RULES AND REGULATIONS ESTABLISHING THE DIMENSIONAL AND EQUIPMENT STANDARDS FOR BICYCLE PARKING AREAS

I. Objectives for Bicycle Parking Areas

1. To encourage the use of bicycles for personal transportation as an alternative to motor vehicles.
2. To provide for bicycle access to employment, commercial, residential and other transportation and travel destinations.

II. Bicycle Parking Standards

Per the 1998 Alexandria Bicycle Transportation and Multi-use Trail Master Plan, the "Inverted U" type bicycle rack is the required bicycle parking rack. Any other type proposed rack would be subject to approval by the Director of the Department of Transportation & Environmental Services (T&ES).

Series of Inverted U Type Bicycle Racks
(photo courtesy James Mackay, City of Denver, CO)

III. Required Provision of Bicycle Parking

The developer agrees to provide, at no charge to the user, secure bicycle storage facilities. These facilities should be highly visible to the intended users and protected from rain from within a structure shown on the site plan. One inverted U bicycle rack can hold up to two bicycles.

The following minimum standards should be met for office, retail and residential developments:

Office Bicycle Storage Facilities:
The office requirement for bicycle parking is one (1) employee space for every 7,500 square feet, or portion thereof, of office floor area and one (1) visitor space for every 20,000 square feet, or portion thereof, of office floor area to the satisfaction of the Director of T&ES.

The facilities for office users must meet the acceptable standards for Class I storage space and be highly visible by a parking attendant booth or a visitor/customer entrance. Class I storage space should be a locked room or cage or fully enclosed locker. Drawings showing that these requirements have been met shall be approved by the Director of T&ES before the issuance of the Construction Permit.

Retail Bicycle Facilities:
The retail requirement is two (2) spaces for every 10,000 square feet, or portion thereof, of the first 50,000 square feet of retail floor area; one (1) space for every 12,500 square feet, or portion thereof, of additional retail floor area and one (1) employee space for every 25,000 square feet, or portion thereof, of retail floor area. These bicycle parking spaces shall be installed at exterior locations that are convenient to the retail customers and employees, and such locations shall be reviewed by T&ES.

Residential Bicycle Facilities:
The residential requirement is one (1) space for every 10 residential units, or portion thereof, and one (1) visitor space for every 50 residential units, or portion thereof to the satisfaction of the Director of T&ES.

IV. Description - The “Inverted U” Type Bicycle Rack

The Inverted U’s shall be fabricated from 1.5" inner diameter (I.D.) (1.9" outer diameter (O.D.)) to - 2.0" I.D. (2.375" O.D.) Schedule 40 Steel Pipe. The inverted U’s shall measure 36" high x 18" wide once installed. The bicycle racks shall not be welded in sections. Only the baseplate shall be welded to the steel pipe with two (2) 1/8" vent holes - one on the inside of each upright where the pipe is welded to the baseplate. After fabrication, the rack shall be coated with a Thermoplastic (polyethylene copolymer based) powder coating (polyarmor) to a thickness 200-250 micrometers (8 - 12 mils).

Racks shall be flange mounted on concrete or set in concrete, depending on conditions. Where mounted on concrete, a minimum of 6" diameter baseplates with 3/8" thick steel in accordance with ASTM A36 will be used, with at least three 7/16" diameter mounting holes on each base plate.

Example of baseplate - note the vandal resistant fasteners used to anchor the rack.
(photo courtesy James Mackay, City of Denver, CO)

The expansion anchor is to be a carbon steel mushroom head, 3/8" x 3" “spike” #5550 as manufactured by Rawl or an approved equal, manufactured from grade 8.2 materials exhibiting equivalent theft-proof performance. Racks shall be set firm and aligned with a tolerance of plus or minus ¼” from plumb. Where required, steel tapered shims shall be installed prior to anchoring in place. Any departure of baseplate from grade by more than 3/8" shall require the separation to be filled with high-strength epoxy non-shrinking grout and made level.

Detail of the vandal resistant fastener - Rawlplug #5550
(photo courtesy James Mackay, City of Denver, CO)

V. Description - “Inverted U” Baserail Array Alternate

Inverted U baserail arrays can be used instead of individual inverted U’s in some cases. The inverted U’s should be mounted 30" on-center via baseplate rails. Racks shall be mounted to concrete via baseplate rails ½” x 3” steel in accordance with ASTM A36 to create a free-standing array.

Only the baserails shall be welded to the steel pipe. The baserails shall have 7/16" diameter mounting holes located on the bicycle rack details (mounted via the same expansion anchors as described above).

VI. Location of Bicycle Parking Racks

Racks should either be installed in the public right-of-way, or on private sites in conformance with front setback requirements. Whenever possible, the racks should be placed within 50' of building entrances where bicyclists would naturally transition to pedestrian mode.

The rack placement would ideally allow for visual monitoring by people within the building and/or people entering the building. The placement of the racks should minimize conflicts with both pedestrians and motorized traffic. All bicycle parking provided should be on concrete, and located a minimum of 24" from a parallel wall, and 30" from a perpendicular wall (as measured to the closest inverted U). An inverted U rack with two parked bicycles will require roughly 7' in length and 3' in width.

VII. Use of Alternative (Non-Inverted U) Bicycle Parking Racks

As stated above, the inverted U is the required rack for all applications, however other bicycle security devices may be approved for use as long as they provide for:

1. Supporting the bicycle frame at two locations (not just a wheel);
2. Allowing both the frame and at least one wheel to be locked to the rack (without requiring that the lock be placed near the bicycle chain);
3. Allowing the use of either a cable or “U-type” lock;
4. Bicycles which are equipped with water bottle cages;
5. Bicycles which are not equipped with kickstands; and
6. All types and sizes of bicycles, including various types and sizes of frames, wheel sizes, and tire widths.

Artistic bicycle rack at St. Elmo's Coffee Pub in Del Ray

Wave-type racks may not be installed as they are commonly used "broadside," which decreases the availability of bicycle parking spaces.

Bicycles parked "broadside" at wave-type racks
(photo courtesy James Mackay, City of Denver, CO)

VIII. Availability of Bicycle Parking Racks

Vendors of inverted U racks can be found in the yellow pages under "Bicycle Racks and Security Systems" and through an Internet search. The City does not recommend any particular vendor, however, vendors that sell this type of bicycle rack include Creative Pipe (www.CreativePipe.com), Dero (www.Dero.com) and Graber (www.GraberProducts.com).

IX. Office Bicycle Parking Lockers and Shower Facilities

The developer agrees that for every 50,000 square feet or fraction thereof of office gross floor area, one (1) shower per gender shall be installed, up to a maximum of three (3) showers per gender. Also, a minimum of one (1) clothes storage locker per gender shall be installed for every required employee bicycle parking space. The lockers shall be installed adjacent to the showers in a safe and secured area and both showers and lockers shall be accessible to all tenants of the building. The location, layout and security of the showers and lockers shall be reviewed by T&ES before issuance of the Construction Permit. The showers and lockers shall be open during normal working hours. There are no locker or shower facility requirements for retail or residential developments.

X. Additional Bicycle Parking Information

For additional information on any bicycle parking topics, visit www.alexride.org or contact Yon Lambert, Pedestrian and Bicycle Program Coordinator at 703-838-4966 x. 183 or via e-mail at yon.lambert@alexandriava.gov.