



CITY OF VANCOUVER  
POLICY REPORT  
TRANSIT AND TRAFFIC

Report Date: April 30, 2008  
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Meeting Date: May 13, 2008

TO: Standing Committee on Transportation and Traffic  
FROM: General Manager of Engineering Services  
SUBJECT: Review of Off-Street Bicycle Parking Requirements

**RECOMMENDATION**

- A. THAT the Class A bicycle requirements in the Parking By-law for office and retail uses be increased from 4% of work trips (1/750m<sup>2</sup> of gross floor space) to 6% of work trips (1/500m<sup>2</sup>).
- B. THAT the Class A bicycle requirements in the Parking By-law for hospitals, schools and manufacturing, transportation & storage, utility & communication, wholesale uses currently 4% of work trips (one space for every 25 employees) be increased to 6% of work trips (one space for every 17 employees).
- C. THAT for each 5 additional Class A bicycle spaces above the proposed 6% of work trip requirement in the Parking By-law be reduced by one space up to a 10% provision (1/300m<sup>2</sup> or 1/10 employees).
- D. THAT the City amend the existing Class A bicycle space requirement in the Parking By-law to require a minimum of 20% bicycle lockers in accordance with the City's bicycle locker standards, and that the maximum number of vertical spaces be reduced to a maximum of 30% of total Class A spaces.
- E. THAT the Parking By-law be amended to allow existing buildings to convert vehicle parking spaces to Class A bicycle spaces up to the current bicycle requirement with a reduction in the parking requirement of one parking space for each 5 Class A bicycle spaces to more easily allow the retroactive provision of bicycle spaces.

- F. THAT the Parking By-law be amended to require a minimum of 50% of clothing lockers required for non-residential use, be full sized (min. 180mm in height) but that enactment of this requirement be delayed for six months.
- G. THAT the City bicycle security requirements in the Parking By-law be amended to:
- Require, as a minimum, for compound enclosures, floor to ceiling expanded metal mesh. A chain link compound will no longer be acceptable.
  - Require that all solid interior walls be painted.
  - Require high security locks for bicycle rooms and compound entrance doors.
  - Exempt from the 40 bicycle limit per room any bicycle lockers located within bicycle rooms or compounds.
  - No longer require a window in bicycle room doors in residential developments.
- H. THAT for the potential future use of electric bicycles the Parking By-law be amended to require that an electrical outlet, as detailed in the report, be provided for each 2 Class A bicycles spaces but that enactment of this requirement be delayed for 12 months.
- I. THAT a specific written assurance that bicycle facilities meet the City's by-law requirements be provided prior to occupancy.
- J. THAT the Director of Legal Services bring forward the necessary by-law amendments to enact the above recommendations.

### *COUNCIL POLICY*

On May 27, 1997, Council approved the Vancouver Transportation Plan which emphasized the need to provide a high standard of bike facilities in commercial and residential facilities, especially in downtown.

On November 2, 1999, Council approved a City Bicycle Plan to support bicycle use with the creation of a bicycle network. This program was reviewed by Council on July 18, 2006.

### **PURPOSE**

This report reviews the requirements for bicycle parking facilities for both multiple residential and non-residential buildings.

### **BACKGROUND**

The City recognizes the importance of bicycles as both a sustainable transportation option and recreational pursuit enjoyed by many people. The City has by-law requirements to ensure the provision of secured bicycle space in both residential and non-residential buildings.

The multiple dwelling residential requirements for bicycles recognize that there is on average more than one bicycle per household, and the non-residential requirements recognize that

there is a growing number of cyclists using their bicycles for work, shopping and entertainment trips.

The 1995 requirements, currently used, were based on both the existing and projected needs at that time. The bicycle requirements were developed as a standard for new buildings to promote cycling throughout the city. These requirements were aimed at improving security, accessibility, and availability of bicycle facilities for commercial and residential buildings.

The City requires both Class A and Class B bicycle spaces.

- Class A bicycle spaces should be fully secured and weather protected for residents or employees with personal locker space and shower facilities required for non-residential facilities.
- Class B bicycle spaces should be for visitor parking and are typically provided in the form of bicycle racks.

Since these 1995 by-law changes were introduced cycling has greatly increased in the Central Business Area and Vancouver.

Several surveys were conducted recently to review the effectiveness of the bicycle provisions of the Parking By-law.

In June and July of 2006, staff reviewed bicycle parking facilities and interviewed managers/staff at a total of 24 commercial and residential developments to check by-law requirement compliance, compound security, bicycle space demand, and shower and locker convenience. The City surveyed buildings that were occupied within the past five years to ensure they fell under the 1995 bicycle requirements.

In 2007 vehicle and bicycle ownership in 50 multiple residential buildings was reviewed.

A summary of the findings of these surveys is as follows and the detailed reports are available in the Parking Management Branch of Engineering Services

### **Bicycle Parking for Non-residential Buildings**

- Bicycle parking facilities located in surveyed commercial office buildings were generally well used. Seven downtown buildings surveyed had an observed usage of 74% of our by-law required spaces. Six buildings surveyed outside the downtown had an observed usage of 83% of our by-law required spaces.
- Five buildings provided more parking than the by-law required due to increased need. Specifically noted were the Federal Fisheries building at 401 Burrard Street which provides almost four times our requirement and had an observed use of twice our requirement, and the BC Cancer building which provided double our requirement with an observed use greater than our requirement.
- Three buildings did not provide required class B parking.

- Many buildings had thefts in the first year of opening and then had security revisions most of which were originally required by the by-law.

### Bicycle Parking for Residential Buildings

- Our survey of multiple residential developments confirmed that bicycle ownership is approximately 1.25 spaces per dwelling unit which is our by-law requirement.
- Most bicycle storage facilities were significantly underused. Overall less than half the provided spaces were used and only 28% of the vertical spaces used.
- Initially none of the bicycle storage areas fully met the City's security requirements.
- Five facilities had been retrofitted to improve security.
- People with high priced bikes generally would prefer to not use their current bicycle storage areas due to theft concerns.

### Specific By-law and Security Concerns

Specific bicycle by-law requirements that were not followed for residential and commercial buildings include:

- **6.3.4 Bicycle room doors.** Many of the bicycle room doors did not have a security window constructed of a laminate of tempered glass and polycarbonate in a steel frame. If a room did have a security window installed, many of them were covered so that thieves could not have a visual access of bicycle merchandise. Thus, while the window was required to allow residents to see inside for personal safety, the bigger concern appears to be bicycle security against theft.
- **6.3.15 Bicycle compound doors.** Many compound doors did not have striker plates installed to protect against prying or hammering of the lockset. Also, many bicycle room doors had L-shaped door handles which made it easy for thieves to pry open.
- **6.3.5, 6.3.16 No room or compound shall provide over 40 bicycles spaces.** Seven of the surveyed buildings, mainly residential, had at least one room that exceeded 40 bicycle spaces. Keeping the number of available bicycle spaces below 40 helps lower the incentive and likelihood for theft.
- **6.3.12 Bicycle racks shall be theft resistant material and allow the frame to be locked with a U-style lock.** The material and design of bicycle racks is not a problem. The problem arises when cyclists try to install and lock their bike on a rack. Many cyclists are unaware of the proper techniques, especially for vertical racks. Most vertical bike racks need the use of a wall to properly assist the rack in holding a bicycle vertically. Many of the vertical bike racks were installed in the middle of a room without the assistance of a wall; therefore racks were either not used or held awkwardly. Some bicycle facilities have instructions that show the proper locking and installation procedure. These instructions help eliminate the confusion surrounding bike racks.

- **6.3.14 Bicycle compound security.** Nearly all of the compounds did not have reinforcing vertical bars spaced at 150mm apart, and welded together by at least two crossbars no more than 1,200mm apart.
- **6.3.11 Class A bicycle spaces are required to be numbered.** Only four of the twenty-four surveyed buildings implemented this.

## DISCUSSION

### Non-residential Buildings

When the City established the bicycle requirements for non-residential developments in 1995 a standard was set which represented 4% of work trips (1 Class A space / 750 m<sup>2</sup> of gross building area). This was two times the observed 2% typical summer bicycle usage to ensure that adequate space was available to accommodate future growth in bicycle use.

Today typical summer bicycle use for work trips has increased to approximately 3%. To continue to accommodate future growth, it is recommended:

- That our requirement for non-residential be increased to 6%, which is 1/500 m<sup>2</sup> of gross building area for office or retail use and 1/17 employees for other uses identified in the parking by-law. This includes hospitals, schools, and industrial uses.

As can be seen by our survey, there are buildings that due to their tenants have increased bicycle parking needs. To allow for this, and encourage the provision of increased bicycle facilities, two further changes are recommended.

- For new buildings it is recommended that for every 5 Class A bicycle spaces provided above the 6% level up to 10% (1/300m<sup>2</sup> of gross building area) the car parking requirement be reduced by one space.
- For existing buildings it is recommended that for every 5 Class A bicycle spaces retroactively provided, up to the bicycle requirement for the use, the parking requirement be reduced by one space.

The ratio of one vehicle space for 5 bicycle spaces represents the equivalent area required to provide 5 Class A bicycle spaces (including at least one bicycle locker and also personal clothes lockers) in accordance with the parking by-law requirement for Class A spaces.

### Residential Buildings

Based on our survey of residential multiple dwellings the demand for bicycle spaces is the same as our existing bicycle space requirements. However, observations show that many bicycle parking spaces are unused.

There would be several reasons for this; however, the greatest factor appears to be security issues.

Many residents surveyed expressed frustration that their bicycle parking security is not adequate, particularly when they first move into a new building. As a result, owners are required to pay additional costs for security upgrades within the first year of moving in. Even with upgrades, none of the surveyed bicycle parking facilities met all of the by-law requirements. In cases where bicycle parking facilities were upgraded, thefts and break-ins significantly declined or were eliminated. As well, many, especially those with high priced bicycles, tend to keep their bicycle in their unit rather than the bike storage area.

No change is recommended in the number of required Class A bicycle spaces for multi-residential buildings and to encourage the better use of facilities a number of security improvements are recommended.

### Security and Convenience Improvements

Staff recommend the following by-law changes to improve security and use of provided bicycle facilities.

- For bicycle compounds it is recommended that reinforced chain link not be allowed and that, as a minimum, developers be required to use expanded metal mesh. Chain link when used was generally not reinforced as required and without reinforcing is relatively easy to breach. Reinforced chain link is also difficult to obtain.
- That the number of vertical bicycle racks allowed be reduced from a maximum of 50% to a maximum of 30%, and that there be a new requirement of a minimum of 20% bicycle lockers. Vertical bicycle racks are more difficult to use and, if not adjacent to a wall, can be impossible to use. The addition of a bicycle locker requirement will provide a much higher level of security, especially needed for expensive bicycles, which are commonly targeted by thieves in bicycle storage rooms.
- That any bicycle lockers located within bicycle rooms or compounds be exempt from the 40 bicycle limit per room.
- That separate written assurance be provided prior to the issuance of occupancy permits that bicycle facilities meet the City by-law requirements.
- That the interior of bicycle rooms be painted. The interior of parkades are required to be painted to improve their general quality and this should also apply to the bicycle storage rooms.
- That the required window in residential bicycle storage rooms no longer be required to improve the security of these rooms.
- That a minimum of 50% of the by-law requirement for clothing lockers for non-residential use be full sized (min. 180mm height) for both male and female locker room provisions. Currently the City requires half sized lockers (min. 90mm height), which may not be adequate for wet bicycle gear.

## Electric Bicycles

There is a growing use of electric 'assist' bicycles. Electric bicycles would typically have a small electrical need and it is important in planning into the future that buildings have a provision built in. With Vancouver's hilly nature, electric bicycles could remove one of the impediments to increased bicycle use and lower car reliance. It is recommended that electric outlets be provided for 50% of Class A bicycle spaces.

## Class B Bicycle Spaces

Observations indicated that the current provisions for Class B (visitor spaces) are adequate and no changes are recommended.

## ENVIRONMENTAL IMPLICATIONS

Bicycle use is a sustainable transportation choice that the City strongly supports. This report, by recommending an increase to the availability and security of bicycle spaces, strengthens the City's commitment to bicycle use.

## IMPLEMENTATION PLAN

Staff acknowledge the inherent difficulties in trying to incorporate these proposed revisions for building designs which are nearing completion. Therefore, in order to avoid new requirements for existing building designs late in the design process, staff recommend that, should Council approve these amendments, the amendments related to bicycle lockers be implemented 6 months after Council approval and the amendments for electrical outlets for Class A bicycle spaces be implemented 12 months after Council approval. This should allow sufficient time for staff to inform industry of the proposed amendments as well as time for building owners and/or designers to incorporate these new requirements into their building designs.

## PUBLIC CONSULTATION

Staff have consulted with the Bicycle Advisory Committee to Council (BAC), the Urban Development Institute (UDI), and the Building Owner and Managers Association (BOMA).

## BAC

The BAC strongly supports the proposed improvements to bicycle facilities. They believe that the City needs to look to the future and both encourage and remove impediments to increased bicycle usage.

They note that we may see the day when bicycle usage reaches 20% or more and the City needs to monitor and update requirements on a periodic basis. They particularly appreciate the provision to reduce vehicle parking requirements for buildings which retrofit added Class A bicycle spaces and would like the City to consider other incentives for retrofitting.

The BAC also favours the recommended security initiatives and note that security is a large issue.

## UDI

UDI members suggested that the City allow bicycle storage areas near parking stalls, however these may be away from elevators or on lower parking floors. Currently bicycle storage is required on the first underground level unless separate bicycle elevator access is provided so cyclists would not excessively have to use stairs or parking ramps. If the proposed bicycle locker requirement is approved the bicycle lockers could be located on the first level near parking stalls.

Many UDI members believed that thieves will break into bicycle storage areas no matter what security measures are in place. People will not place bikes worth several thousand dollars in the facilities. They will opt to store their bicycles in their units. It was suggested that the Woodward's model be adopted where storage facilities are built in the non-market single units with an FAR exemption. Currently, the City is not recommending this, but will review the option after Woodward's opens.

UDI members also suggested that a survey of cyclists in residential and commercial projects be done to determine what they would like to see in terms of bicycle storage. Also residential building/strata managers should be interviewed. The City's surveys invited commentary from bicycle owners and building managers. One particularly telling comment from a building manager was "bike rooms are awkward to get down to and the tenants don't feel the bike room is secure enough to leave expensive bikes".

It was also noted that electric sockets may be required for electric cars. There was some concern expressed about the power requirements for this. Certainly the power requirement for cars will be much greater than bicycles and it is felt that the bicycle room electrical provision would not add a noticeable load on a building's total electrical need.

## BOMA

BOMA did not express any concern about the report as the changes applied mainly to new buildings. They did appreciate the potential parking credit to remove an impediment to retrofitting bicycle spaces and suggested that the City consider other incentives in the future.

## CONCLUSION

Bicycles are used by many Vancouver citizens - there is more than one bicycle for each household. Bicycles are enjoyed for recreation and increasingly as an important transportation mode. The City, through its by-laws, sets standards to ensure the provision of adequate and secure bicycle facilities. These standards, last reviewed in 1995, are set to anticipate future increased use.

Several surveys indicate that bicycle use is at the level projected in 1995 and it is recommended that our non-residential requirements be increased for future growth. There is also growing use of 'electric assist' bicycles and it is recommended that bicycle facilities accommodate them.

Bicycle security continues to be a significant issue and a number of provisions are proposed to improve security.

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