



---

## Public Works & Transportation Committee

Anderson Room, City Hall  
6911 No. 3 Road

Wednesday, November 21, 2012  
4:00 p.m.

Pg. #      ITEM

### MINUTES

**PWT-5**      *Motion to adopt the minutes of the meeting of the Public Works & Transportation Committee held on Wednesday, October 17, 2012.*



### NEXT COMMITTEE MEETING DATE

Wednesday, December 19, 2012, (tentative date) at 4:00 p.m. in the Anderson Room

### PLANNING AND DEVELOPMENT DEPARTMENT

1. **TRANSLINK 2013 CAPITAL PROGRAM COST-SHARING SUBMISSIONS – MAJOR ROAD NETWORK AND BIKE, BICYCLE INFRASTRUCTURE CAPITAL COST-SHARING REGIONAL NEEDS AND TRANSIT-RELATED ROAD INFRASTRUCTURE PROGRAMS**  
(File Ref. No. 01-0154-04/2012) (REDMS No. 3655384 v.2)

**PWT-19**

See Page **PWT-19** for full report

*Designated Speaker: Victor Wei*

### STAFF RECOMMENDATION

(1) *That the submission of:*

- (a) *road improvement project for cost-sharing as part of the TransLink 2013 Major Road Network & Bike (MRNB) Upgrade Program;*
  - (b) *bicycle facility improvement project for cost-sharing as part of the TransLink 2013 Bicycle Infrastructure Capital Cost-Sharing (BICCS) Regional Needs Program; and*
  - (c) *transit facility improvements for cost-sharing as part of the TransLink 2013 Transit-Related Road Infrastructure Program;*  
*as described in the staff report dated October 24, 2012 from the Director, Transportation, be endorsed; and*
- (2) *That, should the above submissions be successful and the projects receive Council approval via the annual capital budget process, the Chief Administrative Officer and General Manager, Planning and Development be authorized to execute the funding agreements and the 2013 Capital Plan and the 5-Year Financial Plan (2013-2017) be updated accordingly dependant on the timing of the budget process.*



## ENGINEERING AND PUBLIC WORKS DEPARTMENT

### 2. **2012 CORPORATE ENERGY MANAGEMENT UPDATE** (File Ref. No.) (REDMS No. 3650284 v.14)

**PWT-27**

See Page **PWT-27** for full report

*Designated Speaker: Levi Higgs*

#### STAFF RECOMMENDATION

*That the staff report titled 2012 Corporate Energy Management Program Update from the Interim Director, Sustainability and District Energy, dated October 29, 2012 be received for information.*



### 3. **CARBON NEUTRAL PROGRESS UPDATE** (File Ref. No. 01-0370-01) (REDMS No. 3695216 v.4)

**PWT-51**

See Page **PWT-51** for full report

*Designated Speaker: Margot Daykin*

STAFF RECOMMENDATION

- (1) *That the City pursue the “Making Progress” option for meeting the terms of the Climate Action Charter for 2012; and*
- (2) *That the ‘Towards Carbon Neutrality – Progress Report 2012’ (Attachment 1) be made accessible to the community through the City’s website and in limited hard-copy supply at City Hall and key community centres.*



4. **PROPOSED CLIMATE SMART PROGRAM – FACILITATING CLIMATE ACTION BY RICHMOND BUSINESSES**

(File Ref. No. 01-0370-01/2012) (REDMS No. 3702578 v.2)

PWT-69

See Page PWT-69 for full report

*Designated Speakers: Margot Daykin & Neonila Lilova*

STAFF RECOMMENDATION

*That the City supports the delivery of the Climate Smart Program as presented in the staff report dated November 6, 2012 titled Proposed Climate Smart Program – Facilitating Climate Action by Richmond Businesses.*



5. **UPDATE ON 2012/2013 SNOW AND ICE RESPONSE PREPARATIONS**

(File Ref. No.) (REDMS No. 3698671)

PWT-75

See Page PWT-75 for full report

*Designated Speaker: Ben Dias*

STAFF RECOMMENDATION

*That the staff report titled Update on 2012/2013 Snow and Ice Response Preparations, dated October 31, 2012, be received for information.*



6. **MANAGER’S REPORT**

Pg. #      ITEM

ADJOURNMENT





## Public Works & Transportation Committee

Date: Wednesday, October 17, 2012

Place: Anderson Room  
Richmond City Hall

Present: Councillor Linda Barnes, Chair  
Councillor Chak Au, Vice-Chair  
Councillor Derek Dang  
Councillor Harold Steves

Absent: Councillor Linda McPhail

Call to Order: The Chair called the meeting to order at 4:00 p.m.

### MINUTES

It was moved and seconded

*That the minutes of the meeting of the Public Works & Transportation Committee held on Wednesday, September 19, 2012, be adopted as circulated.*

**CARRIED**

### PLANNING & DEVELOPMENT DEPARTMENT

1. **TRAFFIC BYLAW AMENDMENT TO REFLECT REVISED FORMAT OF ANNUAL PARADES**  
(File Ref. No. 10-6450-19-03) (REDMS No. 3654348)

It was moved and seconded

*That Traffic Bylaw No. 5870, Amendment Bylaw No. 8955 (Attachment 1) be introduced and given first, second and third reading to ensure conformance with the changes approved in December 2011 to the format of the annual Steveston Santa Claus Parade.*

**CARRIED**

**Public Works & Transportation Committee**  
**Wednesday, October 17, 2012**

---

**2. REQUEST FOR PILOT INITIATIVE TO PROVIDE SPECIAL PUBLIC ACCESS TO STAFF WASHROOMS IN THE RICHMOND-BRIGHOUSE CANADA LINE STATION**

(File Ref. No. 01-0154-00) (REDMS No. 3654479 v.2)

Victor Wei, Director, Transportation, circulated a letter from TransLink written to the Richmond Seniors Network, indicating that TransLink is unable to endorse the Network's suggested pilot program due to existing policies and other concerns. A copy of the letter is attached as **Schedule 1** and forms part of these minutes.

A discussion ensued about: (i) how TransLink has not made adequate provisions for public washrooms on the Canada Line or the original Sky Train; and (ii) requesting TransLink to reconsider the position that has been indicated in the letter to the Richmond Senior's Network.

Hans Havis, Richmond Seniors Advisory Council and Richmond Seniors Network, spoke about how important it is to have washrooms made available for Canada Line users and made reference to several incidents where members of the public were unable to access washrooms when they needed. Mr. Havis also talked about the City of Vancouver's free-standing portable washrooms, believing that the City of Richmond would benefit from a similar solution.

Aileen McCormack, 1291 Railway Avenue, advised the Committee that she has been lobbying TransLink to allow the public full access to the washrooms on the Canada Line. She stated that other municipalities that have the Sky Train as part of their Transit system, are also in support of public access to the washrooms, and requested the City of Richmond to request TransLink to reconsider their position on the issue.

A discussion then ensued among Committee members and Mr. Wei about:

- future re-development along Buswell Street that may provide opportunities to install public washrooms;
- TransLink's recent Board release indicating a shortage of funds;
- other alternatives that would provide public washroom opportunities, including a proposal for washrooms at No. 3 Road and Cook Street;
- the need to request TransLink to reconsider its position on public access to washrooms, and discuss TransLink's concerns on the matter; and
- the feasibility of having the City of Richmond install and maintain free-standing portable public washrooms, particularly at the Brighthouse Station.

**Public Works & Transportation Committee**  
**Wednesday, October 17, 2012**

---

Peter Mitchell, 6271 Nanika Crescent, made the following three points in connection to Richmond's Canada Line Stations:

- i. the map at the Brighthouse Station is located on the south side and is oriented towards the north, creating confusion for transit users who as a result, end up going in the wrong direction when exiting off the Canada Line;
- ii. Richmond High is labelled as Richmond Elementary on the map at Brighthouse Station; and
- iii. the vines on the columns along the Canada Line route are not aesthetically pleasing as they are not healthy.

It was moved and seconded

- (1) *That Richmond City Council send a letter to TransLink advising of its support for the implementation of the pilot initiative proposed by the Richmond Seniors Network; and*
- (2) *That Translink be requested to reconsider its current policy on access to washrooms for this pilot project.*

**CARRIED**

**COMMUNITY SERVICES DEPARTMENT**

**3. UPDATE ON THE ENHANCED PESTICIDE MANAGEMENT PROGRAM**

(File Ref. No. 10-6125-04-01) (REDMS No. 3656638 v. 5)

A discussion ensued among members of the Committee, Lesley Douglas, Manager, Environmental Sustainability, and Robert Gonzalez, General Manager, Engineering and Public Works about: (i) the management of noxious weed infestations in the City of Richmond; and (ii) the current process for enforcement of the Enhanced Pesticide Management Program.

It was moved and seconded

*That the staff report dated September 25, 2012 titled Update on the Enhanced Pesticide Management Program from the Interim Director, Sustainability and District Energy be received for information.*

**CARRIED**

ENGINEERING & PUBLIC WORKS DEPARTMENT

4. **SANITARY DUMP STATION**

(File Ref. No. 10-6000-01) (REDMS No. 3666898)

Lisa Novak, 7451 Montana Road, noted that she has been writing to the City of Richmond since the 2010 Winter Olympics regarding the need for a sanitary dump station in Richmond to service avid campers. She spoke about previous locations that have closed their sanitary dump stations due to a lack of profits, and suggested that one be considered in a location such as McDonald Beach.

Romeo Bicego, Manager, Sewerage & Drainage, advised that currently there are sanitary dump stations along the Trans Canada Highway, however, none are close to the City of Richmond. Mr. Bicego further advised that the reasons for closures of the sanitation dump stations in Richmond included vandalism and a shortage of profits.

Peter Mitchell, 6271 Nanika Crescent, indicated that he acted as the coordinator for recreational vehicle parks for the City of Richmond during the Seniors Games and the 2010 Olympics. Mr. Mitchell spoke about how he assisted in the organization of approximately 100 recreational vehicles at various locations, and resulted in a profit of approximately \$3000. He further noted that he still receives about five emails per year inquiring about a sanitation dump station in Richmond.

A Richmond resident suggested that consideration be given to placing a sanitation dump station at the City's worksyard on Lynas Lane, believing that the station could be maintained by the staff at the works yard. The delegation further noted that placing the station at a City owned site may be the solution to prevent vandalism and misuse of the station.

It was moved and seconded

*That:*

- (1) an Expression of Interest for Sanitary Dump Station service within the City of Richmond be issued; and*
- (2) staff report back with recommendations based on the results of the Expression of Interest to Council for consideration.*

CARRIED



**Public Works & Transportation Committee**  
**Wednesday, October 17, 2012**

---

**5. STEVESTON HARBOUR LONG TERM DEVELOPMENT CONCEPT  
UPDATE 2012**

(File Ref. No. 06-2345-00) (REDMS No. 3666736)

John Irving, Director, Engineering, and Mike Redpath, Senior Manager, Parks were available to answer questions. A discussion took place about:

- some of the proposed non-native plant species. It was noted that the area requires native species in order to thrive, and that the plants listed in the report are part of a preliminary design which may be changed as required;
- acquiring adequate compensation for habitat creation at the foot of No. 2 Road, and the urgency for removing the red zone on Lot H;
- the feasibility of the City acquiring its own dredging equipment;
- the importance of reconfiguring the harbour and maintaining a proper depth; and
- the various stakeholders involved in the proposed project, which include the City of Richmond, the Steveston Harbour Authority, Port Metro Vancouver, and Small Craft Harbours.

Lorne Slye, 11911 – 3<sup>rd</sup> Avenue, accompanied by Bruce Rozenhart, 11171 Barkentine Place, spoke about the work that has been done in an effort to re-create native gardens. Mr. Slye also spoke about how he has taken many elected officials including members of Council, MLAs, and MPs on tours of the harbour during low tides to reveal how disastrous the situation is becoming.

Mr. Rozenhart spoke about the need to preserve the heritage and working aspect of the Steveston Harbour, and stated that the staff report in connection to this matter presents a long term solution.

It was moved and seconded

- (1) *That no greater than \$2.0M in funding from utility provisions be approved as the City's proportionate share for the dredging of the Steveston Channel, which will only be expended upon the approval and commitment by senior governments of matching grants; and*
- (2) *That Council forward a letter to the Richmond MLAs, MPs, Port Metro Vancouver, Small Craft Harbors and the Steveston Harbour Authority seeking financial support for the future dredging of the Local Area channel in Steveston Harbour; and*
- (3) *That Richmond's portion of the funding be applied towards supporting the filling of Lot H, including compensation credits for the red zone.*

**CARRIED**

**Public Works & Transportation Committee**  
**Wednesday, October 17, 2012**

---

**6. MANAGER'S REPORT**

South Fraser Perimeter Road

Victor Wei, Director, Transportation, made reference to his memo regarding the South Fraser Perimeter Road, and explained the key interchanges and connections. A copy of Mr. Wei's memo is attached as **Schedule 2**, and forms part of these minutes.

Dyke Damage at Bayview

John Irving, Director, Engineering, advised that the City of Richmond has now entered into a service agreement with Onni regarding the damage and repair work on the walkway and dyke.

**ADJOURNMENT**

It was moved and seconded  
*That the meeting adjourn (5:23 p.m.).*

**CARRIED**

Certified a true and correct copy of the  
Minutes of the meeting of the Public  
Works & Transportation Committee of the  
Council of the City of Richmond held on  
Wednesday, October 17, 2012.

---

Councillor Linda Barnes  
Chair

---

Shanan Sarbjit Dhaliwal  
Executive Assistant, City Clerk's Office



October 5, 2012

Richmond Seniors Network  
c/o Volunteer Richmond Information Services  
190 – 7000 Minoru Blvd.  
Richmond, BC V6Y3Z5

Attention: Ms. Louise Young,  
Coordinator

Dear Ms. Young:

Subject: Access to Washroom at Canada Line Stations

---

I am replying to your letter dated September 12, 2012, and addressed to Mr. Ian Jarvis, CEO TransLink. I want to thank you for your suggestion of a pilot program, but unfortunately the concerns that we have voiced previously, with respect to the safety and security of our customers, would remain.

Until there is a policy established and a fully funded program that addresses the maintenance and security concerns of the operators of the transit system, we will continue to apply the current policy. I will continue to communicate to our staff, and those tasked with the operation of the Canada Line, that if an urgent need to use the staff facilities exists, then access should not be denied. We will endeavour to ensure consistent application of the policy.

I would also encourage you to work with the municipality on the provision of public washroom facilities. The City of Vancouver has recent experience with automated toilet facilities that may serve as a model for others.

Yours sincerely,

Fred J. Cummings, P.Eng.  
President and General Manager

FJC/dls

cc: Nancy Olewiler, Chair, TransLink Board of Directors  
Ian Jarvis, CEO, TransLink  
Peter Hill, Manager, Access Transit, TransLink  
Hon. Mary Polak, Minister of Transportation & Infrastructure  
Hon. Ralph Sultan, Minister of State for Seniors  
Hon. John Yap, MLA Richmond-Skeveston  
Linda Reid, MLA East Richmond  
Rob Howard, MLA Richmond Centre  
Mayor Malcolm Brodie and Richmond City Council  
Victor Wei, Director of Transportation, City of Richmond  
Richmond Seniors Advisory Committee

British Columbia **PWT-111** Transit Company Ltd.  
6800 – 14<sup>th</sup> Avenue

Burnaby, B.C., Canada V3N 4S7

Telephone: 604-520-3641 Facsimile: 604-521-2818



City of  
Richmond

**Memorandum**  
Planning and Development Department  
Transportation

**To:** Public Works and Transportation Committee  
**From:** Victor Wei, P. Eng.  
Director, Transportation  
**Re:** South Fraser Perimeter Road

**Date:** October 17, 2012  
**File:** 01-0150-20-THIG1/2012-  
Vol 01

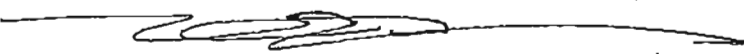
In light of the upcoming opening of the new Port Mann Bridge Improvement project in December 2012 and the planned Deltaport Expansion, this memorandum briefly describes the South Fraser Perimeter Road (SFPR) project and its connections to these two facilities as well as other key links.

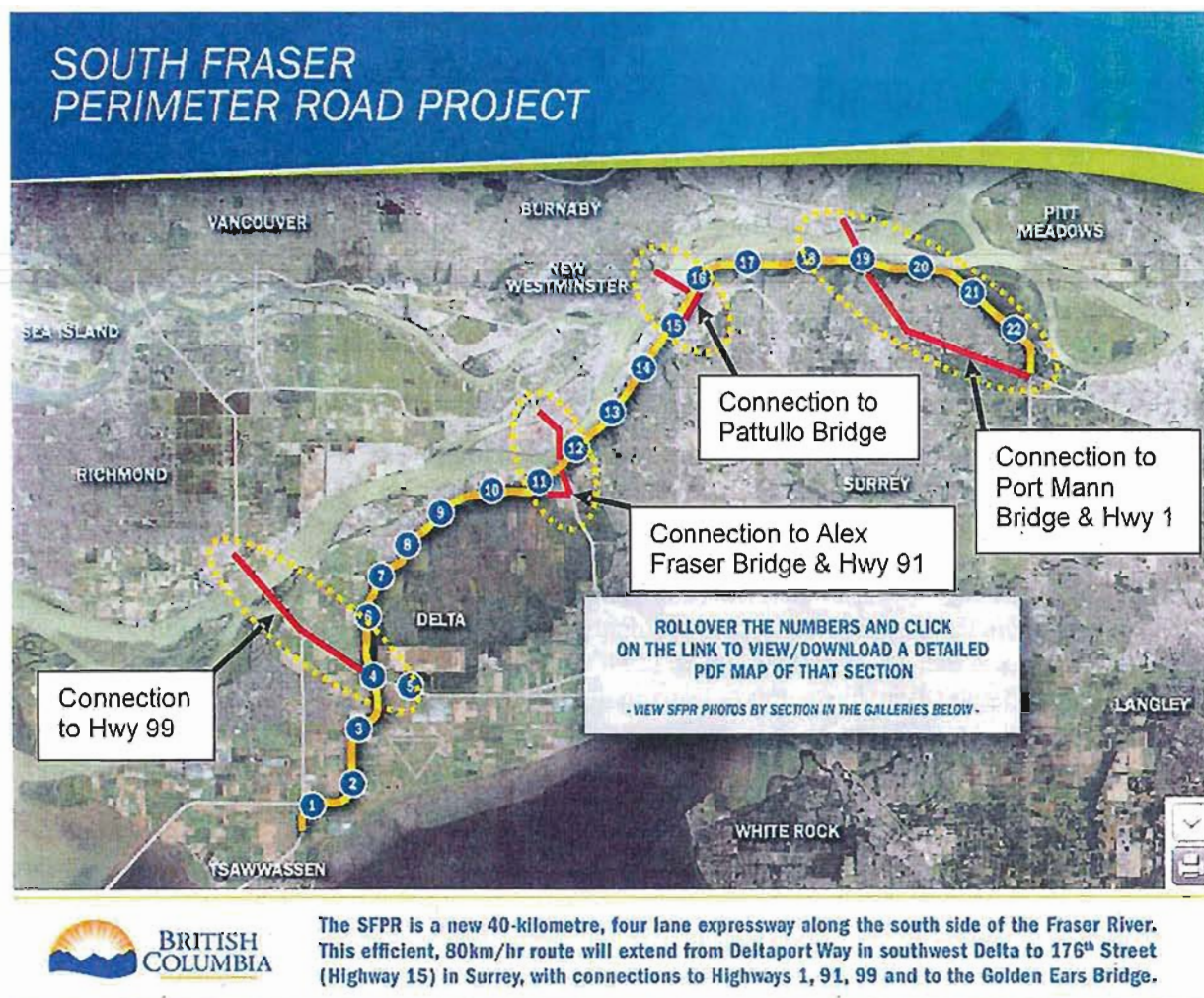
The SFPR project is one of three components that comprise the Province's Gateway Program; the other two being Port Mann Bridge-Highway 1 Improvements and the North Fraser Perimeter Road. The SFPR project is a new four-lane, 40 km long, 80 km/h route along the south side of the Fraser River extending from Deltaport Way in southwest Delta to the Golden Ears Bridge connector road in Surrey/Langley (see **Attachment 1**). It is intended to provide a continuous and efficient route to serve the port facilities, rail yards and industrial areas along this economic corridor, as well as benefit commuters. Key interchanges and connections include:

- direct connection to Deltaport Way/Highway 17 interchange;
- direct connection to Highway 99 interchange near 72<sup>nd</sup> Street in Delta (**Attachment 2**);
- indirect connection to Highway 91 via the Sunbury intersection (**Attachment 3**);
- indirect connection to Pattullo Bridge via Tannery Road and Scott Road/120<sup>th</sup> Street (**Attachment 4**); and
- indirect connection to Port Mann Bridge/Highway 1 via 176<sup>th</sup> Street/Highway 15 interchange (**Attachment 5**).

The SFPR project is anticipated to be open to traffic in two phases: (1) 176<sup>th</sup> St to 136<sup>th</sup> St in Surrey in December 2012; and (2) 136<sup>th</sup> St in Surrey to Deltaport Way in Delta in December 2013.

Given the numerous connections along the corridor and the downgrading of Highway 17 through Ladner, a potential benefit to Richmond of this new regional roadway is the potential diversion of non-local, ferry and commuter traffic to other major river crossings aside from the George Massey Tunnel. A full report on the Deltaport truck traffic, along with further discussions on the expected impacts of the SFPR, is scheduled to be presented to the Public Works & Transportation Committee in December 2012. In the interim, please contact me if you have any questions.

  
Victor Wei, P. Eng.  
Director, Transportation  
VW:dc  
Att. 5  
pc: SMT

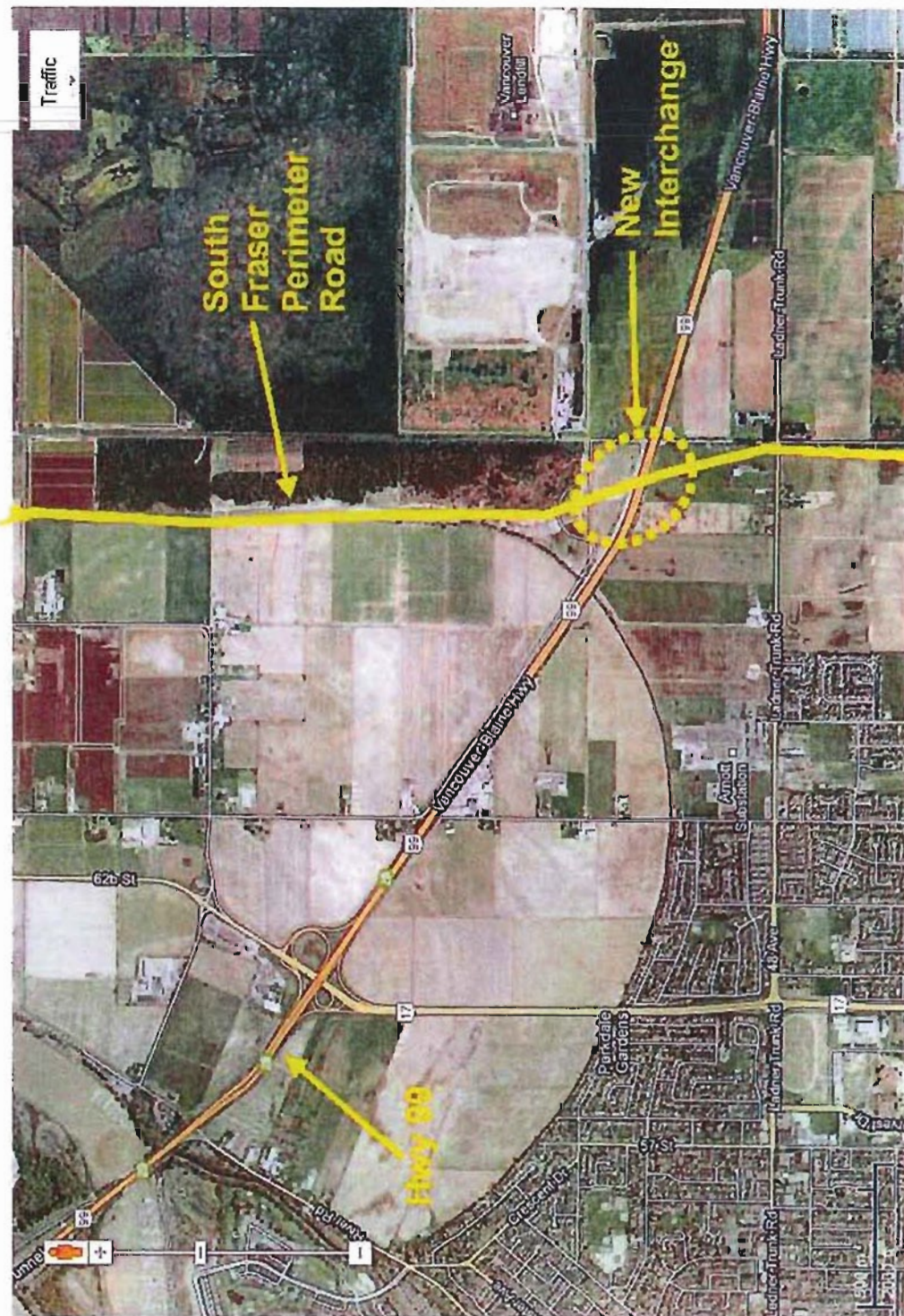


#### Key Connections:

- Highway 99 Connection (Section 4 on key map): located just north of Ladner Trunk Road near 72<sup>nd</sup> Street, it connects ferry and Tsawwassen traffic with Highway 99 and the George Massey Tunnel.
- Highway 91 Connection (Section 11 on key map): via the Sunbury Intersection located west of Highway 91. From the west, travellers on the SFPR would turn right onto the Highway 91 Connector to access the Alex Fraser Bridge/Highway 91. Travellers coming off of the Alex Fraser Bridge would follow the off-ramp onto the Highway 91 Connector to connect to the SFPR westbound or eastbound.
- Pattullo Bridge Connection (Sections 15 and 16 on key map): from the west via the Tanner Road Interchange from where travellers would turn onto Tannery Road, turn left onto Scott Road and continue to the existing connection to the bridge. From the Pattullo Bridge, travellers could use either Scott Road or 124<sup>th</sup> Street to connect to the SFPR.
- Port Mann Bridge/Highway 1 Connection (Section 22 on key map): connects indirectly via the 176<sup>th</sup> Street/Highway 15 interchange. There is no direct connection at the bridge possibly due to the grade differential and potential environmental impacts.

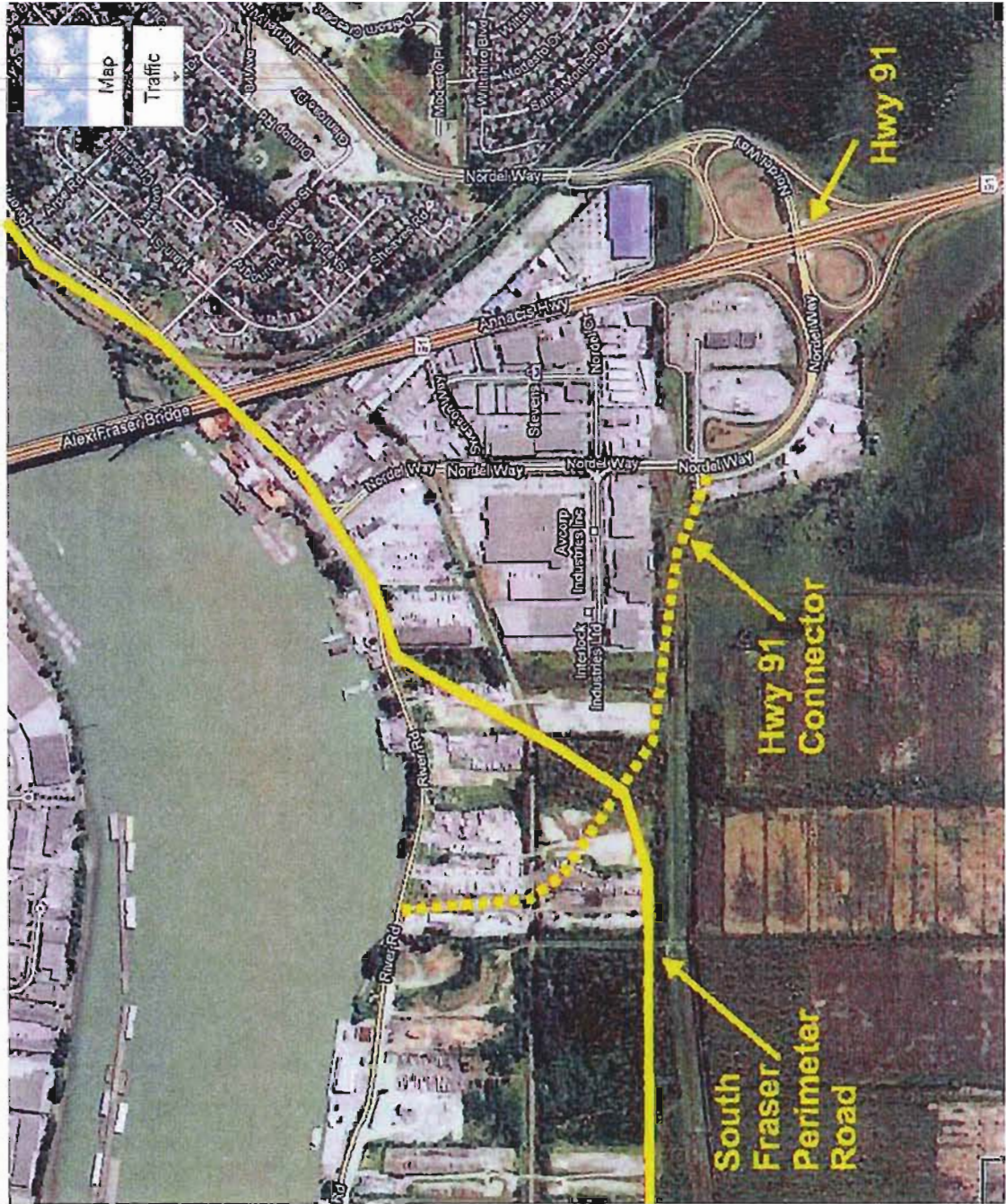


# South Fraser Perimeter Road: Connection to Highway 99





## South Fraser Perimeter Road: Connection to Highway 91



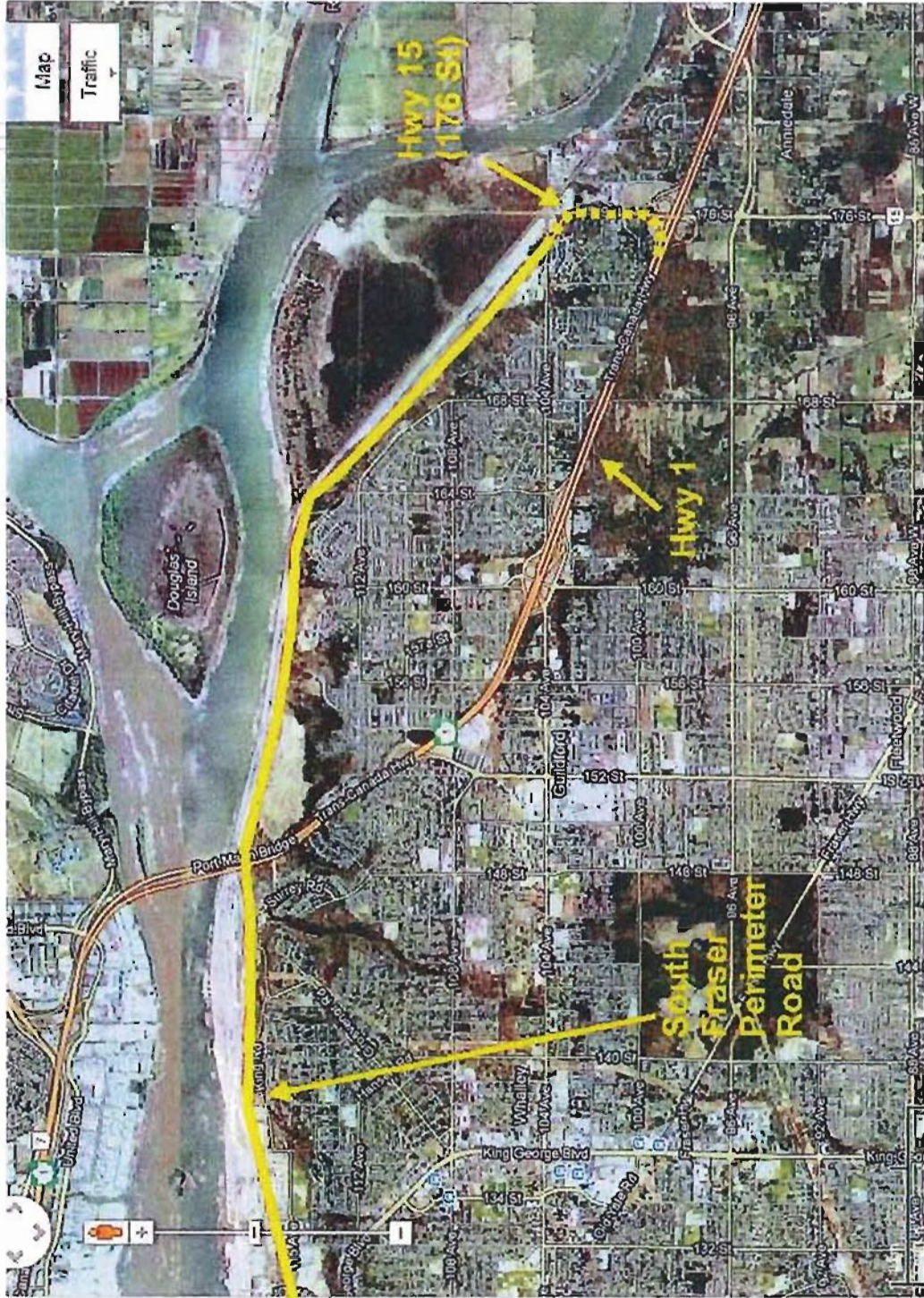


**South Fraser Perimeter Road:  
Connection to Pattullo Bridge**





# South Fraser Perimeter Road: Connection to Port Mann Bridge and Highway 1








# City of Richmond

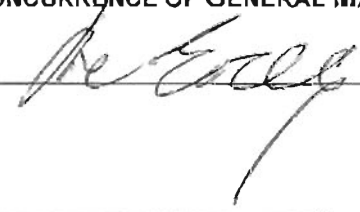


## Report to Committee

**To:** Public Works and Transportation Committee    **Date:** October 24, 2012  
**From:** Victor Wei, P. Eng.  
Director, Transportation    **File:** 01-0154-04/2011-Vol 01  
**Re:** **TRANSLINK 2013 CAPITAL PROGRAM COST-SHARING SUBMISSIONS -  
MAJOR ROAD NETWORK AND BIKE, BICYCLE INFRASTRUCTURE CAPITAL  
COST-SHARING REGIONAL NEEDS AND TRANSIT-RELATED ROAD  
INFRASTRUCTURE PROGRAMS**

### Staff Recommendation

1. That the submission of:
  - (a) road improvement project for cost-sharing as part of the TransLink 2013 Major Road Network & Bike (MRNB) Upgrade Program,
  - (b) bicycle facility improvement project for cost-sharing as part of the TransLink 2013 Bicycle Infrastructure Capital Cost-Sharing (BICCS) Regional Needs Program, and
  - (c) transit facility improvements for cost-sharing as part of the TransLink 2013 Transit-Related Road Infrastructure Program,as described in the report, be endorsed.
2. That, should the above submissions be successful and the projects receive Council approval via the annual capital budget process, the Chief Administrative Officer and General Manager, Planning and Development be authorized to execute the funding agreements and the 2013 Capital Plan and the 5-Year Financial Plan (2013-2017) be updated accordingly dependant on the timing of the budget process.

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

REPORT CONCURRENCE			
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>	
Finance Division .....	<input checked="" type="checkbox"/>		
Parks Services .....	<input checked="" type="checkbox"/>		
Engineering .....	<input checked="" type="checkbox"/>		
Law .....	<input checked="" type="checkbox"/>		
<b>REVIEWED BY SMT SUBCOMMITTEE</b>	<b>INITIALS:</b> 	<b>REVIEWED BY CAO</b> OK	<b>INITIALS:</b> 



## Staff Report

### Origin

Following a review of its Major Road Network (MRN) funding criteria initiated in 2010, TransLink combined the allocated capital upgrade funding for the MRN Minor Capital Program and the Bicycle Infrastructure Capital Cost-Share Program (BICCS) effective for 2013. As a result, the capital cost-share funding programs now available from TransLink are:

- Major Road Network and Bike (MRNB) Program: allocated funding for capital improvements to the major roads across the region that comprise the MRN and the construction of bicycle facilities both on and off the MRN;
- BICCS Regional Needs Program: funding for capital improvements to “regionally significant” bicycle facilities with funding distributed on a competitive basis; and
- Transit-Related Road Infrastructure Program (TRRIP): funding for roadway infrastructure facilities required for the delivery of transit services in the region.

Each year, municipalities are invited to submit road, bicycle and transit-related improvement projects for 50-50 funding consideration from these programs. This staff report presents the proposed submissions from the City to TransLink’s 2013 capital cost-sharing programs.

### Analysis

#### 1. Major Road Network and Bike (MRNB) Upgrade Program

##### 1.1 Funding Availability for 2013

Per TransLink’s 2013 Base Plan, there is no allocated funding available for the 2013 MRNB Upgrade Program due to financial constraints. To mitigate this circumstance, TransLink now provides municipalities with options to transfer funding from their allocation within the OMR (Operations, Maintenance and Rehabilitation) Program, which was increased from \$14,355 per lane-km in 2012 to \$19,100 per lane-km for 2013 (33 per cent increase). These options allow municipalities to:

- transfer funding allocation from O&M (Operations, Maintenance and non-pavement rehabilitation) to R (pavement rehabilitation); and
- transfer funding allocation from R to MRNB Upgrade.

To support the City’s proposed submission to the 2013 MRNB Upgrade Program, a funding transfer of \$500,000 was made from O&M to R, and then from R to MRNB Upgrade as summarized in Table 1. As the City’s allocated OMR funding increased in 2013 vis-à-vis 2012, the net effect is that the City’s revised allocation of O&M and R funding for 2013 still remains higher than in 2012 (i.e., total OMR in 2012 was \$1,873,000 versus the revised 2013 total of \$1,993,000).

**Table 1: Funding Transfers for 2013**

Program	Default	Revised
O&M	\$1,454,000	\$1,162,000
R	\$1,039,000	\$831,000
Subtotal	\$2,493,000	\$1,993,000
MRNB	\$0	\$500,000

## 1.2 Proposed Submission

The City proposes to submit the following project for consideration to be included in the 2013 MRNB Upgrade Program.

- Westminster Highway Widening (Nelson Rd-McMillan Way): widening from two to four lanes including cycling facilities to match the existing cross-section between McMillan Way and the Highway 91 Interchange (see **Attachment 1**). Transport Canada is providing \$4,040,000 towards this project per the City's successful application to the Asia-Pacific Gateway Corridor Initiative for cost-share funding for the combined widening of Nelson Road (Blundell Road to Westminster Hwy) and Westminster Hwy (Nelson Road to McMillan Way). The widening of Nelson Road is not included in this application to TransLink as the roadway is not part of the MRN. The deadline for the completion of the two projects is March 2014. This application is Year 4 of a proposed 4-year TransLink funding process.

## 2. Bicycle Infrastructure Capital Cost-Sharing (BICCS) Regional Needs Program

As noted in Section 1.1, there is no allocated funding available for the 2013 MRNB Upgrade Program. However, \$1.55 million is available on a competitive basis for bicycle infrastructure projects of regional significance through the BICCS Regional Needs Program. The City proposes to submit the following project for consideration to be included in the 2013 BICCS Regional Needs Program.

- Railway Avenue Corridor Greenway (Granville Ave-Garry St): Phase 1 would include the planning, design and construction of a 4.0 m wide two-way multi-use pathway with an asphalt surface on the base of the existing railway bed along with connections to existing trails and bus stops on Railway Avenue (see **Attachment 2**). The long-term development of the greenway would be compatible with and build upon this fundamental building block. The existing on-street bike lanes on Railway Avenue between Granville Avenue and Moncton Street would remain in place to serve commuter and other higher speed cyclists seeking a direct route designated for cyclists only. This application is Year 2 of a proposed 2-year TransLink funding process. TransLink funding approved for 2012 (\$201,200) was allocated towards site clearing and design.

## 3. Transit-Related Road Infrastructure Program (TRRIP)

TransLink funding available for cost-sharing under the 2013 TRRIP is \$1 million. As TRRIP has no block funding formula, there is no allocated amount of eligible funding for the City. Projects proposed to be submitted by the City for cost-sharing under the 2013 TRRIP are:

- Bus Stop Upgrades: retrofits to various existing bus stops to provide for universal accessibility (i.e., installation of a landing pad and/or connecting sidewalk for wheelchair users) and/or bus stop shelters. Potential locations include: Westminster Highway at No. 8 Road; west side of Railway Avenue between Granville Ave and Garry Street (two sites); Cessna Drive south of Lysander Lane; and east side of No. 1 Road at Chatham Street (shelter only).
- Connecting Pathway: paved pathway ~~PWT-21~~ between the bus stop on the west side of Westminster Highway at the Highway 91 Interchange and Westminster Highway North.

#### 4. Requested Funding and Estimated Project Costs

The total requested funding for the above 2013 submissions to TransLink's capital cost-sharing programs is approximately \$1.67 million, as summarized in Table 1 below, which will support projects with a total estimated cost of \$13.1 million.

**Table 1: Projects to be Submitted to 2013 TransLink Cost-Share Programs**

TransLink Funding Program	Project Name/Scope	Proposed City's Portion & Funding Source for 2013	Previously Approved Funding & Sources	Proposed TransLink 2013 Funding <sup>(1)</sup>	Est. Total Project Cost
MRNB Upgrade Program	Westminster Hwy Widening (Nelson Rd to McMillan Way): Year 4 Accrual (2010-2013)	2013 Roads DCC/ Capital Reserve: \$1,529,500 2013 OMR Reserve: \$950,000	2011-12 Roads DCC/ Capital Reserve: \$1,336,666 2010-12 MRN Program: \$2,005,000 Transport Canada: \$4,040,000	\$500,000	\$10,361,166
TRRIP	<ul style="list-style-type: none"> <li>Existing Bus Stop Upgrades</li> <li>Paved Pathway Connection</li> </ul>	2013 Pedestrian & Roadway Improvement Program: \$101,300	N/A	\$101,300	\$202,600
BICCS Regional Needs Program	Railway Ave Corridor Greenway (Granville Ave-Garry St): Year 2 Accrual (2012-2013)	2013 Parks DCC/ Capital Reserve: \$2,000,000	2011-12 Parks DCC/ Capital Reserve: \$350,000 BICCS Program (2012): \$201,200	\$1,074,450	\$2,551,200 <sup>(2)</sup>
<b>TOTAL</b>		<b>Pending: \$4,580,800</b>	<b>Approved: \$7,932,866</b>	<b>\$1,675,750</b>	<b>\$13,114,966</b>

(1) The amounts shown represent the maximum funding contribution to be requested from TransLink based on the City's cost estimate for the project. The actual amount invoiced to TransLink follows project completion and is based on incurred costs.

(2) Should the 2013 application be successful, the project scope would be increased to meet the total funding available.

Should the submissions be successful and the projects receive Council approval via the annual capital budget process, the City would enter into funding agreements with TransLink. The agreements are standard form agreements provided by TransLink and include an indemnity and release in favour of TransLink. Staff recommend that the Chief Administrative Officer and General Manager, Planning and Development be authorized to execute the agreements. The 2013 Capital Plan and the 5-Year Financial Plan (2013-2017) would be updated to reflect the receipt of the external grants where required dependant on the timing of the budget process.

#### Financial Impact

As shown in Table 1, the total proposed City cost is comprised of \$4,580,800, to be considered within the 2013 Capital Budget, plus funding sourced from previous approved Capital Budgets (i.e., 2011-2012 Roads DCC/Capital Reserve of \$1,336,666 and 2011-2012 Parks DCC/Capital Reserve of \$350,000).

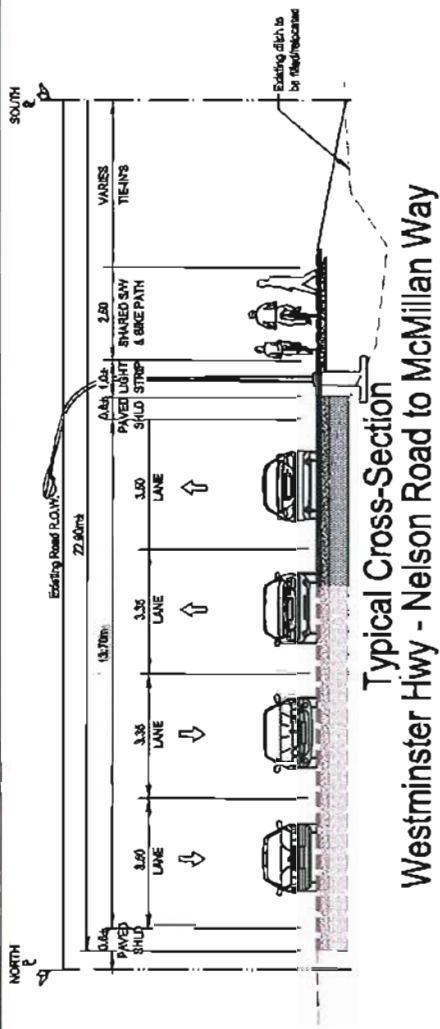
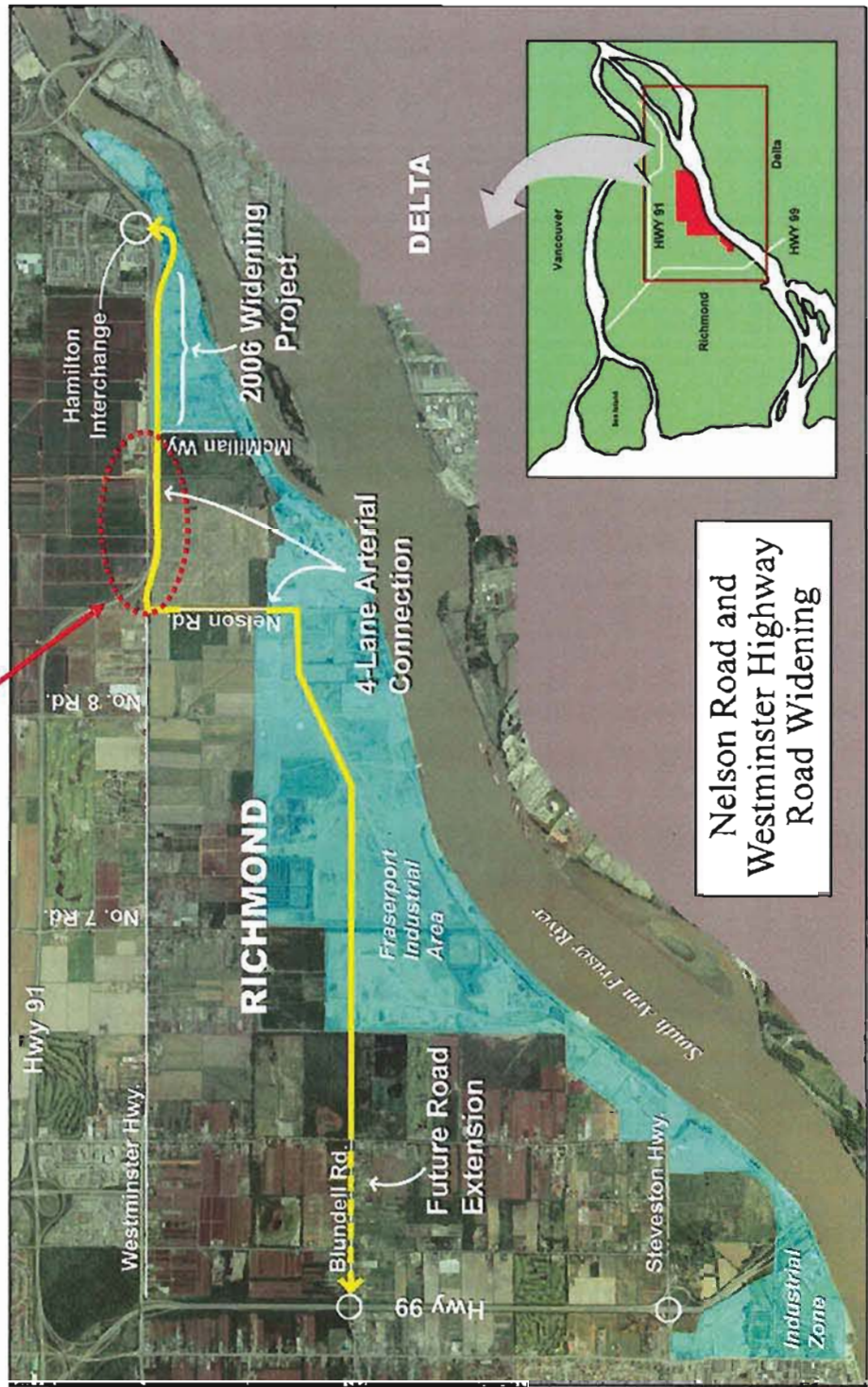
#### Conclusion

Several road, bicycle route and transit-related facility improvement projects are proposed for submission to TransLink's various cost-sharing programs for 2013 that would support the goals of the Official Community Plan (2041) Update. Significant benefits for all road users (motorists, cyclists, transit users, pedestrians) in terms of increased capacity, new infrastructure and safety improvements would be achieved should these projects be approved by TransLink and Council.

  
Joan Caravan  
Transportation Planner  
(604-276-4035)



Proposed Scope of Application: Westminster Highway Widening (Nelson Road-McMillan Way)



# Railway Avenue Corridor Greenway



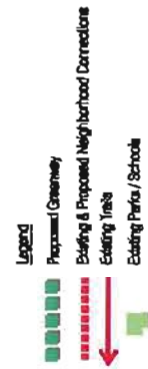
Location Map

## Overall Goals :

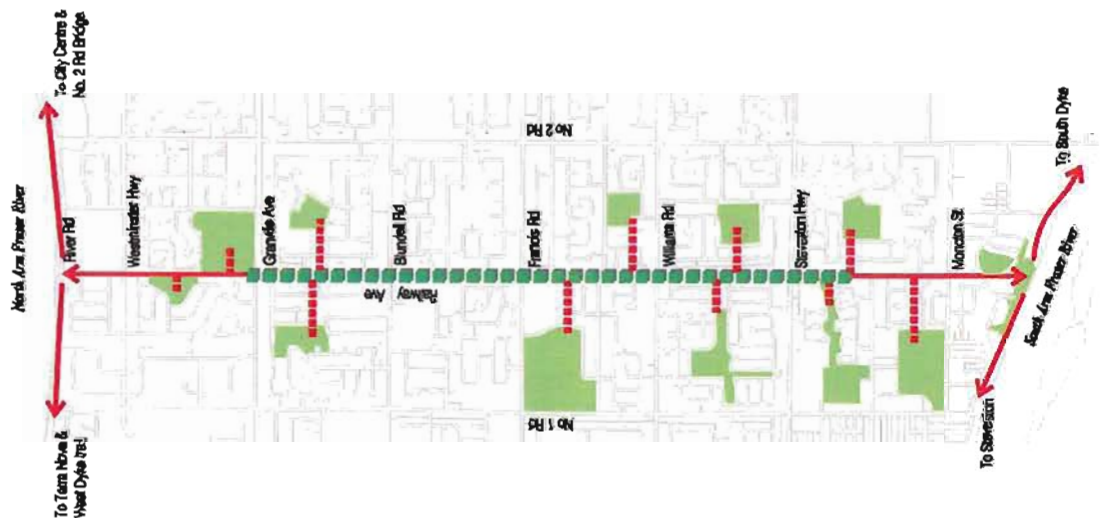
1. City-wide Connections: Connect the existing regional Middle Arm Dyke and Steveston/South Dyke Greenways with this new major north-south greenways. Complete a loop system that would include the regional West Dyke Trail.
2. Neighborhood Connections: Improve or build new connections and gateways into the adjacent neighborhoods and local school / parks.
3. Eco-Corridor Enhancements: Manage the invasive plants and create an ecoPlus+ landscape.
4. Active Lifestyles and Alternative Modes of Transportation: Promote "leaving the car home"
5. Respect the Historic Tram Story: Through landmarks and site furnishings interpret the historic use of Railway corridor.

## 2012 Goal

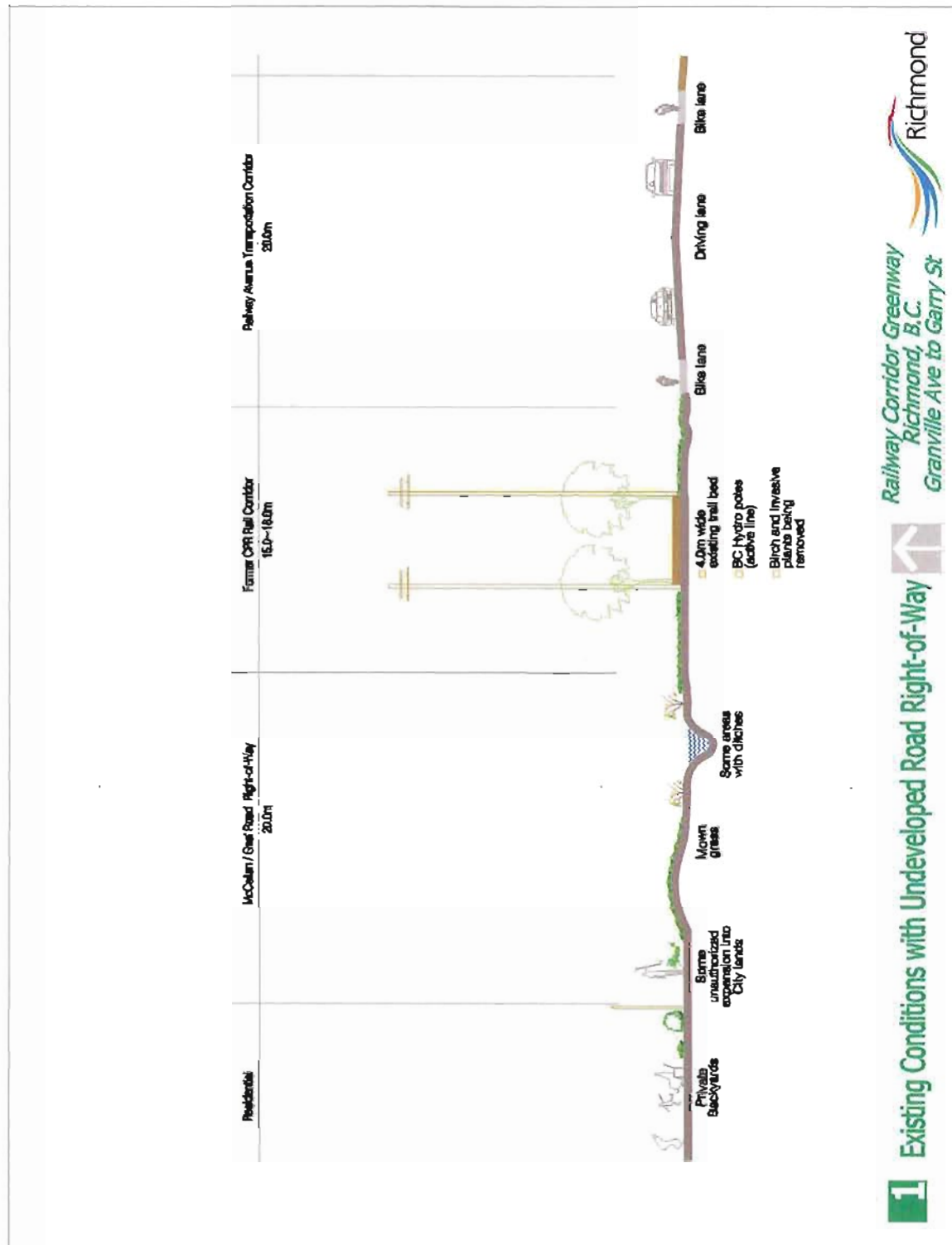
Complete the connection to other major greenways in the City by constructing a basic 4.0metre wide trail utilizing the base of the existing rail bed.



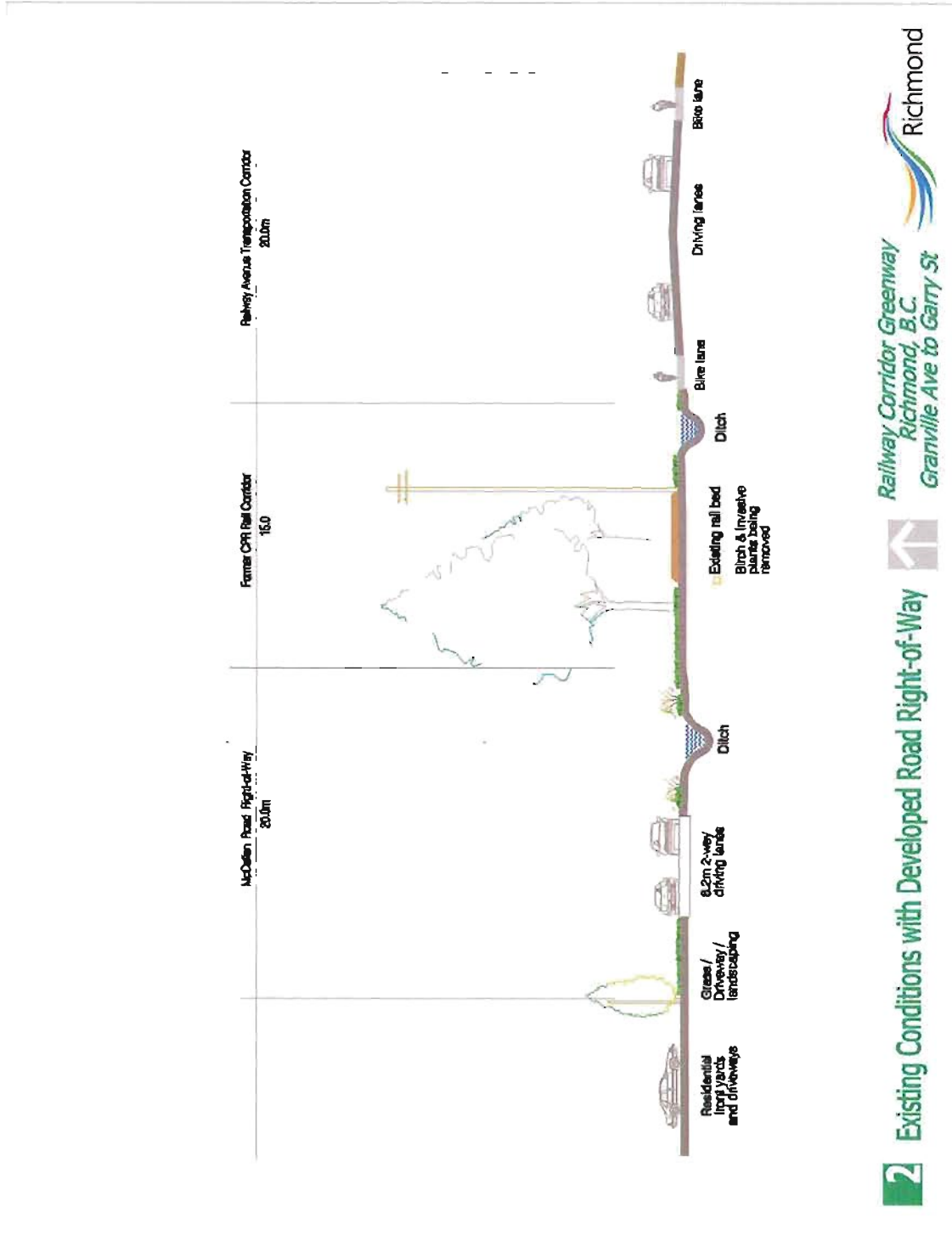
**Railway Corridor Greenway**  
 Richmond, B.C.  
 Granville Ave to Garry St  
**CONTEXT MAP**







# Railway Avenue Corridor Greenway





# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee  
**From:** Cecilia Achiam, MCIP, BCSLA  
Interim Director, Sustainability and District Energy  
**Re:** 2012 Corporate Energy Management Update

**Date:** October 29, 2012

**File:**

### Staff Recommendation

That the staff report entitled "2012 Corporate Energy Management Program Update Report" from the Interim Director, Sustainability and District Energy, dated October 29, 2012 be received for information.

Cecilia Achiam, MCIP, BCSLA  
Interim Director, Sustainability and District Energy  
(604-276-4122)

Att. 7

REPORT CONCURRENCE			
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>	
Engineering Project Development	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		
<b>REVIEWED BY SMT SUBCOMMITTEE</b>	<b>INITIALS:</b> 	<b>REVIEWED BY CAO</b>	<b>INITIALS:</b> OK

## Staff Report

### Origin

The Corporate Energy Management Program (EMP) supports the following Council Term Goal;

Council Term Goal #8.1: “Continued implementation and significant progress towards achieving the City’s Sustainability Framework, and associated targets.”

The EMP is a key contributing program towards achieving the Sustainability Framework Goals of a Sustainable Resource Use-Energy Smart City and Climate Prepared City. In addition, the program supports the significant progress made in the realizing of the Energy Sustainability Strategic Program Implementation Plan endorsed by Council on July 26, 2010 (**Attachment 1 and 2**).

This report summarizes the recent achievements of the Corporate Energy Management Program and highlights upcoming initiatives. The report information is also summarized in an attached brochure, to further illustrate key information and highlights of recent City energy projects and initiatives (**Attachment 3**).

### Background

Corporate wide, the City has been following three core strategies, as adopted by Council in the Energy Sustainability Strategic Program, to guide the transitioning towards more sustainable energy use (greater energy use efficiency) and lower greenhouse gas (GHG) emissions;

- **Empower** – building awareness and capacity
- **Reduce** – reduce overall energy consumption through conservation and efficiency
- **Renew and Localize** – accelerate transition to locally supplied renewable and clean energy

To put these strategies into actions, the corporate EMP has been focused on work in three main areas;

- **Energy conservation** - reduce the overall demand for an energy service (e.g., increased corporate energy use awareness and improved operational control to reduce waste)
- **Energy efficiency** - reduce the energy required to provide an equivalent energy service (e.g. lighting retrofits to more efficient technologies)
- **Renewable and clean energy** – increase the use of renewable energy sources and reduce the carbon intensity of emissions resulting from an energy service (e.g. installation of solar thermal energy systems at existing facilities)

In addition to the Sustainability Framework goals and targets, the City of Richmond, in collaboration with BC Hydro, agreed to an interim target of approximately 2.0% reduction (1,800,000 kWh) in electrical use by April 2013 from 2011 levels, which equates to the energy used on average year by approximately 50 homes in BC. The corporation is presently on-pace to achieve this target. This target was established to maximize the funding available from BC Hydro, one of our key EMP external funding partners, to support our EMP.

### *EMP Achievements – 2007-2010 EMP Highlights*

Between 2007 and 2010 approximately 4.0 GWh (4,000,000 kWh) of energy was saved through energy related projects, which amounts to almost in \$1,000,000 in total operational cost avoidance savings since 2007. During that time the City received approximately \$880,000 in external funding to help support its EMP.

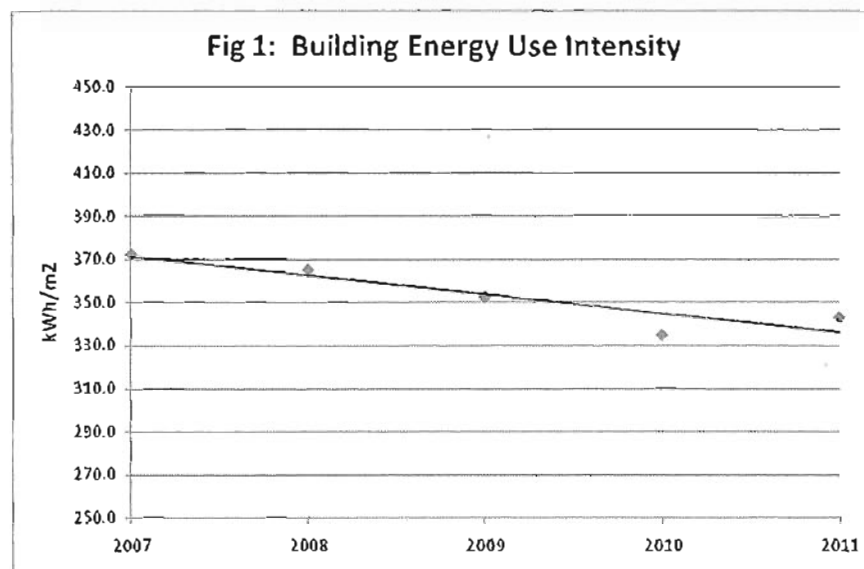
### **Findings of Fact**

#### *Energy Use Overview - 2011*

As specified in last year's Corporate Energy Update report, dated October 6, 2011, the Richmond Olympic Oval energy use information has been included in this 2012 report. The City's fleet energy related information and initiatives are managed separately under the Fleet Operations & Environmental Programs. The EMP now actively manages or coordinates, energy use reporting, inventory, and reduction programs, for all civic buildings, lighting, and water/wastewater services.

In 2011 City assets under the EMP utilized approximately \$5.4 million dollars of conventional energy<sup>1</sup> (electricity and natural gas), which equals approximately 79.3 GWh (this is equivalent to the amount of energy used on average each year by approximately 2,300 homes in BC).

Energy use at civic buildings accounts for a majority (approximately 83%) of total EMP corporate energy use value. Therefore, in order to continue to improve our overall corporate energy use efficiency, continuous efforts need to be made towards increasing the energy efficiency of civic buildings. Through Council's commitment to corporate energy management best practices our building energy use intensity (measured by kWh per square meter of building space) has decreased from approximately 373 kWh/m<sup>2</sup> in 2007 to 343 kWh/m<sup>2</sup> in 2011, as shown in the following Figure 1. Decreasing energy use intensity in our buildings (improving energy use efficiency) demonstrates that our corporate energy management program is effective.



<sup>1</sup> There are civic buildings that have renewable energy systems (e.g. solar thermal hot water heating at Minoru Aquatic Centre), which obtain "free" solar energy that is not accounted for in our total corporate energy use/cost amount.

Out of the approximately 120 civic facilities under City stewardship, energy use in 2011 at only 12 facilities accounted for over 80% of the overall civic building energy use, please see **Attachment 3** for a facility energy use breakdown.

This concentration of energy use by a small number of buildings has led the City to focus its assessment and auditing resources on the higher consuming buildings, where it is expected that the most significant energy savings and cost avoidance can be achieved. Energy efficiency improvements and renewable energy integration at these high consuming buildings will be key moving forward to reaching our short-term and long-term goals, which are currently under development.

#### *EMP Achievements - 2011/2012 EMP Highlights*

Due to the commitment of Council and staff to increased corporate energy use efficiency and awareness, the City of Richmond was recognized by BC Hydro as being a Power Smart Leader with the awarding of 2012 Leadership Excellence Award to the City in October 2012. The City of Richmond remains the only municipality in BC to achieve this high level of recognition for its energy efficiency and conservation work.

It is anticipated that the City will achieve a reduction of approximately 1.9 GWh of electrical and natural gas energy use (approximately 2% of current corporate use) from a variety of completed projects or from projects that are underway and are planned to be completed by early 2013. This reduction represents approximately \$110,000 in operational cost avoidance savings and a reduction of approximately 200 tonnes of CO<sub>2</sub>e (equal to removing approximately 50 Richmond cars from our roads each year).

Capital costs for energy management projects are typically funded through the revolving Corporate Enterprise Fund. For EMP projects, electricity and natural gas cost avoidance and external grants received are used to reimburse the fund. Enterprise fund repayments for energy management projects have totalled over \$1 million dollars since the start of this project financing arrangement. Recently three energy management projects were fully paid off ahead of schedule and closed, and two other projects had their repayment schedule timelines reduced by three and five years respectively. These repayments to the Enterprise Fund help allow funding to be available to other initiatives and requests.

One of the keys to the successful implementation of corporate energy management projects is interdepartmental collaboration. The EMP over the past year and a half has managed and supported various energy projects throughout the organization, as well as provided a central location for the reporting of energy related initiatives managed by other departments (e.g., Project Development, Facility Services, Engineering, etc.). This increased focus on collaboration between the EMP and other corporate departments was one of the main focus areas of the EMP in 2011 and 2012. Several key projects and initiatives that illustrate the success and the potential further development possibilities are as follows;

- Incremental cost support to Project Development for infrastructure replacement of natural gas roof-top units (that were near their end of life) to the highest efficiency roof-top units available.

- Best practices approach to improving energy efficiency and incorporating renewable energy at Gateway Theatre.
- Pilot testing of LED sports lighting at the Burkeville tennis courts, which if the test is successful could lead to other installations and energy reductions at other sports facilities
- Inclusion of energy assessments into yearly condition assessment by Project Development to determine potential energy conservation measures, and to help direct where further energy assessments are needed
- Corporate support for smaller stakeholder lead initiatives such as; funding the Library's installation of software to reduce power consumption of their computers and a new Steveston pool cover to reduce heating cost at night.

Other select highlights of the City's energy management program and other energy related corporate activities from 2011 and 2012 include:

- The securing of over \$200,000 of external funding to support the Corporate Energy Management Program and Sustainability Unit.
- The installation of a sewer heat recovery system at Gateway Theatre to displace heating energy use, and reduce GHG emissions – the project is currently being installed and will be completed by the end of the year.
- The completion of year 2 of a 3-year corporate energy awareness program, branded "Because Energy Awareness Matters (BEAM)" with support of BC Hydro, to promote energy conservation measures with staff.
- The construction and installation of a solar thermal air wall to displace electrical use at South Arm Community Centre, which is expected to be completed by December 2012.
- The testing of 11 different light-emitting diode (LED) street lighting fixtures to determine the most efficient and effective fixture to use for a new installation at Westminster Hwy. The LED lighting will be used instead of the conventional higher energy using high pressure sodium fixtures.
- The renovation of the Community Safety Building for RCMP headquarters to LEED Gold standard was completed. Some energy saving measures included as part of the renovation were new high efficient heat pumps, new insulation and windows, solar thermal panels for domestic hot water heating, and new lighting controls
- The upgrading of our corporate energy database to increase corporate energy use information accessibility, and the developing of corporate building energy demand profile to guide corporate energy and GHG targets. Both initiatives are expected to be completed by the end of the year.

Further detailed accounts of EMP projects in 2011 and 2012 are provided in **Attachments 4, 5, and 6.**

In addition to corporate initiatives listed above, the City, the Engineering Department, and the District Energy Management Program celebrated the opening of the Alexandra District Energy Utility in September, with its first phase connections all in place and providing geothermal heating and cooling to the new West Cambie neighbourhood. This facility is a corporate initiative with energy use implications for the whole community. Other potential district energy centre locations, namely River Green and City Centre, are currently undergoing feasibility review.

### *Planned Upcoming Projects*

There are numerous energy initiatives planned for 2013, as part of capital submissions as well as longer term projects which includes the implement recommended optimization measures at the five facilities participating in the BC Hydro COp program. Detailed information concerning these respective initiatives and projects is provided in **Attachment 7**.

### *Future EMP Vision and Goals*

Continuing efforts have been made by the EMP to support the goals of the Sustainability Framework, with focus on the goals pertaining to Sustainable Resource Use and Climate Prepared City.

A key role of the EMP is supporting the City in reducing its corporate energy use and GHG emissions. The EMP will be developing specific energy and GHG reduction targets for civic buildings and infrastructure. These sector-specific targets in addition to targets being developed by Fleet and Solid Waste will combine to generate a corporate-wide energy and GHG emission reduction target. This work will support the City in achieving greater reductions and moving towards carbon neutrality – one of the key targets in the City's Sustainability Framework.

Currently staff are in the process of developing a corporate projected energy demand profile for civic buildings, as part of the EMP, to aid the establishment of long term overall corporate energy reduction goals and targets. These corporate building energy targets will be developed to allow for alignment with our adopted community energy and GHG emissions reduction targets.

The current aim of the EMP is to complete the establishment of new and replacement facility specific energy and GHG emissions reduction targets by the end of 2013, including updating the High Performance Building Policy. This setting of specific targets will allow for energy related decisions at the design level to be further directed to reduce energy use, and therefore minimize operating costs moving forward.

In continuation from the Vision and Goals from last year's Energy Update Report, the following main focus areas remain in place for the EMP for 2013;

- Increase energy use awareness within the organization and community
- Pursue external funding and partnerships with outside agencies
- Maintain a leadership role in terms of municipal energy systems and policy
- Improve the “usability” of our energy use data at key facilities, to allow for more detailed analysis and the increased optimization of our energy use



- Incorporate a more systematic approach to building energy use performance analysis and benchmarking of our civic facilities, to allow for the continued improvement of our facilities, and the extension of their usefulness
- Continue to ensure that energy use and GHG emission accounting (in relation to reduction goals) is a high priority during the designing of new facilities and developments

The funding strategy for these programs will be brought forward as part of the operating budget process for consideration by Council.

### Financial Impact

There is no financial impact as a result of this report. Capital projects related to energy management are reviewed and approved by Council as part of the capital budget process.

### Conclusion

Through Council's steadfast commitment to increased corporate energy efficiency and the collaborative staff effort between departments, energy efficiency awareness is becoming more embedded into the corporate culture and decision making processes every year. Future initiatives to increase the effectiveness of the corporate EMP, increase corporate energy efficiency, and limit energy related operating cost increases include; setting specific energy targets for new and replacement infrastructure based on corporate energy and emissions targets, incorporating of renewable energy in new and existing corporate buildings, connecting corporate buildings to district energy system where practical, and continuing to retrofit existing buildings for improved energy performance.



Levi Higgs  
Corporate Energy Manager  
(604-244-1239)

Attachment 1	City of Richmond's Corporate Sustainability Framework -- Energy Strategic Program	REDMS# 3425631
Attachment 2	Energy Strategic Program Implementation Plan	REDMS# 3692942
Attachment 3	Energy Report Summary – 2012	REDMS# 3695684
Attachment 4	City Energy Management Program 2011/2012 Key Initiatives	REDMS# 3666641
Attachment 5	Summary of 2011/2012 Energy Management Project	REDMS# 3696611
Attachment 6	2011-2012 EMP Achievements and Highlights – Further Details	REDMS# 3691423
Attachment 7	EMP Planned Project 2013-2015	REDMS# 3685577

# City of Richmond's Corporate Sustainability Framework

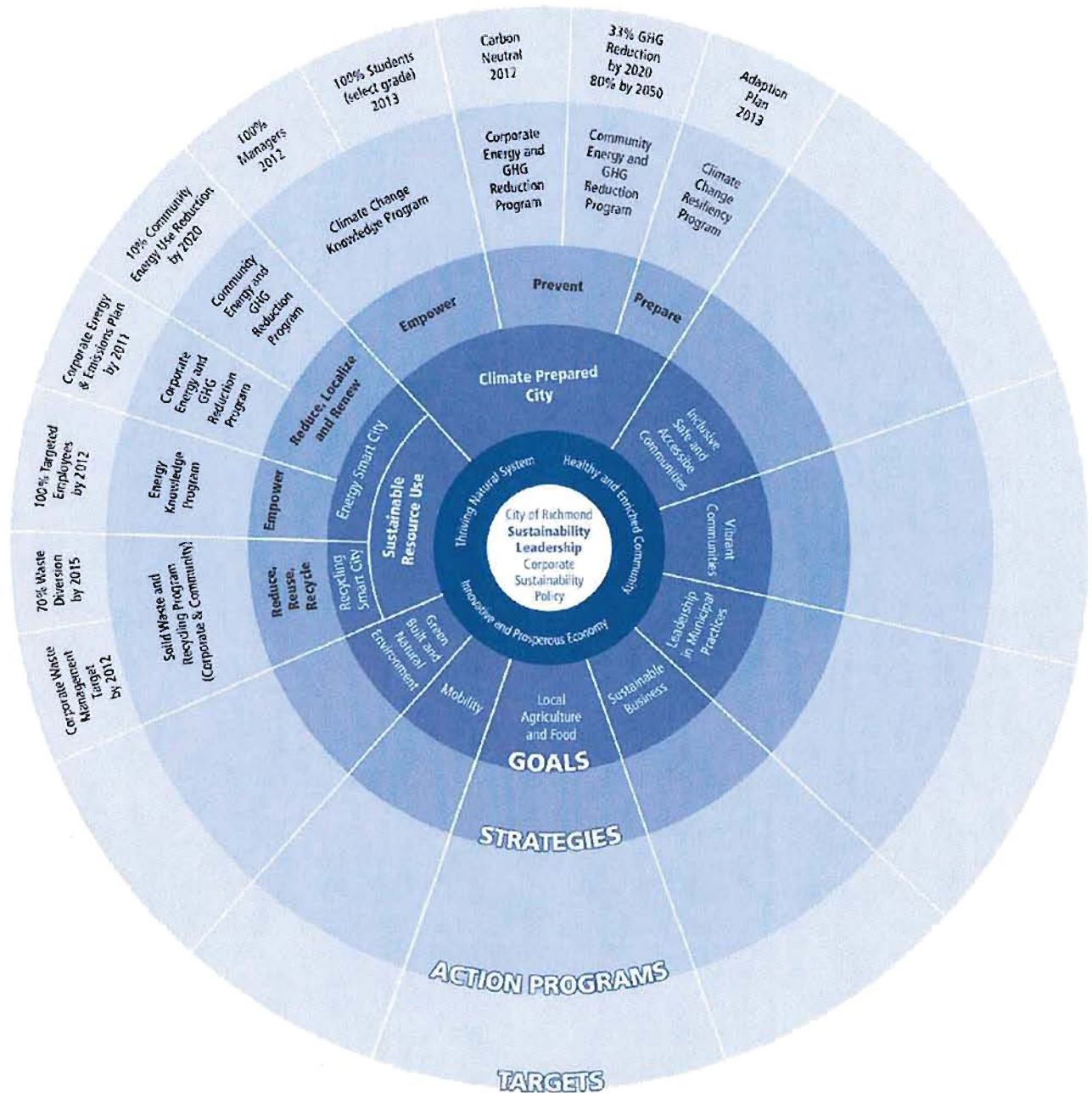


Table 3: 5-Year Implementation Plan

Action		2010	2011	2012	2013	2014	2015
Empower	Energy Knowledge Program						
	Corporate Capacity-Building			Review			
	Corporate Energy and Emissions Program						
	Management	Establish Carbon Neutral Staff Working Group to Develop Plan					
		Oversee Program through Climate Change & Energy Team					
	Inventory	Establish Corporate Inventory Reporting System					
		Manage Inventory System					
	Action Plan	Develop Carbon Neutrality Approach					
		Develop Corporate Energy & GHG Reduction Plan					
	Targets	Develop Corporate Energy & GHG Emission Reduction Targets					
	Reduction Action	Implement Corporate Energy & GHG Reduction Actions (ad-hoc)					
		Implement Corporate Plan (strategic action)					
	Report, Innovate & Improve	Research and Explore Innovations/Best Practices					
		Annual Report – Corporate Energy Use & GHG Emissions					Review
	Community Energy and Emissions Program						
Reduce, Localize & Renew	Management	Establish CEEP Working Group to Develop Plan					
		Oversee Program through Climate Change & Energy Team					
	Inventory	Collaborate with Province on Community Inventory					
	Action Plan	Develop Community Energy and Emissions Plan (CEEP)					
	Targets	Develop Community Energy and GHG Reduction Targets					
	Reduction Action	Implement Corporate Energy & GHG Reduction Actions (ad-hoc)					
		Implement Community Plan					
	Report, Innovate & Improve	Annual Report – Community Energy Use & GHG Emissions					Review
	Adaptation Action	Implement Actions (ad-hoc)					
		Implement Adaptation Strategic Plan					

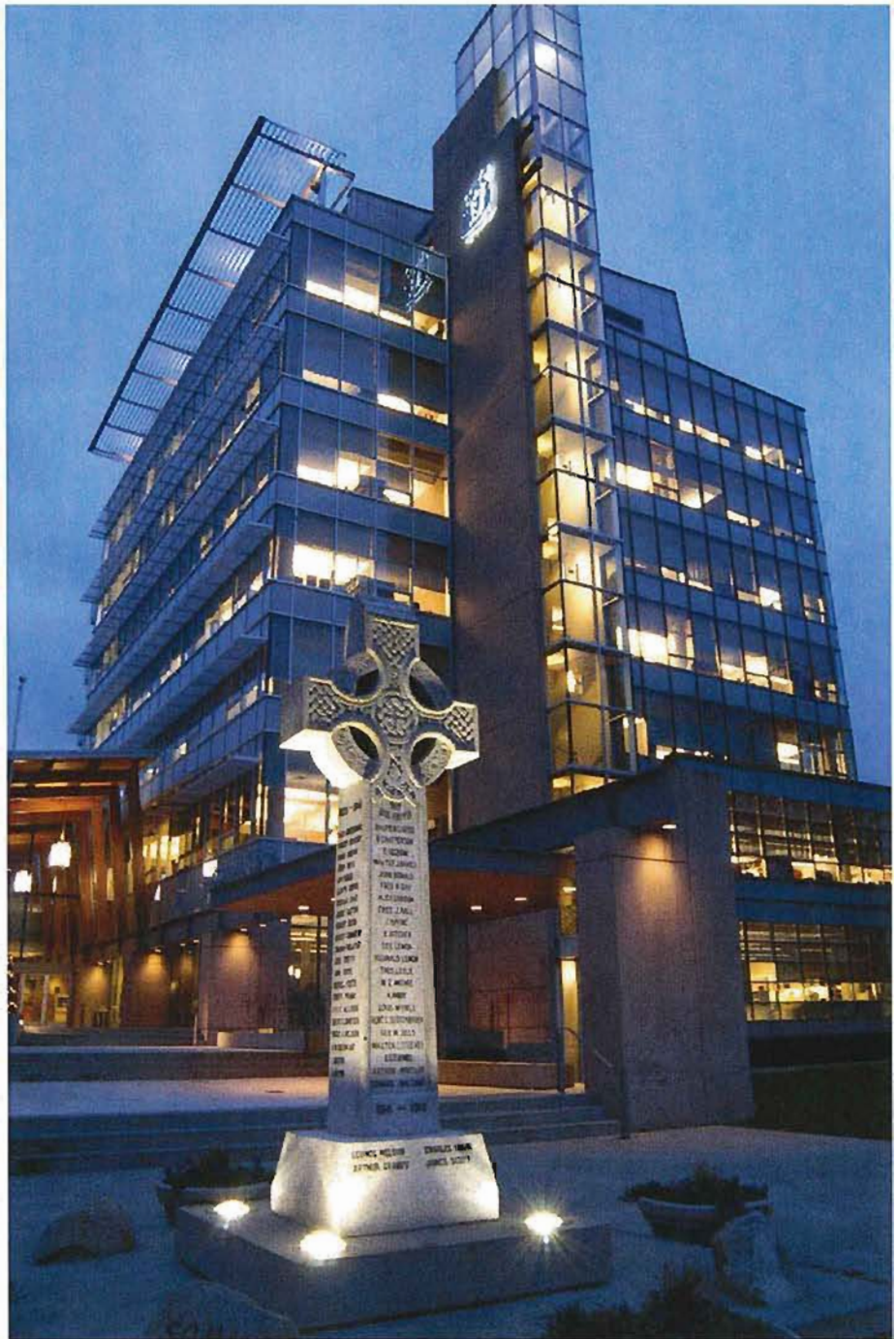
Requires additional resources

Funded within current resources

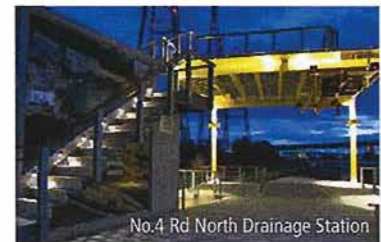
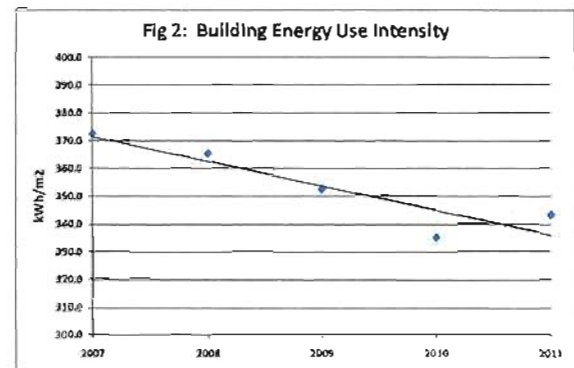
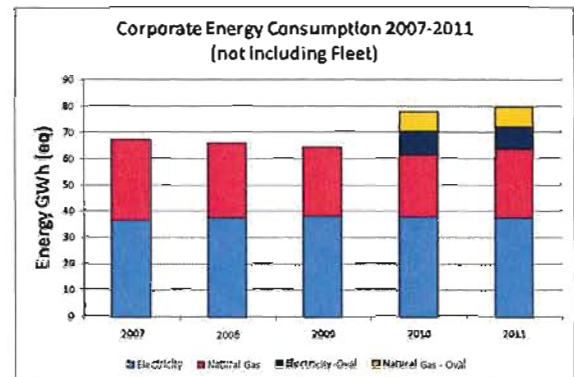


# Energy Update Report

## Summary 2011/2012



- Cost of energy in 2011 for the City of Richmond buildings, lighting, water and wastewater services was approximately **\$5.4 million dollars** or **79.3 GWh** (equal to average energy use of 2300 homes in BC annually).
- As compared with 2010, energy consumption for these civic assets increased by approximately 1.7 GWh. This was mainly due to a colder winter in 2011 that increased corporate natural gas usage.
- Although overall energy use for the organization has increased since 2007, due to new civic infrastructure (such as the Richmond Olympic Oval), our building energy use intensity (kWh/m<sup>2</sup>) has decreased since then, indicating **increasing corporate energy use efficiency**.





- In 2011, the majority of corporate energy use was by buildings-83%, followed by lighting-11% and water/wastewater services-5%.
- Of the ~120 civic facilities under City stewardship, energy use in 2011 at only 12 facilities accounted for ~85% of the overall civic building energy use, with our recreational facilities being the largest consumers.
- Recreational pools and ice arenas were our highest energy consuming facilities - with **Richmond Olympic Oval**, **Watermania**, **Richmond Ice Centre**, **Minoru Pools** and **Minoru Arenas** accounting for approximately 57% of the energy used by civic buildings in 2011.
- This focus of energy usage on a smaller number of buildings has lead the Energy Management Program to focus its assessment and auditing resources on the higher consuming buildings.
- Five high energy consuming buildings are participating in a BC Hydro continuous optimization (COP) program, which involves a detailed site investigation and will implement measures to increase energy efficiency by between 5-20%.

Fig 3: Overall Energy Use by Asset Class

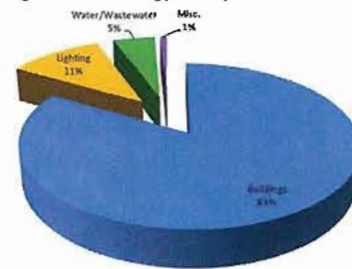
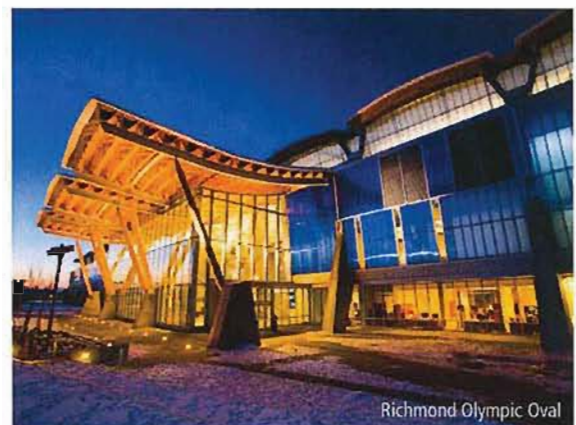
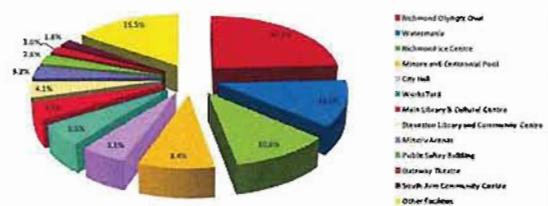


Fig 4: Building Energy Consumption Breakdown 2011



- Secured over **\$200,000** of external funding to support the Energy Management Program.
- The City of Richmond was again recognized by BC Hydro as being a **Power Smart Leader** - remaining the only municipality in BC to achieve this high level of recognition for the City's energy efficiency and conservation work.
- City is on course to achieving an estimated **1.9 GWh** reduction in electrical and natural gas use and approximately **200 tonnes** of greenhouse gas emissions from a variety of projects to be completed by early 2013. This equals approximately **\$110,000** operational cost avoidance savings.
- This energy reduction represents approximately 2% of our current corporate annual energy use and the GHG emissions reduction is equal to removing approximately **50 vehicles** from Richmond roads each year.
- Continued delivering corporate energy awareness program (Year 2), with support of BC Hydro, to promote energy conservation measures. Some from the past year's initiatives included a conservation commitment campaign, Aquatics and Fire Hall energy reduction challenges, and A/C awareness "Beat the Heat" Hawaiian shirt day.

2012 POWER SMART  
**LEADER** | BC Hydro | powerSmart



Ex. Solar Air Wall – to be installed at South Arm Community Centre



Hamilton Community Centre



- One LEED certifiable Gold building renovation was completed for RCMP headquarters use – Community Safety Building.
- Energy saving measures that were part of the renovation included, new high efficient heat pumps and windows, new insulation and windows, solar thermal panels for domestic hot water heating, and new lighting controls.
- The Alexandra District Energy Utility was officially opened in September 2012, with Phase 1 and 2 connections all in place and operating. The system provides geothermal renewable energy to heat and cool the residential units in the new West Cambie neighbourhood.
- Installation of sanitary sewer heat recovery system is underway to provide supplemental heating at Gateway Theatre, which will displace natural gas usage at the facility by ~900GJ and reduce carbon emissions by ~47 tonnes = to 12 vehicles off the road in Richmond each year.
- Pilot testing of light emitting diode (LED) lighting at the Burkeville tennis courts, with the goal looking at installing LED lights at other sports locations.
- Engineering tested 11 different types of LED street light fixtures. One of the 11 fixtures will be used for a new installation at Westminster Hwy. The LED lighting will be used instead of the conventional higher energy using high pressure sodium fixtures.



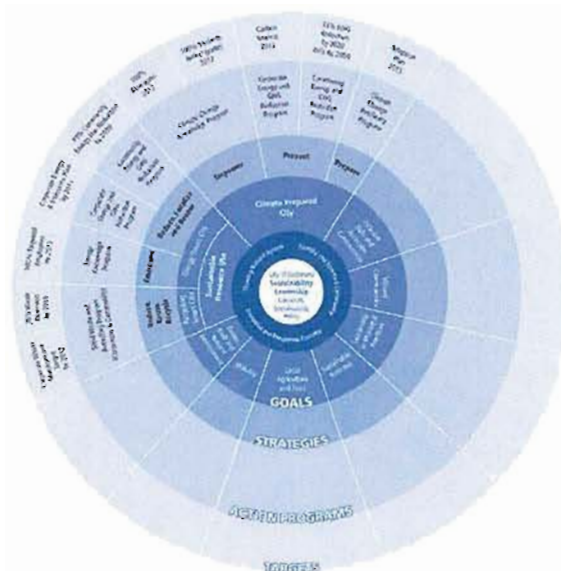


- Continue to implement and work towards the Sustainability Framework goals, specifically the Sustainable Resource Use and Climate Prepared City Strategic Programs.
- Complete the establishment of both corporate and new facility specific energy and GHG emissions reduction targets, including the updating of the High Performance Building Policy.
- Continue to increase energy use awareness within the organization and community.

## Action Items include:

- Continue to deliver information, through presentations and reports, to appropriate city staff and stakeholders concerning civic energy use, to inform and empower.
- Continue to facilitate energy reduction projects through the BC Hydro Power Smart Program and complete the BC Hydro Continuous Optimization program underway at five civic facilities.
- Complete the upgrading of our corporate energy use database, to improve energy reporting capabilities and corporate energy use information sharing.
- Set corporate building energy use targets, to help drive energy efficiency goals within the corporation.
- Complete Year 3 of the workplace conservation awareness program, which focuses on increasing staff energy use awareness and positively influencing energy related work behaviours.
- Continue development of an energy auditing and study schedule for our civic facilities.

## Corporate Sustainability Framework



## City Energy Management Program –2011/2012 Key Initiatives

Management Areas	2011/2012 Key Initiatives
<b>Plan</b>	<p><i>Energy Strategic Planning:</i></p> <ul style="list-style-type: none"> <li>Secured approximately \$200,000 in external funding in the past year to support energy initiatives efficiency initiatives such as               <ul style="list-style-type: none"> <li>Numerous lighting retrofits and re-lamping projects</li> <li>Funding in Energy Manager and Sustainability Project Manager positions</li> <li>Solar wall installation at South Arm Community Centre</li> </ul> </li> <li>In the process of completing a corporate building energy demand profile correlated with expected population growth. Report to Council will be forthcoming.</li> <li>Inclusion of energy auditing within our facility condition assessment, to streamline project one area of energy management project development.</li> </ul>
<b>Do</b>	<p><i>Building Capacity</i></p> <ul style="list-style-type: none"> <li>Workplace conservation Awareness program Year 2 completed, Year 3 in planning stages.</li> <li>Greater communication and collaboration between the Energy Manager and different departments (eg. Project Development, Facilities, and Electrical) has been undertaken in the past year, to ensure that energy management projects are conducted as efficiently and seamlessly as possible.</li> <li>Corporate energy information presentations conducted for different divisions and departments. Information presentation on the status and progress of the EMP to be given to Engineering and Public Work managers on a quarterly basis.</li> </ul> <p><i>Reducing Energy Use or Displacing conventional energy sources</i></p> <ul style="list-style-type: none"> <li>Application of leading-edge technology energy efficiency and alternative energy initiatives               <ul style="list-style-type: none"> <li>South Arm Community Centre – Solar Wall installation to pre-heat ventilation air</li> <li>Lighting retrofits and re-lamps at various corporate facilities (e.g. Richmond Ice Centre, Minoru Arena, Library Cultural Centre, Watermania, and City Hall)</li> <li>Gateway Theatre – Installation of a heat recovery unit within a sanitary pump station located nearby to displace natural gas heating at the facility – reducing gas use by approximately 900 GJ and GHG emissions by 47 tonnes of CO<sub>2</sub>e.</li> </ul> </li> </ul> <p><i>Increasing Financial Security &amp; Stability</i></p> <ul style="list-style-type: none"> <li>over \$100,000 in energy and maintenance cost avoidance</li> </ul>
<b>Monitor &amp; Report</b>	<p><i>Improving Energy Monitoring System</i></p> <ul style="list-style-type: none"> <li>Currently undergoing an update of the corporate energy database, to be completed by the end of the year. Among other features, the new database will allow for greater reporting capabilities and will facilitate more energy information sharing capacity within the corporation.</li> <li>Real-time monitoring of energy use has been installed at City Hall, Richmond Ice Centre, and Watermania. Richmond Olympic Oval and Library/Cultural energy monitoring will be upgraded by the end of the year.</li> </ul> <p><i>Reporting Performance</i></p> <ul style="list-style-type: none"> <li>Annual Corporate-wide Energy update report to Council</li> <li>Corporate projected energy demand profile report, to aid in the development of corporate energy reduction targets and policy, is planned to be brought to Council before the end of the year</li> </ul>
<b>Innovate &amp; Improve</b>	<p><i>Exploring New Approaches and Technologies</i></p> <ul style="list-style-type: none"> <li>The following projects and feasibility of further evaluation will be assessed in the coming months               <ul style="list-style-type: none"> <li>LED sports lighting performance</li> <li>Solar air wall at West Richmond Community Centre</li> <li>Corporate LED parking lot lighting retrofit</li> <li>Upgrade of building control systems, to fully web-based.</li> </ul> </li> </ul> <p><i>Energy Management System Evaluation</i></p> <ul style="list-style-type: none"> <li>BC Hydro energy management system assessment to be conducted in the spring.</li> </ul>

## Summary of 2011/2012 Facilities, Project Development, Energy Management, and other Energy Savings Projects

	Project location	Description	Project capital Cost	Estimated Annual Energy and Maintenance Cost Avoidance	Estimated Annual Energy Savings (kWh)	Estimated Annual GHG Emissions Reduction (tonnes CO <sub>2</sub> e)	Incentive Funding (Secured, Estimated)	Status
1	Main Library and Cultural Centre Lighting	Lighting re-lamp	\$25,000	\$4,000	62,000	1.5	\$6,500	Completed
2	Thompson Community Centre	Lighting re-lamp	\$31,000	\$4,000	52,000	1.3	\$40,227	Completed
3	Richmond Ice Centre and Minoru Arena	Lighting re-Lamp	\$89,000	\$19,000	289,000	7.2	\$38,835	Completed
4	City Hall Neon Sign Replacement	Lighting retrofit	\$52,000	\$3,200	12,000	0.3	\$3,422	Completed
5	Corporate facilities	Upgrade/replacement of Multi-Function Devices	Leased equipment	\$2,500	35,000	0.9	none	Completed
6	West Richmond and Steveston Community Centres	Roof top Unit Replacement	\$123,940	\$14,000	400,000 <sup>a</sup>	87	none	Completed
7	Minoru Arenas	Heat recovery installation	\$24,000	\$3,200	85,000 <sup>a</sup>	18	none	Completed
8	Minoru Arenas	Boiler Replacement	\$115,000	\$2,800	73,000 <sup>a</sup>	15	none	Completed
8	Steveston Pool	Pool cover replacement	\$8,500	\$5,000	135,000 <sup>a</sup>	25	none	Completed
9	Minoru Senior's Centre	Lighting re-lamp and retrofit	\$7,250	\$3,000	21,000	0.5	\$2,970	In Progress
10	City Hall Lighting Retrofit Completion	Lighting retrofit	\$31,500	\$1,400	51,000	1.3	\$14,280	In Progress
12	Main Library and Cultural Centre	Lighting retrofit	\$106,000	\$17,500	151,000	3.8	\$25,000	In Progress
13	CH Parking Lot Lighting Retrofit	Lighting retrofit	\$58,000	\$1,500	23,000	0.6	\$8,000	In Progress
14	Tennis Court Lighting Retrofit Pilot	Lighting retrofit	\$24,000	\$3,100	21,500	0.5	\$5,000	In Progress
15	City Hall Annex Retrofit	Lighting re-design and retrofit	\$168,000	\$11,500	140,000	3.5	\$28,000	In Progress

Project location	Description	Project capital Cost	Estimated Annual Energy and Maintenance Cost Avoidance	Estimated Annual Energy Savings (kWh)	Estimated Annual GHG Emissions Reduction (tonnes CO <sub>2</sub> e)	Incentive Funding (Secured, Estimated)	Status
16 South Arm Community Centre	Solar wall Installation	\$70,000	\$4,000	61,500	1.5	none <sup>b</sup>	In Progress
17 Gateway Theatre	Wastewater heat recovery installation	\$71,000	\$7,500	250,000 <sup>a</sup>	47.4	none <sup>b</sup>	In Progress
18 Main Library	Computer energy management software	\$1,000	\$4,500	70,000	1.7	none	In Progress
<b>Totals</b>		<b>\$1,005,190</b>	<b>\$111,700</b>	<b>1,932,000</b>	<b>217</b>	<b>\$172,234</b>	
<sup>a</sup> Total energy savings is for natural gas only <sup>b</sup> Incentive/grant application decision pending							

## 2011-2012 EMP Highlights – Further Details

In 2011 and 2012 one of the major focus areas of the EMP was to increase the collaboration with corporate departments, as interdepartmental collaboration is crucial to successful implementation of energy management projects. Several key projects and initiatives that illustrate the success and the potential further development possibilities are as follows;

- Incremental cost support to Project Development for infrastructure replacement of natural gas roof-top units that were near their end of life.
  - Support funding from the EMP helped off-set the increased incremental costs of installing the highest efficiency roof-top units available. The total project cost was \$123,940, of which the EMP provided approximately \$50,000 of incremental cost support. It is estimated that these units will reduce the energy costs at the two facilities involved by approximately \$14,000 annually.
- Inclusion of a high efficient heating, ventilation, and air conditioning (HVAC) system at the City Hall Annex renovation.
  - Research and development for the potential options available to the City for increased energy efficiency at the newly renovated City Hall Annex was facilitated by the energy management program, prior to the renovation. Once it was determined that a proven HVAC system was potentially compatible with the City Hall Annex configuration, Project Development got involved and reviewed the technology to determine if it could be installed. The system was chosen to replace the existing HVAC system, and is expected to reduce energy use associated with heating and cooling of the building by as much as 50%.
- Best practises approach to improving energy efficiency and incorporate renewable energy at Gateway Theatre.
  - In conjunction with personnel from Project Development, Engineering, Energy Management and District Energy Management, agreement was reached as to how best to incorporate three separate energy related projects at the Gateway to ensure that the work was done as effectively and efficiently as possible.
- Pilot testing of LED lighting at the Burkeville tennis courts
  - In discussion with Parks Planning, it was determined that the lighting at the Burkeville tennis courts, which was in need of upgrades, would be an ideal location to test some LED sports lighting technology. The replacement of the existing lighting at Burkeville is expected to reduce the energy use of the facility by approximately 20,000 kWh annually, and if successful could lead to other installations and energy reductions at other sports facilities.
- Inclusion of energy assessments in conjunction with yearly condition assessment
  - In collaboration with Project Development, walkthrough energy audits have been included with the yearly building condition assessments starting in 2012. These walkthrough energy audits will help determine energy conservation measures at lower

energy consuming buildings, and will help direct where further energy studies are needed.

- Corporate support for smaller stakeholder lead initiatives
  - The EMP helped support smaller energy efficiency saving initiatives that were brought forward by Library and Steveston Pool personnel. The EMP funded the Library installation of software to reduce power consumption of their public computers, and funded a new Steveston pool cover, which is used at night to reduce heating cost and replaced the old non-functioning pool cover. The projects are estimated to avoid the City approximately \$9,000 annually in energy costs.

Other select highlights of the City's energy management program and other energy related activities from 2011 and 2012 include;

- The City of Richmond was again recognized by BC Hydro as being a Power Smart Leader - remaining the only municipality in BC to achieve this high level of recognition for the City's energy efficiency and conservation work.
- Estimated 1.9 GWh of electrical and natural savings (approximately 2% of current corporate use) from a variety of projects to be completed by early 2013. This represents approximately \$110,000 in operational cost avoidance savings and a reduction of approximately 200 tonnes of CO<sub>2</sub>e (equal to removing approximately 50 Richmond cars from our roads each year).
- The continued development of a corporate energy awareness program, with support of BC Hydro, to promote energy conservation measures with staff, which the City has entitled Because Energy Awareness Matters (BEAM). Under this program Year 2 of the BC Hydro Workplace Conservation Awareness (WCA) program was recently completed with lots of support from our designated energy champions and staff. Initiatives and strategies for Year 3 will be developed this fall to further build on the WCA program's initial successes.
- The installation of a sewer heat recovery system at Gateway theatre to displace heating energy use, and reduce GHG emissions – the project is currently being installed and will be completed by the end of the year. It is estimated that the installation will reduce the use of natural gas by approximately 900 GJ and reduced GHG emissions by 47 tonnes of CO<sub>2</sub>e.
- Construction and installation of a solar thermal air wall at South Arm Community Centre to displace natural gas and electrical use, which is expected to be completed by December 2012. The project involves the installation of two separate solar thermal walls on the two south facing facades of the building. It is estimated that the project will avoid annually approximately \$5,000 in energy costs, and reduce GHG emissions from the facility by approximately 30 tonnes of CO<sub>2</sub>e.
- Upgrading of our corporate energy database to allow for, among other features, greater reporting capabilities and facilitate energy information sharing with our facility



stakeholders (e.g. community centre associations). It is expected that this new web-based program will be installed and operational by the end of 2012.

- Facilitation of an external report to assess the projected corporate energy demand profile of the City given our estimated population growth and a maintaining of our current level of services. This work will support the development of corporate energy reduction targets.

## Energy Management Planned Projects – 2013 Capital Submission Request

Project Name	General Scope	Estimated Project Cost	Anticipated Cost Avoidance through Energy Savings
Gateway Theatre coupling replacement	Replace couplings in high temperature loop system to reduce system's temperature and the operation run time	\$45,000	\$5,600
Building Envelope Sealing	Conduct air sealing, weather stripping, and interior compartmentalization at four corporate buildings (City Hall, Cultural Centre, Gateway, and Richmond Ice Centre), to reduce energy loss through conditioned air leakage.	\$90,000	\$14,000
Richmond Ice Centre brine pump insulation	Insulate brine headers at Richmond Ice Centre to reduce brine pump energy use through reduced run-time.	\$92,500	\$22,000
Works Yards automatic controls upgrade	Implement recommended heating ventilation and air-conditioning control measures, as per consultant's assessment report.	\$26,000	\$12,000
Lighting Retrofits	Conduct 3-5 lighting retrofit and upgrade projects at existing infrastructure and facilities that provide strong energy efficiency gains and demonstrate strong economic returns.	\$150,000	\$25,000
Pre-Design Assessments	Conduct five-eight pre-design assessments for energy management projects, in order to ensure that potential projects are well developed and designed	\$80,000	n/a
<b>Sub-Total</b>		<b>\$483,500</b>	<b>\$78,600</b>
Infrastructure Energy Efficiency Upgrade Funding	Establish a energy efficiency upgrade fund to maximize the opportunity to enhance the energy performance of our buildings and reduce utility costs, in conjunction with Project Development projects (e.g. West Richmond Community Centre, Richmond Ice Centre, and Watermania)	\$150,000	TBD
<b>Total</b>		<b>\$633,500</b>	<b>\$78,600</b>

## Energy Management Planned Projects 2014-2015

Project Name	General Scope	Estimated Project Cost	Anticipated Energy Savings
Corporate Parking Lot Retrofits	Parking lot lighting inventory will be completed before the end of 2012. Once completed a request for proposal will be developed to determine the cost and scope of the project.	TBD	TBD
Upgrading of Building Management Control Systems	City Hall Annex renovations include major upgrades to the building control systems, and the installation of web-based management system. This building will be used to research and test the management system, and to potentially facilitate the installation and upgrades at other locations.	TBD	TBD
BC Hydro COp - City Hall	Investigation Phase of this program is expected to be completed by December 2012, with implementation starting soon after.	TBD	150,000 kWh
BC Hydro COp - Richmond Ice Centre	Investigation Phase of this program is expected to be completed by May 2013, with implementation starting soon after.	TBD	170,000 kWh
BC Hydro COp - Watermania	Investigation Phase of this program is expected to be completed by November 2013, with implementation starting soon after.	TBD	200,000 kWh
BC Hydro COp – Library and Cultural Centre	Investigation Phase of this program is expected to be completed by December 2013, with implementation starting soon after.	TBD	100,000 kWh
BC Hydro COp - Oval	Investigation Phase of this program is expected to be completed by December 2013, with implementation starting soon after.	TBD	400,000 kWh





# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee  
**From:** Cecilia Achiam, MCIP, BCSLA  
Interim Director, Sustainability and District  
Energy

**Date:** October 15, 2012  
**File:** 01-0370-01/2012-  
Vol 01

**Re:** Carbon Neutral Progress Update

### Staff Recommendation

That the City pursue the "Making Progress" option for meeting the terms of the Climate Action Charter for 2012.

That the "*Towards Carbon Neutrality – Progress Report 2012*" (Attachment 1) be made accessible to the community through the City's website and in limited hard-copy supply at City Hall and key community centres.

Cecilia Achiam, MCIP, BCSLA  
Interim Director, Sustainability and District Energy  
(604-276-4122)

Att. 3

REPORT CONCURRENCE			
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>	
Major Buildings and Project Development	<input checked="" type="checkbox"/>		
Fleet and Environmental Programs	<input checked="" type="checkbox"/>		
Parks Services	<input checked="" type="checkbox"/>		
Transportation	<input checked="" type="checkbox"/>		
Community Safety	<input checked="" type="checkbox"/>		
<b>REVIEWED BY SMT SUBCOMMITTEE</b>	<b>INITIALS:</b> 	<b>REVIEWED BY CAO</b> OK	<b>INITIALS:</b> 



## Staff Report

### Origin

At the July 18, 2012 meeting, the City's Public Works and Transportation Committee requested an update on the City's progress towards carbon neutrality. This report responds to this request and supports the following Council Term goal pertaining to sustainability:

Council Term Goal #8.1: *"Continued implementation and significant progress towards achieving the City's Sustainability Framework, and associated targets."*

### Background

In September 2008, the City of Richmond signed the BC Climate Action Charter (the "Charter"), voluntarily committing to become carbon neutral with respect to corporate greenhouse gas (GHG) emissions. This commitment to carbon neutrality means that the City must reduce GHG emissions generated from its own operations and invest in additional action, outside of the City's operations, to compensate for emissions that could not be avoided. The City's commitment to carbon neutrality is one of the targets established to-date in the City's Sustainability Framework.

Achieving carbon neutrality involves two main activities:

1. Reducing internal GHG emissions from 3 key sectors: buildings & infrastructure, fleet and solid waste.
2. Investing in initiatives outside of the City's operations to compensate for unavoidable emissions.

Various programs throughout the organization contribute towards reducing GHG emissions and achieving carbon neutrality by the City of Richmond. Examples include:

- the City's Corporate Energy Management Program (EMP) which seeks to reduce corporate energy use and related GHG emissions pertaining to the City's civic buildings and other infrastructure (e.g., street lighting, water and wastewater pumps, etc.);
- the City's Sustainable Fleet Program which, among broader objectives, serves to reduce fuel consumption and related GHG emissions from corporate vehicular travel;
- the City's Solid Waste and Recycling Programs which reduce corporate waste and related GHG emissions and incorporate community initiatives recognized as potential compensation action;
- the City's Environmental and Parks Programs which strive to protect natural ecosystems that contribute to climate stability.

**Progress Made To-Date**

The “*Towards Carbon Neutrality – Progress Report*” (*Towards Carbon Neutrality*) highlights the substantive action and investment the City has made in reducing corporate GHG emissions and moving towards achieving carbon neutrality in a manner that supports overall sustainability (**Attachment 1**). A snapshot of the “Progress at a Glance” is provided in **Attachment 2**.

Key highlights from the City’s *Towards Carbon Neutrality* Report include:

1. *A focus on a strategic and practical approach*

As noted in the report, carbon neutrality is a relatively new concept and methodologies are emerging. A key focus of the City of Richmond has been on ensuring that approaches under the BC Climate Action Charter contribute to overall sustainability. In 2011, Richmond Council adopted the City’s Carbon Responsible Strategy. The Strategy is focussed on managing GHG emissions effectively and outlines key principles for ensuring a sustainable approach. For example, this approach recognizes that the City of Richmond contributes a relatively small amount of GHG emissions (1% of community-wide emission levels) and that the City’s resources can be more effective at reducing GHG emissions when directed at community-scale initiatives (e.g., transportation demand-side management initiatives, integration of renewable energy systems, etc.). Combined, the City’s Carbon Responsible Principles help the City avoid myopia (i.e., over-focus on carbon neutrality) as well as other common pitfalls of carbon neutrality (**Attachment 3**).

2. *Keep local tax dollars in the community*

From the beginning, a key objective of the City of Richmond was to pursue carbon neutrality in a manner that made investments in the Richmond community. This is generally not the case as most organizations achieve carbon neutrality by purchasing external offsets through an offset supplier. With the purchase of external offsets, organizations have limited influence on where their funds are spent and projects investments are made throughout various jurisdictions.

The BC government was seeking for local governments to achieve carbon neutrality through the purchase of external offsets. Specifically, the Province was seeking for local governments to purchase external offsets through the Pacific Carbon Trust, a crown corporation established by the Province to supply carbon offsets generated by projects throughout BC. This is the mechanism that has been followed for provincial public sector organizations (e.g., schools, hospitals, Ministries, etc.).

The City of Richmond was active in expressing the need for a local community-based approach that enabled re-investment of tax dollars within Richmond. This approach generates significantly greater value for the Richmond community as it supports the advancement of initiatives that not only reduce GHG emissions but contribute to multiple benefits locally. For example, the City’s alternative transportation initiatives reduce GHG emissions while at the same time, provide other important benefits such as reduced congestion, increased affordability and improved air quality. A focus on local investment also means that the City is able to leverage its already existing initiatives, helping to reduce costs associated with compensation action.

Efforts made by Richmond as well as other local governments, have been successful in establishing a change in Provincial policy direction to include recognition of local community investments as valid options. Work is now proceeding to develop methodologies for evaluating appropriate compensation credit levels.

### 3. *A focus on resourcing action*

The City has recognized that advancing sustainability means more than declaration of commitments. Resources must be put in place to actually realize intentions. Richmond Council and other local governments have been working with the Province to establish funding sources for supporting climate protection action. In Fall 2008, the Province announced the Climate Action Revenue Incentive Program (CARIP) program which provides carbon tax rebates to municipalities who have signed onto the Climate Action Charter. This means that local governments have avoided double expenditures (i.e., paying the carbon tax and paying for carbon neutrality). Amount of rebate changes each year, but on average the CARIP means that the City of Richmond avoids about \$200,000 in additional costs. Richmond Council was one of the first municipalities to establish a dedicated fund for supporting GHG emission reduction. This fund, the Carbon Provisional Account, receives the rebate monies from the carbon tax. Currently, there is approximately \$500,000 in this fund.

The CARIP is an important program for reducing costs associated with carbon neutrality. However, whereas funding exists in pockets to help support the advancement of specific initiatives, no dedicated sources of funding have been established to support local government efforts in delivering a complete carbon neutral program. Richmond Council and other local governments have expressed to the Province the need for dedicated funding sources to support GHG emission reduction action.

The City has also been active in ensuring that available funds are directed towards on-the-ground greenhouse gas reduction actions rather than excessively on administrative components of carbon neutrality (e.g., measuring, report, etc.). Richmond Council's recent decision to not track contractor fuel consumption is likely to avoid costs of about \$50,000.

### 4. *A focus on reducing harm and on improving conditions*

A main focus of the City's overall Sustainability Initiative has been to shift from an agenda of reducing level of harm and mitigating damage (i.e., making conditions "less bad") towards a vision of positive contribution, making things better. The City's approach to carbon neutrality showcases this vision by recognizing the need to both *reduce* (i.e., reduce GHG emissions from being emitted into the atmosphere) and *restore* (i.e., improve natural conditions which absorb and sequester GHG emissions to help serve to rebalance healthy conditions).

### 5. *Extensive action has been taken*

The *Towards Carbon Neutrality* Report highlights the extensive action that the City has taken to increase the sustainability performance of its own operations and support GHG emission reduction in the community. As noted in the report, the City of Richmond had already put in place various programs for increasing sustainability performance of its operations prior to the BC Climate Action Charter. Based on broader sustainability objectives, these initiatives serve to

achieve multiple benefits, including but not limited to GHG emission reduction. Highlights of examples are:

- the establishment of high performance building standards for all new civic facilities, resulting in the development LEED buildings such as Hamilton Community Centre, Richmond's Community Safety Building and Steveston Fire Hall<sup>1</sup>;
- the integration of renewable energy systems into civic facilities, including the installation of solar panels at Minoru Pool and current installation of a heating system based on sewage waste heat recovery for Gateway Theatre; and
- the advancement of various initiatives to improve fleet performance such as increasing efficiency through right-sizing of vehicles and replacement of vehicles with higher performing and alternative fuel vehicles (e.g., SMART cars, hybrids and electric vehicles). The City has also reduced GHG emissions by installing equipment in vehicles which reduce the need for generators and idling (e.g., installation of auxiliary batteries to power safety lights, installation of invertors to power tools).

By reducing the amount of corporate GHG emissions, these initiatives lower the City's carbon liability (i.e., the amount of emissions that need to be compensated for). The City has also advanced various initiatives in the community. Once appropriately evaluated, these initiatives could serve to compensate for unavoidable corporate emissions. Examples of the City's community-based initiatives that support GHG emission reduction include the City's purchase of the NE Bog Forest, implementation of the GreenCan program, installation of the Alexandra District Energy System, delivery of the Climate Change Showdown initiative, development of alternative transportation infrastructure (e.g., cycling lanes, trails, etc.) and establishment of land-use policies aimed at creating complete and compact communities. Most recently, the City is now encouraging the uptake of electric vehicles through policies that encourage installation of electric vehicle charging stations in new developments, facilitating installation of charging stations in the business community and by installing electric charging infrastructure at civic sites. In addition to supporting the City's fleet, most of these stations will be publically accessible and be part of a regional network.

## Analysis

The City has made substantive progress towards managing corporate GHG emissions responsibly and implementing the processes necessary to secure carbon neutrality. The City is currently positioned to achieve carbon neutrality in all areas necessary, except for one – compensation. This latter challenge is not because the City lacks projects that contribute compensation value but rather in the technical challenge in determining appropriate compensation credit.

---

<sup>1</sup> Most of the civic buildings built since the introduction of the City's High Performance Building Policy include the following features: renewable energy systems (e.g., solar, geothermal), green roofs, rain gardens, low VOC materials, energy efficient mechanical and electrical systems and use of local and renewable products and materials.

Since the introduction of the Climate Action Charter, the Province committed to working with UBCM to establish a Green Communities Committee (GCC) tasked with developing a common approach to carbon neutrality for the purposes of the Charter. In 2011, the BC Province recognized that methodologies for community-based project investments needed further work. As such, the Province announced a “Making Progress” option that enables local governments to meet their Climate Action Charter commitment by fulfilling actions pertaining to measuring, reducing and reporting. The “Making Progress” option is viewed as a compromise between the Province’s goal of a carbon neutral local government sector through offset purchases and local governments’ visions to direct local funds towards projects of multiple local benefit.

### **Action by Other Municipalities**

Municipal Councils at the Cities of North Vancouver and Surrey have recently endorsed the strategy to pursue the “Making Progress” option for meeting the Climate Action Charter commitments for 2012. Staff in the City of Victoria and other Lower Mainland municipalities (i.e., West Vancouver, New Westminster, City of North Vancouver, District of North Vancouver, Township of Langley, District of Langley, Corporation of Delta) have advised that they anticipate pursuing the “Making Progress” option.

Because it has a unique local investment opportunity that has a recognized and endorsed methodology (i.e., capturing methane from the Vancouver landfill), the City of Vancouver is likely to pursue and achieve carbon neutrality for 2012. Two municipalities, Village of Harrison Hot Springs and Resort Municipality of Whistler, declared carbon neutrality in 2010. These municipalities achieved carbon neutrality through the purchase of external offsets. These municipalities have not committed to achieving carbon neutrality in 2011 or 2012 and are currently reviewing their options. The City of Burnaby never signed the BC Climate Action Charter and is not pursuing carbon neutrality.

### **Options for Meeting Climate Action Charter Commitments in 2012**

#### **1. Making Progress – *Recommended***

This option means that the City would continue to reduce GHG emissions from its corporate services and continue investment into key community-based initiatives that support climate protection goals and serve multiple community benefits (e.g., alternative transportation initiatives, renewable energy initiatives, complete/compact development, natural areas protection, etc.). The City would continue to work with the Province and other partners on developing methodologies for evaluating compensation values.

#### **2. Purchase Offsets for 2012**

This option would mean that the City of Richmond could declare itself to be carbon neutral in 2012 and would establish this to be the performance standard for future years. At \$25/tonne to offset, it is estimated that this option would cost approximately \$300,000 for 2012.



Funding could come from the City's Provisional Account to meet expenditure requirements for 2012. Because the City established the account early on, the City has funding in place from the accumulation to-date. Over time, once the build-up had been eroded, the City would experience funding shortfalls on an annual basis if this approach was continued. This option would mean that the City could not use the carbon tax rebate funds to support greater corporate GHG reduction action or support community-based investments. Consequently, this is likely to place the City into a "continuous payment" scenario with increasing costs over time.

### **Financial Impact**

There is no financial impact associated with the recommendations of this report.

### **Conclusion**

Achieving carbon neutrality is a corporate-wide endeavour, requiring collaborative effort across the organization. The report "*Towards Carbon Neutrality – Progress Report 2012*" provides an overview of Richmond's progress to-date in achieving carbon neutrality. The report highlights the suite of action being taken by multiple City departments to reduce corporate GHG emissions and invest in community-based initiatives that contribute to climate protection and broader sustainability goals.

Carbon neutrality is a relatively new concept and best practices are emerging. The City of Richmond, as with many other local governments, has been working with the Province to develop a local approach to carbon neutrality that supports community-based initiatives. Recently, the Green Communities Committee has begun to work on developing a framework that includes options for retaining local tax dollars and advancing initiatives that advance multiple benefits. The Province has recognized that further work is needed on developing the framework and has established a "Making Progress" option to enable local governments to meet their Climate Action Charter commitments in 2012. This report recommends that the City of Richmond pursue the "Making Progress" option.



Margot Daykin, M.R.M.  
Manager, Sustainability  
(604-276-4130)

# Towards Carbon Neutrality



PROGRESS REPORT 2012





*“The City of Richmond is focussed on advancing sustainability, a vision of working collaboratively to create a strong Richmond community based on a healthy social, economic and environmental fabric.*

*Managing greenhouse gas emissions from the City’s own corporate activities is one of the many important initiatives that the City is doing to support this vision.”*

## Introduction

As part of its efforts to advance sustainability, and specifically to address the issue of climate change, the City of Richmond has committed to achieving carbon neutrality in its own **corporate activities**. Realizing carbon neutrality corporately means that every year, the City reduces greenhouse gas (GHG) emissions generated through the delivery of its service to the best extent possible and then invests in initiatives to compensate for those GHG emissions that could not be avoided. To achieve carbon neutrality, various tools and processes need to be implemented. This report provides an update on the action taken to-date towards carbon neutrality.

## Background

The City of Richmond committed to becoming carbon neutral in its own operations in 2008 when it signed the BC Climate Action Charter – a voluntary agreement among the Province, UBCM and local governments in BC.

The City’s corporate emissions are relatively small and contribute a fraction towards overall community, regional and Provincial emissions. While small, taking action corporately is important for “leading by example” and establishing a strong foundation for working in partnership and facilitating broader action.

The City’s carbon neutral commitment is on way that the City of Richmond is taking leadership action to address climate change. Adopted in 2010 as part of the City’s Sustainability Framework the City’s Climate Change Strategic Program establishes five (5) climate change targets. Together, these targets seek to build capacity, reduce emissions both corporately and in the community, and prepare for unavoidable change.

The City’s five (5) climate action targets are:

1. Reduce community-wide GHG emissions by 33% (from 2007 levels) by 2020 and 80% by 2050.
2. Be carbon neutral in corporate activities by 2012.
3. Engage 100% of Grade 6 students in climate action by 2015.
4. Build corporate awareness and understanding of climate change.
5. Prepare a Climate Change Adaptation Plan.

The City’s carbon neutral commitment, when combined with the other climate change targets, helps the City take a comprehensive approach to responding to climate change.

*Realizing carbon neutrality corporately means that every year, the City reduces its corporate greenhouse gas emissions and invests in initiatives to compensate for those emissions that could not be avoided.*

The City's carbon neutral and other climate change targets have been embedded within the City's Sustainability Framework. The Sustainability Framework recognizes that for sustainability to be achieved, action must be taken to address climate change as well as other key priorities. Accordingly, because it is part of the City's Sustainability Framework, the City is better positioned to allocate the appropriate level of investment towards carbon neutrality in proportion to the relative priority of other key action areas (e.g., resilient economy, local agriculture and food, affordable communities, etc.).

Realizing the suite of climate change targets and other sustainability targets will require strong collective action by all sectors of society.

## Richmond's Sustainability Framework

Realizing sustainability means that action must be taken across many fronts. Richmond's Sustainability Framework is designed to bring together the City's individual components of sustainability into a unified and coherent program. The Framework is being developed to capture the multiple actions at various levels throughout the organization to provide a "one-stop" overview of the City's activities as they relate to advancing nine (9) priority areas: Climate Change, Sustainable Resource Use, Mobility, Resilient Economy, GreenBuilt and Natural Environment, Local Agriculture and Food, Inclusive, Safe and Affordable Communities, Thriving and Vibrant communities (Figure 2).

The Framework also serves to collate and develop performance-based targets and establish an overall system for measuring and reporting progress across the many objectives of sustainability. By having the targets clearly defined in one place, the City will be able to maximize opportunities for collective and multi-objective based action. The Sustainability Framework also helps ensure a complete approach to sustainability, ensuring the right balance of investment across the various action agendas. The City's carbon neutral target is one of the targets developed to-date in Richmond's Sustainability Framework. The City is continuing to develop targets for other important goal areas.



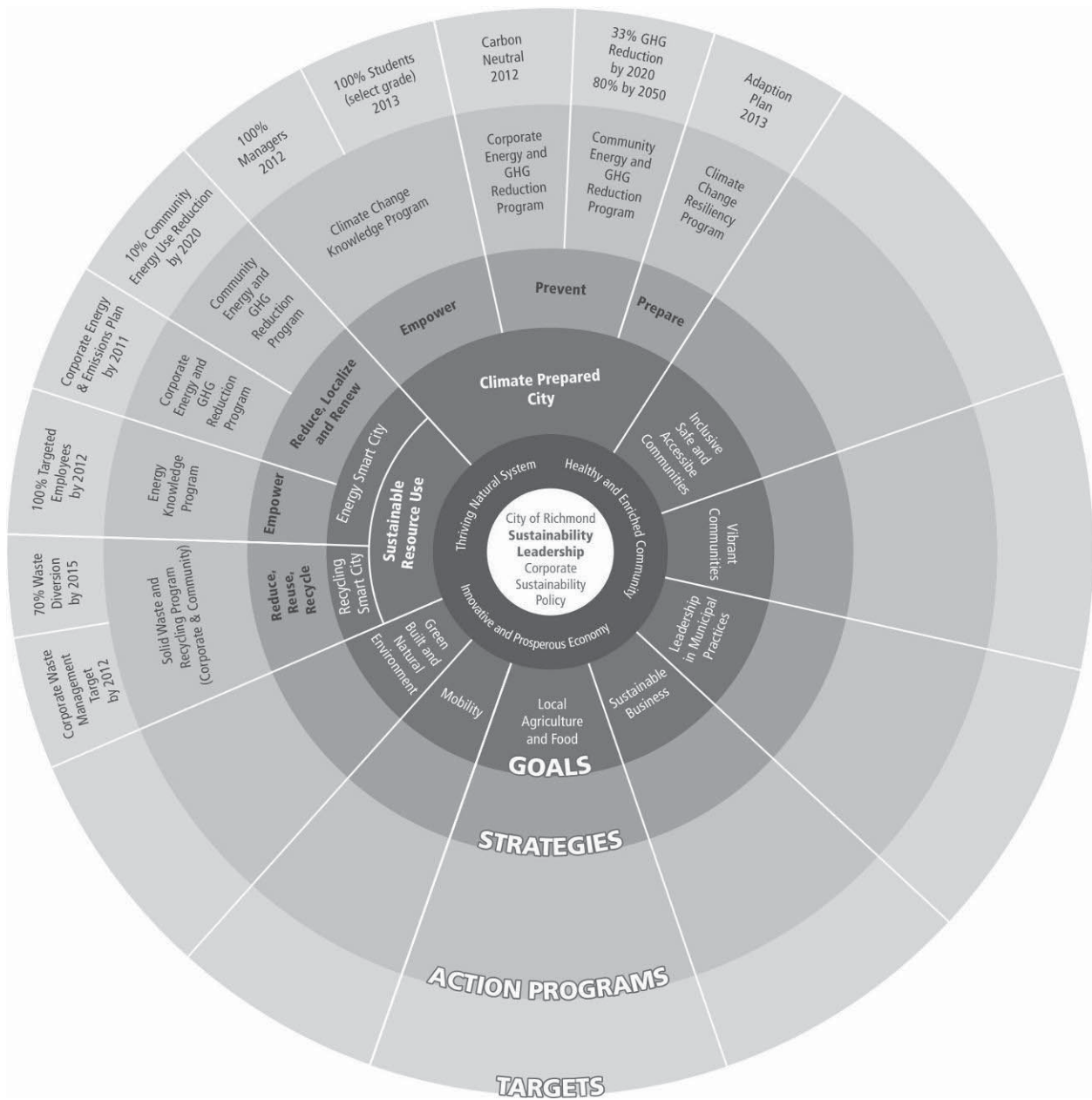
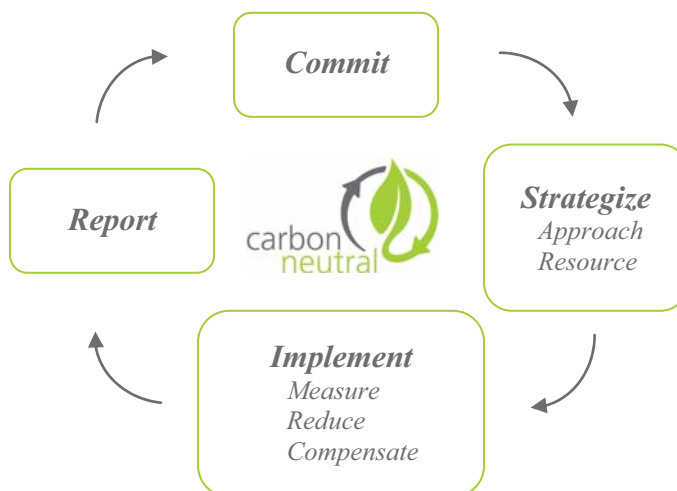


Figure 1: City of Richmond's Sustainability Framework (as developed to-date)

## Towards Carbon Neutrality: Four (4) Steps

There are four main steps for achieving carbon neutrality (Figure 2). Like balancing yearly expenses, carbon neutrality is a continual effort that needs to be done every year. While it is not necessary to review commitments and strategy every year, it is necessary to implement (i.e., measure, reduce, compensate) and report on an annual basis.



*“The City’s “Carbon Responsible Strategy” helps ensure that the City of Richmond is pursuing carbon neutrality in a manner that makes sense for our local community and supports emergence of overall sustainability.”*

Figure 2: Four (4) Steps to Carbon Neutrality

### 1. Commit

Commitment is the first step towards realizing carbon neutrality. The City of Richmond committed to becoming carbon neutral in its operations in 2008 when it signed the BC Climate Action Charter.

### 2. Strategize

#### Approach

Carbon neutrality is an emerging concept and best practices are evolving. The Province, UBCM and local governments have been working on developing a common approach to carbon neutrality as defined under the Climate Action Charter. While the target for reaching carbon neutrality is 2012, the Charter recognizes that the commitment can only be achieved once a common approach has been developed.

The City of Richmond has been working to ensure that a strategic and practical approach to carbon neutrality is developed. It is important that efforts in pursuing carbon neutrality result in meaningful benefits to local communities, use fiscal resources wisely and don’t come at the expense of other important sustainability objectives.

## Richmond's Principles For Achieving Carbon Neutrality

1. **Focus on Sustainability** (not carbon neutrality) – advance carbon neutrality as one component strategy within the broader sustainability agenda. This principle supports the City in allocating appropriate level of resources towards carbon neutrality, helping to ensure that efforts directed at this one important target do not come at the expense of other important sustainability objectives.
2. **Invest in the Richmond Community** (invest locally) – retain expenditures for GHG emission compensation within the local community. This principle helps ensure that local tax dollars are re-invested back into the Richmond community.
3. **Reduce First, Offset Second** – prioritize reducing GHG emissions from civic activities, not offsetting. This principle focuses limited resource on efforts which reduce corporate GHG emissions. These efforts yield climate protection goals while simultaneously reducing costs and providing other benefits.
4. **Focus on Action, not Accounting** – focus on high value action that yields significant community benefit. This principle minimizes costs associated with GHG administration and helps to ensure wise use of limited resources.
5. **Reduce Harm and Restore** (be carbon-balanced) – direct action towards both GHG emission reduction and towards carbon sequestration which absorbs and retains carbon away from entering the atmosphere. This principle seeks to reduce further harm while simultaneously working to rebalance systems to avoid issues in the first place.

In 2010, the City adopted a Carbon Responsible Strategy to guide the City's efforts in pursuing carbon neutrality. Five key principles were identified to help ensure that the City stayed focussed on the underlying issue (reducing GHG emissions) and overarching goal of sustainability.

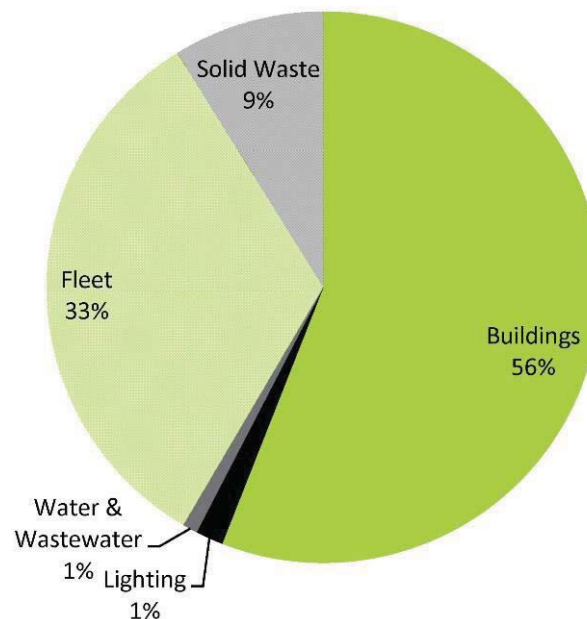
The City's Carbon Responsible Strategy has been highly effective in influencing evolving methodologies. This means that limited resources can stay focused on direct action that reduce GHG emissions and provide serve value to the community.

### Resourcing

Reducing GHG emissions will ultimately reduce societal costs over the long-term; however, managing emissions requires upfront investment. Resources are needed to build capacity, develop methodologies, establish internal systems and continue to support action. The City's Carbon Responsible Strategy seeks to use resources most effectively. Strategies include securing funding sources, minimizing costs associated with administration and leveraging City's existing investments.

The City of Richmond was one of the first municipalities to establish an internal Carbon Fund. Established in 2010, the City's Carbon Provisional Account receives the carbon tax rebate which is provided to local governments who have signed the Climate Action Charter. The Carbon Fund provides some of the necessary fiscal resources needed for managing internal emissions and achieving carbon neutrality. Additional support is also provided through the City's existing management programs, including the City's Sustainable Fleet Program, Corporate Energy Management Program and Corporate Solid Waste and Recycling Program. Considerations for GHG emission reduction has also been incorporated into the City's Land and Capital Budget decision-making process.

### 2007 Corporate GHG Emissions by Sector





### 3. Implement

Achieving carbon neutrality is a corporate-wide endeavour, requiring collaborative effort across the organization. An over of key initiatives is provide on Figure 3.

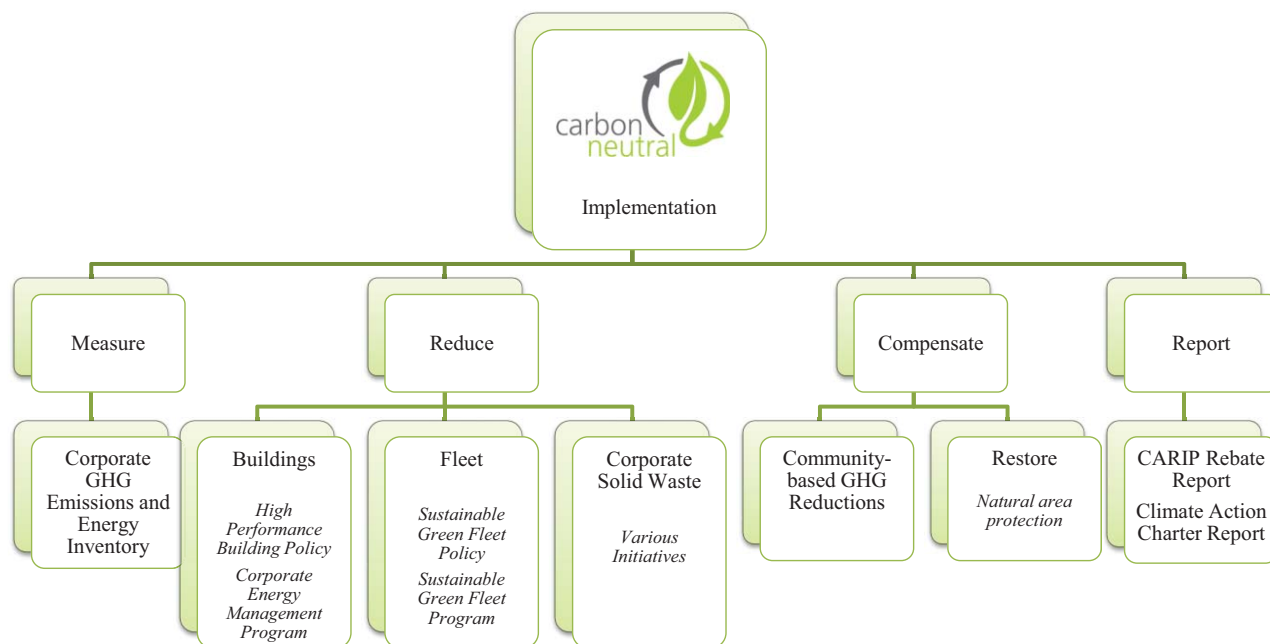


Figure 3: Carbon Neutrality Implementation Summary

#### Measure

Measuring GHG emissions is the first step in implementing a program for reaching carbon neutrality. In 2010, the City produced its first Corporate Energy and Emissions Inventory. This report provided the first comprehensive analysis of the City's energy consumption levels, costs and direct GHG emissions corporate-wide. This report established the City's baseline, based on 2007 levels, for measuring and reporting on future progress. Additionally, this report provided trend data to better enable the City to advance strategic reduction action. Specifically, the report identified the need to focus action on reducing fossil fuel use in civic buildings and corporate fleet use. Combined, these two activities, account for the vast majority of GHG emissions currently being measured. Corporate solid waste generation was also identified as an important area for further reduction action.

To manage its emissions responsibly and reach carbon neutrality, the City will need to measure its corporate GHG emissions on an annual basis. In preparation for this, the City is currently working on integrating GHG emission measurement into its existing management systems (e.g., Corporate Fuel Use Management System for Fleet, Corporate Energy Use Management System for Civic Buildings and

Infrastructures). By embedding GHG emission measurement within existing departmental systems, the City avoids costs associated with new systems. This approach also empowers respective departments in implementing and monitoring the effectiveness of GHG reduction initiatives in day-to-day operations.

## Reduce Corporate GHGs

Reducing internal corporate GHG emissions is the second step in implementation. The City has been taking actions to reduce emissions for some time as part of its broader sustainability objectives, prior to becoming a signator to the BC Climate Action Charter. Highlights in three of the most important areas (e.g., buildings, fleet, and solid waste) for reducing emissions are provided below.

### *Buildings*

In 2004, the City implemented its corporate High Performance Building Policy. This Policy sets performance standards for new and existing civic buildings which strive to:

- reduce resource consumption (energy, water, materials),
- accelerate transition to use of renewable energy sources,
- reduce corporate costs,
- reduce emissions and wastes,
- protect local ecosystems, and
- support healthy work environments.

The City's Project Development and Corporate Energy Management Programs serve to advance initiatives that meet these policy objectives. Key initiatives that support the City's carbon neutral initiatives have included development of LEED Gold buildings, installation renewable energy systems into existing facilities and lighting retrofits. These initiatives have resulted in significant levels of avoided energy consumption, reduced GHG emissions as well as various other benefits (e.g., reduced water consumption, improved indoor air quality, etc.).



Green roof of the Hamilton Fire Hall



Solar panels on the roof of Minoru Pool

*Fleet*

Originally implemented in 2006 and updated in 2012, Richmond's Sustainable Fleet Policy aims to meet the City's mobility needs in a manner that:

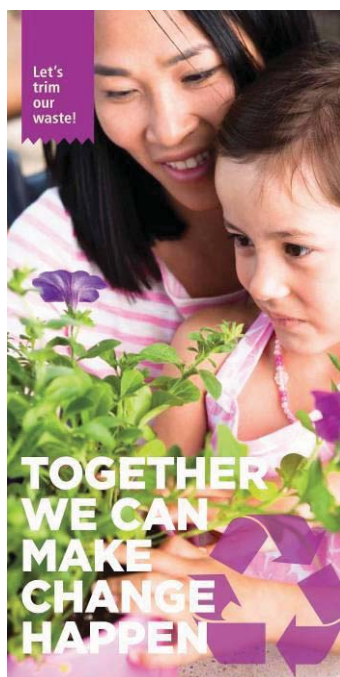
- reduces corporate costs,
- conserves natural resources (e.g., energy, materials, etc.),
- reduces emissions and wastes, and
- supports broader sustainable economic development

The Policy is implemented through the City's Sustainable Fleet Program which procures high performing and alternative fuel vehicles (e.g., SMART cars, hybrids, electric vehicles) and increases efficiency through various tactics (e.g., right-sizing vehicles, undertaking preventative maintenance procedures, improving driver practices and improving fuel management system).

Currently, effort is being directed at installing elective vehicle charging stations at key civic facilities, most of which will be publically accessible. Additionally, the City is currently developing a Sustainable Fleet Plan which will evaluate progress made to-date, identify future action opportunities and recommend a specific GHG emission reduction target pertaining to the City's fleet use.



City of Richmond's Electric Vehicle



Solid waste and recycling initiatives

### ***Solid Waste***

The City of Richmond has been active in reducing corporate waste since the early 1990s. Various initiatives have been advanced to reduce the amount resources consumed in the delivery of City's services, and to increase the diversion and recycling of unwanted materials. In 2000, the City was one of the first municipalities to adopt an Environmental Purchasing Policy and Guidebook. These tools help the City make greener choices in its procurement. More recently, the City introduced its E-Agenda Initiative. This Initiative provides digitized agenda packages for Committee and Council meetings, aiming to significantly reduce the amount of paper needed for these meetings. When waste generation cannot be avoided, corporate reuse and recycling initiatives help ensure that as much waste as possible is diverted from the waste stream. Some of the City's recycling initiatives include the City's office recycling program, the composting of Park green waste into soil and its re-use in the City's nursery as well as the reclamation and re-use of material from the City's drainage projects.

In 2011, the City adopted a Solid Waste Strategic Program under the City's Sustainability Framework. In addition to a community-wide waste diversion target of 70% by 2015, this Program also includes a commitment to develop a corporate waste reduction target. The establishment of the corporate waste reduction target will help the City continue to reduce waste and lower corporate GHG emissions.

### **Compensate**

Despite best efforts, it is simply unfeasible to avoid GHG emissions completely. Accordingly, obtaining carbon neutrality means that investments must be made to offset or compensate for remaining emissions. An offset or compensatory action is an investment in an action external to one's services that compensates for the GHG emissions generated by one's internal operations. Carbon neutrality is achieved when the amount of such (external) investments equals the level of unavoidable GHG emitted corporately (internally).

Carbon neutrality is an emerging concept and methodologies for evaluating the value of alternative compensation investments are evolving. Most work has been done on developing methodologies for purchasing external offsets through a third party supplier. In general, this approach means that monies used to purchase the offsets leave their local community to contribute to projects in other areas. Conversely, the City's Carbon Responsible Strategy focuses on making investments in the local Richmond community. In this regard, the City is able to:

- keep local tax dollars within Richmond,
- reduce local GHG emissions,
- reduce costs by leveraging existing initiatives, while at the same time,





# City of Richmond

## Report to Committee

---



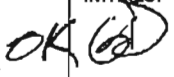
**To:** Public Works and Transportation Committee      **Date:** November 6, 2012  
**From:** Cecilia Achiam  
Interim Director, Sustainability and District Energy      **File:** 01-0370-01/2012-Vol 01  
**Re:** **Proposed Climate Smart Program – Facilitating Climate Action by Richmond Businesses**

---

### Staff Recommendation

That the City supports the delivery of the Climate Smart Program as presented in the attached staff report dated November 6, 2012 entitled "Proposed Climate Smart Program – Facilitating Climate Action by Richmond Businesses".

Cecilia Achiam, MCIP, BCSLA  
Interim Director, Sustainability and District Energy  
(604-276-4122)

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER 	
REVIEWED BY SMT SUBCOMMITTEE	INITIALS: 
REVIEWED BY CAO	INITIALS: 

## Staff Report

### Origin

By participating in the Climate Smart Program, the City can capitalize on an opportunity to support the Richmond business community in reducing greenhouse gas emissions (GHG). This initiative supports the following Council Term goals pertaining to sustainability and economic development:

- Council Term Goal #8.1: *“Continued implementation and significant progress towards achieving the City’s Sustainability Framework, and associated targets.”*
- Council Term Goal #3.2: *“Foster a collaborative economic development culture within the City where the City and businesses are working together to build on and seize opportunities in a faster, more efficient manner, with critical mass.”*

### Background

According to a recently released Carbon Disclosure Project Global 500 Report<sup>1</sup> climate change has climbed the boardroom agenda of major corporations. Recent extreme weather and natural events have increased attention being directed at climate change risks. Risks associated with climate change are being viewed as tangible and present, impacting companies’ operations, supply chains and business planning. 2012 has seen a 10% increase year-on-year in companies integrating climate change into their business strategies (2012: 78%, 2011: 68%), contributing to a 13.8% reduction in reported corporate greenhouse gas emissions. However, while some companies are demonstrating an awareness of the strategic opportunities associated with acting on climate change, few are setting the necessary targets required to ensure their long-term resilience and many are facing challenges justifying the business case for low carbon investment.

The Climate Smart Program (“Climate Smart”, “Program”) is offered in the Lower Mainland by a social enterprise (a for-profit organization that puts social aims first rather than maximizing profits for external shareholders). The Program builds capacity to enable local businesses to reduce their emissions, cut costs and make greater contributions towards a resilient economy. It provides professional development, tools and technical support to enable companies to complete a credible inventory of their energy use and greenhouse gas (GHG) emissions and take strategic action to reduce unnecessary consumption of fuel, electricity, materials and waste. These actions cut business costs and reduce GHG emissions.

Climate Smart is directed at small and medium-sized businesses (SMEs). For many SMEs, time and human resources constrain their ability to become familiar with and act on the mass of information pertaining to GHG management. Engaging external expertise is often too costly and can fail to embed practices within an organization. A key focus of the Program is building the internal skill base necessary for continuing GHG management within organizations. Since 2008, Climate Smart has worked with over 650 businesses who collectively have achieved GHG emission reductions of over 660,000 tonnes. Emissions reductions vary significantly

---

<sup>1</sup> The Carbon Disclosure Project Global 500 report provides an annual update on greenhouse gas emissions data and climate change strategies at the world’s largest public corporations. It is produced on behalf of 655 institutional investors representing \$78 trillion in assets. (Carbon Disclosure Project: *Business resilience in an uncertain, resource-constrained world* (September 2012))

depending on the business sector. Organizations which are carbon-intensive, such as manufacturers and transport-related businesses, can achieve significantly higher reductions than office-based businesses. The program's historic average has been around 780 tonnes per business. Increased resource efficiency taken to achieve these emissions reductions means reduced operating costs. While a range of reduction strategies are employed, including capital-intensive programs such as lighting and other equipment retrofits, most participating businesses have focussed on lower-cost action initiatives such as behaviour-based programs (e.g., driver education programs, "turn-it-off" campaigns, etc.) and third-party contract changes to source more sustainable suppliers. The most common areas of focus are waste diversion, paper use and staff commuting.

The Program consists of:

- three training workshops which help organizations undertake their energy and GHG emission inventories and provide business case analyses for alternative reduction actions
- follow-up with implementation;
- access to online GHG management software;
- up to 10 hours of technical support per business, including external expert review of the first year's data and methodology; and
- provision of a Climate Smart business seal for a year.

For 10-12 businesses, the total program cost is \$15,000-\$25,000 for a one-year term. The price ranges because the cost per business varies in accordance with its size. The Climate Smart Program is currently sponsored by the Pacific Carbon Trust (\$5,000) and Fortis BC (\$3,000). To be delivered in Richmond, the City of Richmond would need to contribute \$5,000. Participating businesses would pay differing contributions based on their size, ranging from \$250 - \$1,000 per business. Based on historical averages, a business achieves \$11,000 in ongoing savings from participating in the Program. Because the type and extent of reduction strategies employed varies widely with each business, the range observed to-date has been anywhere from \$0 – >\$100,000 in ongoing savings.

Business recruitment would be conducted based on collaborative efforts between the City and Climate Smart. The City will work with Climate Smart on developing appropriate targeting criteria for business recruitment (e.g., business carbon intensity, clustering opportunities, etc.) and will assist in increasing awareness of the opportunity through City communication channels. Recruitment will be conducted by Climate Smart.

## Analysis

As part of its overarching Sustainability Framework, Richmond Council adopted GHG emission reduction targets of 33% reduction by 2020 and 80% reduction by 2050. The City has been advancing numerous initiatives which not only reduce GHG emissions but contribute to multiple sustainability objectives (e.g., resilient economy, affordable communities, reduced resource consumption, local agriculture and food, etc.).

Recent achievements include:

- updating the Official Community Plan with climate change and other sustainability policies which support GHG emission reduction (e.g., energy policies, alternative transportation policies, land-use policies encouraging compact and complete communities, etc.),
- building a District Energy System in the West Cambie neighbourhood,
- implementing and delivering the City's GreenCan program and other recycling services, and
- in partnership, delivering the Climate Change Showdown that engages Richmond students in climate action.

The City is also working towards carbon neutrality in its own corporate operations and is developing its first Community Energy and Emissions Plan (CEEP) to measure success/progress made to-date and identify further strategic action for reducing community-wide GHG emissions.

Emission reductions needed to achieve a stable climate are significant and require action across all sectors of society. As a partnership initiative with existing seed funding, the Climate Smart Program provides a cost-effective opportunity to engage and support local businesses in climate action. The Program also provides additional benefits that extend beyond GHG emission reduction such as helping businesses identify efficiencies, decrease operating costs and reduce vulnerability to resource price fluctuations. In addition, by increasing awareness and understanding of climate change, the Climate Smart Program can help build business resiliency and adaptability.

The Program also offers a potential opportunity to gain compensation credits for the City and thereby, support the City's carbon neutral efforts. At an average of cost of \$25 per tonne of GHG reduced per business, the Climate Smart Program offers a strong opportunity to achieve cost-effective compensation credits. Meaningful compensation credit would ultimately depend, however, on the scale of program delivery. Should the City proceed in supporting the delivery of Climate Smart, City staff will work with Climate Smart and other partners to explore means for establishing credits.

### ***Recommended Action***

It is recommended that the City support the delivery of the ClimateSmart program by contributing \$5000 to support the engagement of 10-12 businesses. Results from the program will be brought back to Council to support future program decision-making.

### **Financial Impact**

The cost for the City to support the Climate Smart program for 10-12 businesses is \$5000. There is no impact to the City's budget as funds would be provided by the City's existing Economic Development budget.



## Conclusion

Unmanaged climate change is projected to result in significant impacts to businesses and communities. The City of Richmond is working in partnerships to reduce community GHG emissions, contribute to greater climate stability and mitigate projected adverse impacts. This report presents an opportunity for the City, in partnership with others, to support Richmond businesses in cutting their GHG emissions, reducing operating costs and increasing business resiliency.



Margot Daykin, MRM  
Manager, Sustainability  
(604-276-4130)



for Neonila Lilova  
Manager, Economic Development  
(604-247-4934)






# City of Richmond

## Report to Committee

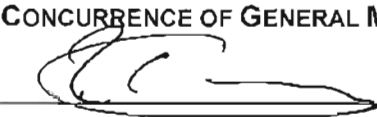



**To:** Public Works and Transportation Committee **Date:** October 31, 2012  
**From:** Tom Stewart, AScT. **File:**  
Director, Public Works Operations  
**Re:** **Update on 2012/2013 Snow and Ice Response Preparations**

### Staff Recommendation

That the staff report regarding "Update on 2012/2013 Snow and Ice Response Preparations", dated October 31, 2012, be received for information.

  
Tom Stewart  
Director, Public Works Operations  
(604-233-3301)

Att. 2

REPORT CONCURRENCE			
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>	
Parks	<input checked="" type="checkbox"/>		
<b>REVIEWED BY SMT SUBCOMMITTEE</b>	<b>INITIALS:</b> 	<b>REVIEWED BY CAO</b>	<b>INITIALS:</b>  

## Staff Report

### Origin

October 17, 2012, the Public Works and Transportation Committee requested an updated report on the City's Snow and Ice Response Preparations. This report provides information on anticipated weather patterns associated with the upcoming 2012/2013 winter season, and the City's current preparedness measures, as well as those underway, to ensure a coordinated response. Also, there is information on the newest measures which are planned to increase public communications during weather events.

### Analysis

In light of changing weather patterns and increased frequency of extreme weather events, Public Works Operations has implemented numerous changes over the last few years to enhance our readiness planning and response efforts. Overviews of these changes, incorporated in the next section, include; policy amendments, equipment review, enhancement to public communications/public involvement and overall response planning. Furthermore, information on expected weather patterns for the 2012/2013 season, operational preparations and planned expansion of public outreach efforts are provided.

### Overview of Existing Initiatives

*Policy Amendments:* Traffic Bylaw 5870 was amended by Council on November 23, 2009 to require commercial, industrial and multi-family property owners or occupiers to clear snow and ice from sidewalks adjacent to their property. City staff will remind the public of Bylaw 5870 through media releases, as well as social media, such as Facebook and Twitter. This Bylaw was amended to encourage the use of public transit with improved convenience for pedestrians. Section 6.1 of the Bylaw reads:

*"The owner or occupier of any parcel of real property which is developed for, or used in whole or in part for, commercial, industrial or multi-family dwelling use other than a two-family dwelling shall remove all snow and ice from any sidewalk adjacent to such parcel for a distance that coincides with the property line of his real property, not later than 10:00 a.m. of every day, including Sunday"*

In response to public concerns about the lack of salting and ploughing on residential streets, Council approved an amendment to Policy 7013 (Roadways – Ice and Snow Removal) to add third priority routes. These routes include the designated collector roads and roads of local significance in residential subdivisions. This initiative will help improve vehicle access from within subdivisions to the major collector roads. However, it should be noted that third priority routes will only be cleared if first and secondary routes have been fully accommodated and if the resources permit.



*Equipment:* There have been a number of improvements over the past few years, including the construction of a “snow shed” in 2010, this project was approved by council and has resulted in the enhanced preparation and readiness of equipment during snow and ice events. The City has also installed five road temperature sensors and is in the planning stages for the installation of another two sensors. These sensors are monitored 24 hours per day and provide early indications of potential road frost or freezing conditions. These sensors are strategically located throughout the City to provide real time information concerning road conditions illustrated in Attachment 1. A full list of equipment dedicated for snow response is provided in Attachment 2.

*Public Outreach:* Comprehensive communication and a public involvement plan are vital when working with the community during the winter season. The City has included these plans in order to work cooperatively with the public:

- Website: The City updated their website to provide considerable information on snow response. Included on the site is a listing of private service providers for contractors that residents, Strata Councils, and business owners can call for snow removal services at their own cost.
- Snow Angels: This program was introduced in 2010 to connect local volunteer groups and service clubs with seniors and people with disabilities who may need assistance during extreme weather events. Assistance can take the form of shovelling snow from walkways. A registry of community organizations can be accessed on the City's website or by calling the Community Services Department, Dispatch, City Hall, or any community centre. The "Snow Angels" program is activated in the event of a major snowfall which is defined as 48 hours of continuous snowfall and a minimum of 15cm of snow.
- Social Media: This past 2011/2012 snow season staff incorporated social media into the overall communication process to reach out to the community through Facebook and Twitter. The City will continue the use of social media via Facebook and Twitter to provide frequent updates during snow and ice events. These updates include weather forecasts, what preparations are underway for current and upcoming events, pictures relating to the event (equipment, staff, road conditions, etc...).
- Community Associations: Staff will continue to work in partnership with the different community associations to improve service levels through open communication and combined efforts. In 2011/2012 staff arranged to have one of the City's Kubota's (a small off road unit with a removable snowplough attachment) to be stationed at the Salmon Shed in Steveston Park. While this unit is regularly used by Parks staff throughout the year, it is also available to the trained volunteers of the Steveston Community Society during snow and ice events.

## **2012/2013 Weather Forecast**

City staff continuously monitors Richmond's specific weather forecasts and conditions. Richmond's unique geography often results in exclusive weather patterns. Forecasts with Richmond-specific weather information and forward-looking forecasts are received daily. The current long-term weather forecast for this upcoming winter season, according to Northwest WeatherNet, has been predicted as:

*"An extreme winter in either direction is unlikely. In most years, we have some weather parameters to clue off of, with the most important one being El Nino / La Nina. However, this year, practically every single weather parameter is in the middle of the scale, or is counter balanced by other factors. There will be no El Nino or La Nina this year. The record low Arctic sea ice will have some minor impact in making the eastern portions of North America colder/snowier, which means a bit less wet and cold for us."*

## **Operational Preparations**

Operational preparations are underway which include equipment preparation, meetings to coordinate efforts between departments, and training for staff. Training was key preparation for the past 2011/2012 season and continues to be important this season. This training is to ensure a sufficient number of personnel are available to respond during short-term and long-term events.

The City of Richmond's salt supplies have been secured for this winter season. There are currently 960 metric tonnes secured under contract and an additional 500 metric tonnes on reserve. In addition to the Public Works Yard, a second location (Sidaway Site) will be stocked with salt for the reloading of trucks during snow events. This secondary location will reduce travel times and increase efficiencies for equipment working on the east side of Richmond.

The City will closely monitor and record equipment locations, route(s) start and completion times and salt distribution through a centralized control centre. This will allow for accurate responses to public enquiries, better record keeping and post event summaries. Costs will also be tracked per lane kilometer to provide additional information for evaluation and future forecasting of expenditures.

## **2011/2012 Winter Season Summary**

During the November 2011 to April 2012 winter season there were 7 snow events and 14 frost events of varying duration and severity. The City of Richmond used 926.82 tonnes of salt and cleared/salted 5169 lane kilometres of 1<sup>st</sup> and 2<sup>nd</sup> priority roads.

## **Conclusion**

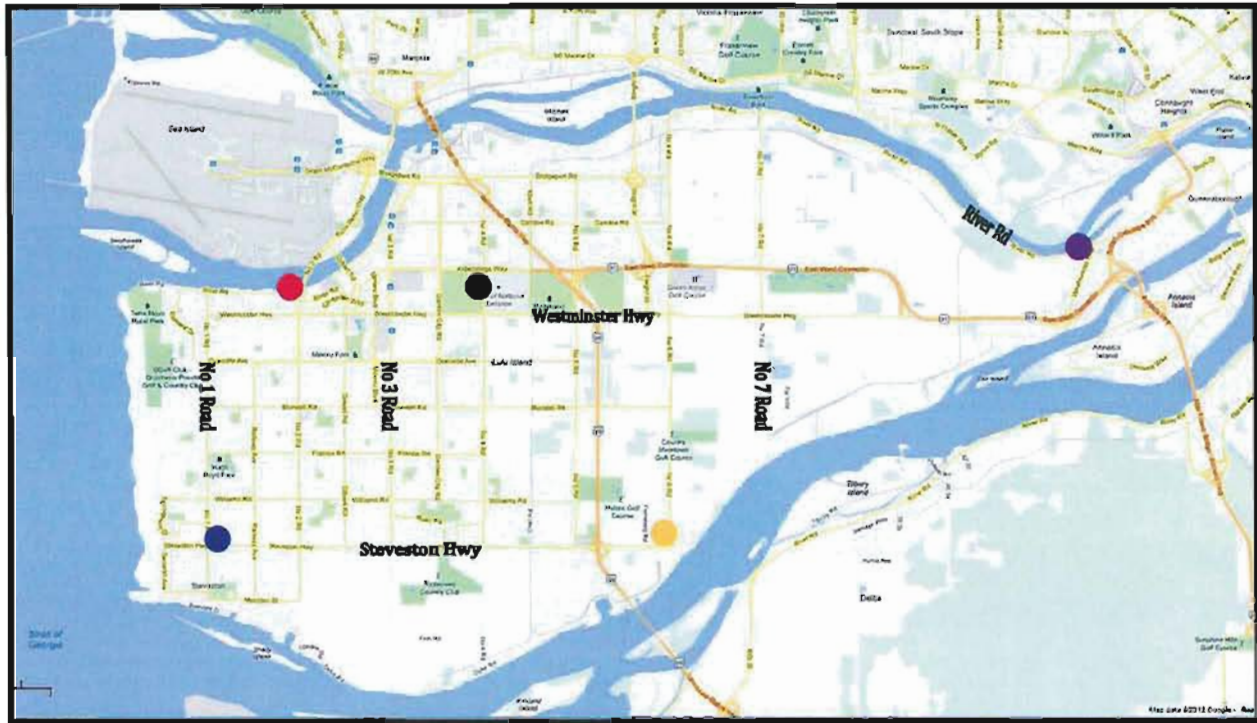
Currently, preparations for the 2012/2013 winter season are underway and will be completed in time for the upcoming season. The City is continuously seeking opportunities to improve service levels, communications and community involvement. Public outreach, through social media, will continue to be implemented to inform, provide current event information and involve the public in an effort to minimize risks associated with snow and ice.



Ben Dias  
Manager, Roads & Construction Services  
(604-244-1207)

:bjd

# City of Richmond - Road Temperature Sensor Locations



## Road Temperature Sensors:

- Armoury
- No. 6 Road South
- Oval
- Queensborough
- Steveston



**Attachment 2****City of Richmond - Snow Response Equipment**

<b>Number of Units</b>	<b>Description</b>
4	Single-Axle Dump Trucks with Flinks and Belly Plows
1	1-tonne Flat Deck Truck with Insert / Brine Tank
6	Tandem Dump Trucks with Insert and Plough Attachments
1	Crane Truck with Insert
1	F550S with Snow Plows
3	F550S with Snow Plows
1	Mobile Road Grader
4	Mobile (Walk-Behind) Snow Blowers
5	Backhoes
1	Front End Wheel Loader
1	Holder
1	Bobcat Skid Steer
3	Hydro Excavators
960 tonnes	Salt
14,000 litres	Brine Mix (for pre-wetting)
216 pails (6 skids)	Ice Melt (walkways, stairs, etc.)