TDMCS

TRANSPORTATION DEMAND MANAGEMENT AND COMMUTER SERVICES

IPS Bike Facility Design Guideline

By

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INTRODUCTION

WHO WE ARE

Integrated Protection Services (IPS) – Commuter Services is responsible for the Transportation Demand Management (TDM) programs for Fraser Health, Providence Health Care, and Provincial Health Services Authority. This includes the development, implementation and evaluation of the active and clean transportation programs by assessing, improving, implementing and tracking commuter service best practices, conducting detailed studies and comprehensive surveys, and recommending changes to current practices to ensure compliance with sustainable transportation regulations and/or legislation.

Commuter Services collaborates with internal stakeholders and community partners to help reduce single occupancy vehicle use by staff, thereby freeing up parking for patients and visitors and curbing expense for parking construction, as well as promoting a healthy workforce.

GENERAL ACTIVE AND CLEAN TRANSPORTATION PREMISE

Each new construction, redevelopment or major renovation project needs to create a TDM plan that will entail two requirements:

- Outline specific actions, goals, monitoring, and proposed reporting schedule that the Lower Mainland Health Care Organization (LMHO) is undertaking concerning TDM. This includes measures to reduce motorized vehicle trips by staff to and from the site.

- A 'TDM: Staff Health and Wellness' letter outlining mechanisms/strategies for reducing vehicular travel to and from the new site, including measures to increase cycling, walking, transit use, carpooling, carsharing and electric vehicle use to date is required. Included in this letter are any other strategies to reduce overall CO_2 pollution from staff vehicles that travel to and from the new site.

PURPOSE

IPS Commuter Services, with the help of various key stakeholders who have expertise on bicycle parking systems and secure bicycle storage facilities, intends to have standardized design guidelines for bicycle parking infrastructure throughout the system. This is to ensure that optimal security for bicycle and cycling accessories at LMHO premises are being provided and that unnecessary expense for replacement, reconstruction, reconfiguration, and rectification of bicycle parking facilities post installation is avoided.

These guidelines are also intended to provide convenient, well-organized, and efficient bicycle parking facilities to cyclists that can ultimately increase the attractiveness of cycling.

INTENDED AUDIENCE

This guide is intended for anyone involved in planning, design and construction of any new building, redevelopment and renovation projects at LMHO-owned, P3 and leased facilities to help design and build functional and secure bicycle parking facilities.

- Lower Mainland Facilities Management
- Facility Planning and Project Delivery – to incorporate cycling facilities in project planning, design and construction.
- Energy and Environmental Sustainability – to advocate for active and clean transportation facilities within LMHO facilities and work with Commuter Services for the annual Carbon Neutral Accountability Report
- Environmental Performance Accountability Report
- Real Estate – to include secure cycling facilities as part of terms of lease agreements.
- External contractors not directly reporting to or working with LMFM who participate in planning, design and construction projects at any LMHO owned, leased and P3 facilities.
- Integrated Protection Services
    - Business Initiatives and Systems Integration – to provide current security systems specifications.

BICYCLE PARKING

MINIMUM REQUIREMENTS

Each project needs to follow the minimum bicycle parking design guidelines below and LEED v4 SSc4.2: “Alternative transportation – bicycle storage and changing rooms” methodology for alternative transportation from LEED HC 2009 as well as minimum requirements by the governing city, municipality, district or township where the facility is located.

These guidelines must be observed by off-street onsite bicycle parking projects at all LMHO-owned and public-private partnerships (P3) facilities. Leased sites must have a stipulation in the lease contract for both onsite short-term and secure long- term bicycle parking spaces for health care employees via the real estate and leasing department, with at least the minimum bicycle parking space requirements below.

PARKING REQUIREMENTS – COMMUTER AND PERFORMANCE E-BIKES

We do not recommend employees park bikes at outdoor racks in general (less secure), and since E-bikes tend to be pricier, we really do not recommend outdoor parking. As a best practice, have employees park their bikes in badge-access bike rooms inside the building or in the parking garage (if that is the only option). (Better, n.d.)

E-bikes require floor racks, like basic staple racks. They are usually too heavy for most people to hoist them onto the hook of a wall-mounted vertical rack or the top level of a double-decker bike rack. (Better, n.d.)

PARKING REQUIREMENTS – UTILITY E-BIKES

Cargo/Utility bikes need more room than regular E-bikes. The end caps of parking rows are often an excellent place to add a few cargo bike spaces. Access to these spaces should be as direct as possible. Mark the pavement (preferred) or post signs to indicate that these spots should be reserved for cargo bikes.

- While the usage rate for cargo bikes varies considerably, two spaces per bike parking location is a good minimum. Target cargo bike parking ratios are 2-5% of total bicycle spots. (Better, n.d.)
- Cargo bikes in particular have a much larger footprint than regular bikes – 36" wide by 120" long. To provide enough space for this kind of bike, increase parallel spacing between staple racks to 48" and center the rack in a 120" long space (Better, n.d.)

TYPES OF BIKE PARKING

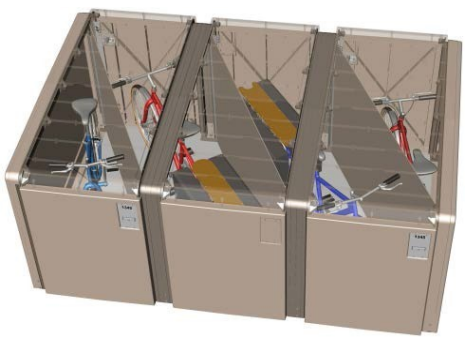
Each facility must have both short and long-term secure bicycle parking facilities of sufficient quantities.

Long-Term or Class A

Intended for long-term use, consists of individual bike lockers and/or inverted U bike racks embedded on the concrete ground surface in a secure, enclosed, lockable space and access restricted to health care employees only. Such spaces should also consist of bike repair tools and bike lock storage bars affixed to a permanent concrete wall.

Short Term or Class B

Intended for short-term use and should consist of racks located with natural surveillance in an accessible outside location, protected from weather, within close proximity of the building entrance, on a concrete surface. (Trek UBC)



Bike Locker Sample & Eagle Ridge Hospital Bike Cage

Surrey Memorial Hospital – Critical Care Tower Bike Room

Cycling Centre

This is another type of long-term secure bicycle parking facility that is intended for sites with over 50,000 m^2 gross floor area or with over 1,000 employees in a maximum work shift, whichever comes first, and complemented with individual bike lockers, inverted U bike racks embedded on the concrete ground surface, self-serve bike repair station, air pumps, bike lock storage bars, perforated clothing lockers, shower rooms, change rooms, water closets, wash basins, hair dryers, benches and a lounge area. Provision of additional amenities, such as towels, to increase cycling rate is strongly proposed.

VGH Cycling Center

SPACE REQUIREMENTS

All required Class A bicycle spaces shall be provided in a separate bicycle room located within a building, except that

A. The spaces can be in a building which provides parking for motor vehicles for one particular residential unit only, instead of in a bicycle room, or
B. The spaces can be provided in a building in an expanded metal mesh compound which complies with sections 6.3.14, 6.3.15, and 6.3.16 instead of in a bicycle room, or
C. The spaces can be provided in a building or private parking area in numbered bicycle lockers, which comply with sections 6.3.17, 6.3.18 and 6.3.19 instead of in a bicycle room. (City of Vancouver, 2022)

The bicycle room shall be designed to accommodate a maximum of 40 bicycles, except that:

A. This number can be increased to 120 if the room is compartmentalized using expanded metal mesh with lockable industrial-grade doors into enclosures containing a maximum of 40 bicycles; and
B. This number does not include bicycle lockers (City of Vancouver, 2022)

All required Class A bicycle spaces shall have a minimum vertical clearance of 1.9 metres, shall be a minimum of 0.6 metres in width and shall be:

A. A minimum of 1.8 metres in length if the bicycles are to be placed horizontally; or
B. A minimum of 1.0 metres in length if the bicycles are to be placed vertically,
    - except that a minimum of 5% of the spaces must be oversized spaces of 2.4 metres in length and 0.9 metres in width, and may not be vertical or stacked spaces. (City of Vancouver, 2022)

All required Class A bicycle spaces shall be independently accessible by means of an aisle of a minimum width of 1.2 metres, except that the Director of Planning, in consultation with the City Engineer, may permit a lesser width, to an absolute minimum of 0.9 metre, where the bicycle spaces served are provided more than the minimum required width. (City of Vancouver, 2022)

All access shall have a minimum vertical clearance of 1.9 metres. All doors on the route from Class A bicycle parking spaces to the outside shall be fitted with automatic door openers. (City of Vancouver, 2022)

All required Class A bicycle spaces shall require a bicycle rack with individually numbered spaces or a numbered bicycle locker. (City of Vancouver, 2022)

Vertical bicycle space racks shall support the bicycle without the bicycle being suspended on the wheels. (City of Vancouver, 2022)

No more than 30% of the required Class A bicycle spaces may be vertical, and in total, no more than

60% of the required Class A bicycle spaces may be vertical and stacked. Stacked bicycle spaces shall be designed to provide access without the need to lift the bicycle entirely off the ground, and must provide convenient access. (City of Vancouver, 2022)

At least 10% of the Class A bicycle spaces must be bicycle lockers. (City of Vancouver, 2022)

- Bicycle lockers shall be designed to accommodate a maximum of 1 bicycle, and the minimum inside dimensions of a bicycle locker shall be
  - (a) 0.6 metre in width at the door end,
  - (b) 0.2 metre in width at the end opposite to the door,
  - (c) 1.8 metres in length, and
  - (d) 1.2 metres in height

Lighting in the bicycle room, compound, or locker area shall provide vertical illumination at floor level of a minimum level of 160 lux, with true colour and a uniformity ratio of at most 3:1. (City of Vancouver, 2022)

INSTITUTIONAL REQUIREMENTS

	Bylaws		**Required (~3700 staff on site)**	
	Class A	Class B	Class A Only	
			70/30 shift split	50/50 shift split
City of Vancouver (hospital or similar)	A minimum of 1 space for every 17 employees on a maximum work shift	A minimum of 6 spaces at each public entrance	153 required	109 required
IPS Guidelines	Located on or accessible from ground level such as ramps (ramp preferably bike-dedicated, with 6-7% gradient and must be at least three meters wide). If in a parking garage, must be on first/street level = 1 space for every 5 employees on a maximum work shift.	A minimum of 6 spaces at each public entrance. Within 15 meters from the facility entrances, on or accessible from ground level, well distributed, weather-protected, easy to use, in areas of high pedestrian activity and allows informal surveillance in well-lit area to discourage theft and vandalism.	518 required	370 required

LOCATION

Each project must be easily accessible, strategically placed within the facility, and does not impede patient access.

Short-Term Bicycle Parking

Within 15 meters from the facility entrances, on or accessible from ground level, well distributed, weather-protected, easy to use, in areas of high pedestrian activity and allows informal surveillance in well- lit area to discourage theft and vandalism.

Long-Term Secure Bicycle Parking and Cycling Centre

Located on or accessible from ground level such as ramps (ramp preferably bike-dedicated, with 6-7% gradient and must be at least three meters wide). If in parkade/lot, must be on first/street level.

CAPACITY

The following numbers may only be superseded if the minimum calculations for the facility are higher than the local governing body's minimum requirements. Both current and projected trend and demand must be considered to avoid unnecessary expansion costs.

Long-Term Secure Bicycle Parking Stalls

One bicycle parking stall for every five employees on a maximum work shift to address current and future cycling demands.

Short-Term Bicycle Parking Stalls

A minimum of six parking stalls for every facility entrance.

E-BIKE BASICS

To be considered an electric bicycle it must meet the following characteristics:

- Electric motor of up to 500 watts
- Functional pedals
- Maximum speed of 32 km/h when power assisted
- The power assist must disengage in any of the following: rider stops pedaling, throttle is released, brake is applied. (WATT Consulting Group, 2018)
- E-Bikes do not require a license, plates, or insurance to own or operate.

TYPES OF E-BIKES

The following are the most popular types of E-Bikes. Commuter, Performance, and Utility:

Types of E-Bikes - https://bikexchange.com/types-of-electric-bikes/

ACCESS TO E-BIKE PARKING

E-bikes tend to be heavier (because of the battery), so wheeling them up to buildings and through doors, and navigating interior spaces, is potentially fraught. Objects like kick plates to automatically open doors, wide hallways, no stairs/elevators or tight corners become more important when employees are pushing their E-bikes. (Bikes Make Life Better, n.d.)

The bicycle room, compound, or lockers shall be located no lower than the first complete parking level below grade and shall have direct access to outside, except that a location more than one level below grade may be permitted where an elevator designed to accommodate the loading and unloading of at least two bicycles is provided, offering direct, convenient access to the outside. (City of Vancouver, 2022)

There shall be no stairs on the access route, except that the Director of Planning may allow stairs provided a wheel ramp of a minimum width of 150 millimetres is provided without cutting into the stair tread. (City of Vancouver, 2022)

Where an elevator is provided to access bicycle parking, a distinct call button for that elevator shall be provided on all levels with bicycle parking and all levels that provide access to the outside. (City of Vancouver, 2022)

Integrated, high quality and simple bicycle parking signage should be provided to indicate the availability and location of an off-street bicycle parking area (City of Coquitlam)

INFRASTRUCTURE

These infrastructure design guidelines will cover all types of bicycle parking facilities located inside and outside of a building. All long-term secure bicycle parking and cycling centres in owned and P3 facilities, unless managed by an external party, must have the following features.

ENCLOSURES FOR BIKE CAGES/ROOMS

Bike rooms and cycling centres are typically part of the permanent building structure with concrete walls. Bike cages are typically enclosed by expanded metal mesh. For projects that require enclosure other than concrete walls, the following materials must be used:

Fence

- At least 9-gauge x ¾" x ½" steel flattened expanded mesh, welded on site for increased security, fully anchored on all sides, without gap openings. Chain links are NOT acceptable

Posts

- ½" square posts, fastened to ceiling and floor

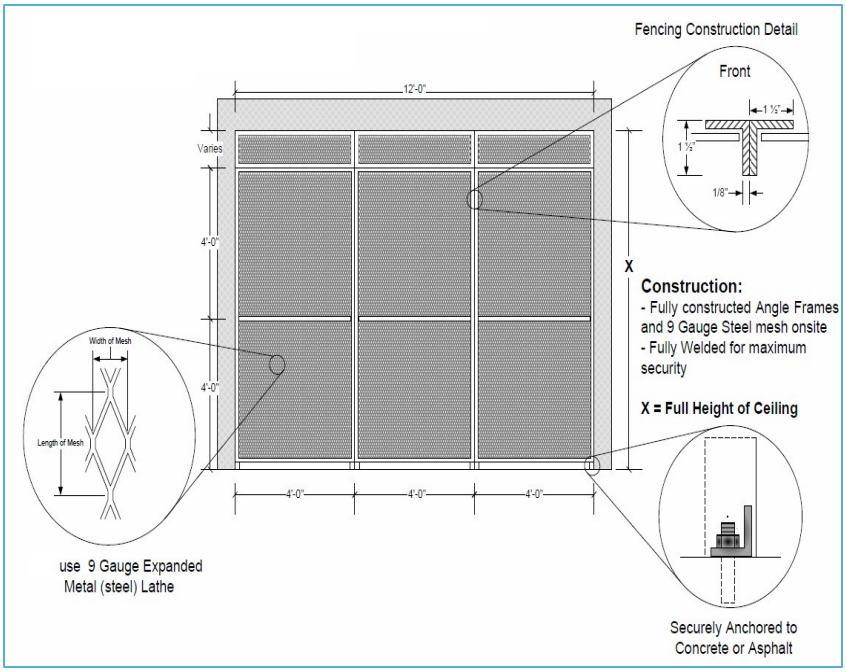
Angle Frames

- 1 ½" x 1 ½" x 1/8" angle frames with bracing for increased security

Door

- Door Panel: 1 ¾" 20-gauge steel solid panel with honeycomb core, outward swing
- Hinges: Tamper proof

- Blocker plates or **Astragals:** Full length
- Door Closer: Commercial/exterior Grade 2 minimum surface mounted, overhead (pull or push side) with aluminum storefront.
- Door Frame: 3' x 7' 22-gauge steel
- Door Lever: Commercial building standard lever with shroud for added security.
- Locking Mechanism: Heavy duty, high traffic electric strike or electrified lockset with built in request-to-exit sensor (if electric strike)



Bike Cage Specifications

Roof

- Coverage must provide weather protection, fit tightly against the cage walls, and requires minimal maintenance.

Paint

- Powder-coated finish or finish painted white. If material is exposed to elements, primer or undercoat application is required prior to paint finish application to prevent paint erosion from rust.

E-BIKE ROOM

The bicycle room shall have solid opaque walls, and all solid interior walls shall be painted. All of the interior of the bicycle room shall be visible from the entry door. A motion-activated security light enclosed in a tamper-proof housing shall be provided in each room (City of Vancouver, 2022)

The bicycle compound shall extend from floor to ceiling, and have expanded metal mesh and door with a non-reflective coating. The walls and door shall be reinforced by full-height solid steel bars 13 millimetres minimum diameter or square section, spaced no more than 150 millimetres apart, and welded one to another by at least two crossbars no more than 1,200 millimetres apart, or constructed to provide equivalent or greater security. Supports shall be attached to floor and ceiling with tamper-proof or concealed bolt heads or nuts. Industrial grade chain-link shall be No. 7 gauge or heavier.

E-BIKE ROOM DOOR

Entry doors to the bicycle room shall be a minimum of 75 centimetres in width. Both door and frame shall be constructed of steel. (City of Vancouver, 2022)

The door shall be hinged on the inside unless hinges are tamper-proof, and shall have a security window constructed of a laminate of tempered glass and polycarbonate in a steel frame for permanent visual access. (City of Vancouver, 2022)

The entry door shall have a separate lock and key or programmed entry system, and the locks shall be high security in nature. (City of Vancouver, 2022)

The entry door to a bicycle room or bicycle compound, or bicycle lockers, shall be within sight of building or parking security, where such exists, an elevator, or an entrance. (City of Vancouver, 2022)

ELECTRICAL OUTLETS

A minimum of one 110 volts electrical outlet per five-bicycle parking space is recommended. Such power outlets are intended for electric and electric-assist bicycle battery charging.

CHARGING & ELECTRICAL

E-bike chargers plug into normal wall outlets (Better, n.d.)

We recommend installing charging in the form of GFCI outlets provided at ground level racks.

- How many outlets to install is up to you, but we have seen companies mandate outlets for 25-40% of their bike parking spots. (Better, n.d.)

Each two Class A bicycle spaces must have an electrical outlet (City of Vancouver, 2022)

Power monitoring is required for E-bikes to report for carbon credits.

RISK & LIABILITY – E-BIKE BATTERY

Most electric bikes have Lithium batteries that are highly combustible. Most of these fires usually occur when home built lithium batteries are subject to careless treatment. (Karni, n.d.)

- Can be prevented by always buying lithium batteries from a trusted dealer to ensure it has the right cell design and structure to support high temperature and over-charging. (Karni, n.d.)

The majority of modern e-bike batteries are well designed and safe to use. The battery technology is progressing further and upcoming designs will be less heavy, more performant and less and less dangerous. As E-bikes are electric vehicles, the risk of a short circuit is still present, but the likelihood of one happening is negligible. (Karni, n.d.)

Bikes that are properly spaced out on racks help prevent any hypothetical fires from spreading (Better, n.d.)

BIKE RACKS

Bike racks for all projects must be highly compatible with many types of different bicycles. They must provide two secure points for locking with a U-style lock, ideally for both frame and at least one wheel. All racks must be firmly secured and ground-bolted by tamper-proof bolts.

Recommended Types (click on the links for specifications):

Inverted U with horizontal bar

- Two points of contact between the bicycle and rack
- Visual contrast with the surrounding environment
- Cost-effective solution allowing two bicycles to be parked adjacent to one rack
- Stands should not be placed in obstructive locations
- A horizontal bar is recommended
- Suitable for standard bicycles, non-standard bicycles, and electric bicycles

Double Stacker to maximize space

- Stores two bicycles in a stacked arrangement with a retractable upper tier
- One wheel and frame locked to each rail
- Ergonomic design to simplify bicycle loading and unloading
- Pneumatic lift assist aids users in lifting their bicycle and tray into place
- Should be used in conjunction with other rack types
- May not be appropriate for all ages and abilities
- Suitable for standard bicycles

"Auclair" or high-density rack

- Premium high-density ground mounted solution that provides the perfect balance of security and user-friendliness
- The staggered implementation of this rack eliminates the issue of handlebar interference, resulting in maximized space efficiency
- Ergonomic design to simplify bicycle loading and unloading
- Scalable and aesthetically pleasing design
- Suitable for standard bicycles, non-standard bicycles, and electric bicycles

Material

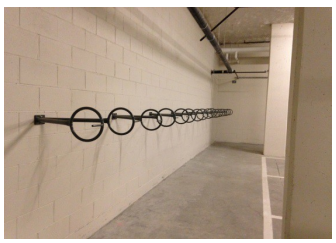
Industrial grade material, smooth-surfaced hot-dipped galvanized steel is recommended for bike racks that are exposed to the elements. Powder-coated racks may be installed in weather-protected facilities. Avoid stainless steel, as it does not weld properly.

Rack and Aisle Width Spacing

Follow recommended spacing for specific bike rack type as provided on the links above under “Recommended Types”. Supply 18" clearance for the handlebar for outside edge from the obstacle (such as wall) to allow enough space for the handlebar. Provide all bicycle spaces with a minimum aisle width of 1.2 metres for dedicated bike access.

Types to AVOID

- Wall hangers, vertical stacking type or any system that requires lifting the bicycle unless with hydraulic assist. Vertical bike parking may not count as bicycle parking stalls under some local government bylaws.
- Coat Hangar Rack
- Wheel-Bender Rack
- Comb/Toaster Rack
- Wave Rack
- Spiral Rack






E-BIKE RACKS

Class A bicycle space racks shall be constructed of sturdy theft-resistant material and shall have secure theft-resistant anchoring to the floor or ground.

The bicycle rack shall support the bicycle frame above the centre of gravity and shall enable the bicycle frame and front wheel to be locked with a U-style lock. (City of Vancouver, 2022)

BIKE LOCKER

Bike lockers supply long-term security for the entire bicycle and accessories against theft, vandalism and weather. Choose lockers that provide security to two bikes per locker with two separate access doors, one on each end, with three-point rotational locking bars for optimum security to optimize real estate. These may be installed inside the bike cage/room or in an open area on a concrete surface.
Key-based system with passkey is ideal for facilities with onsite coordinator to manage the program. Check with Commuter Services prior to installation to ensure onsite management of facilities is available.

BIKE LOCK STORAGE BAR

Bars fully welded, constructed, and formed in one piece from 1" Schedule 40 304 stainless steel pipe, 0.125" thick, 36" max in length per bar, 2.5" off-the-wall clearance, welded to 5" diameter stainless steel washers with three 0.25" holes for mounting. Welds must be buffed, and no burns exposed. Bike lock storage bars must only be mounted to concrete walls.

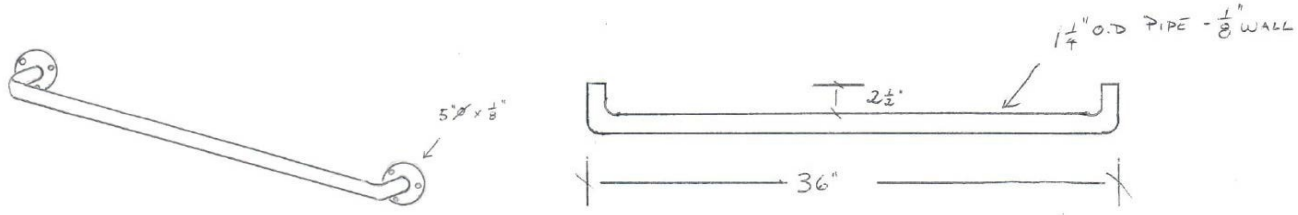


Illustration is from April 27, 2015

CYCLING AMENITIES

Provide end-of-trip amenities to enhance cycling convenience to help encourage higher cycling rate among staff. The table below shows the minimum number of facilities per gender. Minimum requirement set by the local government, if count is higher, supersedes the numbers below.

SHOWER/CHANGE ROOM

A minimum of one shower/change room per gender for every 20-bicycle parking spaces and must be built adjacent to the bike cage or inside the cycling centre.

WATER CLOSETS

A minimum of one water closet per gender for every 20 bicycle parking spaces and must be built adjacent to the bike cage or inside the cycling centre.

WASH BASINS

A minimum of one wash basin per gender for every 30 bicycle parking spaces and must be built adjacent to the bike cage or inside the cycling centre.

HAND DRYER

A minimum of one hand dryer per washroom directly associated to the bike parking facilities per gender.

CLOTHING AND EQUIPMENT LOCKER

- Clothing lockers must be provided equal to 60% of the total bicycle parking stalls and must be near the bike cage/room and inside the cycling centre.
- Use only heavy-duty, single tier perforated/ventilated lockers to allow natural airflow.
- If clothing lockers are provided equivalent to 20% of the total bicycle parking stalls in areas not directly associated to the bike cage/room or cycling centre and are restricted to staff working for certain departments, the total number of clothing lockers to be installed within or adjacent to the secure bike parking areas must be at least 40% of the total bicycle parking stalls.

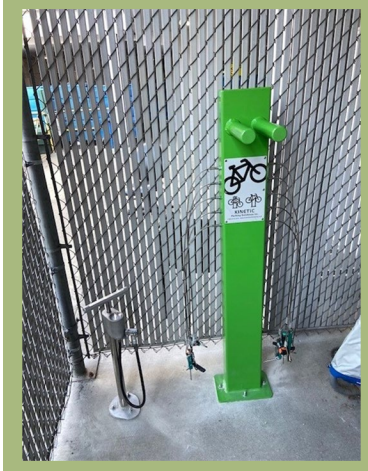
BIKE SELF-REPAIR/ MAINTENANCE

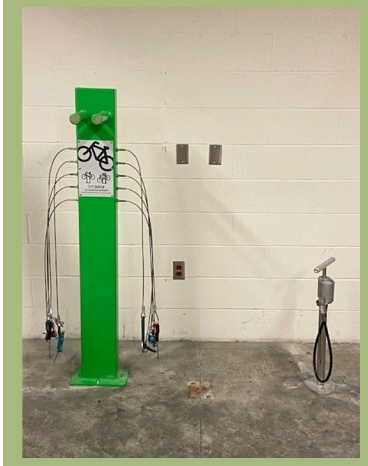
A bike repair stand, basic tools and air pump may be provided in bike cages/rooms. Cycling centres, on the other hand, must include these amenities. (https://www.kineticbikeparking.com/kinetic-bike-repair/)

Heavy Duty Air Pump

Repair Stand with Tools

HEALTH AUTHORITY BIKE REPAIR STANDS





WALL GRAPHICS/AESTHETICS

To make the facilites aesthically pleasing, bright and welcoming, it's preffered to add wall graphics or artwork. Diagrams on how to park in each type of rack properly would be a great benefit to new users.

BENCH

One bench for every 20-bike parking stalls in a cycling centre.

LOUNGE

Cycling centre is preferred to have a lounge area for cyclists. This area may also be used for workshops and other cycling-related activities.

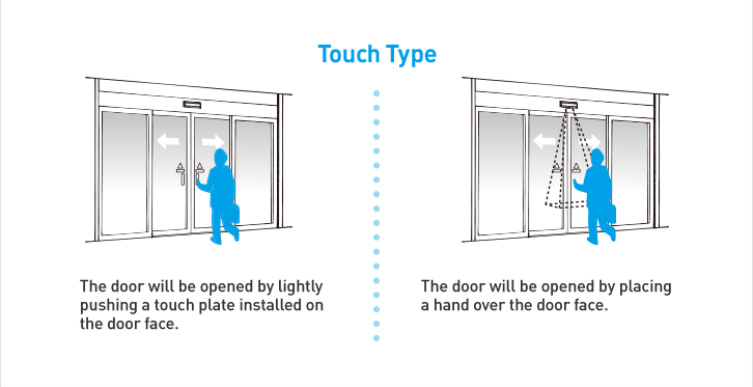
SAFETY, SECURITY AND ACCESS

ACCESS CARD READER

All new projects in an enclosed area must come with an electronic access reader compatible with the current LMHO access control and badging system. Requests for security systems service must be ordered via https://healthbc.sharepoint.com/sites/BusinessInitiativesandSystemsIntegrationFH/SSSRF/SitePages/Service%20Request%20Form.aspx.

Hands-free automated doors:

Provide automated doors that are held open briefly to allow easy access for cyclists.



CLOSE CIRCUIT TELEVISION (CCTV)

Must comply with IPS Security standards, provides coverage of entire bike parking area, and connects to site security CCTV system. Requests for security systems service must be ordered via https://healthbc.sharepoint.com/sites/BusinessInitiativesandSystemsIntegrationFH/SSSRF/SitePages/Service%20Request%20Form.aspx.

LIGHTING

Energy efficient, evenly distributed white light with 6-8 lux for facial recognition. Lights must be always turned on in fully enclosed areas without other source of lighting for security reasons. If CCTV is present, use:

- Monochrome camera – minimum of 5 lux, 40% uniformity, 10 threshold increment, 60 colour rendering index.
- Colour camera – minimum of 15 lux, 40% uniformity, 10-threshold increment, 70 colour rendering index.

Use energy efficient light fixtures that do not exceed 150 watt per luminaire for standby power. For lights that already exist in the parking lot/facility, ensure above requirements are met when replacing.

PANIC BUTTON/DURESS STATION

Must be in place inside the bike parking facility and has direct line to onsite security. This feature only applies to facilities with dedicated security workforce. Requests for security systems service must be ordered via

https://healthbc.sharepoint.com/sites/BusinessInitiativesandSystemsIntegrationFH/SSSRF/SitePages/Service%20Request%20Form.aspx

PATROL VERIFICATION SYSTEM

Electronic patrol monitoring tool for facilities overseen by IPS with dedicated security workforce onsite. Requests must be coursed through the Area Security Lead responsible for the facility. See page 2 of IPS Operations for ASL contact information:

https://healthbc.sharepoint.com/sites/BusinessInitiativesandSystemsIntegrationFH/SSSRF/SitePages/Service%20Request%20Form.aspx

CONVEX SAFETY MIRROR

Intended to minimize blind spots and dark corners to overcome sight restriction problems and avoid collisions with moving and stationary vehicle and/or pedestrian. Road safety and risks audit and assessment of the area must be completed prior to installing a convex safety mirror as distortion or mirror effect on the image can be confusing to users.

Ensure the shape of the mirror is applicable for the radius of curvature of the area and the installation, operation and use of such has been fully considered and applied. The mirror must be highly polished stainless steel, weather-resistant if exposed to the elements, sturdy, requires zero to low maintenance and vandal resistant.

SIGNAGE AND WAYFINDING

All signage must conform to IPS' current bicycle parking signage.

Directional Signage

Each facility must provide visible directional bicycle parking signage (minimum of 18" x 24" on 3mm aluminum panel sign) at the main entrance of the facility.

- Long-Term Secure Bicycle Parking Short-Term Bicycle Parking

Door

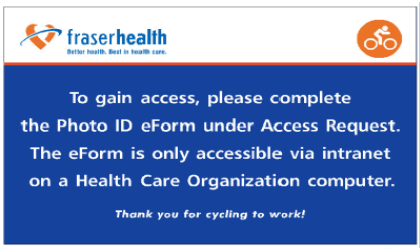
Every entry door of a bike cage/room must post one HA-specific signage (minimum of 12" x 18" vinyl decal on a 3mm aluminum panel sign) directing users for access requests.

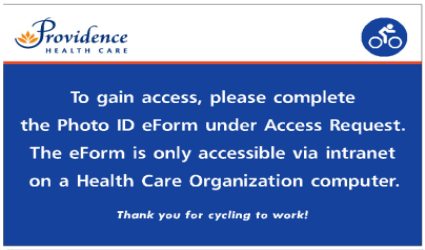
Open Bike Racks

Each bike rack location must post at least one HA-appropriate signage (24" x 30" vinyl decal on a 3mm aluminum panel sign).

Bike Cage/Room:

Post at least one HA-specific signage on a 3mm aluminum panel sign.





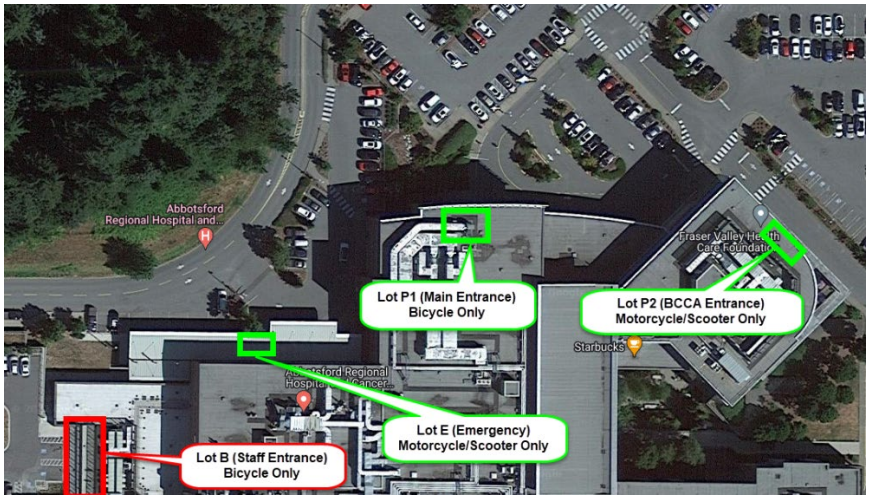
BICYCLE FACILITIES INVENTORY

FRASER HEALTH BIKE STORAGE

ABBOTSFORD REGIONAL HOSPITAL

Bike Stands: 2
Located: Main Entrance & Emergency Entrance
Total # of Bikes: 25

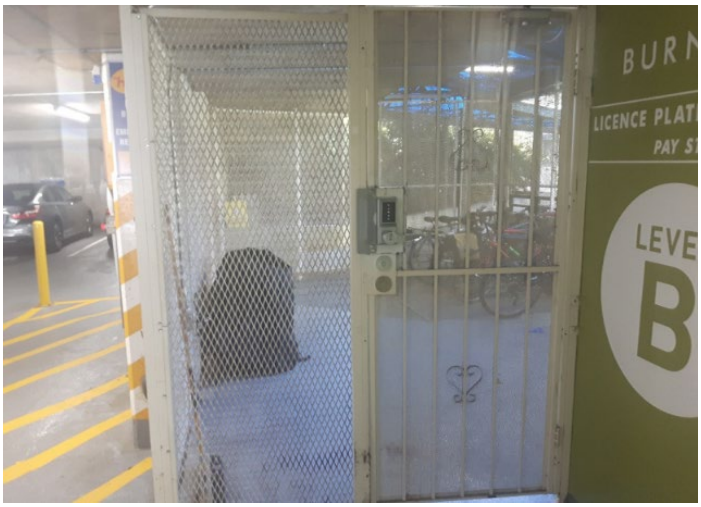
Bike Cages: 1
Located: Staff entrance from lot B *(Yale 3) Adjacent to Pharmacy & Facilities Management Area*
Total # of Bikes: 30



BURNABY HOSPITAL

Bike Stands: 5
Located: Emergency Entrance, Lot #165 Admin Office entrance, Mental Health Entrance, Lot #1502 Main Entrance & Lot #1503 Main Entrance
Total # of Bikes: 28

Bike Cages: 1
Located: Parkade Level 2
Total # of Bikes: 17



CHILLIWACK GENERAL HOSPITAL

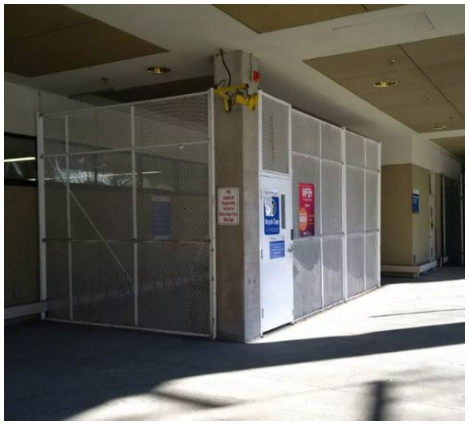
Bike Stands: 1
Located: Main Entrance & Acute Care bldg. of Diamond Jubilee Pavilion
Total # of Bikes: 12

Bike Cages: 1
Located: C Wing, off of Hodgins Ave
Total # of Bikes: 17

EAGLE RIDGE HOSPITAL

Bike Stands: 1
Located: Main/Front Entrance (under cover) – off Guildford Way
Total # of Bikes: 5

Bike Cages: 1
Located: West side of building next to loading docks
Total # of Bikes: 24



LANGLEY MEMORIAL HOSPITAL

Bike Stands: 1
Located: Outside Front Lobby and Doctors Entrance
Total # of Bikes: 12

Bike Cages: 1
Located: Outside Front Lobby and Doctors Entrance
Total # of Bikes: 26

MISSION MEMORIAL HOSPITAL

Bike Stands: 2
Located: Emergency Main Entrance & Mission Community Health Entrance
Total # of Bikes: 12

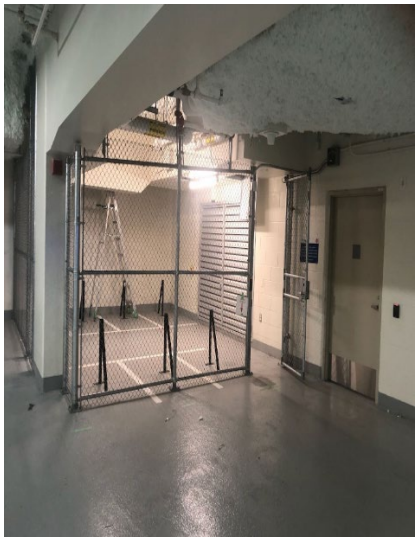
Bike Cages: 1
Located: Hurd Street & Scott Ave Entrance
Total # of Bikes: 20

PEACE ARCH HOSPITAL

Bike Stands: 3
Located: Berkeley Pavilion Entrance, Weatherby Entrance & Dr.Al Hogg Pavilion
Total # of Bikes: 24

Bike Cages: 1
Located: Acute South Tower, South Side Main Floor Facing Russell Ave.
Total # of Bikes: 32

ROYAL COLUMBIAN HOSPITAL



Bike Cages: 2
Located: Health Care Centre Underground Parkade
Total # of Bikes: 24

ROYAL COLUMBIAN HOSPITAL MHSU

Bike Stands: 1
Located: Main Entrance
Total # of Bikes: 8

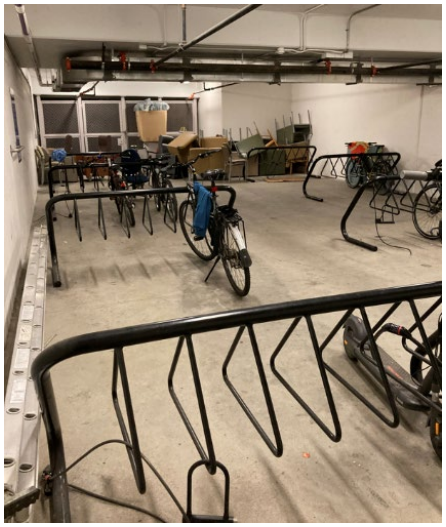
Bike Cages: 1
Located: P1 Underground Parkade
Total # of Bikes: 14

RIDGE MEADOWS HOSPITAL

Bike Stands: 1
Located: Main Entrance
Total # of Bikes: 5

Bike Cages: 1
Located: Basement, West Side Staff Entrance to Acute Bldg.
Total # of Bikes: 8

SURREY MEMORIAL HOSPITAL



Bike Stands: 8
Located: Critical Care Tower Main Entrance, Critical Care Tower Emergency Entrance, North Parkade Level 2, Bldg. B Entrance by Cafeteria, Energy Centre Courtyard Between F bldg., Creekside Bldg. Entrance, Creekside Annex Bldg. Parking Lot & Quibble Creek and Timber Creek Bldg.
Total # of Bikes: 82

Bike Cages: 2
Located: Parkade Level 1 (corner of 94A Ave.) & Critical Care Tower Level B, (underground parkade beside parking stall #2087)
Total # of Bikes: 92

PROVIDENCE HEALTH CARE

MT. ST. JOSEPH

Bike Stands: 1
Located: Main Entrance & Kingsway Entrance
Total # of Bikes: 14

Bike Cages: 1
Located: Back Entrance off of E 15th Ave (behind Main Hospital Bldg.)
Total # of Bikes: 13

ST. PAULS HOSPITAL

Bike Stands: 3
Located: Comox Entrance, Thurlow Entrance & Main Entrance
Total # of Bikes: 26

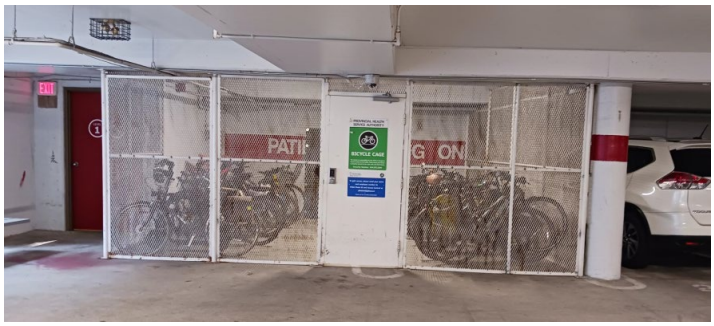
Bike Cages: 1
Located: Back Entrance off of E 15th Ave (behind Main Hospital Bldg.)
Total # of Bikes: 13

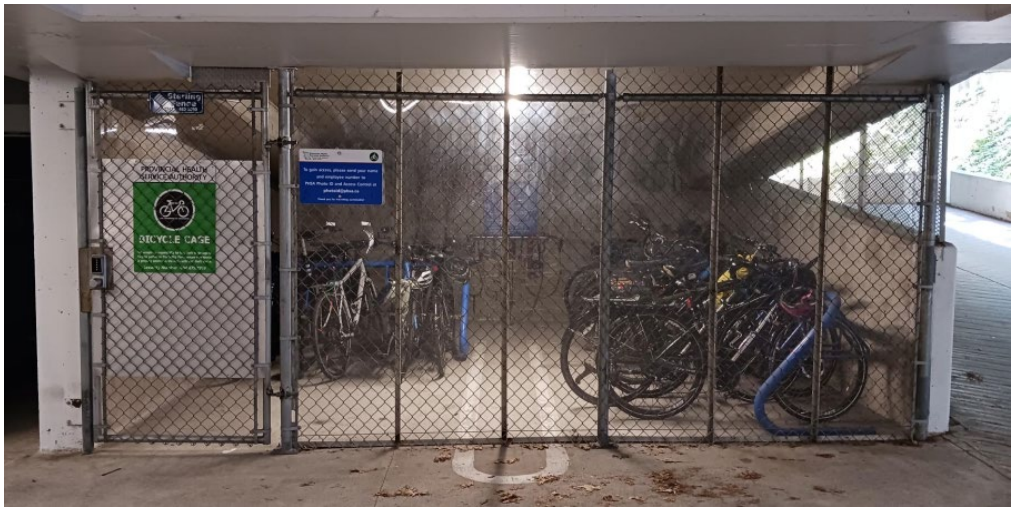
PROVINCIAL HEALTH SERVICES AUTHORITY

BCCA-VCC VANCOUVER CANCER CENTRE

Bike Stands: 3
Located: Main Entrance, Heather Street Side & Parkade Level 1 Entrance
Total # of Bikes: 78

Bike Cages: 2
Located: Parkade Level 1 Hospital Entrance
Total # of Bikes: 59





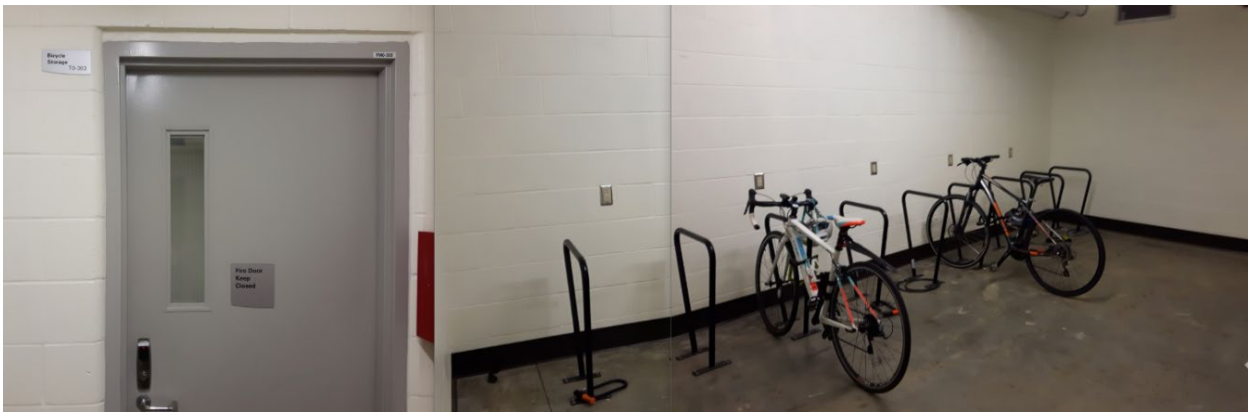
BC CHILDREN'S

Bike Stands: 3
Located: Entrance 11 (new emergency entrance on Oak St.), Entrance 35 (old emergency entrance) & Entrance 17 (level 1 north)
Total # of Bikes: 120

Bike Cages: 2
Located: Level 1 Underground Parkade (stall #1659-1661) & Level 1 Underground Parkade
(Stall #1460/1484)
Total # of Bikes: 63

TACC UNDERGROUND PARKADE

Bike Cages: 2
Located: Room T0-303 & Room T0-305
Total # of Bikes: 34



APPENDICES

FRASER HEALTH FACILITIES CHART

SITE:	LOCATION:	STORAGE TYPE:	# OF BIKES:	OPEN TO:	ACCESS:	SURVAILENCE:	EMERGENCY BUTTON:
ARHCC	ARHCC ENTRANCE	OPEN BIKE STAND	17	ALL		NO	NO
ARHCC	EMERGENCY ROOM	OPEN BIKE STAND	8	ALL		NO	NO
ARHCC	STAFF ENTRANCE FROM LOT B (YALE 3) ADJACENT TO PHARMACY & FACILITIES MANAGEMENT AREAS	BIKE CAGE	30	STAFF ONLY	ID ACCESS	NO	NO
BH	EMERGENCY ENTRANCE	OPEN BIKE STAND	4	ALL		YES	NO
BH	LOT #165 ADMIN OFFICE ENTRANCE	OPEN BIKE STAND	6	ALL		NO	NO
BH	MENTAL HEALTH ENTRANCE	OPEN BIKE STAND	3	ALL		NO	NO
BH	LOT #1502 MAIN ENTRANCE	OPEN BIKE STAND	5	ALL		NO	NO
BH	LOT #1503 MAIN ENTRANCE	OPEN BIKE STAND	10	ALL		NO	NO
BH	PARKADE LEVEL 2	BIKE CAGE	17	STAFF ONLY	PUNCH CODE: 2145	NO	YES (LOCATED OUTSIDE THE CAGE BESIDE THE METER)
CGH	MAIN ENTRANCE, ACUTE CARE BLDG. OF DIAMOND JUBILEE PAVILION	OPEN BIKE STAND	12	ALL		NO	NO
CGH	C WING, OFF HODGINS AVE	BIKE CAGE	12	STAFF ONLY	ID ACCESS	NO	NO
DH (DELTA)	MAIN ENTRANCE, STAFF ENTRANCE & RESIDENTIAL CARE BLDG	BIKE RACK	15	ALL		NO	NO
ERH	MAIN ENTRANC (UNDER COVER) –	OPEN BIKE STAND	5	ALL		NO	NO

	OFF GUILDFORD WAY						
ERH	WEST SIDE OF BUILDING NEXT TO LOADING DOCKS	BIKE CAGE	24	STAFF ONLY	ID ACCESS	NO	NO
JPOCSC	MAIN ENTRANCE	BIKE RACK	4-6	ALL		NO	NO
JPOCSC	PARKADE	BIKE ROOM	27	STAFF ONLY	ID ACCESS	NO	NO
LMH	OUTSIDE FRONT LOBBY & DOCTOR ENTRANCE	BIKE CAGE	26	STAFF ONLY	ID ACCESS	NO	NO
LMH	OUTSIDE FRONT LOBBY & DOCTOR ENTRANCE	BIKE RACK	12	ALL		NO	NO
MMH	EMERGENCY MAIN ENTRANCE	BIKE RACK	7-9	ALL		NO	NO
MMH	MISSION COMMUNITY HEALTH ENTRANCE	BIKE RACK	5	ALL		NO	NO
MMH	HURD STREET & SCOTT AVE ENTRANCE	BIKE CAGE	20	STAFF ONLY	ID ACCESS	NO	NO
PAH	ACUTE SOUTH TOWER, SOUTH SIDE MAIN FLOOR FACING RUSSELL AVE	BIKE CAGE	32	STAFF ONLY	ID ACCESS	YES	YES (2 IN TOTAL)
PAH	BERKELEY PAVILION ENTRANCE	BIKE RACK	8	ALL		NO	NO
PAH	WEATHERBY PAVILION	BIKE RACK	8	ALL		NO	NO
PAH	DR.AL HOGG PAVILION	BIKE RACK	8	ALL		NO	NO
QPCC	STAFF ENTRANCE	BIKE RACK	4	ALL		NO	NO
RCH	HEALTH CARE CENTRE UNDERGROUND PARKADE (CLOSE TO ELEVATOR ENTRANCE)	BIKE CAGE	12	STAFF ONLY	ID ACCESS	NO	NO
RCH	HEALTH CARE CENTRE UNDERGROUND PARKADE (CLOSE TO ELEVATOR ENTRANCE)	BIKE CAGE	12	STAFF ONLY	ID ACCESS	NO	NO
RCH MHSU	P1 UNDERGROUND PARKADE	BIKE CAGE	14	STAFF ONLY	ID ACCESS	NO	NO

RCH MHSU	MAIN ENTRANCE	BIKE RACK	8	ALL		NO	NO
RMH	MAIN ENTRANCE	BIKE RACK	5	ALL		NO	NO
RMH	BASEMENT, WEST SIDE STAFF ENTRANCE TO ACUTE BUILDING	BIKE CAGE	8	STAFF ONLY	ID ACCESS	NO	NO
SMH	PARKADE LEVEL 1, CORNER OF 94A AVENUE & 138TH STREET (ADJACENT TO ENERGY CENTRE)	BIKE CAGE	20	STAFF ONLY	ID ACCESS	NO	NO
SMH	PARKADE LEVEL 1, CORNER OF 94A AVENUE & 138TH STREET (ADJACENT TO ENERGY CENTRE) SOUTH D BLDG	BIKE CAGE	20	STAFF ONLY	ID ACCESS	NO	NO
SMH	CRITICAL CARE TOWER LEVEL B, UNDERGROUND PARKADE BESIDE PARKING STALL #2087	BIKE CAGE	72	STAFF ONLY	ID ACCESS	NO	NO
SMH	CRITICAL CARE TOWER MAIN ENTRANCE, RIGHT SIDE	BIKE RACK	12	ALL		NO	NO
SMH	CRITICAL TOWER CARE EMERGENCY ENTRANCE	BIKE RACK	8	ALL		NO	NO
SMH	NORTH PARKADE LEVEL 2 ENTRANCE (TEMP DECOMMISSIONED)	BIKE RACK	4-6	ALL		NO	NO
SMH	BLDG. B ENTRANCE, BY CAFETERIA	BIKE RACK	7-9	ALL		NO	NO
SMH	ENERGY CENTRE COURTYARD BETWEEN BLDG.F	BIKE RACK	13	ALL		NO	NO
SMH	CREEKSIDE BLDG. ENTRANCE	BIKE RACK	7-9	ALL		NO	NO
SMH	CREEKSIDE ANNEX BLDG. PARKING LOT, NORTHWEST CORNER	BIKE RACK	2-4	ALL		NO	NO
SMH	BETWEEN QUIBBLE CREEK &	BIKE RACK	21	ALL		NO	NO

	TIMBER CREEK BUILDINGS						

PROVIDENCE HEALTH CARE FACILITY CHART

SITE:	LOCATION:	STORAGE TYPE:	# OF BIKES:	OPEN TO:	ACCESS:	SURVEILLANCE:	EMERGENCY BUTTON:
1190 HORNBY ST.	FRONT BUILDING ENTRANCE	BIKE RACK	6-8	ALL		NO	NO
1190 HORNBY T.	UNDERGROUND PARKADE LVL 1	BIKE CAGE	30	TENTANTS/ STAFF ONLY	HR_RECEPTION@PROVIDENCEHEALTH.BC.CA	NO	NO
HOLY FAMILY HOSPITAL	MAIN ENTRANCE ROUNDABOUT	BIKE RACK	8-10	ALL		NO	NO
1125 HOWE ST. (SPH FOUNDATION)	FRONT BUILDING ENTRANCE	BIKE RACK	14-18	ALL		NO	NO
MT. ST. JOSEPH	KINGSWAY ENTRANCE	BIKE RACK	10	ALL		NO	NO
MT. ST. JOSEPH	MAIN ENTRANCE	BIKE RACK	4	ALL		NO	NO
MT. ST. JOSEPH	BACK ENTRANCE OFF OF E 15TH AVE (BEHIND MAIN HOSP. BLDG.)	BIKE CAGE	13	STAFF ONLY	KEY ACCESS ISSUED BY PHYSICAL PLANT WORKSHOP ON THE MAIN FLOOR. DEPOSIT REQUIRED FOR KEY	NO	NO
ST. PAULS HOSPITAL	COMOX ENTRANCE	BIKE RACK	7-9	ALL		NO	NO
ST. PAULS HOSPITAL	THURLOW ENTRANCE	BIKE RACK	6-8	ALL		NO	NO

ST. PAULS HOSPITAL	MAIN ENTRANCE	BIKE RACK	7-9	ALL		NO	NO
ST. PAULS HOSPITAL	UNGERGROUND PARKADE LVL 1 BY ENTRANCE	BIKE CAGE	80	STAFF	ID ACCESS	NO	NO
SV-BROCK FAHRNI PAVILION	MAIN ENTRANCE	BIKE RACK	8	ALL		YES	NO
SV-HONORIA CONWAY	CHAP ENTRANCE	BIKE RACK	8	ALL		NO	NO
YOUVILLE RESIDENCE	STAFF ENTRANCE, EAST SIDE	BIKE RACK	4-6	STAFF	REQUEST FROM DEPARTMENT HEAD/COORDINATOR	NO	NO
YOUVILLE RESIDENCE	MAIN ENTRANCE, IN FRONT THE CHAPEL	BIKE RACK	8	ALL	NO	NO	NO

PROVINCIAL HEALTH SERVICES AUTHORITY FACILITY CHART

SITE:	LOCATION:	STORAGE TYPE:	# OF BIKES:	OPEN TO:	ACCESS:	SURVEILANCE:	EMERGENCY BUTTON:
BCCRC	MAIN ENTRANCE	BIKE STAND	6	ALL		NO	NO
BCCRC	W 10TH AVENUE SIDE	BIKE RACK	7-9	ALL		NO	NO
BCCRC	HEATHER STREET	BIKE STAND	1-2	ALL		NO	NO
BCCRC	ROOM B1. 106, NORTH EAST CORNER OF BLDG.	BIKE ROOM	27	STAFF	CONTACT CAITLIN CLUGSTON: CCLUGSTON@BCCANCER.BC.CA	NO	NO
BCCA-VCC VANCOUVER CANCER CENTRE	HEATHER STREET SIDE	BIKE RACK	6	ALL		NO	NO
BCCA-VCC VANCOUVER	MAIN ENTRANCE	BIKE RACK	45	ALL		NO	NO

CANCER CENTRE							
BCCA-VCC VANCOUVER CANCER CENTRE	PARKADE LVL 1 ENTRANCE	BIKE RACK	27	ALL		YES	NO
BCCA-VCC VANCOUVER CANCER CENTRE	PARKADE LVL 1 HOSPITAL ENTRANCE	BIKE CAGE	21-27	STAFF	PUNCH CODE: 5&4,2,3	YES	NO
BCCDC	N/A	BIKE STAND		ALL		NO	NO
BCCDC	N/A	BIKE RACK		ALL		NO	NO
BCCDC	N/A	BIKE ROOM		STAFF	BILL WONG: BILL.WONG@BCCDC.CA	NO	NO
BCCW-AMBULATORY CARE	ENTRANCE 21	BIKE RACK	8	ALL		YES	NO
BC CHILDREN'S	ENTRANCE 11 (NEW EMERGENCY ENTRANCE ON OAK ST.	BIKE RACK	62	ALL		YES	NO
BC CHILDREN'S	ENTRANCE 35 (OLD EMERGENCY ENTRANCE)	BIKE RACK	40	ALL		NO	NO
BC CHILDREN'S	ENTRANCE 35 (OLD EMERGENCY ENTRANCE)	BIKE RACK	10	ALL		YES	NO
BC CHILDREN'S	ENTRANCE 17 (LVL 1 NORTH)	BIKE RACK	8	ALL		YES	NO
BC CHILDREN'S	LEVEL 1 UNDERGROUND PARKADE (STALL #1661,1660,1659)	BIKE CAGE 1	34	STAFF	$10.00 FEE FOR KEY OBTAINED BY CASHIER AT TIM HORTONS	NO	NO
BC CHILDREN'S	LEVEL 1 UNDERGROUND PARKADE (STALL #1460,1484)	BIKE CAGE 2	29	STAFF	ID ACCESS	NO	NO
BC CHILDREN'S RESEARCH INSTITUTE	NORTH SIDE	BIKE CAGE	4	ALL		NO	NO
BC CHILDREN'S RESEARCH INSTITUTE	SOUTH ENTRANCE	BIKE CAGE	44	CFRI/ CSB STAFF ONLY	KAYA TOMASH: KTOMASH@BCCHR.CA	NO	NO

BC WOMEN'S	ENTRANCE 93	BIKE RACK	16	ALL		NO	NO
BC WOMEN'S	ENTRANCE 97	BIKE RACK	8	ALL		NO	NO
BCCW-CLINICAL SUPPORT BLDG.	ADJACENT TO THE UNDERGROUND PARKADE	BIKE CAGE	3O	CFRI/ CSB STAFF ONLY	NICK STEEL: NSTEEL@CFRI.CA OR TODD JACQUES: TJACQUES@CFRI.CA	YES	NO
BCCW-MENTAL HEALTH BLDG./HEALTHY MINDS CENTRE	ENTRANCE 81	BIKE RACK	8	ALL		NO	NO
BCCW-MENTAL HEALTH BLDG./HEALTHY MINDS CENTRE	ENTRANCE 87, GROUND LVL BELOW PEDESTRIAN WALKWAY	BIKE CAGE	16	MHB/HMC STAFF ONLY	LYDIA ROLLINS: LROLLINS@CW.BC.CA	NO	NO
BCCW-PLANT SERVICES / HR BLDG.	WEST SIDE (INSIDE FENCED AREA)	BIKE RACK	12	PLANT SERVICES/HR BLDG. STAFF ONLY		NO	NO
BCCW-SHAUGHNESSY BLDG.	ENTRANCE 77	BIKE RACK	4	ALL		NO	NO
BCCW-SHAUGHNESSY BLDG.	ENTRANCE 79	BIKE RACK	16	ALL		NO	NO
1795 WILLINGDON	MAIN ENTRANCE	BIKE RACK	3	ALL		NO	NO
1795 WILLINGDON	MAIN UNDERGOUND PARKADE, BY THE ENTRANCE	BIKE WALL HANGER	7	STAFF ONLY	ID ACCESS	NO	NO
1795 WILLINGDON	UNDERGROUND PARKADEE, SOUTHWEST CORNER	BIKE CAGE	50	STAFF ONLY	ID ACCESS	NO	NO
SUNNY HILL HEALTH CENTRE	FRONT ENTRACE AT 3644 SLOCAN AVE	BIKE RACKS	15	ALL		NO	NO
TACC – EMERGENCY	ENTRANCE 53	BIKE RACKS	14	ALL		YES	NO
TACC – EMERGENCY	ENTRANCE 55	BIKE RACKS	18	ALL		YES	NO

RONALD MCDONALD HOUSE	ENTRANCE 90	BIKE RACKS	10	ALL		NO	NO
CHILD CARE CENTRE	ENTRANCE 98	BIKE RACK	3	ALL		NO	NO
TACC UNDERGOUND PARKADE	ROOM T0-303	BIKE ROOM	9	STAFF ONLY	ID ACCESS	YES	NO
TACC UNDERGROUND PARKADE	ROOM T0-305	BIKE ROOM	24-25	STAFF ONLY	ID ACCESS	YES	YES

APPENDIX A: LOWER MAINLAND HEALTH CARE ORGANIZATIONS' ENVIRONMENTAL SUSTAINABILITY COMMITMENT

A. FH - Energy and environmental sustainability - Fraser Health Authority
B. PHC - Energy & Environmental Sustainability | Providence Health Care
C. PHSA - Environmental Sustainability (phsa.ca)
D. VCH - https://www.vch.ca/en/environmental-sustainability
E. LMHCO - Lower-Mainland-Health-Organizations-EPAR.pdf (bcgreencare.ca)

F. Lower Mainland Facilities Management Design Guidelines

APPENDIX B: EXTERNAL GOVERNING BODIES REQUIREMENTS

A. https://www.cagbc.org/our-work/certification/leed/
B. Local Government *(the table below only shows cities, municipalities, districts, townships, etc. with bicycle parking-related bylaws available online)*

City/Municipality	Link
Abbotsford	2014b2400150 (abbotsford.ca)
Agassiz	Zoning Bylaw No. 1219, 2001 (Consolidated May 30, 2012)
Burnaby	No provisions for off-street bicycle parking within its zoning bylaw; only guidance (below) for rezoning applications - City of Burnaby 2009-01-30 - Bicycle

Chilliwack	Zoning Bylaw 2020, No. 5000 - City of Chilliwack Regulatory Bylaws - City of Chilliwack
Coquitlam	Zoning Bylaw | Coquitlam, BC
Delta	Zoning Bylaw | City of Delta
Gibsons	Updated-Bylaw.pdf (gibsons.ca)
Hope	DownloadDocument (hope.ca)
Langley, City of	Zoning Bylaw | City of Langley
Maple Ridge	4350-1990 Off-Street Parking Bylaw Consolidated (mapleridge.ca)
New Westminster	Zoning Bylaw | City of New Westminster (newwestcity.ca)
North Vancouver, City of	Zoning | City of North Vancouver (cnv.org)
North Vancouver, District of	Zoning Bylaw | District of North Vancouver (dnv.org)
Pitt Meadows	Zoning Bylaw No. 2505, 2011 | City of Pitt Meadows
Port Coquitlam	Zoning+Bylaw+No.+3630.pdf (jin-zhang.com)
Port Moody	Zoning Bylaw - City of Port Moody
Powell River	CITY OF POWELL RIVER (civicweb.net)
Richmond	Zoning & Development - City of Richmond, BC Microsoft Word - CITYHALL-#2703766-v3-Zoning_Bylaw_8500_-_Part_A_(Sections_1_to_7)__DO_NOT_MARK_AS_RECORD_(richmond.ca)
Sechelt	Zoning - District of Sechelt
Squamish	2020 Zoning Bylaw Update - District of Squamish - Hardwired for Adventure
Surrey	BYL_Zoning_12000.pdf (surrey.ca)
Vancouver	Parking Bylaw: Section 6 (vancouver.ca)