

BURNABY BICYCLE ADVISORY COMMITTEE

*HIS WORSHIP, THE MAYOR
AND COUNCILLORS*

RE: BICYCLE PARKING AND END OF TRIP FACILITIES REQUIREMENTS

RECOMMENDATIONS:

- 1 *THAT* Council adopt the guidelines as outlined in the *attached* report to be implemented through the use of rezoning prerequisites with particular emphasis on end-of trip facilities.
2. *THAT* Council authorize staff to incorporate bicycle parking and end-of-trip facilities in the zoning bylaw after a period of no more than three years.

REPORT

The Burnaby Bicycle Advisory Committee, at its meeting held on 1997 September 25, at which time a quorum was not present, received and adopted the *attached* report outlining proposed requirements for bicycle parking and end-of-trip facilities in Burnaby.

Arising from discussion on the report, the Committee expressed its concerns on the current process of achieving end-of-trip storage facilities by the rezoning process, and outlined the eventual need for a regulatory requirement to be implemented in the zoning bylaw.

Respectfully submitted,

Councillor N. Volkow
Chair

COPY - CITY MANAGER
- DIR. PLNG. & BLDG.

TO: BICYCLE ADVISORY COMMITTEE
FROM: DIRECTOR PLANNING AND BUILDING

1997 September 12

SUBJECT: CITY OF BURNABY, PLANNING AND BUILDING DEPARTMENT
BICYCLE PARKING AND END OF TRIP FACILITIES REQUIREMENTS

PURPOSE: To outline for discussion with the Committee proposed requirements for Bicycle Parking and End-of-Trip Facilities in Burnaby.

RECOMMENDATIONS:

1. THAT this report be received for information to facilitate discussion at the 1997 September 25 meeting of the Bicycle Advisory Committee.

R E P O R T

1.0 BACKGROUND

A primary goal of The *Burnaby Transportation Plan* is: "Safe and convenient cycling facilities be provided as an alternative to the use of private vehicles." (1996, p. 91) Cycling can be an attractive mode of transportation and play a significant role in reducing vehicular use of street systems. Currently in the GVRD 3% of all trips are made with bicycles. In order to encourage an increase in this number, steps must be taken to improve safety and convenience of cycling.

The *Burnaby Transportation Plan* also encourages provision of support facilities for bicycles. These facilities should be incorporated into multi-family residential, office, industrial, commercial and institutional developments through the rezoning process. Cycle facilities include storage lockers, storage rooms, parking racks, showers, water closets, wash basins and changing facilities. The purpose of such facilities would be to increase the comfort and convenience of cycling for commuters.

Why Invest in Bicycle Facilities?

Bicycling is a viable, efficient form of transportation widely used throughout the world. Many cities in Europe, especially in densely populated countries such as the Netherlands and Denmark, have very high rates of bicycle usage (up to 50% of all trips) and have integrated bicycling as a major component of their transportation plans. Requiring adequate bicycle facilities would help to encourage use of the mode in Burnaby, bringing many positive results.

Historically, North Americans have had the perception that cycling can only be used as a form of recreation. This is a large misperception which has slowly begun to change. The City of Surrey estimates that it is a realistic goal for as much as 5 - 10% of all trips to be made by bicycle with the proper facilities (versus the current 3% in the GVRD). Increased bicycle use, combined with other non-automobile transportation modes such as ridesharing, transit and walking, can reduce auto congestion and increase overall mobility in Burnaby.

In addition, bicycles are much more cost effective than the automobile, reduce air pollution and promote physical fitness. In terms of affordability, an automobile costs approximately \$7,533 or more a year to own and operate, whereas a bicycle costs only \$150 per year. Expenditures on bicycle facilities in principle may be seen to be offset by cost savings and deferred expenditures on road construction, although it is difficult to estimate these savings.

In summary, there are four main benefits of increasing bicycle use:

- 1) reducing the rate of growth of automobile traffic;
- 2) minimizing air pollution emissions;
- 3) improving the health of residents; and
- 4) enhancing livability in the city.

The provision of sufficient bicycle parking at both the home and the workplace, in conjunction with end of trip facilities will help encourage bicycling in the City of Burnaby. These requirements would benefit current cyclists as well as encourage others to use the bicycle as an alternate to the automobile.

2.0 CLASSIFICATION OF BICYCLE PARKING FACILITIES

Bicycle parking facilities vary widely in form. They range from unintended 'hitching posts', such as trees or street lamps, to well-planned, high-security storage rooms. The format of a bicycle parking facility should respond to four principal considerations: the time duration for which it is to be used, the level of security needed, the required weather protection and the level of accessibility needed. For example, bicycles that will be stored for a long period of time need a high degree of security and weather protection, while convenience is a secondary concern. However, for short-term bicycle parking easy access is needed but a lower degree of security may be acceptable.

The following classification system of bicycle parking requirements have been adapted from the Transport Association of Canada (TAC) standards and from the standards of other cities.

2.1 Class A Bicycle Parking Facilities

Class A parking is for long term parking; it protects against theft of the entire bicycle, its components and accessories, and protects the bicycle from inclement weather, including wind-driven rain. Examples of Class A parking would be:

Bicycle Locker Facilities: A fully enclosed space accessible only to the owner or operator of the bicycle. This space may serve additional purposes as well.

Check-In Facilities: A facility where the bicycle is given to and left with an attendant(s). The stored bicycles are accessible by the attendant only and are reclaimed through some means of owner identification.

Restricted Access Facilities:

- a) Bicycle parking facilities which would otherwise be Class B, but have improved security; i.e. they are located within a locked room or enclosure accessible to a maximum of ten (10) owners or operators of the bicycles parked within.
- b) In multi-unit residential developments, a common locked garage area with Class B bicycle parking facilities shall be deemed restricted access provided the garage is accessible only to the residents of the units for whom the garage is provided.
- c) Bicycle parking facilities which would otherwise be Class B, but are located within a designated area and under constant surveillance, such as covered automobile parking lots with 24-hour monitoring.

Other facilities not listed above but providing an equivalent level of security may be approved as Class A. Such features as closed-circuit television, security alarms, magnetic key entry and interior door hinges could be required.

Bicycle parking areas should allow a minimum 0.6m x 1.8m for each space, with a minimum 1.2m wide unobstructed access aisle and minimum 1.9m vertical clearance. Wall-mounted racks for vertical storage and overhead storage systems may be considered, however, no more than 40 percent of spaces should be suspended vertically or overhead, as these could prove unusable for many cyclists.

2.2 Class B Bicycle Parking Facilities

Class B parking is for short-term parking; it protects against theft of frame and wheels of the bicycle but does not protect components or accessories. It must be a stationary object to which the user can:

- i) lock the frame and both wheels to the rack with a high-security U-shaped lock, if the bicyclist removes the front wheel; or
- ii) lock the frame and the wheel to the rack with a high-security U-shaped lock, if the bicyclist leaves both wheels on the bicycle; or
- iii) lock the frame and both wheels to the rack with a chain or cable not longer than 1.8m (6 ft.) and lock, without the removal of any wheels.

Class B facilities should be located under overhangs whenever possible for protection from inclement weather.

3.0 CLASSIFICATION OF END-OF-TRIP FACILITIES

End-of-trip facilities are provided for bicyclists at their origins and their destinations. Most cyclists require showers, lockers and change rooms at their place of work. Providing these facilities enables employees to shower and wash after their ride, change into office attire or uniforms and store toiletries and wet clothes. Without these end-of-trip facilities, many people will not consider cycling an attractive or even possible alternative mode of transportation.

Shower, change room and locker amenities required at the workplace should meet the following guidelines:

- The number of required lockers should be equal to or greater than number of required parking stalls where four (4) or more Class A parking stalls are required. These should be distributed equally between both male and female change rooms.
- The dimensional requirements of storage lockers should be at minimum 45 cm in depth, 30 cm wide and 90 cm in height. It is preferable, however, that the clothing lockers measure 50 cm or 55 cm in depth to adequately accommodate business attire, and that they be 180 cm in height.

4.0 EXAMPLES OF BICYCLE PARKING REQUIREMENTS FROM CITIES IN NORTH AMERICA

In 1995 the City of Vancouver, after conducting a three year investigation, adopted a bicycle parking and end of trip facilities standards Bylaw. In preparation of adoption of this Bylaw, Vancouver conducted a study to assess its need for such facilities and what other municipalities in North America have done to address this issue. The study found that many cities across Canada and the United States already have guidelines or legislation that require developers to provide bicycle parking in their projects (see Table 1). In cities with existing bicycle parking requirements proper enforcement of minimum bicycle parking requirements was found to be necessary in order to ensure that the space allotted for bicycle parking is used effectively and for the intended purpose. The survey also found that if better end-of-trip facilities (i.e. secure parking, showers, lockers) were available at the workplace, 76% of those that already ride and 36% of those that do not currently ride stated that they would bicycle to work more often.

Other municipalities in the Lower Mainland have used the Vancouver Bylaw as a guideline to set up their own bicycle parking and end of trip facilities Bylaws. Surrey, Langley, Richmond, Pitt Meadows and the District of North Vancouver have adopted bicycle parking and/or end-of-trip facilities requirements (see Table 2). Although the Vancouver Bylaw has been a point of reference for these municipalities, it has been modified to meet each city's specific needs. When public hearings have been involved in the adoption of these Bylaws, staff indicated that the public was very supportive of bicycle parking and end-of-trip facilities requirements.

Staff from municipalities in the Lower Mainland where projects have been built with the bicycle parking requirement have indicated that, generally, their Bylaws have been working well. Some staff indicated hesitation on the part of developers to provide secure Class A bicycle parking. In some instances it was found that developers wanted general storage areas to be considered Class A parking facilities. Municipalities with end-of-trip facilities requirements have not had projects built that these would apply to since their Bylaws have come into effect, and, therefore, none were able to comment on their implementation.

Table 1
Sample of Existing Bicycle Parking Requirements in North American Cities

City	Multi-Unit Residential	Hotels	Schools/Universities	Office	Retail/Restaurant	Mfg.	Recreation
Palo Alto, Ca.	1/unit	10%*	1/3 students	10%	10%	10%	30%
Portland, Or.	1/4 units-Downtown	1/20 employees	1/10 students	5%	5%	5%	5%
Sacramento, Ca	10% or 4%-Downtown	2%	-----	6.6% or 10% Downtown	2%	4%	-----
San Diego, Ca.	1/3 Units	1/10 Units	-----	1/2500 sq. ft.	1/3500 sq. ft 1/20 seats (restaurant)	-----	-----
Seattle, Wa.	1/5-10 units 2/11-20 units 1/10 units >20 units	-----	-----	5%	5%	-----	5%
Madison, Wi.	1/unit	1/20 employees	1/10 employees & students	10%	10%	10%	10%
Toronto, Ont.	0.75/unit	1/1250 sq.m.**	1/1250 sq.m.**	1/1250 sq.m.**	1/1250 sq.m.**	1/1250 sq.m.**	1/1250 sq.m.**

Source: City of Vancouver Engineering Department, Bicycle Parking Standards Study, 1991.

* Percentages relate to the number of required automobile parking spaces.

**Applies to buildings where the combined non-residential gross floor area is equal to or greater than 2,000 square metres.

Table 2
Comparison of Bicycle Parking & End of Trip Facility Requirements in Lower Mainland Municipalities

City	Multi-Unit Residential	Hotels	Office	Retail/ Restaurant	Industrial	Recreation/ Cultural	End of Trip Facilities
Vancouver*	A-1.25/unit** B-min.6 for any devel with a min. of 20 units	A-1/30 rooms B-min.6 for at least 75 rooms	A-1/750 sq.m. B-min.6 for any devel with a min of 2,000 sq.m.	A-1/750 sq.m. B-min.6 for developments 1,000 sq.m. or larger	A-1/1,000 sq.m. or 1/25 employees (whichever greater) B-Not Required	A-1/500 sq.m. B-min.6 for each 1,500 sq.m. of floor area used for assembly purposes	Required with provision of 4 or more class "A" bicycle parking spaces serving non-residential uses.
District of North Vancouver*** (Class B Parking Only)	0.2/unit for any devel with a min. of 5 units or a min of 6 spaces for a seniors devel with a min of 20 units	Not Required	3/1,000 sq.m.	3/500 sq.m.	Not Required	Recreation-6/1,500 sq.m. Cultural-6/200 person seating capacity. Museum/ Library-6/1,000 sq.m	Under consideration.
Surrey	A-1.5/unit B-min. 5 per development	A-Not required B-1/each 20 rooms	A-Not required B-Area equal to 10% of vehicle parking spaces	A-Not required B-Area equal to 5% of vehicle parking spaces (retail only, not for restaurants)	A-Not required B-Area equal to 5% of vehicle parking spaces	A-Not required B-Area equal to 10% of vehicle parking spaces	Required with provision of 6 or more class "A" bicycle parking spaces in places of employment.
City of Langley	A-0.5/unit B-6 per development	A-1/each 20 rooms B-6/unit	A-1/750 sq.m. B-6/unit	A-1/500 sq.m. B-6/unit	A-1/10 employees B-6/unit	Not Required	Not Required
City of Richmond****	A-1.5/unit B-0.2/unit	Not Required	A-0.27/100 sq.m. B-0.27/100 sq.m.	A-0.8/100 sq.m. B-0.8/100 sq.m.	Not Required	Not Required	Required in association with Class A parking serving non-residential uses.
District of Pitt Meadows	A-1.5/unit B-min.6 for any devel with a min. of 20 units	A-1/each 20 rooms B-Not required	A-1/750 sq.m. B-min.6 for any devel with a min of 2,000 sq.m.	<u>Retail/Service</u> A-1/750 sq.m B-min.6 for any devel with a min. of 1,000 sq.m <u>Restaurant</u> A-1/250 sq.m. B-Not required	A-10% number of auto parking B-Not required	A-15% of number of auto spaces required B-Determined by District	May be required for non-residential uses with extensive employee bicycle parking stalls.

* Vancouver also has a requirement for parking uses (i.e. parkades) which will be considered on a case by case basis.
 ** Vancouver requires a minimum of 0.75 bicycle parking spaces per unit for dwelling units with a gross floor area less than 37 square metres and for a residential unit associated with and forming an integral part of any artist studio. In addition, a minimum of 0.25 bicycle parking space per unit is required for three or more dwelling units designated solely for senior citizens' housing.
 *** The District of North Vancouver will be looking at including Class A bicycle parking facilities, showers and change room facilities in the future.
 **** These requirements apply only to new development in the City Centre area of Richmond.

5.0 COST ESTIMATES

Cost estimates for bicycle facilities are summarized in Table 3 below. These estimates are taken from data provided by the City of Vancouver, recent expenditures in Ottawa and from a study of bicycle facility costs in North America. All costs estimated below calculated in 1993 dollars.

Table 3 - Estimated Bicycle Parking and Facilities Costs

Bicycle racks, installed	\$50 to \$90/bicycle
Bicycle lockers, installed	\$600 to \$1,000/bicycle
Showers, lockers, change room and parking facilities, in new office developments	\$1,300 to \$2,000/bicycle

6.0 CONCLUSIONS

In light of the *Burnaby Transportation Plan's* goal to promote cycling as a viable transportation alternative to the automobile, it is recommended that the Bicycle Advisory Committee review the proposed bicycle parking and end of trip facilities requirements as outlined below, and that the Committee recommend adoption of the reviewed requirements to Council at a future date. These proposed requirements are based on those in other cities in the Lower Mainland. Proper enforcement of the proposed minimum bicycle parking requirements is necessary to ensure that the space allotted for bicycle parking is used effectively and for the intended purpose. In addition to the proceeding bicycle parking and end of trip facility requirements, it is proposed that the guidelines outlined in the 'Classification of Bicycle Parking Facilities' section of this report should also be incorporated into the requirements upon adoption by Council.

Proposed Burnaby Bicycle Parking Requirements

ZONE	REQUIREMENT
RM-Multiple Family Residential Districts RM1- RM7	<u>For all new developments with 3 or more units:</u> A-minimum of 1.5 spaces per unit B-minimum of 0.2 spaces per unit
C-Commercial Districts C1- C4, C7, C8	A-minimum of 1 space per 750 square metres of gross floor area B-minimum of 6 per 1,000 square metres of gross floor area
M-Industrial Districts M1- M8	A-minimum of 1 per 1,000 square metres of gross floor area or 1 per 25 employees, whichever is greater B-not required
P-Public and Institutional Uses P1 - P3, P5 - P9, P11	<u>Religious buildings:</u> A-not required B-minimum of 6 spaces for each 1,500 square metres of gross floor area <u>Assembly, cultural and recreational facilities, clubs or lodges, health centres and clinics, hospitals, public offices, police stations, fire halls, public libraries, elementary schools, public transportation centres:</u> A-minimum of 1 per 500 square metres of gross floor area B-minimum of 6 per 1,500 square metres of gross floor area <u>Colleges, universities, technical schools, secondary schools:</u> A-minimum of 1 per 500 square metres of gross floor area B-minimum of 6 per 1,000 square metres of gross floor area <u>Parking areas and parking garages:</u> A-not required B-minimum of 10 percent the number of vehicle parking stalls

Proposed Burnaby End of Trip Facilities Requirements

Required Number of Class A Bicycle Spaces	Minimum Number For Each Sex Of:		
	<u>Water Closets</u>	<u>Wash Basins</u>	<u>Showers</u>
0 - 3	0	0	0
4 - 29	1	1	1
30 - 64	2	1	2
65 - 94	3	2	3
95 - 129	4	2	4
130 - 159	5	3	5
160 - 194	6	3	6
Over 194	6 plus 1 for each additional 30 bicycle parking spaces or part thereof	3 plus 1 for each additional 30 bicycle parking spaces or part thereof	6 plus 1 for each additional 30 bicycle parking spaces or part thereof

It is also proposed that, initially, these requirements become a Rezoning Prerequisite as opposed to an amendment to the Zoning Bylaw. Discussion with Planning Staff indicates that proceeding with bicycle parking and end-of-trip facilities requirements as a Rezoning Prerequisite initially would be more appropriate, as once an amendment is formally adopted in the Zoning Bylaw it can be a lengthy process to alter. Due to the above proposed requirements being untested in Burnaby, having them as a Rezoning Prerequisite would allow flexibility to refine the requirements if some portions are found to be inappropriate. Staff indicated that by having bicycle requirements as a Rezoning Prerequisite approximately 95 percent of all multiple family residential projects, 75 percent of commercial and industrial projects and 50 percent of institutional projects would be captured. This would be a sufficient proportion of projects to obtain some experience with the requirements and estimate their suitability.

After a period of approximately three (3) years it is proposed that an amendment be made to the Zoning Bylaw to include bicycle parking and end of trip facilities requirements, incorporating any modifications made to the requirements during the three (3) year trial period.



D.G. Stenson,
Director Planning and Building

PSF/ds