


# Dalhousie University Active Transport Guidelines and Standards

Rev.5 March 2017

*Providing Excellence in facilities Management*

**N.B.:** Changes or additions to this update of the Alternative Transport Guidelines are indicated with a “  ”

## **Guiding Principles**

The goals of Dalhousie University’s Active Transport design guidelines are to:

- Ensure that active transportation infrastructure is incorporated into new and existing development.
- Help provide a well-defined and comfortable environment for users.
- Promote sustainability, local procurement, lifecycle awareness, and conservation of energy and water resources in the design process.

## **Guiding Documents**

Dalhousie University Active Transportation Guidelines adhere to;

- the Halifax Regional Municipality’s (HRM) Land Use By-law (Edition 212);  
[https://www.halifax.ca/planning/documents/HalifaxPeninsula\\_LUB.pdf](https://www.halifax.ca/planning/documents/HalifaxPeninsula_LUB.pdf)
- The HRM Active Transportation Plan;  
<https://www.halifax.ca/TDM/activetransportation/Documents/ActiveTransportationFunctionalPlan.pdf>
- The HRM Active Transportation Technical Appendix - Facility Planning and Design Guidelines Chapter 5.0 – Bicycle Parking;  
<http://www.halifax.ca/tdm/activetransportation/Documents/FacilityPlanningandDesignGuidelinesFinal.pdf>
- Leadership in Energy and Environmental Design (LEED )v4, Section LT, P99-101.

## **Municipal Active Transportation Requirements**

Dalhousie University adheres to the Halifax Regional Municipality’s Land Use by-laws for new construction in the following two instances:

- Bicycle Parking Requirements for ‘Universities’ (excluding Residences) Section 6A,
- Bicycle Parking Requirements for ‘Multiple Unit Dwelling’ (Residences)Section 6A.

Please refer to Appendix A.

Dalhousie follows HRM’s land use by-law classification of “Class A”, “Class B”, and “Enhanced” bicycle parking.

- Class A parking is a facility which secures the entire bicycle in a protected environment, such as a bicycle room, locker, or cage. Class A parking should have a minimum door opening of 0.6m, and no less than 1.8m long, 1.2m high, with an isle of 1.5m.

- Class B parking refers to bicycle racks, including wall mounted varieties. They must be a minimum of 0.6m wide, 1.8m long, have a minimum overhead clearance of 2.0m, and be located a minimum of 0.6m from any wall or other obstruction.
- Enhanced Parking describes parking spaces which provide facilities in excess of the other classifications in terms of quantity or class, including showers and clothes lockers.

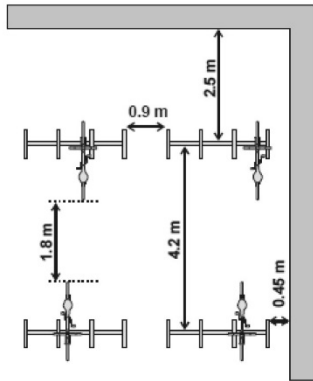
### **Cycle Parking Siting and Performance Requirements**

- Dalhousie University adheres to the HRM's Land Use By-law for the location, illumination, and visibility of bicycle parking spaces, as found in Section 6AB. Additionally, Dalhousie is working towards the maximum 10% reduction of surface parking allowed under Section 6AC. This applies on a case by case basis – please contact the FM Planning department for further clarification.

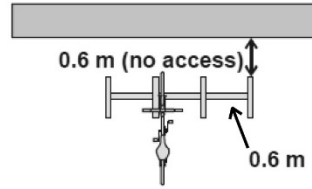
Please refer to Appendix B.

- Both indoor and outdoor bicycling parking is recommended for new buildings and preferable for existing buildings to accommodate long and short-term bicycle parking. Covered bicycling parking is preferred.
- Bicycle rooms (indoor parking) should be accessibly located, preferably at-grade when garage ramp access is not available, so as not to inconvenience a rider with stairs and/or elevators. Ideally, Class A parking will be in a monitored-area and/or a limited access room.
- New rack locations should not create a tripping hazard for visually impaired individuals. This can be achieved by the use of varying surface textures if needed.
- New bicycling parking should be seen as an opportunity for creative design, including the use of public art.
- The installation of bike parking outdoors should consider impacts on tree roots. Please consult the Landscape Design Guidelines on details for tree protection.
- Provide bicycle racks that allow for thermal movements resulting from the change (range) in ambient and surface temperatures by preventing buckling, opening of joints, over-stressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

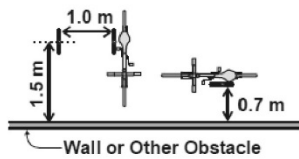
## Recommended Siting for New Cycle Parking



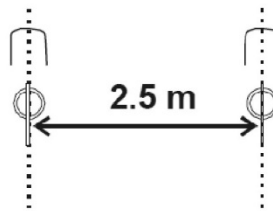
Parking requiring an isle



Parking adjacent to a wall



Wall or Other Obstacle



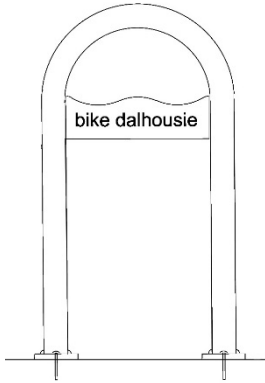
In-line parking

This diagram was cited from the City of *Toronto's Guidelines for the Design and Management of Bicycle Parking Facilities*, found below.

[http://www1.toronto.ca/city\\_of\\_toronto/city\\_planning/transportation\\_planning/files/pdf/bicycle\\_parking\\_guidelines\\_final\\_may08.pdf](http://www1.toronto.ca/city_of_toronto/city_planning/transportation_planning/files/pdf/bicycle_parking_guidelines_final_may08.pdf)

## Rack Type

- All new racks installed on campus must be one of the following:



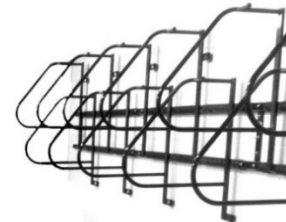
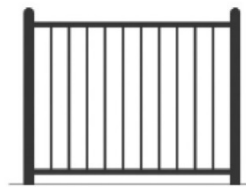
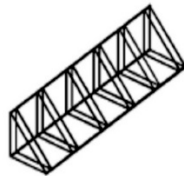
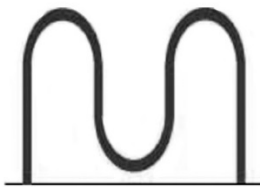
- (a) Staple or Inverted 'U' (b) Ring and Post (c) 'Campus' shape\*

\*minimum height for this rack is 40"

- (d) Custom design approved by the Office of Sustainability.

Please see **Appendix C** for specifications.

- Racks which Dalhousie University **does not accept** include the following;



- (a) "Wave" shape (b) "Toast" shape (c) "Comb" shape (d) Wall mounted rack\*

\*Wall mounted racks may be used in combination with other types of approved racks, but cannot be used alone.

## Materials and Installation– Racks

- The use of local and recycled materials from local suppliers is preferred and encouraged.
- When possible, new racks should be cast in concrete instead of fixed to the ground surface for increased safety. In more secure locations, for cost or other reasons, flanged (ground-fixed) installation is acceptable.

- Set cast-in posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.
- When posts are set into voids in concrete, form or core-drill holes for installing posts in concrete to depth recommended in writing by manufacturer of bicycle racks and 3/4 inch (20 mm) larger than OD of post. Clean holes of loose material, insert posts, and fill space between post and concrete with grout, mixed and placed to comply with anchoring material manufacturer's written instructions, with top smoothed and shaped to shed water.
- Where baseplate mounting is required, install steel tapered shims prior to anchoring in place. Fill gaps between baseplate and substrate greater than 3/8 inch with non-shrink, non-metallic grout.
- When mounting rails, fasten to concrete to create a free-standing array with anchors at each rail end. Shim and level as required to maintain installation tolerances.
- Install bicycle racks to comply with the following maximum tolerances:

Location: Plus or minus 1/2 inch;  
 Height: Plus or minus 1/4 inch;  
 Alignment of Adjacent Units: Plus or minus 1/2 inch in ten feet;  
 1 inch over total length;  
 Plumb: Plus or minus 1/4 inch;  
 Level: Plus or minus 1/4 inch.

- Powder-coated (black) or stainless steel is required for all new bicycling parking installation on campus, to be determined on a project-by-project basis according to locational appropriateness.
- Stainless steel should be free from blemishes. Standard-weight Schedule 40 steel pipe should be used.
- ➔ • Structural tubing should be not less than 2 3/8" (60mm) OD (heavy duty pipe) or 1 7/8" (48mm) OD (regular pipe) thick cold-formed round steel tubing.
- Anchors, fasteners, fittings, and hardware must be corrosion-resistant-coated or non-corrodible materials; commercial quality; tamperproof, vandal and theft resistant; concealed, recessed, and capped or plugged. Provide as required for bicycle rack assembly, mounting, and secure attachment.
- Non-shrink, non-metallic, premixed, factory-packaged, non-staining, noncorrosive, Nongaseous grout should be used.

Erosion-resistant anchoring cement: Factory-packaged, non-shrink, non-staining, hydraulic-controlled expansion cement formulation for mixing with potable water at project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended in writing by manufacturer for exterior applications.

- Examine areas with installer present, prior to and after installation, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

### **Warranty and Quality Requirements**

- Manufacturer's standard form in which manufacturer agrees to repair or replace components on which finishes fail within specified warranty period. Warranty does not include normal weathering.
- A warranty period of at least one (1) year from date of substantial completion.
- Protect finishes on exposed surfaces from damage by applying a temporary protective covering or wrapping before shipping.
- Store materials to comply with manufacturer's directions to prevent deterioration from moisture, heat, cold, direct sunlight, or other causes.

### **Shower Areas**

- All fixtures and systems in the shower areas should adhere to Dalhousie's Mechanical, Electrical and Custodial Design guidelines, specifically as they refer to sustainability goals. They are all available on the Design standards website;  
<http://www.dal.ca/dept/facilities/campus-development/design-guidelines.html>
- At least one shower stall for every six spaces shall be provided for **enhanced bicycle spaces**. These facilities are to be shared with other active transportation users.

### **Change Lockers**

- One locker for each available bicycle parking space shall be provided for enhanced bicycle spaces. Additional lockers may also be provided to cater to walkers, joggers and other individuals.
- Lockers should be secure. Lockers need ventilation and sufficient space to allow for the storage of clothes and equipment such as a pannier. They should be positioned for safe and convenient access. Ideally they should be long and deep enough to hang a skirt or shirt and wide enough to fit a pannier. The suggested dimensions are 24'' x 24'' x 12''

## Access

- Facilities should be within easy access of all members of the Dalhousie University Community. This includes limiting physical barriers, such as stairs, and also operational barriers, such as building permissions. Wherever possible, all new indoor cycle parking should be located on ground level or be accessible by ramp.
- Secure and convenient access should be provided to any indoor storage area. Ideally, storage areas should be accessed directly from the outdoors, with appropriate safety considerations given to cyclists. 24/7 programmed access via the DalCard system is preferred to maximize convenience and safety for regular users.

## Operational Strategies

- It is recommended that lockers be managed through processes consistent with other campus athletic systems. Certain lockers will be provided for day use for active transportation participants.
- Users will supply locks. At certain periods in the year, locks left on will be removed. A percentage of lockers will be provided for active transportation users in the building. These lockers will be managed through a sign-up system through the building administrator.

## Walking, Inline Skating, and Skateboarding

- Common shower and locker facilities will be shared with cyclists. See specifications above.
- Sidewalks, paths, trails, and/or roadways for walking, inline skating, skateboarding, and cycling fall into the jurisdiction of the municipality and university. HRM's Technical Appendix: Facility Planning and Design Guidelines provide some guidelines for surface preparation and signage. Plans for a comprehensive active transportation network to and from and around Dalhousie are outlined in **Dalhousie's Transportation Demand Management Plan**. For maps, routes, and future planning initiatives, please refer to this document.  
<http://www.dal.ca/content/dam/dalhousie/pdf/sustainability/2012Dalhousie%20Transportation%20Demand%20Management%20Report%20Final%20November.pdf>

## Appendix A

### 6ABICYCLE PARKING FACILITIES (RC-Jun 25/14; E-Oct 18/14)

- (1) For the whole of every building or structure to be erected or for the portion of a building or structure which is to be enlarged, on-site bicycle parking shall be provided in accordance with the following table:

Use	Bicycle Parking Requirement



Multiple Unit Dwelling	0.5 spaces per dwelling unit 80% Class A, 20% Class B
Hotels / Motels / Inns	1 space for every 20 rooms 80% Class A, 20% Class B Minimum 2 Class B spaces
General Retail, Trade and service, Food store, Shopping centre, Restaurants	1 space per 300m <sup>2</sup> GFA 20% Class A / 80% Class B Minimum 2 Class B spaces
General office, Banks, Medical clinics, Institutional Uses, Government Buildings	1 space per 500m <sup>2</sup> GFA 50% Class A / 50% Class B Minimum 2 Class B spaces
Auditoriums, Theatres, Stadiums, Halls	1 space for every 20 seats 20% Class A / 80% Class B Minimum of 2 Class B spaces Maximum of 50 spaces
Schools, colleges, Universities	1 space for every 250m <sup>2</sup> GFA 20% Class A / 80% Class B
Recreation facilities, Community centres, Libraries	1 space per 200m <sup>2</sup> GFA 20% Class A / 80% Class B Minimum of 2 Class B spaces
General Industrial Uses	1 space per 1000m <sup>2</sup> GFA 80% Class A / 20% Class B Minimum of 2 Class B spaces Maximum of 20 spaces
Commercial Parking Structures/ Lots ( > 20 Motor Vehicle spaces)	5% of motor vehicle parking provided Minimum of 2 Class B spaces Maximum of 50 spaces
Any Uses Not Specified Above	1 space per 500m <sup>2</sup> GFA 50% Class A / 50% Class B

- (2) Bicycle parking requirements shall not be required for the following land uses: single, two and three unit dwellings, townhouses, self storage facilities, car washes, cemeteries and funeral homes.
- (3) Each Class B bicycle parking space shall:
- (a) be a minimum of 0.6m wide and 1.8m long;
  - (b) have a minimum overhead clearance of 2.0m;
  - (c) be located a minimum of 0.6m from any wall or other obstruction.
- (4) Access to and exit from Class B bicycle parking spaces shall be provided with an aisle of not less than 1.2m in width, to be provided and maintained beside or between each row of bicycle parking.
- (5) Class A bicycle parking spaces shall have a minimum door opening of 0.6m, be no less than 1.8m long and 1.2m in height, with an aisle width of not less than 1.5m. Bicycle rooms and

cages for the storage of multiple bicycles shall contain Class B racks so that individual bicycles are supported.

## Appendix B

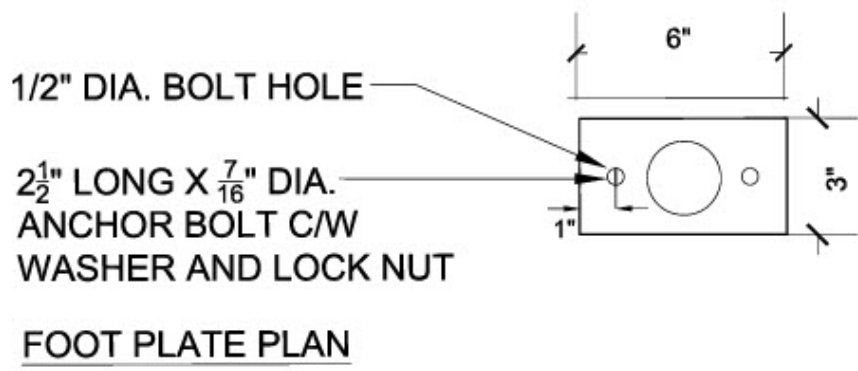
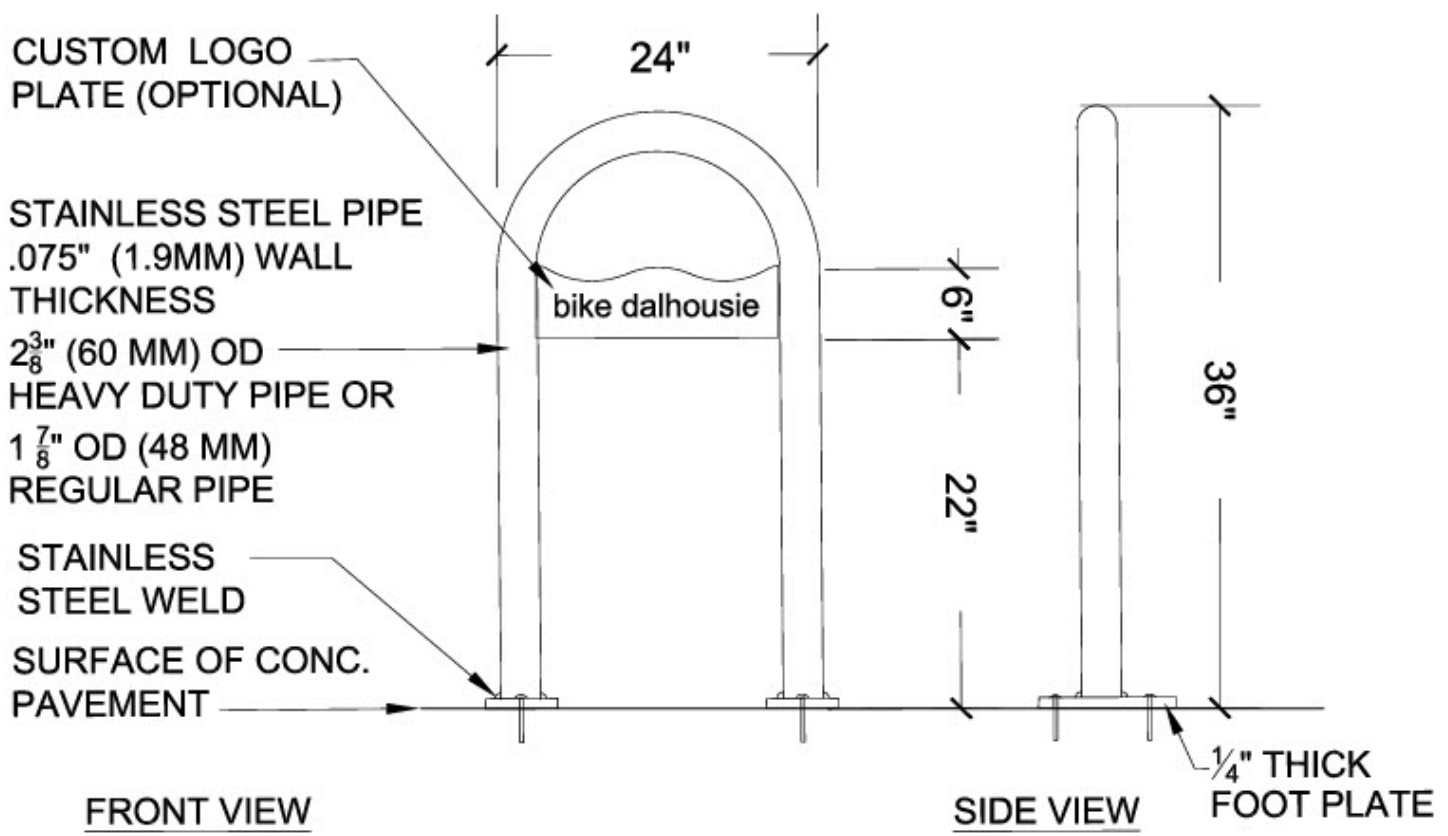
### 6ABLOCATION OF BICYCLE PARKING (RC- Jun 25/14;E- Oct 18/14)

- (1) Class B bicycle parking shall be located no more than 15m from an entrance. Where there are shelters such as building awnings or overhangs or special purpose-designed shelters that protect bicycles from the elements, bicycle parking may be located up to 30m from an entrance.
- (2) Class A bicycle parking may be located up to 200m from an entrance.
- (3) All bicycle parking spaces shall be located on hard surfaces in areas that are visible and well illuminated.
- (4) Class B spaces shall be located at ground level and visible to passers-by or building security personnel. Where not immediately visible to passers-by, directional signage shall be provided.

### 6ACSPECIAL BICYCLE PARKING FACILITY REQUIREMENTS

(RC-Jun 25/14; E-Oct 18/14)

- (1) Where six (6) bicycle spaces are provided, a reduction of one (1) regular required motor vehicle parking spaces may be permitted up to a maximum of two (2) spaces.
- (2) In any case where enhanced bicycle parking facilities are provided, for every two enhanced parking spaces, one regular required motor vehicle space may be eliminated up to a maximum reduction of 10% of the required motor vehicle parking
- (3) In cases of 100% lot coverage, Class B bicycle parking may be installed within the street right-of-way, in accordance with the provisions of the streets By-law (S-300), provided it is within 91.4m from the location they are to serve.



**STAINLESS STEEL AND INSTALLATION SPECIFICATIONS**

1. ALL PIPE, FOOT PLATE, LOGO PLATE, AND WELDING ROD TO BE GRADE 304 STAINLESS STEEL.
2. BIKE RACKS TO BE SURFACE MOUNTED TO CONCRETE PAVEMENT WITH GRADE 304 STAINLESS STEEL CONCRETE ANCHORS WITH LOCK NUTS. PREDRILL BOLT HOLES IN CONCRETE AND EPOXY ANCHOR IN PLACE.