City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	December 23, 2009
From:	Victor Wei, P. Eng. Director, Transportation	**File:**	01-0100-20- RCYC1/2009-Vol01
Re:	**RICHMOND COMMUNITY CYCLING COMMITTEE – PROPOSED 2010 INITIATIVES**		

Staff Recommendation

That the proposed 2010 initiatives of the Richmond Community Cycling Committee regarding cycling-related engineering and education activities, as described in the attached report from the Director, Transportation, be endorsed.

Victor Wei, P. Eng.
Director, Transportation
(604-276-4131)

Att. 2

FOR ORIGINATING DEPARTMENT USE ONLY					
ROUTED TO:	**CONCURRENCE**		**CONCURRENCE OF GENERAL MANAGER**		
Parks Planning, Design & Construction	Y ☑	N ☐			
Community Recreation	Y ☑	N ☐			
REVIEWED BY TAG	YES ☑	NO ☐	**REVIEWED BY CAO** DEPUTY	YES ☑	NO ☐

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Staff Report

Origin

The Richmond Community Cycling Committee (RCCC) was formed in 1993 to allow staff to work in partnership with the community to promote commuter and recreational cycling in Richmond. The Committee provides input and feedback on cycling infrastructure projects and undertakes various cycling education and awareness activities to promote cycling as a healthy and sustainable mode of travel. This report reviews the Committee's 2009 activities and achievements and proposes a number of initiatives for 2010 that support the Committee's mandate of encouraging more people to cycle more often in Richmond.

Analysis

1. 2009 Activities and Achievements

The RCCC undertook and participated in a number of activities in 2009 that contributed to enhanced cycling safety and increased education and awareness of cycling in Richmond.

1.1 Expansion & Improvement of Richmond Cycling Network

The City continued to add to the local cycling network in 2009, which now comprises over 45 km of bike routes, with the support of funding grants from various external agencies such as TransLink, the BC Ministry of Transportation & Infrastructure and UBCM. Activities included:

- *Cycling Network Expansion Program*: review of conceptual designs for proposed 2010 projects, which include a cycling connection from Granville Avenue to No. 3 Road via Buswell Street and Cook Road.
- *Cycling Network Improvement Program*: planned projects developed by the Committee include the installation of large Richmond bike map signs at key gateway locations for cyclists (i.e., south end of the Canada Line Bridge and Massey Tunnel bike shuttle stop), and the overlay of bike stencils on loop detectors so that cyclists know where to position themselves in order to trigger a change in the traffic signal.
- *Continuity of Bike Lanes*: as part of the repaving of the westbound lanes of Granville Avenue between Cooney Road and Gilbert Road, the Committee worked with city staff to revise the pavement markings to reduce traffic conflicts by eliminating the right-turn lanes at Buswell Street, City Hall entrance and Minoru Gate to enable the continuation of the through bike lane.
- *Neighbourhood Bike Routes*: to date, virtually all on-street bike routes in Richmond have been implemented on arterial and/or collector roads, as these roads typically provide continuity across the island unlike local roads in subdivisions. However, given the typical 400 metre spacing of arterial roads and the current lack of cycling facilities on some arterial roads, there are gaps in the coverage of the cycling network. In addition, recent research in Metro Vancouver suggests that many individuals who would like to cycle are reluctant to use bike lanes due to their frequent proximity to heavy volumes of traffic.[1] The Committee has therefore initiated a project to identify potential neighbourhood bike routes that would use a

[1] *Cycling in Cities*, University of British Columbia, School of Population and Public Health, 2008.

combination of local roads with lower traffic volumes and off-street connecting pathways to create neighbourhood bike routes that connect local destinations such as schools and recreation facilities as well as link up to the city's existing on-street cycling network.

- *Development Applications*: the Committee provided input on proposed cycling facility improvements associated with new developments, including defining the type of bike facility to be implemented along the length of the former CP Rail corridor (Hollybridge Way to Capstan Way).

1.2 Education and Promotion

- *Earth Day (April 26, 2009)*: as part of the City's offering of community activities to celebrate Earth Day, members voluntarily led bike tours from the Steveston and West Richmond Community Centres along the dyke to the Terra Nova Rural Park.
- *Bike to Work Week (May & November 2009)*: the Committee worked with organizers of this region-wide annual initiative to successfully stage these events in Richmond. During the May event, bike commuter stations at City Hall and Thompson Community Centre attracted around 25 cyclists each while that at No. 6 Road and Westminster Highway recorded 50 cyclists. During the November event, despite heavy rain, around 40 cyclists stopped at a bike commuter station in front of Thompson Community Centre. At all stations in both May and November, many cyclists were observed riding past the stations without stopping in (e.g., up to 75 at Thompson Community Centre in May 2009).
- *9th Annual "Island City, by Bike" Tour (June 7, 2009)*: each year in June, Better Environmentally Sound Transportation (BEST) organizes Bike Month, an awareness and education campaign to promote cycling as a sustainable and environmentally responsible transportation alternative. As part of these Bike Month activities and the City's Environment Week events, the Committee and the City annually jointly stage a guided tour for the community of some of the city's cycling routes. The 9th annual "Island City, by Bike" tour was based at West Richmond Community Centre and featured short (8.5-km) and long (20-km) rides with escorts provided by the Richmond RCMP bike squad. Activities included a bike and helmet safety check prior to the ride plus a barbecue lunch and raffle prize draw at the finish. Numerous local businesses donated goods and services to the raffle draw and the event attracted 100 cyclists of all ages and cycling ability.
- *TransLink Regional Bike Map*: as part of the preparation of the 4th edition of TransLink's regional bike map, the Committee reviewed the Richmond section to ensure accuracy of the map. The Richmond section will subsequently be used to prepare the 2010 edition of the Richmond cycling map in early 2010 (see Section 2.3 for further discussion).
- *Off-Leash Dog Parks*: as part of the public consultation conducted by the City regarding dogs in parks, the Committee met with Parks Programs staff to offer feedback from a cyclist's perspective regarding the co-location of trails and bike routes through off-leash dog parks and the conflicts between the user groups that may arise.

1.3 City Initiatives with Cycling-Related Components

The Committee provided input on the following City initiatives with cycling-related elements:

- *2010 Olympic Games & O Zone Celebration Site*: as part of the transportation planning for these events, the Committee provided input on bicycle parking requirements, including location and capacity, as well as wayfinding measures for cyclists; and
- *Update of Official Community Plan 2041*: the first round of public consultation for the update of the *Official Community Plan* (OCP) in November-December 2009 provided an opportunity for the Committee to submit initial feedback regarding the need for an improved and more extensive cycling network to help the City meet its greenhouse gas emission reduction targets.

2. Initiatives for 2010

In addition to providing input on the planning, design and implementation of major capital cycling infrastructure projects, the Committee proposes to undertake various cycling education and awareness activities and participate in cycling-related initiatives with other City departments and external agencies.

2.1 Improvement of Existing Cycling Network

The Committee intends to continue work on a project initiated in 2009 that seeks to improve the continuity of bike lanes at intersections. **Attachment 1** provides the Committee's rationale for this project. Currently, along several bike routes in Richmond with designated bike lanes, the bike lane is dropped prior to an intersection in order to provide a right-turn only lane. The intent is for cyclists proceeding straight through the intersection to merge with through traffic. As discussed in Attachment 1, the Committee believes that this design is no longer practical for both cyclists and motorists, primarily due to the increase in traffic volumes.

Staff propose to work closely with the Committee in 2010 to carry out detailed assessment of all intersections with bike lanes where this condition occurs and, as shown in **Attachment 2**, pursue two options of bike lane improvements where feasible. Achieving a seamless and integrated cycling network that promotes greater cycling is consistent with the vision for the City's Official Community Plan (OCP) 2041 update and is an opportunity for the City to help achieve its greenhouse gas emission targets.

2.2 Review of Planned Cycling Network Projects

The Committee will provide input at the earliest conceptual stage on the prioritisation, planning, design, and implementation of the following projects that expand and/or improve the cycling network:

- *Planned 2010 Cycling Network Expansion Projects*: detailed design of bike lanes and shared wide lanes on Minoru Boulevard (Granville Avenue to Alderbridge Way) and identification and prioritisation of intersections on existing bike routes where the bike lane is eliminated to provide for a right-turn to be modified to enable continuation of the through bike lane as discussed in Section 2.1;
- *Planned 2010 Cycling Network Improvement Projects*: identification of localised improvements to existing facilities such as additional pavement markings and signage;

- *Development of Neighbourhood Bike Routes*: following the identification of a number of potential neighbourhood bike routes across the city in 2009, undertake further analysis to develop criteria to determine the priority of development, complete an inventory of existing conditions along these routes, and identify appropriate engineering measures to support the designation of the corridors as neighbourhood bike routes; and
- *Planned Road and Development Projects*: review of projects that impact existing cycling facilities or would incorporate new cycling infrastructure as part of the overall project.

2.3 Education and Awareness Initiatives

The Committee will encourage and promote safe cycling as a sustainable travel mode that also has significant health benefits via the following activities:

- *10th Annual "Island City, by Bike" Tour*: assist in the planning, promotion and staging of the tenth annual bike tour of Richmond during Bike Month in June 2010, which is set for Sunday, June 6th at Thompson Community Centre. In recognition of the tour's 10th anniversary milestone, the Committee hopes to be able to obtain a bicycle as the grand prize of the raffle draw.
- *Bike to Work Week*: assist in the planning, promotion and staging of this region-wide event during May and November 2010, which includes the provision of bike commuter stations throughout the city.
- *Update of Richmond Cycling Map*: following completion of the update of the TransLink regional bike map, modify the Richmond section of this map to produce the first update of the Richmond cycling map, which will include a number of significant improvements to the regional and local cycling networks including the Canada Line Bridge, No. 3 Road bike lanes and the southern extension of the Shell Road bike route. Staff anticipate that approximately 25,000 copies will be printed for distribution to community centres, libraries and other civic facilities as well as handed out at various City events.
- *City Page and City Website*: provide education/awareness notices for both cyclists and motorists in the City Page of the *Richmond Review* (e.g., to complement the planned installation of bike stencils placed on loop detectors at various intersections throughout the city to indicate where cyclists should align their bicycles in order to trigger a change in the traffic signal) and continue to update, revise and enhance cycling-related information on the City's website.

2.4 City Initiatives with Cycling-Related Components

The Committee will provide input on the following City initiatives that have cycling-related elements:

- *2010 Olympic Games & O Zone Celebration Site*: provide planning input and participate in a proposed cycling event sponsored by the Netherlands Consulate-General as part of the O Zone celebrations;
- *Earth Day (April 2010)*: as part of the City's offering of community activities to celebrate Earth Day, voluntarily lead bike tours from various community centres to event sites; and
- *Update of Official Community Plan*: the planned update of the *Official Community Plan* (OCP) will include an update of the principles, goals and objectives for the cycling

component of the transportation section. The Committee will provide direct input to City staff on this initiative and potential areas of contribution include the investigation of potential revisions/additions to the *On-Street Cycling Network Plan* in areas outside the City Centre, particularly for neighbourhoods that are experiencing significant residential growth and are relatively distant from existing cycling facilities.

Financial Impact

There is no financial impact to the City at this time. Cycling infrastructure projects are presented for Council approval as part of the annual Major Capital Works Program process. The various education and awareness initiatives can be undertaken within existing divisional work programs and will not require additional resources. Staff will report to Council for specific approval should the implementation of any initiatives have funding implications to the City. Staff attendance at Committee meetings, which occur outside regular office hours, result in some overtime cost to the City. This overtime cost can be absorbed in the divisional operating budget provided the current service level is maintained.

Conclusion

The Richmond Community Cycling Committee continues to be an effective community forum for enhancing the city's cycling environment and promoting safe cycling in Richmond. The Committee's proposed 2010 initiatives would continue efforts to further encourage greater and safer cycling in Richmond. Upon Council endorsement of these initiatives, staff will forward a copy of this report to the Council/School Board Liaison Committee for its information.

J. Caravan

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(on behalf of the Richmond Community Cycling Committee)

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Planning for Bicycles on Richmond's Street Grid

The City of Richmond and its cycling community take great pride in the city's network of bicycle lanes. The Richmond Community Cycling Committee (RCCC) has worked very successfully with the City's Transportation Department for many years to enhance bicycle facilities and education. The cycling network has been at the vanguard of cycling facilities development since the mid 1980s when it was introduced.

The imminent expansion of the bicycle network will soon, once again, make Richmond a national leader in this regard by introducing raised bike lanes adjacent to the Canada Line along No. 3 Road. These raised bike lanes will clearly define the roadway allocated to motor vehicles by having the bike lanes above grade so they will not to be mistaken for overflow or storage space for cars. By the same token, pedestrian sidewalk space will be further raised above the bike lanes to provide a clearly defined space solely for pedestrians. This design is precedent setting in the Lower Mainland in that it emulates the best of European facilities and adheres to the recognition of "transportation streams."

Transportation streams is a way of conceptualizing the different modes of urban transportation in a way that establishes rights-of-way on the basis of a hierarchy of precedence for the cooperation of urban modes: pedestrians, bicycles and motor vehicles. In the hypothetical situation of a lane of motorized traffic moving in parallel with a sidewalk, the turning movements of motor vehicles at an intersection are governed by:

(1) the presence of pedestrians in the crosswalk because the crosswalk "extends" the sidewalk across the intersection; or
(2) any crossing traffic, if it is proceeding with the right-of-way.

It is important to bear in mind that turning vehicles are accustomed to these delays when turning at intersections, as vehicles and pedestrians cannot have overlapping transportation streams.

This type of urban mode cooperation analysis was not part of the original implementation of bike lanes in Richmond. There was really no requirement for a separate transportation stream for cyclists given the relatively light traffic on the arterial road network at that time. As such, signage for the bike lanes advised cyclists that "Bike Lane Ends" prior to approaching an intersection in order to provide a right turn lane. Cyclists were routed into the through lane for motor vehicle through the intersection and then returned to the safety of the bike lane after clearing the intersection.

Mid-arterial minor intersections were also marked with right turn lanes and arrows, signifying the loss of the bike lane at those junctures as well. The RCCC has worked with the City to eliminate the mid-arterial right-turn lanes and any implication that cyclists must vacate the bike lane in deference to right-turning motor vehicles. The time has come to continue this project of making bike lanes continuous through all

Planning for Bicycles on Richmond's Street Grid

intersections by identifying the safest, most practical means to manage transportation streams at arterial intersections such that bicycle transportation is recognized and accounted for.

The existing arrangement of requiring cyclists to merge into through vehicle traffic at intersections is no longer tenable. The population of Richmond has increased since 1986 by 65%. More daunting is the fact that Richmond's car ownership has outpaced population growth making its registered per capita vehicle ownership rate significantly higher than comparable regional, provincial and national levels as noted in the City's 2005 *State of the Environment* report. The time has come to make bike lanes continuous at intersection approaches by acknowledging cycling as a legitimate transportation stream that takes its natural precedence between motor vehicle and pedestrian streams. This design will be advantageous for many reasons:

- consistency in traffic flow in that all road users will become accustomed to yielding to pedestrians and cyclists when present at all times;
- road users will know what other users are expected to do, thereby reducing potential conflicts;
- road safety will be increased in that intersections are the most crash prone for all users (pedestrians, cyclists and motorists);
- pavement marking will more clearly communicate the proper positioning of cyclists for their benefit and for that of motorists; and
- most importantly, the bike lane network would invite a wider range of cycling skill levels due to its increased usability.

Remedial measures are possible to achieve this design, depending on the width of the right-of-way available. The Committee's order of preference is:

(1) **elimination of the right turn lane** if the width of the roadway does not accommodate the continuation of a bike lane through an intersection (e.g., Williams Road bike route where right-turning vehicles do not have a designated lane); and
(2) **continuous through bike lane** to the left of a right turn lane for motor vehicles (e.g., southbound Railway Avenue at Francis Road). In this scenario, motor vehicles cross the bike lane to enter the right turn lane prior to the intersection.

We eagerly await a chance to discuss the timing of these changes with those affected.

Richmond Community Cycling Committee

Continuity of Bike Lanes at Intersections

Currently, along several bike routes in Richmond with designated bike lanes, the bike lane is dropped prior to an intersection in order to provide a right-turn only lane (see circled area of **Figure 1**). The intent is for cyclists proceeding straight through the intersection to merge with through traffic.

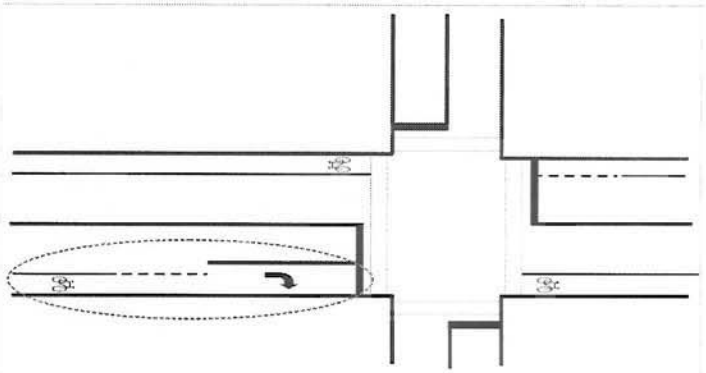

Figure 1: Bike Lane Dropped to Introduce Right-Turn Lane

However, the Committee believes that this design is no longer practical for both cyclists and motorists, primarily due to the increase in traffic volumes. It can be intimidating for cyclists, particularly novices, to merge into the through lane as longer traffic queues at red lights mean the cyclist must spend greater time in the vehicle lane before being able to clear the intersection and return to the bike lane on the far side. Informal observations by Committee members and staff indicate that very few cyclists actually move to the through lane; the vast majority remain in the right-turn lane even when there is a red light. Indeed, if the traffic light is red, a cyclist can create greater vehicle delay by being in the through lane than if the he/she stayed in the right-turn lane, as right-turn traffic volumes are typically less than through volumes.

The Committee has documented an inventory of 25 intersections on designated bike routes with bike lanes where the condition occurs. Staff will work with the Committee to review each intersection and determine the appropriate measures to improve the continuity of the local cycling network as well as cyclists' safety. Figures 2 and 3 illustrate two potential remedial options: (1) eliminate the right-turn lane (**Figure 2**); and (2) relocate the curb to create a through bike lane next to the right-turn lane (**Figure 3**).

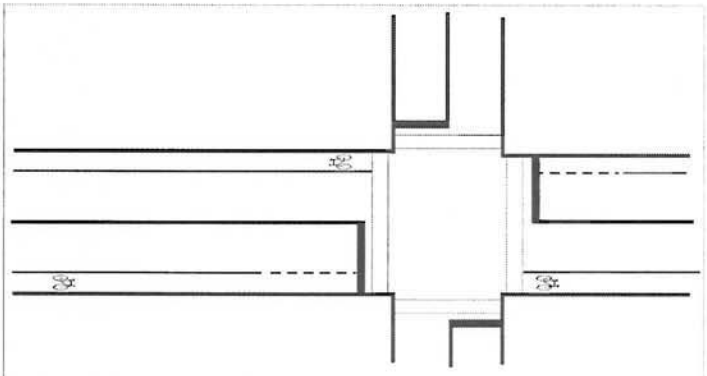

Figure 2: Eliminate Right-Turn Lane to Maintain Bike Lane

Recent research in Metro Vancouver has documented that a significant impediment to increasing cycling is fear of traffic[2]; having continuous bike lanes at intersections would obviate the present need for cyclists to merge with through traffic. A clear, continuous cycling network should also discourage cyclists from riding on sidewalks, which is a potential hazard not only for pedestrians but also for cyclists, as studies indicate that riding on sidewalks is actually more dangerous for cyclists than riding on roadways.[3]

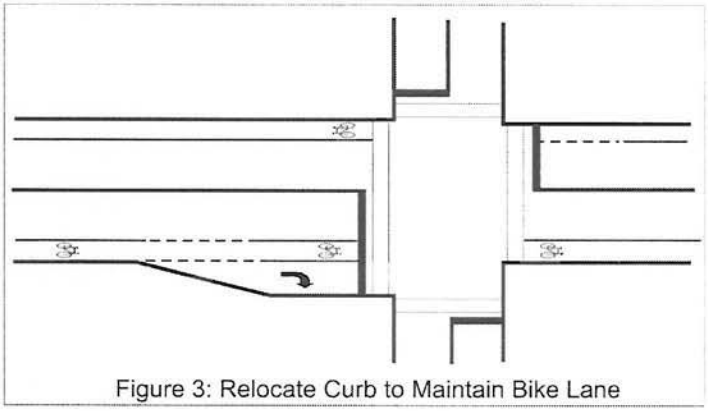

Figure 3: Relocate Curb to Maintain Bike Lane

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[2] *Cycling in Cities*, University of British Columbia, School of Population and Public Health, 2008.
[3] Wachtel and Lewiston, *Risk Factors for Bicycle-Motor Vehicles Collisions at Intersections*, ITE Journal, September 1994.