typically fit in one vehicle parking space.

Chapter [1-7]: ADDITIONAL REQUIREMENTS APPLICABLE TO LONG-TERM BICYCLE PARKING ONLY:

Long-Term Bicycle Parking shall be provided in either (1) Bike Lockers or (2) indoor rooms or indoor areas specifically designated for bicycle parking (including designated areas of an indoor parking facility), and shall satisfy the following requirements, in addition to those set forth in Chapter [1-3] above:

- A. Location:** Long-Term Bike Parking shall be located no more than [300–500] feet from the main public entrance.

COMMENT: Required distances vary considerably. Smaller cities, like Boulder, may use 300 feet; larger cities may allow a greater distance, like 500 feet (Oakland) or 750 feet (Portland). Some large cities allow this requirement to be expanded to 1,000 feet, upon a showing that a proposed or existing bike station or similar high-capacity bicycle parking facility is located within 1,000 feet (around three or four blocks).

- B. Requirements for Indoor Long-Term Bicycle Parking:** Long-Term Bike Parking located in indoor rooms or indoor designated areas shall contain Bike Racks or a comparable device, and shall be designed to maximize visibility of all portions of the room or designated area from the entrance.

Chapter [1-8]: MOTOR VEHICLE PARKING SPACE CREDITS:

- A.** For every [6] Bicycle Parking Spaces provided, the number of required off-street motor vehicle parking spaces (excluding handicapped parking spaces) on a site may be reduced by [1] space.

COMMENT: This type of “parking exchange formula” is very popular with developers, allowing them to reduce the number of vehicle parking spaces (which are more costly than bike parking spaces) when they provide bicycle parking spaces. Such a provision is an effective incentive for both increasing bicycle parking and reducing the amount of land devoted to off-street vehicle parking. If a community is concerned about maintaining a certain minimum number of vehicle parking spaces, a provision can be added that caps the available credit, e.g., “The total number of required off-street vehicle parking spaces shall not be reduced by more than [10] percent pursuant to this credit.”

- B.** To encourage installation of showers and clothing lockers, an off-street motor vehicle parking credit of [1] space will be provided for nonresidential uses for the first shower installed, with additional off-street motor vehicle parking credits available at a rate of [1] space per shower per [25] required Bicycle Parking Spaces. This credit shall be in addition to the bicycle parking credits provided for in subsection (A) of [Chapter 1-8].

COMMENT: Destination amenities (such as showers and clothing lockers) in commercial or industrial buildings are designed to encourage more people to commute to work by bicycle (and commute longer distances by bicycle). Particularly where climates can be warm or humid, the ability to shower can help make commuting by bicycle (or by walking) a more feasible alternative to driving. Like bike parking generally,

these provisions can be viewed as a “win-win” situation. Developers can promote these facilities as a benefit for tenants, businesses can promote employee health and fitness, and employees receive improved options for bicycling to work. Such showers often benefit nonbicycling employees as well, such as those who run during lunch or who spend long hours at the office.

A few large-size cities require such facilities in very large commercial developments, either with or without a vehicle parking credit. If a mandatory requirement is desired, the following provision can be substituted: “Nonresidential uses shall provide [2] showers per gender, along with [4] clothing lockers per shower, for buildings that are [150,000] square feet or more. [One] additional shower per gender shall be provided for each additional [150,000] square feet. An off-street vehicle parking credit of [1] space per shower will be provided, up to [1] shower per [25] required Bicycle Parking Spaces. This credit shall be in addition to the other bicycle parking credits provided for in subsection [7(a)].”

It is also worth noting that in areas that contain existing fitness clubs, employers can also be encouraged to subsidize memberships for all employees in a nearby gym that already has showers. This additional option, or alternative to on-site showers, not only provides showers for bicycle commuters but benefits all employees, as well as the employer, since healthier employees tend to have higher productivity. Such programs can be linked to employee commuter programs, physical activity promotions, or other similar local initiatives.

Chapter [1-9]: EXISTING BICYCLE PARKING AFFECTED BY CONSTRUCTION:

In the event that the [NAME OF MUNICIPALITY] has authorized a permit holder to remove existing bicycle parking in the public way due to construction of a new development, remodel, or renovation, the permit holder shall replace such bicycle parking no later than the date of completion of the construction. If bicycle parking is likely to be removed for more than [120] days, it shall, to the extent possible, be temporarily re-sited, in coordination with [the municipality], to a location as close to the original site as practicable, pending completion of the construction. At least [7] days prior to removal of such bicycle parking, a weather-proof notice shall be posted conspicuously on or in the immediate vicinity of the bicycle parking, specifying the date of removal. In the event that any bicycles remain parked on the date of the removal, such bicycles shall be stored for a reasonable period, not less than [45] days, and a conspicuous, weather-proof notice shall be placed as close as practical to the site of the removed bicycle parking containing information as to how a removed bicycle can be retrieved.

COMMENT: This provision is designed to ameliorate the reduction of bicycle parking that occurs when existing bicycle parking is eliminated as an unavoidable byproduct of the construction process. Providing advance notice and a way to retrieve bicycles also addresses the problem, which some cities have experienced, in which bicycles are confiscated or destroyed without notice or recourse when existing bicycle parking is removed.

Chapter [1-10] (optional) MODIFICATION OF REQUIREMENTS: In the event that satisfying all of the requirements of this Ordinance would be infeasible due to the unique nature of the site, or cause an unintended consequence that undermines the purpose of this Ordinance, a property owner (or designee) may submit a written request to the [Planning Director/Zoning Administrator/other City Administrator or designee] for a modification of the requirements of this Ordinance. The request shall state the specific reason(s) for the request, provide supporting documentation, and propose an alternative action that will allow the purposes of this Ordinance to be fulfilled as much as possible.

SECTION 2: THAT [TITLE AND/OR CHAPTER OF CODE] IS AMENDED BY [AMENDING/ENACTING] A NEW CHAPTER [2] THEREOF, “BICYCLE PARKING REQUIREMENTS FOR PARKING FACILITIES” TO READ AS FOLLOWS:

Chapter [2-1]: PURPOSE: The purpose of this [Title/Chapter] is to provide sufficient safe and convenient bicycle parking in parking facilities so as to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, pollution, and wear and tear on roads, and fosters healthy physical activity.

COMMENT: Since vehicle parking lots and garages are already in the business of providing parking, it is relatively easy for these uses to include bicycle parking, and thus significantly expand bicycle parking options in locations already identified as desirable destinations. This section is designed to apply to existing parking facilities licensed by the municipality, as well as new parking facilities, once they become established and are licensed. Note that the bicycle parking requirements for new parking facilities (see [Section 1, Chapter 3]), are consistent with the requirements of this Section.

Chapter [2-2]: DEFINITIONS: The definitions set forth in [Section 1, Chapter 1-2 of this Ordinance (*insert final code sections*)] shall apply to this Section [Section 2], unless the context clearly requires otherwise.

Chapter [2-3]: LICENSING CONDITIONS: As a condition of the issuance or renewal of a license required by [the City/Village/Township] for a parking facility, parking facilities shall provide [1] Bicycle Parking Space per each [20] vehicle parking spaces provided, with a minimum of [6]. Where the calculation of total required spaces results in a fractional number, the nearest whole number shall be used. If the fraction is one-half, the number shall be rounded up to the next whole number.

COMMENT: Cleveland requires bicycle parking in all licensed parking lots and garages at a rate of 1 per 20 vehicle spaces. San Francisco has a similar provision, but reduces the ratio to 1 per 40 vehicle spaces for garages that provide over 500 spaces. If desired, the ordinance can impose a cap on the maximum number of bicycle parking spaces that can be required (San Francisco has a cap of 50; Cleveland has a cap of 24).

Chapter [2-4]: LOCATION: All Bicycle Parking Spaces shall be located in an area, preferably on the ground floor, that can be conveniently and safely accessed, is not isolated, and maximizes visibility by parking facility patrons and attendants. If the licensed parking facility has multiple entrances, the required Bicycle Parking Spaces may be spread out among the multiple entrances. Bicycle Parking Spaces shall be accessible without climbing stairs or going up or down a slope in excess of [12] percent.

Chapter [2-5]: BIKE RACKS: Bike Racks shall be provided in a sufficient number to accommodate the number of Bicycle Parking Spaces required in [Chapter 2-3] above, and shall be well lit if accessible to the public or bicyclists after dark or if in an interior or darkened location. All Bike Racks shall also provide a clearance of at least [36] inches in all directions from any obstruction (including but not limited to other bike racks, walls, doors, posts, columns, or landscaping), and shall be separated from vehicles by some form of physical barrier (such as bollards, concrete or rubber curbing or pads, reflective wands, a wall, or a combination thereof) designed to adequately protect the safety of bicyclists and bicycles. All Bike Racks located outdoors shall also be securely attached to concrete footings and made to withstand severe weather and permanent exposure to the elements.

Chapter [2-6]: SIGNAGE: Parking facilities that are required to install Bicycle Parking Spaces by this section shall provide prominent signs in or near the entrance that advertise the availability of bicycle parking, and the location, if it is not visible from the entrance.

Chapter [2-7]: CONTRACTUAL LIMITS ON LIABILITY: This section shall not interfere with the rights of a parking facility to enter into agreements with facility users or take other lawful measures to limit the parking facility's liability to bicycle users with respect to bicycle parking in the parking facility, provided that such agreements or measures are otherwise in accordance with the requirements of this Ordinance and the law.

SECTION 3: THAT [TITLE AND/OR CHAPTER OF CODE] IS AMENDED BY [AMENDING/ENACTING] A NEW CHAPTER [3] THEREOF, “BICYCLE PARKING REQUIREMENTS FOR SPECIAL EVENTS INVOLVING STREET CLOSURES” TO READ AS FOLLOWS:

Chapter [3-1]: PURPOSE: The purpose of this [Title/Chapter] is to provide sufficient safe and convenient bicycle parking at special events involving street closures so as to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, pollution, and wear and tear on roads, and fosters healthy physical activity.

COMMENT: Monitored bicycle parking at large civic and sporting events has become increasingly popular around the country as event organizers and local governments see the many benefits: (1) it encourages attendees to leave their cars at home and arrive by bicycle, which is a healthy, nonpolluting form of transport; (2) it can increase the number of attendees by encouraging residents who might not otherwise attend at all because of concerns regarding traffic congestion, car parking hassles, or lack of safe, secure bicycle parking; and (3) it helps reduce traffic congestion caused by the street closures and the increased number of people attracted to the area.

Chapter [3-2]: CONDITIONS ON STREET CLOSURE PERMITS: As a condition of a permit for the temporary closure of a street for an event in which the daily number of participants is projected to be [1,000] or more, monitored bicycle parking shall be provided by the event sponsor (or a designee) for at least [1] percent of expected daily participants beginning [½ hour] before and ending [½ hour] after the time of the event each day of the event.

Chapter [3-3]: REQUIREMENTS FOR MONITORED PARKING: Monitored bicycle parking requires the presence, at all times, of one or more attendants, as needed, to receive bicycles, dispense claim checks, return bicycles, and provide security for all bicycles.

Chapter [3-4]: LOCATION: All monitored bicycle parking shall be located within [500] feet of at least one regular entrance or access point to the event.

COMMENT: Possible locations for monitored parking would include school yards, in-street vehicle parking spaces, garages, or designated sections of closed streets. Generally, 10 bicycles will fit in one vehicle parking space.

Chapter [3-5]: PUBLICITY AND SIGNAGE: All publicity, including signs, for the event shall state the availability of monitored bicycle parking, its location, and its cost. All event maps shall include the location of monitored bicycle parking. If monitored bicycle parking is

not within eyeshot of each entrance, signs shall be provided to ensure easy way finding.

Chapter [3-6]: INSURANCE COVERAGE AND FEES: The event sponsor or designee must provide insurance coverage for the monitored bicycle parking in case of damaged or stolen bicycles, and may charge a small fee to cover the cost of providing the monitored parking.

COMMENT: The San Francisco Bicycle Coalition reports that it has never had a bicycle lost or stolen in the 10 years it has provided monitored bicycling at local events. Nonetheless, an insurance requirement is recommended.

COMMENT: The cities of San Francisco and Alameda, Calif., both implement their monitored bicycle parking requirement for large events involving street closures through their temporary street closure and event permit application and review process.

SECTION 4: THAT [TITLE AND/OR CHAPTER OF CODE] IS AMENDED BY [AMENDING/ENACTING] A NEW CHAPTER [4] THEREOF, “REMOVAL OF ABANDONED BICYCLES” TO READ AS FOLLOWS:

Chapter [4-1]: PURPOSE: The purpose of this [Title/Chapter] is to ensure the reasonably prompt removal of bicycles abandoned in Bicycle Parking Spaces so as to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, pollution, and wear and tear on roads, and fosters healthy physical activity.

Chapter [4-2]: DEFINITIONS: The definitions set forth in [Section 1, Chapter 1-2] of this Ordinance (*insert final code sections*) shall apply to this Section [Section 4], unless the context clearly requires otherwise.

Chapter [4-3]: REMOVAL REQUIREMENTS: On [a quarterly basis], owners of property subject to Sections 1 or 2 of this Ordinance (or a designee) shall remove, from all Bicycle Parking Spaces associated with their property, including those located on the public right-of-way, bicycles that show clear signs of being abandoned. A bicycle shall be deemed to be abandoned if it has not been removed after a notice of removal has been posted on it or in its immediate vicinity for [2] weeks for Short-Term Bicycle Parking Spaces or [4] weeks for Long-Term Parking Spaces. Additional signs of an abandoned bicycle include rusted chains, flat tires, or missing major parts. However, a bicycle shall not be deemed to be abandoned if the bicyclist and owner have a written agreement regarding provision of seasonal storage

covering the time period in question. Abandoned bicycles may be donated to nonprofits that reuse bicycles or disposed of in any lawful manner.

COMMENT: Removal of abandoned bicycles is critical. Not only do they effectively eliminate bicycle parking spaces, but they are also an eyesore, deter bicycle users, and turn others against bicycle parking. Some cities, like Emeryville, Calif., require property owners to remove abandoned bicycles from short-term spaces on a monthly basis.

Since state law governs abandoned personal property, the law in this area can vary by state. Typically, however, state law provides that personal property is abandoned when it is thrown away, or its possession is intentionally forsaken by the owner. Whether the possession is intentionally forsaken generally turns on the original owner's acts and conduct and the specific circumstances. Evidence that a bicycle had been neglected for an extended period in a public bicycle parking area, particularly after an abandonment notice, would provide evidence of abandonment. The first person who finds and takes possession of abandoned property acquires all right, title, and interest in the property, and thus may dispose of it in any lawful manner. Given variations in state law, however, municipalities should consult their individual state's law on abandonment of personal property to ensure their ordinance is consistent.

SECTION 5: IMPLEMENTATION OF ORDINANCE:

- A. Regulations:** The [Planning Director/Zoning Administrator and/or other relevant city administrator(s)] [is/are] authorized to promulgate new and amend existing rules, regulations, procedures, or forms as necessary or appropriate to implement the provisions of this Ordinance.
- B. Training:** [The City/Village/Township] shall periodically make training and/or training materials available to planners and other city employees involved in the implementation and enforcement of this Ordinance.

COMMENT: City planners or staff may not be familiar with the multitude of different bike parking design and site layout issues that arise in the context of bicycle parking. Providing training or training materials can be crucial to the effective implementation of a bicycle parking ordinance. Resources that could be used to develop training materials are available from some bicycling organizations such as the Association of Pedestrian and Bicycle Professionals (www.apbp.org) and the Bicycle Transportation Alliance (www.bta4bikes.org/resources/bikeparking.php). Also, some bicycle parking ordinances, such as Portland's, include helpful diagrams of possible bike parking site layouts. (Portland's ordinance is available at www.portlandonline.com/bps/index.cfm?a=53320 [see pages 25–27].)

- C. Reporting:** The [Planning Director/Zoning Administrator] shall provide an annual report to the [Adopting Body, e.g., City Council/Board of Supervisors] regarding the implementation of this Ordinance which shall, at a minimum, include the following information relevant to the preceding year: (1) the number of Short-Term and Long-Term Bicycle Parking Spaces created pursuant to this Ordinance under Sections [1] and [2], and the number of events for which special event bicycle parking was provided under Section [3]; (2) (*if applicable*) a brief summary of each request for modification received and action taken in response thereto; and (3) any other information learned that would improve future implementation of this Ordinance.

COMMENT: This crucial accountability provision enables local lawmakers and the public to assess the effectiveness of the ordinance. If desired, municipalities can include additional reporting requirements, designed to assist with future bicycle programs or plans. Such requirements could include reporting on actual use of bicycle parking spaces or changes in bicycling rates.

SECTION 6: STATUTORY CONSTRUCTION:

- A.** All ordinances or parts thereof that conflict or are inconsistent herewith are repealed to the extent necessary to give this Ordinance full force and effect.
- B.** If any section or portion of this Ordinance is judicially invalidated for any reason, that portion shall be deemed a separate and independent provision, and such ruling shall not affect the validity of the remaining portions of this Ordinance.

COMMENT: These standard provisions ensure there is no conflict with any other existing laws and that any partial invalidation does not affect the remainder of the ordinance.

SECTION 7: EFFECTIVE DATE: This Ordinance shall be in full force and effect after passage, approval, and publication in the manner provided by law, *except that*:

- A.** Section [1] [Bicycle Parking Requirements for New Development and Major Renovations] shall only apply to developments and renovations for which a building permit is issued on or after [120] days from the date that this Ordinance is in full force and effect.

COMMENT: The 120 days provides a buffer period to ensure that all developers and city planners have sufficient notice of, and time to prepare for, full implementation of the ordinance.

B. Section [2] [Bicycle Parking Requirements for Parking Facilities] shall apply to parking facilities that were originally licensed prior to the effective date of this law as follows: [½] of the required number of Bicycle Parking Spaces shall be provided no later than [6] months after the effective date of this Ordinance, with full implementation required no later than [18] months after the date that this Ordinance is in full force and effect.

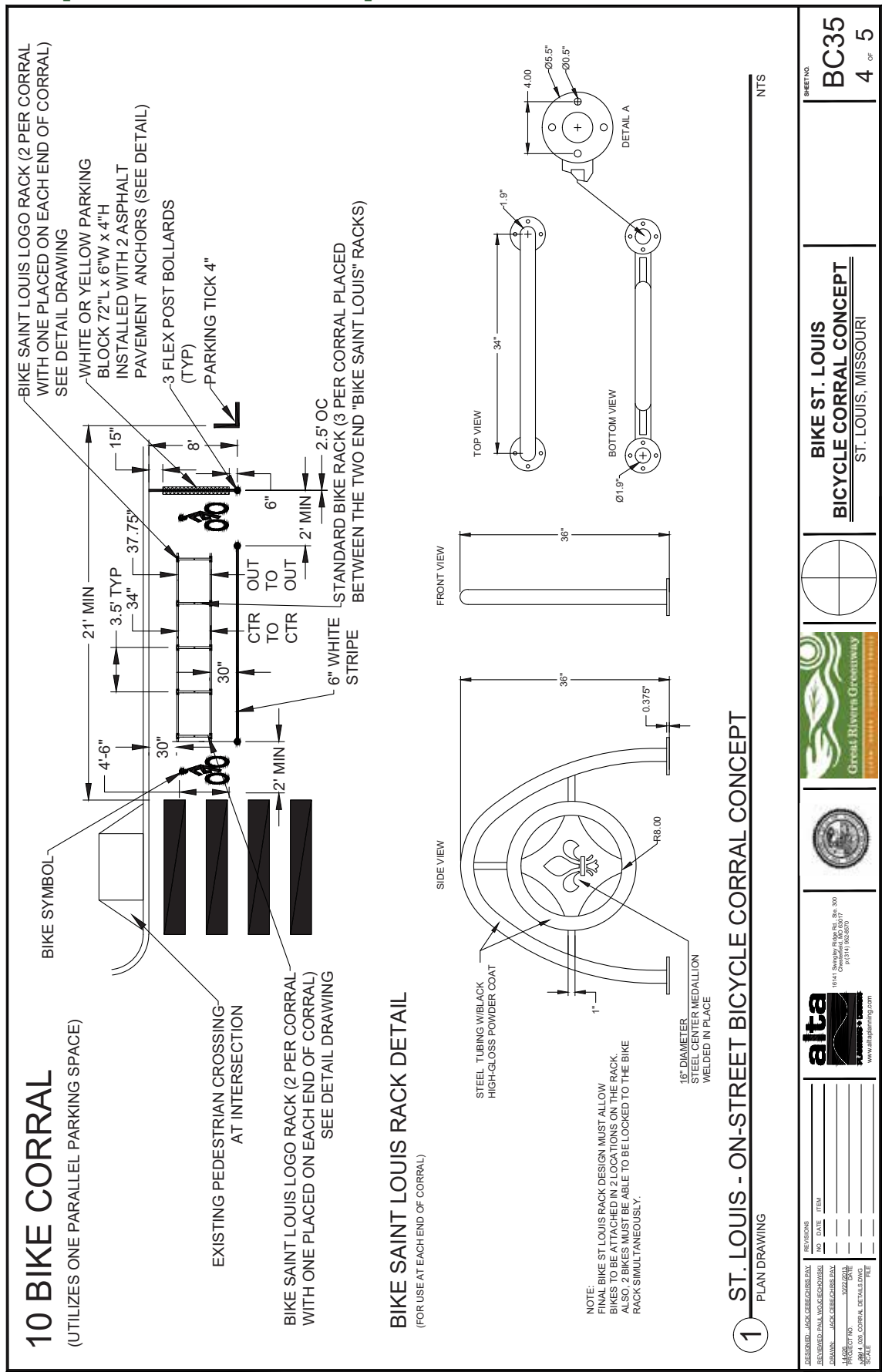
COMMENT: San Francisco follows this phased-in process; Cleveland simply provides a two-year window to come into full compliance.

C. Section [3] [Bicycle Parking Requirements for Special Events Involving Street Closures] shall not apply to events for which the temporary street closure was authorized pursuant to an application submitted prior to the date that this Ordinance is in full force and effect.

- 1 Centers for Disease Control and Prevention. "Overweight and Obesity: Health Consequences." Available at: www.cdc.gov/obesity/causes/health.html.
- 2 Centers for Disease Control and Prevention. "Overweight and Obesity: Causes and Consequences." Available at: www.cdc.gov/obesity/causes/index.html.
- 3 See Active Living Research. *Active Transportation: Making the Link from Transportation to Physical Activity and Obesity*, Research Brief. 2009. Available at: www.activelivingresearch.org/files/ALR_Brief_ActiveTransportation.pdf.
- 4 U.S. Department of Transportation, Federal Highway Administration. *2009 Household Travel Survey*. 2011. Available at: <http://nhts.ornl.gov/2009/pub/stt.pdf>. For relevant excerpts, see America Bikes, League of American Bicyclists. "Factsheet: National Household Travel Survey." Available at: www.bikeleague.org/resources/reports/pdfs/nhts09.pdf.
- 5 U.S. Department of Transportation, Federal Highway Administration. *2009 Household Travel Survey*. 2011. Available at: <http://nhts.ornl.gov/2009/pub/stt.pdf>. For relevant excerpts, see America Bikes, League of American Bicyclists. "Factsheet: National Household Travel Survey." Available at: www.bikeleague.org/resources/reports/pdfs/nhts09.pdf; see also Rails-to-Trails Conservancy. *Turning Potential into Practice: Walking and Biking as Mainstream Transportation Choices*. 2007. Available at: www.railstotrails.org/resources/documents/whatwedo/TrailLink%2007%20Program_Mobility.pdf (citing FHWA 2006).
- 6 Research and Innovative Technology Administration, Bureau of Transportation Statistics. "Figure 2 On a typical day, how many miles one-way do you travel from home to work?" *Omnistats*, 3(4): 2003. Available at: www.bts.gov/publications/omnistats/volume_03_issue_04/html/figure_02.html.
- 7 U.S. Department of Transportation, Federal Highway Administration. "The 'Carbon Footprint' of Daily Travel: NHTS Brief." 2009. Available at: <http://nhts.ornl.gov/briefs/Carbon%20Footprint%20of%20Travel.pdf>.
- 8 See, e.g., Vanderbilt T. "What Would Get Americans Biking to Work? Decent parking." *Slate*, Aug. 17, 2009, www.slate.com/id/2225511/; see also, e.g., City of New York Department of City Planning, Transportation Division. *The New York City Bicycle Survey: A Report Based on the Online Public Opinion Questionnaire Conducted for Bike Month 2006*. 2007. Available at: www.nyc.gov/html/dcp/pdf/transportation/bike_survey.pdf at p. 15 (NYC commuters report a lack of safe storage for bicycles as a leading reason for not commuting by bike).
- 9 See, e.g., Marin County Bicycle Coalition. *Economic Benefits of Bicycling in Urban Environments*. Available at: <http://www.marinbike.org/Resources/EconomicBenefitsOfBicycling.pdf> (citing a 118%-125% increase in bicycle use in Marin County over the last 10 years due to improvements in infrastructure, including pathways, shared use lanes, intersection improvements, and bicycle parking; and pointing to increased revenue due to retail purchases by bicyclists with adequate access to infrastructure and parking). See also Dill J and Carr T. "If You Build Them, Commuters Will Use Them — Another Look." *Portland State University*, Portland, OR: 2003 (finding "higher levels of bicycle infrastructure . . . positively and significantly correlated with higher rates of bicycle commuting").



Sample Bike Corral Concept



Sample Images of Covered Bike Parking





