



---

**Public Works and Transportation Committee**

**Anderson Room, City Hall  
6911 No. 3 Road**

**Wednesday, September 21, 2016  
4:00 p.m.**

Pg. #      ITEM

MINUTES

**PWT-5**      *Motion to adopt the **minutes** of the meeting of the Public Works and Transportation Committee held on July 20, 2016.*



NEXT COMMITTEE MEETING DATE

October 19, 2016, (tentative date) at 4:00 p.m. in the Anderson Room.

ENGINEERING AND PUBLIC WORKS DIVISION

1. **CITY OF RICHMOND ENERGY STATEMENT INITIATIVE**  
(File Ref. No. 10-6125-05-01) (REDMS No. 5149960 v. 7)

**PWT-9**

**See Page PWT-9 for full report**

*Designated Speaker: John Irving*

STAFF RECOMMENDATION

*That the staff report titled “City of Richmond Energy Statement Initiative” from the Director, Engineering, dated August 29, 2016, be received for information.*



Pg. # ITEM

- 2. **RELEASE OF BC CLIMATE LEADERSHIP PLAN**  
(File Ref. No. 10-6125-07-02) (REDMS No. 5146965 v. 5)

PWT-15

[See Page PWT-15 for full report](#)

*Designated Speaker: John Irving*

STAFF RECOMMENDATION

*That a letter be sent to the Premier of BC to express the concerns regarding the Climate Leadership Plan, as identified in the report titled "Release of BC Climate Leadership Plan," dated August 24, 2016, from the Director, Engineering.*



PLANNING AND DEVELOPMENT DIVISION

- 3. **TRANSLINK 2017 CAPITAL PROGRAM COST-SHARE SUBMISSIONS**  
(File Ref. No. 01-0154-04) (REDMS No. 5106703 v. 3)

PWT-27

[See Page PWT-27 for full report](#)

*Designated Speaker: Joan Caravan*

STAFF RECOMMENDATION

- (1) *That the submission of pedestrian, bicycle and transit facility improvement projects for cost-sharing as part of the TransLink 2017 Bicycle Infrastructure Capital Cost Sharing Regional Needs Program and Transit-Related Road Infrastructure Program, as described in the report, titled, "TransLink 2017 Capital Program Cost-Sharing Submissions" dated August 10, 2016 from the Director, Transportation, be endorsed; and*
- (2) *That, should the above submissions be successful and the projects receive Council's 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 2017 Capital Plan and the 5-Year Financial Plan (2017-2021) be updated accordingly.*



4. **TRANSLINK SOUTHWEST AREA TRANSPORT PLAN – RESULTS OF PHASE 1 CONSULTATION**

(File Ref. No. 01-0154-04) (REDMS No. 5146696 v. 2)

PWT-33

See Page PWT-33 for full report

*Designated Speaker: Joan Caravan*

STAFF RECOMMENDATION

*That the staff report titled “TransLink Southwest Area Transport Plan – Results of Phase 1 Consultation” providing a summary of the Phase 1 consultation results for TransLink’s Southwest Area Transport Plan, dated August 24, 2016, from the Director, Transportation, be received for information.*



5. **RECOMMENDATION TO AWARD CONTRACT 5658P - TRAFFIC SIGNAL SYSTEM MAINTENANCE, UPGRADING AND INSTALLATION**

(File Ref. No. 02-0775-50-5658) (REDMS No. 5104871)

PWT-39

See Page PWT-39 for full report

*Designated Speaker: Joan Caravan*

STAFF RECOMMENDATION

- (1) *That Contract 5658P – “Traffic Signal System Maintenance, Upgrading and Installation” be awarded to Cobra Electric Limited in an amount not to exceed approved budgets and that staff be authorized to extend the contract in one-year increments up to five years in total and, if required, extend the contract beyond the five-year term on a month-by-month basis until such time a new contract can be advertised and awarded; and*
- (2) *That the Chief Administrative Officer and General Manager, Planning and Development, be authorized to execute the above contract.*



Pg. #      ITEM

6.      **DRAINAGE BOX CULVERT REPLACEMENT AT NO. 2 ROAD AND WALTON ROAD**

(File Ref. No.: 10-6060-01) (REDMS No. 5157881)

PWT-42

See Page PWT-42 for full report

*Designated Speaker: Lloyd Bie*

STAFF RECOMMENDATION

- (1)    *That funding of \$2,000,000 from the Drainage Utility Reserve be included as an amendment to the 5 Year Financial Plan (2016-2020) to complete the Drainage Box Culvert Replacement Project at No. 2 Road and Walton Road; and*
- (2)    *That the Chief Administrative Officer and General Manager, Engineering and Public Works, be authorized to award the Drainage Box Culvert Replacement Project at No. 2 Road and Walton Road and execute an agreement with respect thereto.*

7.      **WATER METER PROGRAM UPDATE**

(File Ref. No.: 10-6650-02) (REDMS No. 5125648 v. 11)

PWT-46

See Page PWT-46 for full report

*Designated Speaker: Lloyd Bie*

STAFF RECOMMENDATION

*That staff bring forward options and recommendations for mandatory Multi-Family water metering for consideration through the Capital budget process.*

8.      **MANAGER'S REPORT**

ADJOURNMENT



## Public Works and Transportation Committee

Date: Wednesday, July 20, 2016  
Place: Anderson Room  
Richmond City Hall  
Present: Councillor Chak Au, Chair  
Councillor Harold Steves  
Councillor Derek Dang  
Councillor Ken Johnston  
Absent: Councillor Alexa Loo  
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 and Transportation Committee held on June 22, 2016, be adopted as circulated.*

**CARRIED**

### NEXT COMMITTEE MEETING DATE

September 21, 2016, (tentative date) at 4:00 p.m. in the Anderson Room

### ENGINEERING AND PUBLIC WORKS DIVISION

1. **PROPOSED GOODWIN ENTERPRISES (2015) LTD. SERVICING AGREEMENT**  
(File Ref. No. 10-6060-01) (REDMS No. 5032930 v. 2)

**Public Works & Transportation Committee**  
**Wednesday, July 20, 2016**

---

It was moved and seconded

*That the Chief Administrative Officer and the General Manager, Engineering and Public Works be authorized to finalize and execute a Servicing Agreement between the City and Goodwyn Enterprises (2015) Ltd. to abandon and replace ageing infrastructure that passes through and around properties owned by Goodwyn Enterprises (2015) Ltd., and to discharge a statutory right of way (Plan No. 47019), based on the material terms and conditions set out in the staff report titled "Proposed Goodwyn Enterprises (2015) Ltd. Servicing Agreement" dated June 27, 2016 from the Director, Engineering.*

**CARRIED**

2. **MUNICIPAL ACCESS AGREEMENT WITH OPTIC ZOO NETWORKS LTD.**

(File Ref. No. 10-6060-01) (REDMS No. 5027209)

It was moved and seconded

*That the Chief Administrative Officer and the General Manager, Engineering and Public Works be authorized to execute, on behalf of the City, a Municipal Access Agreement between the City and Optic Zoo Networks Ltd. containing the material terms and conditions set out in the staff report titled, "Municipal Access Agreement with Optic Zoo Networks Ltd.", dated May 31, 2016 from the Director, Engineering.*

**CARRIED**

3. **PESTICIDE USE CONTROL BYLAW AMENDMENTS IN RESPONSE TO THE PROVINCIAL INTEGRATED PEST MANAGEMENT REGULATION AMENDMENTS**

(File Ref. No. 10-6125-04-01) (REDMS No. 5021648 v. 4)

In reply to questions from the Committee, Lesley Douglas, Manager, Environmental Sustainability, explained that the amendments to the Pesticide Use Control Bylaw will focus on educating the consumer and working with retailers to help residents understand the appropriate use for pesticides.

Ms. Douglas noted that retailers are not required to be cognisant of the municipal bylaws. However, they are under rigorous guidelines as to the delivery of the products and the manner in which they are contained.

It was moved and seconded

*That the Pesticide Use Control Bylaw No. 8514, Amendment Bylaw No. 9574 be introduced and given first, second, and third readings.*

**CARRIED**

2.

**Public Works & Transportation Committee**  
**Wednesday, July 20, 2016**

---

4. **RIPARIAN RESPONSE STRATEGY REVIEW**

(File Ref. No. 10-6160-08) (REDMS No. 5032024 v. 13)

It was moved and seconded

*That the stakeholder consultation program outlined in the report titled "Riparian Response Strategy Review" from the Director, Engineering, dated June 27, 2016, be endorsed.*

**CARRIED**

5. **REVIEW OF RICHMOND PARKING ADVISORY COMMITTEE**

(File Ref. No. 01-0100-30-RPAD1-01) (REDMS No. 5049478 v. 4)

The Committee echoed concerns regarding congestion of traffic in the City Centre area and discussed the mobility issues caused by these patterns. Questions were directed to staff for clarification on the actions currently being taken by the City of Richmond on improving mobility, ridership, and congestion in the City Centre area.

Victor Wei, Director, Transportation, noted that the City Centre area plan is already addressing many of the issues regarding congestion in the area and that staff are able to provide an update on the advancement of the desired improvements.

As a result of the discussion, the following **referral motion** was introduced:

It was moved and seconded

*That staff provide an update on traffic volumes, mobility, and ridership in the City Centre area and report back.*

**CARRIED**

It was moved and seconded

*(1) That the Richmond Parking Advisory Committee and the Richmond Traffic and Transportation Advisory Committee be dissolved; and*

*(2) That past and current members of the above committees be thanked for their contributions.*

**CARRIED**

6. **RECOMMENDATION TO AWARD CONTRACT 5659 EOI – SUPPLY AND INSTALLATION OF CONDUITS & WATER SERVICE PIPES USING TRENCHLESS TECHNOLOGY AND OTHER RELATED CIVIL WORKS**

(File Ref. No. 02-0775-50-3118) (REDMS No. 4975387 v. 4)

**Public Works & Transportation Committee**  
**Wednesday, July 20, 2016**

---

It was moved and seconded

- (1) *That Contract 5659 EOI – “Supply and Installation of Conduits & Water Service Pipes Using Trenchless Technology and Other Related Civil Works” be awarded to Ulmer Contracting Limited and that staff be authorized to extend the contract in one-year increments up to five years in total and, if required, extend the contract beyond the five-year term on a month-by-month basis until such time a new contract can be advertised and awarded; and*
- (2) *That the Chief Administrative Officer and General Manager, Planning and Development, be authorized to execute the above contract.*

**CARRIED**

**7. MANAGER’S REPORT**

Victor Wei, Director, Transportation, invited the Committee to attend a double achievement celebration at the City Centre Community Centre next week.

**ADJOURNMENT**

It was moved and seconded

*That the meeting adjourn (4:14 p.m.).*

**CARRIED**

Certified a true and correct copy of the Minutes of the meeting of the Public Works and Transportation Committee of the Council of the City of Richmond held on Wednesday, July 20, 2016.

---

Councillor Chak Au  
Chair

---

Shaun Divecha  
Legislative Services Coordinator





**To:** Public Works and Transportation Committee  
**From:** John Irving, P.Eng, MPA  
Director, Engineering  
**Re:** **City of Richmond Energy Statement Initiative**

**Date:** August 29, 2016  
**File:** 10-6125-05-01/2015-  
Vol 01

**Staff Recommendation**

That the staff report titled “City of Richmond Energy Statement Initiative” from the Director, Engineering, dated August 29, 2016, be received for information.

John Irving, P.Eng, MPA  
Director, Engineering  
(604-276-4140)

Att. 1

<b>REPORT CONCURRENCE</b>	
<b>CONCURRENCE OF GENERAL MANAGER</b> 	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> 
<b>APPROVED BY CAO</b> 	

## Staff Report

### Origin

Following the success of past corporate energy efficiency staff engagement programs, the City of Richmond’s Energy Statement Initiative described in this report supports the following Council 2014-2018 Term Goals:

#### #4 Leadership in Sustainability:

- 4.1. *Continued implementation of the Sustainability Framework.*
- 4.2. *Innovative projects and initiatives to advance sustainability.*

Attachment 1, “Energy Statement Ice Centre Example,” demonstrates the final proof of the initiative that will be used to engage corporate building stakeholders, and will hopefully help to further improve the energy efficiency of corporate buildings.

### Background

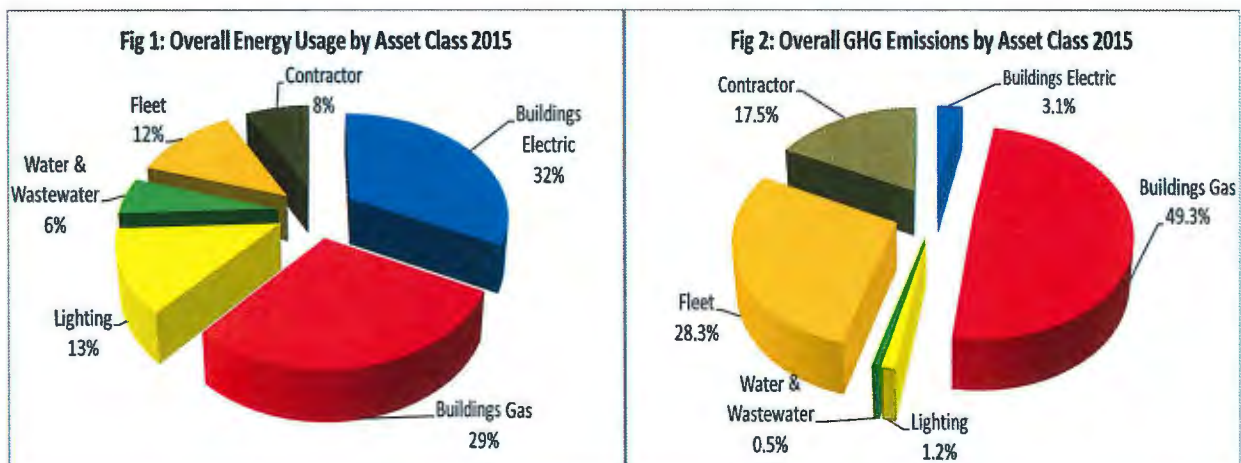
The City’s Energy Management Program (EMP) contributes to corporate energy efficiency and reduced greenhouse gas (GHG) emissions. The EMP helps support the City’s long term goal of maintaining carbon neutral corporate operations, mainly through decreased natural gas use. The continuing support and enhancement of energy efficiency and reduction initiatives is integral to maintaining the City’s Climate Action Charter commitments and overall corporate sustainability.

Energy conservation work at the City and energy related projects have cumulatively saved over 48.0 GWh of energy since 2008 (equal to the energy consumption in 1,200 Richmond single-family homes per year). In this same period, the City has avoided approximately \$2,400,000 in total operational costs and over 6,800 tonnes of greenhouse gas emissions (CO<sub>2</sub>e) (equal to emissions from 2,100 Richmond cars).

### Findings of Fact

#### Energy Statement Initiative Overview

In 2015 energy use at civic buildings accounted for a majority of total reported corporate energy use and greenhouse gas emissions (see Figure 1 and Figure 2 below).



Energy reduction and optimization projects are conducted in collaboration with multiple stakeholders, to ensure that numerous project benefits are achieved from building improvements or infrastructure replacements. Energy management best practices are the responsibility of all staff, and staff are encouraged to play an active role in identifying energy efficiency and reduction opportunities whenever possible.

Over the last five years, through a corporate staff energy engagement program, staff were encouraged to recognize behavioural ways to help reduce corporate energy use. Initiatives were informative and engaging, and included; an ugly sweater contest in the winter time to be able to turn down the thermostat, a stay light by day bright summer initiative to reduce lighting use, and various contests like a monitor shut down challenge.

The Energy Statement Initiative is the next step to further engage with corporate building users by increasing their awareness of energy use and cost. Most corporate monthly energy use billing is centralized, and any review of energy use and costs by select managers is usually done while periodically reviewing their operating budgets. There is currently no regular reporting that is provided to key stakeholders specific to the energy use and costs of the assets that they manage or program.

It has been shown that through simple awareness initiatives, energy use and costs can be reduced. In addition, many jurisdictions in North America have begun to implement benchmarking reporting requirements for buildings in order to compare building types and promote energy use reductions. An energy statement is planned to be shared with select City staff and managers quarterly, so as to inform them of the energy use and cost of an asset that they are involved with, and to provide general energy conservation tips. The energy statement initiative has been introduced to key stakeholder groups within Engineering and Public Works, Community Services and Law and Community Safety at General Manager/managers' meetings to build awareness and solicit feedback. Key staff, who will be the recipients of the quarterly energy statements, will be identified in each area. Having this stakeholder group defined and receiving this information will help to improve corporate energy use engagement opportunities for communicating energy saving initiatives and actions that the City is undertaking.

#### List of Corporate Energy Statements Locations and Infrastructure

The initiative will primarily focus on higher consuming buildings with identifiable key stakeholders, as well as key corporate infrastructure. Below is a list of currently identified locations and infrastructure that are proposed for receiving Energy Statements. This list will be adjusted as needed based on discussions with the appropriate departments.

**Buildings**

Watermania	City Centre Community Police	City Centre CC
Minoru Aquatic Centre	Steveston Community Police Station	South Arm CC
Richmond Ice Centre	Gateway Theatre	South Arm CHI
Minoru Arena	Fire Hall #1 - Headquarters	Thompson CC/CH
Works Yard Complex	Fire Hall #2 - Steveston	West Richmond CC
Steveston CC Complex	Fire Hall #3 - Bridgeport	Branscombe House
City Hall	Fire Hall #4 - Sea Island	Britannia Shipyard
City Hall Annex	Fire Hall #5 - Hamilton	London Farm Historic Site
City Hall West	Fire Hall #6 - Shellmont	Steveson Museum & PO
Corporate Storage Facility	Fire Hall #7 - Crestwood	Buemann Meeting House
Library/Cultural Centre	East Richmond CH	Terra Nova Barn
Community Safety Building		

**Infrastructure**

Alexandra District Energy Utility	Traffic Signals	Sanitary Pump Stations
City Street Lighting	Traffic Signals	PRV Stations
Pedestrian Signals	Drainage Pump Stations	

**Financial Impact**

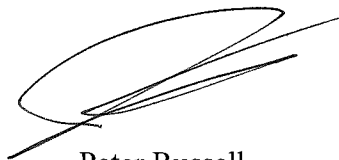
None.

**Conclusion**

The Energy Statement Initiative will help bridge the information gap between managers who program and operate City infrastructure and the associated energy use and costs. It will help to improve infrastructure optimization by increasing the number of “eyes” on corporate energy use, so that more anomalies are reported and corrected in a timely manner.



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



Peter Russell  
Senior Manager, Sustainability and District Energy  
(604-276-4130)

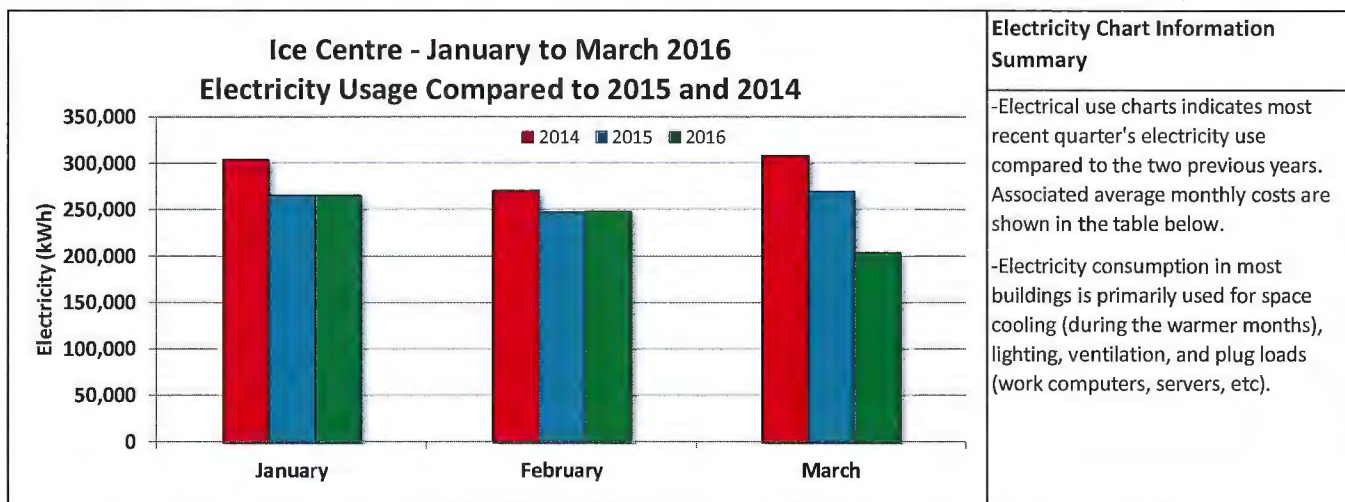
Att. 1: Energy Statement Initiative – Richmond Ice Centre Example



# Ice Centre - 14140 Triangle Rd

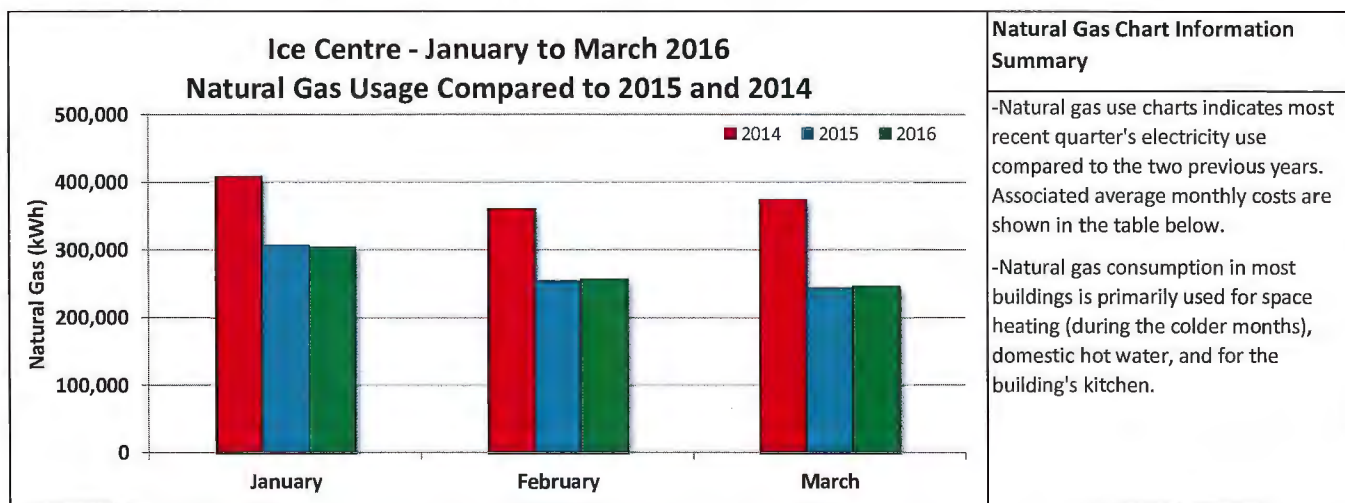
## Energy Statement - Q1 2016

Reporting Time Period: January to March 2016  
 Current Electricity Cost: \$0.095 per kWh (average)



	Jan-14	Jan-15	Jan-16	Feb-14	Feb-15	Feb-16	Mar-14	Mar-15	Mar-16
Elec Usage (kWh)	304,234	265,631	265,571	270,844	247,329	248,437	307,996	269,884	204,083
Electricity Costs (\$)	\$23,098	\$20,917	\$24,664	\$21,932	\$21,226	\$22,218	\$21,957	\$21,022	\$21,487

Current Natural Gas Cost: \$0.023 per kWh (average)



	Jan-14	Jan-15	Jan-16	Feb-14	Feb-15	Feb-16	Mar-14	Mar-15	Mar-16
Nat Gas Usage (kWh)	409,194	307,472	304,556	361,444	254,583	257,361	374,500	243,750	246,194
Nat Gas Costs (\$)	\$12,683	\$9,194	\$7,580	\$15,265	\$7,967	\$5,934	\$12,336	\$7,471	\$5,464

	Jan-14	Jan-15	Jan-16	Feb-14	Feb-15	Feb-16	Mar-14	Mar-15	Mar-16
Heating Degree Days*	423	384	413	433	296	306	344	296	299
Cooling Degree Days*	0	0	0	0	0	0	0	0	0

\*Heating or cooling degree days are the number of degrees that the average daily temperature is below or above 18°C. This measurement helps to better compare weather dependent energy use for different time periods. As an example, a month with higher heating degrees days will have a higher energy usage as well, due to the extra heating requirement.

If you have any questions concerning this information, please contact the City's Corporate Energy Manager - Levi Higgs at [lhiggs@richmond.ca](mailto:lhiggs@richmond.ca) or 604-244-1239

## Energy Conservation Tips

The City is committed to a culture of continuing improvement and optimization. Get on board and consider these energy savings tips for your building:

- Close blinds in the summer time at the end of the day (keep blinds open in the winter)
- Ensure that equipment and lighting that can be turned off is shut off when leaving a room
- If occupant comfort issues exist in a space, please contact Facilities Mgmt, refrain from using space heaters or portable fan devices
- Encourage staff and occupants to report energy related issues, e.g. fan operating 24/7, mechanical failures, lighting on 24/7, etc.



**Corporate Highlights:** Energy conservation work at the City and energy related projects have cumulatively saved over **48.0GWh** of energy since 2008 (equal to the energy consumption in 1,200 Richmond single-family homes per year). In this same period, the City has avoided approximately **\$2,400,000** in total operational costs and over **6,800 tonnes** of greenhouse gas emissions (CO<sub>2</sub>e) (equal to emissions from 2,100 Richmond cars). Since 2008, the City has received over **\$1,400,000** in external funding that has supported further energy conservation initiatives within the City.



**CONTACT INFORMATION:** The City is constantly looking to maximize opportunities to increase staff and occupant comfort, reduce operational costs, reduce the overall corporate energy use footprint, and obtain external funding support. If you have any lighting and/or equipment related upgrade projects or ideas for upgrades, please contact the Corporate Energy Manager (Levi Higgs at [lhiggs@richmond.ca](mailto:lhiggs@richmond.ca)).





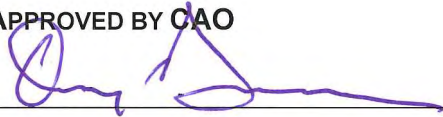
**To:** Public Works and Transportation Committee  
**From:** John Irving, P.Eng. MPA  
Director, Engineering  
**Re:** Release of BC Climate Leadership Plan

**Date:** August 24, 2016  
**File:** 10-6125-07-02/2016-  
Vol 01

**Staff Recommendation**

That a letter be sent to the Premier of BC to express the concerns regarding the Climate Leadership Plan, as identified in the report titled "Release of BC Climate Leadership Plan," dated August 24, 2016, from the Director, Engineering.

  
John Irving, P.Eng. MPA  
Director, Engineering  
(604-276-4140)

REPORT CONCURRENCE	
CONCURRENCE OF GENERAL MANAGER 	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: DW
APPROVED BY CAO 	

## Staff Report

### Origin

This report provides an update on the BC Government's Climate Leadership Plan that was released on August 19, 2016. Staff previously presented a report titled "Paris Climate Agreement and BC Climate Leadership Plan Update" at the Public Works and Transportation Meeting on March 23, 2016.

This report supports Council's 2014-2018 Term Goal #4 Leadership in Sustainability:

*Continue advancement of the City's sustainability framework and initiatives to improve the short and long term livability of our City, and that maintain Richmond's position as a leader in sustainable programs, practices and innovations.*

*4.1. Continued implementation of the sustainability framework.*

*4.2. Innovative projects and initiatives to advance sustainability.*

### Background

In 2010, Council adopted greenhouse gas (GHG) and energy use reduction targets in Richmond's Official Community Plan. These targets were the same as those committed by the Province's Climate Action Plan: to reduce community greenhouse gas (GHG) emissions 33% below 2007 levels by 2020, and 80% below 2007 levels by 2050. Richmond also committed to reducing energy consumption by 10% at the same time. However, section 2.1 of the OCP also notes that an "effective response" to climate change "will depend upon sufficient action being taken by all sectors of society, including senior governments, businesses and the general public."<sup>1</sup> The Community Energy and Emissions Plan adopted in January 2014 similarly states that the City's targeted reductions "are not achievable without larger shifts including additional Federal and Provincial regulatory change, aggressive industry development or global pricing changes for energy or carbon."<sup>2</sup>

In May 2015, the Premier announced that the Climate Leadership Team, a panel of 17 experts drawn from academia, business, First Nations, environment and community groups as well as the provincial government, had been given several tasks including "providing advice and recommendations to Cabinet" on:

- "New programs and policies required to meet B.C.'s greenhouse gas reduction targets while maintaining strong economic growth and successfully implementing the BC Jobs Plan, including the liquefied natural gas strategy;" and
- "How to further the Province's collaboration with local governments within the context of mutually-beneficial climate actions."

---

<sup>1</sup> City of Richmond Official Community Plan (Adoption: November 19, 2012), p.2-3

<sup>2</sup> Richmond Community Energy and Emissions Plan, p. iv



The Climate Leadership Team subsequently developed 32 recommendations for the Climate Leadership Plan. The Team's report emphasized the importance of increasing BC's proven carbon tax at a steady \$10 per year, starting in July 2018, as a central means of driving GHG emission reductions.<sup>3</sup> The Team also noted that since 2012, BC's GHG emissions have been increasing again, making the Province's target of 33% GHG reductions by 2020<sup>4</sup> "extremely difficult to meet." The Team recommended that a new, achievable 2030 target of 40%GHG reduction below 2007 levels be adopted, including sector-specific targets for industry, transportation, and buildings. The Team's recommendations were released by the Province in November 2015 prior to the Paris Climate Change conference.

The Province released the plan on Friday afternoon, August 19, 2016.

### **Analysis**

The Climate Leadership Plan diverges from the main recommendations of the Climate Leadership Team in the following areas:

- Emission reductions measures identified in the plan do not achieve either of the Province's legislated 2020 or 2050 GHG targets, and the plan does not reference the Team's recommendation for a new 2030 target.
- The plan contains measures estimated to produce 25 MT of GHG emission reductions by 2050<sup>5</sup>, with almost half coming from temporary forest-sector offsets such as tree-planting to reforest areas impacted by the mountain pine beetle and wildfires, rather than reducing fossil fuel emissions.<sup>6</sup>
- The plan does not include any timetable for increases to the BC Carbon Tax.

The Province has positioned the current Climate Leadership Plan as the initial version of a plan that will be updated every five years, and one which may be amended within the current year with the Province is currently working with other provinces and the federal government on carbon pricing over the coming year as part of the Pan-Canadian Climate Plan.

The plan includes a two-page summary of actions, included below as Attachment 1.

A number of the action items in the Climate Leadership Plan may create new opportunities for the City of Richmond to explore:

- *Increasing resources for BC Hydro and FortisBC energy-efficiency programs.* The City has leveraged its funds by working with BC Hydro and Fortis BC to implement corporate and community energy efficiency programs. Staff will maximize opportunities to leverage new resources.

---

<sup>3</sup> This was the only recommendation not to be unanimously supported: one Team member dissented.

<sup>4</sup> i.e. the same target as the City of Richmond

<sup>5</sup> Relative to a business-as-usual emissions trajectory.

<sup>6</sup> Since reforesting impacted areas simply speeds up regeneration, the "additionality" of these offsets declines over time.

- Supporting increased use of electric and natural gas-fuelled vehicles. Actions include support for fleet fuelling stations, and regulations promoting installation of electric vehicle charging stations,
- Enabling higher levels of energy efficiency in new construction. Provincial staff have been developing “stretch code” standards that local governments could voluntarily adopt for new development. City of Richmond staff have been directly involved in the development of these proposed building standards and will bring a report forward on this matter in 2016.
- Promoting lower-carbon materials. Actions include approving use of Portland-limestone cement in public sector infrastructure, and increasing use of B.C.’s wood products in order to store carbon and reduce emissions.
- Preparing for climate impacts. Actions include developing “guidelines for public sector operations to reduce emissions and plan for climate change adaptation”, and “strengthen[ing] the ability of communities to adapt to the impacts of climate change.”

Other Climate Leadership Plan items will indirectly assist the City’s efforts to increase energy efficiency and reduce greenhouse gas emissions:

- Increasing energy efficiency requirements for gas-fired equipment including boilers, fireplaces, air source heat pumps, space and water heating equipment.
- Shifting BC Hydro towards a 100% “clean or renewable” electricity content for domestic sales. Note that current electricity supply is 97% “clean or renewable” but is only required to achieve a 93% target. “Clean” is defined by the BC Government to include some forms of natural gas generation. There is no timeline for this action.

There are also some aspects of the Climate Leadership Plan that may present new challenges for the City:

- Leaving the Carbon Tax as is will not allow for an increase to the incentive that the City can provide through the Richmond Carbon Marketplace. Engaging with the business community on GHG emissions reduction initiatives is challenging at current incentive levels.
- “Reducing congestion ... [by] replacing the George Massey Tunnel to reduce idling; and optimizing movement through Canada’s Pacific Gateway.” The recent report to Council titled “George Massey Tunnel Replacement – Application to Agricultural Land Commission on Highway 99 Widening for Transportation, Utility and Recreational Trail Use” dated July 12, 2016 notes that the province has not provided any information to substantiate the emissions benefits claimed for the tunnel replacement, and that Metro Vancouver has identified concerns regarding the “insufficient consideration of alternatives to a 10-lane bridge and the negative impacts on transit ridership, greenhouse gas emissions, energy consumption, and air quality of the expanded roadway capacity of the Project that would promote increased single occupant vehicle usage.”

The lack of reference to the Province’s legislated 2020 GHG reduction targets, and of actions sufficient to achieve this target, is noteworthy. Attachment 2 includes an external assessment by Clean Energy Canada of the Climate Leadership Plan’s emission reduction measures relative to the 2020 and 2050 GHG emission reduction targets.

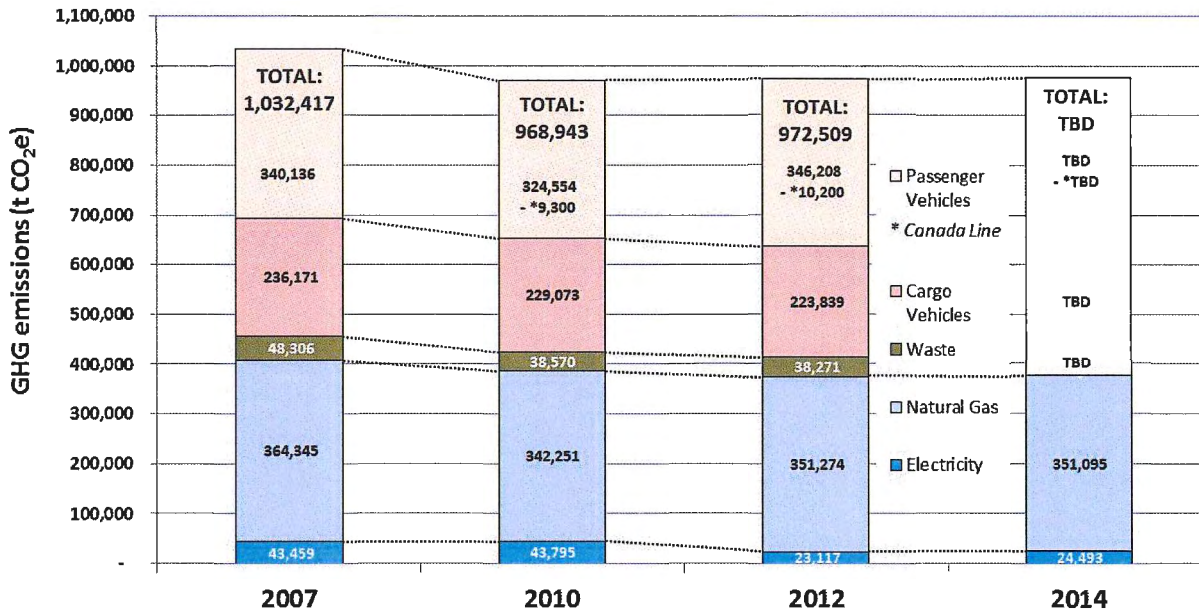
Concerns to be noted in a letter to the Premier and BC Environment Minister

Given that current efforts by the City will not be significantly augmented by new provincial measures included in the current Climate Leadership Plan to achieve its 2020 GHG reduction target, staff recommend that a letter be sent to Premier Christy Clark and Environment Minister Mary Polak stating the following points:

- That the City of Richmond signed the Climate Action Charter in 2008 at the request of the province, and adopted the GHG emissions reduction targets urged by the province, including the that of reducing emissions within the City of Richmond to 33% below 2007 levels by 2020.
- That in order to achieve the 2020 and 2050 GHG reduction targets urged by the Province, the City of Richmond has since developed a Community Energy and Emissions Plan (CEEP), has been actively implementing the policies in the CEEP, and has achieved a 6% reduction from 2007 GHG greenhouse gas emissions by 2012, even as the population of the city has grown by 6.5%.
- That in order to achieve the large additional reductions required, significant additional action must be taken now by the provincial and federal governments.
- That the measures outlined in the Climate Leadership Plan fall far short of achieving the province's legislated GHG reduction targets, and provide inadequate support to local governments diligently seeking to achieve their GHG reduction targets under the Climate Action Charter.
- That the Provincial Government work constructively with other governments to develop a strong Pan-Canadian Action Plan that provides local government with the tools and resources needed to achieve success.

Greenhouse Gas Emissions for the City of Richmond

In July 2016, the Community Energy & Emissions Inventory (CEEI) initiative of the Provincial Government provided updated greenhouse gas emissions data for the City of Richmond. This new data includes full data for the year 2012, as well as new (higher) estimates of emissions from the transportation sector, and small adjustments to other emissions data going back to 2007. If the effect of the Canada Line on Richmond travel patterns in 2010 and 2012 (as estimated by staff) is also factored in, GHG emissions for the City of Richmond in 2012 were 6.1% less than in 2007, even as the City's population grew by 6.5%. See Attachment 3 for details.



The partial information currently available out to the year 2014 indicates that overall GHG emissions from building energy use (electricity and natural gas) declined by 8%, even as Richmond’s population expanded by 10.5% between 2007 and 2014. The City has moved in the right direction, and Richmond’s performance has exceeded that of the province as a whole.

**Financial Impact**

None.

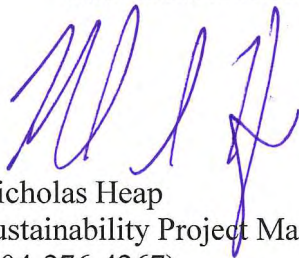
**Conclusion**

The Province’s new Climate Leadership Plan contains commitments for a number of new actions and initiatives that may assist the City’s own efforts to reduce its GHG emissions, and may be amended with additional measures in the near future as the federal-provincial negotiations on the Pan-Canadian Climate Action Plan are finalized. However, the actions outlined in the current Climate Leadership Plan are insufficient to achieve the provincial government’s legislated emission reduction targets – the same targets adopted by the City of Richmond.

Since current efforts by the City will not be significantly augmented by new provincial measures included in the current Climate Leadership Plan to achieve its 2020 GHG reduction target, staff recommend a letter be sent to Premier Christy Clark and Environment Minister Mary Polak that:

- Notes the City’s own efforts to reduce its community GHG emissions;
- Expresses concern that the measures in the Climate Leadership Plan do not achieve the province’s legislated GHG reduction targets and do not adequately support climate action by local governments; and

- Urges the provincial government to work constructively with other governments to develop a strong Pan-Canadian Action Plan that provides local government with the tools and resources needed to achieve success.



Nicholas Heap  
Sustainability Project Manager  
(604-276-4267)



Peter Russell  
Senior Manager, Sustainability and District Energy  
(604-276-4130)

NH:nh

Att. 1: Climate Leadership Plan at a Glance

Att. 2: Forecast of BC net GHG emissions with the BC Climate Leadership Plan. Clean Energy Canada, August 2016.

Att. 3: City of Richmond GHG emissions 2007-2014 (updated)

## Attachment 1: Climate Leadership Plan at a Glance

## Climate Leadership Plan at a Glance



The Climate Leadership Plan is British Columbia's next step to fight climate change. This plan highlights the first set of actions we are taking to help meet our 2050 emissions reduction target of 80 per cent below 2007 levels, while building a clean economy.

These actions are expected to reduce annual greenhouse gas emissions by up to 25 million tonnes below current forecasts by 2050 and create up to 66,000 jobs over the next ten years.



### Natural Gas

Natural gas offers an opportunity to grow British Columbia's economy, while helping other jurisdictions reduce their carbon footprint by transitioning to this cleaner burning fuel.

We are taking action in three key areas:

- Launching a strategy to reduce upstream methane emissions by 45 per cent;
- Developing regulations to enable carbon capture and storage; and
- Investing in infrastructure to power natural gas projects with British Columbia's clean electricity.

This action area is expected to reduce annual emissions by up to 5 million tonnes by 2050.



### Transportation

Transportation is essential to keep British Columbia moving, but a significant source of our emissions.

The Province is launching new actions to reduce the impact of transportation, including:

- Increasing the requirements for our Low Carbon Fuel Standard;
- Amending regulations that encourage switching commercial fleets to renewable natural gas;
- Expanding support for zero emission vehicle charging stations in buildings; and
- Expanding the Clean Energy Vehicle program to support new vehicle incentives and infrastructure.

This is in addition to our 10-year transportation plan that will:

- Invest in infrastructure to reduce congestion;
- Create new rapid transit lines; and
- Shift more public transit to low carbon fuels.

In total, this action area is expected to reduce annual emissions by up to 3 million tonnes by 2050.



## Forestry & Agriculture

Forestry and agriculture are foundational industries in British Columbia's economy. Our forests also offer incredible potential for storing carbon, so we are taking further action to:

- Rehabilitate under-productive forests;
- Recover more wood fibre; and
- Avoid emissions from burning slash.

Additionally, we are expanding a nutrient management program that will help improve the environmental performance of B.C.'s farms. This action area is expected to reduce annual emissions by up to 12 million tonnes by 2050.



## Industry & Utilities

B.C.'s industrial sectors create good jobs for British Columbians, but they also require significant amounts of energy to power production. That is why we are taking action to reduce these emissions, including:

- Developing new energy efficiency standards for gas fired boilers;
- Enabling further incentives to promote adoption of efficient gas equipment; and
- Facilitating projects that will help fuel marine vessels and commercial vehicles with cleaner burning natural gas.

We are working with utilities on their demand-side management programs to make electrification projects and natural gas equipment more efficient. We are also committing to making B.C.'s electricity 100 per cent clean or renewable, with allowances to address reliability. These actions are expected to reduce annual emissions by up to 2 million tonnes by 2050.



## Communities & Built Environment

Communities across B.C. play a critical role in the fight against climate change, particularly in the areas of buildings, waste, and planning. To build on progress already made in our communities, we are:

- Working with local governments to refresh the Climate Action Charter;
- Identifying tools to focus growth near transit corridors; and
- Supporting more resilient infrastructure.

We are also amending regulations to promote more energy efficient buildings, developing requirements to encourage net zero ready buildings, and creating a strategy to reduce waste and turn it into valuable resources. This action area is expected to reduce annual emissions by up to 2 million tonnes by 2050.



## Public Sector Leadership

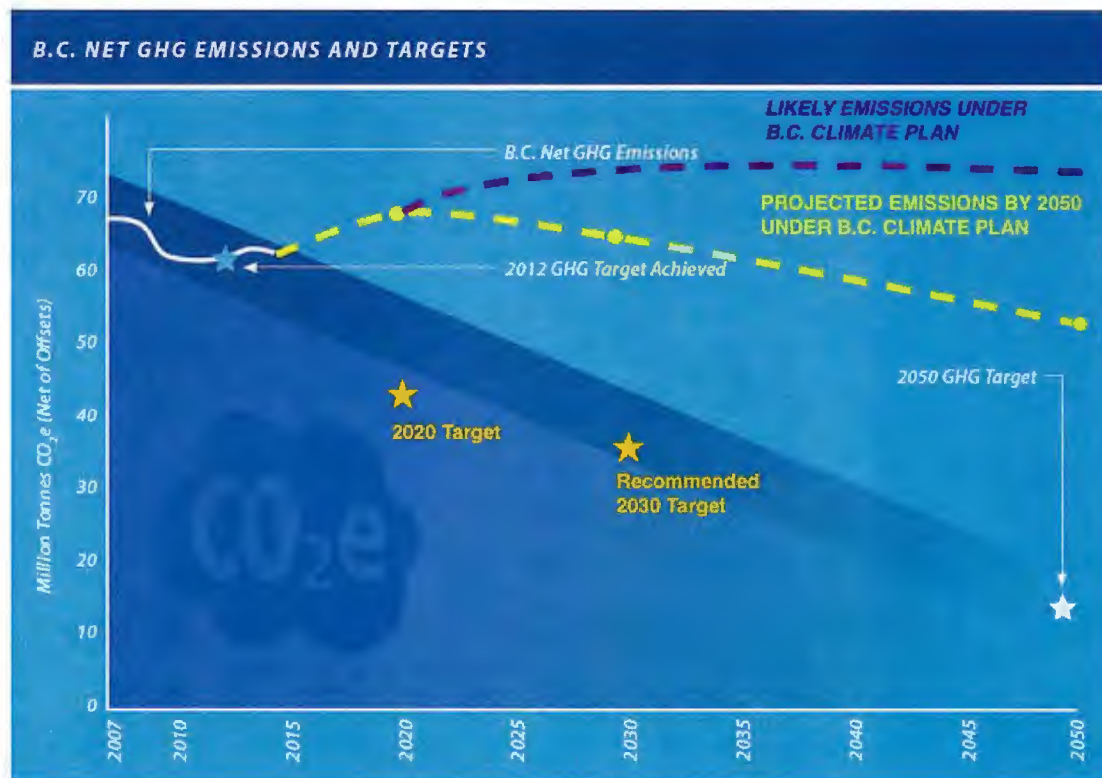
B.C.'s public sector is already leading the way in demonstrating how climate action can help reduce emissions. To continue this leadership, we are taking action with new strategies, including:

- Promoting use of low carbon and renewable materials in public sector buildings; and
- Mandating the creation of 10-year emissions reduction and adaptation plans for provincial public sector operations.

This action area is expected to reduce annual emissions by up to 1 million tonnes by 2050.

This set of 21 actions targets key areas we can act on now. The Climate Leadership Plan will be updated over the course of the following year as work on the Pan-Canadian Framework on climate action progresses.

**Attachment 2: Forecast of BC net GHG emissions with the BC Climate Leadership Plan**



Source: Clean Energy Canada, August 2016.

<http://cleanenergycanada.org/three-big-questions-about-british-columbias-climate-plan/>

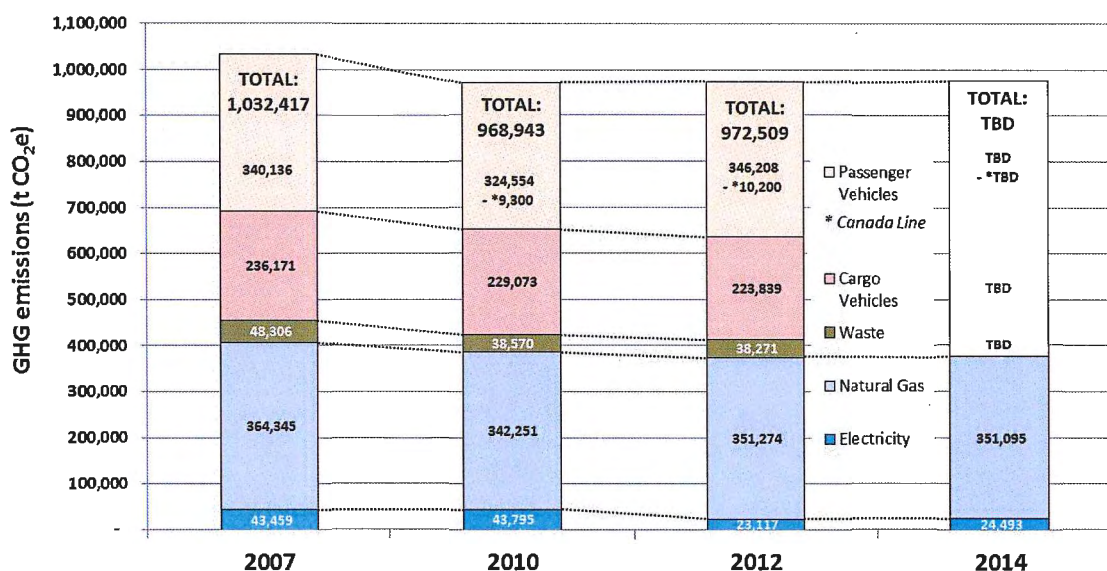


**Attachment 3: City of Richmond GHG emissions (2007-2014): updated**

The province prepares the Community Energy and Emissions Inventory (CEEI) for local governments. The latest data from CEEI, received by City of Richmond staff in July 2016, includes complete data up to 2012. The new data incorporates small adjustments to estimated emissions for all years from electricity, natural gas and waste, and significant increases in estimated emissions from the transportation sector, relative to the emissions inventory presented to Council in March 2016.<sup>7</sup>

According to the July 2016 CEEI data, total GHG emissions from the City of Richmond in 2012 were 982,709 t CO<sub>2</sub>e (i.e. 0.98 MT CO<sub>2</sub>e), a 4.9% decrease from the updated 2007 estimate of 1,032,417 t CO<sub>2</sub>e.<sup>8</sup> The new data indicates that 2012 emissions increased by only 4,466 t CO<sub>2</sub>e (i.e. less than 0.5%) from the 978,243 t CO<sub>2</sub>e emitted in 2010. Note, however, that the 5.25% reduction in emissions between 2007 and 2010 indicated by the new CEEI data is smaller than the 6% drop (based on previous CEEI data) that was reported to Council in March 2016.

In the March 2016 report to Council, staff noted that the CEEI method for calculating transportation sector emissions is unable to reflect the local shift in transportation mode share which resulted from the start of service on the Canada Line in 2009. Staff estimate that travellers shifting from automobile use to the Canada Line resulted in an emissions reduction of approximately 9,300 tonnes annually in 2010, with annual reductions increasing by a further 10% to 10,200 t CO<sub>2</sub>e in 2012 – equivalent to about 3% of total passenger vehicle emissions in Richmond.<sup>9</sup> When the GHG emission totals are amended by this amount to reflect the influence of the Canada Line, the amended results indicate that overall GHG emissions in Richmond did drop by 6% between 2007 and 2012; from 1,032,417 t CO<sub>2</sub>e to 972,509 t CO<sub>2</sub>e.



<sup>7</sup> Compare with the emissions inventory numbers presented in “Paris Climate Agreement and BC Climate Leadership Plan Update,” Public Works and Transportation Meeting, March 23, 2016.

<sup>8</sup> Not including 2,999 t CO<sub>2</sub>e of net emissions from land use change, which were reported only for the year 2012.

<sup>9</sup> Estimate derived by staff from a comparison of Richmond B-Line boardings from 2008 compared with Lulu Island Canada Line boardings during 2010 and 2012, using average trip distances from 2011 TransLink trip diary results.

The province and BC Hydro have also provided staff with 2014 data for total Richmond electricity and natural gas consumption only (i.e. the buildings sector).<sup>10</sup> These totals indicate that overall emissions for the buildings sector in 2014 increased by only 0.3% over 2012 levels, despite a population growth of 3.6% in Richmond during 2012-2014.

Between 2007 and 2014, BC Statistics estimates Richmond's population to have increased by 10.5%.<sup>11</sup> During this time, however, natural gas consumption has actually declined by 4% (a 13% decrease on a per capita basis), while electricity consumption increased by only 1% (a 9% per capita decline). The City's compact urban development policies, combined with the numerous energy efficiency programs including district energy, are influencing this result. Total community GHG emissions from natural gas also declined by 4% during this time, while GHG emissions from electricity use declined by 43% (because of higher use of zero-emission electricity generation sources during this time).<sup>12</sup> The City's success in diverting community solid waste from landfills appears to have played a significant role in declining waste sector emissions, which were down a remarkable 21% (28% on a per capita basis) between 2007 and 2012.<sup>13</sup>

---

<sup>10</sup> Excluding large industry. Data provided by CEEI to Richmond staff in December 2015 and January 2016, and by BC Hydro in January 2016.

<sup>11</sup> 2006 population: 185,818; 2014 population: 205,262; 2007-2014 increase: 10.5%. Source: [http://www.richmond.ca/\\_shared/assets/Population\\_Hot\\_Facts6248.pdf](http://www.richmond.ca/_shared/assets/Population_Hot_Facts6248.pdf)

<sup>12</sup> New data on the GHG intensity of BC Hydro's electricity means this is less than the 60% decline reported in March 2016.

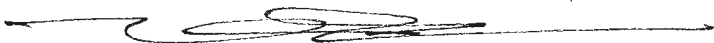
<sup>13</sup> New data from CEEI means this is considerably larger than the 9% decline between 2007 and 2010 reported in March 2016.



**To:** Public Works and Transportation Committee      **Date:** August 10, 2016  
**From:** Victor Wei, P. Eng.  
 Director, Transportation      **File:** 01-0154-04/2016-Vol 01  
**Re:** **TransLink 2017 Capital Program Cost-Share Submissions**

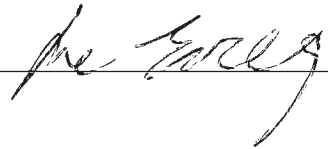

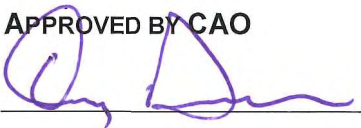
**Staff Recommendation**

1. That the submission of pedestrian, bicycle and transit facility improvement projects for cost-sharing as part of the TransLink 2017 Bicycle Infrastructure Capital Cost Sharing Regional Needs Program and Transit-Related Road Infrastructure Program, as described in the report, titled, "TransLink 2017 Capital Program Cost-Sharing Submissions" dated August 10, 2016 from the Director, Transportation, be endorsed; and
  
2. That, should the above submissions be successful and the projects receive Council's 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 2017 Capital Plan and the 5-Year Financial Plan (2017-2021) be updated accordingly.



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

Att. 1

<b>REPORT CONCURRENCE</b>		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Finance Parks Engineering Law	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> 	<b>APPROVED BY CAO</b> 

## Staff Report

### Origin

Each year, municipalities may submit road, bicycle and transit-related improvement projects for 50-50 funding consideration from TransLink's capital cost-share funding programs. This staff report presents the proposed submissions from the City to TransLink's 2017 capital cost-share programs, which support the goals of the City's *Official Community Plan*.

This report supports Council's 2014-2018 Term Goal #3 A Well-Planned Community:

3.3. *Effective transportation and mobility networks.*

This report supports Council's 2014-2018 Term Goal #5 Partnerships and Collaboration:

5.2. *Strengthened strategic partnerships that help advance City priorities.*

### Analysis

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

The MRNB Program provides 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. Since 2013, there has been no allocated funding available to municipalities from TransLink for the annual MRNB Upgrade Program due to financial constraints. To mitigate this circumstance, TransLink provides municipalities with options to transfer funding from their allocation within the Operations, Maintenance and Rehabilitation Program. This mechanism allows municipalities to transfer a funding allocation from Operations and Maintenance (operations, maintenance and non-pavement rehabilitation) to Rehabilitation (pavement rehabilitation), and then from Rehabilitation to MRNB Upgrade.

During 2013 through 2015, the City transferred funding from the Operations, Maintenance and Rehabilitation Program to the MRNB Upgrade Program (an average of \$335,000 each year over the three year period) to support the construction and installation of road and bicycle infrastructure improvements. Beginning in 2016, no further annual transfers are proposed as continuing these transfers would incur the trade-off of decreasing funding intended for MRN maintenance and rehabilitation.

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

While there is no allocated funding available for the 2017 MRNB Upgrade Program, TransLink does offer \$1.55 million on a competitive basis for bicycle infrastructure projects of regional significance through the BICCS Regional Needs Program. Due to funding constraints, municipalities are permitted to submit only one project each for TransLink 50-50 cost-share funding up to a maximum of \$250,000.

As shown in Table 1, the City will receive up to \$171,500 for the River Drive multi-use pathway as part of the 2016 BICCS Regional Needs Program.

Table 1: Project to Receive Funding from 2016 BICCS Regional Needs Program

Project Name/Scope	TransLink 2016 Funding <sup>(1)</sup>	Est. Total Project Cost
River Drive (No. 4 Road-Van Horne Way): new multi-use pathway on south side including pedestrian lighting	\$171,500	\$1,110,000

(1) The amount shown represents 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.

The City proposes to submit the same project for consideration to be included in the 2017 BICCS Regional Needs Program as the second year of two-year accrual process over the 2016 and 2017 periods with \$250,000 being requested in 2017 towards the total estimated cost of \$1,110,000.

- *River Drive Multi-Use Pathway*: construction of a two-way paved 3.0 m wide asphalt pathway for pedestrians and cyclists on the south side of River Drive between No. 4 Road and Van Horne Way including pedestrian lighting (see Attachment 1). There are currently no pedestrian facilities on this section of River Drive and the City has received requests from residents of the Tait neighbourhood for a pedestrian connection to the Bridgeport Canada Line Station. The pathway will enable a safe pedestrian connection plus enhance access to the Canada Line Bridge for cyclists.

An application to the Province of BC's 2016-2017 BikeBC program was also made seeking 50-50 cost-sharing of the total cost of \$1,110,000 total cost, which was not successful for this funding cycle. A re-application for the same project will be made to the 2017-2018 BikeBC program. Should the second BikeBC application be successful, the TransLink funding amount for 2017 would be reduced accordingly as TransLink cost-share funding guidelines require the deduction of any senior government funding with the balance then cost-shared between the City and TransLink on a 50-50 basis.

Concurrently, staff will further investigate the potential to locate a portion of the pathway on an adjacent parcel to the south owned by BC Hydro, which may enable reduced construction costs. Preliminary discussions with BC Hydro indicated concerns with setback requirements and length of tenure (i.e., no guarantee as to how long path could remain) that may render this option infeasible. Staff will continue discussions to confirm the viability of this option to reduce costs.

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

TransLink's TRRIP provides funding for roadway infrastructure facilities required for the delivery of transit services in the region. As shown in Table 2, a number of City transit-related projects will receive up to a total of \$109,250 in funding from TransLink's 2016 TRRIP. As of July 2016, Richmond has 716 active bus stops, of which 515 (71.9%) are accessible, which is an increase from 68.5% in July 2015.

Table 2: Projects to Receive Funding from 2016 TRRIP

Project Name/Scope	TransLink 2016 Funding <sup>(1)</sup>	Est. Total Project Cost
Addition of landing pad to bus stop: 26 locations	\$79,250	\$158,500
Geometric changes at southbound bus stop on No. 3 Road far side Saba Road to accommodate articulated bus	\$30,000	\$60,000
<b>Total</b>	<b>\$109,250</b>	<b>\$218,500</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.

TransLink funding of \$1.0 million is available for cost-sharing under the 2017 TRRIP. 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 2017 TRRIP are:

- ***Bus Stop Upgrades:*** continued 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), installation of bus stop benches and shelters, and construction of connecting pathways to provide access to/from the bus stop. The exact bus stop locations for these upgrades will be determined through feedback from transit users and consultation with Richmond Centre for Disability. Typically, 10 to 15 bus stops are upgraded each year at an estimated cost of \$200,000-\$250,000.

Additional projects may be identified for submission to TransLink prior to its annual program deadline (e.g., installation of advance left-turn arrows at selected intersections to facilitate turning movements for buses in order to increase service reliability).

Requested Funding and Estimated Project Costs

The total requested funding for the above 2017 submissions to TransLink’s capital cost-sharing programs is \$375,000 as summarized in Table 3, which will support projects with a total estimated cost of \$1,360,000.

Table 3: Projects to be Submitted to 2017 TransLink Cost-Share Programs

TransLink Funding Program	Project Name/Scope	Proposed City’s Portion & Funding Source for 2017	Proposed TransLink 2017 Funding <sup>(1)</sup>	Est. Total Project Cost
BICCS Regional Needs Program	River Drive (No. 4 Road-Van Home Way): new multi-use pathway on south side including pedestrian lighting	2017 Roads DCC: \$688,500	\$250,000 <sup>(2)</sup>	\$1,110,000
TRRIP	Existing Bus Stop Upgrades	2017 Transit-Related Road Improvement Program: \$125,000	\$125,000	\$250,000
<b>TOTAL</b>			<b>\$375,000</b>	<b>\$1,360,000</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) TransLink has confirmed funding of \$171,500 for 2016; anticipated total TransLink funding for the project is \$421,500.

Should the submissions be successful and the projects receive Council’s 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 2017 Capital Plan and the 5-Year Financial Plan (2017-2021) 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 3, the proposed City cost is \$125,000 for TRRIP, which will be considered during the 2017 capital budget process. The proposed City’s cost for the multi-use pathway on River Drive is anticipated to be \$688,500 based on successful cost-share applications to TransLink (i.e., \$1,110,000 total cost less two-year accrual of \$421,500 (\$171,500 in 2016 and

\$250,000 in 2017) from TransLink), which will be considered during the 2017 capital budget process. The City's cost would be reduced to \$277,500 should the 2017-2018 BikeBC application be successful (i.e., \$1,110,000 total cost less \$555,000 BikeBC funding less two-year accrual of \$277,500 from TransLink). Both projects would have operating budget impacts that would be incorporated as part of the annual budget process.

### **Conclusion**

A number of pedestrian, bicycle route and transit-related facility improvement projects are proposed for submission to TransLink's various cost-sharing programs for 2017 that would support the Council Term Goal with respect to "A Well Planned Community" as well as the goals of the Official Community Plan. Significant benefits for those using sustainable travel modes in terms of new infrastructure that provides safety and accessibility enhancements would be achieved should these projects be approved by TransLink and Council.



Joan Caravan  
Transportation Planner  
(604-276-4035)

JC:jc

Att. 1: Proposed Cost-Share Pedestrian and Cycling Infrastructure Project

### Proposed Multi-Use Pathway on River Drive







**To:** Public Works and Transportation Committee

**Date:** August 24, 2016

**From:** Victor Wei, P. Eng.  
Director, Transportation

**File:** 01-0154-04/2016-Vol  
01

**Re:** **TransLink Southwest Area Transport Plan – Results of Phase 1 Consultation**

**Staff Recommendation**

That the staff report titled “TransLink Southwest Area Transport Plan – Results of Phase 1 Consultation” providing a summary of the Phase 1 consultation results for TransLink’s Southwest Area Transport Plan, dated August 24, 2016, from the Director, Transportation, be received for information.

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

Att. 2

REPORT CONCURRENCE		
<b>ROUTED TO:</b>  Policy Planning	<b>CONCURRENCE</b>  <input checked="" type="checkbox"/>	<b>CONCURRENCE OF GENERAL MANAGER</b>  
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b>  DW	<b>APPROVED BY CAO</b>  

## Staff Report

### Origin

The development of TransLink’s Southwest Area Transport Plan was initiated in February 2015. Staff have provided regular updates on the progress of the Plan with the last report in February 2016 providing an update on the activities of the advisory committees connected to the Plan. This report provides a summary of the Phase 1 consultation results for the Plan.

This report supports Council’s 2014-2018 Term Goal #3 A Well-Planned Community:

*3.3. Effective transportation and mobility networks.*

This report supports Council’s 2014-2018 Term Goal #5 Partnerships and Collaboration:

*Continue development and utilization of collaborative approaches and partnerships with intergovernmental and other agencies to help meet the needs of the Richmond community.*

### Analysis

#### Southwest Area Transport Plan

The Southwest Area Transport Plan includes Richmond, South Delta (Ladner and Tsawwassen) and Tsawwassen First Nation and will encompass the entire multi-modal transportation network (as opposed to just transit) within the identified sub-area of the region. Based on the structure of TransLink’s Regional Transportation Strategy and the Mayors’ Council 10-Year Plan, the Plan will identify priority strategies and actions related to the themes of invest, manage and partner. Figure 1 identifies the timeline for the development of the Plan.

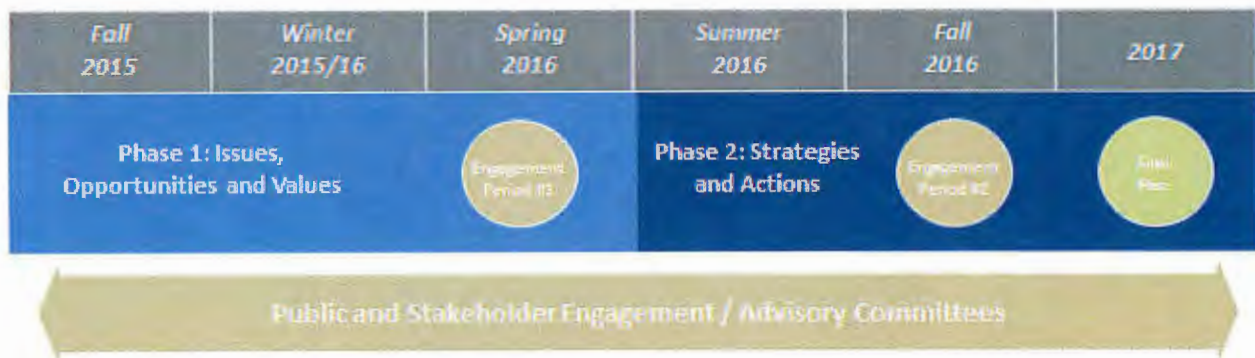


Figure 1: Timeline for Development of Southwest Area Transport Plan

#### Phase 1 Consultation Engagement

From April 11 to May 6, 2016, TransLink sought input from the public, stakeholders and municipal partners in the engagement for Phase 1: Issues, Opportunities and Values. Outreach activities to raise awareness of the consultation included:

- Local newspaper advertisements including the Richmond News, Ming Pao and Sing Tao
- Online and social media including targeted digital advertising buys, Buzzer blog, TransLink website and social media, local government websites and social media (including the City of Richmond)
- Transit shelter advertisements in Richmond on four City-owned shelters (see Figure 2) and on the Canada Line
- Email to 250+ community and business groups, distribution of 5,500 posters and postcards to community centres, libraries, non-profits, and transit hubs



Figure 2: Phase 1 Consultation Notice

Feedback was gathered via an online survey with paper surveys available at key community locations including Richmond Centre for Disability, Richmond Chinese Community Society, Minoru Place Activity Place, and the annual Capital Projects Open House at City Hall. In addition, five drop-in information sessions were held as well as an elected officials forum (attended by three Councillors), a transportation stakeholder workshop, and 10 meetings with public, technical and government advisory committees.

A total of 3,037 surveys were completed (2,923 online and 114 paper). Table 1 provides a breakdown of the survey participants by location of residence for the online responses. Overall, one-half of the participants identified themselves as residents of the southwest area of Richmond, South Delta (Ladner and Tsawwassen) and Tsawwassen First Nation.

Table 1: Survey Responses by Residence

Resident of	#	%
Richmond	773	26%
South Delta	651	22%
Tsawwassen First Nation	34	1%
Other/Did Not Answer	1,465	50%
Total	2,923	100%

### Phase 1 Consultation Results

Survey participants were asked for their opinion on ways to improve transit, cycling, walking and to motivate them to drive less. As shown in Attachment 1, the most important factors that influence their decision to use transit, cycling and walking more often and drive less often are:

- More Transit Use: more reliable service, fewer transfers during a journey and faster trip time
- More Cycling: bike paths separated from vehicle traffic, signed and marked cycling routes and secure bicycle parking at transit exchanges
- More Walking: convenient bus stop locations, safe crossings and sidewalks to bus stops
- Less Driving: better transit service, better walking network and more park and rides

Survey participants were also asked for their impression of the outreach and engagement. Most felt that they had the opportunity to provide their input, the public survey was easy to understand

and the purpose of the public survey and how input will be used was made clear. One-half of the survey participants felt they had a better understanding of the Plan by reading the website and taking the public survey.

Feedback from stakeholders identified the following key issues for Richmond: crowding on the Canada Line and extending its evening hours of operation, the need to support future growth in the City Centre and around neighbourhood centres and providing more choices for east-west and north-south transit trips that do not necessarily flow through the City Centre.

### Next Steps

The results of the public consultation and stakeholder feedback together with the background technical studies completed (i.e., land use analysis, travel market analysis, transport analyses, and customer perception) will be synthesized to provide direction for the Plan as it moves into Phase 2, which is the development of strategies and actions to address the issues and opportunities identified in Phase 1. The draft strategies will align with the three key levers of invest, manage and partner as identified in TransLink's *Regional Transportation Strategy: Strategic Framework*. Attachment 2 identifies the proposed approach for each mode in relation to these three levers. Conceptual transit, cycling and walking networks will be developed that support the strategies and potential actions identified, evaluated and prioritized.

A second round of public consultation is planned for the fourth quarter of 2016 to allow feedback on these draft strategies followed by finalization of the Plan in early 2017.

### **Financial Impact**

None.

### **Conclusion**

The development of the Southwest Area Transport Plan is proceeding on schedule and is anticipated to be completed by the first quarter of 2017. Staff will continue to provide regular updates to Council on the progress of the Plan with the next update, anticipated in Winter 2016, reporting on the draft strategies and the results of the second public consultation period.

*for* Joan Caravan  
Transportation Planner  
(604-276-4035)

Donna Chan, P.Eng., PTOE  
Manager, Transportation Planning  
(604-276-4126)

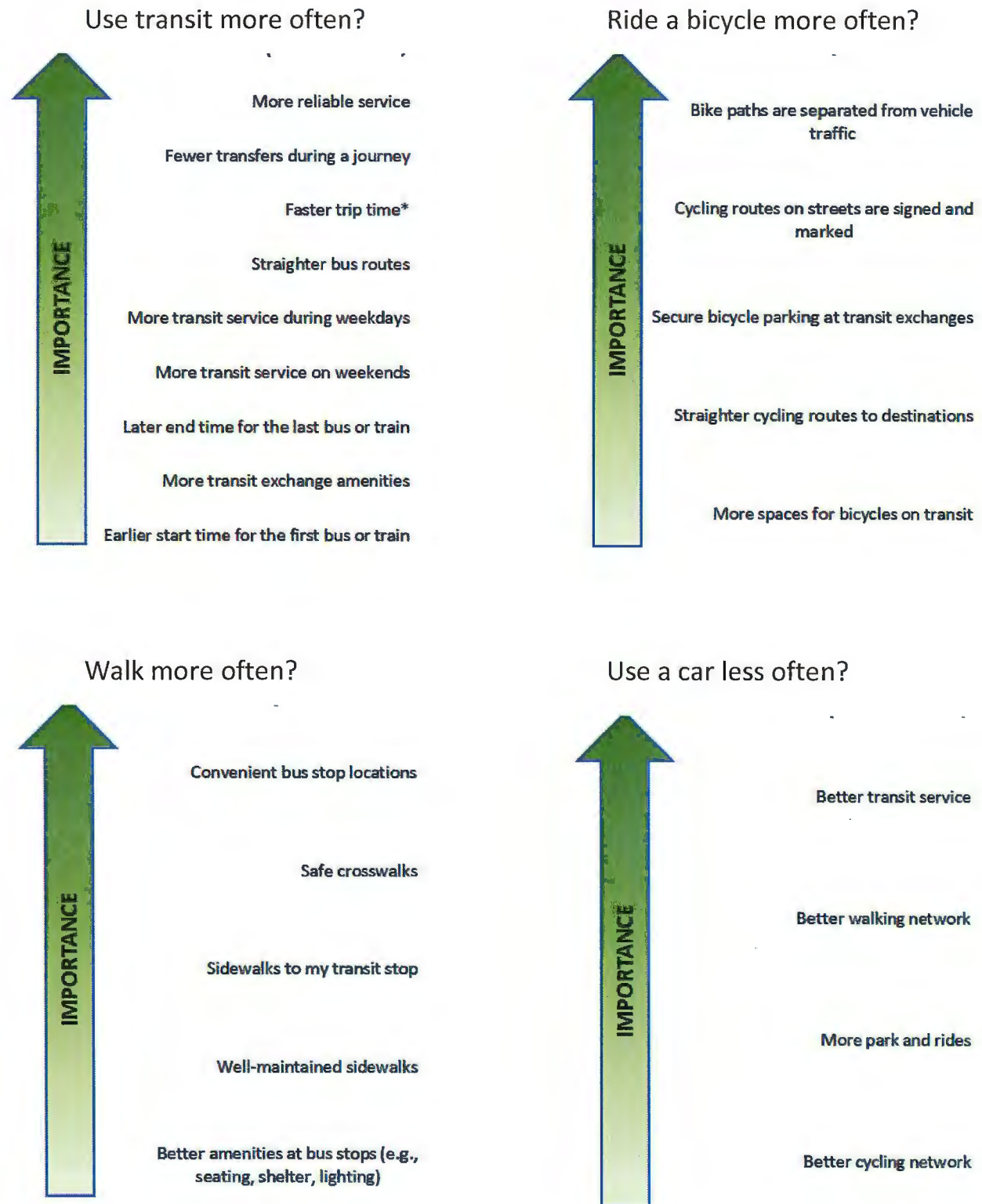
JC:jc

Att. 1: Factors that Influence Decision to use Transit, Cycling and Walking More Often and Driving Less Often

Att. 2: Proposed Approach to Develop Strategies and Actions for Each Mode

### Southwest Area Transport Plan Phase 1 Consultation Results

Q: What is important in your decision to:



## Southwest Area Transport Plan Proposed Approach to Develop Strategies and Actions for Each Mode

### Southwest ATP

#### Proposed approach for each component

	Invest	Manage	Partner
<b>Transit</b>			
Identify sub-regional priorities for investments or changes to the transit network (e.g. frequency, coverage, connections).	X	X	X
Identify transit infrastructure improvements associated with the recommended transit network (e.g. exchanges, park and rides).	X	X	
Encouragement of transit-supportive municipal infrastructure, zoning, and policies (including transit priority measures).			X
<b>Cycling</b>			
Identify sub-regional priority corridors for new cycling facilities.	X		
Identify opportunities for secure bicycle parking.	X		
Encourage municipalities to partner with TL on wayfinding.		X	
Consider bicycle-transit integration issues.		X	X
<b>Walking</b>			
Identify where walking infrastructure (e.g. sidewalks, crosswalks) is needed to support access to existing/new transit service (i.e. stations, exchanges, stops). Focus on walking access (and accessibility) to rapid transit stations and other FTN service, but also consider coverage service.	X		X
Encourage municipalities to partner with TL on wayfinding.		X	
<b>Driving</b>			
Educate the public on TL's role in funding the MRN.		X	
Accept new MRN requests for consideration, and identify sub-regional priorities for adding / deleting MRN segments.	X	X	
Identify sub-regional priorities for creating a better local street grid in Urban Centres and FTDA's.	X		
Assess issues and opportunities for parking to identify sub-regional priorities, specifically in Urban Centres and FTDA's.		X	
<b>Goods Movement</b>			
Use a checklist-style approach to identify areas to improve the coordination of regulations, bylaws or other supportive initiatives across municipalities (e.g. weight/height restrictions for roads, permitting for overweight vehicles, time of day regulations).			X
Educate on major truck routes by volume.		X	
<b>TDM</b>			
Identify opportunities for Travel Smart programming.		X	X



# City of Richmond

## Report to Committee

**To:** Public Works and Transportation Committee **Date:** August 3, 2016  
**From:** Victor Wei, P. Eng. **File:** 02-0775-50-5658/Vol  
 Director, Transportation 01  
**Re:** **Recommendation to Award Contract 5658P - Traffic Signal System Maintenance, Upgrading and Installation**

### Staff Recommendation

1. That Contract 5658P – “Traffic Signal System Maintenance, Upgrading and Installation” be awarded to Cobra Electric Limited in an amount not to exceed approved budgets and that staff be authorized to extend the contract in one-year increments up to five years in total and, if required, extend the contract beyond the five-year term on a month-by-month basis until such time a new contract can be advertised and awarded; and.
2. That the Chief Administrative Officer and General Manager, Planning and Development, be authorized to execute the above contract.

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 Information Technology Engineering	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> DW	<b>APPROVED BY CAO</b> 

## Staff Report

### Origin

Contract T.3398 (Maintenance, Upgrading and Installation of Traffic Signal Systems in Richmond) allows the City to retain a contractor to provide 24-hour traffic signal maintenance, upgrading and installation works. Approximately 335 signalized traffic devices, over 140 kilometres of communications cable and several wireless radio systems are included in this contract. The current contract between the City and Cobra Electric Limited expired on May 31, 2014 and is being extended on a month-to-month basis with no change in unit pricing. The procurement process to obtain a new contract was temporarily deferred to accommodate the relocation of the Traffic Management Centre from the site of Fire Hall No. 1 to the City Hall Annex.

Following the completion of a Request for Proposals process to identify the lowest priced and most qualified contractor for a new contract, staff have identified Cobra Electric Limited as the preferred proponent and are seeking Council approval to award the new contract.

This report supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

*Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.*

*6.1. Safe and sustainable infrastructure.*

*6.2. Infrastructure is reflective of and keeping pace with community need.*

### Analysis

#### Contract 5658P – Traffic Signal System Maintenance, Upgrading and Installation

The scope of work comprises the maintenance of traffic signals and troubleshooting controllers, cabinets, electronic control equipment, copper and fibre optic data communications cable networks, and wireless networks. The work to be performed under this contract would involve the provision of specialized skilled labour and equipment to perform a satisfactory and professional job of maintaining, upgrading and installing sophisticated traffic signal components and portions of a City-owned conduit, cable and wireless voice/data communications infrastructure.

The City's Purchasing section within the Finance Department worked with the Transportation Department to conduct the Request for Proposals process to identify the most qualified and experienced contractor for the new contract. Contract 5658P for Traffic Signal System Maintenance, Upgrading and Installation was issued to the marketplace by the City on May 25, 2016 with a closing date of June 13, 2016. The following two proposals were received:

- Cobra Electric Limited: \$1,601,249.00
- Crown Contracting Limited: \$1,934,743.00



Staff evaluated the proposals based on the criteria of quality, service, price, and qualifications and experience in signal maintenance, communications, upgrade, and installation.

The lowest and most qualified bidder, Cobra Electric Limited, currently or has recently provided traffic signal maintenance work for the City of Richmond as well as a number of local municipalities including North Vancouver (City and District), West Vancouver, Surrey, Burnaby, Coquitlam, Langley (Township and City), Port Moody, Mission, and Delta. Cobra Electric Limited has been Richmond’s traffic signal maintenance contractor since 1985 and is familiar with Richmond’s traffic signal physical plant.

Crown Contracting Limited has experience in traffic signal installation, including a number of projects in Richmond, but has limited maintenance experience and resources as required by Contract 5658P. Staff have considerable practical experience in working with both Cobra Electric Limited and Crown Contracting Limited on traffic signal related works and are thus familiar with their respective capabilities to meet the needs of Contract 5658P.

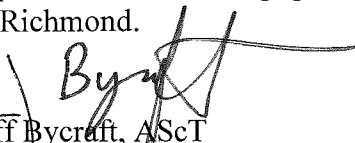
The contract would be configured to allow the City to maintain the existing level of service and allow for unit prices to be considered for modification by a Price Index Adjustment Factor (PIAF) consistent with the British Columbia Ministry of Transportation’s Annual Electrical Adjustment Calculation for Provincial electrical maintenance contracts.


**Financial Impact**

The maintenance, upgrade and installation work for this contract would be funded from several sources in the approved 2016 Operating and Capital Budgets (Traffic Signal Maintenance) and (Traffic Signal Communications)) and the proposed 2017 Operating and Capital Budgets, which are subject to Council approval. The amount of \$1,601,249.00 shown in the preferred proponent’s bid price is not a fixed number that is used to guarantee payment to the contractor as the proposed contract is based on the actual work performed as directed by the City throughout the year. The amount shown in the proposal was used only for the purpose of defining an estimated scope of work for the proponents to provide quotes. As such, staff would ensure that the actual work done would not exceed the approved budget(s).

**Conclusion**

The lowest and most qualified bidder, Cobra Electric Limited, has been Richmond’s traffic signal maintenance contractor since 1985, covering multiple signal maintenance contracts. Cobra Electric Limited has given the City quality and cost-effective services over this time. Of the two proposals received, Cobra Electric Limited represents the best value and has the required experience, staff and equipment resources to maintain, upgrade and install traffic signal systems in Richmond.

  
Jeff Bycraft, ASCT  
Supervisor, Traffic Signal Systems  
(604-276-4031)  
JC;jc

  
Joan Caravan  
Transportation Planner  
(604-276-4035)



# City of Richmond

## Report to Council

**To:** Public Works and Transportation Committee      **Date:** September 6, 2016  
**From:** John Irving, P.Eng. MPA      **File:** 10-6060-01/2016-Vol  
 Director, Engineering      01  
**Re:** **Drainage Box Culvert Replacement at No. 2 Road and Walton Road**

### Staff Recommendation

1. That funding of \$2,000,000 from the Drainage Utility Reserve be included as an amendment to the 5 Year Financial Plan (2016-2020) to complete the Drainage Box Culvert Replacement Project at No. 2 Road and Walton Road.
2. That the Chief Administrative Officer and General Manager, Engineering and Public Works, be authorized to award the Drainage Box Culvert Replacement Project at No. 2 Road and Walton Road and execute an agreement with respect thereto.

John Irving, P.Eng. MPA  
 Director, Engineering  
 (604-276-4140)

REPORT CONCURRENCE		
<b>ROUTED TO:</b>	<b>CONCURRENCE</b>	<b>CONCURRENCE OF GENERAL MANAGER</b>
Sewerage & Drainage Finance	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> Dw	<b>APPROVED BY CAO</b> 

## **Staff Report**

### **Origin**

In August 2016, staff were advised that ground settlement was occurring in the northbound vehicle lanes along No. 2 Road near Walton Road. Further investigation has indicated that the settlement is due to a failing drainage box culvert. While the system is still operational, it is necessary to replace an approximate 50 meter section of drainage box culvert along No. 2 Road to prevent further ground settlement and maintain public safety.

Two lanes (left turn lane and one northbound lane) have been shut down to vehicular and pedestrian traffic as a precautionary measure until the drainage box culvert can be replaced.

This report supports Council's 2014-2018 Term Goal #6 Quality Infrastructure Networks:

*Continue diligence towards the development of infrastructure networks that are safe, sustainable, and address the challenges associated with aging systems, population growth, and environmental impact.*

### **Analysis**

There are approximately 629 kilometers of drainage mains owned and maintained by the City. The drainage network collects storm water throughout the City and discharges it directly to the Fraser River.

In August 2016, ground settlement in the northbound lanes of No. 2 Road was reported to staff. Subsequent inspection of the drainage box culvert revealed settlement, cracking and infiltration through an approximate 50 meter section near Walton Road.

While the drainage box culvert remains operational, the replacement of approximately 50 meters of 3.4 meter x 1.37 meter drainage box culvert is necessary to address the settlement issues and prevent further damage to the City's Major Road Network and maintain public safety at the earliest possible opportunity. The estimated cost to complete this emergency replacement is \$2,000,000.

Staff have requested quotations from three (3) qualified contractors that are able to begin work immediately and have experience in constructing deep drainage box culverts. Staff are requesting approval to award the emergency replacement work to the best qualified contractor through an award memo to the Chief Administrative Officer and General Manager, Engineering & Public Works.

### **Financial Impact**

The total estimated capital cost is \$2,000,000 and is proposed to be funded from the Drainage Utility Reserve. There is \$30,651,673 remaining in the Drainage Utility Reserve.

### Conclusion

An approximate 50 meter section of drainage box culvert at No. 2 Road near Walton Road has settled and is experiencing cracking and infiltration. It is necessary to replace this section of drainage box culvert on an emergency basis to prevent further ground settlement and maintain public safety.



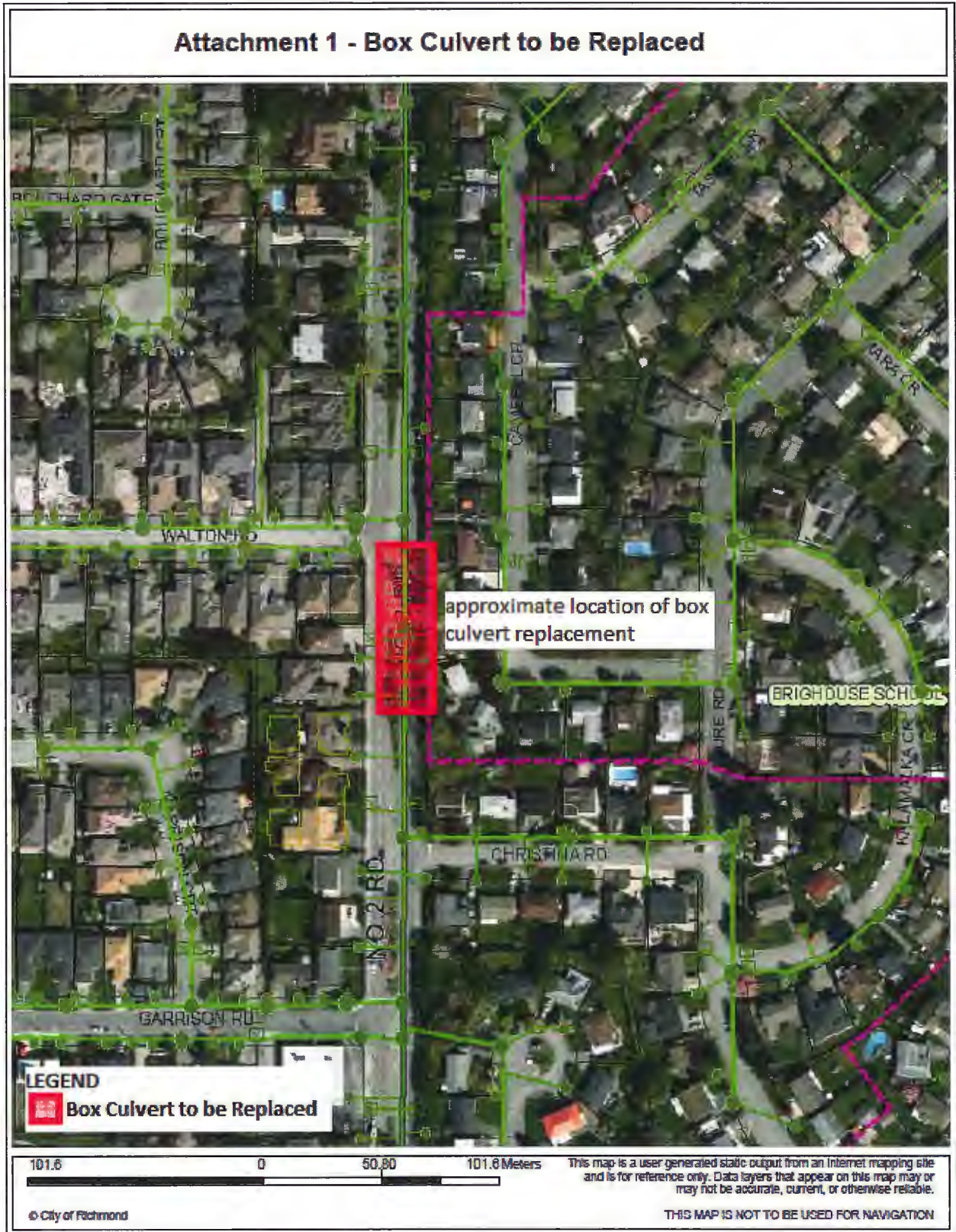
Lloyd Bie, P.Eng  
Manager, Engineering Planning  
(604-276-4075)



Corrine Haer, EIT  
Project Engineer  
(604-276-4026)

LB:ch

Att. 1: Map: Box Culvert to be Replaced





**To:** Public Works and Transportation Committee

**Date:** September 7, 2016

**From:** John Irving, P.Eng. MPA  
Director, Engineering

**File:** 10-6650-02/2016-Vol  
01

**Re:** **Water Meter Program Update**

**Staff Recommendation**

That staff bring forward options and recommendations for mandatory Multi-Family water metering for consideration through the Capital budget process.

John Irving, P.Eng. MPA  
Director, Engineering  
(604-276-4140)

REPORT CONCURRENCE		
<b>ROUTED TO:</b>  Finance Water Services	<b>CONCURRENCE</b>  <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<b>CONCURRENCE OF GENERAL MANAGER</b>  
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b> DW	<b>APPROVED BY CAO</b> 

## Staff Report

### Origin

At the April 22, 2013 Regular Council Meeting, Council adopted the following motion:

*That a universal water metering program, as outlined in Option 3 in the staff report titled Water Meter Program Update from the Director, Engineering, dated April 5, 2013, be implemented for single-family dwellings, starting in 2014, with a five-year completion target.*

At the October 28, 2013 Regular Council Meeting, Council adopted the following motion:

*That the Universal Single-Family Water Meter Program be contracted to Neptune Technology Group (Canada) Ltd. for a six-month term with a City option to extend to a three-year term.*

This report outlines the status of the residential water metering programs and provides recommendations for universal deployment of a Fixed Based Network for meter reading.

### Analysis

Water metering provides Richmond residents with a more equitable way of paying for their water use when compared to the flat rate, and supports the Official Community Plan (OCP) objective to pursue water demand management strategies and continue water conservation initiatives.

#### Single-Family Water Metering

Water meters have been installed for 93% (25,448) of single-family dwellings (excluding residential addresses zoned as agricultural) through the volunteer and mandatory water meter programs. In 2015, 86% of these customers saved money with a metered service when compared to the flat rate with an average annual savings of \$417.60 with water and sewer costs combined.

In April 2013, Council adopted universal water metering for single-family dwellings over the course of five years beginning in 2014. Since the beginning of the Universal Water Metering Program, 71% of the water meter installations were performed by the contractor (Neptune Technology Group Ltd.) while 29% were performed by City crews. As of July 2016, there are 1,791 single-family dwellings that are not metered (excluding residential addresses zoned as agricultural). It is estimated that an additional 500 water meters will be installed by the end of 2016 and the remaining 1,300 will be installed in 2017.

The three-year water metering installation contract with Neptune will expire on December 31, 2016. City crews have sufficient staffing capacity to complete the Universal Single-Family Water Meter Program in one year, within the original program timeline approved by Council. The average cost for City crews to install a water meter is competitive with Neptune's contract

price. Given the small number of installations remaining, staff will complete the remaining single-family water meter installations using City crews.

The next steps for program implementation would include the following:

- **Capital Project Submission.** A Capital project submission for installation of the remaining 1,300 single-family water meters will be included as part of the 2017 Capital budget process for council consideration.
- **Communications.** Unmetered single-family properties would receive mailed pamphlets in multiple languages to inform them of the impending water meter installation, as well as educational content on water meters and water conservation. This is consistent with the public communication program for the universal single-family water metering program to date.
- **Utility Rates.** Utility budgets and rates will be developed for the upcoming year and brought forward to Council in the 4<sup>th</sup> quarter. Increases from Metro Vancouver's wholesale water rate as well as labour and materials cost increases will result in increased costs to the water utility. As more dwellings become metered, small adjustments to the metered rate will be recommended in order to balance the budget.

### ALR Lands

Agriculture remains an important part of Richmond's economy and community. Over 39% of the City's lands are designated as Agricultural Land Reserve (ALR). The ALR has a total of 828 single-family homes, 42% of which are metered.

Of the remaining single-family homes on flat rate in the ALR, 155 are classified as farm by BC Assessment. Farms, as per Bylaw No. 5637, require a back flow preventer to be installed. These devices will be installed as part of the universal single-family water meter program at no direct cost to the homeowner. However, the homeowner will own and be responsible for the maintenance of the back flow preventer thereafter.

### Duplex Water Metering

There are currently 524 duplex units in Richmond that do not have a water meter. Duplexes are not included in the universal metering program, as most duplexes in Richmond share one water service and have interconnected plumbing. In order to meter these units, private plumbing work must be done within the dwelling.

Existing duplexes are metered on a voluntary basis. The volunteer program provides up to \$3,000 to homeowners to separate the plumbing. New duplexes are metered on a mandatory basis.

Due to the plumbing work required within the dwelling, staff recommend to continue to exclude duplexes in the mandatory water meter program. Water meters will still be installed for duplex dwellings on a voluntary basis.



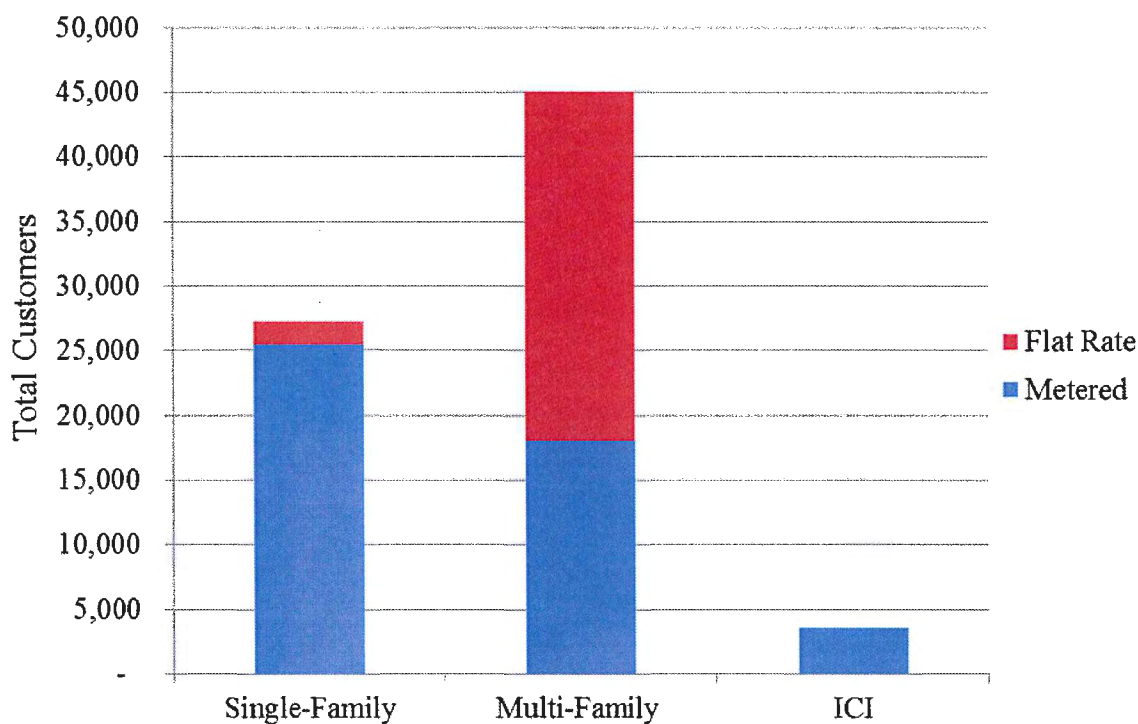
Multi-Family Water Metering

As of July 2016, 40% of the multi-family units have been metered. In 2015, 98% of metered multi-family complexes saved money, on average realizing a 37% savings compared to the flat rate.

Water meters have been mandatory for new multi-family dwellings since 2005. To date, there have been 184 mandatory water meters installed, comprising of 9,353 units and 143 voluntary water meters installed, comprising of 8,702 units. Interest in the volunteer water metering program for multi-family dwellings is in decline. In 2016, there were only four multi-family complexes that inquired about a water meter installation and only one complex approved the installation.

The Industrial/Commercial/Institutional (ICI) sector is universally metered for water and single-family dwellings will be universally metered by the end of 2017. Figure 1 identifies the number of single-family, multi family and ICI units that are metered.

Figure 1: Number of Flat Rate vs. Water Metered Customers by Sector



The multi-family sector, representing approximately 1/3 of City’s water consumption, is the largest sector of unmetered water use. As the single-family universal metering program reaches completion in 2017, resources will be available to address universal metering of multi-family dwellings.

Staff will review potential universal multi-family water meter program benefits and implications and bring forward a report with options and recommendations for Council’s consideration.

Staff will also review two potential incentive programs to increase the number of volunteer complexes.

The multi-family water meter installation cost incentive will be reviewed and harmonized with the water meter installation cost for single-family dwellings. Currently the multi-family installation cost incentive lags single-family installation cost and is a possible deterrent to potential multi-family volunteers. Updated water meter incentive rates will be brought to Council for consideration as part of the Utility Rates process this fall.

Another possible deterrent for potential multi-family volunteers is property side leakage. Some older multi-family complexes may have plumbing that is in disrepair and has significant water leakage. The cost of leaked water could be a deterrent to volunteer metering and repair costs are a possible deterrent to fixing the leaks. Staff will review potential leak audit and repair incentive programs that are cost neutral for the City and provide cost sharing for plumbing repair or upgrades in multi-family complexes where there is substantial leakage. Staff will report the findings of this review for Council's consideration in a subsequent report.

#### Fixed Based Meter Reading

The City currently has three methods of water meter reading: touchpads, drive-by and fixed based. Each touchpad must be read manually on site by physically touching the meter with a meter reader. For drive-by readings, a vehicle drives by the meter collecting the radio signal. Meters on the Fixed Based Network are continuously read through radio towers called gateways.

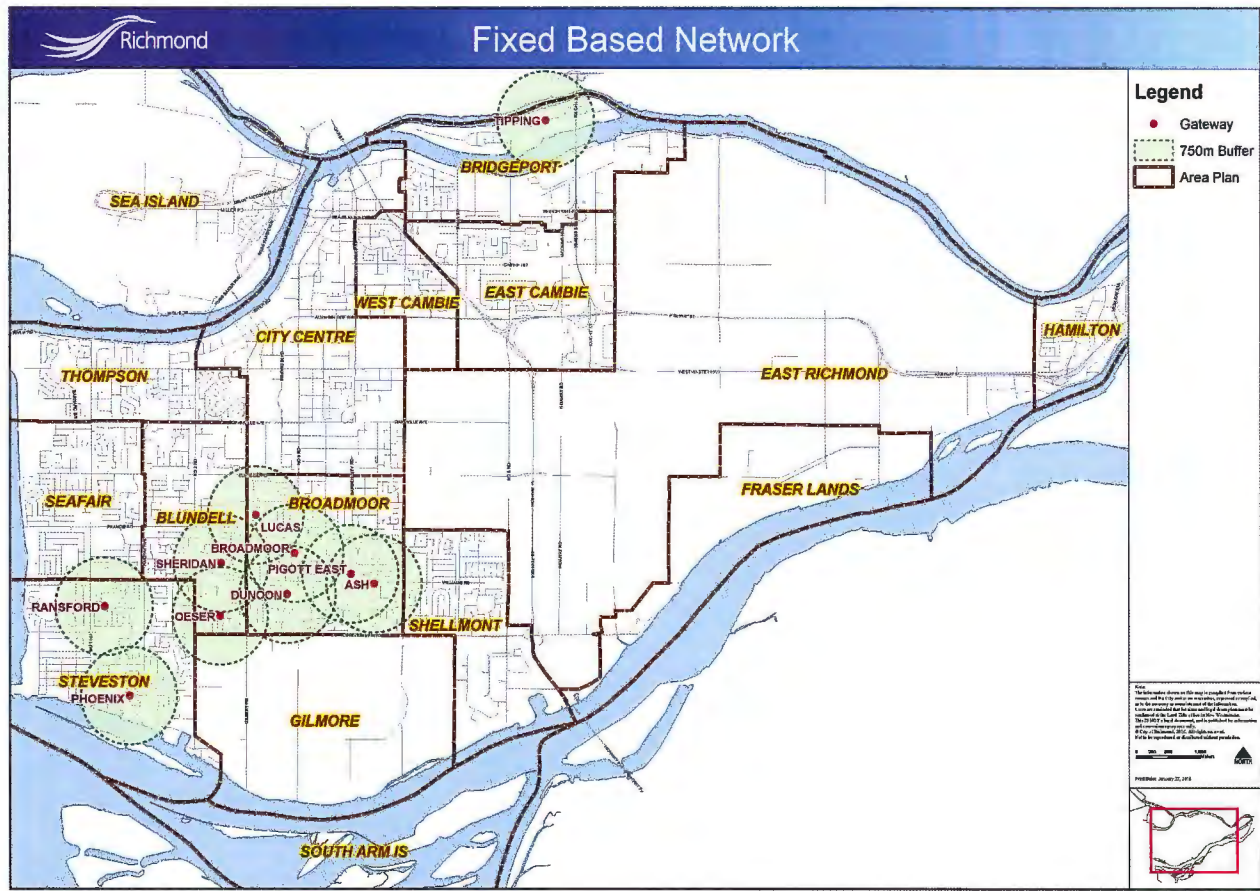
In 2014, Richmond introduced a pilot project for Fixed Based Meter Reading. Currently, 10 gateways have been installed and approximately 5,000 meters are being read, approximately 11% of all Richmond water meters. Staff have tested the Fixed Based system and have been successful in integrating the Fixed Based Network software with the City's billing system.

Benefits of the Fixed Based Network include:

- Real time consumption data which allows staff to help the customer identify causes of leaks and water consumption habits;
- Up-to-date consumption data which will improve revenue assessment throughout the year and enhance revenue forecasting;
- Reduced Greenhouse gas emissions through a reduction in vehicle use; and
- More efficient use of staff time; time currently spent manually reading meters can be re-directed to more value-added services such as assisting residents with identifying leaks and assistance in leak repair.

Figure 2 shows the gateways currently installed and the areas that can be read through the Fixed Based water meter reading network.

Figure 2: Current Fixed Based Water Meter Reading Network



An additional 36 gateways are required for universal implementation in urban areas of the City. A capital project to automate water meter data collection will be submitted for Council consideration as part of the 2017 Capital program.

East Richmond, Fraser Lands and Gilmore areas have excluded from the urban areas. Staff recommend to continue reading these areas manually due to the low density of water connections.

Based on the successes of the Fixed Base Network trial and the significant benefits and efficiencies, staff will recommend that the Fixed Based Network be universally deployed in the urban areas of the City.

The City has approximately 10,000 residential touchpad meters and 1,750 industrial, commercial and institutional (ICI) touchpad meters. These meters require physical contact with the water meter reading equipment and cannot be read by the Fixed Base Network. This equipment will be changed out through existing maintenance and capital programs over the next 10 years with no additional funding required.

### Customer Portal

Should Council choose to move forward with implementation of the Fixed Based Network Meter Reading, the next steps could include the introduction of a customer portal. The customer portal will provide real time information for customers regarding their water consumption.

Notifications can be set if a leak is detected or if there is water usage when the customer is not at home. Customers will also become more aware of their consumption habits which will aid in overall reduction of water usage. The customer portal will contribute to achieving the City's customer service objectives.

### **Financial Impact**

None.

### **Conclusion**

Water meters have been installed for 93% (25,448) of single-family dwellings (excluding residential addresses zoned as agricultural) through the volunteer and mandatory programs. Staff recommend completing the Universal Single-Family Water Meter Program with City crews.

The interest in the volunteer water meter program for multi-family dwellings is declining. Staff will further review a mandatory multi-family water meter program and bring forward a report with mandatory multi-family water metering options for Council's consideration.

Fixed Based Network water meter reading has significant benefits including real time consumption information, notification of leaks and environmental benefits. Staff will recommend a universal deployment of the Fixed Based Network to automate water meter data collection in urban areas of the City through the 2017 Capital budget process.



Lloyd Bie, P.Eng.  
Manager, Engineering Planning  
(604-276-4075)



Pratima Milaire, EIT.  
Project Engineer  
(604-276-4039)

LB:pm