



ADMINISTRATIVE REPORT

Report Date: April 30, 2010
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Meeting Date: May 6, 2010

TO: Standing Committee on Transportation and Traffic
FROM: Acting General Manager of Engineering Services
SUBJECT: Cycling in Vancouver: Looking Forward to 2010/2011

RECOMMENDATIONS

- A. THAT Council direct staff to develop a new 10-Year Cycling Program Master Plan and approve funding up to \$500,000 for its development; source of funding to be the 2009 Streets Basic Capital Budget (Bicycle Network).
- B. THAT Council approve funding of up to \$400,000 for the development of a comprehensive cycling monitoring program; source of funding to be the 2009 Streets Basic Capital Budget (Bicycle Network).
- C. THAT Council approve funding of up to \$100,000 for the installation of additional on-street bicycle parking; source of funding to be the 2009 Streets Basic Capital Budget (Bicycle Network).
- D. THAT Council approve funding of up to \$250,000 for spot improvements on existing bikeways to address emergent safety and capacity issues; source of funding to be the 2009 Streets Basic Capital Budget (Greenways).
- E. THAT Council approve, in principle, the development of:
 - i. improved cycling connections from the Canada Line Bridge to Kent Avenue, Heather and Ontario Bikeways, and to the Cambie Street bike lanes; and
 - ii. a local street bikeway generally along 45th Avenue from the Balaclava Bikeway in the west to the Ridgeway Bikeway/Greenway (Nanaimo Street) in the east.
- F. THAT staff report back on options to conduct a trial of a fully separated bike lane or lanes on an arterial street outside of the Downtown core, in addition to the trial previously approved by Council for a fully separated bike lane on part of the city's existing local street bikeway.

COUNCIL POLICY

The 1995 Greenways Plan, adopted by Council in July 1995, describes a system of greenways connecting all parts of the City. Greenways expand the opportunities for urban recreation, including walking and cycling. Most City Greenways are designated bikeways.

The 1997 Transportation Plan, adopted by Council in May 1997, identifies cycling as one of the priority transportation modes within the City.

The 1999 Bicycle Plan, adopted by Council, identifies 12 action items to improve cycling in Vancouver, including a network of bicycle routes throughout the City.

In 2003, Council approved implementation of the Downtown Transportation Plan to improve Downtown access and liveability by creating a balanced transportation system that includes, among other priorities, creating a network of bike lanes.

In April 2005, Council approved the Community Climate Change Action Plan that identified the critical importance of encouraging and supporting active transportation if Vancouver is to meet its greenhouse gas reduction target for 2012.

In early 2009, the Greenest City Action Plan and Quick Start Recommendations were launched, including reference to numerous initiatives aimed at increasing cycling mode share.

SUMMARY

The City of Vancouver has built a strong foundation upon which to further develop cycling as an appealing and safe transportation option for residents and visitors. This includes policies in support of cycling, an expanding network of bicycle facilities for people of all ages and abilities, and increasing funding to implement cycling infrastructure.

To continue building on this foundation, work in the coming two years will see the City complete projects in three broad categories:

1. Planning and evaluation;
2. Cycling network improvements; and
3. Complementary projects and programs.

Staff recommend that a new 10-year Cycling Program Master Plan (Cycling Plan) be developed in 2010 to further advance cycling as a priority mode of transportation and to establish new long-term goals and priorities for future capital funding of cycling program improvements. A primary goal of the new Cycling Plan will be to increase cycling mode share; the new Plan will include initiatives aimed at raising the feeling of safety and level of comfort of cyclists with a range of abilities and comfort levels, city-wide. An important element of the new plan will be a social marketing component to educate and promote cycling to those who are interested in riding a bike for more trips, but who remain concerned or apprehensive to do so, and to educate motorists on safely sharing the road with cyclists.

The new Cycling Plan will comprise a monitoring and evaluation plan to facilitate timely and meaningful review of Plan goals. In preparation for this, staff recommend that a comprehensive monitoring strategy be developed concurrently with the 10-year Cycling Program Master Plan. The monitoring strategy will focus on collecting the information needed

to develop a greater understanding of the cycling program initiatives most likely to increase mode share; it will provide the baseline data needed for defensible evaluation of the next 10-year Cycling Program Master Plan; and it will build on recent advancements in bicycle counting technology to ensure timely, accurate and transparent reporting of cycling volumes throughout the city.

While development of a new Cycling Plan is underway, cycling network improvement projects will be undertaken to transition between the 1999 Bicycle Plan, which is now largely complete, and the new Cycling Plan, which will introduce new and higher standards for cycling program implementation.

Cycling network improvements are funded primarily through Bicycle Network and Greenways Capital Plan programs, and through programs with complementary objectives, such as traffic signals. The City's investment in cycling network improvements has increased steadily with each Capital Plan. Special projects, such as the Carrall Street and Central Valley Greenways, also contribute to the cycling network, although these programs are funded through project-specific funding separate from the Bicycle Network and Greenways Capital Plan programs.

Approximately \$8.3 million remains to be allocated from the Greenways and Bicycle Network Programs in the 2006-2008 and 2009-2011 Capital Plans. This represents 9% of the approximately \$90 million remaining in the 2006-2008 and 2009-2011 Capital Plans targeted for street and transportation projects.

In this report, staff recommend that \$1.25 million be allocated for:

- development of the new 10-year Cycling Program Master Plan;
- development of the comprehensive monitoring strategy;
- installation of basic bicycle parking; and
- spot improvements to the existing cycling network.

This leaves \$7.05 million of unallocated funds. This report identifies a number of cycling network projects that will commit these remaining unallocated funds subject to reports back to Council. These include:

- cycling connections from the Canada Line Bridge to nearby local street bikeways;
- cycling infrastructure along the future North Arm Trail Greenway;
- implementation of a local street bikeway on 45th Avenue.

In addition to the above projects, there is also project-specific funding outside of the Greenways and Bicycle Network Programs for the following projects:

- Downtown separated bike lanes;
- implementation of the Comox-Helmcken Greenway;
- Carrall Street Greenway (Expo-Pacific).

Projects that complement the cycling network will also proceed in 2010 and 2011, including installation of cyclist- and pedestrian-activated signals at crossings of major roads; further defining the City's priorities with respect to end-of-trip facilities; and further defining the City's role in cycling promotion, education and encouragement.

PURPOSE

The purpose of this report is to recommend a 2010/11 Cycling Program work plan and budget that will advance Council's cycling program priorities.

BACKGROUND

Goals

The goals of the City of Vancouver Cycling Program are to better integrate cyclists into the existing transportation system and to promote and encourage the use of bicycles as a safe and convenient mode of transportation.

Cycling Program Plans and Policies

Cycling program initiatives and route development in the City of Vancouver in the past 20 years have been guided by four documents: the 1988 Vancouver Comprehensive Bicycle Plan; the 1992 Bicycle Network Study; the 1999 Bicycle Plan; and the 2002 Downtown Transportation Plan. Most existing routes are identified in one or more of these plans, but some recent bicycle routes have been initiated through Council-directed initiatives (e.g., Greenest City Action Plan and Quickstart Recommendations) and opportunities arising from other City and Regional projects (e.g., Canada Line).

In June 2009, Council endorsed significant enhancements to the City's local street bikeways to enhance safety and comfort for cyclists, including the reduction of speed limits on local street bikeways to 30 km/h. The change is intended to reduce the speed differential between cyclists and motor vehicles on local street bikeways, making the routes more comfortable for a broader range of cyclists.

Also in June 2009, Council directed staff to limit the approvals of new driveways on to existing and planned bikeways except where other locations are deemed inadvisable due to safety considerations, transit operations, pedestrian conflicts or site and streetscape constraints. The overall goal is to mitigate the cumulative impacts of incremental redevelopment along the City's bikeway network.

Cycling Mode Share

The City achieves an overall cycling mode share of 3.7% for trips to work, with several neighbourhoods near the Metro Core approaching 12% bike mode share; the lowest cycling mode share occurs primarily in neighbourhoods in the south and east of the City. In the Downtown core, combined cycling and walking represents more than 41% of the journey-to-work mode share. The source for cycling mode share data is the Canada 2006 Census, the results of which were released in 2008.

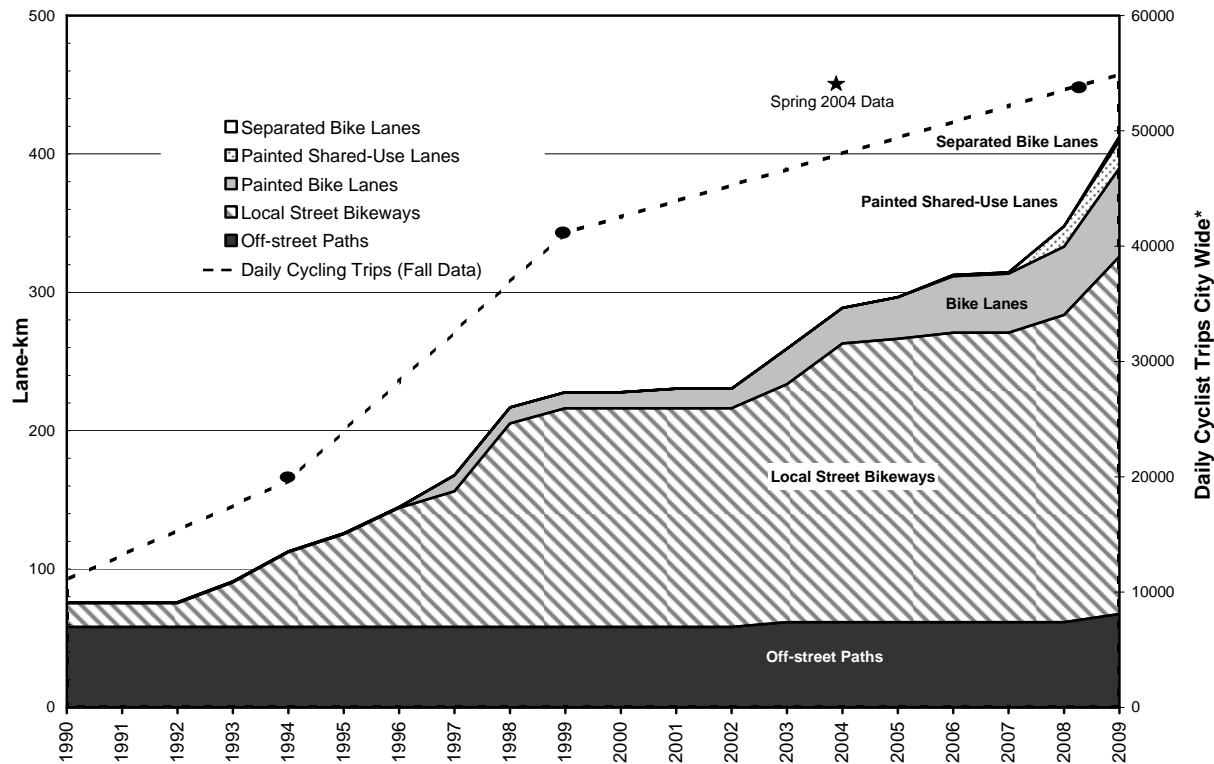
Cycling Infrastructure

Vancouver's bicycle network comprises five primary types of facility: off-street paths, local street bikeways, painted bike lanes, painted shared-use lanes and separated bike lanes. Cycling network planning to date envisions a grid network of local street bikeways, each approximately 1 km apart, complemented by off-street paths, painted bike lanes and painted shared-use lanes where feasible or necessary for network continuity. The network has seen steady growth since 1992, comprising routes identified through the 1999 Bike Plan and those arising through opportunities from other projects underway in the City. In 2009, several new bicycle routes were substantially completed and the City reached 400 lane-kilometres of bicycle routes. Refer to Figure 1, which shows the development of the bicycle network (in

lane-km) over time, together with the trend in total daily cycling trips city-wide over the same time period.

Figure 2 shows the location of routes recently completed, and illustrates the extent to which the vision of a grid network of facilities has been achieved. Provided in Appendix A is a summary of the current status of ongoing cycling network projects.

Figure 1: Development of the City’s Bicycle Network Since 1990



* Based on TransLink 1994, 1999, 2004, 2008 trip diary surveys. Data between Fall points has been linearly interpolated.

Funding

Funding for cycling facilities has three primary sources: City of Vancouver 3-Year Capital Plans; external funding from a variety of Regional, Provincial and Federal bicycle cost-sharing programs; and development cost levies or community amenity contributions.

Figure 3 shows the City’s historic expenditures and current financial commitments to bicycle facility development, including funding from external sources.

Figure 2: Bicycle Routes Completed Since the Last Bike Plan Update (June 2008)

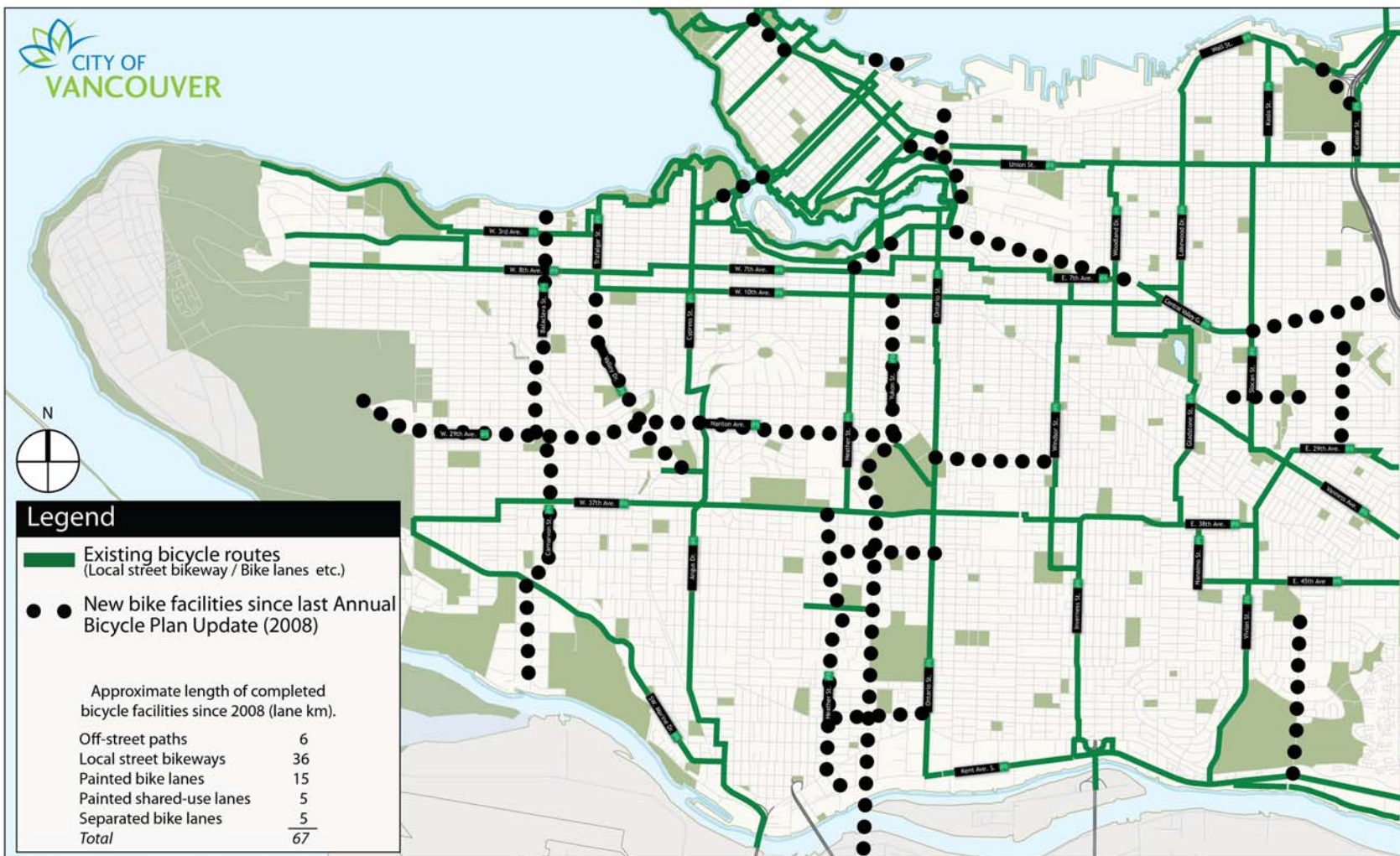
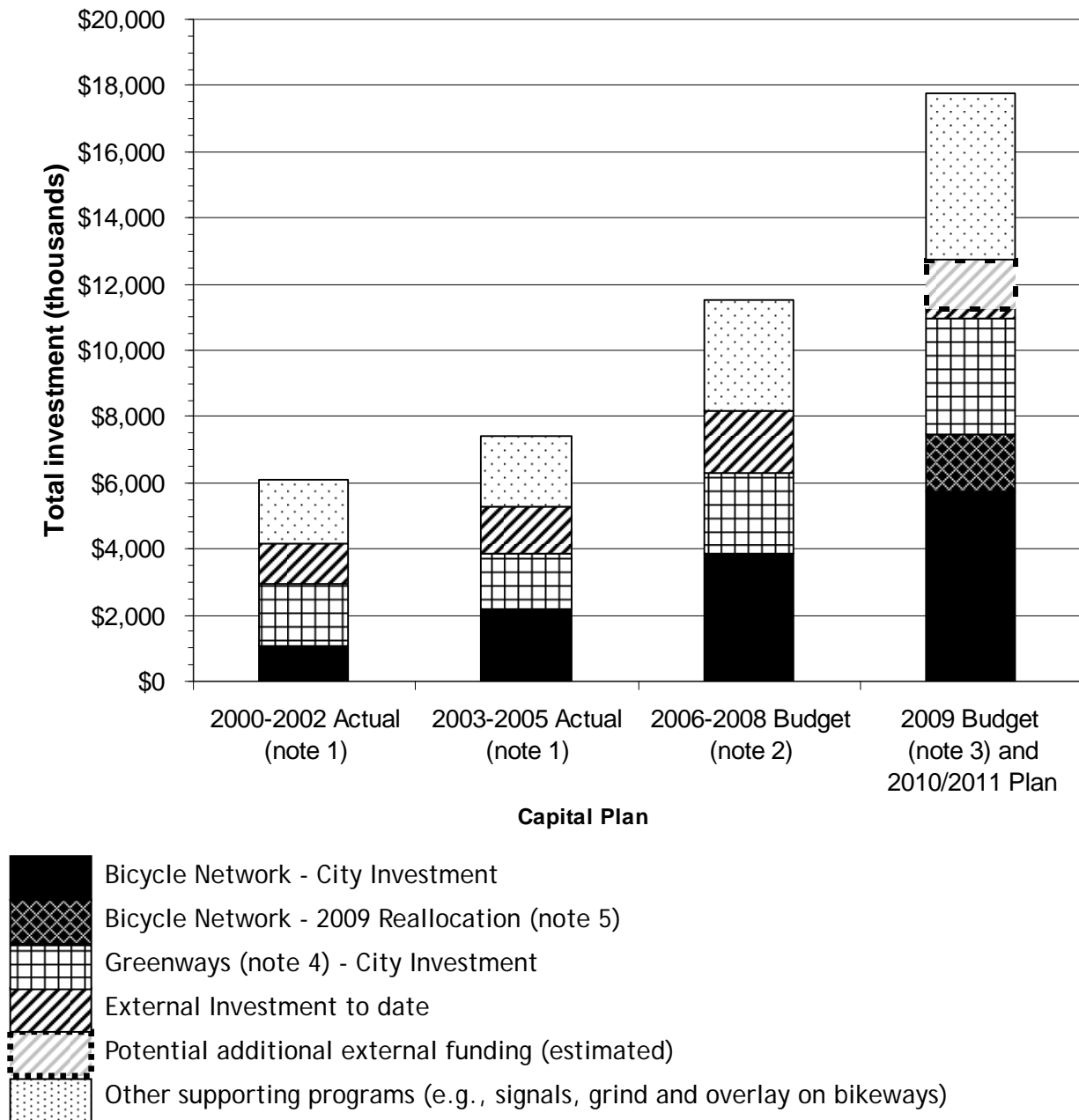


Figure 3: Actual and Planned Expenditures for Cycling Network Improvements



Notes:

¹ Actual gross expenditures

² Budgeted City expenditures, and estimated committed funding (signed agreements) from external partners not yet invoiced.

³ Total 2009 Bicycle Network Budget includes \$716,000 in Council-approved transfers from Traffic Calming and Greenways.

⁴ Greenways budget includes City Greenway (i.e., de-facto bikeways), Neighbourhood Greenway and Community Garden expenditures.

⁵ Council doubled the 2009 Bicycle Network budget by reallocating \$1.7 million of capital funding toward cycling projects for the year 2009.

Shown in Figure 3 are investments (actual and planned) in cycling network improvements that have been funded through the Bicycle Network and Greenways budgets. As shown, total investment has increased with each Capital Plan.

In June 2009, Council doubled the 2009 bicycle network budget by reallocating \$1.7 million of capital funding toward cycling projects for the 2009 budget year. These additional funds are being directed toward higher-standard facilities, including the Dunsmuir Viaduct separated bike lanes, enhancements to the existing network of local street bikeways, implementation of 30-km/h speed limits on local street bikeways, and accelerated development of a new 10-Year Cycling Program Master Plan. Appendices A and C summarize the current status of cycling infrastructure projects advanced as a result of this additional funding.

Figure 3 also identifies other City programs that fund infrastructure that supports cycling. For example, all new pedestrian-activated signals now include curbside pushbuttons for cyclists and the current grind-and-overlay program for local streets will focus on improving pavement quality on designated bikeways throughout the City.

In addition to the investments in cycling network improvements from the Bicycle Network and Greenways program budgets and other supporting programs, projects such as Carrall Street Greenway and Central Valley Greenway have provided significant improvements to the cycling network. Because they have been funded through separate, project-specific funding, investments from these programs are not shown in Figure 3.

Most of the funds budgeted in previous Capital Plans have been spent or are committed to specific projects. Table 1 provides a summary of the Capital Plan funding that remains unallocated, as well as a summary of funds that have been allocated to projects but that have not yet been spent. The unspent funds are committed to projects that will be completed in 2010/11.

Table 1: Remaining 2006-2011 Bicycle Network & Greenway Funds (thousands)

	2006-2008 Capital Plan	2009-2011 Capital Plan		Total
		2009 Budget	2010-2011	
<i>Unallocated funds</i>				
Bicycle Network	-	\$1,000	\$3,300	\$4,300
Greenways	\$700	\$700	\$2,600	\$4,000
Total Unallocated Funds	\$700	\$1,700	\$5,900	\$8,300¹
<i>Funds committed, but not yet spent</i>				
Bicycle Network	\$820	\$1,625	-	\$2,445
Greenways	\$932	\$253	-	\$1,185
Total Funds Committed, but Not Yet Spent	\$1,752	\$1,878	-	\$3,630

¹ Of the \$8.3 million unallocated, \$1.25 million is requested in this report. A further \$5.35 million is earmarked to specific projects, as identified in Table 4, subject to future funding approvals from Council.

DISCUSSION

This section provides a review of recommendations for cycling program priorities for the remainder of the 2009-2011 Capital Plan. Work in 2010 and 2011 will see the City complete projects in three broad categories:

1. Planning and evaluation;
2. Cycling network improvements; and
3. Complementary projects and programs.

Planning and Evaluation

Development of a new Cycling Program Master Plan

The 1999 Bicycle Plan is more than 10 years old; most of the Plan's objectives have been achieved or are well underway, and the profile of cycling in Vancouver has increased significantly. The time is right to look to the future, review the vision for the City's Cycling Program and, subject to Council approval, develop a new 10-year Cycling Program Master Plan (Cycling Plan).

The new Cycling Plan will form a component of a new Transportation Plan, to be initiated later this year. Integration of the two planning processes is necessary, and will be considered when the terms of reference are developed.

Development of the Cycling Plan will be consultative and research-based, resulting in a comprehensive plan. The Plan will include:

1. *Consultation* with stakeholder groups to:
 - a. develop a terms of reference for the Cycling Plan
 - b. define a vision for the future of cycling in Vancouver
2. *Research* into international best practices aimed at evaluating and increasing bicycle mode share, including:
 - a. factors affecting transportation mode choice
 - b. social marketing strategies
 - c. bicycle network infrastructure
 - d. end-of-trip facilities
3. *Data collection and analysis*, including:
 - a. public opinion research to benchmark current perceptions, attitudes, values and priorities of the City's non-cycling and cycling residents
 - b. public opinion research to understand the key factors that affect transportation mode choice
 - c. cycling volumes, city-wide
 - d. projected cycling volumes, city-wide
4. *A comprehensive plan* that will work toward increased bicycle mode share, including:
 - a. guidelines to facilitate selection and prioritization of Cycling Program initiatives
 - b. social marketing strategies that will address barriers to cycling, including motorist and cyclist education, promotion and encouragement
 - c. enhancements to the network of bicycle routes, including consideration of a Public Bicycle System
 - d. improvements to end-of-trip facilities, including consideration of bike centres
 - e. a monitoring and evaluation plan that will carry on from the comprehensive monitoring strategy that will be developed in 2010 (described in more detail below).

Development of a new Cycling Plan provides the opportunity for further analysis of separated bike lanes as one of the primary desired facility types in Vancouver. Consistent with Council's motion in February 2010, this will include review of opportunities to implement separated bike lanes on portions of the City's local street bikeway network.

The new Cycling Plan will also consider the implications of and opportunities for integrating a Public Bicycle System into the City's transportation system, as well as "bicycle centres", offering varying levels of service for bicycle parking and serving the cycling community.

The work plan for development of a new Cycling Plan will require approximately 14 months to complete, as outlined in Figure 4. Staff recommend that a multi-disciplinary team be assembled, comprising staff from Engineering and Planning. The team will be identified when the terms of reference are developed.

Cycling Program Monitoring and Evaluation

Monitoring and evaluation of the City's Cycling Program provides staff and Council with information needed to understand and verify observations and assumptions, obtain regular feedback, and assess whether the objectives of the Cycling Program are being met. With significant changes occurring to the bike network, particularly in and around Downtown, staff propose developing a monitoring strategy that will focus on: collecting the information needed to develop a greater understanding of cycling program initiatives most likely to increase bicycle mode share; collecting the baseline data needed for defensible evaluation of the new Cycling Plan; and building on recent advancements in automatic bicycle counting to facilitate efficient, timely and transparent reporting.

The objectives of the comprehensive monitoring strategy will be achieved through:

Research

- review of best practices in cycling program monitoring in the world's most cycling advanced cities

Ensuring that relevant data is collected in a timely and more frequent manner

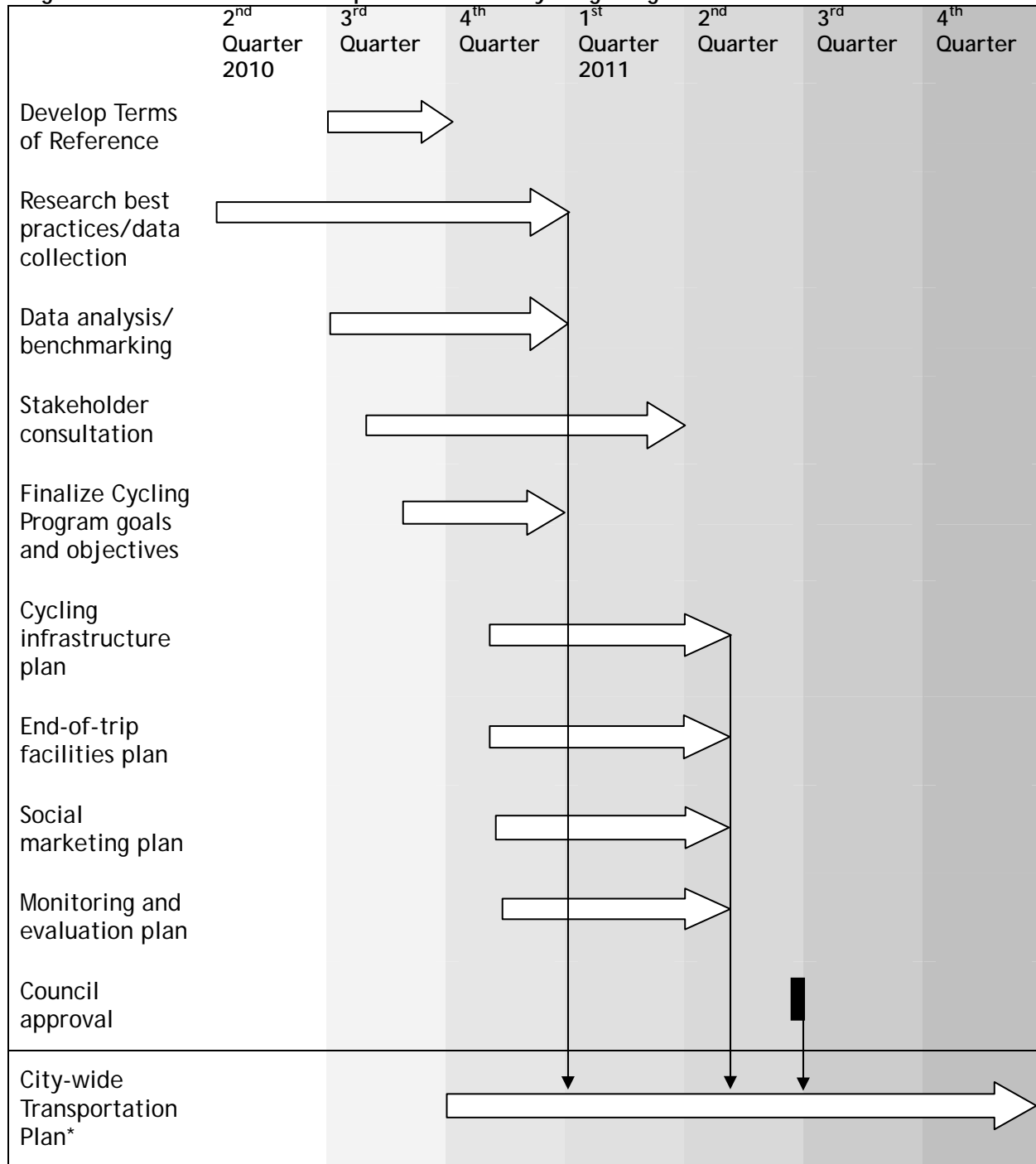
- selection of key statistical indicators, such as:
 - bicycle and vehicle volumes
 - perceptions of safety/feelings of comfort
 - collision/safety data
- development of an associated data collection and reporting strategy, including an increased frequency for collection
- development of a public opinion research strategy aimed at improving our understanding of the public's perceptions, attitudes and values related to cycling in Vancouver
- development of a public opinion research strategy to improve our understanding of the barriers to increased cycling mode share

Efficient use of technology

- development of a City-wide bicycle and pedestrian counting strategy, including the identification of appropriate count locations
- deployment and testing of a high-capacity bicycle/pedestrian counting system; and
- establishment of a prominent and permanent bike count display kiosk to provide the public with a continuous visual reminder of the significance of cycling in our city.

This expanded monitoring program will require cooperation and involvement from other agencies, including ICBC, the Vancouver Police Department, TransLink and UBC. Staff will work with these other agencies to identify options and approaches for expanding the monitoring of cycling-related data.

Figure 4: Timeline for Development of New Cycling Program Master Plan



* Timeline for City-wide Transportation Plan yet to be confirmed.

Ad-hoc and project-specific monitoring of bicycle and motor vehicle traffic throughout the City has been ongoing since development of the Comprehensive Bicycle Plan in 1988. In the past two years, staff augmented monitoring through the following activities:

- collection of manual count data at more than 100 key intersections throughout the city;
- studying the costs and benefits of automatic bike counters;
- installation of eight permanent bike count locations;
- daily download of Burrard Bridge count data and weekly upload to the City's website as part of the Burrard Bridge lane reallocation trial;
- planning for the installation of permanent bicycle counters at several locations throughout the network, including along the Carrall Street Greenway, the future North Arm Trail Greenway, the Ridgeway Greenway and on TransLink's new Fraser River bike/pedestrian bridge;
- monitoring of motor vehicle volumes on bikeways; and
- reviewing accident and injury statistics to help identify factors that may affect cyclist safety.

In preparation for a new Cycling Plan, development of a comprehensive monitoring and evaluation strategy will:

- validate investments in the Downtown core bicycle network;
- ensure that staff have the data necessary to define a defensible vision for the new Cycling Plan;
- ensure successful evaluation of the new Cycling Plan; and
- allow for the timely, accurate and transparent reporting of Cycling Program statistics.

It is anticipated that temporary or contract staff will be needed to assist with development of a comprehensive monitoring strategy, data collection and data analysis. It is recommended that the strategy be developed in consultation with the Bicycle Advisory Committee.

Cycling Network Improvements

Staff continue to work on development of the bicycle network based on past plans and emerging opportunities. The following discussion identifies and prioritizes cycling network projects for 2010/11 based on a preliminary project evaluation matrix. The matrix will be further refined as the new Cycling Plan is developed.

Identification of Potential Network Improvement Projects

There are many opportunities to augment the City's bicycle network with new routes and connections. Staff identify potential projects through a variety of sources, including:

1. 1999 Bicycle Plan
2. 1995 City Greenways Plan
3. 2002 Downtown Transportation Plan
4. Identification of locations with significant potential for increased cycling volumes, but which possess significant concerns related to safety or level of comfort
5. Demand/desire lines - for example, non-designated routes which show meaningful numbers of cyclists already
6. Opportunities arising from construction/coordination with other projects, such as major utilities or rapid transit
7. Opportunities arising from development

8. Opportunities arising from other City departments and partner agencies, such as TransLink and the Province

Prioritizing Network Improvement Projects

Generally, when an idea for a network improvement project is raised for consideration, staff follow a four-step process to determine the relative priority of the project:

1. Preliminary Screening - To determine whether a network improvement project is warranted, it is necessary to answer 'yes' to at least one of the following questions:
 - a. Is there a known or perceived safety concern on an existing cycling facility that needs to be addressed?
 - b. Is there a gap greater than 1 km in the grid network of local street bikeways?
 - c. Is there an existing or latent demand for improved level of service, based on:
 - i. Safety concerns
 - ii. "Desire line" - significant number of cyclists already using a non-designated route
 - iii. Bottleneck conditions on an existing facility
 - iv. Potential for increased ridership if the existing facility were to be modified to provide a higher level of service
 - d. Is there a need to improve connectivity to/from:
 - i. a school (including post-secondary)
 - ii. an employment or commercial centre
 - iii. a recreational facility (including park, community centre)
 - iv. a public transit facility
 - v. an existing cycling network facility
2. Facility Type - Staff determine the most appropriate type of facility to meet the identified need. In selecting an appropriate facility type, staff must consider:
 - a. Existing and anticipated bicycle volume
 - b. Topography of the corridor
 - c. Physical characteristics of the street right-of-way
 - d. Existing and desired motor vehicle volume (i.e., by how much, if any, do motor vehicle volumes need to decline in order to provide a safer and more comfortable route for cyclists)
 - e. Existing and desired motor vehicle speed (i.e., do motor vehicle speeds need to be reduced to provide a safer and more comfortable route for cyclists)
3. Conceptual Design and Order-of-Magnitude Cost - Next, staff develop a conceptual design for the facility and estimate order-of-magnitude costs. At this point, staff may explore cost-sharing opportunities with other agencies.
4. Prioritization - Finally, projects are prioritized from among all possible network improvement projects, using the interim evaluation matrix provided in Table 2. This interim evaluation matrix has been developed based on initial research of network planning processes in other cities, including Copenhagen, London, Portland and

Minneapolis. These interim criteria are generally consistent with past practices in assessing network improvement opportunities in Vancouver, and they have been used to evaluate the 2010/11 projects identified below.

The evaluation framework presented in this report is considered preliminary, and will be assessed in greater depth through the new Cycling Plan. Initial review with several internal stakeholders has identified possible additional factors for consideration, such as impacts of bicycle facilities on pedestrians, transit and goods movement, impacts on access to neighbourhoods and community facilities, and impacts on cycling speed/travel time. Through discussion with stakeholders and partner agencies during development of the new Cycling Plan, it is anticipated that the framework will be refined.

Table 2: Interim Evaluation Matrix

Factor	Description	Weighting	Rating	Points
Degree to which facility addresses known or perceived safety concerns	Considers whether proposed facility will address a known or perceived safety concern that presents a barrier to generating new cycling trips	7	High Moderate Low	3 2 1
Potential for generating new bicycle trips	Considers type of facility, end-of-trip facilities nearby, destinations along the route, connections to transit, topography of corridor	5	High Moderate Low	3 2 1
Potential for cost sharing and coordination with other agencies	Opportunities to implement bike facilities as part of other infrastructure projects would generate efficiencies	4	High/Confirmed Moderate/Application submitted Low/Unlikely	3 2 1
Cost per kilometre (for permanent measures)	Ratings for this factor would have to be re-evaluated over time	2	Low (<\$250,000) Moderate (\$250,000 - \$750,000) High (≥ \$750,000)	3 2 1
Potential impact on on-street parking and loading	Considers impacts on supply of curbside space for parking and loading and on City revenues	1	Low Moderate High	3 2 1
Existing bicycle volume	Factor considers whether proposed facility is already on a "desire line"	1	High Moderate Low	3 2 1
Proximity to parallel cycling facilities of same or higher level of service	Reflects desire for a connected grid of bicycle routes	2	≥ 1 km 500 m - 1 km < 500 m	3 2 1
Degree to which facility will overcome gap, barrier or bottleneck in cycling network	Factor considers how facility will complete key connections between existing bicycle facilities	3	High Moderate Low	3 2 1

Network Improvement Projects to be Completed in 2010/2011

Although staff recommend that preparations begin on a new Cycling Plan, in 2010 and 2011 it will be necessary to finalize several remaining tasks identified in the 1999 Bicycle Plan and to carry on with basic Cycling Program initiatives. Some projects have already received Council approval and are ready for construction; some other projects are of high priority and staff recommend that they be approved in principle through this report. As well, some have previously been approved in principle but will be moving forward to construction in 2010/11, pending Council approval of funding at a future date.

Approximately 55 lane-kilometres of new or improved cycling network are recommended for construction in 2010/2011, as illustrated in Figure 5. These projects include:

Approval-in-principle sought in this report

- Connections between the Canada Line Bridge and existing nearby bicycle routes (Fraser River Trail extension)
- 45th Avenue Bikeway

Previously approved in principle

- Downtown separated bike lanes (Burrard Bridge to Dunsmuir Viaduct)
- Comox-Helmcken Greenway bicycle infrastructure
- North Arm Trail bicycle infrastructure

Previously approved

- Enhancements to existing bikeways
- Carrall Street Greenway (Expo-Pacific)
- Arterial bike lanes (Dunbar St)
- Ridgeway West Greenway

As the City moves toward new and higher standards for accommodating cyclists, and separated bike lanes as a preferred approach in particular, it will be important to evaluate the various implications of these new standards. Consistent with ongoing and pending trials of separated bike lanes in and approaching the Downtown, it is recommended that staff report back on options for a pilot project of separated bike lanes on an arterial street outside of the Downtown core.

The evaluation of the above projects is summarized in Table 3, and more information on each project is provided in Appendix B.

In addition to those projects identified above, staff are recommending an additional allocation of funding for bikeway spot improvements. Through various channels, such as the Bicycle Hotline and Bicycle Advisory Committee, staff regularly hear concerns and/or suggestions about emerging safety and capacity issues affecting cyclists. However, it is often challenging to respond in a timely manner to more significant issues. To facilitate a quicker response, staff recommend allocation of \$250,000 to address the need for spot improvements on various bicycle routes. The source of funding would be the 2009 Streets Basic Capital Budget (Greenways).

Figure 5: Bicycle Routes Planned for 2010/2011

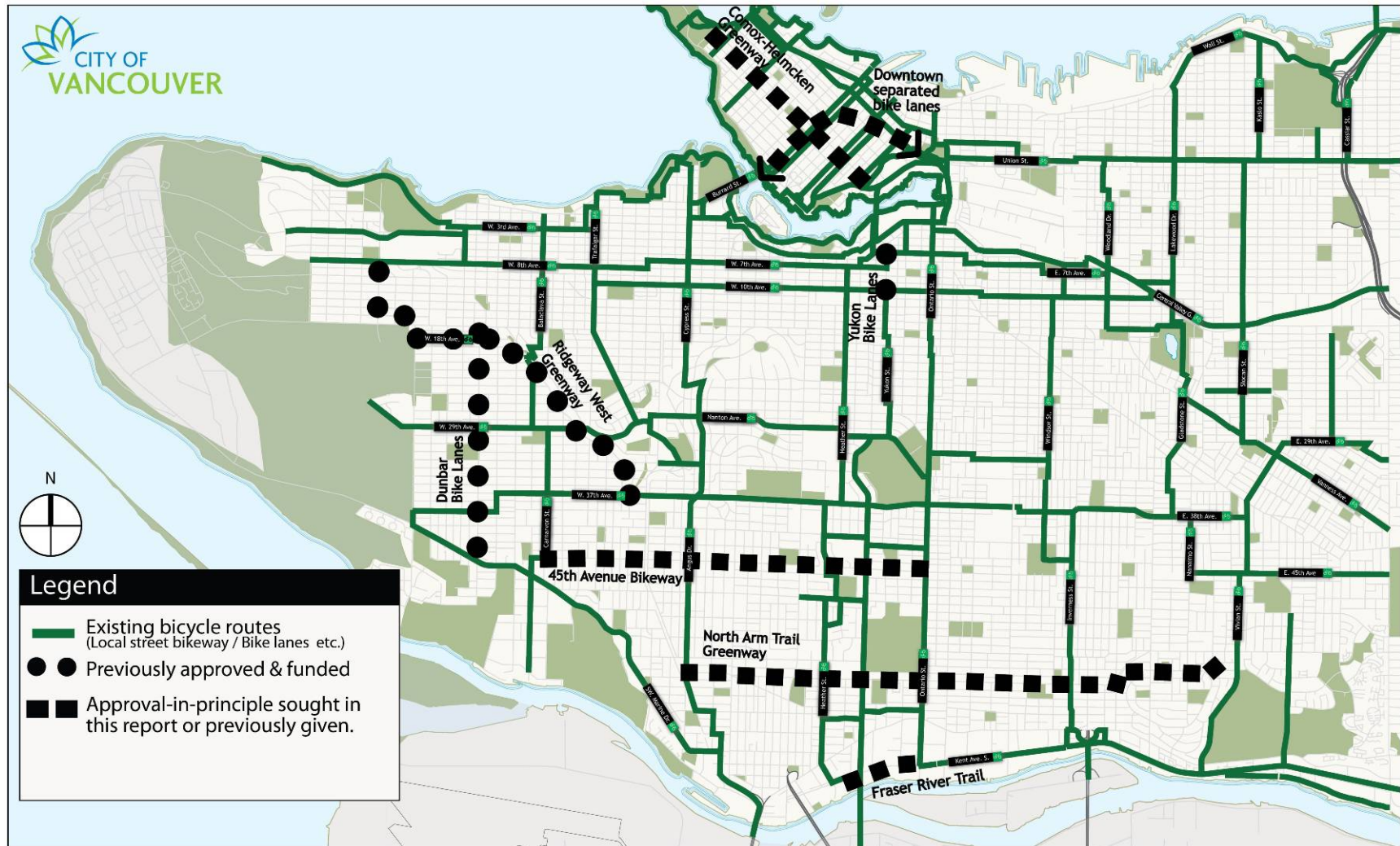


Table 3: Evaluation of 2010/11 Cycling Network Projects

Projects	Degree to which facility addresses known or perceived safety concerns	Potential for generating new cycling trips	Potential for cost sharing	Cost per kilometre	Potential impacts on on-street parking and loading	Existing bicycle volume	Proximity to parallel cycling facilities of same or higher level of service	Degree to which facility will overcome gap, barrier or bottleneck in cycling network	Weighted Total	Weighted Rank
<i>Weighting</i>	7	5	4	2	1	1	2	3		
<u>Approval-in-principle sought in report</u>										
Canada Line Bridge connections	3	2	3	1	3	2	3	3	65	1
45th Ave bikeway	1	1	2	3	3	1	2	1	37	5
<u>Previously approved-in-principle</u>										
Downtown separated bike lanes	3	3	1	1	1	3	3	3	61	2
Helmcken Greenway	3	2	2	1	2	2	3	2	57	3
North Arm Trail Greenway	1	2	3	2	3	1	3	1	46	4
<u>Previously approved</u>										
Ridgeway West Greenway	1	1	1	2	3	1	2	1	31	
Carrall St Greenway (Expo-Pacific)	3	2	1	1	2	2	3	2	53	
Arterial bike lanes (Dunbar St)	2	1	2	3	3	2	2	1	45	
Enhancements to existing bikeways	2	2	3	3	3	2	2	1	54	
<u>Pending report back to Council</u>										
Separated bike lane pilot project(s) outside of Downtown core	3	2-3	2	1	1	1-3	1-3	1-3	48-65*	

* Actual evaluation is highly dependent on location.

Complementary Projects and Programs for 2010/11

- Cyclist- and pedestrian-activated signals
- Basic bicycle parking
- Other end-of-trip facilities (including bike centre)
- Cycling promotion, education and encouragement

Complementary Projects and Programs

1. *Cyclist- and pedestrian-activated signals on major roads*

Staff continually look for opportunities to enhance major road crossings for pedestrians and cyclists. This includes new signals and modifications to existing signals to better serve non-motorized users. Staff anticipate that funding will continue to be requested over time to support these programs, typically through the annual traffic signal program.

2. *Basic bicycle parking*

Bicycle parking is continually identified by cyclists as one of the critical elements for encouraging cycling, and as an ongoing issue throughout the City. The City will continue to deploy bicycle racks on municipal rights-of-way through the street furniture program. In addition, staff recently developed and deployed 100 “branded” bicycle racks on Commercial Drive and E Hastings Street. Staff recommend that these racks continue to be deployed on a widespread basis in key commercial areas that are currently lacking short-term bicycle parking.

Through this report, staff are seeking approval to allocate \$100,000 of additional funding to further expand basic bicycle parking throughout the city, beyond the limited amount available through the street furniture program. Subject to Council approval, approximately 500 branded racks will be deployed in 2010.



3. *Other end-of-trip facilities*

In addition to basic bicycle parking, staff are developing facilities to provide a higher level of service to cyclists. In 2010, staff anticipate several new initiatives to support cyclists who need secure bicycle parking with end-of-trip amenities, as follows:

- Following Council approval in 2009, staff began working on a prototype “bike corral”, which is a high-capacity parking stall for 10-20 bicycles that replaces a single on-street car parking stall. The first corral will be installed this summer.
- In July 2009, Council approved two enclosed, secure bike parking structures at Broadway-City Hall and Olympic Village Canada Line stations. It is anticipated that the new structures will be installed in 2010.

- The City is participating with TransLink in a feasibility study and conceptual design for a potential “bike centre” in the Downtown. This destination facility would provide staffed parking facilities and services such as a repair shop, change rooms, showers and lockers. There is no funding within the current Capital Plan to pursue this program, but staff continue to investigate opportunities for implementation of a bike centre and other secure parking facilities near key cycling destinations.
- Through the street furniture contract, the City has the opportunity to install approximately 140 bike lockers. Staff are investigating management strategies for these lockers, including possible integration with the pay-by-phone parking system.
- The City partnered with BEST for the expansion of its bike valet service, which provides staffed bike parking for events. City funding provides for new equipment and development of a marketing strategy and business plan for the service.

4. *Cycling promotion, education and encouragement*

The vast majority of cycling resources in the past have been directed to infrastructure improvement and expansion. In the coming years, staff recommend that the role of the City and partner agencies in promoting cycling and educating cyclists and motorists be developed further, with an emphasis on developing social media exposure. A few notable promotional and educational activities have been undertaken by the City in the past and will require consideration in the new Cycling Program Master Plan:

- Early in 2009, Corporate Communications assisted with the development of the *bike vancouver* ‘brand’. The brand now appears on the City’s bicycle-related equipment and promotional material, information signs and new bike racks.



- *The Bicycle Route Map* continues to be popular, with more than 60,000 copies distributed in 2009. Staff recently produced 120,000 more maps in anticipation of increased demand during and following the 2010 Winter Games. Additional copies may be ordered later in the year.
- *Cycling pages on the City’s website* have been updated with a more user-friendly layout, more current information, basic profiles for each of the designated bike routes, and Burrard Bridge bike count data. More recently, staff have developed a presence through various *social media*, including Facebook and Twitter, and are exploring how to capitalize on these new resources.
- The City’s *One Day One School* (ODOS) program aims to reduce emissions, traffic and congestion around schools through training and outreach. Fifteen schools participated in Phases I and II of the pilot program. Staff review indicates the need for a more sustainable program with broader outreach. With these objectives in mind, a subsequent pilot program was launched at Sir Charles Tupper Secondary School and will be reviewed in 2010.
- The City continues to support promotional and educational activities offered by other organizations, such as *Bike to Work Week*, *Bike Month*, and the *Streetwise Cycling* training program. During Bike Month 2009, the City hosted an event where

several hundred cyclists enjoyed gifts and refreshments, bike tune-ups, guided rides and interaction with staff. Staff continue to develop partnerships with local organizations, and look forward to speaking to residents about the new Cycling Program Master Plan at Bike Month 2010 events.

- The *Bicycle Hotline* continues to be well used by both residents and visitors. Hotline e-mail continues to be received by Engineering staff, but telephone inquiries are now received first by the 311 system, and redirected to staff as appropriate. Approximately 730 cycling-related calls were received by 311 in 2009.

Funding

Funding for bicycle facilities is provided in the City of Vancouver 3-Year Capital Plans. In addition, staff continue to apply for external funding through a variety of cost-sharing programs offered by partner agencies. Table 4 provides a summary of the estimated capital costs to complete the projects described above, including both previously approved projects and new projects.

Funding to complete upcoming projects would come from: Bicycle Network and Greenways Program capital allocations, development cost levies and community amenity contributions, and committed funding from external sources. Additional funding sources are also being sought to achieve the objectives outlined above. Apart from those initiatives specifically identified for funding requests in this report, staff will report back to request specific funding allocations for the new projects described in this report.

Table 4: Projected Allocation of 2009-2011 Capital Plan Funding (thousands)

Projects	Estimated funding required for new projects			
	2006/08 Capital Plan	2009 Budget	To be requested from 2010/2011 Budgets	Project-specific funding
1. New 10-Year Cycling Program Master Plan	-	\$500 ²	-	-
2. Comprehensive monitoring strategy	-	\$400 ²	-	-
3. Cycling Network Improvements (in order of priority)				
a. Canada Line Bridge connections	-	-	\$2,300	-
b. Downtown separated bike lanes	-	-	-	\$3,000
c. Comox-Helmcken Greenway bicycle infrastructure (Central Valley Greenway to Stanley Park)	-	-	-	\$3,460
d. North Arm Trail bicycle infrastructure	\$700 ¹	-	\$1,100	-
e. 45 th Avenue Bikeway	-	-	\$1,000	-
4. Carrall St Greenway	-	-	-	\$1,640
5. Basic Bicycle Parking	-	\$100 ²	-	-
6. Network spot improvements	-	\$250 ³	-	-
7. Separated bike lane pilot project(s) outside of Downtown core (location(s) to be determined)	-	-	\$250	-
Additional projects potentially needing Bicycle Network or Greenways funding (Blueways, Neighbourhood Greenways, Community Gardens, fully separated local street bikeway pilot project)	-	\$450 ⁴	\$1,250	
Total Projected Investment	\$700	\$1,700	\$5,900	\$8,100
Total Available Funding	\$700	\$1,700	\$5,900	\$8,100
Other Transportation Programs Supporting Cycling				
Traffic Signal Program	\$3,314		\$4,000	
Bikeway Grind-and-Overlay			\$1,000 ⁵	

1 To be requested in a subsequent report, from 2006/08 Greenways Program

2 2009 Capital Funding requested within this report, from 2009 Bicycle Network Program

3 2009 Capital Funding requested within this report, from 2009 Greenways Program

4 To be requested in a subsequent report, from 2009 Greenways Program

5 This represents that portion of the total grind-and-overlay program to be applied specifically to bicycle routes

FINANCIAL IMPLICATIONS

In this report, staff are requesting that Council approve a \$1.25 million allocation from the 2009 Streets Basic Capital Budget (Bicycle Network and Greenways) to enable development of a new 10-year Cycling Program Master Plan, development of a comprehensive monitoring and evaluation program, installation of additional on-street bicycle parking and to provide for spot improvements throughout the bicycle network.

Approval-in-principle is being sought in this report for three cycling network projects; if approval is granted, staff will report back to Council in subsequent reports with design details and cost implications for each project.

PERSONNEL IMPLICATIONS

Staff time will be required to address the project management, research, planning, public consultation and analysis associated with development of a new 10-year Cycling Program Master Plan. Existing staff time is available for the project management and planning. However, the magnitude of the public consultation, research and analysis tasks, combined with staff commitments to ongoing projects and the new projects identified in this report, mean that additional staff or other outside resources will be needed to assist with the project. This additional staff requirement will be for the duration of the planning process, which is anticipated to start in mid 2010 and be completed in mid 2011.

For similar reasons, additional staff and/or external resources will be required to address the research and analysis associated with the development of a comprehensive cycling program monitoring and evaluation strategy.

IMPLEMENTATION IMPLICATIONS

Development of a new 10-year Cycling Program Master Plan will be managed internally with existing staff. It is recommended that planning begin with public opinion research aimed at defining the cycling potential of all City residents. Further, it is recommended that, through the public consultation process, the perceptions and values of the full range of cyclists and potential cyclists, including those not yet committed to cycling as a transportation choice, be considered.

It is anticipated that all infrastructure projects identified in this report will be started in 2010.

CONCLUSION

The coming years promise to be exciting for cycling in Vancouver. Staff recommend the development of a new Cycling Plan, as well as a comprehensive monitoring and evaluation strategy to support planning and ongoing evaluation of cycling initiatives. Part of the coming year's focus will also be on the development of social marketing as a tool for promoting and educating cyclists and motorists.

Staff also recommend that several network infrastructure projects be completed to provide new and improved cycling facilities throughout the City. These projects and the new Cycling Program Master Plan provide the opportunity to firmly establish new standards and practices for cycling and will allow Vancouver to reach the next "wave" of cyclists in 2010 and beyond.

* * * * *

Funding Sources and Status of Ongoing Projects

Project	Capital Plan(s)			Project Status		
	2003-2005 or earlier	2006- 2008	2009- 2011	Planning ¹	Design	Construction
<i>Ongoing Projects</i>						
Ridgeway West Greenway	✓					
Haro Bikeway	✓					
Main Street Shared Lanes	✓					
Central Valley Greenway	✓	✓				
Balaclava Bikeway	✓	✓				
Heather Bikeway Extension		✓				
Dunbar Bike Lanes		✓				
22 nd Avenue Bike Lanes/ Shared Lanes		✓				
49 th Avenue Bike Lanes/ Shared Lanes		✓				
Yukon Bikeway (10 th - 29 th Aves)		✓				
Yukon Bike Lanes (2 nd - 10 th Aves)		✓				
29 th Avenue Bikeway		✓				
Alberni Bike Lanes		✓				
Cambie Bike Lanes		✓				
Valley Bikeway		✓				
Kerr Street Bike Lanes		✓				
Rupert Street Bike Lanes		✓				
Carrall Street Greenway		✓	✓			
<i>New Projects Initiated with Increased 2009 Funding</i>						
Bikeway enhancements			✓			
Bike parking at Canada Line stations			✓			
Dunsmuir Viaduct bike lane			✓			
Downtown separated bike lanes			✓ ²			
<i>Other New Projects Arising from this Report</i>						
Canada Line Bridge connections			✓ ²			
Comox-Helmcken Greenway			✓ ²			
North Arm Trail Greenway			✓ ²			
45 th Avenue Bikeway			✓ ²			
Separated bike lane pilot project(s) outside of Downtown core			✓ ²			

¹ Planning phase includes preliminary scoping, consultation, data collection, etc.

² Pending Council approval

Descriptions of 2010/11 Cycling Infrastructure Projects

The five projects noted below will be reported back to Council for funding approval following public consultation, design and detailed cost estimates.

1. Connections to the Canada Line Bridge from local street bikeways (Fraser River Trail)

Council approval:	Approval-in-principle sought in this report
Budget estimate:	\$2,300,000
Proposed source of funds:	2010 Streets Basic Capital Budgets (Bicycle Network)
Cost sharing:	Over \$400,000 (TransLink)

The cycling facilities on the new Canada Line Bridge provide a new connection for cyclists between Vancouver and Richmond. However, comfortable cycling connections to the Canada Line Bridge are currently lacking and there is a need to significantly improve these connections for both recreational and commuter cyclists. This report seeks Council approval-in-principle for construction of bikeway connections from the Canada Line Bridge to the existing east-west Kent Avenue Bikeway and to north-south routes on Heather, Cambie and Ontario Streets.

2. Downtown separated bike lanes

Council approval:	Approval-in-principle February 2010
Budget estimate:	\$3,000,000
Proposed source of funds:	2010 Streets Basic Capital Budget (Strategic Transportation - Arterial Modifications)

Council recently approved implementation of a separated bike lane on the Dunsmuir Viaduct and approved in principle the development of separated bike lanes in the Downtown Peninsula to connect the Dunsmuir Viaduct and Burrard Bridge, subject to the outcome of public consultation.

Staff will also report back with options for permanent configurations for the Burrard Bridge, including recommendations for improved approaches to the bridge for pedestrians, bikes and motor vehicles, and safer connections for cyclists leading to the approaches.

3. Comox-Helmcken Greenway bicycle infrastructure

Council approval:	Approval-in-principle through 1995 Greenways Plan
Budget estimate:	\$3,460,000
Proposed source of funds:	Greenlinks

The Comox-Helmcken Greenway was approved as part of the 1995 Greenways Plan and is envisioned to connect the Seawall and Central Valley Greenway across Downtown and the West End to Stanley Park. The configuration of the cycling portion of facility is yet to be designed, but would likely incorporate a combination of separated bike lanes and heavily traffic-calmed streets, including partial and/or full closures of Helmcken Street. The greenway would provide an east-west cycling facility in an area currently lacking in any east-

west cycling infrastructure, and would complement separated bike lanes on Dunsmuir Street and the Seawall. Staff will report back on detailed design, consultation and costs.

4. North Arm Trail Greenway cycling infrastructure and street lighting upgrade

Council approval:	Approval-in-principle through 1995 Greenways Plan
Budget estimate:	\$1,800,000
Proposed sources of funds:	2006/08 Streets Basic Capital Budget (Greenways) 2010/11 Streets Basic Capital Budget (Greenways)
Cost sharing:	Over \$400,000 (TransLink)

The North Arm Trail Greenway was approved in 1995, following significant public consultation, as part of the City Greenways Plan. Staff recommend that construction of the cycling infrastructure and street lighting upgrade for the section of Greenway from the Cypress Bikeway on Angus Drive to the Sunrise Bikeway on Vivian Drive be initiated in 2010. Once complete, this greenway will extend from the Fraser River Trail in the southwest to Boundary Road in the east, augmenting the east-west network in the southern part of Vancouver. Between Angus Drive and Argyle Street, the route will be along 59th Avenue. East of Argyle Street, the route will be primarily along Upland Drive and other local streets. Following completion of the cycling infrastructure and street lighting upgrade, and further public consultation, staff will make a subsequent request for the addition of Greenway amenities to the route, including seating areas, drinking water fountains, enhanced wayfinding and public art.

5. 45th Avenue Bikeway

Council approval:	Approval-in-principle sought in this report
Budget estimate:	\$1,000,000 (Phase 1)
Proposed source of funds:	2010/11 Streets Basic Capital Budget (Bicycle Network)

The 45th Avenue Bikeway, extending from Balaclava Bikeway in the west to the Ridgeway Greenway at Nanaimo Street in the east, will enhance the east-west network in the southern part of Vancouver. Phase 1, to be undertaken in 2010, will extend from the Balaclava Bikeway to the Ontario Greenway. Between Hudson Street and Tisdall Street, the route will be on W 46th Avenue.

This new local street bikeway will incorporate features common to other local street bikeways in Vancouver - traffic circles to replace stop signs, cyclist-activated traffic signals for crossing major streets, signage and pavement markings indicating presence of a bikeway (including 30-km/h speed limits) and traffic calming to discourage shortcutting by non-local traffic.

The remaining projects anticipated for completion in 2010/11 have been previously approved by Council and are scheduled for construction.

Carrall Street Greenway - Pacific to Expo Boulevard

Council approval: July 2006
 Budget: \$1,640,000
 Source of funds: 2009 Streets Basic Capital Budget (Carrall Street Greenway)

The final section of the Carrall Street Greenway, from Pacific to Expo Boulevard will be constructed in 2010. The Carrall Street Greenway is a strategic initiative in the Downtown Transportation Plan and Downtown Eastside Economic Revitalization Plan, in addition to being one of the routes identified in the Council-approved 1995 City Greenways Plan. The Greenway will complete the downtown seawall loop by providing a separated seawall-to-seawall cyclist and pedestrian connection between False Creek and Burrard Inlet.

Enhancement of local street bikeways with additional traffic calming

Council approval: June 2009
 Approved budget: \$1,200,000
 Source of funds: 2009 Streets Basic Capital Budget (Bicycle Network, Traffic Calming, Greenways)
 Cost sharing: \$192,000 (TransLink)

In June 2009, Council approved a significant funding allocation for the implementation of additional traffic calming measures on existing bikeways, along with 30-km/h speed limits on local street bikeways. The objective in designing the enhancements is to reduce motor vehicle volume and speed on local street bikeways. Refer to Appendices A and B for a review of the status of work on this initiative.

Designs for several of these calming measures have been completed, and construction is expected to begin on non-diversionary measures early in 2010. "Pre-implementation" data collection for many of the planned diversionary measures is now complete, and temporary diversionary measures will likely be implemented in Spring 2010. Appendix C summarizes current status of these projects.

Arterial bike lanes (Dunbar St)

Council approval: December 2007
 Approved budget: \$150,000 for multiple streets
 Source of funds: 2007 Street Basic Capital Budget (Bicycle Network)
 Cost sharing: \$52,600 (TransLink)

Council approved the implementation of standard bike lanes on arterial streets where no curb realignment or significant parking impacts are required. Under this program staff have implemented bike lanes on Rupert Street and E 22nd Avenue in 2009. This year, it is recommended that the remaining capital funds be used to implement bike lanes on Dunbar Street.

Ridgeway West Greenway

Council approval: October 2005
 Approved Budget: \$946,000
 Source of Funds: 2002 and 2004 Streets Basic Capital Budgets (Greenways & New Traffic Signal Program)

The Ridgeway Greenway West extension will connect the existing Ridgeway Greenway at W 37th Avenue and Yew Street to W 18th Avenue and Dunbar Street. It includes a number of measures to calm neighbourhood traffic and to improve overall conditions for pedestrians and cyclists.

In addition to those projects described above, the following project will be pursued pending reports back to Council on implementation options and implications.

Separated bike lane pilot project(s) outside of Downtown core

Council approval:	Pending reports back on design, consultation and costs
Budget estimate:	\$250,000
Proposed source of funds:	2010/11 Streets Basic Capital Budget (Bicycle Network)

Pending approval of this report, staff will report back to Council on options for the implementation of trial separated bike lanes on a local street bikeway and on an arterial road outside of the Downtown core. These pilot projects will require Council approval to proceed.

Status of Enhanced Traffic Calming and 30 km/h Signage on Bikeways

