



City Council

Council Chambers, City Hall
6911 No. 3 Road

Tuesday, May 23, 2017
7:00 p.m.

Pg. # ITEM

MINUTES

1. ***Motion to:***

- (1) *adopt the minutes of the Regular Council meeting held on May 8, 2017* (distributed previously);
- CNCL-14 (2) *adopt the **minutes** of the Regular Council meeting for Public Hearings held on May 15, 2017; and*
- CNCL-40 (3) *receive for information the Metro Vancouver **'Board in Brief'** dated April 28, 2017.*



AGENDA ADDITIONS & DELETIONS

PRESENTATIONS

- (1) Rebecca Tunnacliffe, CEO of the BC Recreation and Parks Association, to present the Park Excellence Award for the Terra Nova Adventure Play Environment.
- (2) Chris Siddaway, President, Recreation Facilities Association of BC to present the Bill Woycik Outstanding Facility Award for City Centre Community Centre.
- (3) Geoff Cross, Vice President, Planning and Policy, TransLink, to present the Southwest Area Transport Plan – Phase 2 Consultation.

COMMITTEE OF THE WHOLE

2. *Motion to resolve into Committee of the Whole to hear delegations on agenda items.*



3. Delegations from the floor on Agenda items.

PLEASE NOTE THAT FOR LEGAL REASONS, DELEGATIONS ARE NOT PERMITTED ON ZONING OR OCP AMENDMENT BYLAWS WHICH ARE TO BE ADOPTED OR ON DEVELOPMENT PERMITS/DEVELOPMENT VARIANCE PERMITS – ITEM NO. 23.

4. *Motion to rise and report.*



RATIFICATION OF COMMITTEE ACTION

CONSENT AGENDA

PLEASE NOTE THAT ITEMS APPEARING ON THE CONSENT AGENDA WHICH PRESENT A CONFLICT OF INTEREST FOR COUNCIL MEMBERS MUST BE REMOVED FROM THE CONSENT AGENDA AND CONSIDERED SEPARATELY.

CONSENT AGENDA HIGHLIGHTS

- Receipt of Committee minutes
- Canada 150 Legacy Public Art Concept Proposal
- Solar Energy Systems Project for Fire Hall No. 1
- Affordable Housing Strategy Update – Draft Policy Review and Recommendations
- Land use application for first reading (to be further considered at the Public Hearing on June 19, 2017):
 - 9560 Pendleton Road – OCP Amendment from Park to Neighbourhood Residential and Rezone from SI to ZS28 (Dava Developments Ltd. – applicant)
- Richmond Response: Metro Vancouver Regional Growth Strategy Amendment Bylaw No. 1243, 2017 and RGS Performance Monitoring Guide

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- Richmond Response: Port of Vancouver Proposed Industrial Designation of 1700 No.6 Road
- Richmond Response: YVR Proposed Phase 2 North Runway Safety End Areas (RSEA) Options
- BC Energy Step Code for New Private Buildings
- Award of Contract 5757 EOI – Recycling Depot Container Collection and Recycling Services
- Amendment to Water Use Restriction Bylaw
- 2016 Annual Water Quality Report
- 2016 Climate Action Revenue Incentive Program and Carbon Neutral Progress Report

5. *Motion to adopt Items No. 6 through No. 18 by general consent.*

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Consent
Agenda
Item

6. COMMITTEE MINUTES

That the minutes of:

- CNCL-48 (1) the **Community Safety Committee** meeting held on May 9, 2017;
- CNCL-52 (2) the **General Purposes Committee** meeting held on May 15, 2017;
- CNCL-58 (3) the **Planning Committee** meeting held on May 16, 2017; and
- CNCL-64 (4) the **Public Works and Transportation Committee** meeting held on May 17, 2017;

be received for information.

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Consent
Agenda
Item

7. CANADA 150 LEGACY PUBLIC ART CONCEPT PROPOSAL

(File Ref. No. 11-7000-09-20-232) (REDMS No. 5366639 v. 4)

CNCL-68

See Page CNCL-68 for full report

GENERAL PURPOSES COMMITTEE RECOMMENDATION

That the concept proposal and installation for the Canada 150 Legacy public artwork by artists Henry Lau and David Geary, as presented in the report titled “Canada 150 Legacy Public Art Concept Proposal,” dated April 12, 2017, from the Director, Arts, Culture and Heritage Services, be endorsed.

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Consent
Agenda
Item

8. **SOLAR ENERGY SYSTEMS PROJECT FOR FIRE HALL NO.1**
(File Ref. No. 10-6125-05-01) (REDMS No. 5325224 v. 25)

CNCL-83

[See Page CNCL-83 for full report](#)

GENERAL PURPOSES COMMITTEE RECOMMENDATION

- (1) *That the report titled “Solar Energy Systems Project for Fire Hall No. 1” dated April 9, 2017 from the Director, Engineering, be approved in the amount of \$450,000; and*
- (2) *That the 5 Year Financial Plan (2017-2021) be amended accordingly.*



Consent
Agenda
Item

9. **AFFORDABLE HOUSING STRATEGY UPDATE – DRAFT POLICY REVIEW AND RECOMMENDATIONS**
(File Ref. No. 5383915) (REDMS No. 5383915 v. 22)

CNCL-88

[See Page CNCL-88 for full report](#)

PLANNING COMMITTEE RECOMMENDATION

That the recommended Affordable Housing Strategic approach and policy actions, as outlined in the staff report titled, “Affordable Housing Strategy Update – Draft Policy Review and Recommendations,” be approved for the purpose of key stakeholder consultation and the results of the consultation be reported back to Planning Committee.



Consent
Agenda
Item

10. **APPLICATION BY DAVA DEVELOPMENTS LTD. TO AMEND ATTACHMENT 1 TO SCHEDULE 1 OF THE OFFICIAL COMMUNITY PLAN AT 9560 PENDLETON ROAD FROM “PARK” TO “NEIGHBOURHOOD RESIDENTIAL”, AND FOR REZONING AT 9560 PENDLETON ROAD FROM “SCHOOL & INSTITUTIONAL USE (SI)” ZONE TO “SINGLE DETACHED (ZS28)” – PENDLETON ROAD (WEST RICHMOND) ZONE**
(File Ref. No. 12-8060-20-009661/9662; CP 16-733600; RZ 16-732627) (REDMS No. 5193684)

CNCL-192

[See Page CNCL-192 for full report](#)

PLANNING COMMITTEE RECOMMENDATION

- (1) *That Official Community Plan Bylaw OCP Bylaw 9000, Amendment Bylaw 9662, to re designate 9560 Pendleton Road from "Park" to "Neighbourhood Residential" in Attachment 1 to Schedule 1 of Official Community Plan Bylaw OCP Bylaw 9000, be introduced and given first reading;*

- (2) *That Bylaw 9662, having been considered in conjunction with:*
- (a) *The City’s Financial Plan and Capital Program; and*
- (b) *The Greater Vancouver Regional District Solid Waste and Liquid Waste Management Plans;*
- is hereby found to be consistent with said program and plans, in accordance with Section 477(3)(a) of the Local Government Act;*
- (3) *That Bylaw 9662, having been considered in accordance with OCP Bylaw Preparation Consultation Policy 5043, is hereby found not to require further consultation; and*
- (4) *That Richmond Zoning Bylaw 8500, Amendment Bylaw 9661, to create the “Single Detached (ZS28) – Pendleton Road (West Richmond)” zone, and to rezone 9560 Pendleton Road from the "School & Institutional Use (SI)" zone to the "Single Detached (ZS28) – Pendleton Road (West Richmond)" zone, be introduced and given first reading.*



Consent
Agenda
Item

11. **RICHMOND RESPONSE: METRO VANCOUVER REGIONAL GROWTH STRATEGY AMENDMENT BYLAW NO. 1243, 2017 AND RGS PERFORMANCE MONITORING GUIDE**

(File Ref. No. 08-4040-01) (REDMS No. 5386785)

CNCL-219

See Page CNCL-219 for full report

PLANNING COMMITTEE RECOMMENDATION

- (1) *That the staff report titled, “Richmond Response: Metro Vancouver Regional Growth Strategy Amendment Bylaw No. 1243, 2017 and RGS Performance Monitoring Guide”, dated May 8, 2017 from the General Manager, Planning and Development, be received for information; and*
- (2) *That the staff recommendation to advise the Metro Vancouver Regional Board that the City of Richmond supports the proposed Metro Vancouver Regional Growth Strategy Amendment Bylaw 1243, 2017 and RGS Performance Monitoring Guide be endorsed.*



Consent
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12. **RICHMOND RESPONSE: PORT OF VANCOUVER PROPOSED INDUSTRIAL DESIGNATION OF 1700 NO.6 ROAD**

(File Ref. No. 08-4040-01) (REDMS No. 5386969)

CNCL-292

See Page CNCL-292 for full report

PLANNING COMMITTEE RECOMMENDATION

- (1) *That the staff recommendation in the report “Richmond Response: Port of Vancouver Proposed Industrial Designation of 1700 No. 6 Road”, dated May 8, 2017 from the General Manager, Planning and Development, to advise the Port of Vancouver board that the City of Richmond supports the Port’s proposed Industrial designation of 1700 No. 6 Road in the Port’s Master Plan be endorsed; and*
- (2) *That the staff recommendation to request the Port of Vancouver Board to work with the City of Richmond to establish the future OCP proposed Knox Way extension, OCP Major Greenway and OCP Major Cycling Route be endorsed.*



Consent
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Item

13. **RICHMOND RESPONSE: YVR PROPOSED PHASE 2 NORTH RUNWAY SAFETY END AREAS (RSEA) OPTIONS**

(File Ref. No. 08-4040-01) (REDMS No. 5387271)

CNCL-300

See Page CNCL-300 for full report

PLANNING COMMITTEE RECOMMENDATION

- (1) *That the staff report titled “Richmond Response: YVR Proposed Phase 2 North Runway Safety End Areas (RESA) Options”, dated May 8, 2017 from the General Manager, Planning and Development be received for information; and*
- (2) *That the staff recommendation to advise the Vancouver International Airport Authority (YVR) that the City of Richmond supports YVR’s proposed Option 2 be endorsed.*



Consent
Agenda
Item

14. **BC ENERGY STEP CODE FOR NEW PRIVATE BUILDINGS**

(File Ref. No. 10-6125-07-02) (REDMS No. 5367037 v. 8)

CNCL-324

See Page CNCL-324 for full report

PUBLIC WORKS AND TRANSPORTATION COMMITTEE
RECOMMENDATION

- (1) *That the stakeholder consultation program in the report titled "BC Energy Step Code for New Private Buildings" dated April 11, 2017, from the Director, Engineering, be endorsed for the purpose of gaining feedback on how the Energy Step Code can be implemented in Richmond;*
- (2) *That the air barrier installation training program identified in the report titled "BC Energy Step Code for New Private Buildings" dated April 11, 2017, from the Director, Engineering, be approved with \$60,350 funding from the Carbon Tax Provision; and*
- (3) *That the funding for the air barrier installation training program be included as an amendment to the 5 Year Financial Plan (2017-2021).*



Consent
Agenda
Item

15. **AWARD OF CONTRACT 5757 EOI – RECYCLING DEPOT CONTAINER COLLECTION AND RECYCLING SERVICES**

(File Ref. No. 10-6370-04-01) (REDMS No. 5374675)

CNCL-341

See Page CNCL-341 for full report

PUBLIC WORKS AND TRANSPORTATION COMMITTEE
RECOMMENDATION

- (1) *That Contract 5757 EOI, Recycling Depot Container Collection and Recycling Services, be awarded as follows:*
 - (a) *Cascades Recovery Inc. – the container collection and recycling services for the following commodities at the unit rates quoted: newspaper, mixed paper and cardboard; and*
 - (b) *Super Save Group – the container collection and recycling services for the following commodities at the unit rates quoted: tin, scrap metal, aluminium, plastic and yard waste;*
- (2) *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 as a new contract can be advertised and awarded; and*

- (3) *That the Chief Administrative Officer and General Manager, Engineering and Public Works, be authorized to execute the above contracts.*

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Consent
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Item

16. **AMENDMENT TO WATER USE RESTRICTION BYLAW**
(File Ref. No. 10-6160-07-06) (REDMS No. 5352786)

CNCL-346

See Page CNCL-346 for full report

PUBLIC WORKS AND TRANSPORTATION COMMITTEE
RECOMMENDATION

That the Water Use Restriction Bylaw No. 7784, Amendment Bylaw No. 9704 be introduced and given first, second and third readings.

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Consent
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Item

17. **2016 ANNUAL WATER QUALITY REPORT**
(File Ref. No. 10-6000-01) (REDMS No. 5371641)

CNCL-352

See Page CNCL-352 for full report

PUBLIC WORKS AND TRANSPORTATION COMMITTEE
RECOMMENDATION

That the staff report titled “2016 Annual Water Quality Report” dated April 13, 2017 from the Director, Public Works Operations, be endorsed and made available to the community through the City’s website and through various communication tools including social media and as part of community outreach activities.

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Consent
Agenda
Item

18. **2016 CLIMATE ACTION REVENUE INCENTIVE PROGRAM AND CARBON NEUTRAL PROGRESS REPORT**
(File Ref. No. 10-6125-07-03) (REDMS No. 5372171 v. 12)

CNCL-444

See Page CNCL-444 for full report

PUBLIC WORKS AND TRANSPORTATION COMMITTEE
RECOMMENDATION

- (1) *That the 2016 Climate Action Revenue Incentive Program (CARIP) and Carbon Neutral Progress Report from the Director, Engineering dated April 27, 2017, be received for information; and*

- (2) *That, in accordance with Provincial requirements, the CARIP Report and Carbon Neutral Progress Report be posted on the City's website for public access.*



CONSIDERATION OF MATTERS REMOVED FROM THE
CONSENT AGENDA

NON-CONSENT AGENDA ITEMS

GENERAL PURPOSES COMMITTEE

Mayor Malcolm D. Brodie, Chair

19. **APPLICATION FOR A NEW LIQUOR PRIMARY LIQUOR LICENCE - 1063035 BC LTD DOING BUSINESS AS: V + CLUB, 8171 ACKROYD RD UNIT 140**

(File Ref. No. 12-8275-30-001) (REDMS No. 5378064 v. 4)

CNCL-474

See Page CNCL-474 for full report

GENERAL PURPOSES COMMITTEE RECOMMENDATION

Opposed: Cllr. Au

- (1) *That the application from 1063035 BC Ltd., doing business as, V + Club, for a new Liquor Primary Liquor Licence to operate a Karaoke Box Room, at premises located at 8171 Ackroyd Rd Unit 140, with liquor service, be supported for;*
- (a) *A new Liquor Primary Liquor Licence with primary business focus of entertainment, specifically Karaoke Box Room with total person capacity of 100 persons;*
- (b) *Family Food Service to permit minors in all licensed areas until 10:00 PM when accompanied by a parent or guardian;*
- (c) *Liquor service hours for Monday to Sunday, from 12:00 PM to 2:00 AM;*
- (2) *That a letter be sent to Liquor Control and Licensing Branch advising that:*

- (a) *Council supports the conditions as listed above, for a new Liquor Primary Liquor Licence as the issuance will not pose a significant impact on the community; and*
- (b) *Council's comments on the prescribed criteria (set out in Section 71(9) of the Liquor Control and Licensing Regulations) are as follows:*
 - (i) *The potential for additional noise and traffic in the area was considered;*
 - (ii) *The impact on the community was assessed through a community consultation process; and*
 - (iii) *Given that this is a new business, there is no history of non-compliance with this operation;*
- (c) *As the operation of a licenced establishment may effect nearby residents the City gathered the views of the residents as follows:*
 - (i) *Property owners and businesses within a 50 meter radius of the subject property were contacted by letter detailing the application, providing instructions on how community comments or concerns could be submitted; and*
 - (ii) *Signage was posted at the subject property and three public notices were published in a local newspaper. The signage and the notice provided information on the application and instructions on how community comments and concerns could be submitted; and*
- (d) *Council's comments and recommendations respecting the views of the residents are as follows:*
 - (i) *That based on the number of letters sent and the few responses received from all public notifications, Council considers that the approval of this application is acceptable to the majority of the residents in the area and the community.*



Pg. # ITEM

20. **BUILDING PERMIT APPLICATION AT 7251 NO. 6 ROAD**
(File Ref. No. 12-8360-20-01) (REDMS No. 5382274 v. 2)

CNCL-499

See Page CNCL-499 for full report

GENERAL PURPOSES COMMITTEE RECOMMENDATION

Opposed: Cllr. Loo

That Building Permit Application No. 17-770896 for a single family dwelling at 7251 No. 6 Road, with a total floor area (including garage) of 1,246.3 m² (13,414.9 ft²) be withheld for a period of 30 days beginning on the date of application (April 26, 2017) pursuant to Section 463(1) of the Local Government Act, as Council considers that the proposed house size, farm home plate and setbacks are in conflict with the proposed Zoning Bylaw amendments under preparation.

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PUBLIC DELEGATION ON NON-AGENDA ITEM

21. *Motion to resolve into Committee of the Whole to hear delegations on non-agenda items.*

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CNCL-504

Anne Janzen, Market Manager, Farm Fresh Events and Jeremy McElroy, General Manager, Kwantlen Student Association, to speak on the Kwantlen St. Farmers Market at KPU's Richmond campus.

22. *Motion to rise and report.*

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RATIFICATION OF COMMITTEE ACTION

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PUBLIC ANNOUNCEMENTS AND EVENTS

NEW BUSINESS

BYLAWS FOR ADOPTION

- CNCL-515** Soil Removal and Fill Deposit Regulation Bylaw No. 8094, Amendment **Bylaw No. 9002**
Opposed at 1st/2nd/3rd Readings – None.

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- CNCL-517** Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122, Amendment **Bylaw No. 9003**
Opposed at 1st/2nd/3rd Readings – None.

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- CNCL-521** Business Regulation Bylaw No. 7538, Amendment **Bylaw No. 9649**
Opposed at 1st/2nd/3rd Readings – None.

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- CNCL-524** Business Licence Bylaw No. 7360, Amendment **Bylaw No. 9650**
Opposed at 1st/2nd/3rd Readings – None.

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- CNCL-528** Municipal Ticket Information Authorization Bylaw No. 7321, Amendment **Bylaw No. 9651**
Opposed at 1st/2nd/3rd Readings – None.

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- CNCL-531** Consolidated Fees Bylaw No. 8636, Amendment **Bylaw No. 9652**
Opposed at 1st/2nd/3rd Readings – None.

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- CNCL-533** Business Licence Bylaw No. 7360, Amendment **Bylaw No. 9696**
Opposed at 1st/2nd/3rd Readings – None.

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Pg. # ITEM

CNCL-534 Richmond Zoning Bylaw No. 8500, Amendment **Bylaw No. 9558**
(3471 Moncton Street, 12060 and 12040 3rd Avenue, 3560, 3580 and 3600
Chatham Street, RZ 15-710852)
Opposed at 1st Reading – None.
Opposed at 2nd/3rd Readings – None.

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CNCL-540 Richmond Zoning Bylaw No. 8500, Amendment **Bylaw No. 9624**
(9320 Dixon Avenue, RZ 16-735119)
Opposed at 1st Reading – None.
Opposed at 2nd/3rd Readings – None.

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DEVELOPMENT PERMIT PANEL

23. RECOMMENDATION

See DPP Plan Package (distributed separately) for full hardcopy plans

- CNCL-542** (1) *That the **minutes** of the Development Permit Panel meeting held on
May 10, 2017, and the **Chair's report** for the Development Permit
CNCL-546 Panel meeting held on May 10, 2017 be received for information; and*
- (2) *That the recommendation of the Panel to authorize the issuance of a
Development Permit (DP 16-753377) and Heritage Alteration Permit
(HA 17-763809 for the properties at 3471 Moncton Street, 12040 &
12060 3rd Avenue and 3560, 3580 & 3600 Chatham Street be
endorsed, and the Permits so issued.*

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ADJOURNMENT

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**Regular Council meeting for Public Hearings
Monday, May 15, 2017 & Wednesday, May 17, 2017**

Place: Council Chambers
Richmond City Hall

Present: Mayor Malcolm D. Brodie
Councillor Chak Au
Councillor Derek Dang
Councillor Carol Day
Councillor Ken Johnston
Councillor Alexa Loo
Councillor Bill McNulty
Councillor Linda McPhail
Councillor Harold Steves

Claudia Jesson, Acting Corporate Officer

Call to Order: Mayor Brodie opened the proceedings at 7:00 p.m.

1. **RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9715**
RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9687
(File Ref. No. 12-8060-20-009687/9715) (REDMS No. 5362581, 5228881, 5327032, 5364465)
- 1A. **RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9715**
(Location: City-wide) (Applicant: City of Richmond)
- 1B. **RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9687**
(Location: 10475, 10491, 10511, 10531, 10551, 10571, 10591 and 10631 No. 5 Road)
(Applicant: Anthem Properties Group Ltd.)

Applicant's Comments:

The applicant was available to respond to queries.

Written Submissions:

- (a) Annie Chong, 10168 Kilby Drive (Schedule 1)
- (b) Wilson Chong, 6195 168 Street (Schedule 2)
- (c) Gina Mahil, 11551 Seahurst Road (Schedule 3)
- (d) Heather, 10551 Springfield Crescent (Schedule 4)



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- (e) Ben Gies, 8100 Corless Place (Schedule 5)
- (f) Courtney Haines, 13020 No. 2 Road (Schedule 6)
- (g) Tom Cox-Rogers, 103020 No. 2 Road (Schedule 7)
- (h) Larry Biggar, 10471 Springhill Crescent (Schedule 8)
- (i) Martin Yeung, 7733 Heather Street (Schedule 9)
- (j) Karny Mahil, 11551 Seahurst Road (Schedule 10)
- (k) Maureen Taylor Forey, 8580 Doulton Place (Schedule 11)
- (l) Suzy Kim, 8040 Railway Avenue (Schedule 12)
- (m) Carl McWhinnie, 8580 Doulton Place (Schedule 13)

Submissions from the floor:

Mackenzie Biggar, 3900 Moncton Street, supported the proposed rezoning due as it will provide a variety of affordability options.

PH17/5-1 It was moved and seconded
That Richmond Zoning Bylaw 8500, Amendment Bylaw 9715 be given second and third readings.

CARRIED

PH17/5-2 It was moved and seconded
That Richmond Zoning Bylaw 8500, Amendment Bylaw 9687 be given second and third readings.

CARRIED

PH17/5-3 It was moved and seconded
That Richmond Zoning Bylaw 8500, Amendment Bylaw 9715 be adopted.

CARRIED

2. **RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9703**
(Location: 8511 No. 4 Road) (Applicant: Pak Ching Chan & Anna Lei Ling Lee)

Applicant's Comments:

The applicant was available to respond to queries.



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Written Submissions:

None.

Submissions from the floor:

None.

PH17/5-4

It was moved and seconded

That Richmond Zoning Bylaw 8500, Amendment Bylaw 9703 be given second and third readings.

CARRIED

3. RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9705

(Location: 5071 Steveston Highway) (Applicant: Oris (TLP) Developments Corp.)

Applicant's Comments:

The applicant was available to respond to queries.

Written Submissions:

- (a) Jack O'Hare, 5031 Steveston Highway (Schedule 14)
- (b) Robert Ransford, 10720 Railway Avenue (Schedule 15)
- (c) Leon Sison, 10591 Hollymount Drive (Schedule 16)

Submissions from the floor:

None.

PH17/5-5

It was moved and seconded

That Richmond Zoning Bylaw 8500, Amendment Bylaw 9705 be given second and third readings.

CARRIED

4. RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9713

(Location: 7000/7002/7020 Williams Road & 10060 Gilbert Road) (Applicant: Zhao XD Architect Ltd.)

Applicant's Comments:

The applicant was available to respond to queries.



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Written Submissions:

None.

Submissions from the floor:

None.

PH17/5-6

It was moved and seconded

That Richmond Zoning Bylaw 8500, Amendment Bylaw 9713 be given second and third readings.

CARRIED

**5. TEMPORARY USE PERMIT RENEWAL APPLICATION
(TU 17-763604)**

(Location: 8320 Cambie Road and 8431 Brownwood Road) (Applicant: Fairchild Developments Ltd.)

Applicant's Comments:

The applicant was available to respond to queries.

Written Submissions:

- (a) Zaynub Mia and Captain Zimmerman, 8451 Brownwood Road (Schedule 17)
- (b) Richmond resident, 8400 Brownwood Road (Schedule 18)
- (c) Chen Ming Fong, 8420 Brownwood Road (Schedule 19)
- (d) Marian and Charles Dean, 8411 Browngate Road (Schedule 20)
- (e) Richmond resident, 4140 Brownlea Road (Schedule 21)
- (f) Richmond resident, 4120 Brownlea Road (Schedule 22)

Submissions from the floor:

None.



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PH17/5-7

It was moved and seconded

That a Temporary Use Permit be reissued to Fairchild Developments Ltd. as a renewal of TU 14-653009 to allow a temporary surface parking lot at 8320 Cambie Road and 8431 Brownwood Road for a period of three years.

The question on the motion was not called as discussion took place on the proposed temporary use permit. In response to a question from Council, staff advised that they have been in discussion with the applicant regarding (i) dust control in drier weather, (ii) landscaping and (iii) a garbage enclosure.

The question on the motion was then called and it was **CARRIED**.

6. **TEMPORARY COMMERCIAL USE PERMIT (TU 17-762905)**

(Location: 13340 Smallwood Place) (Applicant: Beth Denny OMB Architects.)

Applicant's Comments:

The applicant was available to respond to queries.

Written Submissions:

(a) Eyal Lichtmann, Richmond Animal Protection Society (Schedule 23)

Submissions from the floor:

None.

PH17/5-8

It was moved and seconded

That a Temporary Commercial Use Permit be issued to the Richmond Animal Protection Society (RAPS) for the property at 13340 Smallwood Place to allow Veterinary Service as a permitted use.

CARRIED



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7. BYLAWS RELATED TO AGRICULTURALLY ZONED LAND

**OFFICIAL COMMUNITY PLAN 9000, AMENDMENT BYLAW 9706
RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9707
RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9712
RICHMOND ZONING BYLAW 8500, AMENDMENT BYLAW 9717**
(Location: City-wide) (Applicant: City of Richmond)

Applicant's Comments:

With the aid of renderings (attached to and forming part of these Minutes as Schedule 24), Wayne Craig, Director, Development, provided background information and stated that the proposed bylaws (i) establish a farm home plate on agricultural zoned properties to ensure residential development is focused on a specific area within a lot, (ii) introduce new regulations on residential development in the AG1 zone, (iii) introduce new regulations on residential development on the RS/1 subzones located in the Agricultural Land Reserve (ALR), and (iv) introduce policies with regard to site specific requests for larger homes and secondary dwellings for full-time farm labour on parcels greater than 8 hectares.

Mr. Craig then commented on details of the proposed bylaws for Council consideration:

Zoning Amendment Bylaw No. 9707

- establishes a farm home plate that is intended to focus all residential buildings and associated infrastructure but excluding septic fields on a specific portion of the lot;
- provides for enhanced farm access to the rear agricultural area;
- provides a farm home plate that ensures all agricultural properties preserve an opportunity for farming on at least a portion of the lot;
- establishes different home plate options based on lot sizes; and
- allows site specific considerations should there be a need for a larger farm home plate through Council consideration of a Development Variance Permit.



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Zoning Amendment Bylaw No. 9712

- revises density calculation for agricultural properties so density formula is consistent with City's urban areas;
- places 2 distinct maximum house size limits: (i) 500 m² for lots less than 0.2 hectares and (ii) 1000 m² for lots 0.2 hectares and greater; and
- proposes to establish a limit on detached accessory buildings of 70 m².

Zoning Amendment Bylaw No. 9717

- amends RS/1 subzone in the ALR to place the same distinct house size maximums.

Official Community Plan Amendment Bylaw No. 9706

- provides general policies with regard to site specific requests (i) for larger homes, from new farmers, or associated with cultural traditions and (ii) secondary dwellings for full-time farm labour on lots greater than 8 hectares.

In reply to queries from Council, Mr. Craig responded that the City of Surrey has a maximum farm home plate of 2,000 square metres and does not have a limit on house size.

Also, Mr. Craig advised that the exclusion of a septic field from the farm home plate would decrease the area of land available for agricultural purposes.

Written Submissions:

- (a) Michelle Li (May 5, 2017), Richmond resident (Schedule 25)
- (b) Debra, 10900 No. 3 Road (Schedule 26)
- (c) Jim Wright, 8300 Osgoode Drive (Schedule 27)
- (d) John Roston, 12262 Ewen Avenue (Schedule 28)
- (e) Jaclyn Kirby, 7377 Salisbury Avenue (Schedule 29)
- (f) Dr. Steven Pelech, 5640 Musgrave Crescent (Schedule 30)
- (g) Daniela Navarria, 8180 Lansdowne Road (Schedule 31)
- (h) Monica Torres, 12311 No. 2 Road (Schedule 32)
- (i) Emilie Henderson, 12438 Brunswick Place (Schedule 33)



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- (j) Hélène Fraser, 7560 Sunnymede Crescent (Schedule 34)
- (k) Ruth Plerce, 11171 4th Avenue (Schedule 35)
- (l) B. Yaworski, 4687 Morgan Place, Ladner (Schedule 36)
- (m) Dan Straker, 3448 West 1st Avenue, Vancouver (Schedule 37)
- (n) Chris Shannon, 9080 Parksville Drive (Schedule 38)
- (o) Dorothy Levitt, 7511 Minoru Boulevard (Schedule 39)
- (p) Marion Smith, 6580 Mayflower Drive (2 pieces of correspondence) (Schedule 40)
- (q) Gerry Pelletier, 4280 Moncton Street (Schedule 41)
- (r) Rosina Rodighiero, 5771 Forsyth Crescent (Schedule 42)
- (s) Krystie, 1389 20th Street, West Vancouver (Schedule 43)
- (t) Michelle Kwieton, 5800 Andrews Road (Schedule 44)
- (u) Sandra Marquardt, 6300 Birch Street (Schedule 45)
- (v) Lynn Daoust, 12639 No. 2 Road (Schedule 46)
- (w) Katherine Innes, 11920 4th Avenue (Schedule 47)
- (x) Andrea Cade, 10033 River Drive (Schedule 48)
- (y) Lyndsay Scott, 12411 Trites Road (Schedule 49)
- (z) Pei-San Tsai, 10033 River Drive (Schedule 50)
- (aa) Natalie Choy, 3900 Scotsdale Place (Schedule 51)
- (bb) Michelle Li (May 11, 2017), 10350 Hollybank Drive (Schedule 52)
- (cc) Leslie Williams, 2771 Westminster Highway (Schedule 53)
- (dd) Cathy W, 8120 Jones Road (Schedule 54)
- (ee) Anders Erickson, 6385 Hawthorn Lane, Vancouver (Schedule 55)
- (ff) Brenda Denchfield, the Canadian Federation of University Women (Schedule 56)
- (gg) Laura McLeod, 12935 16th Avenue (Schedule 57)
- (hh) Ross Pallett, 5500 Andrews Road (Schedule 58)
- (ii) Rae McInnes, 5500 Andrews Road (Schedule 59)



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- (jj) Christine Ho, 3530 Cambie Street, Vancouver (Schedule 60)
- (kk) Cheryl Thomas, 68 Cameron Road, Clearwater (Schedule 61)
- (ll) James Barry Gifford, 10431 Hollybank Drive (Schedule 62)
- (mm) Joanne Nicholson, 12411 Trites Road (Schedule 63)
- (nn) Grace Sarbeng, 2111 Lower Mall, Vancouver (Schedule 64)
- (oo) Mei, 7240 Montana Road (Schedule 65)
- (pp) S.D. Allen, Vancouver resident (Schedule 66)
- (qq) Bryan, 3880 Westminster Highway (Schedule 67)
- (rr) Joanne Masse, 11971 7th Avenue (Schedule 68)
- (ss) Seana Hong, 9339 Alberta Road (Schedule 69)
- (tt) Stephanie Samila, 9151 No. 5 Road (Schedule 70)
- (uu) Mary Miller, 9551 Bowen Drive (Schedule 71)
- (vv) Keeley Nixon, 6385 Hawthorn Lane, Vancouver (Schedule 72)
- (ww) Lydia Travers, Richmond resident (Schedule 73)
- (xx) Zoe-Ann and Brian White, 9451 Glenallan Drive (Schedule 74)
- (yy) Mary Phillips, 5500 Andrews Road (Schedule 75)
- (zz) Alisa Beischer, 3375 Raleigh Street, Port Coquitlam (Schedule 76)
- (aaa) David Bridges, 1746 Aldergrove BC (Schedule 77)
- (bbb) De Whalen, Richmond resident (Schedule 78)
- (ccc) Daphne Kerley, 7491 No. 1 Road (Schedule 79)
- (ddd) Ellen Chapman, 7491 No. 1 Road (Schedule 80)
- (eee) Ernesto Ayala, 4280 Moncton Street (Schedule 81)
- (fff) Derek Chichak, 5180 Woodward Road (Schedule 82)
- (ggg) Nikki Hollinson, 5580 Langtree Avenue (Schedule 83)
- (hhh) Bosco Hong, 9339 Alberta Road (Schedule 84)
- (iii) Gayle and Mark McCooey, 8311 Fairfax Place (Schedule 85)
- (jjj) Melanie Beggs-Murray, 5115 Garden City Road (Schedule 86)



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- (kkk) Ning Shu, 6600 Barnard Drive (Schedule 87)
- (lll) Grace Augustinowicz, 2560 154 Street, Surrey (Schedule 88)
- (mmm) Felipe Vera, 11671 Kestrel Drive (Schedule 89)
- (nnn) Emily Vera, 11671 Kestrel Drive (Schedule 90)
- (ooo) Brechin Maclean, 12331 Phoenix Drive (Schedule 91)
- (ppp) Dean Garner, 4151 Regent Street (Schedule 92)
- (qqq) Olga Nadjafova, 7500 Francis Road (Schedule 93)
- (rrr) Jade C (Schedule 94)
- (sss) Sharon Renneberg, 4211 Bayview Street (Schedule 95)
- (ttt) M. Solie, 1260 Bidwell Street, Vancouver (Schedule 96)
- (uuu) Amy Robinson, 1075 Victoria Drive, Vancouver (Schedule 97)
- (vvv) Catherine Chappell, 4280 Moncton Street (Schedule 98)
- (www) Sandy Rocha, Vancouver resident (Schedule 99)
- (xxx) Jennifer Meilleur, North Shore Table Matters Network (Schedule 100)
- (yyy) Teresa Sameshima, 9720 Swansea Drive (Schedule 101)
- (zzz) Sandy Jin Tang, 7733 Heather Street (Schedule 102)
- (aaaa) Barbara Allan, 9200 Ferndale Road (Schedule 103)
- (bbbb) Arno Schortinghuis (Schedule 104)
- (cccc) Karen McDonald, 7111 Lynwood Drive (Schedule 105)
- (dddd) William Schuss, Tsawwassen resident (Schedule 106)
- (eeee) Tammy Prince, Seafair resident (Schedule 107)
- (ffff) Steven F. Carver, Richmond resident (Schedule 108)
- (gggg) Deborah Simpson, Vancouver Resident (Schedule 109)
- (hhhh) Lori Grant, Port Coquitlam resident (Schedule 110)
- (iiii) Jenny Lee (Schedule 111)
- (jjjj) Henry Sim Loh Lee (Schedule 112)
- (kkkk) Norm Goldstein, 11751 King Road (Schedule 113)



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- (llll) Catherine Ellens, 6233 Birch Street (Schedule 114)
- (mmmm) Lloyd Wilson, 11971 7th Avenue (Schedule 115)
- (nnnn) Bob Mostat, 11266 Railway Avenue (Schedule 116)
- (oooo) Emily Wai Man Lee (Schedule 117)
- (pppp) Mehernaz Parakh, 12331 Phoenix Drive (Schedule 118)
- (qqqq) Michael Wolfe, 9731 Odlin Road (Schedule 119)
- (rrrr) Sabine Eiche, Richmond resident (Schedule 120)
- (ssss) Cheryl McLachlan, Langford, BC (Schedule 121)
- (tttt) Naomi Kolet, 3660 Regent Street (Schedule 122)
- (uuuu) Shaun Good, 5115 Garden City Road (Schedule 123)
- (vvvv) Elizabeth Hardacre, 5391 Woodpecker Drive (Schedule 124)
- (wwww) Angela Burnett (Schedule 125)
- (xxxx) Judith Doyle (Schedule 126)
- (yyyy) Betty Boland, Richmond resident (Schedule 127)
- (zzzz) Lynn Chapman, Roberts Creek, BC (Schedule 128)
- (aaaaa) Gabrielle Grun (Schedule 129)
- (bbbbb) Bruno Vernier, 6691 Francis Road (Schedule 130)
- (ccccc) Kerry Starchuk, 7611 Lancing Place (Schedule 131)
- (ddddd) Martin Woolford, 5951 Egret Court (Schedule 132)
- (eeeee) Bea McKenzie, 1139 Lippincott Road (Schedule 133)
- (fffff) Lorraine Bell, 10431 Mortfield Road (Schedule 134)
- (ggggg) Andrew Picard, 11137 Kingfisher Drive (Schedule 135)
- (hhhhh) Hafsa Khan, 3031 Williams Road (Schedule 136)
- (iiii) Greg Allen (Schedule 137)
- (jjjj) Ronald Heber, 3571 Blundell Road (Schedule 138)
- (kkkkk) Anne Marie and Brendan Kelly, 6245 Sheridan Road (Schedule 139)
- (lllll) Prithvipal S. Dadiala, 10131 Blundell Road (Schedule 140)



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- (mmmmm) Wendy Kooyman, 3571 Blundell Road (Schedule 141)
- (nnnnn) Sharon Doucelin, 4911 Pendlebury Road (Schedule 142)
- (ooooo) Mary Hanson, 7671 Abercrombie Drive (Schedule 143)
- (ppppp) William Evans, 10440 Sidaway Road (Schedule 144)
- (qqqqq) Brenda Wong (Schedule 145)
- (rrrrr) (Schedule 146)
- (sssss) Laura Gillanders (Schedule 147)
- (ttttt) Janet Kay, 10511 Springmount Drive (Schedule 148)
- (uuuuu) Bill Pekonen (Schedule 149)
- (vvvvv) Len Kay, 10511 Springmont Drive (Schedule 150)
- (wwwww) Nusheen Dhamani, 9388 McKim Way (Schedule 151)
- (xxxxx) Steve Bridger, 9811 Finn Road (Schedule 152)

Submissions from the floor:

Anita Georgy, Executive Director, Richmond Food Security Society, urged Council to consider strong regulations that protect farmland and stated that she supports the Ministry of Agriculture's bylaw development guide. Also spoke of the City's Official Community Plan, noting that it states that the City will ensure zoning and farmland bylaws are consistent with provincial regulations.

Michelle Li, Richmond Food Security Society, spoke on details of the Ministry of Agriculture's bylaw development guide. She expressed concern regarding (i) the size of homes under consideration, (ii) the exclusion of a septic field from the farm home plate, and (iii) an increase to setbacks.

Jim Wright, 8300 Osgoode Drive, read from his submission (attached to and forming part of these minutes as Schedule 153), and spoke in opposition to the proposed bylaws.

John Roston, 12262 Ewen Avenue, spoke on the current and future costs of farmland and queried its effects on the farming community. Mr. Roston read from his submission (attached to and forming part of these minutes as Schedule 28).



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Sandra Bourque, 6911 Dunsony Place, expressed concern in regards to exceeding 500 m² per house on agricultural land and the proportional increase of the farm home plate for any reason. She urged Council to follow the principle of preserving as much farmland as possible.

Sharon MacGougan, 7411 Ash Street, spoke in opposition to Bylaw 9717 and urged Council to protect the farmland for future farmers. Ms. MacGougan read from her submission (attached to and forming part of these minutes as Schedule 154).

Laura Gillanders, [REDACTED], spoke to the Ministry of Agriculture's bylaw development guide and expressed concern for house sizes on agricultural land and how agricultural land is being utilized for residential purposes. Ms. Gillanders urged Council to accept the initial regulations brought forward by staff to Council and follow the Ministry of Agriculture's bylaw development guide.

Marion Smith, 6580 Mayflower Drive, spoke on the current cost of farmland and contemplated its effects on the farming community. Ms. Smith read from her submission (attached to and forming part of these minutes as Schedule 40).

Bruce May, 5220 No. 8 Road, spoke to the disadvantages to farming in an urban setting and stated that farmers should be afforded the same opportunities with respect to building on their land as other land owners. Also, Mr. May was of the opinion that the location of a septic field should be at the discretion of the farmland owner.

Grant Rice, 10378 125A Street, Surrey, spoke in support of the Ministry of Agriculture's bylaw development guide and the original staff report presented to Council. He then spoke on the Foreign Buyers Tax and expressed concern regarding the escalating cost of farmland as a result of large homes being built on such lots.

John Baines, 11620 No. 4 Road, spoke on (i) large houses in Richmond, (ii) increasing prices of farmland, and (iii) suspected reasons for amending the proposed bylaws.

Nancy Trant, 10100 No 2. Road, expressed concern regarding food security due to large homes on farmland and urged Council to restrict house sizes on agricultural land.



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Ned Georgy, 1621 East 31st Avenue, Vancouver, highlighted the City of Richmond's accomplishments in regards to food security and urged Council to remain close to what is proposed in the Ministry of Agriculture's bylaw development guide.

Deirdre Whalen 13631 Blundell Road, spoke in opposition to the proposed bylaws and urged Council to (i) include coach houses as part of the definition of farm home plate, (ii) lobby the provincial government to make agricultural properties subject to the Foreign Buyers Tax, (iii) follow the Ministry of Agriculture's bylaw development guide, and (iv) eliminate the expectations under proposed Bylaw 9706. Ms. Whalen read from her submission (attached to and forming part of these minutes as Schedule 78).

Keefer Pelech, 10180 Amethyst Avenue, expressed concern regarding (i) food security, (ii) the cost of farmland, and (iii) the livelihood of future farmers.

Helmut Pastrick, 9651 Finn Road, spoke on the economic benefits of farming in Richmond and referred to agricultural statistics from the 2016 census. Mr. Pastrick expressed concern regarding increasing prices for agricultural land, noting that it is challenging for farmers to acquire farmland. He urged Council to limit house sizes on agricultural land with few exceptions.

Steve Guthrie, 3480 Rosamond Avenue, urged Council to (i) reject the proposed bylaws, (ii) be wary of exemptions, and (iii) to endorse previous version for the propose bylaws as initially presented to Council.

David Baines, 8451 Rosehill Drive, spoke in opposition to Bylaw 9717 and expressed support for the Ministry of Agriculture's bylaw development guide.

Charan Sethi, 10571 Granville Avenue, queried to the discrepancy between house size regulations between agricultural and urban land owners. Mr. Sethi spoke to the difficulties of being a farmer in a city and expressed concern regarding (i) illegal dumping, (ii) RV storage on agricultural land, and (iii) illegal hotels on agricultural land.

Kathleen Beaumont, 6451 London Road, expressed concern on (i) increasing house sizes, (ii) the farm home plate being consumed for estates, and (iii) leasing agricultural land in the rear for farming without proper equipment.

Ron Fontaine, 3560 No. 7 Road, spoke in favour of the proposed bylaws.



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Ben Dhiman, 9360 Sidaway Road, spoke on (i) multi-generational living, (ii) the difficulties of being a farmer in an urban setting, and (iii) the need for a larger farm home plate. Mr. Dhiman advised that the Richmond Farmland Owners Association has created a website advertising farmland for lease; however they have received minimal interest. Also, he noted that the Ministry of Agriculture's bylaw development guide is general and was of the opinion that Council's decision should be based on community needs. Mr. Dhiman then remarked that he supported of the proposed bylaws.

Gary Berar, 9571 No. 6 Road, spoke in favour of the proposed bylaws and was of the opinion that people who have the means to build large homes on agricultural land should be permitted to do so.

VJ Sidhu, 9211 Ogden Drive, spoke in favour of the proposed bylaws and expressed concern with former land rights for farmers. Mr. Sidhu was of the opinion that farmers are significant contributors to society and believed that innovative planning could attract a larger demographic for farmland.

Kush Panatch, representing the Richmond Farmland Owners Association, advised that his group represents approximately 20 acres of active farmland. Mr. Panatch stated he shared Council's concern with regard to the abuse of oversized homes on farmland and the notion to increase farming in Richmond; however, he noted that in order for farming to increase in Richmond, it starts with a successful farmer. Mr. Panatch was of the opinion that additional restrictions on farmers would only impede their farming efforts. Furthermore, he spoke on how farming in general has evolved, noting that as a means of viability, it has become a multi-family endeavour. Mr. Panatch then requested that the location of the septic field be at the discretion of the farmland owner.

PH17/5-9

It was moved and seconded

That Public Hearing of May 15, 2017 proceed past 11:00 p.m.

CARRIED

Anne Piche, 11800 6th Avenue, commented that the majority of farmland in Richmond falls within the proposed bylaws' regulations that permit a larger home. Also, Ms. Piche cautioned Council on zoning amendments and the effects they have across the City and was of the opinion that the septic field not be included in the farm home plate.



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Glen Anderson, 10071 Dyke Road, commented on the economics of farmland in Richmond.

Peter Dhillon, 10531 Springhill Drive, spoke of his family history farming in Richmond and was of the opinion that the subject at hand has divided Richmond residents. Mr. Dhillon acknowledged that the abuse of oversized homes on farmland is concerning; however, he stated that restrictions on farmland further hinder farmers' ability to farm their land. Also, he was of the opinion that although the goal is to preserve land in the ALR, bylaw amendments can potentially do the opposite.

Elaine Beltran-Sellitti, 11711 Trumpeter Drive, spoke of the City's sustainability framework, and was of the opinion that Richmond farmers have the privilege of farming on fertile lands. She stated that when large homes are built on farmland, it directly affected land values, and hinders farming activity. Ms. Beltran-Sellitti urged the City and local farmers to unite in an effort to preserve farmland.

Judy Schneider, 11331 No. 2 Road, expressed concern with regard to the size of homes permitted on ALR lands, noting that mega homes are unaffordable to rent. She was of the opinion that homes on ALR lands should be smaller, and should a land owner wish to build a home that exceeds what is permitted, a variance application be submitted for consideration.

Dale Badh, 2831 Westminster Highway, stated that a farming operation requires more than one farmer. He remarked that leasing farmland in Richmond is most economical for young farmers and was of the opinion that additional restrictions on farmland would deter farming activities.

Doug Wright, 11540 No. 3 Road, spoke of the Agricultural Advisory Committee's comments with regard to house size on agricultural land. He stated that although he is in favour of preserving farmland, those requesting smaller homes on ALR lands are doing so at the financial detriment of farmland owners. Also, Mr. Wright stated that he believed that "septic field" should not be included in the definition of farm home plate and concluded his comments by noting that much concern has been expressed regarding farmland but very little about farmers.



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Jordan Sangha, 6171 No. 6 Road, stated that farming requires more than one farmer. Mr. Sangha was of the opinion that imposing restrictive regulations on agricultural land (i) discourages farmers, (ii) devalues agricultural land, and (iii) limits farmland owners with what they can do with their businesses. Also, he remarked agricultural landowners should be afforded the same opportunities with regard to building amenities on their land as urban land owners. Mr. Sangha then expressed concern with farmland not being farmed in Richmond, stating that he believed this was the real problem.

Stephen Easterbrook, 17740 River Road, Co-Chair, Agricultural Advisory Committee, stated that striking a balance between what farmers wish to see and what agricultural land advocates wish to see is key. He spoke of the global economics of farming, noting that farmers grow what is best suited for the soil they have; it does not necessarily mean that what is grown locally is consumed locally. Mr. Easterbrook then spoke on leasing farmland, noting that it is at the farmland owner's discretion; he queried whether the City could impose a covenant on agricultural land obligating farmland owners to lease their land if approached.

Don Flintoff, 6071 Gilbert Road, stated that the City should follow the Ministry of Agriculture's bylaw development guide and expressed concern with the disappearance of ALR land, noting that should a farmland owner wish to build a larger home than was suggested in the Ministry's guide, they submit a request to Council.

Kathryn McCreary, 7560 Glacier Crescent, spoke in opposition to Bylaw 9706, stating that it is too flexible. She expressed concern with regard to the various criteria in which applicants may request to build larger homes. Also, Ms. McCreary was of the opinion that large homes on agricultural land benefit landowners who wish to increase their property value for resale.

Jora Bhullar, 6660 Sidaway Road, commented on the process undertaken with regard to the proposed bylaws, noting that compromises were made to reach this point. He requested that all farmers not be penalized for the lack of farming by some farmland owners. Mr. Bhullar concluded his comments by stating that if Council wishes to support farming, then the views of farmers should be considered.



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David Yurkovich, 6411 Monteith Road, stated that it's critical that farmland be protected for its best use and its highest value. He requested that Council consider an absolute upper limit on house sizes of 500 m² regardless of lot size. He expressed concern regarding large homes on agricultural land, noting that larger homes equate to less land for farming activities.

Davi Boyal, 6620 No. 6 Road, was of the opinion that large homes on agricultural land does not necessarily take away from farming activities. He stated that farmland owners should not be limited to building homes of a specific size.

E.C. Wittensleger, 10631 Hollymount Drive, was of the opinion that Council, as the leaders of the City, should make a fair decision for all parties involved, one that is best for the entire community.

Eshleen Panatch, 6791 Elmbridge Way, was of the opinion that the size of homes on agricultural land does not affect the lot's farming capability. Also, she expressed concern with regard to limiting house size on agricultural land, stating that such restrictions are at the financial detriment of farmland owners.

Vicki Lingle, Steveston resident, spoke in favour of the Ministry of Agriculture's bylaw development guide and commented on the need to recognize that special provisions for house size on agricultural land may be required on an individual basis.

Todd May, 2620 No. 6 Road, President of the Richmond Farmers' Institute, summarized the comments expressed by all the previous speakers and remarked that the Farmers' Institute supports the proposed bylaws.

Suki Badh, 2831 Westminster Highway, spoke of community contributions from the local farming community, stating that farmers should be afforded flexibility with regard to their land. He then commented on various lot sizes and home size limitations, remarking that additional storeys on a home are not viable to families with older adults.



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Mayor Brodie acknowledged the conclusion of the first round of public speakers.

PH17/5-10

It was moved and seconded

That the Public Hearing be recessed, and be reconvened on Wednesday, May 17, 2017 at 7:00 p.m. in the Council Chambers at Richmond City Hall.

CARRIED

RECESSED – 12:51 a.m.

The Public Hearing reconvened at 7:00 p.m. on Wednesday, May 17, 2017 in the Council Chambers at Richmond City Hall with all members of Council present.

The Acting Corporate Officer provided an update on correspondence received after May 15, 2017, which was circulated to Council and form part of these minutes as Schedule 155.

With the aid of renderings (attached to and forming part of these Minutes as Schedule 156), Joe Erceg, General Manager, Planning and Development, illustrated farm home plates for various sized lots. Mr. Erceg then demonstrated what is permitted with regard to house size under the existing zoning bylaws and how this would change should the proposed bylaws under consideration be approved.

Discussion took place on an absolute upper limit on house sizes and staff advised that any deviation from what is proposed in the bylaws before Council would be subject to Council approval.



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Submissions from the floor continued:

John Roston, 12262 Ewen Avenue, commented on the challenges of addressing the concerns regarding large homes on agricultural land that hinder farming activity, while permitting large homes on agricultural land to accommodate multi-generational farming. Mr. Roston remarked that he supports farmers for their farming endeavours, however is opposed to agricultural land owners' efforts to increase the price of their lots.

Anita Georgy, 7611 Ash Street, stated that the biggest barrier to farming in Metro Vancouver is the cost of land. Ms. Georgy referenced a study conducted by the Institute of Agriculture at Kwantlen Polytechnic University, which noted that it is more feasible to lease farmland than purchase it. Also, she remarked that given climate change and other global concerns, it is important to have affordable land in order to secure food production. Ms. Georgy then urged Council to follow the Ministry of Agriculture's bylaw development guide with respect to house size on agricultural land.

Sharon MacGougan, 7411 Ash Street, spoke on current real estate trends in her neighbourhood, noting that it is adversely affecting the area and the community.

Ben Dhiman, 9360 Sidaway Road, spoke on land values in Metro Vancouver, and was of the view that restricting house sizes on agricultural land would not correlate with reducing land values.

Don Flintoff, 6071 Gilbert Road, spoke on the Ministry of Agriculture's bylaw development guide.

Steve Guthrie, 3480 Rosamond Avenue, remarked that farming is no longer the best use of land in Richmond. Mr. Guthrie stated that allowing houses to be 1000 m² will decrease agricultural land, while a smaller home would preserve such lands.

John Baines, 11620 No. 4 Road, spoke on the increasing prices of farmland in Richmond. He stated that as more large homes are built, fewer people are farming. Mr. Baines expressed concern regarding the 1000 m² house size, as he did not believe the groups consulted provided a true representation of the local farming community.

Sandra Bourque, 6911 Dunsony Place, stated that farming viability is an issue across Canada. Ms. Bourque stated that family farms are diminishing and being replaced by large corporations, and noted that increasing house sizes on agricultural land will not solve the problem.



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Glen Anderson, 10071 Dyke Road, stated that he supported farming and was of the opinion that zoning regulations should not be generated to increase the cost of agricultural land.

Kush Panatch, 6791 Elmbridge Way, spoke on the proposed bylaws and noted that there is more land to farm with the City's proposed bylaws in comparison to what is suggested in the Ministry of Agriculture's bylaw development guide.

Jordan Sangha, 6171 No. 6 Road, spoke on the farm home plate and noted that reducing house size from 1000 m² to 500 m² and keeping the home plate the same size does not allow for more farmland. He stated that by restricting house size on agricultural land it devalues the property, which in turn takes away business opportunities for the land owner.

Bruce May, 5220 No. 8 Road, spoke on the Richmond Farmers' Institute suggestions in regards to exclusion of the septic field and septic tank from the farm home plate.

Charan Sethi, 10571 Granville Avenue, stated that there would be difficulties finding farm labour if farmers were unable to house them.

Grant Rice, 10378 125A Street, Surrey, expressed concern in regards to large homes on farmland. He was of the opinion that 5,000 square feet was a solution that would satisfy everyone's needs.

Laura Gillanders, [REDACTED], stated that Ministry of Agriculture's bylaw development guide suggests the best way to determine house size is to keep it consistent with what is existing in the surrounding neighbourhood. Ms. Gillanders urged Council to save farmland and consider the bylaws that were initially presented to Council.

Ron Fontaine, 3560 No. 7 Road, spoke in support of the proposed bylaws and wished to know what size of house he would be permitted to build on his lot.

Steven Easterbrook, 17740 River Road, stated land prices are increasing due Metro Vancouver's appeal. Mr. Easterbrook urged Council not to alter agricultural land owners' equity due to global economics.



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Doug Wright, 11540 No. 3 Road, noted that much of the farmland that is leased has large homes on the property, yet continues to be successful in long term leasing. He stated that restricting house size will devalue farmland and will not be more successful. Mr. Wright concluded his comments by requesting that Council consider the effects on people and farmers of the future when making a decision.

Jora Bhullar, 6660 Sidaway Road, stated that new technologies for farming practices require a large investment and they do not guarantee immediate revenue. Mr. Bhullar was of the opinion that reducing prices of farmland will push farmers to bankruptcy.

Dale Badh, 2831 Westminster Highway, remarked that farming is not an easy endeavour and farmers work industriously to run successful farms. Mr. Badh then urged Council to consider the proposed bylaws.

, expressed concern regarding (i) large homes sprawling on agricultural land, (ii) speculation regarding the cost of agricultural land, and (iii) the use of farmland for illegal activities.

encouraged Council to consider regulations that allow farmland and principal dwellings to co-exist.

Michelle Li, 7611 Ash Street, stated that the City should be supporting farmland and curbing speculation regarding the cost of agricultural land. She stated that she supports farming families and thus, variances for larger homes should be considered for those that truly require it. She expressed concern for farmers of the future and the potential lack of agricultural land available to them for farming. Ms. Li stated she is in favour of the bylaws originally presented to Council.

Jim Wright, 8300 Osgoode Drive, read from his submission (attached to and forming a part of these minutes as Schedule 157).

Suki Badh, 2831 Westminster Highway, remarked that approving the proposed bylaws will significantly reduce the number of large homes on agricultural land in Richmond. Mr. Badh spoke of the farm home plate and the importance for it to be large enough to accommodate family amenities without the potential for farming activities to affect its usage.



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Todd May, 2620 No. 6 Road, remarked that large homes on agricultural land is a concern in the city; however, regulating home size on such lands also negatively affects how farmers farm. Mr. May urged Council to approve the proposed bylaws as he believed they support farmers' livelihood now and in the future.

PH17/5-11

It was moved and seconded

That:

- (a) *Official Community Plan Bylaw 9000, Amendment Bylaw 9706 be given second and third readings;*
- (b) *Richmond Zoning Bylaw 8500, Amendment Bylaw 9707 be given second and third readings;*
- (c) *Richmond Zoning Bylaw 8500, Amendment Bylaw 9712 be given second and third readings; and*
- (d) *Richmond Zoning Bylaw 8500, Amendment Bylaw 9717 be given second and third readings.*

The question on the motion was not called as discussion ensued in regards to reducing house size on AG1 zoned land and in particular, to consider the City of Maple Ridge's regulations on house size.

Cllr. Steves left the meeting (10:37 p.m.) and did not return.

As a result of the discussion, the following **amendments** were introduced:

PH17/5-12

It was moved and seconded

That Richmond Zoning Bylaw 8500, Amendment Bylaw 9712 be amended to have a maximum house size limit of 6,995 square feet.

DEFEATED

Opposed: Mayor Brodie
Cllrs. Au
Dang
Johnston
McNulty
McPhail
Loo



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PH17/5-13

It was moved and seconded

That Richmond Zoning Bylaw 8500, Amendment Bylaw 9707 be amended at Section 14.1.6 to allow a maximum farm home plate setback from the front lot line to the rear of the farm home plate of 60 metres.

DEFEATED ON A TIE VOTE

Opposed: Cllrs. Dang
Johnston
McNulty
McPhail

Discussion then took place on increasing the number of storeys permitted of homes on agricultural land in an effort to reduce the home's impact on farming activities.

The question on the main motion was then called and it was **CARRIED** with Cllr. Day opposed.

PH17/5-14

It was moved and seconded

That:

- (a) *Official Community Plan Bylaw 9000, Amendment Bylaw 9706 be adopted;*
- (b) *Richmond Zoning Bylaw 8500, Amendment Bylaw 9707 be adopted;*
- (c) *Richmond Zoning Bylaw 8500, Amendment Bylaw 9712 be adopted; and*
- (d) *Richmond Zoning Bylaw 8500, Amendment Bylaw 9717 be adopted.*

CARRIED

Opposed: Cllr. Day

ADJOURNMENT

PH17/5-15

It was moved and seconded

That the meeting adjourn (10:52 p.m.).

CARRIED



**City of
Richmond**

Minutes

**Regular Council meeting for Public Hearings
Monday, May 15, 2017 & Wednesday, May 17, 2017**

Certified a true and correct copy of the Minutes of the Regular meeting for Public Hearings of the City of Richmond held on Monday, May 15, 2017 and Wednesday, May 17, 2017.

Mayor (Malcolm D. Brodie)

Acting Corporate Officer
(Claudia Jesson)

Schedules for the Public Hearing
held on May 15 and 17, 2017
are available on the City website.

http://www.richmond.ca/cityhall/council/agendas/hearings/2017/051517_minutes.htm



For Metro Vancouver meetings on Friday, April 28, 2017

Please note these are not the official minutes. Board in Brief is an informal summary. Material relating to any of the following items is available on request from Metro Vancouver. For more information, please contact Greg.Valou@metrovancover.org or Kelly.Sinowski@metrovancover.org

Metro Vancouver Regional District

Corporation of Delta – Proposed Amendments to the Fraser Sewerage Area Boundary

RESOLVED

Metro Vancouver resolved that a request for regional sewerage service extension to the Nordel Way Business Park was consistent with Metro 2040 policies, and that an extension to 5224 88th Street was 'not inconsistent' with Metro 2040 policies, concurrent with efforts to mitigate the above noted risks. The Fraser Sewerage Area expansion applications will be forwarded to the GVS&DD Board for consideration.

Consideration of the City of Surrey's Amended Regional Context Statement

APPROVED

The Board accepted the City of Surrey's amended Regional Context Statement as submitted to Metro Vancouver on January 13, 2017. The amendment includes minor changes to the Metro 2040 Rural designation and expansion of the Urban Containment Boundary in the Campbell Heights Industrial area, as well as corrects mapping discrepancies between the Metro 2040, Surrey's Official Community Plan, and the Campbell Heights Local Area Plan. The amendment is required for a proposed Mixed Employment development to proceed.

Audited 2016 Financial Statements

APPROVED

The MVRD Board, as well as the Greater Vancouver Sewage and Drainage District, the Greater Vancouver Water District and the MVHC approved the Audited 2016 Consolidated Financial Statements for their separate entities. Legislation requires that annual Audited Financial Statements be prepared for the Greater Vancouver Districts and Metro Vancouver Housing Corporation and presented at a public meeting of the Board of Directors.

2016 Financial Results Year-End

RECEIVED

The MVRD Board received an update on the financial performance for the year ending December 31, 2016 as compared to the 2016 annual budget. Overall, the 2016 financial results for Metro Vancouver entities and functions were favourable to budget with a surplus of \$27.2 million.

Performance and Audit Committee Terms of Reference**RECEIVED**

The Board received a revised Terms of Reference for the Performance and Audit Committee, based on input received at the joint meeting on financial planning and oversight with the Finance and Intergovernment Committee.

2017 Homeless Count in Metro Vancouver: Preliminary Data**RECEIVED**

The Board received the preliminary results of the 2017 Homeless Count in Metro Vancouver, which showed a 30% increase in the number of people counted as homeless in Metro Vancouver -- a significant rise since 2014. The final report will be released this summer.

2017 TransLink Application for Federal Gas Tax Funding from the Greater Vancouver Regional Fund**APPROVED**

The Board approved funding from the Greater Vancouver Regional Fund for transit service expansion projects proposed by TransLink in its Application for Federal Gas Tax Funding. TransLink is seeking approval for six projects totaling \$121,280,000. Five of the six projects support the transit service expansion component of the Mayors' Council Transportation and Transit Plan, and the Phase One Investment Plan.

2017 Budget - Status of Reserves**APPROVED**

The Board approved additional reserve applications -- to those previously approved by the Board in October 2016 -- after year-end processes were complete and operating and designated reserves projected for 2017 were updated, including 2016 operating surpluses. The applications are consistent with legislated requirements and with previous Board direction on the use of reserves and will provide the funding necessary to complete operating priorities currently in progress as well as reduce future debt requirements.

MVRD Nominee to the 2017-2018 E-Comm Board of Directors**APPROVED**

The Board designated Raymond Louie as Metro Vancouver nominee to the E-Comm Board of Directors for the 2017-2018 term. Under the E-Comm Members' Agreement, MVRD is entitled to designate one nominee for election to the E-Comm Board of Directors annually. E-Comm will be holding its Annual General Meeting in June.



Finance and Intergovernment Committee Terms of Reference

RECEIVED

The Board received a revised Terms of Reference for the Finance and Intergovernment Committee, after issues were raised following a joint meeting of the Finance and Intergovernment Committee and the Performance and Audit Committee. The revisions include additional responsibilities such as oversight of director remuneration, exempt compensation, collective bargaining, and personnel matters, as well as reviewing corporate initiatives, legal matters, and matters that cross multiple standing committees.

Proposed Amendments to the Sponsorship Policy

APPROVED

The Board approved amendments to the Board Sponsorship Policy to address multi-year sponsorship funding requests. Staff have prepared an amendment that will make multi-year requests ineligible for funding under the Sponsorship Policy. Under the proposed amendment, organizations that wish to request multi-year funding for an annual event that exceeds \$500 will be required to submit a request in writing to the designated Standing Committee and Board for consideration under a Contribution Agreement that will be considered using the criteria for eligibility as established in the Sponsorship Policy.

Metro Vancouver 2040: Shaping our Future Amendment to Incorporate Revised Housing Demand Estimates

APPROVED

The Board gave third and final reading to a non-substantive amendment to the Regional Growth Strategy Amendment Bylaw, which specifies that the revised housing demand estimates are not regional growth strategy targets, and are provided only as reference to represent the potential housing unit increase anticipated in each municipality.

Adoption of Greater Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1236, 2016

APPROVED

The Board approved final adoption of the Greater Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1236, 2016 to revise regional growth strategy (Metro 2040) policies guiding the extension of regional sewerage services -- and to adopt the associated guidelines. The policy revisions will provide more effective coordination between Metro Vancouver's regional growth and utility services in achieving Metro Vancouver's urban containment and agricultural protection goals.

Greater Vancouver Water District

Membership in the Canadian Water Network

APPROVED

The GVWD/GVS&DD Board authorized the Greater Vancouver Water District/Greater Vancouver Sewerage and Drainage District to join the Canadian Water Network. Several of the CWN's current research focus areas could provide value to Metro Vancouver and its members, such as water demand forecasting and management, biosolids management and contaminants of emerging concern.

Water Supply Forecast and Water Consumption Update for Summer 2017

RECEIVED

The GVWD Board received a report dated March 23, 2017 titled "Water Supply Forecast and Water Consumption Update for Summer 2017." With the existing snowpack levels slightly above average it is expected that source lake storage will be sufficient to ensure adequate water supply for the 2017 summer season. Rainfall also contributes to the water levels in the three source lakes.

Regional Water Conservation Campaign 2017

RECEIVED

The GVWD Board was updated on the "Regional Water Conservation Campaign 2017," which includes regional lawn watering restrictions. The 2017 campaign builds on the successes found in the 2016 campaign, with emphasis on activities that proved to be most influential with the public.

Status of Utilities Capital Expenditures to December 31, 2016

RECEIVED

The GVWD and GVS&DD Boards received an update on the status of the utilities capital expenditures. As utilities capital projects are typically multi-year in nature, the report provided a comparison between the total project budgets and total projected expenditures to project completion.

2016 GVWD Quality Control Annual Report

RECEIVED

The GVWD Board received a summary of the 2016 GVWD Quality Control Annual Report on drinking water quality. Metro Vancouver's water quality monitoring program continues to fulfill its role in confirming that the multiple protection barriers for drinking water that the GVWD has in place, including watershed protection, water treatment and ongoing operation of the water system to maintain water quality, are working effectively and that the drinking water provided by the GVWD to its customers met or exceeded water quality standards and guidelines in 2016.



Audited 2016 Financial Statements

APPROVED

The MVRD Board, as well as the Greater Vancouver Sewage and Drainage District, the Greater Vancouver Water District and the MVHC approved the Audited 2016 Consolidated Financial Statements for their separate entities. Legislation requires that annual Audited Financial Statements be prepared for the Greater Vancouver Districts and Metro Vancouver Housing Corporation and presented at a public meeting of the Board of Directors.

2017 Budget - Status of Reserves

APPROVED

The MVRD, GVS&DD and GVWD Boards approved the application of additional reserve applications to those previously approved by the Board in October 2016.

Greater Vancouver Sewerage and Drainage District

Membership in the Canadian Water Network

APPROVED

The GVWD/GVS&DD Board authorized the Greater Vancouver Water District/Greater Vancouver Sewerage and Drainage District to join the Canadian Water Network. Several of the CWN's current research focus areas could provide value to Metro Vancouver and its members, such as water demand forecasting and management, biosolids management and contaminants of emerging concern.

Status of Utilities Capital Expenditures to December 31, 2016

RECEIVED

The GVWD and GVS&DD Boards received an update on the status of the utilities capital expenditures. As utilities capital projects are typically multi-year in nature, the report provided a comparison between the total project budgets and total projected expenditures to project completion.

Award of Phase B – Design-Build Procurement Consulting Services for the Lions Gate Secondary Wastewater Treatment Plant Pump Station and Conveyance Project

APPROVED

The GVS&DD Board awarded Phase B, Design-Build Procurement Consulting Services in the amount up to \$2,000,000 (exclusive of taxes) to the Phase A consultant, AECOM Canada Ltd., for the Lions Gate Secondary Wastewater Treatment Plant Pump Station and Conveyance Project.

Award of Contract for Design-Build-Finance Contract Implementation Consulting Services for the Lions Gate Secondary Wastewater Treatment Plant Project

APPROVED

The GVS&DD Board awarded a contract in the amount up to \$9,084,157 (exclusive of taxes) to AECOM Canada Ltd. for Design-Build-Finance Contract Implementation Consulting Services for the Lions Gate Secondary Wastewater Treatment Plant Project.

Impact of Cigarette Butts on Aquatic Life

RECEIVED

The GVS&DD Board received for information a report dated March 6, 2017, titled "Impact of Cigarette Butts on Aquatic Life." Staff was asked to conduct a preliminary scientific literature search on the potential impact of cigarette butts on aquatic life. Extensive literature search revealed a very limited number of scientific studies on this topic.

Fraser Sewerage Area Amendment – 6625 60th Avenue, Corporation of Delta

APPROVED

The GVS&DD Board approved an amendment of the Fraser Sewerage Area to include a new craft brewery at 6625 60th Avenue in Delta. The MVRD Board has resolved that amending the FSA to include this property is not inconsistent with the provisions of Metro 2040: Shaping Our Future.

2017 – 2030 Liquid Waste Sewer Area Household Cost Projections

RECEIVED

The GVS&DD Board received a summary of the updated household costs for each of the four sewer areas within the GVS&DD service area based on the federal and provincial governments grant funding confirmed for the replacement of the Lions Gate Wastewater Treatment Plant.

Disposal Ban Surcharge Waiver Pilot Project for Residual Waste from Licensed Brokering Facilities

APPROVED

The GVS&DD Board agreed to proceed with a pilot project to waive recyclable material disposal ban surcharges for residual waste from licensed brokering facilities and that staff report back on the results and any proposed changes to the *Greater Vancouver Sewerage and Drainage District Tipping Fee and Solid Waste Disposal Regulation Bylaw No. 302, 2016*

2016 Disposal Ban Program Update**RECEIVED**

The GVS&DD Board received the annual update on the Metro Vancouver Disposal Ban Program, which is a key waste reduction strategy identified in the ISWRMP. In 2016, 180,530 loads were inspected and 3,430 surcharge notices issued.

2016 Regional Food Scraps Recycling Campaign Results**RECEIVED**

The GVS&DD Board received the results of the 2016 regional food scraps recycling campaign to support the Organics Disposal Ban. The campaign achieved broad reach throughout the region, and the digital media (banner ads and social media) enabled us to expand our reach further and connect with a targeted audience.

Create Memories, Not Garbage: 2016 Campaign Results**RECEIVED**

The GVS&DD Board received the results of the 2016 regional Christmas behavior change campaign. Now in its sixth year, the creative was refreshed and adapted based on a recent campaign assessment to give it a bold new look and respond to residents' desire for practical tips and ideas. Overall, the campaign performed strongly with strategic outdoor placements, television spots that were produced in-house, and strong clicks of the digital ads, and high engagement on social media ads.

Audited 2016 Financial Statements**APPROVED**

The MVRD Board, as well as the Greater Vancouver Sewage and Drainage District, the Greater Vancouver Water District and the MVHC approved the Audited 2016 Consolidated Financial Statements for their separate entities. Legislation requires that annual Audited Financial Statements be prepared for the Greater Vancouver Districts and Metro Vancouver Housing Corporation and presented at a public meeting of the Board of Directors.

2017 Budget - Status of Reserves**APPROVED**

The Board approved additional reserve applications -- to those previously approved by the Board in October 2016 -- after year-end processes were complete and operating and designated reserves projected for 2017 were updated, including 2016 operating surpluses. The applications are consistent with legislated requirements and with previous Board direction on the use of reserves and will provide the funding necessary to complete operating priorities currently in progress as well as reduce future debt requirements.

Delegations Received at Committee April 2017**RECEIVED**

The GVS&DD Board received a summary of a delegation to the Zero Waste Committee from Mateo Ocejo, of Net Zero Waste Group and Jaye-Jay Berggren, of Sea to Sky Soils.

**Greater Vancouver Sewerage and Drainage District Development Cost Charge
Reserve Fund Expenditure Bylaw No. 303, 2017****APPROVED**

The GVS&DD Board gave first, second and third reading to "Greater Vancouver Sewerage and Drainage District Development Cost Charge Reserve Fund Expenditure Bylaw No. 303, 2017". The 2016 budget contemplated the transfer of DCC revenues collected to meet actual debt charge funding requirements related to the Liquid Waste growth capital program. This bylaw completes that process.

Metro Vancouver Housing Corporation District**Audited 2016 Financial Statements****APPROVED**

The MVRD Board, as well as the Greater Vancouver Sewage and Drainage District, the Greater Vancouver Water District and the MVHC approved the Audited 2016 Consolidated Financial Statements for their separate entities. Legislation requires that annual Audited Financial Statements be prepared for the Greater Vancouver Districts and Metro Vancouver Housing Corporation and presented at a public meeting of the Board of Directors.



Community Safety Committee

Date: Tuesday, May 9, 2017

Place: Anderson Room
Richmond City Hall

Present: Councillor Bill McNulty, Chair
Councillor Derek Dang
Councillor Alexa Loo
Councillor Linda McPhail

Absent: Councillor Ken Johnston

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 Community Safety Committee held on April 11, 2017, be adopted as circulated.

CARRIED

NEXT COMMITTEE MEETING DATE

June 13, 2017, (tentative date) at 4:00 p.m. in the Anderson Room

COMMUNITY SAFETY DIVISION

1. **COMMUNITY BYLAWS MONTHLY ACTIVITY REPORT – MARCH 2017**
(File Ref. No. 12-8060-01) (REDMS No. 5365745)
Cecilia Achiam, General Manager, Community Safety, introduced Greg Scarborough, Manager, Bylaws.

Community Safety Committee
Tuesday, May 9, 2017

It was moved and seconded

That the staff report titled "Community Bylaws Monthly Activity Report - March 2017", dated April 10, 2017, from the General Manager, Community Safety, be received for information.

CARRIED

2. EMERGENCY PROGRAMS ACTIVITY REPORT – JANUARY – MARCH, 2017

(File Ref. No. 09-5126-01) (REDMS No. 5377124)

Lainie Goddard, Manager, Emergency Programs, highlighted that (i) Emergency Programs is gauging the level of interest from other Community Centres in regards to the Neighbourhood Preparedness Program, (ii) the Chinese Christian Mission of Canada event at Aberdeen Mall was a success, and (iii) the Public Works Open House is on May 13, 2017.

In reply to queries from Committee, Ms. Goddard noted that staff are working with Corporate Communications and using social media to promote the Volunteer Information meeting on May 31, 2017, and current volunteers would be contacted to ensure continued interest in volunteering with Emergency Programs.

It was moved and seconded

That the staff report titled, "Emergency Programs Activity Report – January – March, 2017," dated April 16, 2017, from the General Manager, Community Safety, be received for information.

CARRIED

3. RICHMOND FIRE-RESCUE MONTHLY ACTIVITY REPORT – MARCH 2017

(File Ref. No. 09-5000-01) (REDMS No. 5361485)

Tim Wilkinson, Deputy Fire Chief, Richmond Fire-Rescue, highlighted activities from the March 2017 Richmond Fire-Rescue Activity Report.

It was moved and seconded

That the staff report titled "Richmond Fire-Rescue Monthly Activity Report – March 2017", dated April 10, 2017 from the Acting Fire Chief, Richmond Fire-Rescue, be received for information.

The question on the motion was not call as discussion ensued with regard to emergency response training for Richmond Fire-Rescue personnel.

In reply to queries from Committee, Ms. Achiam noted that a memorandum would be distributed to Council with more information.

The question on the motion was then called and it was **CARRIED**.

Community Safety Committee
Tuesday, May 9, 2017

4. **FIRE CHIEF BRIEFING**

(Verbal Report)

Items for discussion:

(i) Fire Hall No. 3 Move-In

Deputy Chief Wilkinson spoke on activities at Fire Hall No. 3, highlighting that (i) May 8th and 9th were the first days of operation, (ii) the training group will be in attendance on May 10th, and (iii) vehicle technicians will be moving in next week.

(ii) Update on LUCAS CPR

Deputy Chief Wilkinson spoke on the LUCAS CPR machine, specifically the completion of training and discussions with BC Health Services with regards to deployment.

(iii) Recruiting Update

Deputy Chief Wilkinson advised that recruitment is going well and that many young people applied. He noted that psychological tests have been completed, physical tests will be underway May 17th and 18th, and final interviews are scheduled for July.

5. **RCMP'S MONTHLY ACTIVITY REPORT - MARCH 2017**

(File Ref. No. 09-5000-01) (REDMS No. 5359142)

Inspector Eric Hall, Richmond RCMP, spoke on (i) statistics regarding letters sent and notices issued in relation to distracted drivers, lock-out auto crime, and speed watch (ii) the upcoming D.A.R.E graduation ceremony, and (iii) other RCMP monthly statistics.

In reply to queries from Committee, Inspector Hall noted that it is more telling to compare annual statistics as opposed to monthly as certain crimes may occur at a particular time of year.

Discussion ensued in regards to bike patrols and foot patrols.

Inspector Hall mentioned that the RCMP will be participating in the Public Works Open House on May 13, 2017. Also, he noted next week is Police Week and the theme is strengthening bonds with faith based communities.

It was moved and seconded

That the report titled "RCMP's Monthly Activity Report – March 2017," dated April 3, 2017, from the Officer In Charge, Richmond RCMP, be received for information.

CARRIED

Community Safety Committee

Tuesday, May 9, 2017

6. **RCMP/OIC BRIEFING**

(Verbal Report)

Inspector Hall announced that Inspector Jan Baker is being transferred to Halifax next month and thanked her for her service on behalf of the Richmond RCMP.

6A. **COMMITTEE STANDING ITEMS**

E-Comm

The Chair noted that E-Comm is still recruiting for a new Chief Executive Officer and the Annual General Meeting is on June 10, 2017.

7. **MANAGER'S REPORT**

None.

ADJOURNMENT

It was moved and seconded

That the meeting adjourn (4:22 p.m.).

CARRIED

Certified a true and correct copy of the Minutes of the meeting of the Community Safety Committee of the Council of the City of Richmond held on Tuesday, May 9, 2017.

Councillor Bill McNulty
Chair

Sarah Kurian
Legislative Services Coordinator



General Purposes Committee

Date: Monday, May 15, 2017

Place: Anderson Room
Richmond City Hall

Present: Mayor Malcolm D. Brodie, Chair
Councillor Chak Au
Councillor Derek Dang
Councillor Carol Day
Councillor Ken Johnston
Councillor Alexa Loo
Councillor Bill McNulty
Councillor Linda McPhail
Councillor Harold Steves

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

AGENDA

It was moved and seconded
That Shaw Television Coverage be added to the agenda as Item No. 6.

CARRIED

MINUTES

It was moved and seconded
That the minutes of the meeting of the General Purposes Committee held on May 1, 2017, be adopted as circulated.

CARRIED

General Purposes Committee
Monday, May 15, 2017

COMMUNITY SERVICES DIVISION

1. CANADA 150 LEGACY PUBLIC ART CONCEPT PROPOSAL

(File Ref. No. 11-7000-09-20-232) (REDMS No. 5366639 v. 4)

In reply to a query from Committee, Eric Fiss, Public Art Planner, advised that there will be didactic signage adjacent to the artwork for informational purposes.

It was moved and seconded

That the concept proposal and installation for the Canada 150 Legacy public artwork by artists Henry Lau and David Geary, as presented in the report titled "Canada 150 Legacy Public Art Concept Proposal," dated April 12, 2017, from the Director, Arts, Culture and Heritage Services, be endorsed.

The question on the motion was not called as in reply to a further query from Committee, Mr. Fiss advised that a memorandum illustrating the final rendering of the artwork would be circulated to Council for information. Also, it was suggested that, should there be an unveiling ceremony of the artwork, Rick Hansen be invited.

The question on the motion was then called and it was **CARRIED**.

DEPUTY CHIEF ADMINISTRATOR'S OFFICE

2. SISTER CITY ADVISORY COMMITTEE 2016 YEAR IN REVIEW

(File Ref. No. 01-0100-30-SCIT1-01) (REDMS No. 5380164)

It was moved and seconded

That the staff report titled "Sister City Advisory Committee 2016 Year In Review" dated April 19, 2017, from the Director, Intergovernmental Relations and Protocol Unit, be received for information.

CARRIED

ENGINEERING AND PUBLIC WORKS DIVISION

3. SOLAR ENERGY SYSTEMS PROJECT FOR FIRE HALL NO.1

(File Ref. No. 10-6125-05-01) (REDMS No. 5325224 v. 25)

Discussion took place on the feasibility of utilizing the proposed solar photovoltaic system and concerns were expressed regarding its costs, its payback timeframe and the region's low annual levels of sunshine.

General Purposes Committee

Monday, May 15, 2017

John Irving, Director, Engineering, provided background information with regard to the City's extensive sustainability framework efforts, noting that solar photovoltaic systems have always been on the City's radar; however, due to its costs, its use has never been brought forward for Council consideration. Mr. Irving highlighted that the cost of solar photovoltaic systems has dropped significantly and staff believe that the proposed installation of solar photovoltaic energy generation and innovative storage technology at the new Fire Hall No.1 is a good value proposition.

In reply to queries from Committee, Levi Higgs, Corporate Energy Manager, advised that (i) energy systems develop and become more efficient in terms of their size and capacity, however the technology remains relatively the same, (ii) the technology is flexible in that it can be modified to benefit from new efficiencies like new batteries, (iii) the economic challenge with utilizing solar photovoltaic systems is due to the current cost of the infrastructure, the low Lower Mainland's electricity prices, the current electricity rate structure, and the comparably low annual levels of sunshine the Lower Mainland receives.

In response to a query from the Chair, Robert Gonzalez, General Manager, Engineering and Public Works, advised that the City is committed to corporate energy conservation, efficient resource use and GHG (greenhouse gas) emissions reductions, and Policy 2307 – Sustainable “High Performance” Building Policy – City Owned Facilities entails that City buildings meet specific energy criteria.

It was moved and seconded

- (1) *That the report titled “Solar Energy Systems Project for Fire Hall No. 1” dated April 9, 2017 from the Director, Engineering, be approved in the amount of \$450,000; and*
- (2) *That the 5 Year Financial Plan (2017-2021) be amended accordingly.*

CARRIED

FINANCE AND CORPORATE SERVICES DIVISION

4. APPLICATION FOR A NEW LIQUOR PRIMARY LIQUOR LICENCE - 1063035 BC LTD DOING BUSINESS AS: V + CLUB, 8171 ACKROYD RD UNIT 140

(File Ref. No. 12-8275-30-001) (REDMS No. 5378064 v. 4)

In reply to queries from Committee, Carli Edwards, Manager, Customer Services and Licencing, provided the following information:

- the applicant's proposed operating hours of liquor service are Monday to Sunday, 12:00 PM to 2:00 AM, which is consistent with Policy 9400 – Applications for Liquor Licences – New or Amended;

3.

General Purposes Committee
Monday, May 15, 2017

- staff liaise with the Richmond RCMP with regard to liquor licence applications as the RCMP conducts background and criminal record checks on the principals of the company;
- the proposed total capacity of the karaoke business is 100 persons with 17 rooms for karaoke singing;
- of the 1311 letters sent to businesses, residents and property owners within the 50 meter radius of the subject property, the City received ten responses, five of which were complaints not related to this business in particular; and
- the City has the ability to regulate business activity through the Business Regulation Bylaw No. 7538.

Discussion took place and Committee commented that it would be valuable to know the names of the principals of numbered companies when such applications come before Council.

It was moved and seconded

- (1) *That the application from 1063035 BC Ltd., doing business as, V + Club, for a new Liquor Primary Liquor Licence to operate a Karaoke Box Room, at premises located at 8171 Ackroyd Rd Unit 140, with liquor service, be supported for;*
 - (a) *A new Liquor Primary Liquor Licence with primary business focus of entertainment, specifically Karaoke Box Room with total person capacity of 100 persons;*
 - (b) *Family Food Service to permit minors in all licensed areas until 10:00 PM when accompanied by a parent or guardian;*
 - (c) *Liquor service hours for Monday to Sunday, from 12:00 PM to 2:00 AM;*
- (2) *That a letter be sent to Liquor Control and Licensing Branch advising that:*
 - (a) *Council supports the conditions as listed above, for a new Liquor Primary Liquor Licence as the issuance will not pose a significant impact on the community; and*
 - (b) *Council's comments on the prescribed criteria (set out in Section 71(9) of the Liquor Control and Licensing Regulations) are as follows:*
 - (i) *The potential for additional noise and traffic in the area was considered;*
 - (ii) *The impact on the community was assessed through a community consultation process; and*

General Purposes Committee

Monday, May 15, 2017

- (iii) *Given that this is a new business, there is no history of non-compliance with this operation;*
- (c) *As the operation of a licenced establishment may effect nearby residents the City gathered the views of the residents as follows:*
 - (i) *Property owners and businesses within a 50 meter radius of the subject property were contacted by letter detailing the application, providing instructions on how community comments or concerns could be submitted; and*
 - (ii) *Signage was posted at the subject property and three public notices were published in a local newspaper. The signage and the notice provided information on the application and instructions on how community comments and concerns could be submitted; and*
- (d) *Council's comments and recommendations respecting the views of the residents are as follows:*
 - (i) *That based on the number of letters sent and the few responses received from all public notifications, Council considers that the approval of this application is acceptable to the majority of the residents in the area and the community.*

CARRIED

Opposed: Cllr. Au

PLANNING AND DEVELOPMENT DIVISION

5. **BUILDING PERMIT APPLICATION AT 7251 NO. 6 ROAD**

(File Ref. No. 12-8360-20-01) (REDMS No. 5382274 v. 2)

It was moved and seconded

That Building Permit Application No. 17-770896 for a single family dwelling at 7251 No. 6 Road, with a total floor area (including garage) of 1,246.3 m² (13,414.9 ft²) be withheld for a period of 30 days beginning on the date of application (April 26, 2017) pursuant to Section 463(1) of the Local Government Act, as Council considers that the proposed house size, farm home plate and setbacks are in conflict with the proposed Zoning Bylaw amendments under preparation.

CARRIED

Opposed: Cllr. Loo

5.

General Purposes Committee
Monday, May 15, 2017

6. **SHAW TELEVISION COVERAGE**
(File Ref. No.)

Ted Townsend, Director, Corporate Communications and Marketing, advised that Shaw Communications has announced the closure of its local television station in Vancouver, among other cities. Mr. Townsend remarked that staff are currently examining its effects and in particular the equipment utilized to record City Council meetings and the operation of said equipment.

As a result, the following **referral** was introduced:

It was moved and seconded

That staff examine the upcoming Shaw Television changes and report back.

CARRIED

ADJOURNMENT

It was moved and seconded

That the meeting adjourn (4:42 p.m.).

CARRIED

Certified a true and correct copy of the Minutes of the meeting of the General Purposes Committee of the Council of the City of Richmond held on Monday, May 15, 2017.

Mayor Malcolm D. Brodie
Chair

Hanieh Berg
Legislative Services Coordinator



Planning Committee

Date: Tuesday, May 16, 2017

Place: Anderson Room
Richmond City Hall

Present: Councillor Linda McPhail, Chair
Councillor Bill McNulty
Councillor Chak Au
Councillor Alexa Loo
Councillor Harold Steves

Also Present: Councillor Derek Dang

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

AGENDA ADDITIONS

It was moved and seconded

That Francis Road Fill Application be added to the agenda as Item No. 6A, Winery at 15380 Westminster Highway be added to the agenda as Item No. 6B, and Winter Night Market be added to the agenda as Item No. 6C.

CARRIED

MINUTES

It was moved and seconded

That the minutes of the meeting of the Planning Committee held on May 2, 2017, be adopted as circulated.

CARRIED

NEXT COMMITTEE MEETING DATE

June 6, 2017, (tentative date) at 4:00 p.m. in the Anderson Room

Planning Committee
Tuesday, May 16, 2017

COUNCILLOR DEREK DANG

1. RCSAC PROPOSAL FOR RICHMOND FOOD SYSTEMS ADVISORY COMMITTEE

(File Ref. No.)

Alex Nixon and Kathie Chiu, representing the Richmond Community Services Advisory Committee (RCSAC), spoke on the proposal from the RCSAC to form a Richmond Food Systems Advisory Committee, noting that there are currently no committees in the City that holistically addresses food systems in Richmond.

Discussion ensued with regard to (i) involving food producers in the proposed advisory committee, (ii) the process to form an advisory committee, and (iii) the potential composition of the proposed advisory committee.

It was moved and seconded

That staff examine the propriety of forming a Richmond Food Systems Advisory Committee and report back.

The question on the motion was not called as discussion ensued with regard to involving local food producers and distributors in the proposed advisory committee.

In reply to queries from Committee, Cathryn Volkering Carlile, General Manager, Community Services, noted that staff can examine best practices and the potential expansion of the scope of current advisory committees to include food systems.

The question on the motion was then called and it was **CARRIED**.

COMMUNITY SERVICES DIVISION

2. AFFORDABLE HOUSING STRATEGY UPDATE – DRAFT POLICY REVIEW AND RECOMMENDATIONS

(File Ref. No. 5383915) (REDMS No. 5383915 v. 22)

Joyce Rautenberg, Affordable Housing Coordinator, with the aid of a PowerPoint presentation, (copy on-file, City Clerk's Office) reviewed the Affordable Housing Strategy Draft Policy and Recommendations, noting that staff will report back on the proposed policy by August 2017.

Planning Committee
Tuesday, May 16, 2017

Discussion ensued with regard to (i) the lack of funding dedicated to affordable housing from senior levels of government, (ii) increasing the recommended built affordable housing unit contribution percentage to 15%, (iii) increasing the cash-in-lieu contribution for single-family developments, (iv) further reducing the built unit thresholds to below 60 units, (v) encouraging development of accessible units, (vi) the potential impact of the proposed recommendations on townhouse development, (vii) working with School District No. 38 to build density around low enrolment schools, and (viii) the availability of amenity space for new affordable housing.

It was moved and seconded

That the recommended Affordable Housing Strategic approach and policy actions, as outlined in the staff report titled, "Affordable Housing Strategy Update – Draft Policy Review and Recommendations," be approved for the purpose of key stakeholder consultation and the results of the consultation be reported back to Planning Committee.

The question on the motion was not called as discussion ensued with regard to (i) utilizing micro suites for affordable housing, (ii) meeting the demand for affordable housing, and (iii) utilizing not-for-profit organizations to manage affordable housing units.

In reply to queries from Committee, Kim Somerville, Manager, Community Social Development, noted that staff will seek opportunities to partner with not-for-profit organizations and senior levels of government to develop affordable housing and that consultation will include feedback from the public.

PLANNING AND DEVELOPMENT DIVISION

3. **APPLICATION BY DAVA DEVELOPMENTS LTD. TO AMEND ATTACHMENT 1 TO SCHEDULE 1 OF THE OFFICIAL COMMUNITY PLAN AT 9560 PENDLETON ROAD FROM "PARK" TO "NEIGHBOURHOOD RESIDENTIAL", AND FOR REZONING AT 9560 PENDLETON ROAD FROM "SCHOOL & INSTITUTIONAL USE (SI)" ZONE TO "SINGLE DETACHED (ZS28)" – PENDLETON ROAD (WEST RICHMOND) ZONE**

(File Ref. No. 12-8060-20-009661/9662; CP 16-733600; RZ 16-732627) (REDMS No. 5193684)

It was moved and seconded

- (1) *That Official Community Plan Bylaw OCP Bylaw 9000, Amendment Bylaw 9662, to re designate 9560 Pendleton Road from "Park" to "Neighbourhood Residential" in Attachment 1 to Schedule 1 of Official Community Plan Bylaw OCP Bylaw 9000, be introduced and given first reading;*

Planning Committee
Tuesday, May 16, 2017

- (2) *That Bylaw 9662, having been considered in conjunction with:*
- (a) *The City's Financial Plan and Capital Program; and*
 - (b) *The Greater Vancouver Regional District Solid Waste and Liquid Waste Management Plans;*
- is hereby found to be consistent with said program and plans, in accordance with Section 477(3)(a) of the Local Government Act;*
- (3) *That Bylaw 9662, having been considered in accordance with OCP Bylaw Preparation Consultation Policy 5043, is hereby found not to require further consultation; and*
- (4) *That Richmond Zoning Bylaw 8500, Amendment Bylaw 9661, to create the "Single Detached (ZS28) – Pendleton Road (West Richmond)" zone, and to rezone 9560 Pendleton Road from the "School & Institutional Use (SI)" zone to the "Single Detached (ZS28) – Pendleton Road (West Richmond)" zone, be introduced and given first reading.*

CARRIED

4. RICHMOND RESPONSE: METRO VANCOUVER REGIONAL GROWTH STRATEGY AMENDMENT BYLAW NO. 1243, 2017 AND RGS PERFORMANCE MONITORING GUIDE

(File Ref. No. 08-4040-01) (REDMS No. 5386785)

Terry Crowe, Manager, Policy Planning, briefed Committee on Metro Vancouver's proposed Regional Growth Strategy Amendment Bylaw No. 1243, 2017 and the Regional Growth Strategy Performance Monitoring Guide, noting that it was proposed that performance measures be reduced from 55 to 15 key measures.

It was moved and seconded

- (1) *That the staff report titled, "Richmond Response: Metro Vancouver Regional Growth Strategy Amendment Bylaw No. 1243, 2017 and RGS Performance Monitoring Guide", dated May 8, 2017 from the General Manager, Planning and Development, be received for information; and*
- (2) *That the staff recommendation to advise the Metro Vancouver Regional Board that the City of Richmond supports the proposed Metro Vancouver Regional Growth Strategy Amendment Bylaw 1243, 2017 and RGS Performance Monitoring Guide be endorsed.*

CARRIED

Planning Committee
Tuesday, May 16, 2017

5. RICHMOND RESPONSE: PORT OF VANCOUVER PROPOSED INDUSTRIAL DESIGNATION OF 1700 NO.6 ROAD

(File Ref. No. 08-4040-01) (REDMS No. 5386969)

It was moved and seconded

- (1) *That the staff recommendation in the report "Richmond Response: Port of Vancouver Proposed Industrial Designation of 1700 No. 6 Road", dated May 8, 2017 from the General Manager, Planning and Development, to advise the Port of Vancouver board that the City of Richmond supports the Port's proposed Industrial designation of 1700 No. 6 Road in the Port's Master Plan be endorsed; and*
- (2) *That the staff recommendation to request the Port of Vancouver Board to work with the City of Richmond to establish the future OCP proposed Knox Way extension, OCP Major Greenway and OCP Major Cycling Route be endorsed.*

CARRIED

6. RICHMOND RESPONSE: YVR PROPOSED PHASE 2 NORTH RUNWAY END SAFETY AREAS (RSEA) OPTIONS

(File Ref. No. 08-4040-01) (REDMS No. 5387271)

Mr. Crowe spoke on the Vancouver Airport's (YVR) proposed Phase Two North Runway End Safety Areas (RESA) options, noting that YVR is currently completing Phase One of the project and that the RESA consists of softer paving material that will provide a safety buffer for aircraft that overshoot the runway.

It was moved and seconded

- (1) *That the staff report titled "Richmond Response: YVR Proposed Phase 2 North Runway Safety End Areas (RESA) Options", dated May 8, 2017 from the General Manager, Planning and Development be received for information; and*
- (2) *That the staff recommendation to advise the Vancouver International Airport Authority (YVR) that the City of Richmond supports YVR's proposed Option 2 be endorsed.*

CARRIED

6A. FRANCIS ROAD FILL APPLICATION

(File Ref. No.)

Discussion ensued with regard to informing the Agricultural Land Commission (ALC) on the non-farm use fill application for the property located at the eastern terminus end of Francis Road.

Planning Committee
Tuesday, May 16, 2017

It was moved and seconded

That the non-farm use fill application for the property located at the eastern terminus end of Francis Road be referred to the Agricultural Land Commission.

CARRIED

6B. WINERY AT 15380 WESTMINSTER HIGHWAY

(File Ref. No.)

It was noted that a development application sign was installed on-site

It was moved and seconded

That the Agricultural Land Commission be informed of the development application at 15380 Westminister Highway.

CARRIED

6C. WINTER NIGHT MARKET

(File Ref. No.)

Discussion ensued with regard to expediting the application for the proposed Winter Night Market.

In reply to queries from Committee, Mr. Craig noted that staff are currently reviewing the application and that staff can liaise with the Canada 150 Committee to meet target dates.

ADJOURNMENT

It was moved and seconded

That the meeting adjourn (4:51 p.m.).

CARRIED

Certified a true and correct copy of the Minutes of the meeting of the Planning Committee of the Council of the City of Richmond held on Tuesday, May 16, 2017.

Councillor Linda McPhail
Chair

Evangel Biason
Legislative Services Coordinator



Public Works and Transportation Committee

Date: Wednesday, May 17, 2017

Place: Anderson Room
Richmond City Hall

Present: Councillor Chak Au, Chair
Councillor Harold Steves
Councillor Derek Dang
Councillor Carol Day
Councillor Alexa Loo

Also Present: Councillor Linda McPhail

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

MINUTES

It was moved and seconded

That the minutes of the meeting of the Public Works and Transportation Committee held on April 20, 2017, be adopted as circulated.

CARRIED

NEXT COMMITTEE MEETING DATE

June 21, 2017, (tentative date) at 4:00 p.m. in the Anderson Room

Public Works & Transportation Committee
Wednesday, May 17, 2017

ENGINEERING AND PUBLIC WORKS DIVISION

1. BC ENERGY STEP CODE FOR NEW PRIVATE BUILDINGS
(File Ref. No. 10-6125-07-02) (REDMS No. 5367037 v. 8)

It was moved and seconded

- (1) *That the stakeholder consultation program in the report titled "BC Energy Step Code for New Private Buildings" dated April 11, 2017, from the Director, Engineering, be endorsed for the purpose of gaining feedback on how the Energy Step Code can be implemented in Richmond;*
- (2) *That the air barrier installation training program identified in the report titled "BC Energy Step Code for New Private Buildings" dated April 11, 2017, from the Director, Engineering, be approved with \$60,350 funding from the Carbon Tax Provision; and*
- (3) *That the funding for the air barrier installation training program be included as an amendment to the 5 Year Financial Plan (2017-2021).*

CARRIED

2. AWARD OF CONTRACT 5757 EOI – RECYCLING DEPOT CONTAINER COLLECTION AND RECYCLING SERVICES
(File Ref. No. 10-6370-04-01) (REDMS No. 5374675)

It was moved and seconded

- (1) *That Contract 5757 EOI, Recycling Depot Container Collection and Recycling Services, be awarded as follows:*
 - (a) *Cascades Recovery Inc. – the container collection and recycling services for the following commodities at the unit rates quoted: newspaper, mixed paper and cardboard; and*
 - (b) *Super Save Group – the container collection and recycling services for the following commodities at the unit rates quoted: tin, scrap metal, aluminium, plastic and yard waste;*
- (2) *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 as a new contract can be advertised and awarded; and*
- (3) *That the Chief Administrative Officer and General Manager, Engineering and Public Works, be authorized to execute the above contracts.*

CARRIED

Public Works & Transportation Committee
Wednesday, May 17, 2017

3. AMENDMENT TO WATER USE RESTRICTION BYLAW

(File Ref. No. 10-6160-07-06) (REDMS No. 5352786)

In response to a query from Committee, Kimberley Armour, Environmental Coordinator, advised that the European chafer beetle has impacted the Lower Mainland.

It was moved and seconded

That the Water Use Restriction Bylaw No. 7784, Amendment Bylaw No. 9704 be introduced and given first, second and third readings.

CARRIED

4. 2016 ANNUAL WATER QUALITY REPORT

(File Ref. No. 10-6000-01) (REDMS No. 5371641)

It was moved and seconded

That the staff report titled "2016 Annual Water Quality Report" dated April 13, 2017 from the Director, Public Works Operations, be endorsed and made available to the community through the City's website and through various communication tools including social media and as part of community outreach activities.

CARRIED

5. 2016 CLIMATE ACTION REVENUE INCENTIVE PROGRAM AND CARBON NEUTRAL PROGRESS REPORT

(File Ref. No. 10-6125-07-03) (REDMS No. 5372171 v. 12)

In reply to a query from Committee, Suzanne Bycraft, Manager, Fleet and Environmental Programs, advised that the City currently does not require that its contractors utilize "green" fleet; however, staff are aware of alternative fuel options and this could be considered in the future.

It was moved and seconded

(1) *That the 2016 Climate Action Revenue Incentive Program (CARIP) and Carbon Neutral Progress Report from the Director, Engineering dated April 27, 2017, be received for information; and*

(2) *That, in accordance with Provincial requirements, the CARIP Report and Carbon Neutral Progress Report be posted on the City's website for public access.*

CARRIED

Public Works & Transportation Committee
Wednesday, May 17, 2017

6. MANAGER'S REPORT

(1) No. 2 Road Multi-Use Pathway

Milton Chan, Manager, Engineering Design and Construction, provided an update on the progress of the No. 2 Road Multi-Use Pathway, noting that staff are currently examining alignment options that minimizes impact to trees in the area.

(2) Harvest Power

John Irving, Director, Engineering, commented on the recent decision by the Environmental Appeal Board with regard to Harvest Power's appeal.

(3) Public Works

Tom Stewart, Director, Public Works Operations, spoke on National Public Works Week and highlighted that the Public Works Open House was successful with over 5,000 people attending the event.

Committee thanked staff for all their efforts in volunteering and hosting a success event.

ADJOURNMENT

It was moved and seconded
That the meeting adjourn (4:13 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, May 17, 2017.

Councillor Chak Au
Chair

Hanieh Berg
Legislative Services Coordinator



City of Richmond

Report to Committee

To: General Purposes Committee
From: Jane Fernyhough
Director, Arts, Culture and Heritage Services
Date: April 12, 2017
File: 11-7000-09-20-232/Vol
01
Re: Canada 150 Legacy Public Art Concept Proposal

Staff Recommendation

That the concept proposal and installation for the Canada 150 Legacy public artwork by artists Henry Lau and David Geary, as presented in the report titled "Canada 150 Legacy Public Art Concept Proposal," dated April 12, 2017, from the Director, Arts, Culture and Heritage Services, be endorsed.

Jane Fernyhough
Director, Arts, Culture and Heritage Services
(604-276-4288)

Att. 2

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

Staff Report

Origin

At the November 28, 2016 Council meeting, Council formally endorsed the *Canada 150 Celebrations Public Art Plan* as the guiding plan for public art opportunities in support of Canada 150 celebrations and major event programming in 2017.

This report presents the artwork concept proposal for the Canada 150 Legacy commission, a significant artwork to be located in a prominent location within the landscaped grounds of Richmond City Hall facing Granville Avenue.

This report supports Council's 2014-2018 Term Goal #2 A Vibrant, Active and Connected City:

Continue the development and implementation of an excellent and accessible system of programs, services and public spaces that reflect Richmond's demographics, rich heritage, diverse needs and unique opportunities, and that facilitate active, caring and connected communities.

2.1. *Strong neighbourhoods.*

2.3. *Outstanding places, programs and services that support active living, wellness and a sense of belonging.*

2.4. *Vibrant arts, culture and heritage opportunities.*

Analysis

Canada 150 Celebrations Public Art Plan Vision

It is the intention of the *Canada 150 Celebrations Public Art Plan* to support the overall programming established by the Canada 150 Steering Committee. The *Public Art Plan* provides opportunities for permanent and temporary artworks to engage diverse and multi-generational audiences.

The public artwork opportunities strive to support exceptional, sustainable and accessible public spaces and the public artwork recommendations are driven by the following guiding principles:

- contributing to a sense of place;
- creating artworks of the highest quality;
- reflecting the principles of sustainability; and
- achieving synergies between the community, the artists and City staff.

Themes for Canada 150 Legacy Public Artwork

The three themes used to inform the creation of a permanent artwork for the Canada 150 Legacy Artwork at Richmond City Hall include:

- *History, Culture, Diversity*: Artwork to reflect Richmond's rich tapestry of cultures, recognizing the original First Nations residents, early European settlers and the immigrants from a multiplicity of cultures that have since made their homes here.
- *Fraser River, Working River*: Artwork to explore Richmond's vital relationship to the Fraser River and reflect on the development of Lulu Island with the key industries of fisheries, agriculture, shipping and other fields.
- *Agricultural Sustainability*: Artwork to celebrate Richmond's relationship to the land, from the first inhabitants, to farmers who recognized and nurtured the bounty of the region's rich delta soils, to recent food security initiatives and innovation in urban agriculture.

Canada 150 Legacy Public Artwork - Public Art Artist Selection Process

In February 2017, following the Public Art Program administrative procedures for selection of civic public art projects, an artist call was issued for a Canadian artist to create a legacy artwork to commemorate Canada's 150th anniversary in 2017 (Attachment 1).

On March 14, 2017 following the administrative procedures for selection of civic public art projects, the Selection Panel reviewed the artist qualifications and preliminary concept proposals of twenty artists who responded to the Artist Call and shortlisted four artists to further develop their concept proposals for the artwork.

Members of the Selection Panel included:

- Norm Williams, Sculptor, Artist
- Simone Guo, Community Representative and Local Richmond Artist
- Danny Chen, Community Representative and Local Richmond Artist
- Denise Cook, Cultural Heritage Resource Specialist

On April 4, 2017, staff presented the four shortlisted concept proposals to the Canada 150 Steering Committee for their feedback to inform the final deliberation by the Selection Panel in the artist selection process.

On April 6, 2017, following the presentations and interviews of the four shortlisted artists, the Public Art Selection Panel reached consensus and recommended the concept proposal *Stylized White River Sturgeon Sculptural Relief* by artists Henry Lau and David Geary, an architect and visual artist collaborative team from Saskatoon, Saskatchewan, for the Canada 150 Legacy public artwork.

The following feedback was provided by the Selection Panel in support of their recommendation:

- The proposed artwork's connection to the "Fraser River/Working River" theme is simplistic. However, visually it is a striking concept, iconic, simple, symbolic,

straightforward, bold and contemporary statement that has the potential to become a Richmond landmark for years to come.

- The size of the fish approximates the size of a 150 year old white sturgeon. The Panel felt this was a unique way to acknowledge Canada's 150th anniversary.
- The artwork brings awareness to the sturgeon as a cultural, social and economic historically significant fish species for the City of Richmond, which has been overshadowed by the salmon. The sturgeon reflects an historical connection to Richmond's Sturgeon Banks.
- The white sturgeon is a species that is under protection by the BC Provincial Fisheries Program. The artwork raises awareness of native wildlife species and environmental sustainability.
- The proposed artwork is an appropriate scale for the location, conducive to pedestrian and vehicular viewing experiences.
- The site is not located in a high traffic pedestrian street and may not engage as many pedestrians as the artists anticipate.

On April 11, 2017, the Richmond Public Art Advisory Committee reviewed the proposal and supports the Selection Panel's artist recommendation. The Committee identified questions about the durability and maintenance of the artwork that are to be addressed by the artist during detailed design. The Committee noted the positive relationship in the positioning of the sturgeon to appear below the water level of the adjacent pond on the south side of City Hall.

Recommended Public Art Concept Proposal

The artwork will be located in a low, recessed concrete retaining wall, located within the landscaped grounds of Richmond City Hall facing Granville Avenue. The artists describe the artwork as follows:

"We propose a stylized stainless steel sculptural relief of a sturgeon as a metaphorical representation of the history and peoples of Richmond. It is a metaphor for the Fraser River and region's fishing industry. The artwork uses the unique durable and reflective qualities of polished stainless steel to engage the public in conveying this story."

Attachment 2 provides further information about the proposed artwork.

A technical review and coordination phase with the City's facility staff will be included with the implementation phase of the artwork. The artists and City staff will continue to meet to review construction coordination and implementation phases of the project. Maintenance of the artwork will be the responsibility of the Public Art Program.

Financial Impact

The total public art budget for the Canada 150 Legacy public artwork is \$150,000 funded from existing funds in the approved 2017 Public Art Capital Project. For this project, a budget of up to \$30,000 is provided to the artist for design services. The balance of \$120,000 will be used for fabrication and installation of the artwork including all related artist expenses. Any repairs required to the artwork will be the responsibility of the Public Art Program. City funds for maintenance would be allocated out of the Public Art Program's annual operating budget.

Conclusion

The Canada 150 Celebrations in 2017 represents an opportunity to acknowledge Richmond's history, heritage and cultural diversity. This initiative also supports the Richmond Arts Strategy's 2012-2017 recommended action to broaden the diversity of arts experiences and opportunities and expand public awareness and understanding of the arts.

Staff recommends that Council endorse the proposed concept and installation of the Canada 150 Legacy public artwork, by artists Henry Lau and David Geary, as presented in this report.



Eric Fiss
Public Art Planner
(604-247-4612)

- Att. 1: Canada 150 Legacy Public Art, Artist Call Terms of Reference
2: Canada 150 Legacy Public Artwork Concept Proposal, Henry Lau and David Geary

call to artists

PUBLIC ART
RICHMOND



Figure 1 - Richmond City Hall, artwork location facing Granville Avenue.

Canada 150 Legacy Public Art

Request for Proposals, RFP

Richmond City Hall
February 2017



OPPORTUNITY

The Richmond Public Art Program is seeking an artist or artist team to create a legacy public artwork to commemorate Canada's 150th anniversary in 2017. The civic artwork will be located in a prominent location at Richmond City Hall, 6911 No. 3 Road. Artists with demonstrated ability and proven practices in sculpture, mixed-media and installation art are encouraged to apply.

This is a two-stage open artist call. Following review of the submissions, the Selection Panel will recommend up to five artists to be shortlisted. Shortlisted artists will be invited to develop their concept proposals and attend an interview. An interview fee of \$500, plus applicable taxes will be paid to each of the shortlisted artists or artist teams. All information about the opportunity is contained herein.

Project Budget:	Up to \$150,000 CAD
Eligibility Requirements:	Open to professional artists residing in Canada.
Deadline for Submissions:	Monday, March 6, 2017 at 5:00 p.m. PST.
Installation:	Fall 2017

call to artists

PUBLIC ART
RICHMOND

ARTWORK THEMES

Artists will be required to respond to one or a combination of the following three themes in their statement of intent:

- **History, Culture and Diversity**

Reflect Richmond's rich tapestry of cultures, recognizing the original First Nations residents, early European settlers and the immigrants from a multiplicity of cultures that have since made their homes in Richmond.

- **Fraser River, Working River**

Explore Richmond's vital relationship to the Fraser River and reflect on the development of Lulu Island, with the key industries of fisheries, agriculture, shipping and other fields.

- **Agricultural Sustainability**

Celebrate Richmond's relationship to the land, from the first inhabitants, to farmers who recognized and nurtured the bounty of the region's rich delta soils, to recent food security initiatives and innovations in urban agriculture.

BACKGROUND

Canada's 150 Celebration in 2017 presents an opportunity to mark the occasion with a new public artwork in Richmond. The legacy artwork will occupy a prominent location along Granville Avenue and will be seen against the dramatic backdrop of Richmond City Hall.

The award-winning Richmond City Hall was completed in 2000 and offers amenities and multipurpose spaces, available for public and private events and programming. A large civic plaza with outdoor stage, water elements and heritage, indigenous low-maintenance trees are features of the extensive landscaped gardens that contribute to a welcoming environment, making City Hall a focal point for Richmond's evolving civic centre.

The building construction uses concrete, stone and wood to reduce life cycle energy and premature obsolescence. Artists will consider the symbolic civic nature of the artwork, and its relationship to the building's material palette.

LOCATION

The legacy artwork will be located at Richmond City Hall, 6911 No. 3 Road. An existing low concrete retaining wall facing south on Granville Avenue has been identified as the location for the artwork. The platform supports a viewing stage for the annual Remembrance Day ceremonies in Richmond. Please refer to Figures 2–5 for context images of the site. Applicants are encouraged to visit the site prior to submitting proposal packages.

call to artists

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MATERIALS

Artists will be required to work with long-lasting materials that are durable, low maintenance and reflect strength and dignity in design.

DESIGN CONSTRAINTS

The artwork shall not exceed the dimensions shown in Figure 3. Attachments and foundation supports should be secure and limited to the concrete retaining wall and ledge.

BUDGET

A total budget of up to \$150,000 CAD, plus applicable taxes is available for this project. This budget will include (but is not limited to) artist fees, design, permitting as required, engineering fees, fabrication, installation, photography, insurance and all applicable taxes (GST excluded). Shortlisted artists will be required to provide a detailed budget as part of their second stage submission package.

ARTIST ELIGIBILITY

This opportunity is open to artists or artist teams residing in Canada. Qualified artists will have proven experience producing artworks for civic projects. City of Richmond staff and its Public Art Advisory Committee members, selection panel members, project personnel, and immediate family members are not eligible to apply.

SELECTION PROCESS

A selection panel will recommend the artist/artist team through a two-stage open call process. For stage one, artists are asked to submit a preliminary idea or approach for the site. For stage two, up to five artists will be asked to prepare a detailed concept design, detailed project budget and attend a finalist presentation and interview. An interview fee of \$500 will be paid to each of the shortlisted artists or artist teams.

Finalists outside of Greater Vancouver will be reimbursed for up to \$500 for travel and lodging expenses to attend the interview in Richmond. If applying as a team, the allowance for travel may not fully reimburse all team members.

A selection panel comprised of artists, art professionals and community representatives will review all artist submissions. The panel will select up to five shortlisted artists to develop detailed concept proposals. At the end of the second stage selection process, the selection panel will recommend one artwork proposal to City Council for endorsement.

call to artists

PUBLIC ART
RICHMOND

ARTIST SELECTION CRITERIA

The following criteria will inform the Selection Panel deliberation process as part of the artist selection process in Stage 1 and Stage 2.

Stage 1

- Artistic merit of Artist Statement of Intent and Conceptual Artist Sketch in response to project theme and goals.
- Artist's demonstrated qualifications, skills and experience of past work.
- Ability of the artwork to respond to the existing character of the site by taking into account scale, colour, material, texture, content and the physical characteristics of the location.
- Artist's capacity to work with other design professionals and stakeholders.
- Appropriateness of the proposal to the Public Art Program goals: www.richmond.ca/culture/publicart/plans/policy.

Stage 2

- Artist response to any feedback and follow-up questions from Selection Panel regarding artistic merit of Artist Statement of Intent and Conceptual Artist Sketch in response to project theme and goals.
- Artist response to any feedback and follow-up questions from Selection Panel regarding ability of the artwork to respond to the existing character of the site by taking into account scale, colour, material, texture, content and the physical characteristics of the location.
- Artist response to any feedback and follow-up questions from Selection Panel regarding *appropriateness* of the proposal to the Public Art Program goals: www.richmond.ca/culture/publicart/plans/policy.
- Detailed project budget including, but not limited to: artist fees, materials, fabrication, administration, insurance, installation, documentation, permits and consultant fees.
- 3D artist visualizations and/or models to communicate how the artwork will respond to the site including scale, colour, material, texture, content, installation method and the physical characteristics of the location.
- Artwork sensitivity to environmental concerns with respect to artwork materials and method of fabrication and installation.

call to artists

PUBLIC ART
RICHMOND

SUBMISSION REQUIREMENTS

E-mail all documentation as one PDF document, not to exceed a file size of 5 MB to: publicart@richmond.ca

- **INFORMATION FORM** – Please complete the information form attached to this document.
- **STATEMENT OF INTENT** – (one page maximum) a brief artist bio, an outline of concept or approach to the identified themes, reference to demonstrated experience in past work and proposed medium or materials for the artwork. If applying as a team, please address how team members will work together.
- **CONCEPTUAL ARTIST SKETCH** – (one page maximum) a preliminary artwork visualization to accompany the Statement of Intent and how you are responding to the identified selection criteria.
- **ARTIST CV** – (one page maximum) current professional CV. Artist teams will include a one page CV for each team member.
- **WORK SAMPLES** – Artists and artist teams must submit a maximum of ten (10) samples of past work that best illustrate their qualifications for this project. One image per page. Please include artist name(s), title, year, location and medium information.
- **REFERENCES** – Three references who can speak to your abilities, skills and accomplishments. Please provide name, title and contact telephone number and/or email. Reference letters are not required. Teams should include two references for each member.

PROJECT TIMELINE

*Applicants are asked to reserve this date in their calendar.

Submission Deadline: Monday, March 6, 2017, 5:00 p.m. PST

Finalist Interviews: Thursday, April 6, 2017*

Completion: Fall 2017

SOURCES FOR ADDITIONAL INFORMATION

[Canada 150 Celebration Program](#)

[City of Richmond](#)

[City of Richmond Archives](#)

[City Centre Public Art Plan](#)

[Richmond Public Art Program Policy](#)

call to artists

PUBLIC ART
RICHMOND

SUBMISSION GUIDELINES

1. All supporting documents must be complete and strictly adhere to the guidelines and submission requirements or risk not being considered.
2. All submissions must be formatted to 8.5 x 11 inch pages. Past work images and concept sketches would be best formatted to landscape format.
3. Submission files must be a single PDF file that is 5 MB or less.
4. If submitting as a team, the team should designate one representative to complete the entry form. Each team member must submit an individual resume/curriculum vitae. (See Submission Requirements)
5. All documents must be sent by e-mail to: publicart@richmond.ca

ADDITIONAL INFORMATION

1. The selected artist will enter into contract with the City of Richmond and may be required to show proof of WCB coverage and up to \$5,000,000 general liability insurance.
2. Please be advised that the City and the selection panel are not obliged to accept any of the submissions and may reject all submissions. The City reserves the right to reissue the Artist Call as required.
3. All submissions to this Artist Call become the property of the City. All information provided under the submission is subject to the Freedom of Information and Protection of Privacy Act (BC) and shall only be withheld from release if an exemption from release is permitted by the Act. The artist shall retain copyright in the concept proposal. While every precaution will be taken to prevent the loss or damage of submissions, the City and its agents shall not be liable for any loss or damage, however caused.
4. Extensions to the submission deadline will not be granted under any circumstances. Submissions received after the deadline and those that are found to be incomplete will not be reviewed.

QUESTIONS

Please contact the Richmond Public Art Program:

Tel: 604-204-8671

E-mail: publicart@richmond.ca

call to artists

PUBLIC ART
RICHMOND

RICHMOND CITY HALL – ARTWORK LOCATION



Figure 2 – Concrete retaining wall location highlighted in red.



Figure 3 – Artwork dimensions should not exceed 22' length x 3'-4" high x 2' deep.

call to artists

PUBLIC ART
RICHMOND



Figure 4 – Detail elevation of recessed retaining wall area.



Figure 5 – Aerial perspective showing site in context along Granville Avenue.

Stylized White River Sturgeon Sculptural Relief

By Henry Lau and Dave Geary

Artist Statement

We propose a stylized stainless steel constructed relief of a sturgeon as a metaphorical representation of the history and peoples of Richmond. It is also a metaphor for the Fraser River and region's fishing industry. The artwork uses the unique durable and reflective qualities of polished stainless steel to engage the public in conveying this story.

Sturgeons are majestic and legendary. They have survived and persisted through millennia in challenging environments and symbolize resiliency, adaptability, resourcefulness and determination to thrive under harsh conditions.

Sturgeons can be found in the Americas, Asia and Europe. An understanding and appreciation of these legendary creatures is shared by many cultures and can be seen as an evocative and unifying symbol for Richmond's culturally diverse community.

The proposed artwork and the award winning Richmond City Hall are visually complementary. The form and the scale of the artwork will be in dialogue with the proposed site. The artwork will contribute to the elegant and dynamic landscape and backdrop of Richmond City Hall.

The Stainless Steel chosen for the artwork has post-consumer recycled content of up to 82% and all material wastes will be minimized and recycled. The material is very durable and will require minimal maintenance, which reduces the life cycle energy requirement for the artwork.

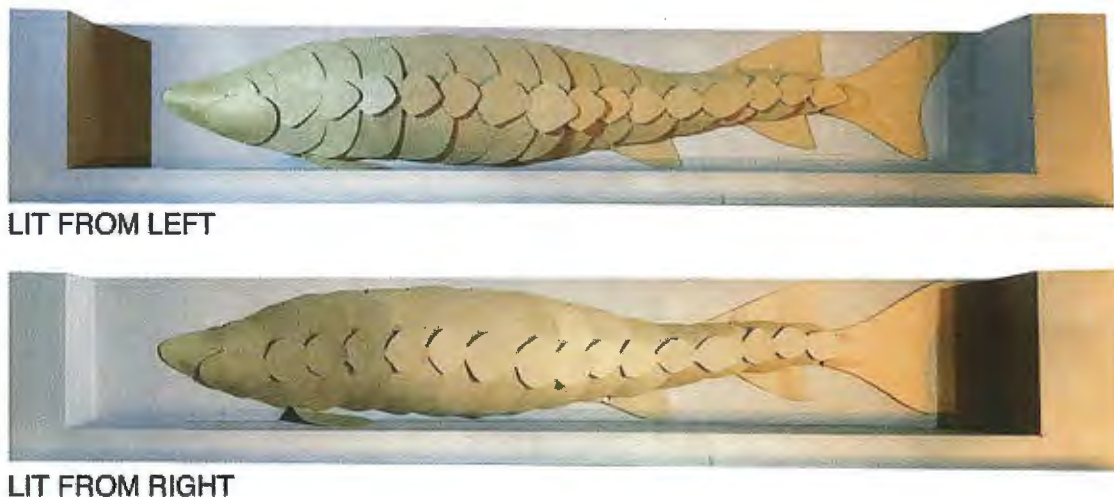


Figure 1 – Artist image of cardboard model



Figure 2 – Artist rendering of the white sturgeon artwork within the existing concrete recess



Figure 3 – Artist rendering of the white sturgeon in context with the site and architecture



City of Richmond

Report to Committee

To: General Purposes Committee

Date: April 9, 2017

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

File: 10-6125-05-01/2017-
Vol 01

Re: Solar Energy Systems Project for Fire Hall No.1

Staff Recommendation

1. That the report titled "Solar Energy Systems Project for Fire Hall No. 1" dated April 9, 2017 from the Director, Engineering, be approved in the amount of \$450,000; and,
2. That the 5 Year Financial Plan (2017-2021) be amended accordingly.

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

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

Staff Report

Origin

The purpose of this report is to bring forward an opportunity for Council consideration to incorporate solar photovoltaic (PV) energy generation and innovative storage technology at the new Fire Hall No.1.

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.*

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.*

Background

In January 2014 Council adopted the Community Energy and Emissions Plan (CEEP) that outlines an array of strategies and actions for the City to take to reduce community energy use and GHG emissions. Some of these strategies and actions encourage the deployment of corporate solar energy systems, including:

Strategy 10: Utilize Local Energy Sources.

Strategy 13: "Lead by example" with City Operations Energy Management.

Council's commitment to corporate energy conservation, efficient resource use and GHG (greenhouse gas) emissions reductions, are key components that drive the City's sustainable business and operational practices. This commitment led to the update of the Sustainable "High Performance" Building Policy – City Owned Facilities (#2307) in February 2014, with strong energy conservation and sustainability performance targets for new and existing facilities. In accordance with the City's policy, the new Fire Hall No.1 targeted LEED® Gold certification for New Construction. These targets drove the building design to maximize waste heat recovery, minimize heat loss through improved building envelopes, use high efficient lighting and low flow water fixtures, and incorporate a rainwater collection system for site irrigation needs.

Incorporating energy conservation measures are anticipated to greatly increase the energy efficiency of the new Fire Hall No.1 as compared to the previous building. It is expected that the new fire hall will utilize approximately 50% less energy, while providing 35% more floor space.

In addition, the “Solar Friendly Richmond Framework”, presented to Council in January 2016, outlined opportunities for the City to accelerate solar PV deployment in the City, including installing solar on new or existing corporate buildings.

Analysis

During the design development, it was recognized that a solar PV electricity generation system was not a core operational feature. However, the building was designed to structurally support solar PV panels on the upper roof of the building. This structure design feature, along with other features, was crucial to incorporate in the initial design of the building in order to ensure that the systems could be integrated as seamlessly as possible now or in the future. In addition, this renewable energy infrastructure is essential for the City to achieve LEED® Gold certification for the Fire Hall No.1, and without it a lesser designation is expected to be achieved.

Staff worked to leverage support and funding through partnerships with external stakeholders. Through the Federation of Canadian Municipalities, the City was successful in receiving a 50% grant (up to \$67,000) to complete a comprehensive feasibility study on the potential design and benefits of a solar PV system at Fire Hall No.1, which included a review of innovative technical and financing options that the City could potentially utilize. Other larger external capital funding requests were not successful, including submissions to the Federal Energy and Innovation Program, New Build Canada Fund, and Canada 150 Fund, and the Provincial Community Energy Leadership Program. As other funding opportunities from senior levels of government become available, staff will continue to pursue funding from these programs that align with this project and other Council priorities.

Feasibility Study Results

A comprehensive feasibility study was completed that outlined various sizing options for a solar PV installation at Fire Hall No.1, and provided valuable information on innovation opportunities and cost benefit analysis.

The maximum size that the current roof area of Fire Hall No.1 will support is 57 kW. A solar PV installation of this size would reduce conventional energy use by approximately 60,000 kWh annually (or approximately 18% of the building’s projected annual use). In addition to a reduction in energy use, the feasibility study reviewed the benefits of including an energy storage component to this renewable energy system that would allow the facility to reduce its peak energy demand through the use of large energy storage batteries. Including the installation of a 100 kW battery component greatly increases the economic benefits that the City will be able to gain from completing this project (see Table 1 and 2).

The current commercial rate structure that BC Hydro has in place encourages customers to maximize the demand savings of potential renewable energy systems to obtain the greatest economic benefits, which is one of the reasons that including energy storage capacity with this project has been recommended.

Table 1 – Estimated Solar PV and Associated Infrastructure Costs

Asset Description	Combined Panels and Storage
Asset Size	157 kW
Total Estimated Cost	\$450,000
Maintenance Costs (\$/Yr.)	\$3,000/yr

Table 2 – Estimated Solar PV Financial Benefits

Asset Description	Combined Panels and Storage
Asset Size	157 kW
Cost avoidance savings (Yr. 1)	\$16,800
Cost avoidance savings (Yr. 10)	\$22,800
Payback	~20 years

The current economic challenge with integrating solar PV systems at Fire Hall No.1 is due to the current cost of the infrastructure, the region's low electricity prices, the current electricity rate structure, and the comparably low annual levels of sunshine our region receives. Industry stakeholders have estimated that it will be 5 to 10 years before solar PV infrastructure costs will reach "grid parity" and be competitive with conventional electricity connection. As the City moves towards building carbon neutral and net zero energy buildings, solar PV technology will likely play an increasing role in our corporate energy supply mix.

The completed feasibility study also assessed increasing the implementation of solar PV energy systems on available corporate roof spaces through alternative financing, implementation, and operation models. This opportunity could involve the City's wholly owned corporation, Lulu Island Energy Company, as a funder, delivery agent, and/or operating partner. Staff may report back at a future date should this type and scale of project prove viable after further analysis.

Recommendation

The proposed solar PV system with energy storage project at Fire Hall No.1 is eligible to be funded from the Federal Government Gas Tax provisional account and from Carbon Tax Provision account.

Completing this project along with the energy storage component would allow the City to immediately take advantage immediately of avoided operating costs once the facility is completed, and would help streamline construction through existing on-site contractors. Smart investments in renewable energy infrastructure help demonstrate to the community and region the opportunities that exist in terms of "green" building infrastructure, and promote the City as a leader in sustainable building development. With the planned solar PV system at Fire Hall No.1 being the City's first solar PV installation, the City will also gain valuable internal experience in operating, maintaining, and optimizing a new renewable energy system.

In addition to the benefits listed above that the City would achieve, the inclusion of an energy storage system to the facility would add another disaster response resiliency element to the building.

Financial Impact

It is estimated that it would cost \$450,000 to complete the infrastructure associated with the proposed solar PV project and energy storage system. Funding for this work is available from existing Federal Government Gas Tax and Carbon Tax provisional accounts.

Once the solar PV energy systems are operational, it is expected that they will displace and offset approximately 60,000 kWh at Fire Hall No.1 and reduce energy demand during peak periods to maximize cost avoidance reductions. This electricity production and demand reduction from this renewable energy system will help the City avoid a combined \$16,800 in annual energy costs beginning in year 1 and increasing after that.

Conclusion

To further promote the City as a leader in sustainable development and demonstrate how smart investments in renewable energy infrastructure are feasible today, it is recommended that the City fund the installation of a solar PV energy system with storage capacity at the new Fire Hall No.1. Ensuring that the installation of solar PV energy systems is part of initial construction for the facility will allow the City to immediately benefit from the energy cost avoidance savings, and will enable the City to showcase this project as part of the building's opening. Promoting the incorporation of renewable solar PV technology will help to demonstrate to the community the current opportunities that these systems present and will help further increase its use throughout the City.



Levi Higgs
Corporate Energy
(604-244-1239)



Mile Racic
Acting Senior Project Manager
(604-247-4655)

LH:lh



City of Richmond

Report to Committee

To: Planning Committee **Date:** April 21, 2017
From: Cathryn Volkering Carlile **File:** 08-4057-01/2017-Vol
General Manager, Community Services 01
Re: **Affordable Housing Strategy Update – Draft Policy Review and
Recommendations**

Staff Recommendation

That the recommended Affordable Housing Strategic approach and policy actions, as outlined in the staff report titled, "Affordable Housing Strategy Update – Draft Policy Review and Recommendations," be approved for the purpose of key stakeholder consultation and the results of the consultation be reported back to Planning Committee.

Cathryn Volkering Carlile
General Manager, Community Services
(604-276-4068)

Att. 4

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Real Estate Services	<input checked="" type="checkbox"/>	
Development Applications	<input checked="" type="checkbox"/>	
Policy Planning	<input checked="" type="checkbox"/>	
Finance	<input checked="" type="checkbox"/>	
Transportation	<input checked="" type="checkbox"/>	
Law	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

The purpose of this report is to provide a progress report on the Affordable Housing Strategy update process and present the draft policy options and recommendations that are currently being considered for the new updated Strategy. The purpose of this report is also to request the recommended approach and policy actions to be approved for the purposes of consultation, and to report back to Planning Committee with the refined final recommendations. The report will outline the update progress to date, existing approach and successes and challenges with the current policies, as well as provide an analysis and recommend options for the overall policy approach and provide a series of recommended actions.

This report supports the following Council 2014-2018 Term Goals:

Goal #2 - A Vibrant, Active and Connected City:

Continue the development and implementation of an excellent and accessible system of programs, services, and public spaces that reflect Richmond's demographics, rich heritage, diverse needs, and unique opportunities, and that facilitate active, caring, and connected communities.

2.2. *Effective social service networks.*

Goal #3 - A Well-Planned Community:

Adhere to effective planning and growth management practices to maintain and enhance the livability, sustainability and desirability of our City and its neighbourhoods, and to ensure the results match the intentions of our policies and bylaws.

3.4. *Diversity of housing stock.*

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.

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

This report also supports the Social Development Strategy Goal #1: Enhance Social Equity and Inclusion:

Strategic Direction #1: Expand Housing Choices

Background

Affordable Housing Strategy Update: Progress to Date

The City's current Affordable Housing Strategy (AHS) was adopted in 2007. Building on the success and experience gained over the past ten years, the City has undertaken a comprehensive, multi-phase and consultative process to develop a renewed Strategy that will help ensure that Richmond's response to local housing affordability challenges remains relevant, reflects key

priority groups in need and addresses identified housing gaps, emerging socio-economic trends, market conditions and the evolving role of senior government.

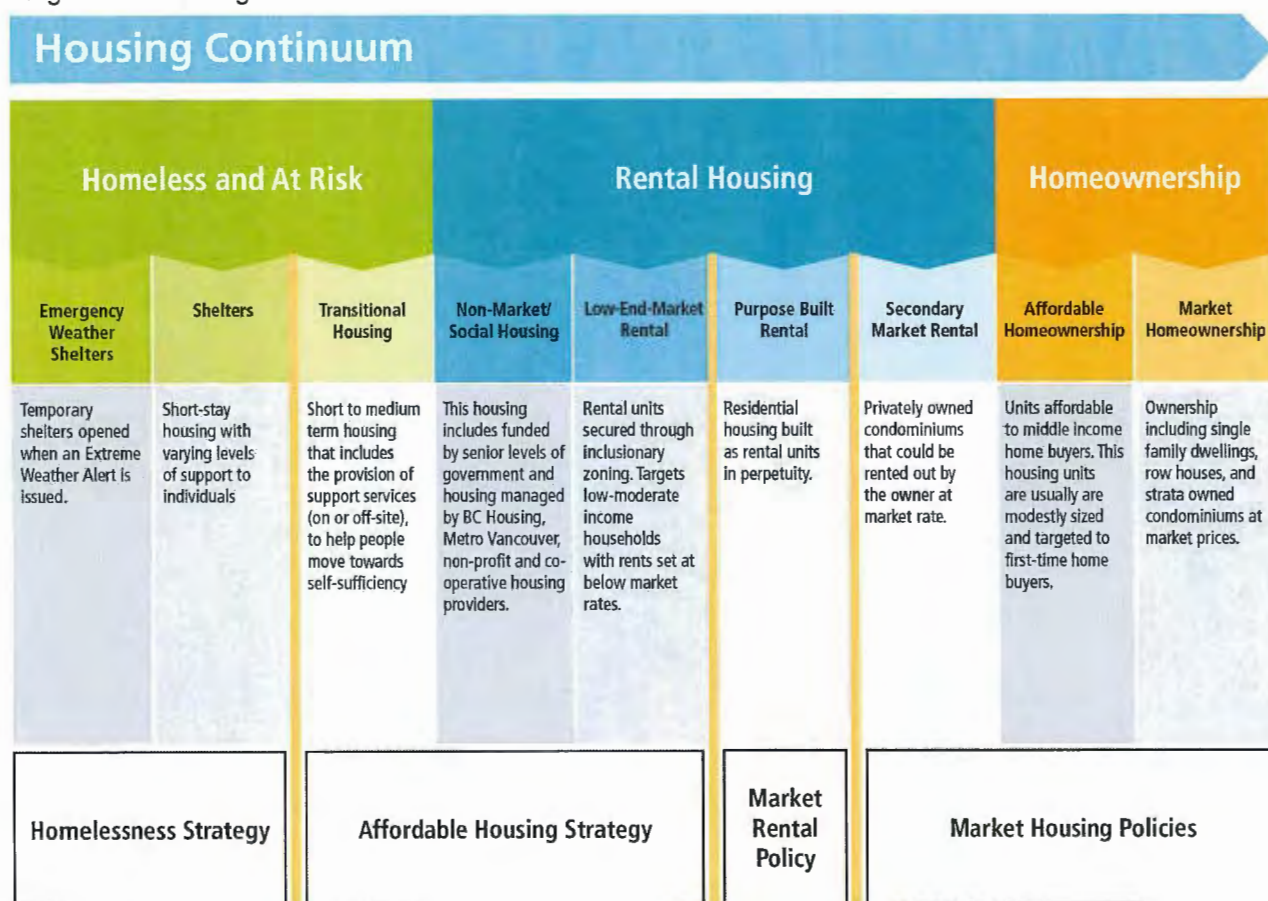
Figure 1 – Affordable Housing Strategy Update Process- Key Phases



The Housing Continuum

Throughout the update process, the housing continuum (Figure 2) has been a useful visual framework that identifies a healthy mix of housing choices in any community. Although identified housing gaps fall along various points on the continuum, the updated Affordable Housing Strategy's focus will be on the highlighted portion of the housing continuum in the figure below. Additional policy initiatives, such as the concurrent Market Rental Policy and the Homelessness Strategy update, scheduled to begin later in 2017, will complement the updated AHS and help address other components of the continuum.

Figure 2 – Housing Continuum



An updated AHS will continue to recognize the City's limitations regarding its municipal mandate and resources required to address housing affordability. Once adopted by Council, the renewed AHS will help clearly define the City's role, guide decision making and focus priorities and resources over the next 10 years. The updated AHS will also continue to recognize the importance of continued partnerships with the private and non-profit housing sector, senior levels of government and community service agencies.

Existing Approach and Affordable Housing Priorities

The 2007 AHS established three key housing priorities:

1. Non-market (subsidized) rental – targeted to households with incomes below \$34,000;
2. Low-end market rental “built” units – targeted to households with incomes of \$34,000 or less and \$57,500 or less; and
3. Entry level homeownership – targeted to households with incomes of less than \$60,000.

The City has also responded through a variety of policies and tools including an Affordable Housing Reserve Fund, Special Development Circumstance and Value Transfer, and land use policies that encourage secondary suites, private market rental housing and basic universal housing design.

Currently, there is a balanced approach between securing cash contributions to support the creation of non-market rental units and securing low-end market rental “built” units in developments. This approach is unique, and Richmond is the only municipality in Metro Vancouver that consistently applies affordable housing policy requirements to developments across the city. Building on the successes of the current AHS, staff have been directed to examine opportunities with respect to the following:

- Increasing the built unit percentage requirement (e.g. 5% of the total floor area secured as low-end market rental) in developments;
- Decreasing the unit threshold (more than 80 units) in developments for providing low-end market rental; and
- Requiring low-end market rental units in townhouse developments.

Current Policies: Successes & Challenges

The following section provides a brief description of the current AHS priorities and policies, highlighting key successes and challenges.

Policy	Overview	Successes	Challenges
Non-market Subsidized Rental Housing	The City currently secures cash-in-lieu contributions to the Affordable Housing Reserve Fund (AHRF) at the time of rezoning for single family, townhouse and apartment developments less than 80 units. The reserve fund helps the City respond to partnership initiatives with senior government, private and non-profit sector, which can be leveraged to create a	<ul style="list-style-type: none"> • Since 2007, over \$35 million in developer cash contributions and value transfers have been secured for affordable housing. • AHRF has supported innovative partnerships (e.g. City contribution of \$24.1 million to support Kiwanis Towers (296 units) and \$19.1 million 	<ul style="list-style-type: none"> • Currently not enough funds in the AHRF to support the future acquisition of land/sites and potential partnerships to create more affordable housing. • AHRF does not accumulate at a rate to support several projects with significant land

Policy	Overview	Successes	Challenges
	<p>higher number of affordable housing units than what would typically be secured through development. Partnerships and use of the reserve fund also facilitate the provision of non-market units (e.g. rents are secured well below LEMR and market rents, and may include additional wraparound supports).</p>	<p>for Storeys (129 units)).</p> <ul style="list-style-type: none"> • Units are managed by organizations with the mandate to provide affordable housing, and are targeted towards households in need • Ability for City and partners to tailor projects to ensure that housing is appropriate for different household types. • Non-market projects are not subject to fluctuations in market housing conditions which can provide greater certainty around when a project may be completed and occupied. 	<p>costs</p> <ul style="list-style-type: none"> • Current cash contribution rates are not equivalent to built unit contribution. • May have to wait for partnerships and funding opportunities to use resources. • Projects can place significant demands on the Affordable Housing Reserve Fund and staff resources.
<p>Low-End Market Rental Housing</p>	<p>A density bonus is offered at time of rezoning for multi-family and mixed use developments with more than 80 units in exchange for at least 5% of total residential floor areas built as low-end market rental units secured in perpetuity with a Housing Agreement registered on title.</p>	<ul style="list-style-type: none"> • Since 2007, there have been 423 LEMR units secured through development; to date, 120 units have been built and tenanted. • Integrated units lead to the creation of mixed-income developments • LEMR units provide rental options for individuals/households that may not qualify for non-market housing (if targeted client group) and may not be able to afford market rental housing. 	<ul style="list-style-type: none"> • Management challenges associated with securing a small number of LEMR units. • LEMR units are not entirely rented to the intended/target households. • Market housing fluctuations can provide uncertainty over when a development including LEMR units may be completed and occupied. • Required minimum unit sizes may not be consistent with current market trends, adding additional costs towards construction. • Emphasis on securing built units may result in fewer cash-in-lieu contributions to the reserve fund. • Stakeholder feedback indicates that the maximum rents are not enough to cover renovations or upgrades that may be needed.

Policy	Overview	Successes	Challenges
Entry-Level Homeownership	Targeted to households with annual incomes of less than \$60,000 (2007) and focused on encouraging the construction of smaller, owned units.	<ul style="list-style-type: none"> City contribution of financial support to cover development cost charges for a recent Habitat for Humanity project targeted to lower to moderate income families. 	<ul style="list-style-type: none"> No mechanism to secure affordability for future owners. An affordable homeownership program may have significant legal and/or administrative challenges.
Affordable Housing Special Development Circumstance (AHSDC) and Value Transfer	The AHSDC policy is an addendum to the existing Affordable Housing Strategy which allows for clustering affordable housing units in a standalone building/project, if a sound business case and social programming approach is identified. The AHSDC has previously been paired with the value transfer mechanism, where certain developments convert their built unit contribution to a cash contribution to be used towards a "donor site" (a standalone affordable housing project).	<ul style="list-style-type: none"> Rents are secured at non-market levels, which helps to address the needs of low-income and vulnerable households. Funds generated contribute to successful developments such as Kiwanis Towers and the Storeys development. Non-market units were secured in the Cressey Cadence project (15 units for lone-parent families). Richmond's policy is recognized by other jurisdictions as a potential model to replicate. 	<ul style="list-style-type: none"> AHSDC policy is not currently integrated into the overall AHS Non-profit housing providers typically prefer to manage clustered units for operational efficiency. The current AHSDC does not provide for this flexibility. Value transfers require available land in order to make projects viable. Standalone projects are increasingly mixed in income and rent levels to offset the lack of available operating funding.
Secondary Suites	<p>The City requires all new single detached lots being rezoned to include:</p> <ul style="list-style-type: none"> Secondary suites on 100% new lots created; Suites on 50% of new lots and a cash contribution on the remaining 50%; or A cash contribution on 100% of new lots created to the Affordable Housing Reserve Fund. 	<ul style="list-style-type: none"> Provides potential mortgage helper to many homeowners. Provides additional rental housing supply (204 secondary suites and coach houses as of December 31, 2016). New rental units integrated into existing fabric of neighbourhoods. 	<ul style="list-style-type: none"> No direct benefit to the affordable housing supply – contributes to the overall rental supply. No mechanism to ensure units are affordable. No mechanism to ensure suites are rented out. Monitoring illegal suites is difficult, as the process is complaint-driven.
Market (Purpose-Built) Rental Housing	Richmond's current Official Community Plan encourages a 1:1 replacement when existing rental housing in multi-unit developments are converted to strata or where existing sites are rezoned for new development.	<ul style="list-style-type: none"> Kiwanis project resulted in greater than 1:1 replacement (122 units to 296 units, resulting in 174 additional units). 	<ul style="list-style-type: none"> Not all purpose built rental projects can be retained over time as they age. Under-utilized land could achieve higher and better use including affordable housing.

Policy	Overview	Successes	Challenges
			<ul style="list-style-type: none"> Replacement units tend to be smaller and often more expensive than original units. Richmond currently has a very low vacancy rate of 1% which may trigger higher rents for market rental housing.
Basic Universal Housing	The City currently provides a floor area exemption for developments that incorporate basic universal housing features in the units. Single storey units that are accessible are often an effective way to accommodate accessible housing.	<ul style="list-style-type: none"> Provides clear expectations and standards to developers and builders. The current basic universal housing policy is successful at securing units with these features. Currently aligns with BC Building Code. 	<ul style="list-style-type: none"> Current regulations only focus on physical accessibility. Changes to the BC Building Code may pose challenges for incorporating basic universal housing features.

AHS Inventory

The chart below displays the various types of units and cash contributions that have been secured since the adoption of the AHS in 2007, with updated information as of March 31, 2017.

Contribution Type	Secured as of March 31, 2017
Subsidized/Non-Market	477
Low-end Market Rental	423 (~120 built and occupied)
Market Rental	411
Entry-Level (Affordable) Homeownership	19
Secondary Suite/ Coach House	223
Total Affordable Housing Units Secured	1,553
Cash-in-lieu Contributions	\$7,913,160
Affordable Housing Value Transfers	\$27,172,084
Total Cash Contributions Secured	\$35,085,244

Emerging Priorities for the Updated AHS

On November 14, 2016, Council endorsed the Housing Affordability Profile that identified the priority groups in need and key housing gaps. The groups in need and gaps are based on a review and analysis of demographics and housing data, combined with feedback from extensive stakeholder consultation. The consultation sessions revealed the following key priority groups in need and who may also face additional barriers to finding affordable, appropriate housing:

- Families;
- Low-to-moderate income households;
- Persons with disabilities;
- Seniors;

- Vulnerable groups including households on fixed incomes, persons experiencing homelessness, women and children experiencing family violence, persons with mental health and addictions issues, and Aboriginal populations.

Further feedback from the consultation sessions identified significant housing gaps that households may experience while searching for affordable and appropriate housing in the community. These include:

- Family friendly units across the housing continuum;
- Accessible and adaptable units along the housing continuum;
- All types of rental housing;
- Non-market housing with supports; and
- Emergency shelter spaces for women and children.

The housing gaps reflect changing demographics in the community as well as the impact of low vacancy rates and escalating housing prices. Despite the variety of housing types available in Richmond, the current demand for affordable housing exceeds the supply, particularly for low to moderate income households. The current housing supply may also not be suitable or appropriate for some household types.

Analysis

Policy Review Objectives

The goal of the Policy Review is to develop updated policy recommendations that will form the foundation of the updated AHS. The specific objectives include:

- Examine existing AHS priorities and policies and new policy options in the context of emerging affordable housing priorities;
- Undertake a comprehensive economic analysis testing the impact and market feasibility of potential changes to the City's current density bonusing, inclusionary housing and associated contribution rates; and
- Consult and seek input from a broad range of community stakeholders including private and non-profit housing developers, community service agencies, senior and regional government representatives and City staff who are actively involved in planning and the implementation of affordable housing policy.

Results of the analyses are contained in the attached Summary Options Chart (Attachment 1) and Policy Options Report (Attachment 2). The following sections summarize key findings from the policy review and propose new directions for existing policies and recommended new policy options.

Economic Analysis

An economic analysis was undertaken by an independent third-party land economist to test various scenarios and examining the feasibility of the above directions, with additional feedback provided by a second independent third-party land economist. The analysis was based on a review of land values, market trends and demand in Richmond and development pro-forma analysis of 15 sites across the city using various development and density assumptions/scenarios. The consultants also examined increasing the current cash-in-lieu contribution rates for single family, townhouses and multi-family developments requiring rezoning.

Key findings:

- Current high land values in Richmond and future market uncertainty, combined with the impact of increased development cost charges and levies at both the municipal and regional levels, suggest that increasing the LEMR “built” requirement to 15% of the total residential floor area may have an impact on development in the city. Instead, an increase of up to 10% could be considered to test the market, with continued monitoring to consider additional increases in the future;
- Decreasing the development thresholds below 60 units would result in small numbers of LEMR units in each development. This situation could place overly onerous requirements on developers of smaller projects who may not typically have sufficient property management resources to effectively manage these units and may also exacerbate known management and occupancy challenges with LEMR units; and
- The City’s current 5% total residential floor area “built” contribution rate is worth more than the equivalent of cash-in-lieu contribution rates in terms of overall value of affordable housing produced. Increasing the cash-in-lieu contribution rates to close the gap with the “built” unit contribution rate would create a more equitable approach.

In addition to the economic analysis, feedback from the first phase of the AHS update process was also considered in conjunction with findings from the annual statutory declaration process (a yearly audit of occupied low-end market rental units). Some of the overarching themes include:

- There is a growing demand for non-market rental housing that is greater than the supply;
- Non-market housing developments serve an important need in the community (e.g. low-income seniors and vulnerable/at-risk households);
- There are concerns over management and administration of low-end market rental units:
 - Managing affordable housing is not the mandate of the development community;
 - Dispersed units throughout developments and a small number of secured units are challenging from a non-profit management perspective, as there is limited control over maintenance and operating costs;
 - Units may not be occupied by the intended tenant households; and
 - Ongoing monitoring by the City and ensuring compliance may present challenges with limited staffing resources; and
- There is a need for increased and diverse housing options (e.g. opportunities to create housing on smaller lots or in stacked townhouses, rental housing across the continuum).

Updated Affordable Housing Strategy Approach

The following section outlines the overall approach that will form the basis of the City’s updated Affordable Housing Strategy. There are three approaches put forward for consideration:

1. Continue to secure a combination of non-market and low-end market rental housing as a priority (**recommended**).
2. Secure non-market (subsidized) rental housing and cash-in-lieu contributions as a priority (**not recommended**).
3. Secure a low-end market rental (LEMR) housing as a priority (**not recommended**).

Each option is explained in more detail in the following charts.

Approach #1: Continue to Secure a Combination of Non-Market and Low-End Market Rental Housing as a Priority (Recommended)	
Overview	This option provides the opportunity to secure both non-market and low-end market rental housing in the community. This option seeks to ensure there is a balance of housing options available for a variety of households, while also being prudent in maintaining consistent cash flow into the Affordable Housing Reserve Fund. This option recognizes the strategic importance of having a healthy reserve balance to increase City inventory in the event that the pace of development slows down.
Target/Priority Groups in Need	Vulnerable populations and low-to-moderate income households.
Objectives	<ul style="list-style-type: none"> • Increase both the “built” unit inventory and ensure that the Affordable Housing Reserve fund has sufficient resources received through cash-in-lieu contributions (e.g. \$1.5 million generated annually). • Strategically position the City to seek senior government funding and partnership opportunities, while building the reserve to increase the City’s inventory.
Pros	<ul style="list-style-type: none"> • Equates to a higher number of affordable housing units being developed due to other funding sources that can be secured through partnerships. • Non-market housing units through partnerships are typically constructed and occupied at a faster pace, when compared to low-end market rental units constructed in mixed developments. • Increase non-profit housing provider capacity in Richmond by providing more opportunities for non-profit ownership and management of units. • Wrap-around supports are available and provided to priority groups in need which can encourage movement along the housing continuum for vulnerable residents. • Can facilitate innovative rent structures to provide a mix of rent levels and supports in one building/development leading to mixed communities. • Provides rental options for individuals/households that may not qualify for non-market housing (if targeted appropriately for intended client group) and may not be able to afford full market rental housing.
Cons	<ul style="list-style-type: none"> • May be difficult to balance the need for cash-in-lieu contributions and built LEMR contributions. • The City will need to strengthen regulatory measures to ensure that built LEMR units are occupied by target/intended households and comply with the terms of the Housing Agreement/Covenant.
Approach #2: Secure Non-Market (Subsidized) Rental Housing and Cash-in-Lieu Contributions as a Priority (Not Recommended)	
Overview	This option places emphasis on securing cash contributions to use towards affordable housing projects, focusing on partnerships with senior levels of government, non-profit housing providers and potentially the private sector to deliver non-market housing options.
Target/Priority Groups in Need	Vulnerable populations
Objectives	<ul style="list-style-type: none"> • Emphasis on cash-in-lieu contributions for affordable housing (including maximizing cash contributions for single family and townhouse developments). • Utilize the Affordable Housing Reserve Fund to purchase land and support

	partnerships for affordable housing projects.
Pros	<ul style="list-style-type: none"> • Equates to a higher number of affordable housing units being developed due to other funding sources secured through partnerships. • Non-market housing units are typically constructed and occupied at a faster pace, when compared to low-end market rental units constructed in mixed developments. • Wrap-around supports are available and provided to priority groups in need which can encourage movement along the housing continuum for vulnerable residents. • Can facilitate innovative rent structures to provide a mix of rent levels and supports in one building/development leading to mixed communities.
Cons	<ul style="list-style-type: none"> • Timing with partnership opportunities and requests may not align with adequate resources in the reserve fund, as there may not be enough funds available at a given time to purchase land or contribute towards projects. • Affordable housing projects involving partnerships may place significant demands on the reserve fund and staff resources.
Approach #3: Secure Low-End Market Rental (LEMR) Housing as a Priority (Not Recommended)	
Overview	This option places emphasis on securing built LEMR units through development and securing built units in smaller apartment (e.g. below 80 units) and townhouse developments.
Target/Priority Groups in Need	Low-to-moderate income households
Objectives	<ul style="list-style-type: none"> • Increase inventory of built LEMR units • Lower the threshold for multi-family developments to provide LEMR units • Increase the built unit percentage • Secure LEMR units in townhouse developments
Pros	<ul style="list-style-type: none"> • Provide rental options for individuals/households that may not qualify for non-market housing (if targeted appropriately for intended client group) and may not be able to afford full market rental housing. • Increase non-profit housing provider capacity in Richmond with more opportunities for non-profit ownership and management of units.
Cons	<ul style="list-style-type: none"> • Townhouse developments are the most significant revenue source for the Affordable Housing Reserve Fund; requiring built units instead of cash would not generate enough contributions to meet the Affordable Housing Reserve Fund's \$1.5M annual target to use towards affordable housing projects and initiatives. • May exacerbate existing challenges with management and occupancy practices. • Securing a small number of units (e.g. less than 10) may present challenges with management (e.g. too small scale for non-profit housing providers to manage). • Policies increasing the number of secured LEMR units would place significant demands on staff resources to create and administer housing agreements, monitoring and ensuring compliance, and responding to occupancy management challenges. • Secured units may not be delivered as quickly as non-market/non-profit housing developments, as pace of construction is determined by the developer/builder. • Limited opportunities to facilitate wraparound supports for priority groups in need.

Staff recommend Approach 1 (a combination of non-market and low-end market rental housing) as the foundational approach for the updated AHS. This option would result in increasing the inventory of affordable housing units that would serve a diverse range of households and priority groups in need. This option would also result in significant contributions to the City's Affordable Housing Reserve Fund which in turn can be used to support strategic initiatives that increase the local supply of affordable housing (e.g. land acquisition, partnerships). The next two sections detail specific proposed policy changes and proposed new policy options to support the recommended approach.

Recommended Policy Actions

This section outlines the recommended actions to support the continued approach of securing cash-in-lieu contributions to facilitate non-market housing and affordable housing built units through development. It is important to note that implementation of the updated and new policies will require significant City resources, including sufficient cash reserves and staff resources.

Policy #1: Non-Market (Subsidized) Rental Housing

Non-market rental housing was identified as a significant need in the community. Cash-in-lieu contributions from developments are a critical piece in supporting and facilitating the creation of non-market rental housing. The economic analysis examined existing cash contribution rates with respect to maintaining or increasing them based on current market conditions. The analysis found that the City's current 5% total residential floor area "built" contribution rate is worth more than the cash-in-lieu contribution rates in terms of the overall value of affordable housing produced. Staff recommend that the cash-in-lieu rate be increase to close the gap and create greater equality between projects that provide the "built" contribution and those that provide a cash-in-lieu contribution.

Recommended Actions:

1. Increase the cash-in-lieu contribution to create greater equality with the 'built' contribution as per the following table:

Housing Type	Current Rates	Proposed Rates
Single Family	\$2/sq.ft.	\$4/sq.ft.
Townhouse	\$4/sq.ft.	\$8.50/sq.ft.
Multi-Family Apartments	\$6/sq.ft.	\$14/sq.ft. (concrete construction) \$10/sq.ft. (wood frame construction)

2. Continue to accept 100% cash-in-lieu contributions for apartment developments with less than 60 units and all townhouse developments to be used towards facilitating the creation of more non-market housing units.
3. Set an annual revenue target of \$1.5M for the Affordable Housing Reserve Fund to support non-market rental and other innovative housing projects and to help position the City to leverage funding opportunities through partnership with senior governments and the private and non-profit sectors.
4. Revise the income and rent thresholds for non-market rental units to ensure that the rents and income thresholds are below average market rental rents. For non-market rental units secured through development, calculate rent thresholds based on 25% below the CMHC annual average market rents and income thresholds based on 25% below the Housing Income Limits (HILs).

Non-Market Rental Unit Thresholds				
Unit Type	Current Total Annual Household Income	Proposed Total Annual Household Income	Current Maximum Monthly Rent	Proposed Maximum Monthly Rent
Studio	\$34,000 or less	\$28,875 or less	\$850	\$632
1-Bdrm	\$34,000 or less	\$31,875 or less	\$850	\$769
2-Bdrm	\$34,000 or less	\$39,000 or less	\$850	\$972
3+ Bdrm	\$34,000 or less	\$48,375 or less	\$850	\$1,197

5. Continue to seek strategic opportunities to acquire land and partner with senior levels of government and non-profit organizations.
6. Consider waiving (full or partial) DCCs for non-market units if purchased/owned by a non-profit housing provider – section 563 of the Local Government Act allows Council, though a bylaw, to waive or reduce DCCs for the purposes of affordable housing. It is important to note that the costs of these projects may be passed onto other taxpayers by way of a potential tax increase.

Policy #2: Low End Market Rental (LEMR) Housing – Built Unit Contribution

A density bonus is offered at time of rezoning for multi-family and mixed use developments with more than 80 units in exchange for at least 5% of total residential floor areas built as low-end market rental units secured in perpetuity with a Housing Agreement registered on title. The City establishes income and maximum rental thresholds for non-market and LEMR units utilizing the bachelor/studio level in BC Housing's Housing Income Limits (HILS). However, the current approach presents some challenges. For example, the HILs are tied to the average market rents determined by CMHC and may not reflect non-market or low-end of market need. As well, the monthly allowable rent and annual allowable increases may push rents over average market rents determined by CMHC.

Recommended Actions:

1. Explore revising the built unit percentage of total residential floor area in apartment developments:
 - Maintain at the current 5% requirement
 - Increase the requirement to 10% (recommended at this time)
 - Increase the requirement to 15%
2. Decrease the built unit threshold requirements:
 - Maintain at the current 80 unit threshold
 - Decrease to a 70 unit threshold
 - Decrease to a 60 unit threshold (recommended at this time)
3. Revise the income and rent thresholds for low-end market rental units to ensure that the rents and income thresholds stay consistently below average market rental rents. For low-end market rental units secured through development, calculate rent thresholds based on 10% below the CMHC annual average market rents and income thresholds based on 10% below the Housing Income Limits (HILs).

Low-end Market Rental (LEMR) Unit Thresholds				
Unit Type	Current Total Annual Household Income	Proposed Total Annual Household Income	Current Maximum Monthly Rent	Proposed Maximum Monthly Rent
Studio	\$34,000 or less	\$34,650 or less	\$850	\$759
1-Bdrm	\$38,000 or less	\$38,250 or less	\$950	\$923
2-Bdrm	\$46,500 or less	\$46,800 or less	\$1,162	\$1,166
3+ Bdrm	\$57,500 or less	\$58,050 or less	\$1,437	\$1,436

4. Revise the minimum unit size requirements for 2BR units from 860 ft² to 741ft².

Unit Type	Current LEMR Minimum Size	Recommended LEMR Minimum Size
Bachelor/Studio	37m ² (400 ft ²)	37m ² (400 ft ²)
1 Bedroom	51m ² (535 ft ²)	51m ² (535 ft ²)
2 Bedroom	80m² (860 ft²)	69m² (741ft²)
3+ Bedroom	91m ² (980 ft ²)	91m ² (980 ft ²)

5. Strongly encourage and play an active role in facilitating partnerships between the development community sector and non-profit housing sector, so that units are owned and managed by non-profit organizations;
- Consider waiving (full or partial) DCCs for LEMR units if purchased by a non-profit housing provider – section 563 of the Local Government Act allows Council, though a bylaw, to waive or reduce DCCs for the purposes of affordable housing. It is important to note that the costs associated with these projects may be passed onto other taxpayers by way of a potential tax increase.
 - Develop a list of pre-qualified non-profit housing providers.
6. Continue to seek 100% cash-in-lieu contributions in all townhouse developments through the Affordable Housing Strategy, as townhouse applications are the most significant revenue stream for the Affordable Housing Reserve Fund. The Arterial Road Policy includes a provision for increased density in exchange for LEMR townhouse units, which will contribute to the overall LEMR housing stock. Requiring LEMR units in all townhouse developments may pose a cash flow challenge, resulting in minimal cash-in-lieu contributions to meet the Affordable Housing Reserve Fund's annual \$1.5M target.
7. While partnerships with the private sector and senior levels of government are critical to creating affordable housing, it is recommended that the City develops policy language around the use of senior government funding to be directed towards lowering the rents of LEMR units, or creating additional LEMR units above the 10% requirement and not reimburse developers/builders for LEMR units which are secured and provided under the Affordable Housing Strategy requirements.
8. Set a target of securing 80-100 LEMR units annually.

Policy #3: Entry Level Homeownership

In the current 2007 AHS, this priority was targeted to households with annual incomes of less than \$60,000 and focused on encouraging the construction of smaller, owned units. Although stakeholder consultations identified homeownership as a need in the community, a comprehensive homeownership program is not being recommended at this time. This will be

addressed further in the report. Staff continue to recommend encouraging opportunities through land use and regulation to support affordable homeownership.

Recommended Actions:

1. Focus priorities on rental housing, as there are limited resources and funding opportunities to create affordable homeownership units. Furthermore, the ongoing administration and management of an affordable homeownership program would fall outside the City's mandate.
2. Continue to encourage homeownership opportunities that are affordable through land use and regulatory measures including flexibility in unit sizes and the permitting of secondary suites and coach houses as "mortgage helpers."

Policy #4: Affordable Housing Special Development Circumstance (AHSDC) and Value Transfer

The Affordable Housing Special Development Circumstance (AHSDC) policy is an addendum to the existing Affordable Housing Strategy, which allows for clustering affordable housing units in a standalone building/project if a sound business case and social programming approach is identified to support target population. The AHSDC has previously been paired with the value transfer mechanism, where certain developments convert their built unit contribution to a cash-in-lieu contribution to be used towards a "donor site" for a standalone affordable housing project. The value transfer mechanism presents an opportunity for the City to provide capital contributions towards affordable housing projects and ensure that rent levels are targeted towards low-income or vulnerable households.

Recommended Actions:

1. Incorporate the policy into the updated AHS as a priority for securing affordable housing units
2. Develop a list of prequalified non-profit housing providers for management and development of affordable housing units

Policy #5: Secondary Suites

The City requires all new single detached lots being rezoned to either include secondary suites on 100% of new lots created, secondary suites on 50% of new lots created and a cash contribution on the remaining 50%, or to provide a 100% cash contribution on the total buildable residential floor area to the Affordable Housing Reserve Fund.

Recommended Action:

1. Continue with the existing policy, which supports a balanced approach to secure both built suites and cash-in-lieu contributions.

Policy #6: Market (Purpose-Built) Rental Housing

Under a separate complementary process, the City is currently developing a policy aimed at increasing the supply of purpose built market rental housing. Richmond's current Official Community Plan encourages a 1:1 replacement when existing rental housing in multi-unit developments are converted to strata or where existing sites are rezoned for new development.

Recommended Actions:

1. Ensure the proposed Market Rental Policy led by Planning and Development is developed with a holistic approach and considers both market rental and affordable housing objectives, including incentives for market rental development and policies regarding tenant relocation and protection
2. For townhouse developments, explore the feasibility of including a market rental requirement in addition to affordable housing cash contribution (the market rental floor area would be exempted from affordable housing contribution). This could achieve the need for more built units, while maintaining the cash flow necessary for maximizing the Affordable Housing Reserve Fund. This will be considered during the development of a separate Market Rental Policy, as per the recent referral from Council on April 10, 2017 to look at market rental and/or secondary suites in multi-family/townhouse rezoning applications.

Policy #7: Basic Universal Housing

The City currently provides a Floor Area Ratio exemption for residential units that incorporate basic universal housing features in new developments.

Recommended Action:

1. Continue to secure affordable housing units with basic universal housing features and formalize this policy in the updated Affordable Housing Strategy.

Proposed New Policies

The section below proposes new policies, which were selected and evaluated on their potential to address identified priorities including groups in need and local housing gaps. The new policy options are commonly used and supported by legislation. It is noted that implementation of the new policies will require significant City resources, including funds from the Affordable Housing Reserve Fund and staff resources.

Policy #1: Municipal Financing Tools

Municipal financing tools, such as development cost charge reductions/waivers of eligible developments by bylaw and property tax exemptions, can be used to stimulate the creation of affordable housing. As the tax burden from some of these policies may be shifted to the taxpayers, property tax exemptions are not recommended at this time. However, the waiver or reduction of development cost charges can incentivize non-profit ownership and management of non-market and LEMR units. The tax burden impact of the waiver or reduction will be examined should Council proceed with this recommendation.

Recommended Action:

1. Consider waiving development costs charges and municipal permit fees for new eligible affordable housing developments that are operated by non-profit housing providers and where affordability is secured in perpetuity. As part of this action, securing ownership may be considered to ensure units are owned and managed by a non-profit provider.

Policy #2: Family-Friendly Housing Policy

This policy would encourage developers to provide additional larger units (2BR+) in multi-residential developments, allowing families to have more options in finding suitable accommodation for their needs.

Recommended Actions:

1. Consider developing necessary policy and regulatory changes to require a minimum percentage of family friendly units (2BR+) in all multi-family developments and setting family-friendly LEMR targets.
2. Create design guidelines for family friendly housing, specifying design features and amenities that are appropriate for children and youth (e.g outdoor and play space, storage)

Policy #3: Public-Private Partnerships

This policy encourages partnerships with other levels of government, non-profit housing providers, and the development community to facilitate the development of purpose-built affordable housing.

Recommended Actions:

1. Continue to pursue partnerships with senior government, private developers and non-profit housing organizations in order to capitalize on opportunities as they arise (eg. funding and development opportunities)
2. Consider creating a list of pre-qualified non-profit housing providers in advance of affordable housing development opportunities

Policy #4: Non-profit Housing Development

This policy continues to build non-profit capacity by supporting non-profit housing providers with funding, financial incentives, technical assistance and other resources to facilitate the development of purpose-built affordable housing.

Recommended Actions:

1. Develop and adopt criteria for reviewing and prioritizing City supported non-profit housing projects;
2. Integrate the Affordable Housing Special Development Circumstance criteria into this policy; and
3. Expand opportunities to facilitate more non-profit housing projects by continuing to build relationships with qualified non-profit housing providers throughout Metro Vancouver.

Policy #5: Co-location of Non Market Housing and Community Assets

This policy promotes the integration of affordable housing with new and redeveloped community facilities, where appropriate.

Recommended Actions:

1. Create an inventory of existing community assets (e.g. faith-based organizations, non-profit owned-land, civic facilities); and
2. Formulate a policy that encourages co-location of affordable housing with community assets where appropriate (e.g. civic facilities, institutional land). Should Council wish to proceed with this action, specific guidelines will come forward after consultation regarding density, unit types and unit mix.

Policy #6: Use of City-Owned Land for Affordable Housing

This option seeks to use vacant or under-utilized land as well as acquire new land for affordable housing projects in order to leverage partnership opportunities with senior government and non-profit housing providers.

Recommended Actions:

1. Review on an annual basis, land acquisition needs for affordable housing in consultation with Real Estate Services to reflect and align with the City's Strategic Real Estate Investment Plan.
2. Continue to use cash in lieu contributions for land acquisition for affordable housing projects.

Policy #7: Rent Bank Program

A rent bank is a program (typically managed by a non-profit entity) that offers no-interest loans for rent and utilities to low-income households that are experiencing short-term financial hardships to prevent homelessness.

Recommended Actions:

1. Work with non-profit organizations to further enhance and support local rent bank initiatives that may offer no-interest loans for rent and utilities to low-income households that experience short term financial hardships that may lead to homelessness; and
2. Consider utilizing funds from the Affordable Housing Reserve Fund to use towards developing a pilot rent bank program to be administered by a non-profit organization. Should Council proceed with this recommended action, a full feasibility analysis and legal review of a rent bank program will be provided with the final recommendations.

Policy #8: Community Land Trust (CLT)

A Community Land Trust acts as community-based organization that acquires land and removes it from the private market and leases it to non-profit housing providers for affordable housing. This proposed policy would not include City-owned land.

Recommended Action:

1. Explore existing CLT models and examine the feasibility of a local non-profit community based land trust that could potentially secure and preserve land for future development of affordable housing. Land could be "banked" and held in trust and later leased on a long-term basis to non-profit organizations for housing projects.

Policy #9: Encouraging Accessible Housing

This option strives to ensure that affordable housing is created and targeted to groups in need of accessible housing, considering both mental and physical barriers to housing.

Recommended Action:

1. Continue to collaborate and foster relationships with community-based organizations, including Vancouver Coastal Health Authority, to encourage accessible features in units and integrate other design features that meet local accessible housing needs.

Policy #10: Compact Living Rental Units

This policy allows the development of smaller rental units (approximately 250-300 square feet on average) where appropriate for individual households.

Recommended Action:

1. Consider conducting a comprehensive planning analysis that examines the feasibility of micro or compact living units ranging between 225 and 350 sq ft per unit. This policy would fall outside the immediate scope of the Affordable Housing Strategy, and would be require discussions with Planning and Development.

Policy #11: Transit-Oriented Affordable Housing Development

This policy seeks to locate affordable housing near the Frequent Transit Network and frequent transit routes.

Recommended Action:

1. Continue to encourage diverse forms of affordable housing along the Frequent Transit Network in the city.

Policy Options Not Recommended

Policy #1: Affordable Homeownership Program

Given available municipal resources and the affordable housing priorities that have been identified through the AHS update process, staff do not recommend the development of an affordable homeownership program for Richmond at this time. If Council would like to explore possible options for Richmond in the future, staff would recommend that a comprehensive cost/benefit analysis be undertaken to fully understand program complexities and the associated risks.

Policy #2: Municipal Housing Authority

A municipal housing authority is one option that some municipalities have used to develop and deliver housing units and to ensure the ongoing effective management of affordable housing units that are secured through various programs and policies. They typically involve legal incorporation, governance through a Board of Directors (usually City Council members) that provides public accountability, public funding either from senior and/or local governments, an asset planning function and ongoing tenant involvement.

Staff do not recommend a local municipal housing authority be established at this time. Creating a local authority would first involve a comprehensive feasibility analysis which would explore various models and a full assessment of costs, benefits and risks to the City.

Consultation

The focus of the planned consultation sessions will be to discuss technical aspects and feasibility of the proposed policies and actions. The sessions will be in a focus group format, with emphasis on specific topics related to the industry/sector. Attachment 3 identifies the key stakeholders that will be invited and the corresponding discussion topics.

There will be opportunities for broader public consultation, as well as further stakeholder input, once the draft updated Affordable Housing Strategy is prepared and presented for Council consideration.

Next Steps

Subject to Council direction, staff will engage directly with key stakeholders in June to discuss and receive feedback on the draft policy options and actions. Following consultation, staff will review and refine the range of policy options and present a final set of recommendations for Council consideration in Q3 2017.

Subject to Council approval, the final policy recommendations will be incorporated into the draft Affordable Housing Strategy that will be presented for Council consideration in the fourth quarter of 2017.

Financial Impact

There is no financial impact at this time.

Conclusion

A thorough analysis of existing policies and new policy options has been undertaken to generate recommendations that will respond to the priority groups in need and housing gaps identified in the first phase of the Affordable Housing Strategy update process. The review process has looked at policies holistically, taking funding, existing City resources and municipal mandate and jurisdiction into consideration.

Further refinement of the recommendations with stakeholder input will ensure a balanced approach in the creation of more affordable housing units in partnership with senior levels of government, non-profit housing societies, the development sector and service providers. Encouraging more affordable housing opportunities along the housing continuum will help to generate a full range of options to meet the needs of Richmond's diverse population.



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- Att.1: Summary – Policy Options and Preliminary Recommendations
- Att.2: Draft Policy Options Report - April 2017
- Att.3: Stakeholder Consultation Plan
- Att.4: Affordable Housing Initiatives in Metro Vancouver – Comparison Chart

SUMMARY – POLICY OPTIONS AND PRELIMINARY RECOMMENDATIONS

	Priority	Policy/Practice	Description	Summary of Preliminary Recommendation
1. Current	Short-term	Affordable Housing ('built') – Low-end Market Rental (LEMR) unit contribution	Requires 5% of the residential floor area of multi-residential developers over 80 units to be LEMR units, secured as affordable in perpetuity with a housing agreement, in exchange for a density bonus	<ul style="list-style-type: none"> • Increase up to 10% of the total floor area as the built affordable contribution rate • Decrease threshold to 60 units • Allow for flexibility to cluster LEMR units • Revise minimum size requirement targets (specifically revision of 2BR unit size) • Facilitate non-profit housing provider management and potential ownership of LEMR units <ul style="list-style-type: none"> ◦ Consider waiving (full or partial) DCCs for LEMR units if purchased by a non-profit housing provider ◦ Develop a list of pre-qualified non-profit housing providers
2. Current	Short-term	Affordable Housing ('cash-in-lieu') contribution	Requires cash-in-lieu contributions for single-family, townhouse, and multi-residential rezonings less than 80 units, in exchange for a density bonus.	<ul style="list-style-type: none"> • Increase the cash-in-lieu contribution to match the value of the 'built' contribution • Continue to accept cash contributions for all townhome developments <ul style="list-style-type: none"> ◦ For townhouse developments, explore the feasibility of including market rental % requirement in addition to AH cash contribution. The market rental floor area would be exempted from AH contribution. • Continue to accept cash contributions for all multi-family developments below 60 units • Continue with existing single family rezoning policy, with a balanced approach of securing both built suites and cash contributions • While partnerships with the private sector and senior levels of government are critical to creating affordable housing, it is recommended that the City develops policy language

	Priority	Policy/Practice	Description	Summary of Preliminary Recommendation
				around the use of senior government funding to be directed towards lowering the rents of LEMR units, or creating additional LEMR units above the 10% requirement.
3. Current	Short-term	Affordable Housing Reserve Fund	Uses developer cash contributions to support affordable housing development through land acquisition and other initiatives to leverage additional funding through partnerships with senior governments and the private and non-profit sector	<ul style="list-style-type: none"> • Ensure sufficient developer cash contributions are collected to support affordable housing projects and to help position the City to leverage funding opportunities through partnership with senior governments and the private and non-profit sectors • Seek strategic land acquisition opportunities for affordable housing
4. Current	Short-term	Special Development Circumstance and Value Transfer Policy	Provides developers with a density bonus in exchange for funding the building of an affordable housing development off-site, where low rents and additional supportive programming are also secured	<ul style="list-style-type: none"> • Incorporate the policy into the overall AHS as a priority for securing affordable housing units • Develop a list of prequalified non-profit housing providers for management and development of affordable housing units
5. Current	Short-term	Secondary Suites	The City requires all new single detached lots being rezoned to include a) secondary suites on 100% new lots created; b) suites on 50% of new lots and a cash contribution on the remaining 50%; or c) a cash contribution on 100% of new lots created to the Housing Reserve Fund.	<ul style="list-style-type: none"> • Continue with the existing policy, which supports a balanced approach to secure both built suites and cash-in-lieu contributions.
6. Current	Short-term	Rental Housing	Seeks to maintain	<ul style="list-style-type: none"> • Continue to require a 1:1

	Priority	Policy/Practice	Description	Summary of Preliminary Recommendation
			the existing stock of rental housing through 1:1 replacement	<ul style="list-style-type: none"> replacement of existing rental housing Consider providing incentives for the development of additional units of market rental housing and a tenant relocation and protection plan through the Market Rental Policy
7. Current	Short-term	Basic Universal Housing	Aims to increase the supply of accessible housing for persons with disabilities	<ul style="list-style-type: none"> Continue to secure affordable housing units with Basic Universal Housing features
8. Potential	Short-term	Municipal Financial Tools	Exempts property taxes and waives or reduces development cost charges to stimulate the creation of affordable housing	<ul style="list-style-type: none"> Consider waiving the development cost charges and municipal permit fees for new affordable housing developments that are owned/operated by a non-profit and where affordability is secured in perpetuity Do not consider property tax exemptions at this time
9. Potential	Short-term	Family Friendly Housing Policy	Encourages developers to provide larger units (2 and 3 bedrooms) in multi-residential developments	<ul style="list-style-type: none"> Develop a family friendly housing policy Consider requiring a minimum % of units to be built in all new multi-unit condominium projects and LEMR units
10. Potential	Medium-term/ Ongoing	Public-Private Partnerships	Collaboration with other levels of government, non-profit housing providers, and the private sector to facilitate the development of affordable housing	<ul style="list-style-type: none"> Proactively identify opportunities for partnership to facilitate the development of affordable housing Create a list of pre-qualified non-profit housing providers for partnership on potential housing projects
11. Potential	Medium-term/ Ongoing	Non-profit Housing Development	Build non-profit capacity by supporting non-profit housing providers with funding, financial incentives, technical assistance and other resources to support the development of affordable housing	<ul style="list-style-type: none"> Continue to build relationships with established non-profit housing providers throughout Richmond and Metro Vancouver that have expertise in housing the identified priority groups in need Adopt criteria for reviewing and prioritizing City-supported non-profit housing projects
12. Potential	Long-term/ Ongoing	Co-Location of Non-Market &	Integrates affordable housing	<ul style="list-style-type: none"> Explore opportunities to co-locate affordable housing with

	Priority	Policy/Practice	Description	Summary of Preliminary Recommendation
		Community Assets	with new and redeveloped community facilities, where appropriate	community assets (existing or new)
13. Potential	Long-term/ Ongoing	Use of City Land for Affordable Housing	Seeks to use vacant or under-utilized land and acquire new land for affordable housing projects in order to leverage partnership opportunities with senior government and non-profit housing providers	<ul style="list-style-type: none"> Review the land acquisition needs for affordable housing projects annually during the review of the City's Strategic Real Estate Investment Plan Continue to use cash-in-lieu contributions in the Affordable Housing Reserve Fund for land acquisition for affordable housing projects
14. Potential	Long-term	Rent Bank Program	A program that offers no-interest loans for rent and utilities to low-income households that are experiencing short-term financial hardships to prevent homelessness	<ul style="list-style-type: none"> Work with non-profits to further enhance and support local rent bank initiatives Consider utilizing funds from the Affordable Housing Reserve Fund towards developing a pilot rent bank program to be administered by a non-profit organization
15. Potential	Long-term	Community Land Trust	Is a community based organization that acquires land and removes it from the private market and leases it to non-profit housing providers for affordable housing	<ul style="list-style-type: none"> Consider conducting a feasibility study of a community based Community Land Trust in Richmond
16. Potential	Long-term/ Ongoing	Encouraging Accessible Housing with Persons with Disabilities	Ensures that affordable housing is produced and targeted to groups in need of accessible housing	<ul style="list-style-type: none"> Continue to build relationships with non-profit organizations to obtain input into housing needs and design for program patients that require accessibility features
17. Potential	Long-term (jurisdiction under Planning)	Micro-Unit Rental Housing	Allows the development of smaller rental units appropriate for individuals	<ul style="list-style-type: none"> Consider working with Planning to conduct a feasibility study on micro-unit housing
18. Potential	Long-term (jurisdiction under	Transit-Oriented Affordable Housing	Seeks to locate affordable housing near the Frequent	<ul style="list-style-type: none"> Continue to encourage diverse forms of housing along the Frequent Transit Network

	Priority	Policy/Practice	Description	Summary of Preliminary Recommendation
	Planning)	Development Guidelines	Transit Network	
19. Potential	Not Recommended	Affordable Homeownership Program	Provides support to allow first-time homebuyers to enter into the housing market	<ul style="list-style-type: none"> This option is not recommended at this time, as the priorities focus on rental housing and an affordable homeownership program would place significant demands on municipal resources and jurisdiction.
20. Potential	Not Recommended	Municipal Housing Authority	An independent, City-controlled agency to directly manage and operate affordable housing units and potentially develop new affordable housing units	<ul style="list-style-type: none"> This option is not recommended at this time, as there would be significant demands on municipal resources and jurisdiction.

1. Recommended Cash-in-Lieu Contribution Rates:

Housing Type	Current Rates (\$ per buildable sq. ft.)	Proposed Rates (\$ per buildable sq. ft.)
Single Family	\$2	\$4
Townhouse	\$4	\$8.50
Multi-Family Apartment (60-70 units or less)	\$6	\$14 (concrete construction) \$10 (wood frame construction)

2. Recommended Rent and Income Thresholds:

For non-market rental units secured through development or as part of an affordable housing project, calculate rent thresholds based on 25% below the CMHC annual average market rents and income thresholds based on 25% below the Housing Income Limits (HILs):

Non-market Rental Unit Thresholds		
Unit Type	Total Annual Household Income	Maximum Monthly Rent
Studio	\$28,875 or less	\$632
1-Bdrm	\$31,875 or less	\$769
2-Bdrm	\$39,000 or less	\$972
3+ Bdrm	\$48,375 or less	\$1,197

For low-end market rental units secured through development, calculate rent thresholds based on 10% below the CMHC annual average market rents and income thresholds based on 10% below the Housing Income Limits (HILs):

Low-end Market Rental (LEMR) Unit Thresholds		
Unit Type	Total Annual Household Income	Maximum Monthly Rent
Studio	\$34,650 or less	\$759
1-Bdrm	\$38,250 or less	\$923
2-Bdrm	\$46,800 or less	\$1,166
3+ Bdrm	\$58,050 or less	\$1,436

3. Recommended Minimum Unit Sizes:

Unit Type	Recommended LEMR Minimum Size Targets
Bachelor/Studio	37m ² (400 ft ²)
1 Bedroom	51m ² (535 ft ²)
2 Bedroom	69m ² (741ft ²)
3+ Bedroom	91m ² (980 ft ²)



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CITY OF RICHMOND

Draft Policy Options Report

Affordable Housing Strategy Update

May 2017

EXECUTIVE SUMMARY

SUMMARY OF PROPOSED DIRECTIONS

This Policy Options Report has been prepared for the City of Richmond to provide a framework for updating the City's Affordable Housing Strategy. This report contains an examination of existing and potential new policies with respect to addressing identified housing gaps.

Recommended policies are focused on increasing the supply of affordable rental housing options that address the needs of Richmond's priority groups:

- Families including one parent families;
- Low and moderate income earners such as seniors, families, singles, couples, students;
- Persons with disabilities; and,
- The City's more vulnerable residents (e.g. those on fixed incomes, women and children experiencing family violence, individuals with mental health/addiction issues).

No single policy or proposed action is successful in isolation. When implemented together, the combination of recommended policies and practices create a comprehensive response to affordable housing issues in a community.

Implementation of the recommended policy options will require partnerships and ongoing collaboration among a wide variety of groups including the City, senior levels of government, the private and non-profit housing sectors. Effective and timely implementation will also require significant City resources including sufficient cash reserves and staff resources. Increasing capacity will enable the City to build on the success of past initiatives and partnerships that have contributed to increase the supply of affordable housing options for residents and to position Richmond to continue to proactively respond to future funding and collaborative opportunities with senior levels of government and other community partners.



The following table summarizes existing and potential policy actions (including preliminary recommendations) that have been considered through this analysis.

	Policy / Practice	Description	Summary of Preliminary Recommendation
Current	Affordable Housing ('built') - Low End Market Rental (LEMR) unit contribution	Requires 5% of the residential floor area of multi-residential developers over 80 units to be LEMR units, secured as affordable in perpetuity with a housing agreement, in exchange for a density bonus	<ul style="list-style-type: none"> Consider a cautious and phased approach to increase the floor area contribution rate to a maximum of 10% Decrease threshold to 60-70 units Allow for flexibility to cluster LEMR units Revise minimum size requirement targets (specifically revision of 2BR unit size) Facilitate non-profit housing provider management and potential ownership of LEMR units Consider waiving (full or partial) DCCs for LEMR units if purchased by a non-profit housing provider Develop a list of pre-qualified non-profit housing providers
Current	Affordable Housing ('cash-in-lieu') contribution	Requires cash-in-lieu contributions for single-family, townhouse, and multi-residential rezonings less than 80 units, in exchange for a density bonus.	<ul style="list-style-type: none"> Increase the cash-in-lieu contribution to match the value of the 'built' contribution Continue to accept cash contributions for townhome developments and multi-residential developments less than 60-70 units For townhouse developments, exploring the feasibility of including market rental % requirement in addition to AH cash contribution. The market rental floor area would be exempted from AH contribution. Continue to accept cash contributions for single family rezonings



	Policy / Practice	Description	Summary of Preliminary Recommendation
Current	Affordable Housing Reserve Fund	Uses developer cash contributions to support affordable housing development through land acquisition and other initiatives to leverage additional funding through partnerships with senior governments and the private and non-profit sector	<ul style="list-style-type: none"> • Ensure sufficient developer cash contributions are collected to support affordable housing projects and to help position the City to leverage funding opportunities through partnership with senior governments and the private and non-profit sectors • Seek strategic land acquisition opportunists for affordable housing
Current	Special Development Circumstance and Value Transfer Policy	Provides developers with a density bonus in exchange for funding the building of an affordable housing development off-site, where low rents and additional supportive programming are also secured	<ul style="list-style-type: none"> • Incorporate the policy into the overall AHS as a priority for securing affordable housing units • Develop a list of prequalified non-profit housing providers for management and development of affordable housing units
Current	Secondary Suites	Permits secondary suites in single-family dwellings, which may be available for rent through the secondary market. In exchange for single-family rezoning and subdivisions, a secondary suite must be required on 50% of new	<ul style="list-style-type: none"> • Consider accepting cash-in-lieu instead of secondary suites for all single family rezoning applications
Current	Rental Housing	Seeks to maintain the existing stock of rental housing through 1:1 replacement	<ul style="list-style-type: none"> • Continue to require a 1:1 replacement of existing rental housing • Consider providing incentives for the development of additional units of market rental housing • Consider developing a tenant relocation and protection plan
Current	Basic Universal Housing	Aims to increase the supply of accessible housing for persons with disabilities	<ul style="list-style-type: none"> • Continue to secure affordable housing units with Basic Universal Housing features
Potential	Co-Location of Non-Market & Community Assets	Integrates affordable housing with new and redeveloped community facilities, where appropriate	<ul style="list-style-type: none"> • Explore opportunities to co-locate affordable housing with community assets (existing or new)



	Policy / Practice	Description	Summary of Preliminary Recommendation
Potential	Public-Private Partnerships	Collaboration with other levels of government, non-profit housing providers, and the private sector to facilitate the development of affordable housing	<ul style="list-style-type: none"> Proactively identify opportunities for partnership to facilitate the development of affordable housing Create a list of pre-qualified non-profit housing providers for partnership on potential housing projects
Potential	Non-profit Housing Development	Build non-profit capacity through supporting non-profit housing providers with funding, financial incentives, technical assistance and other resources to support the development of affordable housing	<ul style="list-style-type: none"> Continue to build relationships with established non-profit housing providers throughout Richmond and Metro Vancouver that have expertise in housing the identified priority groups in need Adopt criteria for reviewing and prioritizing City-supported non-profit housing projects
Potential	Family Friendly Housing Policy	Encourages developers to provide larger units (2 and 3 bedrooms) in multi-residential developments	<ul style="list-style-type: none"> Develop a family friendly housing policy Consider requiring a minimum % of units to be built in all new multi-unit condominium projects and LEMR units
Potential	Policy for the Use of City Owned Land for Affordable Housing	Seeks to use vacant or under-utilized land and acquire new land for affordable housing projects in order to leverage partnership opportunities with senior government and non-profit housing providers	<ul style="list-style-type: none"> Review the land acquisition needs for affordable housing projects annually during the review of the City's Strategic Real Estate Investment Plan Continue to use cash-in-lieu contributions for land acquisition for affordable housing projects
Potential	Municipal Financing Tools	Exempts property taxes and waives or reduces development cost charges to stimulate the creation of affordable housing	<ul style="list-style-type: none"> Consider waiving the development cost charges and municipal permit fees for new affordable housing developments that are operated by a non-profit and where affordability is secured in perpetuity Do not consider property tax exemptions at this time



	Policy / Practice	Description	Summary of Preliminary Recommendation
Potential	Affordable Homeownership Program	Provides support to allow first-time homebuyers to enter into the housing market	<ul style="list-style-type: none"> Consider conducting a comprehensive cost benefit analysis of an affordable homeownership program in Richmond
Potential	Municipal Housing Authority	An independent, City- controlled agency to directly manage and operate affordable housing units and potentially develop new affordable housing units	<ul style="list-style-type: none"> Consider conducting a feasibility study of a municipal housing authority in Richmond
Potential	Transit-Oriented Affordable Housing Development Guidelines	Seeks to locate affordable housing near the Frequent Transit Network	<ul style="list-style-type: none"> Continue to encourage diverse forms of housing along the Frequent Transit Network
Potential	Micro-Unit Rental Housing	Allows the development of smaller rental units appropriate for individuals	<ul style="list-style-type: none"> Consider conducting a feasibility study on micro-unit housing
Potential	Encouraging Accessible Housing with Persons with Disabilities	Ensures that affordable housing is produced and targeted to groups in need of accessible housing	<ul style="list-style-type: none"> Continue to build relationships with non- profit organizations to obtain input into housing needs and design for program patients that require accessibility features
Potential	Community Land Trust	Is a community based organization that acquires land and removes it from the private market and leases it to non-profit housing providers for affordable housing	<ul style="list-style-type: none"> Consider conducting a feasibility study of a community based Community Land Trust in Richmond
Potential	Rent Bank Program	A program that offers no- interest loans for rent and utilities to low- income households that are experiencing short-term financial hardships to prevent homelessness	<ul style="list-style-type: none"> Work with non-profits to further enhance and support local rent bank initiatives Consider utilizing funds from the Affordable Housing Reserve Fund to develop a pilot rent bank program to be administered by a non-profit organization



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I. INTRODUCTION

PURPOSE OF DOCUMENT

The City of Richmond is updating its 2007 Affordable Housing Strategy (AHS) through a multi-phased approach, and has engaged CitySpaces Consulting to facilitate and implement a policy review as part of this process.

Consultation activities facilitated by CitySpaces (2016) in Phase 1, (Housing Affordability Profile), gained insights on the housing issues identified by stakeholders and the public. Together with the Profile and housing indicators data, priority groups and housing gaps in Richmond were identified.

This report, as part of Phase 2, is a comprehensive policy review informed by consultation and research and outlines policy options, for consideration, to guide the future planning of affordable housing in Richmond.

This document analyzes existing policies with respect to meeting the housing needs of Richmond's priority groups and also identifies additional policy and practice options for consideration.

POLICY REVIEW GOALS AND OBJECTIVES

The goal of the AHS Policy Review is to develop updated policy recommendations that will be incorporated into an updated AHS which will guide the City's response over the next 10 years to address local housing affordability issues, in partnership with the private and non-profit housing development sectors, senior government and community service agencies.

Specific objectives of the Policy Review include:

- Undertaking a comprehensive examination of existing AHS policies, priorities and regulatory and financial tools aimed at addressing housing affordability;
- Consulting with a broad range of stakeholders including staff, private and non-profit housing development sectors and other community partners on



The City has encouraged and supported innovative approaches to delivering affordable housing, including:

- Providing contributions to offset construction costs
- Leasing City-owned land to non-profit housing providers
- Providing development incentives such as density bonus in exchange for affordable rental units

implementation challenges and successes of existing policies and tools, as well as proposed draft policy options; and,

- Recommending new and/or amended policies, regulatory and financial mechanisms that will help address identified affordable housing gaps and priority groups in need.

AFFORDABLE HOUSING STRATEGY UPDATE PROCESS

Richmond has a long history of supporting affordable housing that resulted in an inventory of 3,175 affordable rental units prior to adoption of the current AHS in 2007. The AHS defines the following three priority areas for addressing affordable housing challenges and outlines policies, directions, priorities, definitions, and annual targets for affordable housing. These priority areas are:

- Subsidized (Non-Market) Rental Housing (for households with income of \$34,000 or less);
- Low End Market Rental (for households with income between \$34,000 and \$57,000); and,
- Entry Level Homeownership (for households with income less than \$64,000).

Since 2007, the City of Richmond has successfully secured approximately 1,392 of additional affordable housing units ranging from low-end market rental to subsidized rental.

While the AHS has helped guide Richmond's response to local affordability over the past ten years, there remains significant housing affordability challenges in the community. Current and emerging demographic changes, community and regional growth, development pressures, changing market conditions (i.e., high land values, persistently low rental vacancy rates), and an evolving senior government funding situation may no longer be accurately reflected in AHS policy priorities. It is within this context that the City initiated an update to the AHS.

The AHS Update process is outlined in the figure below, beginning with creating a Housing Affordability Profile (informed by consultation and research), followed by policy review (this phase) towards informing drafting housing actions and the Updated Affordable Housing Strategy (phase 3).

Figure 1: Affordable Housing Strategy Update Process



THE HOUSING CONTINUUM

The housing continuum is a visual concept used to describe and categorize different types of housing. The housing continuum is a useful framework that identifies a healthy mix of housing choices in any community. The AHS places emphasis on housing gaps and priority groups experiencing the greatest challenge in the Richmond housing market.

Figure 2: Housing Continuum



KEY HOUSING PARTNERS

SENIOR GOVERNMENTS

The Federal and Provincial governments in Canada have historically played a major role in the provision of affordable housing. This has shifted significantly over the past 20+ years, as senior government policy changes have resulted in less funding to support the creation of new affordable housing options for low and moderate income households.

In BC, the Provincial Government has continued to match available federal funding on housing but with an increased focus on providing rent supplements as the primary means of improving affordability for low-income households (Metro Vancouver, 2015). These changes have continued to place considerable pressure on local governments to become more active beyond their traditional land use planning and development approvals role in the provision of

affordable housing. More recently, the BC Government, through the Provincial Investment in Affordable Housing (PIAH) Program, has committed \$355 million over five years to help create in partnership with the non-profit housing sector and municipalities, affordable rental housing units for people with low to moderate incomes.

METRO VANCOUVER REGIONAL DISTRICT

The Regional Growth Strategy, *Metro Vancouver 2040: Shaping our Future*, recognizes affordable housing as an essential component of creating complete communities. In supporting the strategy, municipalities are required to develop local Housing Action Plans which are intended to help implement regional housing goals. The Regional Affordable Housing Strategy (RAHS) 2016 includes a vision, goals, strategies and recommended actions aimed at expanding housing supply, diversity and affordability with a focus rental housing (both market and non-market), transit oriented affordable housing developments; and the housing needs of very low and low income households.

LOCAL GOVERNMENT

Local governments are increasingly taking a more active role to plan for and facilitate affordable housing. These roles typically include:

- **Regulatory measures:** which include municipal land use planning (e.g., Official Community Plans, Neighbourhood Plans), regulatory and development approval tools (e.g., Zoning Bylaws) to encourage the supply of housing;
- **Fiscal measures:** such as direct funding, provision of City owned land and at times, relief from municipal fees and charges;
- **Education and advocacy:** to help raise community awareness of local affordability issues and to encourage increased role and support by senior governments to address affordability challenges; and,
- **Direct Service:** to provide affordable housing either through a civic department or agency such as a municipal housing authority.

Richmond has long acknowledged that providing a range of affordable and diverse housing types for residents is an integral part of creating a liveable community. The City recognizes that it cannot solve local affordability issues on its own, but will continue to play a role within its authority in partnership with senior levels of government, the private and non-profit housing sectors.

PRIVATE SECTOR

The private sector includes landowners, developers and builders, investors and landlords and is responsible for the development, construction and management of a range of housing forms and tenures including ownership and rental housing. The sector works closely with local governments to provide a range of housing choices aimed at addressing short and longer term local housing needs and demand.



NON-PROFIT SECTOR

The non-profit housing sector provides safe, secure and affordable rental housing to households with low to moderate incomes. The sector is comprised mainly of community based organizations that are able to secure senior levels of funding and leverage existing assets to provide a greater number of affordable housing units and lower rents that are typically secured with solely municipal and private partnership. Non-profit housing providers provide a range of programming (i.e. employment readiness, childcare, legal services, and community building) to support individuals and households that may experience barriers to housing. Non-profit's mandates and expertise with tenant selection and occupancy management ensure that appropriate priority groups are receiving housing.

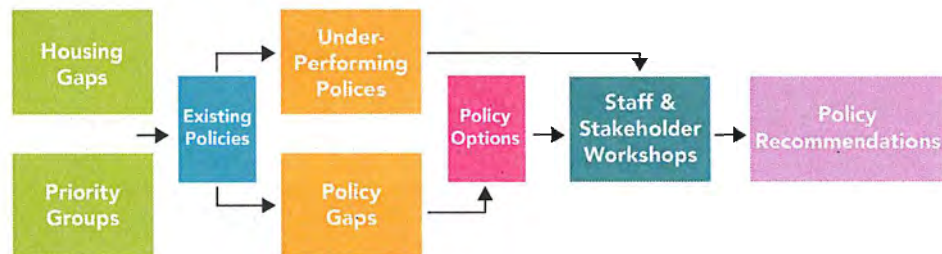


II. HOUSING POLICY EVALUATION FRAMEWORK

APPROACH

A key objective of the policy review is to examine existing and potential municipal policies and tools in order to assess their effectiveness in meeting the needs of the priority groups and housing gaps that were identified in Phase 1 of the AHS update. This section of the report highlights successes and key implementation challenges associated with Richmond's existing affordable housing priorities and policy tools.

Figure 3: Research Framework Flowchart



PRIORITY GROUPS IN NEED OF AFFORDABLE HOUSING

Based on the review of key demographic and housing data, combined with feedback from recent community consultation (May 2016), the following groups in need and housing gaps have been identified:

- Families (including lone-parent families, families with children and multi-generational families);

- Low and moderate income earners including seniors, families, singles, couples, students, and persons with disabilities;
- Persons with disabilities finding suitable, accessible and affordable housing; and,
- Vulnerable populations (households in fixed incomes, persons experiencing homelessness, women and children experiencing family violence, individuals with mental health/addiction issues and Aboriginal population).

AFFORDABLE HOUSING GAPS IN RICHMOND

Despite the diverse mix of housing types currently available in Richmond, movement along the City's housing continuum is constrained due, in part, to high land values and low rental vacancy rates. Key housing gaps in Richmond include:

- Family friendly housing including market and non-market rental and homeownership;
- Accessible, adaptable and visitable housing;
- Purpose built rental housing;
- Low barrier rental housing (including programming supports);
- Low end market rental housing for singles, couples, families, seniors and persons with disabilities;
- Non-market housing for singles, couples, families, seniors and persons with disabilities, persons with mental health issues and substance users; and,
- Lack of emergency shelter for women and children.

EXISTING AFFORDABLE HOUSING PRIORITIES AND POLICY TOOLS: SUCCESSES AND KEY IMPLEMENTATION CHALLENGES

Richmond has played an active role within its authority over many years in helping to address local affordability challenges. The 2007 AHS established three key priorities – subsidized rental housing, low-end market rental housing and entry level homeownership which have provided focus to the City's response over the past 10 years. In addition, the City has assisted through a variety of mechanisms and approaches, including an Affordable Housing Reserve Fund, long term leasing of municipal land for non-market rental housing, land use and regulatory policies that encourage secondary suites, private rental housing and basic universal housing.



SUBSIDIZED RENTAL HOUSING

In Richmond's AHS, subsidized housing is targeted towards households with incomes of \$34,000 or less. The City does not provide any ongoing operating or rent subsidies. Under this priority, the City:

- Typically, accepts cash-in-lieu for subsidized housing from single-family rezoning, townhouse developments and apartment developments less than 80 units;
- Uses cash-in-lieu contributions primarily for subsidized housing; and,
- Encourages subsidized housing (secured with maximum rents to households under specified income thresholds) for groups including but not limited to individuals experiencing/at-risk of homelessness, individuals with mental health or addiction issues, lone parents with limited income, seniors on fixed income, persons with disabilities, and low income families.

In Richmond, examples of subsidized housing include:

- Affordable rental units that are funded by senior government and managed by non-profit organizations or by senior government (e.g. BC Housing and the Metro Vancouver Housing Corporation). In many instances, a rent-g geared-to-income model is used, where a household only pays 30% of their income and the remainder of the rent is subsidized by senior government. This type of housing is often referred to as "social housing."
- Affordable Housing Special Development Circumstance projects (e.g. Kiwanis, Storeys and Cressey Cadence) where the rents and incomes are secured at a "subsidized" level, but no government subsidies are provided. In these projects, the units are located in one building and have dedicated programming/amenity space to serve a particular client group.
- Affordable rental units secured in private developments where the rents and incomes are secured at a "subsidized" rent level, but no government subsidies are provided. These units are targeted towards low-income artists and feature a live/work space.

SUCSESSES:

- The development of innovative partnerships between senior governments, the private and non-profit housing sectors and the City.
- Provides secure and affordable housing for specific priority groups with access to supportive services (i.e. employment training).
- Highlights of successful projects:
 - Kiwanis Towers: The City contributed \$24.1 million towards the Kiwanis Tower's redevelopment. The redevelopment provides long-term benefits for Richmond low-income seniors by providing additional 296 affordable rental units (122 replacement units and 174 additional units) that support aging-in-place and is located within walking distance to amenities, transit and health services.
 - Storeys: The City contributed \$19.1 million and lease of City-owned land to the Storeys development. Six (6) non-profit organizations will own and manage the 196 affordable rental



units and additional programming space for Richmond's vulnerable residents, including those who are or are at-risk of homelessness.

- ▶ Cadence: Through the 2007 Affordable Housing Strategy, the City secured 15 units of affordable rental housing at shelter rates for lone-parent families. These units will be owned and managed by Atira Women's Resource Society and parents will have access to affordable child-care at the adjacent City-owned child care centre.

CHALLENGES:

- The term "subsidized rental" may be confusing to the public and other stakeholders, as units are not necessarily subsidized by senior government.
- The City acknowledges that the shelter rate set by the Province remains at \$375/month for an individual. It is challenging for individuals on incomes assistance to find rent at these rates.
- The City's role is not clearly defined with securing subsidized rental units.
- The Affordable Housing Special Development Circumstance (AHSDC) has led to successful projects (477 units). This policy, however, is not integrated into the broader AHS policy.

LOW-END MARKET RENTAL (LEMR)

In Richmond, the City's inclusionary housing policy offers a density bonus at time of rezoning for multi-family and mixed use developments containing more than 80 residential units in exchange for building at least 5% of total residential floor area as low-end-market-rental (LEMR) units. These units are secured in perpetuity with a Housing Agreement registered on title. For apartments less than 80 units and townhouse developments, the City accepts cash contributions in-lieu of built units, which are used to support larger scale affordable housing projects involving partnerships (i.e. Kiwanis Towers).

SUCSESSES

- Since adoption of the inclusionary housing and density bonus approach in 2007, 388 LEMR units have been secured (as of February 2017). Of these units, 131 units have been built and are tenanted to date.
- These units are integrated into market developments and therefore led to the creation of mix-income communities.

CHALLENGES:

- Occupancy management: The LEMR program was originally intended to be targeted to low and moderate income households. Ongoing monitoring of these units and consultation with non-profit organizations suggests that the target population may not necessarily be served. This policy review provides an opportunity to ensure that the conditions and obligations (i.e. tenant selection, maximum rents, addition charges including parking) that are set out in legal agreements are fully met by the property managers and owners. During consultation, both the public and non-profit organizations also expressed the need for better communication and

awareness of available LEMR units, as there is currently no centralized waitlist for qualified households.

- **Location of Units within a Development:** Previously, the City's practice has been to secure LEMR units dispersed throughout a larger market development. Developers have expressed that they do not typically have the expertise to provide adequate property management services to the targeted tenants of the LEMR program (i.e. low income households and households with other barriers). Non-profit organizations have expressed the desire to manage and potentially own LEMR units that are clustered in order to improve operational efficiencies (i.e. ongoing maintenance of units). Under the current practice, non-profits would not have control over the operating costs associated with the larger building, which is one of the various reasons that non-profit organizations to date have not purchased any LEMR units.
- **Income Thresholds and Maximum Rents:** This policy review provides an opportunity to review and refine income thresholds and maximum rents of the LEMR units to ensure consistency between developments that include LEMR units and to ensure rents remain affordable to priority groups in need.
- **Unit Size:** Developers have expressed concern that the current minimum square footage requirement of the LEMR units, originally established in 2007, are now greater than what is currently produced in the market.

ENTRY-LEVEL HOMEOWNERSHIP

Entry level homeownership is a term that often refers to modest housing units that are affordable for first-time homebuyers. In many jurisdictions, these programs are usually referred to as "affordable homeownership" and often help to create housing stock that is affordable in perpetuity through resale restrictions. Richmond identified entry level homeownership as Priority #3 in the 2007 AHS. To respond to this priority, the City has encouraged:

- The construction of smaller units to make homeownership more affordable; and,
- Developers, on their own initiative, to build entry level homeownership units for households with an annual income of less than \$60,000.

SUCCESSSES:

The City of Richmond provided \$134,538 of financial support towards the development cost charges for a Habitat for Humanity Project, which included six units of affordable homeownership for low-income families.

Other than this initiative, this priority has had limited success in securing entry level homeownership units. Since 2007, the City in partnership with the private sector has secured only 19 units for entry level homeownership. In this circumstance, the developer built smaller, more modest units to increase affordability. These units were not subject to a housing agreement and did not have restrictions on the resale price, and therefore were not necessarily sold to households below the identified income thresholds. As such, these units did not secure homeownership affordability for future owners.



The priority of the 2007 AHS was to focus on securing LEMR and subsidized rental units. To date, the City has not had the resources to explore the merits of a comprehensive affordable homeownership program.

CHALLENGES:

- No mechanism to secure affordability for future owners;
- Currently, no established program to secure affordable home ownership units in developments; and,
- Income thresholds have not been updated and are therefore not relative to current market conditions.

SPECIAL DEVELOPMENT CIRCUMSTANCES AND VALUE TRANSFERS

The City's typical approach is to disperse affordable housing throughout a development or multiple sites. However, the City's Affordable Housing Special Circumstance (AHSDC) policy allows the clustering of groups of affordable housing units if a sound business case and social programming approach is identified to address the needs of target populations.

AHSDC proposals are reviewed by the City on a project specific basis, and require rents to be secured below low-end market rental unit maximum permitted rents.

SUCSESSES:

- The policy contributed to the successful development of affordable housing projects in Richmond, including the Kiwanis, Storeys and Cressey Cadence projects.
- Other municipalities refer to Richmond's value transfer approach as a model to replicate.

CHALLENGES:

- Many non-profit housing providers prefer to manage clustered units on one site for operational efficiency. The current AHSDC does not provide clarity for this flexibility.
- Value transfers require available land contributions in order to make affordable housing projects viable.

AFFORDABLE HOUSING RESERVE FUND

The City secures cash-in-lieu contributions from rezoning applications with density bonuses for the Affordable Housing Reserve Fund (AHRF). The fund assists the City in partnering senior levels of government and non-profit

housing societies to deliver affordable housing. The AHRF is comprised of two divisions:

- 70% of the fund is dedicated to capital costs used towards site acquisition for affordable housing projects. The AHRF can also be used to provide municipal fiscal relief to affordable housing developments (including development cost charges, capital costs to service land, development



application and permit fees), and fund other costs typically associated with construction of affordable housing projects (such as design costs).

- 30% of the fund is dedicated to operating costs to support City-initiated research, information sharing, administration, consulting, legal fees associated with housing agreements, policy work including economic analysis, and other operating expenses the City incurs to implement various components of the AHS.

SUCCESSES:

- Since 2007, the City has collected over \$40,000,000 in developer cash (including cash-in-lieu and value transfer) contributions towards affordable housing).
- Since 2007, the City has supported subsidized housing projects, such as the Kiwanis Towers, Storeys Project, and the Habitat for Humanity project.

CHALLENGES:

- The AHRF does not accumulate developer contributions at a rate necessary to support several projects with land costs within the multi-million dollar range.
- Prioritization of potential housing projects has not been established.

SECONDARY SUITES

The City's Zoning Bylaw permits secondary suites in single detached dwellings. The City requires all new single-detached lots being rezoned or subdivided to either include secondary suites on 50% of new lots or provide a cash-in-lieu contribution to the AHRF.

The City of Richmond also permits coach houses (detached secondary dwelling) on single-detached lots subject to lot size and other regulatory requirements.

SUCCESSES:

- May provide mortgage helpers to homeowners to make their monthly mortgages affordable.
- Providing additional rental housing supply through the secondary rental market (204 secondary suites and coach houses as of December 31, 2016).
- Incorporates new rental units within the existing urban fabric of Richmond.

CHALLENGES:

- No way to ensure that units are being rented out at affordable rents.
- Monitoring and maintaining data on illegal secondary suites may be difficult as it is complaint driven.
- Accommodating parking onsite or on-street and responding to public inquiries related to suite parking and tenants.
- Limited uptake on coach house development through single-family rezonings.



RENTAL HOUSING

To ensure no net loss of rental housing, current City policy encourages a one-to-one replacement when existing rental housing in multi-unit developments are converted to strata-title or where existing sites are rezoned for new development projects. The City strives to secure replacement units as low-end market rental through housing agreements.

SUCCESSIONS:

- The City strives to support redevelopment where appropriate while maintaining existing rental housing units and encouraging the development of new rental housing.

CHALLENGES:

- Not all purpose-built rental projects can be retained over time as they age and are in need of repair.
- Some existing rental projects are located on under-utilized land that could achieve higher and better use including accommodating more affordable housing units.
- In other jurisdictions, replacement units tend to be smaller and more expensive for renters than older existing purpose-built rental housing units.

BASIC UNIVERSAL HOUSING

The City currently provides a Floor Area Ratio (FAR) exemption for residential units that incorporate “Basic Universal Housing Features.” Municipal staff have been successful in securing universal design features in most built affordable housing units.

SUCCESSIONS:

- Provides clear expectations and standards to developers and builders on creating accessible housing.
- Aligns with the requirement of the BC Building Code.
- Provides more accessible units for individuals with physical disabilities.

CHALLENGES:

- These features focus on mobility accessibility and does not include standards for other types of accessible housing needs, including individuals with mental health barriers.

USE OF CITY OWNED LAND FOR AFFORDABLE HOUSING

Richmond has a long history of leasing City-owned property to non-profit housing providers and in these cases, the City has provided land at below market rates (usually at a nominal cost) to help facilitate affordable housing projects in partnership with non-profit housing providers. Currently, however, the City does not have the available land to support all innovative housing projects being proposed by non-profit providers and other partnerships.



SUCCESSIONS:

- The City currently leases eight City-owned properties to non-profit housing providers, which provide 438 units of affordable housing.
- The use of City-owned land positions the City to capitalize on partnership opportunities with senior levels of government and non-profit housing providers to create more units with lower rents than what would be possible without partnerships (i.e. Kiwanis Towers).

CHALLENGES:

- Currently, there are no sites specifically identified affordable housing purposes. It is beneficial to have identified and available sites, which better positions the City to capitalize on partnership opportunities with senior governments and non-profit housing providers. Building on the success of the use of City-owned land to date, this review provides an opportunity to guide the acquisition of potential sites for affordable housing in the context of other Civic priorities.



III. POLICY DIRECTIONS AND OPTIONS

EVALUATING POTENTIAL POLICIES + PRACTICES

Research and analysis has been undertaken to identify potential policy options to be considered for the AHS Update. Specifically, policies and practices have been selected and evaluated on their potential to meet the needs of priority groups identified as challenged to afford housing in Richmond.

This section includes potential new directions for current policies being used by the City of Richmond as part of the AHS. Proposed revisions to these policies are intended to increase effectiveness. Also included in this section are potential new policies that the City of Richmond can consider for its updated AHS. The new policy options include an overview, applicability to the Richmond context, role of the City and other key stakeholders and implementation.

EASE OF IMPLEMENTATION SCALE

Each proposed policy and practice include an ease of implementation scale. The scale represents the ability to implement the select policy or practice, ranging from complex to relatively simple, as illustrated below.

Figure 4: Ease of Implementation Scale



The ease of implementation scale is meant to provide a holistic qualitative measure that accounts for factors such as the cost of implementation, municipal resources required, legal authority, community acceptance, timeframe required for implementation, and the need for partnerships with external stakeholders.

Policies and practices marked towards the simple side of the scale are ones that are considered to be a commonly used practice supported by legislation (i.e., Local Government Act), are known or familiar to housing sector stakeholders including developers and non-profit housing providers, and are appropriate to the Richmond context including alignment with other municipal

initiatives and potential fit within already established development patterns or future development plans.

Policies and practices marked towards the complex side of the scale require significant resources that may be beyond municipal capacity and are considered to not be standard practice, or considered innovative and not yet widely applied in Metro Vancouver. Complex policies and practices may be less familiar or not a common practice used by the housing sector, such as developers and non-profit housing providers, and would require refinement with stakeholder consultation. Policies and practices may be considered challenging to implement if the municipality is unfamiliar or has a limited role and would depend on other agencies or stakeholders to lead the implementation. Policies and practices may also be considered challenging if they do not completely align with other municipal initiatives or regional housing objectives.

POLICY + PRACTICE OPTIONS

Several policy options and practices are proposed in this report for the City's consideration. These policies were identified based on feedback received through the consultation process, in response to challenges and opportunities within the current framework, to align with regional AHS objectives, and to respond to key priority groups and housing gaps identified in the housing affordability profile.

New directions for current AHS policies include:

1. Affordable Housing ('built') - Low End Market Rental Unit Contribution;
2. Affordable Housing ('cash-in lieu') Contribution;
3. Affordable Housing Reserve Fund;
4. Special Development Circumstances and Value Transfers;
5. Secondary Suites;
6. Rental Housing; and,
7. Basic Universal Housing.

New policies and practices have been selected and evaluated on their potential to meet the needs of identified priority groups which may experience challenges or barriers to finding affordable housing. Each policy has been evaluated from a Richmond community context and perspective. Each policy option responds to a target housing gap and target priority group. These options include:

8. Co-Location of Non-Market + Community Assets;
9. Public-Private Partnerships;
10. Non-Profit Housing Development;
11. Family-Friendly Housing Policy;



12. Policy for the Use of City Land for Affordable Housing;
13. Municipal Financing Tools;
14. Affordable Homeownership Program;
15. Municipal Housing Authority;
16. Transit-Oriented Affordable Housing Development Guidelines;
17. Micro-Unit Rental Housing;
18. Encouraging Accessible Housing for Person with Disabilities;
19. Community Land Trust; and,
20. Rent Bank Program.



CURRENT POLICIES

1. AFFORDABLE HOUSING (“BUILT”) LOW-END MARKET RENTAL UNIT (LEMR) CONTRIBUTION

Since the adoption of the AHS in 2007, the City has secured 388 LEMR units (131 units built to date) through development, targeted to low and moderate income households earning between \$34,000 and \$57,500 per year. The City utilizes an “inclusionary housing” approach, where a density bonus is granted in exchange for “built” LEMR units which are secured through a Housing Agreement registered on title. As part of the City’s Arterial Road Policy (adopted in 2016), there are also provisions to provide additional density for “built” LEMR units in townhouse developments.

The policy review presents an opportunity to analyze research and stakeholder feedback, and explore various options to further refine the LEMR policy with respect to:

- Testing the economic viability of increasing the “built” unit contribution above the current 5% and associated development threshold of 80 units;
- The merits of clustering vs. dispersal of units;
- LEMR unit size requirements;
- Management of units to ensure units are targeted to intended households; and,
- Ensuring that rents remain affordable relative to household incomes.

A comprehensive economic analysis was undertaken on various aspects of the LEMR Policy. Feedback from stakeholder consultations, public engagement and findings from the statutory declaration process (owners of units declaring information about the tenants living in the units) have also been taken into consideration.

ECONOMIC ANALYSIS OF “BUILT” CONTRIBUTION

Currently, developers are required to contribute 5% of the total residential floor area for developments over 80 units as LEMR units in exchange for a density bonus. Developers of projects with less than 80 units are currently required to make a cash-in-lieu contribution. To evaluate the density bonusing and “built” unit percentage requirements, the economic analysis tested the financial viability of increasing the “built” requirement to 7.5%, 10%, and 15% and the viability of decreasing the threshold from 80 to 70 or 60 units. The economic analysis reviewed 15 sites across Richmond in various neighbourhoods and tested various development and density scenarios.

Key findings of the analysis:

- The current high land values in Richmond, possible market uncertainty in the near to midterm, and recent increases in development cost charges and levies at the municipal and regional level (i.e. Metro Vancouver and TransLink) suggest that increases in the built LEMR requirement to 15%



would adversely affect development in Richmond. Instead, a modest increase could be considered.

- Decreasing the development threshold below 80 units (to 70 and 60 units) would result in small numbers of LEMR units in each development (e.g. 1-3 per units per development). This requirement may place onerous expectations on smaller projects that may not have sufficient staffing resources to effectively manage these units. Second, it may exacerbate known management and occupancy challenges with the current LEMR units. Decreasing the threshold to 70 or 60 units will not however affect the capital costs of development.

ANALYSIS OF CLUSTERING AND DISPERSAL OF UNITS

While there have been recent projects that have resulted in clustered units, the City's typical practice to date has been to disperse LEMR units throughout market developments rather than cluster in one building or floor. The rationale for this approach was to help foster mixed income communities and to prevent the potential stigmatization of low to moderate income households within a development.

Through the consultation process, most non-profit housing providers expressed the desire to manage a larger number of clustered LEMR units (e.g. greater than 10 units) than what has been typically secured in market developments in Richmond. Non-profit housing providers also expressed the desire to own the units but are concerned that owning a small number of dispersed units (e.g. less than 10 units) within a larger development may limit their control over ongoing maintenance and operating costs. The dispersal of LEMR units may also create operational inefficiencies and could therefore be a barrier for non-profits to provide wrap around services to priority groups in need.

Table 1: Benefits and Challenges of Clustering and Dispersing LEMR

	Benefits	Challenges
Clustering LEMR Units	<ul style="list-style-type: none"> • Opportunity for enhanced design to meet the specific needs of the priority groups in need • Creates mixed income communities (within the same neighbourhood) • Improved operational efficiencies for non-profit housing providers • Encourages non-profits, that may have the expertise to select qualified tenants, to manage the units • May increase non-profit capacity by providing opportunities to purchase and manage units 	<ul style="list-style-type: none"> • Potential concentration may lead to stigmatization
Dispersing LEMR Units	<ul style="list-style-type: none"> • Creates mixed income communities within buildings • May reduce the potential for stigmatization 	<ul style="list-style-type: none"> • Operational inefficiencies • Administrative and management challenges • Disincentives for non-profit housing providers to manage • May result in disincentives for non-profit housing ownership and management of units



An example of a successful integration of clustered affordable housing units within a larger market development is the recent Cadence project. In this specific instance, the developer was permitted to cluster the LEMR contribution into one stand-alone building within the larger development in exchange for securing the rents at a non-market (subsidized) level (e.g. \$850/month for all unit types), on the condition that a non-profit operator would be jointly selected by the City and the developer. The units are specifically targeted for lone-parent family households. The City facilitated a Request for Proposal process to select a qualified non-profit housing provider to manage the affordable housing building and provide additional programming to support the priority group in need (e.g. single women with children). Going forward, the City could consider this model as a preferred practice.

The City may also consider facilitating more opportunities to provide affordable housing off-site through the value transfer mechanism to develop larger-scale affordable housing projects for specific priority groups in need (i.e. Kiwanis Towers for low-income seniors). This mechanism allows developers to convert their project's built unit requirement into a dollar amount (calculated based on construction costs), and transfer it to a specific site to support a larger-scale affordable housing project.

ANALYSIS OF MINIMUM UNIT SIZE REQUIREMENTS

The 2007 AHS established minimum size requirements for LEMR units based on the unit type (i.e. number of bedrooms) to ensure livability and functionality. Concerns have been raised through the consultation process with the development community that the current minimum size requirements may be too large compared to those being delivered in the market locally and in Metro Vancouver, making it difficult to incorporate affordable housing units into their projects.

Table 2: Comparison of Affordable Housing Size Requirement and Size of Smallest Unit in Recent Market Housing Projects

Unit Type	Richmond LEMR Minimum Size	BC Housing Target for Affordable Housing	Vancouver Secured Market Rental Maximum Unit Size	Range of Smallest Unit Size by Type in Sample of 8 New Market Multi-Unit Residential Buildings in Richmond		
				Smallest	Median	Largest
Bachelor/ Studio	37 m ² (400 ft ²)	33 m ² (350 ft ²)	42 m ² (450 ft ²)	N/A	N/A	N/A
1 Bedroom	50 m ² (535 ft ²)	54 m ² (585 ft ²)	56 m ² (600 ft ²)	47 m ² (503 ft ²)	51 m ² (553 ft ²)	61 m ² (659 ft ²)
2 Bedroom	80 m ² (860 ft ²)	74 m ² (795 ft ²)	77 m ² (830 ft ²)	59 m ² (636 ft ²)	69 m ² (741 ft ²)	84 m ² (901 ft ²)
3 Bedroom	91 m ² (980 ft ²)	93 m ² (1,000 ft ²)	97 m ² (1,044 ft ²)	91 m ² (980 ft ²)	100m ² (1,076 ft ²)	110 m ² (1,183 ft ²)



The table above compares LEMR unit sizes provided through the City's AHS with units provided through BC Housing's affordable housing programs, the City of Vancouver's Secured Market Rental Housing Policy and eight recently constructed market multi-family residential buildings in central Richmond.

The comparison highlights that:

- Richmond's minimum LEMR unit size requirements are larger than BC Housing targets for bachelor/studio and 2-bedroom units while BC Housing targets are larger than the minimum size requirements for 1-bedroom and 3-bedroom units;
- Richmond's minimum size of LEMR 2-bedroom units is larger than the maximum size of 2-bedroom units in Vancouver's Secured Market Rental Program. (Note: In order for rental housing projects in Vancouver to qualify for a Development Cost Levy waiver, the average size of units in the project must be below a maximum size by unit type); and
- Market units in Richmond can be significantly smaller than the City's LEMR minimum required size. This is most pronounced with the Richmond LEMR minimum size requirement for 2 bedroom units, for which the minimum size requirement was larger than both the BC Housing target and the Vancouver Secured Market Rental Program maximum size, and was larger than many of the smallest market 2 bedroom units.

OCCUPANCY MANAGEMENT

While the City has been successful in securing LEMR units since 2007, concerns have been raised suggesting that in many cases, these units may not be targeted to or occupied by the intended households (e.g. annual household incomes between \$34,000 and \$57,500)

Currently, there is no standardized methodology with respect to ongoing property management including tenant screening. This can lead to inconsistencies in how tenants are selected, and a lack of assurance that the intended tenant groups are renting the units. It is difficult for the City to track and enforce instances of non-compliance, as the process is largely complaint-driven.

Under the current policy approach, the primary responsibility for tenant selection and ongoing property management of the LEMR units falls onto the private developer or their designated property management firm which may not possess the experience in administering affordable housing. There is no one entity that owns or manages the affordable housing units. As such, there is no centralized waitlist or application process for eligible households which can lead to confusion from interested tenants regarding availability of the units and application procedures. In cases where there are a small number of units (e.g. 3-4 units) secured in a development, there are challenges in securing appropriate property management services for the intended tenant households.



ANALYSIS OF INCOME THRESHOLDS AND MAXIMUM RENTS

The City establishes income and maximum rent thresholds for LEMR units to ensure that they remain affordable relative to household income. Income thresholds also provide guidelines for evaluating affordable housing development opportunities and can assist in prioritizing housing for priority groups in need based on income ranges.

The City's current income and maximum rent thresholds are determined by BC Housing's Housing Income Limits.

Table 3: Income and Maximum rent thresholds are determined by BC Housing's Housing Income Limits

Unit Type	Minimum Size	Minimum Monthly Rent	Total Household Annual Income
Bachelor/Studio	37 m ² (400 ft ²)	\$850	\$34,000 or less
1 Bedroom	50 m ² (535 ft ²)	\$950	\$38,000 or less
2 Bedroom	80 m ² (860 ft ²)	\$1,162	\$46,000 or less
3 Bedroom	91 m ² (980 ft ²)	\$1,437	\$57,000 or less

The City's current approach however has presented some challenges:

- The Housing Income Limits are not updated annually, so there may not be a consistent benchmark to increase or decrease thresholds;
- Richmond falls under the "Vancouver" category of the Housing Income Limits, so the amounts may not accurately reflect local context;
- Allowable, annual rent increases (e.g. under the Residential Tenancy Act's allowable increase) may push the rents to exceed CMHC's market rental average for Richmond; and
- Local service providers have expressed that the LEMR rents are above what clients can afford.

Several options were considered for revising the methodology of calculating income and rent thresholds:

- CMHC's market rental data;
- Housing Income Limits;
- Greater Vancouver Real Estate Board's benchmark prices; and
- Canada Revenue Agency's Tax Filer data.

The first three approaches are more simple and reflect existing market rents and prices. The Tax Filer approach may be more accurate, but is more complex. Data may not be readily available and is only updated every Census (e.g. every four years).



PROPOSED DIRECTIONS

- **Contribution Rates and Thresholds:**

- ▶ Consider, if any, a very cautious and phased increase to a maximum of 10% of the total residential floor area to be built as LEMR units;
- ▶ Consider decreasing the current threshold (multi-residential units greater than 80 units) for the built requirement;
- ▶ Continue to accept cash-in-lieu for townhouse developments;
- ▶ Consider accepting cash-in-lieu instead of secondary suites for all single family rezonings; and,
- ▶ Continue to evaluate density bonusing and inclusionary housing rates to account for changing market conditions.

- **Clustering vs. dispersal:**

- ▶ Allow for flexibility to cluster units throughout developments to incentivize non-profit management and possible ownership of the units.

- **Occupancy Management:**

- ▶ Facilitate non-profit management and potential ownership of LEMR and other affordable housing units secured in market developments; and
- ▶ Consider creating information bulletins for property managers currently managing built LEMR units, to inform them of the intent and responsibilities of the program.

- **LEMR Minimum Unit Size Requirements:**

- ▶ For all projects, consider requiring the following recommended minimum unit size targets:

Unit Type	Recommended LEMR Minimum Size Targets	Existing LEMR Minimum Size Requirements
Bachelor/Studio	37 m ² (400 ft ²)	37 m ² (400 ft ²)
1 Bedroom	50 m ² (535 ft ²)	50 m ² (535 ft ²)
2 Bedroom	69 m ² (741 ft ²)	80 m ² (860 ft ²)
3 Bedroom	91 m ² (980 ft ²)	91 m ² (980 ft ²)

- **Income Thresholds and Maximum Permitted Rents:**

- ▶ For low-end market rental units secured through development, consider calculating rent thresholds based on 10% below the



CMHC annual average market rents and income thresholds based on 10% below the Housing Income Limits (HILs):

Low-End Market Rental (LEMR) Unit Thresholds		
Unit Type	Total Annual Household Income	Maximum Monthly Rent
Bachelor/Studio	\$34,650 or less	\$759
1 Bedroom	\$38,250 or less	\$923
2 Bedroom	\$46,800 or less	\$1,166
3 Bedroom	\$58,050 or less	\$1,436

- For non-market rental units secured through development or as part of an affordable housing project, consider calculating rent thresholds based on 25% below the CMHC annual average market rents and income thresholds based on 25% below the Housing Income Limits (HILs):

Non-Market Rental Unit Thresholds		
Unit Type	Total Annual Household Income	Maximum Monthly Rent
Bachelor/Studio	\$28,875 or less	\$632
1 Bedroom	\$31,875 or less	\$769
2 Bedroom	\$39,000 or less	\$972
3 Bedroom	\$48,375 or less	\$1,197

2. AFFORDABLE HOUSING ('CASH-IN-LIEU') CONTRIBUTION

Cash in Lieu (CIL) contributions to the Affordable Housing Reserve Fund (AHRF) are currently accepted in multi-family developments less than 80 units, all townhouse developments and single family rezonings in exchange for a density bonus. Contributions have been used to support innovative affordable housing projects and have helped the City capitalize on partnerships and funding opportunities with senior government and the non-profit sectors (e.g. Storeys and the Kiwanis Towers). The AHRF provides capital funding (70% of contributions secured) for site acquisition and municipal fee off-sets. The remaining 30% of contributions secured are used to implement the various components of the Affordable Housing Strategy (e.g. policy development and research).



The following table highlights current CIL contribution rates adopted by Council on September 14, 2015:

Table 4: Richmond Cash-In-Lieu Contribution Rates

Housing Type	Current Rates (\$ per build able sq. ft.)
Single Family	\$2
Townhouse	\$4
Multi-Family Apartment	\$6

As of December 31, 2016, the total cash contributions secured through the Affordable Housing Strategy since 2007 amount to \$7,913,160. This figure does not include contributions secured through the affordable housing value transfer mechanism, which were collected to use towards specific projects (e.g. Storeys and the Kiwanis Towers).

The economic analysis also examined existing CIL contribution rates with respect to maintaining or increasing the rates based on current market conditions. The analysis found that the City's current 5% total residential floor area contribution rate is higher than the equivalent of cash in lieu contribution rates in terms of overall value of affordable housing produced. To create a more equitable approach, the following contribution rate increases are recommended to match the "built" unit contribution rate:

Table 5: Recommended Cash-In-Lieu Contribution Rates

Housing Type	Current Rates (\$ per buildable sq. ft.)
Single Family	\$4
Townhouse	\$8.50
Multi-Family Apartment	\$14 (concrete construction) \$10 (wood frame construction)

The proposed increase in CIL rates will help sustain a healthy balance in the AHRF in the coming years which is key to the City's ability to continue its support for the innovative projects, which are providing affordable housing for some of Richmond's priority groups in need. Ensuring sufficient funds are collected (e.g. \$1.5 million annually) will help the City take advantage of strategic land acquisition opportunities as they arise and will put Richmond in an excellent position to initiate and respond to partnership opportunities with senior levels of government, non-profit organizations and private developers.



PROPOSED DIRECTIONS

- ▶ Increase the CIL contributions to be equivalent to the built unit contribution and continue to monitor housing market conditions and local land values, and revisit CIL contribution requirements as conditions change.

3. SPECIAL DEVELOPMENT CIRCUMSTANCES AND VALUE TRANSFERS

The economic analysis also explored the feasibility of allowing clustering (e.g. in a stand-alone building or section of a building) of LEMR units versus dispersal of LEMR units throughout a development. Although the City has historically favoured dispersal of units, there could be economic and programming reasons for clustering units. Most importantly, clustering units would facilitate non-profit ownership and management of affordable housing and low-end market rental units. The clustering of affordable housing units could take a number of different forms, including:

- Clustering units in a large development into a single building in the development rather than having units dispersed throughout all buildings;
- Clustering units from a number of developments in a relatively close geographic area into a single donor building/site in close proximity to the other projects; or,
- Clustering units from a development or a number of developments into a single donor building/site that is not geographically proximate to the other projects but is in a site appropriate for affordable housing.

Economic analysis indicates that for the first two options, the only economic benefit that would be anticipated is if the donor building was constructed of wood rather than concrete.

The cost of construction varies substantially inside and outside the City Centre. If the third option were permitted and the required LEMR units were moved outside of City Centre, where land is nearly half the price of City Centre land, there could be additional savings on the cost of these LEMR units, possibly leading to the development of additional LEMR units.

PROPOSED DIRECTIONS

- ▶ Integrate the Special Development Circumstances and Value Transfers into the AHS, rather than a stand alone policy.
- ▶ Update select sections of the policy to reflect the proposed changes to the AHS Update, such as priority groups, housing gaps, income thresholds, and specific references to existing and proposed policy and practice options.
- ▶ Provide additional clarity on how the City defines demonstrated “social innovation” (i.e. standalone affordable rental buildings, additional supportive programming, projects involving partnerships). Alternatively, the City could consider revising language to give preference to projects that co-locate with community facilities.



- ▶ Consider revising the selection of non-profit housing providers to own, manage and operate the units to include an option for units to be leased.
- ▶ Clarify evaluation criteria to ease application process for non-profit housing providers and developers, such as eliminating the requirements to provide case studies if projects are innovative with limited or no examples to reference.
- ▶ Develop shortlist of non-profit housing providers through a Request for Qualifications process to ease the housing partner selection process.

4. AFFORDABLE HOUSING RESERVE FUND

The Affordable Housing Reserve Fund (AHRF) is an important tool that has been used strategically in partnership with the non-profit sector to secure units in innovative affordable housing projects such as Kiwanis Towers, Storeys and a recent Habitat for Humanity affordable homeownership project. While it has been instrumental in the success of these projects, the AHRF does not currently have enough funds to be able to support future projects that can address the City's priority groups in need and identified housing gaps. With sufficient funds, the AHRF can be used strategically as leverage to secure larger contributions from senior levels of government and other partners to contribute to affordable housing development in Richmond.

PROPOSED DIRECTIONS

- ▶ Ensure sufficient cash contributions are collected to support affordable housing projects and to position the City to leverage funding opportunities through partnerships with senior government and private and non-profit sectors.
- ▶ Retain the current funding division between City-initiated operating costs.
- ▶ For capital funding contributions, the City may want to ensure funding is dedicated to projects that are geared towards target priority groups and target housing gaps.
- ▶ For capital funding contributions, continue to support projects that have other sources of funding such as grants and loans provided by senior levels of government. However, at the discretion of Council, consider supporting projects that may not have other sources of funding but ones that are still viable. This approach intends to avoid unintentionally excluding potential projects.
- ▶ Consider reviewing staff resources dedicated to managing and implementing the AHS and, if warranted, consider utilizing city-wide staffing budget for additional professional and support staff instead of sourcing from the Reserve Fund.



5. SECONDARY SUITES

Permitting secondary suites in single-detached dwellings helps to provide new rental supply within the existing fabric of Richmond. Recent development data suggests that the market will likely continue to deliver secondary suites regardless of the City's requirement for "built" suites on 50% of new lots and an additional cash in lieu contribution on the remaining lots.

Given these trends, the City could consider amending the existing policy and only require cash in lieu contributions in single family rezoning instead of "built" secondary suites. These contributions would help build up the AHRF so that it can be used to support additional affordable housing projects.

PROPOSED DIRECTIONS

- ▶ Consider policy and regulatory amendments that remove the requirement for single family rezonings to provide a secondary suite on 50% of new lots created, requiring instead a cash-in-lieu contribution.
- ▶ Continue to add flexibility permitting accessory dwelling units on single detached lots (i.e. secondary suite within primary dwelling and coach house at the rear of the property). Consider preparing illustrations to visually communicate flexible configurations.

6. RENTAL HOUSING

Market rental housing is an important component of Richmond's housing mix. Low vacancy rates, high average rents and the limited supply of rental housing make it difficult for many renters to find accommodation in the City and therefore maintaining and encouraging new rental stock is vital to the ongoing liveability of many residents. The City is currently developing a Market Rental Policy and in coordination with the Affordable Housing Strategy, will help to ensure that a range of housing options are available for Richmond residents.

PROPOSED DIRECTIONS

- ▶ Align with Metro Vancouver's Updated Regional Affordable Housing Strategy (RAHS) by providing clear expectations and policies for increasing and retaining the purpose-built market rental housing supply (see proposed policy and practice option Co-Location of Non-Market + Community Assets).
- ▶ Consider offering incentives such as reduced parking requirements and increased density for infill development or underdeveloped sites as appropriate, to preserve existing rental stock and to encourage new purpose-built market rental housing
- ▶ Consider best practices from other jurisdictions when developing a tenant relocation policy and tenant relocation plan template to support developer and non-profit provider with rental redevelopment projects.



7. BASIC UNIVERSAL HOUSING

Incentives for developers to incorporate “Basic Universal Housing Requirements” lead to increased housing options that help to ensure persons with disabilities are able to find appropriate accommodations to suit their needs.

PROPOSED DIRECTIONS

- ▶ Consider enhancing these standards with a broader lens of accessibility (i.e. housing standards for persons with mental barriers requiring accessibility features).
- ▶ Continue to secure affordable housing units with Basic Universal Housing design features.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Build and maintain relationships
- ▶ Partner

OTHER ROLES:

- ▶ BC Housing - partner
- ▶ Developers - partner
- ▶ Non-profit housing societies - partner
- ▶ Non-profit social services organizations - partner



Co-location of municipal fire hall and affordable housing in Vancouver

POTENTIAL NEW POLICIES + PRACTICE

8. CO-LOCATION OF NON-MARKET + COMMUNITY ASSETS

Target Priority Group in Need

Low and moderate income earners, including families, seniors, singles, couples students, persons with disabilities, and vulnerable populations.

Target Housing Gap

Non-market rental, low-end market rental, and purpose-built rental for low and moderate income households. Shelters and transitional housing could be targeted, where appropriate.

CONTEXT

A key challenge to developing affordable housing in Richmond is the high cost and limited availability of land.

At the same time, there are numerous sites across the City occupied by community assets such as places of worship, community centres, and non-profit social service agencies. Many of these organizations do not have a housing mandate, but many own or lease and occupy potentially under-utilized land. Some of their buildings and structures are aging, and may be prime for redevelopment or repurposing. There may be opportunity to leverage these community assets with redevelopment potential including for co-locating with affordable housing projects.

OVERVIEW OF REDEVELOPMENT OF EXISTING NON-MARKET + COMMUNITY ASSETS

The development of co-location projects that combine affordable housing with community amenity facilities is increasingly common. The benefits of co-locating, rather than building stand-alone purpose-built facilities, include:

- Shared capital and operating costs;
- Achieves maximum public benefits in the delivery of community assets;
- Efficient use of land and servicing; and,
- Creates complete communities.

Co-locating affordable housing with community facilities is usually the result of opportunistic situations, facilitated by partnerships.

APPROACH AND ACTIONS

Analysis to Richmond Context

The City of Richmond could identify public and community facilities that are under-utilized and/or aging and prime for redevelopment with the potential to accommodate additional density and affordable housing, subject to the



The City of Vancouver increased their capital cost for upgrading the aging Fire Hall No. 5 to incorporate the construction of affordable housing units for low-income women and children. Partnerships with the YWCA covered pre-construction costs including consultant fees and project management. The YWCA is also co-locating affordable family housing with a new library branch in East Vancouver that is currently under construction.

necessary planning processes. This policy acknowledges that park land is not underutilized, but provides an important community benefit as green space. The City could also engage with private facilities operators and land holders to explore opportunities for partnership and co-location development.

Proposed Approach and Actions

1. Formulate a policy that encourages the co-location of affordable housing with community assets.
2. Consider updating regulatory requirements to permit co-location of affordable housing and community facility uses.
3. Evaluate currently proposed community projects, that are early in the planning stage, and determine if the site(s) could support the inclusion of affordable housing.
4. Create an inventory of existing community facilities. Identify facilities that have potential for redevelopment or repurposing.
5. Facilitate discussions with faith groups, non-profit organizations and community associations, to explore opportunities for partnership and co-location development opportunities.

Implementation Roles

Municipality:

- Formulate policy on co-location of affordable housing with community assets.
- Undertake inventory of existing community asset facilities.
- Communicate information to senior levels of government, non-profit housing providers, non-profit social service organizations, and developers on the co-location policy.

Development Community:

- Partner, where appropriate, with the City, non-profit housing societies, and non-profit social service organizations on delivering affordable housing units and community facilities through co-location opportunities.

Non-profit Housing Providers:

- Partner, where appropriate, with the City, non-profit social service organizations, and developers on delivering affordable housing units and community asset amenities through co-location opportunities.
- Operate units secured through co-location projects.

Non-profit Social Service Organizations:

- Partner, where appropriate, with the City of Richmond, non-profit housing providers, and developers on delivering affordable housing units and community amenities through co-location opportunities.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Facilitator
- ▶ Establish criteria
- ▶ Communications

OTHER ROLES:

- ▶ **BC Housing** - partner and provide funding and finance options
- ▶ **Developers** - partner and deliver units
- ▶ **Non-profit housing societies** - Secure and operate dedicated units
- ▶ **Non-profit social services organizations** - partner and contribute land

9. PUBLIC-PRIVATE PARTNERSHIPS

Target Priority Group in Need

Low and moderate income earners, including families, seniors, singles, couples, students, persons with disabilities, and vulnerable populations.

Target Housing Gap

Non-market rental, low end market rental, purpose-built rental, and affordable homeownership for low and moderate income households. Shelters and transitional housing could be targeted, where appropriate.

CONTEXT

Building and operating affordable housing in communities is not undertaken in isolation by one organization or group, but rather requires contributions from many in order to be successful. Most affordable housing developments have some combination of government, private sector, and non-profit partnerships. Continuing this type of partnership will help allow the City to capitalize on opportunities with senior government and non-profit housing providers for affordable housing projects.

OVERVIEW OF PUBLIC-PRIVATE PARTNERSHIPS

Public-private partnerships are a deliberate and formalized approach to cross-sector collaboration.

- **Partnerships with Senior Levels of Government:** There is new momentum at both the provincial and federal levels with capital and operating investment opportunities for affordable housing.
- BC Housing uses a public-private partnership model to create new non-market housing. Developments are designed and built by the private sector and owned and managed by private, non-profit or co-op housing providers. Upon project completion, BC Housing may provide opportunity funding to make units affordable.
- The Federal Government, through CMHC, can make one-time capital contributions to provide support for the feasibility or initial project costs. Municipal governments can provide land, capital, or in-kind support, for example, waiving municipal fees. There has been indications from the Federal Government that more funding may become available; however, the most significant cost subsidies will come from Provincial sources.
- **Private Sector Partnerships:** Developers have the ability to build affordable housing units, but typically require an experienced operator to manage secured affordable housing units. Municipalities can facilitate partnerships between developers and non-profit housing societies to match secured affordable housing units with a suitable administrator.
- **Non-Profit and Service Providers Partnerships:** Non-profit and service providers have the potential to partner and support affordable housing





Kiwanis Towers, Richmond

projects such as contributing under-utilized land and/or through redeveloping or repurposing aging community facilities.

Successful partnerships require joint investment of resources, shared liability, shared benefit, shared authority, and shared responsibility.

APPROACH AND ACTIONS

Analysis to Richmond Context

The City of Richmond has been a leader in facilitating affordable housing partnerships, and has shown by example of how partnerships can successfully address priority groups and housing gaps. The Kiwanis Towers, for example, is a project where the City partnered with a non-profit housing society, private developer and senior level of government (BC Housing) to help redevelop an existing site with non-market rental housing for low-income seniors.

Building on the experience that the City of Richmond already has in facilitating and implementing partnerships, this policy option aims to help prepare the City for relationships required to initiate projects well in advance of evident opportunities.

Proposed Approach and Actions

1. Consider creating a list of pre-qualified non-profit housing operators well in advance of affordable housing development opportunities.
2. Continue to maintain regular communication with current organizations in the private, public, and non-market sectors to ensure that relationships are established so that potential development opportunities can be advanced quickly when presented.
3. Consider reaching out to qualified non-market housing providers who may have expertise in serving the identified priority groups in need.
4. Explore and facilitate partnerships with government, quasi-government, non-profit, and private organizations.
5. Support non-profit housing providers pursuing funding opportunities offered by senior levels of government by contributing information and data, where appropriate, in support of proposal submissions; officially establish partnerships and consider committing contributions to potential projects.

Implementation Roles

Municipality:

- Foster regular regular and ongoing relationship building and maintaining with cross sector organizations.
- Partner, where appropriate and as opportunities arise, with public, private, and non-profit social service sector organization to support and contribute to affordable housing projects.
- Facilitate partnerships between developers and non-profit housing societies to potentially secure units generated through other housing policies (including low-end market rental units).



Development Community:

- Partner, where appropriate and as opportunities arise, with public and non-profit social service organizations to support and contribute to affordable housing projects.

Non-profit Housing Providers:

- Partner, where appropriate and as opportunities arise, with public, private, and non-profit social service sector organization to support and contribute to affordable housing projects (including the possible purchase and management of low-end market rental units).

Non-profit Social Service Organizations:

- Partner, where appropriate and as opportunities arise, with public, private, and other non-profit social service sector organization to support and contribute to affordable housing projects.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Formulate policy
- ▶ Enable regulation
- ▶ Prepare inventory
- ▶ Communicate information
- ▶ Facilitate partnerships

OTHER ROLES:

- ▶ **Developers** - Partner and deliver units
- ▶ **Non-Profit Housing Providers** - Secure and operate dedicated units
- ▶ **Non-Profit Social Service Organizations** - Partner and contribute land

10. NON-PROFIT HOUSING DEVELOPMENT

Target Priority Group in Need

Low and moderate income households, including families, seniors, singles, couples, students, persons with disabilities, and vulnerable populations.

Target Housing Gap

Non-profit rental housing development, including non-market rental, low-end market rental and purpose-built rental for low and moderate income households. Shelters and transitional housing could be incorporated, where appropriate.

CONTEXT

Non-profit housing providers play an essential role in creating access to affordable housing for priority groups in Richmond. They are the key sector that manages affordable housing units for low and moderate income earners in Richmond, including managing tenant selection and intake, operations management, and project maintenance. They also advocate on behalf of their sector and vulnerable populations, liaise with municipalities and senior levels of government, participate in broader strategic initiatives and conversations at the community and regional level, and provide valuable insights into what works and the supports they need in order to be successful.

There are opportunities to expand the non-profit housing sector in Richmond and continue to build capacity. Many non-profit housing societies in Richmond currently provide housing for specific client groups, and provide appropriate supports as necessary. However, non-profit housing providers currently operating in Richmond are faced with increasing demands while resources and funding remain competitive. By expanding the non-profit housing sector in Richmond, there may be increased capacity to provide housing to more household types. With a more robust sector, there may be opportunities to leverage larger portfolios to access funding and financing.

In addition to the ability to meet increasing housing needs, an expanded non-profit housing sector could lead to partnership opportunities and increased capacity to respond to funding opportunities.

OVERVIEW OF NON-PROFIT HOUSING DEVELOPMENT

The City of Richmond strives to create a supportive environment for non-profit housing providers to thrive. Progressive policy, financial contributions, research and advocacy, and relationship building are all valuable attributes required for the non-profit housing sector to be successful in communities and providing much-needed quality affordable housing.

The City should establish a clear set of criteria to determine which projects should be prioritized.



In addition, non-profit housing projects are increasingly exploring ways to incorporate non-housing uses within their housing project to generate revenue to offset the costs of subsidizing non-market and low-end market rental units. Typically leased, these spaces can include commercial and retail uses, community facilities such as libraries and childcare, and social enterprises. There is an opportunity for the City of Richmond to create an even more supportive environment by exploring innovative and flexible policy and regulatory requirements that support mixed-use non-profit housing projects.

APPROACH AND ACTIONS

Analysis to Richmond Context

The City of Richmond can establish a set of criteria for staff and Council to review and prioritize municipal contributions to support potential non-profit led affordable housing projects. This criteria can be directly related to the identified priority groups and housing gaps for Richmond.

To complement the criteria, the City could consider proactively building relationships with other well-established non-profit housing providers to help address the gaps in service delivery for priority groups and housing. Specific strategies could include issuing RFPs to select pre-qualified non-profit housing providers for City-supported initiatives.

Proposed Approach and Actions

1. Adopt criteria for reviewing and prioritizing City-supported non-profit housing projects, as per Table 6.
2. Support revenue generating activities in non-profit housing development projects.
3. Expand opportunities to develop more non-profit housing projects by continuing to build relationships with qualified non-profit housing providers throughout Metro Vancouver. Align selection towards non-profit housing providers that could bring necessary skills, experience, resources, and capacity that could address Richmond's priority groups and housing gaps.
4. Consider updating regulatory requirements to permit social enterprise and other uses with non-profit housing projects. This includes updating the Zoning Bylaw to identify appropriate zones for permitted use, updated language under definitions, and standards under general regulations.
5. Informed by the adopted criteria, consider supporting non-profit housing providers with their proposal preparation and submissions to funders and senior levels of government.
6. Leverage the annual BC Non-Profit Housing Association (BCHPHA) Conference, and other opportunities, to showcase Richmond's affordable housing development projects to date.



Table 6: Proposed Criteria for City-supported Non-Profit Housing Development

Criteria for City-Supported Non-Profit Housing Development Projects
<p>1. Meets one or more of Richmond's priority groups: low to moderate income families, singles, couples, students, persons with disabilities, and vulnerable populations such as persons experiencing homelessness.</p> <p>2. Addresses one or more of Richmond's housing gaps: family-friendly, market rental, and non-market housing; accessible, adaptable, and visitable homeownership, market rental, and non-market housing; purpose-built rental housing; low-barrier rental housing; low-end market rental housing for singles, couples, students, families, seniors, and persons with disabilities; non-market housing for singles, couples, students, families, seniors, persons with disabilities, persons with mental health issues, and substance users; and, emergency shelter for women and children. Affordable homeownership projects may be considered at the discretion of Council.</p> <p>3. Demonstrates project viability: financial sustainability; livability; and flexibility to potentially adapt with changing and emerging housing needs in Richmond.</p> <p>4. Secured: designated affordable units (non-market and low-end of market rental units) are secured through housing agreements.</p> <p>5. Affordable: are affordable for the priority groups (LEMR=less 10% of CMHC rents; Non-Market Rents = less 25% CMHC rents).</p>

Implementation Roles

Municipality:

- Adopt criteria to assess City-supported non-profit housing development projects.
- Communicate criteria internally to various municipal departments and Council, and externally to non-profit housing providers, funding agencies and senior levels of government.
- Undertake review and amendments to regulations, where applicable, to support flexibility in design to allow revenue generating uses in non-profit housing projects such as social enterprise.
- Continue to build relationships with qualified non-profit housing providers throughout Metro Vancouver.
- Prepare and participate in the annual BCNPHA conference to showcase affordable housing development projects in Richmond.

Development Community:

- Partner, where appropriate, with non-profit housing providers to develop and secure affordable housing units.

Non-Profit Housing Providers:

- Prepare business cases to demonstrate project criteria and viability to the City of Richmond and other potential project partners such as developers, funders and senior levels of government. This includes preparing proposals to submit to funding opportunities when available.



- Partner, where appropriate, with the City and developers to secure affordable housing units.
- Operate units secured through partnerships.
- Continually communicate with the City of Richmond on needs and opportunities for support.



EASE OF IMPLEMENTATION:

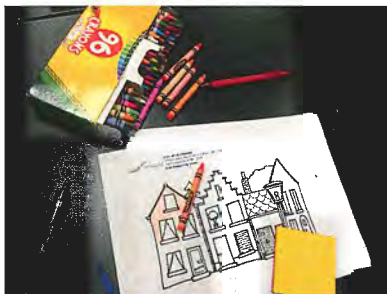


MUNICIPAL ROLE:

- › Formulate policy
- › Communicate information
- › Review development applications with “family-friendly lens”
- › Facilitate partnerships
- › Monitor data

OTHER ROLES:

- › **Developers** - Deliver units
- › **Non-profit housing societies** - secure and operate dedicated affordable units



11. FAMILY-FRIENDLY HOUSING POLICY

Target Priority Group in Need

Families, including lone-parent families, families with children, and multi-generational families, of all income ranges.

Target Housing Gap

Family-sized affordable housing across the entire housing continuum, including homeownership, market rental, particularly ground-oriented multi-unit residential housing.

CONTEXT

High housing prices for single-detached dwellings have created limited affordable and suitable housing options for families, especially low-income and moderate-income families. More families are living in multi-unit residential housing, and concerns related to livability have been raised with families living in units with an insufficient number of bedrooms to accommodate all members of a household. Multi-unit dwellings may lack onsite amenities that are appropriate for children and youth, such as yard space, playspace, storage, and proximity to family-oriented services such as schools, community centres, parks, shopping, and transit.

Ground-oriented multi-unit dwellings (i.e., townhomes) are often identified as family friendly. Non-ground-oriented options may be less desirable due to the lack of play and outdoor space, but are another option for families if the unit is large enough. While the City already encourages family friendly units, there is an overall lack of larger (i.e. 2 and 3+ bedroom) apartments in Richmond that are affordable for families for rent and ownership suitable for housing for families.

OVERVIEW OF FAMILY FRIENDLY HOUSING POLICY

Increasingly, municipalities are exploring policies to require housing developments to include more family-friendly units in their projects. Such a policy may help low- to moderate-income family households by increasing the supply of units large enough to accommodate families. One common approach to address this challenge is to require new multi-unit residential development projects to include a certain percentage of units with 2 and 3 or more bedrooms. This requirement can be specific to rental units, ownership units, or both. Design guidelines can also be enhanced to incorporate family-friendly features into housing projects, such as providing adequate storage and outdoor space.





APPROACH AND ACTIONS

Analysis to Richmond Context

To understand the implications of a family-friendly housing policy, a high-level analysis was conducted on five multi-unit sites in the city to determine the return on investment and feasibility of incorporating 2 and 3 bedroom units. These estimates were conducted using market derived inputs and assumptions that were created through recent financial studies conducted on the City's behalf.

The analysis also reviewed examples of family-friendly housing policies from comparable jurisdictions where a minimum percentage of 2- and 3-bedroom units were required.

Proposed Richmond Approach

The analysis indicates that family friendly-housing policies will not have significant impact on developer revenue; however, it is recommended that the City take a conservative approach to these policies given the unique development constraints in the municipality.

As such, the City should consider the following minimum requirements for family-friendly units:

Multi-Unit Condominium/ Ownership Projects	Multi-Unit Low-End Market Rental Projects
Minimum 15% two bedroom units	Minimum 15% two bedroom units
Minimum 5% three bedroom units	Minimum 5% three bedroom units

Proposed Approach and Actions

1. Consider developing the necessary policy and regulatory changes requiring a minimum percentage of 2- and 3-bedroom units in all new multi-unit developments, taking into consideration stakeholder feedback.
2. Consider creating communications materials to inform developers, non-profit housing societies, and the public about the family-friendly housing policy. Inform organizations that have a role in delivering and securing the family-friendly housing units will support implementation.
3. Create design guidelines for family-friendly housing, specifying design features and amenities that are appropriate for children and youth, such as yard space, playspace, and storage. These guidelines could also include unit design with space and liveability considerations.

Implementation Roles

Municipality:

- Formulate policy that requires new multi-unit housing projects to include a minimum percentage of units that contain the specified percentage of units to be dedicate as family-friendly housing.





- Communicate information to developers, non-profit housing societies, the public and other groups about the family-friendly housing policy requirements.
- Review multi-unit housing project development applications with a “family-friendly lens”, ensuring the applications meet the requirements. This includes working closely with the development community to problem-solve design and requirement challenges and provide design flexibility, where appropriate, to meet the policy (and regulatory) requirement.
- Monitor data on absorption and occupancy and monitor the impact of the policy.
- Continue to ensure that a mix of unit types, including larger family friendly units, are secured as LEMR.

Development Community:

- In multi-unit housing projects, deliver the specified percentage of units dedicated as family-friendly housing.
- Work with the City to achieve project and unit design that meets livability criteria for families.
- Partner, where appropriate, with non-profit housing societies to secure some or all units generated through the family-friendly housing policy to be secured as affordable for low-income families.

Non-Profit Housing Societies:

- Work with the City to identify opportunities for partnership with developers to secure affordable family-friendly rental housing units for low-income families.
- Partner, where appropriate, with developers to secure units in multi-unit housing projects, secured through housing agreements.
- Operate the units secured through housing agreements, including managing tenant selection and intake process.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Strategic acquisition of land
- ▶ Repurposing existing City-owned land

OTHER ROLES:

- ▶ **Developers** - provide funds and partner with City and non-profit housing societies on new affordable housing developments
- ▶ **Non-profit Housing Providers** - partner with City

12. POLICY FOR THE USE OF CITY LAND FOR AFFORDABLE HOUSING

Target Priority Group in Need

Low and moderate income earners, including families, seniors, singles, couples, students, persons with disabilities, and vulnerable populations.

Target Housing Gap

Purpose-built rental, low end market rental, non-market rental, supportive and transitional housing and shelter accommodation.

CONTEXT

One of the most difficult challenges in increasing the supply of affordable housing is acquiring well located sites to develop. In strong housing markets, competition with market developers makes land acquisition expensive, and limiting especially when combined with challenges that non-profit housing providers experience when piecing together multiple sources to support financing for affordable housing developments.

The City has a long history of leasing land at nominal rates to support the provision of affordable housing by non-profit housing providers. The City's Real Estate Services regularly updates Richmond's Strategic Land Acquisition Plan. This provides an opportunity to include Affordable Housing as one of the priorities for acquisition.

Continuing to provide City-owned land for affordable housing can reduce the cost to develop an affordable housing project and therefore provide a greater number of units. Using City land for affordable housing purposes is also particularly effective for ensuring that affordable housing is placed in locations best suited to meet the needs of priority groups.

OVERVIEW OF USE OF CITY LAND FOR AFFORDABLE HOUSING POLICY

The use of City-owned land for affordable housing could help non-profit housing providers overcome challenges related to high land values. Such a policy could identify sites that are currently owned by the City that are not currently in use or under-utilized.

The City's Strategic Real Estate Investment Plan's purpose is to acquire land for a variety of civic initiatives. During annual reviews, City staff should take into account land needs for future affordable housing projects. Land that the City uses for other municipal services, such as fire halls and community centres, could also be evaluated for redevelopment involving the co-location of affordable housing on these properties.



APPROACH AND ACTIONS

Analysis to Richmond Context

City staff may wish to develop a set of criteria that would guide and prioritize land acquisition appropriate to potentially support affordable housing projects, as per the proposed criteria in Table 7. Such a policy could be closely linked with housing targets that will be a part of the future Affordable Housing Strategy.

Table 7: Proposed Criteria for Land Acquisition

Criteria to Guide and Prioritize Land Acquisition for Affordable Housing
1. Location: Sites should be in proximity to services and amenities used by the intended priority groups, ideally within walking distance. Sites should also provide access to public transportation.
2. Site Characteristics: Sites should be relatively easy to redevelop, and sites with potential environmental remediation or complicated soil conditions.
3. Proximity to other potential redevelopment sites: Sites that are close to other potential redevelopment sites, such as older and under-utilized rental housing developments or under-utilized community assets, so that sites can potentially be redeveloped together. Developing larger sites can create economies of scale and reduce overall construction costs.
4. Cost of land and project feasibility: Should be demonstrated, even if the site is intended to be held for later development.

A dedicated source of funding for land acquisition for affordable housing would need to be established. One funding option for Richmond would be to use the existing AHRF to fund municipal land acquisition. However, this could further deplete the AHRF of resources for other projects quickly as the AHRF does not accumulate at the rate or volume needed to support several multi-million dollar land acquisitions.

Proposed Approach and Actions

1. Review need for affordable housing land acquisition as part of the annual Strategic Real Estate Investment Plan.
2. Explore the feasibility of using existing City land for affordable housing development, by either disposing of the land or co-locating affordable housing with other municipal services.
3. Strategically acquire land for affordable housing as it becomes available and satisfies acquisition criteria.
4. Partner with non-profit housing providers to develop affordable housing, which can then be managed and operated by non-profit housing societies under long term lease agreements with the City.
5. Explore and establish dedicated sources of funding to support land acquisition for affordable housing projects.



6. Consider using City-owned land to support affordable housing projects, where appropriate, and acquire land that meets criteria for future affordable housing development.

Implementation Roles

Municipality:

- Review the affordable housing land needs annually.
- Acquire land appropriate for affordable housing development projects.
- Explore feasibility of existing City-owned land for affordable housing development projects.
- Communicate information on the use of City-owned land for affordable housing to non-profit housing providers and other potential project partners.

Development Community:

- Provide funding to the affordable Housing Reserve Fund from cash-in-leu density bonus contributions.
- Partner with the City and non-profit housing providers, as appropriate, to develop affordable housing projects.

Non-profit Housing Providers:

- Partner with the City to develop affordable housing projects using land provided by the City.
- Manage and operate affordable housing delivered through the policy under a long-term lease agreement with the City.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Formulate policy
- ▶ Enable financial tools
- ▶ Communicate information

OTHER ROLES:

- ▶ **Non-Profit Housing Providers** - Use financial incentives to develop affordable housing
- ▶ **Property Owners** - Use financial incentives to improve existing rental units

13. MUNICIPAL FINANCING TOOLS

Target Priority Group in Need

Low and moderate income households, including families, seniors, singles, couples, students, persons with disabilities, and vulnerable populations.

Target Housing Gap

Non-profit rental housing development, including non-market rental, low-end market rental and purpose-built rental for low and moderate income households.

CONTEXT

Municipal authority provides unique abilities to stimulate the creation of affordable housing. While land use planning and regulation is a critical and effective tool for promoting affordable housing, such as with Richmond's density bonusing/inclusionary housing policy and developer requirements for cash-in-lieu contributions, municipalities also have range of other financial tools that may be used to offer indirect financial incentives. These can be used to improve the financial feasibility of affordable housing development.

Many Metro Vancouver municipalities use financial incentives, including property tax exemptions and waived or reduced development cost charges. In addition to stimulating the construction of new affordable housing units, financial incentives may be used to repair and upgrade existing affordable housing to ensure minimum maintenance standards and safety measures are met in rental buildings.

OVERVIEW OF MUNICIPAL FINANCING TOOLS

Municipalities can use a number of financing tools that may facilitate the creation of affordable housing related to their authority to collect taxes and fees. Specific tools include:

- **Waiving/reducing fees and charges:** Development cost charges (DCC) and building permit fees may be waived or reduced, for projects owned by non-profit organizations. Municipalities may also delay the collection of DCCs, reducing carrying costs for non-profit housing providers and improving the economics of housing projects. Waiving DCCs require municipalities to recover the cost from other sources.
- **Property tax exemptions:** Municipalities may also offer property tax exemptions for projects that provide affordable housing. Some municipalities waive these costs outright, while other municipalities choose to allocate funds from affordable housing reserve funds to offset these fees.

Section 226 of the Community Charter allows Council to enter into agreements with property owners to exempt their property from municipal property value taxes for up to 10 years. While this power is usually used for programs such as a downtown revitalization, where properties can apply for tax exemption in



exchange for commercial improvements, there is an opportunity to explore the option of implementing a tax exemption program specific to affordable housing projects.

When a property owner of an affordable housing building wants to make improvements, the municipality can provide a tax exemption up to a certain period to offset the costs of improvements, thereby preventing the improvement costs from affecting tenants.

Analysis to Richmond Context

The ability to use these financial tools will depend on a Richmond's financial resources and local economic conditions. Although these approaches may result in a short-term loss in revenue, they may produce significant long-term social and economic benefits through promoting the supply of affordable housing. Richmond should consider the costs and benefits of these approaches.

Proposed Richmond Approach and Actions

1. Review municipal authority and financial impact of waiving and reducing DCCs and explore the terms and conditions upon which the exemptions can be granted.
2. Consider waiving the DCCs and municipal permit fees for developments that solely provide affordable housing, where affordability is secured in perpetuity through a housing agreement.
3. Consider waiving, in part, the DCCs for low-end market rental units secured in private developments, when operated by a non-profit organization.
4. Obtain legal opinion on entering into agreements with non-profit housing providers to exempt their property from municipal property taxes, for a limited duration of time, in exchange for new affordable housing.
5. Consider exempting property taxes for new affordable housing projects owned and operated by a non-market housing provider and where affordability is secured in perpetuity with a housing agreement.

Implementation Roles

Municipality:

- Review municipal authority and financial impact of waiving and reducing DCCs and municipal permit fees and tax exemptions for non-profit housing providers.

Non-Profit Housing Providers:

- Use waived or reduced DCCs, municipal permit fees, and property tax exemptions to finance the development of new affordable housing.

EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Facilitate partnerships
- ▶ Establish income thresholds and eligibility requirements
- ▶ Data collection
- ▶ Communicate information
- ▶ Monitor data

OTHER ROLES:

- ▶ **Non-profit organization ("The CLT"):** Agency and administrator
- ▶ **Financial Institutions:** Offer flexible mortgage arrangements and downpayment assistance programs.

14. AFFORDABLE HOMEOWNERSHIP PROGRAM

Target Priority Group in Need

Moderate income families including couples with children and single parent households, with the potential to expand to non-family households including couples and singles.

Target Housing Gap

Affordable homeownership for moderate income families, with the potential to expand to suitable to non-family couples and singles, focusing on multi-unit residential housing.

CONTEXT

Homeownership remains an important goal for many families and households, and plays a critical role in the housing continuum for a healthy community. There is, however, a growing gap between rapidly increasing property values not matched by incomes, limited land supply, and competition for units in many urban areas, including Richmond, that make this goal increasingly difficult to attain. Saving for a down payment is usually the largest barrier for first-time, moderate-income households, who could otherwise afford the ongoing homeownership costs (i.e., mortgage, property taxes, utilities, and applicable strata fees). Affordable homeownership programs are therefore being undertaken by some municipalities to ease the financial pressures of purchasing a home and transition these moderate-income households from renting to homeownership.

An affordable homeownership program is one way that municipalities may influence the supply of affordable homeownership units. Land-use and policy planning can also help to encourage a greater supply through increased density allowance and other regulatory measures such as parking reductions.

OVERVIEW OF AFFORDABLE HOMEOWNERSHIP PROGRAMS

Affordable homeownership programs may be delivered in a number of ways to address unique local circumstances. Programs can be provided directly through initiatives that reduce the cost of purchasing a home through various financing and assistance tools, or indirectly through municipal policy and regulations that encourage diverse housing forms. However, affordable homeownership programs share a number of common elements:

1. **Administrative Capacity:** In municipal cases, sufficient administrative capacity (ie. a subsidiary housing authority, third party, or dedicated staff) is necessary to help manage and oversee local programs.
2. **Restrictions on resale:** Restrictions on resale help to ensure that units will be affordable for future owners. This can be accomplished by:



- a) A price restriction model, which ties the future resale price of a unit to a common denominator (for example, the rate of inflation, core inflation, or fixed amount) that is agreed upon prior to the primary sale of the housing unit; or,
 - b) A shared equity model, which enables purchasers with the ability to acquire units at below market costs and also benefit in future market growth in relation to their initial equity contribution. In some models, municipalities access a portion of the unit's equity on resale and reinvest this amount into the affordable housing program's mandate.
3. **Owner occupancy:** Owner occupancy ensures that the unit does not become solely an income generating property, and instead an affordable unit to maintain as a principal residence.
 4. **Income or asset restrictions on participation:** This ensures that an appropriate priority group is targeted for homeownership support. These restrictions are typically as inclusive as possible given that homeownership is difficult to obtain for low and moderate income households in Richmond.
 5. **Financial Support:** In most programs reviewed, financial support in the form of down payment assistance is provided as an interest free or low-interest loan registered as a second mortgage on the property. Usually this loan is repayable after a set period of time, after the first mortgage is paid off, or if the property is sold.

APPROACH AND ACTIONS

Analysis to Richmond Context

It is important for municipalities to undertake a comprehensive cost-benefit and risk analysis to understand the feasibility of undertaking an affordable homeownership program. This feasibility study should look at different ways in which an affordable homeownership program could be structured, as well as consider what households would be eligible for a program, thresholds for program participation, and other eligibility criteria.

Findings from a feasibility study would provide more details about the expected costs, benefits, and associated risks of the program, allowing the City to compare outcomes of an affordable homeownership program relative to outcomes from a similar investment that address other housing priorities and needs. This assessment would help the City evaluate where limited resources investments should be invested to address priority groups and identified housing gaps.

Proposed Richmond Approach and Actions

1. Undertake a comprehensive feasibility study to examine the expected costs, benefits, and associated risks of an affordable housing program.



Implementation Roles

Municipality:

- Conduct a feasibility study to provide a comprehensive, cost benefit analysis of establishing a local affordable homeownership program.
- Work with development community and non-profit housing providers to consider affordable homeownership models.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Strategic acquisition of land
- ▶ Repurposing existing City-owned land

OTHER ROLES:

- ▶ **Developers** - provide funds and partner with City and non-profit housing societies on new affordable housing developments
- ▶ **Non-profit Housing Providers** - partner with City

15. MUNICIPAL HOUSING AUTHORITY

Target Priority Group in Need

Low and moderate income households, including families, singles, couples, students, persons with disabilities, and vulnerable populations.

Target Housing Gap

Purpose-built subsidized (non-market) and low end market rental housing units for low to moderate income households. Affordable homeownership units can be considered where appropriate.

CONTEXT

Units secured through the 2007 Affordable Housing Strategy are currently managed by the owner, i.e. private developer or property manager. While the City has achieved some success with the creation of affordable housing units, ensuring units are targeted to priority groups and are managed according to the housing agreements, continues to be a challenge.

A Municipal Housing Authority may allow the City to have a more direct role in ensuring that affordable housing units are being accessed by priority groups and addressing housing gaps identified in Richmond's AHS. At a basic level, a Municipal Housing Authority could operate rental units secured through housing agreements, including managing tenant selection and intake process, perhaps in partnership with a non-profit housing provider. A housing authority may also be directly involved in the development and production of new affordable housing.

OVERVIEW OF MUNICIPAL HOUSING AUTHORITIES

Housing authorities are typically governmental bodies that govern some aspect of housing, providing access to affordable housing to eligible households. While some housing authorities are directly involved with the development, production, and administration of affordable housing units, other housing authorities have a more limited role in facilitating the development of social and affordable housing, often working with non-profit housing providers to build or manage affordable housing units. A housing authority is one option that some municipalities have used to ensure that the ongoing management of units secured through policy and programs are effective.

At the municipal level, housing authorities commonly have the following elements:

- **Legal incorporation:** Legal establishment of the agency allows the agency to own housing stocks and allows the agency to negotiate and enter into agreements.
- **Public representation:** A Board of Directors, which usually includes City councillors, provides accountability to the public and a senior-level voice in housing authority deliberations.



- **Public funding:** Funding from government sources allow housing authorities to reduce housing costs and remove competitive market pricing pressures through subsidies. The experience of jurisdictions with successful housing authorities (e.g. USA) suggest that significant levels of senior government funding is required to support capital and operating expenses.
- **Community or asset plan:** The housing authority's goals, strategies, and activities are documented to promote transparency.
- **Tenant involvement:** Feedback on housing unit management gives the tenants a say in how the corporation and its units are operated.

Municipal housing authorities and agencies are City-controlled, but legally separate, entities created to assist in implementation of the AHS. Because housing authorities are City-controlled, they can more effectively direct resources and projects to closely align with affordable housing goals and objectives. A housing authority can identify where the greatest impacts can be made, and act as a catalyst for innovative housing ideas and models. If sufficiently resourced, a municipal housing authority can deliver housing quickly, efficiently, and affordably through standardized processes, economies of scale, and clear decision making.

Municipal housing authorities can also present a number of challenges to municipalities as they often require ongoing government financial assistance that is sufficient to support the authority's ongoing operations, eg; land acquisition, asset management, necessary staff/administrative resources.

APPROACH AND ACTIONS

Analysis to Richmond Context

While a municipal housing authority may be seen to address some of Richmond's affordability challenges, establishing a local authority needs to be examined in the context of the City's other corporate real estate and asset management priorities. A narrowly scoped Municipal Housing Authority focused on administering and managing LEMR units, facilitating relationships and providing technical assistance to developers and non-profit housing providers may be one option that could potentially be supported through existing revenue from the Affordable Housing Reserve Fund. However, a more ambitious scope of activities, such as the purchasing of land and existing affordable housing, would require significantly more resources. A more comprehensive analysis that fully explores the feasibility, including costs, benefits, and associated risks of establishing a Richmond housing authority would be a critical first step.

Proposed Richmond Approach and Actions

1. Consider the establishment of a municipal housing authority through a comprehensive feasibility study, which would explore various models and assess their costs and benefit, and confirming targeted priority groups and housing gaps.



Implementation Roles

Municipality:

- Conduct a feasibility study to explore an affordable homeownership program.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Formulate policies
- ▶ Communicate information
- ▶ Participate in regional transportation discussions
- ▶ Where applicable, acquire land along frequent transit networks (through a land acquisition policy)

OTHER ROLES:

- ▶ **Developers** - deliver units
- ▶ **Non-profit housing societies** - partner; secure and operate dedicated affordable units
- ▶ **Non-profit social service organizations** - partner and co-locate
- ▶ **Translink** - deliver transit services

16. TRANSIT-ORIENTED AFFORDABLE HOUSING DEVELOPMENT GUIDELINES

Target Priority Group in Need

Low and moderate income households, including singles, couples, families, and seniors.

Target Housing Gap

Non-market rental, low-end market rental, purpose-built market rental housing for low and moderate income households. Affordable homeownership units may also be considered where appropriate.

CONTEXT

Housing and transportation costs are closely linked, and represent the two highest costs for most working households. The combined expenses of housing and transportation create particular affordability challenges for low and moderate income households in Richmond, and often take precedent over other household costs and basic necessities such as food, childcare, and recreation.

Research indicates that households living in transit-oriented areas have relatively lower transportation costs compared to households that live far from transit service. Building housing near or along the Frequent Transit Network (FTN) can help households rely less on automobiles and reduce their overall transportation costs. This can help make communities more livable and easier to move around, and improve peoples' connection to employment, educational institutions, community centres, commercial spaces and other community amenities.

Municipalities are increasingly recognizing the need to plan strategically for affordable housing along FTNs and to support affordable housing developments in transit-oriented areas through partnerships, land acquisition, municipal contributions and incentives, and other strategic mechanisms, including voluntary contributions from developers (e.g. in lieu of parking).

OVERVIEW OF TRANSIT-ORIENTED AFFORDABLE HOUSING DEVELOPMENT GUIDELINES

Metro Vancouver's recently updated Regional Affordable Housing Strategy (RAHS) includes a direct focus on increasing the supply of non-market, low end market and purpose-built market rental housing in transit-oriented areas and specifically within close proximity to FTNs. The RAHS outlines expectations for municipalities to implement the regional goals and strategies as they relate to the plan and in close linkage to regional transportation planning.





Metro Vancouver's Frequent Transit Network (FTN) is a network of corridors where transit service runs at least every 15 minutes in both directions throughout the day and into the evening, every day of the week. People traveling along FTN corridors can expect convenient, reliable, easy-to-use services that are frequent enough that they do not need to refer to a schedule. For municipalities and the development community, the FTN provides a strong organizing framework around which to focus growth and development.

Encouraging affordable housing along or near FTNs and transit-oriented areas can be approached by providing:

- **Parking Reduction:** Reduction or elimination of parking for affordable housing units in transit-oriented areas in exchange for rental units. The cost of parking is a considerable construction expense.
- **Density Bonus:** Increased density in exchange for rental units.
- **Land Acquisition:** Acquiring land near or along FTRs to contribute to affordable housing projects.
- **Partnerships:** Create partnerships between developers, non-profit housing providers, the City, and Translink on transit-oriented development projects.

Generally, a transit-oriented affordable housing development policy could provide specific incentives to increase the supply of affordable housing in transit-oriented areas, specifically along or near FTRs. Partnerships between public and private sectors could help facilitate this process.

APPROACH AND ACTIONS

Analysis to Richmond Context

The City of Richmond currently has a strong network of transit services, including rapid transit (Canada Line), with direct connection to Vancouver and networks that branch into Delta, New Westminster, Burnaby, Surrey, and White Rock. The City has already leveraged some areas by encouraging and successfully building transit-oriented hubs with mixed-use towers and podiums, especially along No. 3 Road.

There is an opportunity for the City to build on successful transit-oriented development by prioritizing affordable housing development along the Canada Line in future projects, particularly non-market, low-end market rental, purpose-built market rental housing, and potentially affordable homeownership units.

In addition, there is existing rental housing stock near FTNs, some of which are aging and under-utilized. There is an opportunity to redevelop some of these sites to replace and add to the rental stock with a transit-oriented lens, with units secured through housing agreements (this will be addressed by the City's forthcoming Market Rental Policy).

Proposed Richmond Approach and Actions

1. Prioritize, where applicable, the development of non-market, low-end market rental, purpose-built market rental and affordable homeownership units near or along FTNs.
2. Align with Metro Vancouver's Regional Affordable Housing Strategy's goal to increase the rental housing supply along FTNs. The Metro Vancouver's RHS specifies "close proximity" as within 400 metres of non-rapid FTNs (bus) and within 800 metres of rapid transit (Canada Line).



3. Encourage diverse housing forms in proximity to FTNs including medium density ground-oriented housing in close proximity to station areas, and leverage sites that are under-utilized that could include affordable housing.
4. Prioritize density bonus value transfers to transit-oriented areas.
5. Establish transit-oriented inclusionary housing targets for purpose-built rental and housing that is affordable to very low and low-income households within close proximity of transit.
6. In keeping with Metro Vancouver's RAHS, provide incentives for new purpose-built rental housing located in transit-oriented locations to enable these developments to achieve financial viability. These incentives can include parking reductions or elimination, and density bonus, density bonus value transfers.
7. Consider acquiring land located in close proximity to FTNs to contribute towards affordable housing projects (see use of City land for affordable housing).
8. Consider working with Metro Vancouver to identify opportunities for new capital funding options to increase the supply of affordable housing in transit-oriented areas.

Implementation Roles

Municipality:

- Communicate and liaise with Metro Vancouver and Translink on development opportunities along FTNs in Richmond.
- Investigate land acquisition opportunities near or along FTNs.
- Communicate information to developers and non-profit housing societies on transit-oriented affordable housing development opportunities.

Development Community:

- Work with the City of Richmond to implement the transit-oriented development objectives.
- Partner, where appropriate, with non-profit housing societies on transit-oriented development opportunities.
- Deliver affordable housing units through partnership projects.

Non-Profit Housing Providers:

- Partner, where appropriate, with developers and the City on transit-oriented development opportunities.
- Manage and operate affordable housing units delivered through transit-oriented development projects either through long-term lease agreements or stratified ownership.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Establish expectations
- ▶ Communicate information
- ▶ Support pilot project

OTHER ROLES:

- ▶ **Developers** - deliver units

17. MICRO-UNIT RENTAL HOUSING

Target Priority Group in Need

Low and moderate income singles, students, and vulnerable singles who are able to live independently including persons who formerly experienced homelessness.

Target Housing Gap

Purpose-built market rental housing and low-end of market rental housing for low and moderate income singles who are able to live independently.

CONTEXT

Renters in Richmond are experiencing increasing challenges to find available and suitable rental housing affordable to their incomes. Low vacancy rates, increasing rents, applicant competition, and limited new supply have intensified these challenges. For low and moderate income single-person households, finding an affordable rental unit that meets their needs in Richmond can be difficult. For some households, a small affordable rental unit, such as a micro-unit, could meet their housing needs.

Micro-units are typically built in multi-unit residential projects and can range between 225 to 350 square feet per unit. The units can be rented or owned as apartments or condos. Micro-units rented at market rates can be a cost-saving alternative to typical studio or one-bedroom rental units. Research indicates that tenants usually live between one to two years in a micro-unit until they can afford to graduate to a larger unit. This cycle demonstrates that micro-units are a "stepping stone" for households to get into the housing market. Given their size limitation, micro-units may not be adequate for couples, families or seniors.

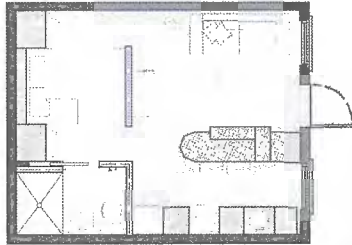
A multi-unit residential project comprised of micro-units may achieve higher unit density on a site without increasing height of a project, which can be a practical development alternative for Richmond given development height restrictions. Micro-units are a housing option that can increase the housing supply to a specific niche target population but are limited in their suitability and affordability.

OVERVIEW OF MICRO-UNIT HOUSING POLICY

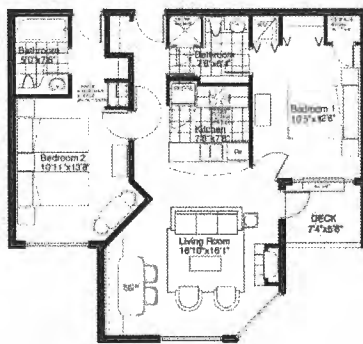
Municipalities across BC are increasingly exploring the concept of micro-unit housing as a cost-saving alternative for residents, for both market rental and condo homeownership options. Strong regulatory requirements have been utilized to implement micro-unit housing forms, such as specifying unit sizes and locations near transit and demographic demand from singles and students.



Micro-units in the City of Kelowna have a minimum 312 square foot unit size, and limited siting criteria including within urban areas, the University Village and within 400 metres of a bus stop.



Sample micro-unit layout in Kelowna project (Worman, 2016)



Sample lock-off suite

The limited square footage of micro-units can lead to tenants utilizing common and public spaces outside their respective unit to meet their livability needs. This includes onsite indoor and outdoor amenity space and public amenities. Municipalities have responded by encouraging micro-unit housing development to be located within close proximity to parks, recreation, transit, shopping and other amenities to off-set the space limitations of micro-units.

Micro-unit housing policy can also be complemented by design guidelines to improve livability of building and suite design, such as incorporating large/ corner windows and providing onsite storage facilities. Other design considerations include purpose-built flexibility so that two or more micro-units can be converted into a studio or one-bedroom unit in the future if required, providing adaptability to changing demographics and housing need in the community.

APPROACH AND ACTIONS

Analysis to Richmond Context

Micro-unit housing projects could be a specific housing form to meet the housing needs of low and moderate income singles in Richmond who are in need of rental housing.

Given their limited suitability to the target population of singles, including students, the City of Richmond could consider slowly introducing these units and monitor absorption and occupancy over time.

As a starting point, the City may wish to complete a comprehensive land use planning analysis that examines the pros and cons of micro unit housing within a Richmond context. This analysis should explore land use and community planning opportunities and challenges, necessary policy and regulatory change including location criteria.

Proposed Richmond Approach and Actions

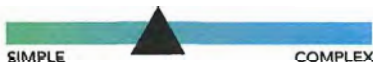
1. Consider developing a comprehensive planning study that examines the pros and cons of micro units, including necessary policy and regulatory changes.

Implementation Roles

Municipality:

- Develop terms of reference and undertake a comprehensive planning study on micro rental units.

EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Facilitate partnerships
- ▶ Establish expectations
- ▶ Communicate information
- ▶ Support pilot project
- ▶ Evaluate livability

OTHER ROLES:

- ▶ **Non-profit housing providers** - partner; secure and operate dedicated affordable units

18. ENCOURAGING ACCESSIBLE HOUSING FOR PERSONS WITH DISABILITIES

Target Priority Group in Need

Low and moderate income households with a disability, including seniors, couples, and families that have one or more members of their household with a disability.

Target Housing Gap

Supportive housing, non-market rental, low-end market rental, and affordable homeownership units for persons living with a disability.

CONTEXT

Persons living with a disability were identified through the consultation as experiencing significant challenges finding suitable, accessible, and affordable housing in Richmond across the entire housing continuum. Households that have a member of their family living with a disability have limited options that are affordable, accessible, and large enough to accommodate everyone.

The City of Richmond currently has Basic Universal Housing (BUH) standards to create more inclusive and accessible housing units for persons living with a disability. These standards have informed many housing development projects in Richmond and have positively contributed to the available housing stock. However, the majority of low-end market rental units secured with BUH are not rented to persons living with disabilities, and there are concerns that these and other market units are not affordable to persons on disability assistance.

OVERVIEW OF ENCOURAGING ACCESSIBLE HOUSING

The City of Richmond has the opportunity to build on an already inclusive mobility-focused accessible housing practices and to explore ways to increase accessible units within affordable housing projects.

APPROACH AND ACTIONS

Analysis to Richmond Context

Building on existing relationships with the health authority and other non-profit organizations focused on accessibility, the City can encourage more accessible housing forms through partnerships in new affordable housing projects.

Proposed Richmond Approach and Actions

1. Continue to foster relationships with Richmond based organizations, such as the Richmond Centre for Disability, Pacific Autism Family Centre (PAFC), Society for Community Living, and the Rick Hansen Foundation, and identify opportunities to collaborate and to obtain



input into housing needs and design for short-term and long-term housing options for program participants.

2. Consider partnering with health authorities and other potential project partners where there are opportunities to incorporate units or other design features that meet accessible housing needs.

Implementation Roles

Municipality:

- Facilitate relationship building, partnerships and communications with various organizations.

Non-Profit Housing Providers:

- Work with the City of Richmond to identify opportunities for partnerships.
- Partner, where appropriate, with various agencies and the City to deliver affordable housing projects that include the accessible units.
- Operate units secured through accessible projects, including managing tenant selection and intake process.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Facilitate partnerships
- ▶ Contribute land

OTHER ROLES:

- ▶ **Non-profit organization ("The CLT"):** Agency and administrator
- ▶ **Non-profit housing providers:** Lease-holders and operators
- ▶ **BC Housing:** Project partner

CLT's anticipate that buildings, tenants, operators, funders and contracts change over time, but the land is held in perpetuity for the sole purpose of providing long-term affordable housing in a community.

19. COMMUNITY LAND TRUST

Target Priority Group in Need

Low and moderate income earners, including families, seniors, singles, couples, students, persons with disabilities, and vulnerable populations.

Target Housing Gap

Non-market rental, low end market rental, purpose-built rental, and affordable homeownership for low and moderate income households. Shelters and transitional housing could be targeted, where appropriate.

CONTEXT

As previously noted, a key challenge to making housing affordable in Richmond is the significant and increasingly high cost of land. For both developers and non-profit housing providers, the cost of land directly influences capital and operating costs, maximum rent levels, and the number and types of units that can be secured in affordable housing projects.

High land costs also limits the impact of municipal financial contributions to support potential affordable housing projects, as the Affordable Housing Reserve Fund does not accumulate at the rate and volume needed to support projects.

OVERVIEW OF COMMUNITY LAND TRUST

While land costs are fixed at market rates, there may be an opportunity to secure land through a Land Trust model that, over time, acquires and preserves land in perpetuity for affordable housing.

A Community Land Trust (CLT) is a community-based model to secure land for the future development and preservation of affordable housing. Typically, a CLT is a non-profit agency that is created with the mandate to acquire and "bank land" to be leased over the long term to non-profit housing societies for operating affordable housing projects. A CLT can receive public or private land donations or government subsidies to purchase land in which affordable housing can be built. The banked land is held in trust by the community for the purpose of building and creating access to affordable housing and is not available for other development. The CLT provides exclusive use of their land to ground-lease holders, who own the structures via ground leases. The CLT retains a long-term option to repurchase the structures/improvements on the land.

This model helps to reduce the risk and prevents the loss of the affordable housing stock, as it removes land from the market and holds it for affordable housing.



The Vancouver Community Land Trust (VCLT) established in 2014 is the first community land trust in Metro Vancouver. The Land Trust is currently developing 358 units of housing on three sites in the City of Vancouver in partnership with the City of Vancouver, BC Housing, Vancity Credit Union, and several non-profit and co-operative housing providers, with occupancy expected in late 2017 to early



Incorporated in 1984, the Champlain Housing Trust (formerly the Burlington Community Land Trust) in Vermont has 2,200 rental leases and 565 affordable homeownership units in their portfolio. (Photo above: apartment in CHT's portfolio).

APPROACH

Analysis to Richmond Context

Land made available through a land trust could be used to target all priority groups and housing gaps, from singles to families and from affordable rental housing to affordable homeownership. The City of Richmond may wish to explore various CLT models and consider their potential applicability to Richmond.

Overall, a local land trust has the potential to preserve and expand access to affordable housing in communities experiencing significant increases in land costs. A land trust initiative may be challenging, however with early investment and establishing a framework, a Land Trust model could eventually lead to a long-range reward in affordable housing stock in Richmond.

Proposed Richmond Approach and Actions

1. Explore the feasibility of establishing a community-based CLT and its potential application in Richmond by taking into account the following considerations:
 - Governance, legal and administration structure.
 - Initial and long-term funding and operating structure, including potential tax exemptions and revenue generating uses.
 - Priority groups and project eligibility.

Implementation Roles

Municipality:

- Prepare a terms of reference for preparing a comprehensive feasibility analysis of a community-based CLT.

Non-Profit Housing Societies:

- Work with the City of Richmond to identify opportunities for partnership with a potential community-based CLT to deliver and manage affordable housing projects.



EASE OF IMPLEMENTATION:



MUNICIPAL ROLE:

- ▶ Establish expectations
- ▶ Select administrator
- ▶ Engage potential funders

OTHER ROLES:

- ▶ **Non-profit social service organization** — Administer rent bank program
- ▶ **Funding Partners** - Contribute funding

20. RENT BANK PROGRAM

Target Priority Group in Need

Low income earners, including families, seniors, students, persons with disabilities, and vulnerable populations including persons at-risk of homelessness.

Target Housing Gap

Low-end market rental and purpose-built market rental housing.

CONTEXT

A rent bank is a financial assistance program that can make funds available to households who are at-risk of eviction due to inability to make rent. Funds can be used towards housing related costs such as rent and utility bills. Rent banks are typically operated by a non-profit society with financial contributions made by their respective municipality.

Temporary financial setbacks among vulnerable low-income households often result in households entering homelessness. A rent bank can help keep these households at-risk of homelessness remained housed.

OVERVIEW OF RENT BANK PROGRAM

Most rent bank programs operate by providing no-interest loans, with the intention of having loans repaid by clients. However, a contingency is typically built into the program operations in case the loans are not paid back. In essence, these funds can function either as a loan or a grant, with funds serving as a loan if a client is able to repay or a grant if a client is unable to repay. This approach offers less risk to clients in need.

Accessing rent banks is especially important for low-income households who may not have access to credit during a short-term emergency crisis.

Typically, non-profit society staff will supervise the intake and approval of loans. They may also provide assistance with personal budgeting and financial literacy. Staff will follow-up on loan repayment and, in some cases, provide housing search assistance if current housing will remain unaffordable in the long-run. Rent bank staff may also negotiate with landlords, liaise with other relevant agencies, and provide information and referrals.

The role of the municipality is typically a financial contributor.

APPROACH AND ACTIONS

Analysis to Richmond Context

A rent bank program currently exists in Richmond for low-income seniors through Chimo Community Services. Other vulnerable groups in Richmond may also benefit from a similar program.



Proposed Richmond Approach and Actions

1. The City may wish to explore options to work with non-profit organizations to further enhance and support local rent bank initiatives.

Implementation Roles

Municipality:

- Consider working with non-profit organizations to support local rent bank initiatives.

Non-Profit and Social Service Organization:

- Operate local rent bank including administration of loans, personal budgeting and financial literacy support.



V. CONCLUSION

This report, as part of Phase 2 of the City of Richmond's Affordable Housing Strategy Update, is a comprehensive policy review informed by consultation and research and outlines policy options, for consideration, to guide the future planning of affordable housing in Richmond.

IMPLEMENTATION CAPACITY

The current authority, capacity, and municipal resources are limited and the City will not necessarily be able to implement all of the proposed policy directions outlined in this report. All policy directions require ongoing administration and monitoring, while others involve feasibility studies, business plans, and special studies or projects. It is recommended that the City evaluate and identify gaps in municipal resources, primarily staffing, in order to implement the proposed policy directions.

NEXT STEPS

The proposed policy options will be reviewed by staff, and shared with select stakeholders to obtain feedback on potential challenges and opportunities for implementation. Input will be considered prior to presenting proposed recommendations to Council. Based on direction, the finalized policy options report will create a framework for updating the City's Affordable Housing Strategy document.





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Policy Review and Options Stakeholder Engagement

Consultation Objectives

The objectives of the consultation sessions are to:

- Provide information to stakeholders on priority groups, identified housing gaps and proposed strategic directions
- Seek input and discuss feasibility of proposed policy options and recommendations, including feasibility
- Refine recommended policy options for Council consideration

The consultation sessions will be scheduled for early June 2017, with final policy recommendations incorporating stakeholder feedback presented for Council consideration in July 2017.

Target Audience/Participants

The target participants of the consultation sessions will be with stakeholders involved with the development, management and programming of affordable housing in Richmond. Due to the technical nature of the policies, the consultation sessions will follow a focus group format focused on specific topic areas with the key stakeholders.

Stakeholder Group	Participants	Topic Areas
Non-profit housing providers	<ul style="list-style-type: none"> • Turning Point Recovery Society • Catalyst Community Development Society • Coast Mental Health • Tikva Housing • SUCCESS • Chimo Community Services • Atira Women's Resource Society • Richmond Society for Community Living • Pathways Clubhouse • YWCA • Co-op Housing Federation of BC • BC Non-Profit Housing Association and any other interested housing providers 	<ul style="list-style-type: none"> • Non-market and low-end market rental housing, including management, and programming • Co-location of non-market housing and community assets • Non-profit housing development • Municipal financing tools • Encouraging accessible housing • Rent Bank Program
Private/development sector	<ul style="list-style-type: none"> • Urban Development Institute 	<ul style="list-style-type: none"> • Non-market and low-end market rental

	<ul style="list-style-type: none"> • Richmond Home Builders Group • Greater Vancouver Home Builders' Association 	<p>housing</p> <ul style="list-style-type: none"> • Cash-in-lieu contributions • Public-private partnerships • Family-friendly Housing Policy • Transit-oriented affordable housing development • Encouraging accessible housing
Government and quasi-government organizations	<ul style="list-style-type: none"> • CMHC • BC Housing • Metro Vancouver • Vancouver Coastal Health • Richmond School Board 	<ul style="list-style-type: none"> • Non-market and low-end market rental housing • Public-private partnerships • Co-location of non-market housing and community assets • Non-profit housing development
Non-profit service providers and community groups	<ul style="list-style-type: none"> • Salvation Army • Richmond Centre for Disability • Richmond Food Bank • Richmond Addictions Services Society • Richmond Poverty Response Committee • any other interested organizations (invited through the Richmond Community Services Advisory Committee, Richmond Intercultural Advisory Committee and Richmond Seniors Advisory Committee) 	<ul style="list-style-type: none"> • Non-market and low-end market rental housing • Co-location of non-market housing and community assets • Encouraging accessible housing • Rent Bank Program

Municipal Housing Initiatives in Metro Vancouver – Comparison Charts

The following charts are a comparison of housing initiatives used in select municipalities throughout Metro Vancouver by category including, fiscal measures, planning and policies, zoning and regulatory measures, and market rental housing retention and development.

Municipal Measure	Select Metro Vancouver Municipalities										
	Burnaby	Coquitlam	Delta	Maple Ridge	New Westminster	North Vancouver	Port Moody	Richmond	Surrey	Vancouver	West Vancouver
Fiscal Measures											
Lease of City-owned sites to non-profits for Affordable Housing	X	X		X	X	X	X	X	X	X	X
Donation of City land for affordable housing development		X		X	X	X			X	X	
Property tax exemption for supportive affordable housing				X	X	X				X	
Waive/reduce DCCs for affordable housing	X	X		Exploring		X		Through AH Grants	X	X	Exploring
Waive fees for affordable housing (i.e. Building permit fees)	X	X		Exploring	X	X		Through AH Grants	X	X	Exploring
Land trust for affordable housing				Exploring		Exploring				X	
Affordable Housing Reserve Fund	X	X		Exploring	X	X	X	X	X	X	Exploring
Cash-in-lieu accepted for density bonus	X	X		X	X	X		X		X	Exploring

Municipal Measure	Select Metro Vancouver Municipalities										
Planning & Policies	Burnaby	Coquitlam	Delta	Maple Ridge	New Westminster	North Vancouver	Port Moody	Richmond	Surrey	Vancouver	West Vancouver
Affordable Housing Strategy		X	X	X	X	X	X	X		X	X
OCP policies for a range of housing types	X	X		X	X	X	X	X	X	X	X
Suitable sites identified for affordable housing	X			X	X	X		X		X	
Family Friendly Housing Policy					X	X				X	
Adaptable Housing Policy	X			X	X	X	Exploring			X	
Tenant Relocation Policy	X	X		X	X	X	Exploring			X	
Affordable Homeownership Policy										Exploring	

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Municipal Measure	Select Metro Vancouver Municipalities										
	Burnaby	Coquitlam	Delta	Maple Ridge	New Westminster	North Vancouver	Port Moody	Richmond	Surrey	Vancouver	West Vancouver
Zoning & Regulatory Measures											
Density Bonus for affordable housing	X	X		X	X	X	X	X	X	X	X
Inclusionary zoning policy for affordable housing	X			X		X		X		X	
Pre-zone lands for affordable housing	X					Exploring				X	
Smaller lots permitted	X	X	X	X	X	X	X	X	X	X	X
Secondary suites/coach housing in single family zones	X	X	X	X	X	X	X	X	X	X	X
Secondary suites in other zones (i.e. lock of suites)	X	X		Exploring		X				X	
Reduced parking requirements for all residential housing			X	X	X	Exploring			X	X	Exploring
Reduced parking requirements for affordable housing	X			X	X	X		X	X	X	Exploring
Housing agreements to secure affordable housing	X	X		X	X	X	X	X	X	X	X

Municipal Measure	Select Metro Vancouver Municipalities										
	Burnaby	Coquitlam	Delta	Maple Ridge	New Westminster	North Vancouver	Port Moody	Richmond	Surrey	Vancouver	West Vancouver
Rental Housing Replacement & Development Incentives											
Replacement Policy				X		Case-by-case		X		X	Exploring
Demolition Policy				X	X	X		X		X	
Condo/Strata conversion Policies	X	X	X	X	X	X		X	X	X	X
Standards of Maintenance by-law		Exploring	X	X	X	X		X	X	X	
Density Bonus for new market rental development		X		X	X	X				X	Exploring
Parking requirements relaxed	Case-by-case	X		Exploring	X	X	Case-by-case			X	
Fees waived/reduced for new market rental development		X		Exploring	X	X				X	Exploring



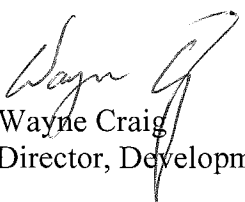
To: Planning Committee
From: Wayne Craig
Director, Development
Date: May 1, 2017
File: CP 16-733600
RZ 16-732627
Re: **Application by Dava Developments Ltd. to Amend Attachment 1 to Schedule 1 of the Official Community Plan at 9560 Pendleton Road from "Park" to "Neighbourhood Residential", and for Rezoning at 9560 Pendleton Road from "School & Institutional Use (SI)" Zone to "Single Detached (ZS28)" – Pendleton Road (West Richmond) Zone**

Staff Recommendation

1. That Official Community Plan Bylaw OCP Bylaw 9000, Amendment Bylaw 9662, to re-designate 9560 Pendleton Road from "Park" to "Neighbourhood Residential" in Attachment 1 to Schedule 1 of Official Community Plan Bylaw OCP Bylaw 9000, be introduced and given first reading.
2. That Bylaw 9662, having been considered in conjunction with:
 - The City's Financial Plan and Capital Program; and
 - The Greater Vancouver Regional District Solid Waste and Liquid Waste Management Plans;

is hereby found to be consistent with said program and plans, in accordance with Section 477(3)(a) of the Local Government Act.

2. That Bylaw 9662, having been considered in accordance with OCP Bylaw Preparation Consultation Policy 5043, is hereby found not to require further consultation.
3. That Richmond Zoning Bylaw 8500, Amendment Bylaw 9661, to create the "Single Detached (ZS28) – Pendleton Road (West Richmond)" zone, and to rezone 9560 Pendleton Road from the "School & Institutional Use (SI)" zone to the "Single Detached (ZS28) – Pendleton Road (West Richmond)" zone, be introduced and given first reading.


Wayne Craig
Director, Development

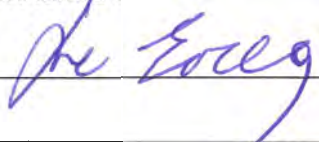
WC:jr
Att. 8

May 1, 2017

- 2 -

CP 16-733600

RZ 16-732627

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Affordable Housing	<input checked="" type="checkbox"/>	
Parks	<input checked="" type="checkbox"/>	
Policy Planning	<input checked="" type="checkbox"/>	

Staff Report

Origin

Dava Developments Ltd. has applied to the City of Richmond for permission to rezone 9560 Pendleton Road from the "School & Institutional Use (SI)" zone to a new site-specific "Single Detached (ZS28) – Pendleton Road (West Richmond)" zone, to permit the property to be subdivided to create three single-family lots with vehicle access from Pendleton Road (Attachment 1). The proposed subdivision plan is shown in Attachment 2.

The proposed rezoning requires an amendment to the Official Community Plan (OCP), to redesignate the property from "Park" to "Neighbourhood Residential" in Attachment 1 to Schedule 1 of Official Community Plan Bylaw OCP Bylaw 9000. These two applications are being processed concurrently.

Findings of Fact

A Development Application Data Sheet providing details about the development proposal is provided in Attachment 3.

Surrounding Development

Development immediately surrounding the site is as follows:

- To the North and West, across Pendleton Road: Hugh Boyd Secondary School and park; on a lot zoned "School & Institutional Use (SI)."
- To the South: Three single-detached dwellings on lots zoned "Single Detached (RS1/E)"; with vehicle access from Pendleton Road and Pendlebury Road.
- To the East: One single-detached dwelling on a lot zoned "Single Detached (RS1/E)"; with vehicle access from Pendleton Road.

Related Policies & Studies

Official Community Plan

The subject property is located in the Seafair Planning Area, and has an OCP designation of "Park" (Attachment 4). This application would change the designation to "Neighbourhood Residential" to permit development of the subject property.

The proposed rezoning and subdivision is consistent with the proposed "Neighbourhood Residential" designation. Final adoption of Official Community Plan Amendment Bylaw 9662 is required prior to final adoption of the rezoning bylaw.

Floodplain Management Implementation Strategy

The proposed redevelopment must meet the requirements of the Richmond Flood Plain Designation and Protection Bylaw 8204. Registration of a flood indemnity covenant on Title is required prior to final adoption of the rezoning bylaw.

Public Consultation

A rezoning sign has been installed on the subject property. Staff have not received any comments from the public about the rezoning application in response to the placement of the rezoning sign on the property.

Should the Planning Committee endorse this application and Council grant first reading to the rezoning bylaw, the bylaw will be forwarded to a Public Hearing; where any area resident or interested party will have an opportunity to comment. Public notification for the Public Hearing will be provided as per the *Local Government Act*.

Staff have reviewed the proposed OCP amendment, with respect to the BC *Local Government Act* and the City's OCP Consultation Policy No. 5043 requirements, and recommend that this report does not require referral to external stakeholders.

Richmond Official Community Plan Bylaw OCP Bylaw 9000, Amendment Bylaw 9662, having been considered in accordance with OCP Bylaw Preparation Consultation Policy 5043, is hereby found to not require further consultation.

The public will have an opportunity to comment further on the proposed amendment at the Public Hearing.

School District

This application was not referred to School District No. 38 (Richmond) because it does not have the potential to generate 50 or more school aged children. This application only involves three single-family housing units.

Site History and Council-Approved Land Sale

The property was originally acquired by the City in 1962 for municipal purposes, as a single property encompassing the current 2 lots at 9560 and 9580 Pendleton Road. The transaction was part of a larger acquisition of land for the development of the combined high school and community park (Hugh Boyd Secondary and Hugh Boyd Community Park). In the November 28th, 1961 report to Council recommending the acquisition, it was suggested that "this isolated parcel of land be subdivided by the Municipality into single family residential lots to be disposed of at some appropriate time in the future". The property was subdivided to create the two lots at 9560 and 9580 Pendleton Road in 1983.

The property at 9560 Pendleton Road has been maintained by the City as a passive park with no program elements constructed within it. Staff reviewed the property in 2015 to consider its value and function as a park and its role in the City's parks and open space system. Staff determined that the property was not required, in order to meet the City's park quantity standard of 7.66 acres/1,000 population, and it was not required to fulfill overall park needs in the area.

As the property was deemed surplus by the Parks Department, it was recommended to Council that the property be sold. The sale was approved to proceed by Council in November of 2015. Sale of the property assumed a future subdivision to create three lots.

Public notification of the City's intent to dispose of the property was advertised in the Richmond News on February 24, 2016 and March 4, 2016. The sale to River Road Investments Ltd. was completed April 29, 2016, and revenue from the sale of the property was used to fund city-wide park acquisition priorities.

Analysis

Site-specific Zone – “Single Detached (ZS28) – Pendleton Road (West Richmond)”

This rezoning application would result in the creation of a site-specific zone: “Single Detached (ZS28) – Pendleton Road (West Richmond)”. This site-specific zone would vary the requirements of the “Single Detached (RS2/E)” zoning bylaw to allow a reduced front yard setback from 6.0 m to 4.5 m and set the minimum lot size at 700.0 m². All other aspects of the proposed “Single Detached (ZS28) – Pendleton Road (West Richmond)” zoning bylaw are consistent with the “Single Detached (RS2/E)” zoning bylaw. The minimum lot size requirements contained in the zone allow no more than three lots to be created through subdivision.

The purpose of the reduced front yard is to shift the building massing toward the front lot line, to facilitate tree retention at the rear of the development site. The subject site was maintained by the City as a park, and contains 20 bylaw-sized trees. These mature trees have large canopies as a result of the open growth conditions, and most are in good health. There is a grove of trees at the rear of the proposed new lots, of which 6 will be retained through this application.

Staff have worked with the applicant to ensure that tree retention goals can be met while allowing the proposed subdivision and development to proceed. A total of 10 on-site trees will be retained through this application. Additional details on tree retention and replacement are contained in later sections of this report, and in the attached tree protection plan (Attachment 7).

Built Form and Architectural Character

As the proposed subdivision will create a new corner lot, the applicant has submitted conceptual plans showing the proposed architectural elevations of the dwelling on Proposed Lot 1 (Attachment 5). The primary access to the dwelling and attached garage is from the west side of the lot, which enables retention of two good quality, mature trees in the front yard. A porch wraps around the corner of the dwelling, and projections on the north face break up the dwelling into smaller components.

Prior to final adoption of the rezoning bylaw, the applicant is required to register a legal agreement on Title, specifying that the Building Permit application and ensuing development of the corner lot must be generally consistent with the conceptual plans included in Attachment 5 to this report. Plans submitted at Building Permit application stage must also demonstrate compliance with Richmond Zoning Bylaw 8500 and all City regulations at the time of submission.

Prior to final adoption of the rezoning bylaw, the applicant is required to submit a Landscape Plan, prepared by a Registered Landscape Architect, to the satisfaction of the Director of Development, for Proposed Lot 1. The Landscape Plan must comply with the requirements for

corner lots in Richmond Zoning Bylaw 8500. A Landscape Security, including installation costs and a 10% contingency, will be held by the City to ensure the approved landscaping is installed.

Transportation and Site Access

Vehicle access is proposed to be provided from Pendleton Road to the north via separate driveways to two of the proposed new lots. Access to the corner lot will be provided from the west side of the lot to facilitate tree retention in the front yard.

Tree Retention and Replacement

The subject property is a unique situation in the city – there has not been any development on the lot to date. The property is surrounded by properties which have developed and re-developed in recent years. The majority of the existing trees on the site are in good to excellent condition, but are in locations which conflict with proposed building envelopes. As described above, the site was originally secured as a development property, and was recently sold as such. Consistent with the City's tree bylaw and development procedures, tree removal can be considered for conflict with potential building envelopes.

The applicant has submitted a Certified Arborist's Report, which identifies on-site and off-site tree species, assesses tree structure and condition, and provides recommendations on tree retention and removal relative to the proposed development. The Report assesses 20 bylaw-sized trees on the subject property, six trees on neighbouring properties, one tree on City property, and one tree on a property line shared with the City. As described below, 10 of the on-site trees are being retained by shifting building envelopes in respect to the tree protection zones.

The City's Tree Preservation Coordinator has reviewed the Arborist's Report and has the following comments:

- Six London Plane trees (Tag # 856, 857, 858, 859, 860, and 861); ranging in size between 35 cm and 65 cm caliper, located on the development site are in excellent condition (open growth, no structural defects, and good health). Two trees (Tag # 856 and 857) are to be retained and protected. Four trees (Tag # 858, 859, 860 and 861) are to be removed.
- Three Maple trees (Tag # 850, 851, and 852); ranging in size between 29 cm and 36 cm caliper; located on the development site are in excellent condition (open growth, no structural defects, good health). Two trees (Tag # 850 and 852) are to be retained and protected. Tree # 851 is to be removed.
- Four Western Red Cedar trees (Tag # 862, 863, 864, and 865); ranging in size between 35 cm and 55 cm caliper, located on the development site are in excellent condition (good health, canopies inter-grown at the base due to proximity, no visible structural defects). All these trees are to be retained.
- Four Pin Oak trees (Tag # 866, 867, 868 and 869); ranging in size between 40 cm and 55cm caliper, located on the development site are in good condition (no visible defects, open growth, some minor limb dieback due to crowding). Three trees (Tag # 866, 867, and 869) are to be retained and protected. Tree # 868 is to be removed.

- Four Austrian Pine trees (Tag # 847, 848, 854, 855); ranging in size between 37 cm and 60 cm caliper, located on the development site in two groups are in poor condition. All four of these trees are to be removed.
- Six trees located on neighbouring property (Tag # 846, 870, 871, 872, 873, 874, and 875) are to be retained and protected.
- Replacement trees should be specified at 2:1 ratio as per the OCP.

The City's Parks Department has assessed the City-owned trees and has the following comments:

- One Austrian Pine tree (Tag # 853) located on City property is in poor condition and will be removed.
- One Austrian Pine tree (Tag # 849) located on a shared property line with the City is in poor condition and will be removed.
- Compensation is required for the City to plant four trees at or near the development site.

Tree Protection

Ten trees on the subject property (Tag # 850, 852, 856, 857, 862, 863, 864, 865, 867, and 869) and six trees (Tag # 846 and 870-875) on neighbouring properties are to be retained and protected. The applicant has submitted a conceptual site plan (Attachment 6) and a tree protection plan showing the trees to be retained and the measures taken to protect them during development stage (Attachment 7). To ensure that the trees identified for retention are protected at development stage, the applicant is required to complete the following items:

- Prior to final adoption of the rezoning bylaw, submission to the City of a contract with a Certified Arborist for the supervision of all works conducted within or in close proximity to tree protection zones. The contract must include the scope of work required, the number of proposed monitoring inspections at specified stages of construction, any special measures required to ensure tree protection, and a provision for the arborist to submit a post-construction impact assessment to the City for review.
- Prior to final adoption of the rezoning bylaw, the City's acceptance of a \$100,000 Tree Survival Security.
- Prior to final adoption of the rezoning bylaw, registration of a legal agreement on Title to ensure that the Building Permit application and ensuing development of the site is generally consistent with the preliminary site plan contained in Attachment 6 of this report.
- Prior to demolition of the existing dwelling on the subject site, installation of tree protection fencing around all trees to be retained. Tree protection fencing must be installed to City standard in accordance with the City's Tree Protection Information Bulletin Tree-03 prior to any works being conducted on-site, and remain in place until construction and landscaping on-site is completed.

Tree Replacement

The applicant wishes to remove 10 on-site trees (Tag # 847, 848, 851, 854, 855, 858, 859, 860, 861, 866, and 868). The 2:1 replacement ratio would require a total of 20 replacement trees.

The applicant has agreed to plant four replacement trees on the development site. The required replacement trees are to be of the following minimum sizes, based on the size of the trees being removed as per Tree Protection Bylaw No. 8057.

No. of Replacement Trees	Minimum Caliper of Deciduous Replacement Tree	Minimum Height of Coniferous Replacement Tree
4	11 cm	6 m

To satisfy the 2:1 replacement ratio established in the OCP, the applicant will contribute \$8,000 to the City's Tree Compensation Fund in lieu of the remaining 16 trees that cannot be accommodated on the subject property after redevelopment.

The applicant wishes to remove two trees within the City-owned boulevard. The applicant will contribute \$2,600 to the City's Tree Compensation Fund for the City to plant four trees at or near the development site. The total Tree Compensation Fund contribution of \$10,600 is required prior to final adoption of the rezoning bylaw.

Affordable Housing Strategy

The Affordable Housing Strategy for single-family rezoning applications requires a secondary suite or coach house on 100% of new lots created, or a suite or coach house on 50% of new lots created together with a cash-in-lieu contribution to the City's Affordable Housing Reserve Fund of \$2.00/ft² of the total buildable area of the remaining lots.

The applicant proposes to build secondary suites on two of the three proposed lots, together with a \$7,797.05 contribution to the City's Affordable Housing Reserve Fund. This proposal is consistent with the Affordable Housing Strategy.

Prior to final adoption of the rezoning bylaw, the applicant is required to register a legal agreement on Title to ensure that no final Building Permit inspection is granted until a secondary suite is constructed on two of the three future lots, to the satisfaction of the City in accordance with the BC Building Code and the City's Zoning Bylaw.

Site Servicing and Frontage Improvements

At a future subdivision stage, the applicant is required to complete the following:

- Payment of the current year's taxes, Development Cost Charges (City and GVS & DD), School Site Acquisition Charge, and Address Assignment Fees.
- Enter into a Servicing Agreement for the required servicing works and off-site improvements described in Attachment 8.

Financial Impact

This rezoning application results in an insignificant Operational Budget Impact (OBI) for off-site City infrastructure (such as roadworks, waterworks, storm sewers, sanitary sewers, street lights, street trees and traffic signals).

Conclusion

The purpose of this application is to amend the Official Community Plan designation of 9560 Pendleton Road from "Park" to "Neighbourhood Residential," and to rezone the property from the "School & Institutional Use (SI)" zone to a the site-specific "Single Detached (ZS28) – Pendleton Road (West Richmond)" zone, to permit the property to be subdivided to create three single-family lots with vehicle access from Pendleton Road.

The proposed rezoning and subdivision is generally consistent with the applicable plans and policies for the area.

The list of rezoning considerations is included in Attachment 8; which has been agreed to by the applicant (signed concurrence on file).

It is recommended that Official Community Plan Bylaw OCP Bylaw 9000, Amendment Bylaw 9662 and Richmond Zoning Bylaw 8500, Amendment Bylaw 9661 be introduced and given first reading.



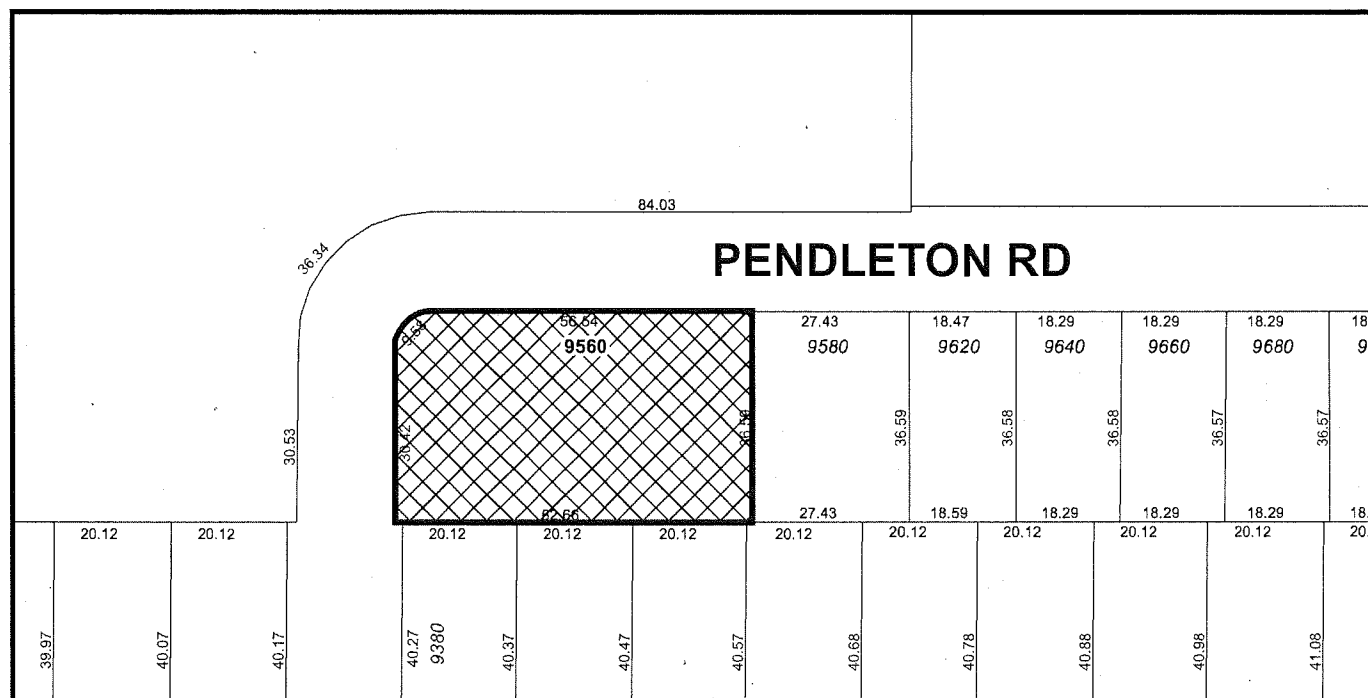
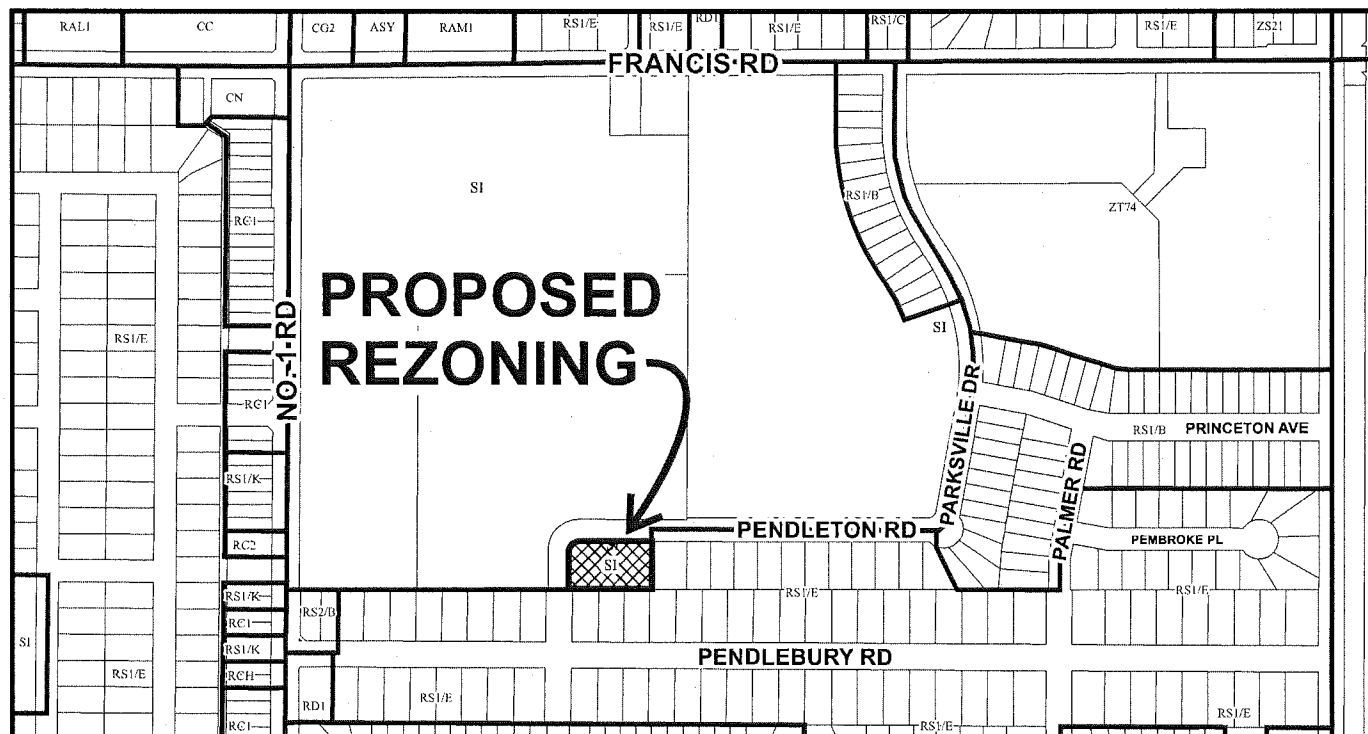
Jordan Rockerbie
Planning Technician
(604-276-4092)

JR:blg

- Attachment 1: Location Map and Aerial Photo
- Attachment 2: Proposed Subdivision Plan
- Attachment 3: Development Application Data Sheet
- Attachment 4: Seafair Area Land Use Map
- Attachment 5: Conceptual Development Plans
- Attachment 6: Conceptual Site Plan
- Attachment 7: Tree Retention Plan
- Attachment 8: Rezoning Considerations



City of Richmond



RZ 16-732627

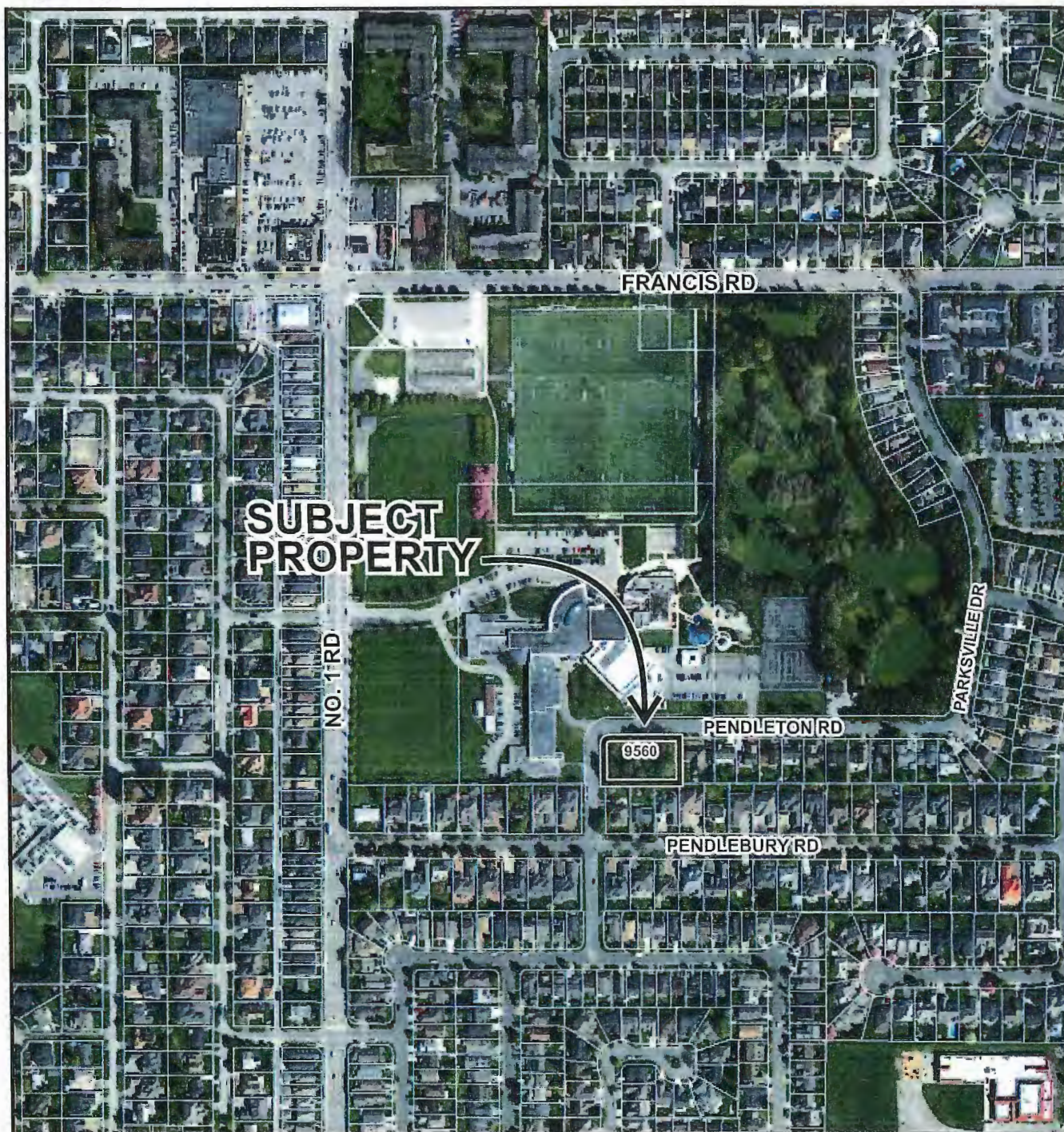
Original Date: 06/10/16

Revision Date: 04/20/17

Note: Dimensions are in METRES



City of
Richmond

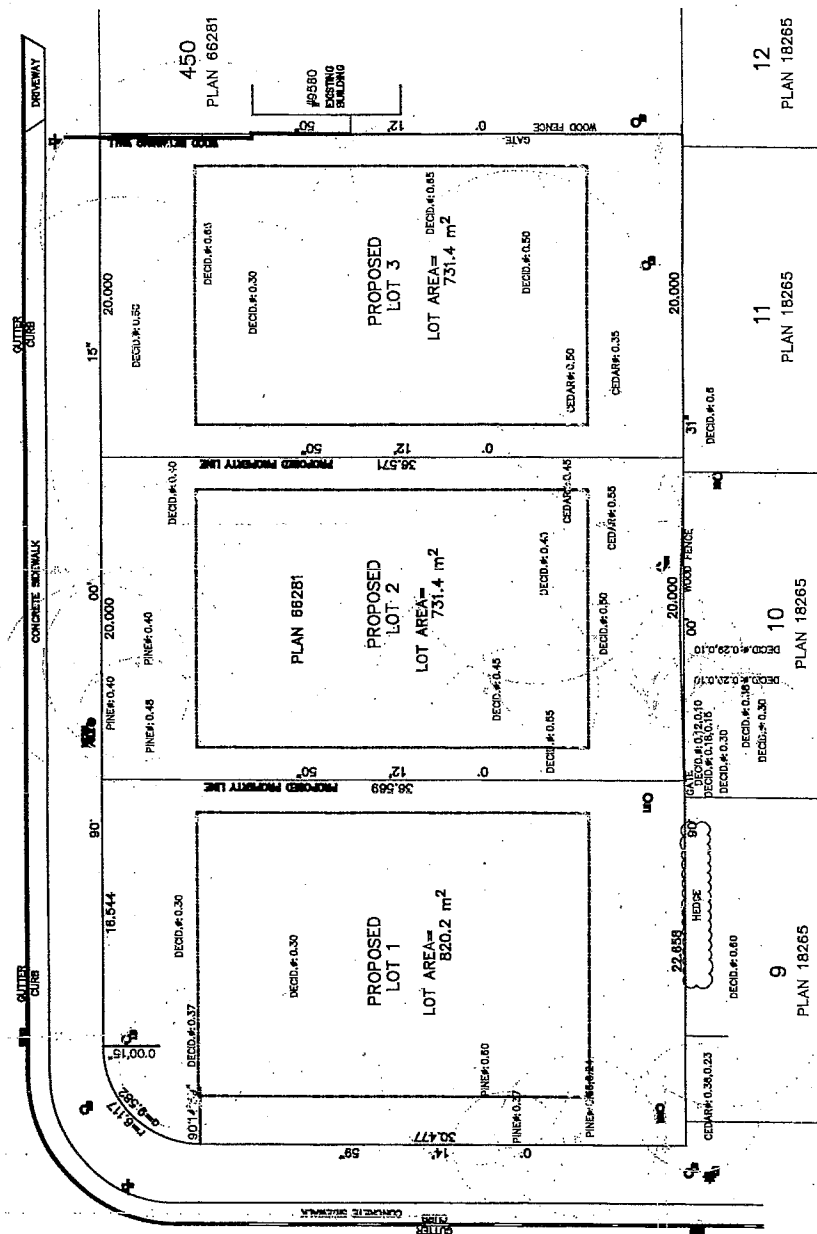


RZ 16-732627

Original Date: 06/10/16

Revision Date:

Note: Dimensions are in METRES





RZ 16-732627

Attachment 3

Address: 9560 Pendleton Road

Applicant: Dava Developments Ltd.

Planning Area(s): Seafair

	Existing	Proposed
Owner:	1068801 B.C. LTD.	To be determined
Site Size (m²):	2,283 m ²	Lot 1: 820.2 m ² Lot 2: 731.4 m ² Lot 3: 731.4 m ²
Land Uses:	Park	Three single-family dwellings
OCP Designation:	Park	Neighbourhood Residential
Zoning:	School & Institutional (SI)	Single Detached (ZS28) – Pendleton Road (West Richmond)

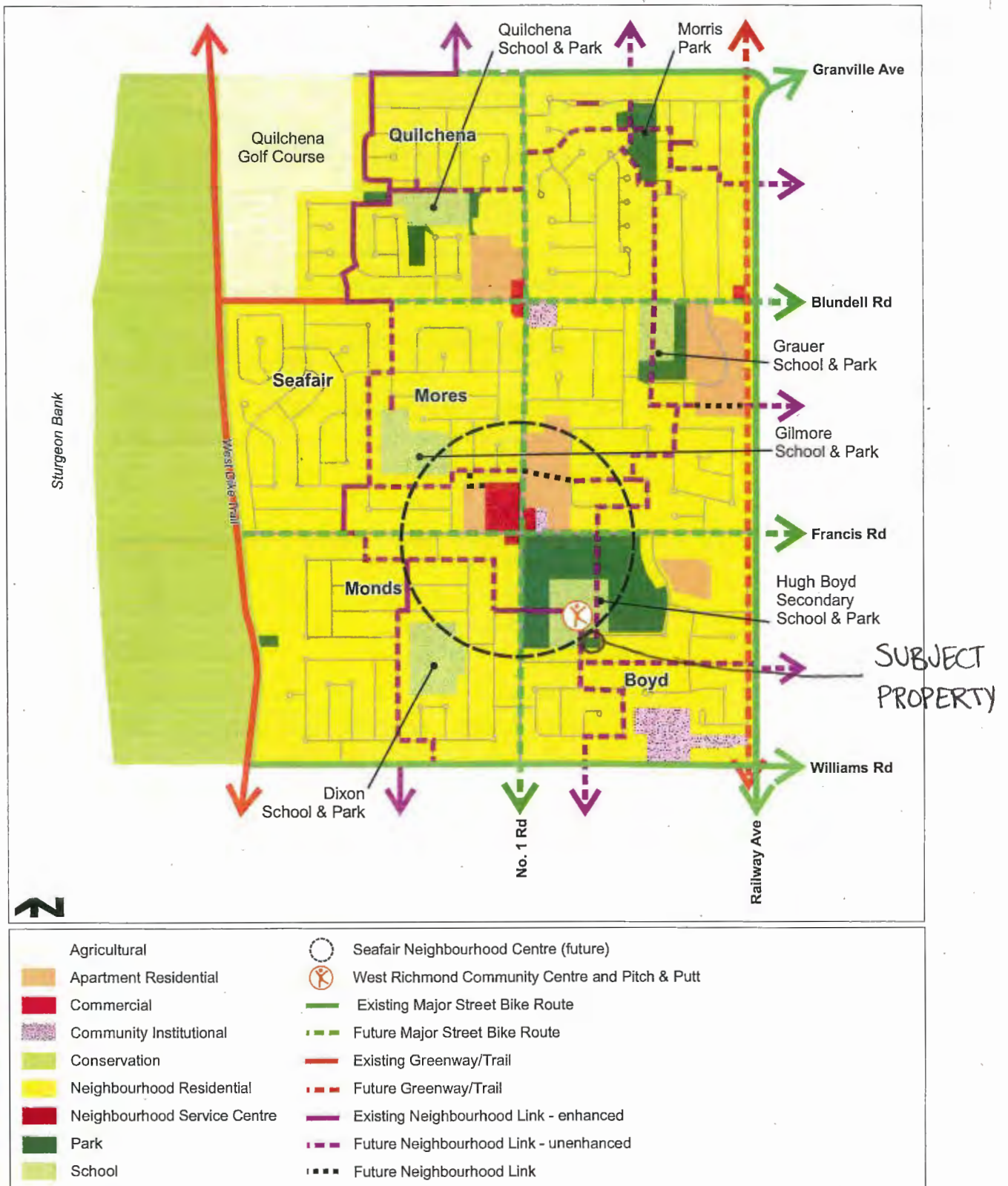
On Future Subdivided Lots	Bylaw Requirement	Proposed	Variance
Floor Area Ratio:	Max. 0.55 for lot area up to 464.5 m ² plus 0.3 for area in excess of 464.5 m ²	Max. 0.55 for lot area up to 464.5 m ² plus 0.3 for area in excess of 464.5 m ²	none permitted
Buildable Floor Area (m ²):*	Lot 1: Max. 362.18 m ² (3,898 ft ²) Lots 2 & 3: Max. 335.55 m ² (3,611 ft ²)	Lot 1: Max. 362.18 m ² (3,898 ft ²) Lots 2 & 3: Max. 335.55 m ² (3,611 ft ²)	none permitted
Lot Coverage (% of lot area):	Building: Max. 45% Non-porous Surfaces: Max. 70%	Building: Max. 45% Non-porous Surfaces: Max. 70%	none
Lot Size:	550.0 m ²	Lot 1: 820.2 m ² Lots 2 & 3: 731.4 m ²	none
Lot Dimensions (m):	Lot 1 Width: 20.0 m Lots 2 & 3 Width: 18.0 m Depth: 24.0 m	Lot 1 Width: 22.66 m Lots 2 & 3 Width: 20.00 m Depth: 36.57 m	none
Setbacks (m):	Front: Min. 4.5 m Rear: Min. 6.0 m Side: Min. 2.0 m Exterior Side: Min. 3.0 m	Front: Min. 4.5 m Rear: Min. 6.0 m Side: Min. 2.0 m Exterior Side: Min. 3.0 m	none
Height (m):	Max. 9.0 m	Max. 9.0 m	none

Other: Tree replacement compensation required for loss of bylaw-sized trees.

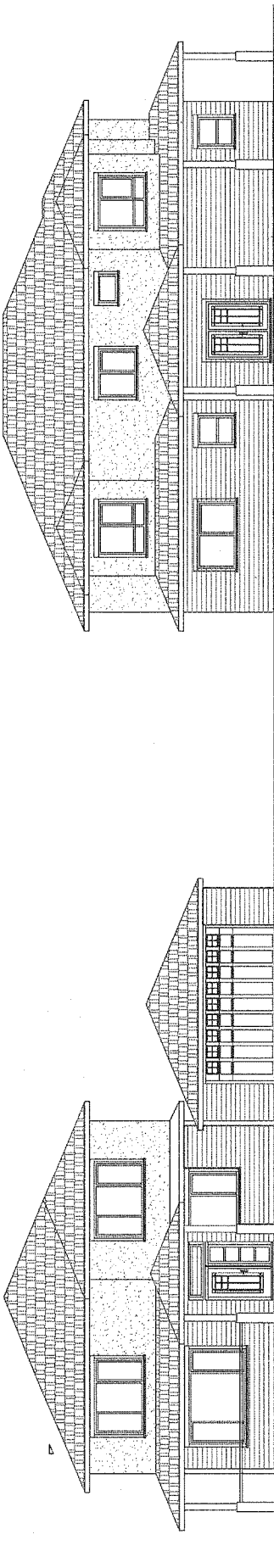
* Preliminary estimate; not inclusive of garage; exact building size to be determined through zoning bylaw compliance review at Building Permit stage.



3. Seafair



CNCL - 205

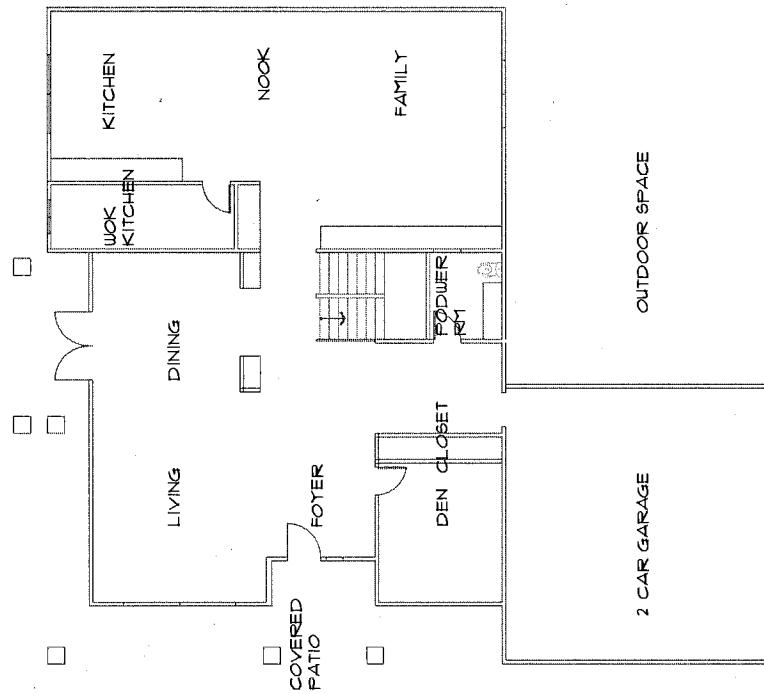


NORTH ELEVATION $\frac{3}{32}'' = 1'0''$

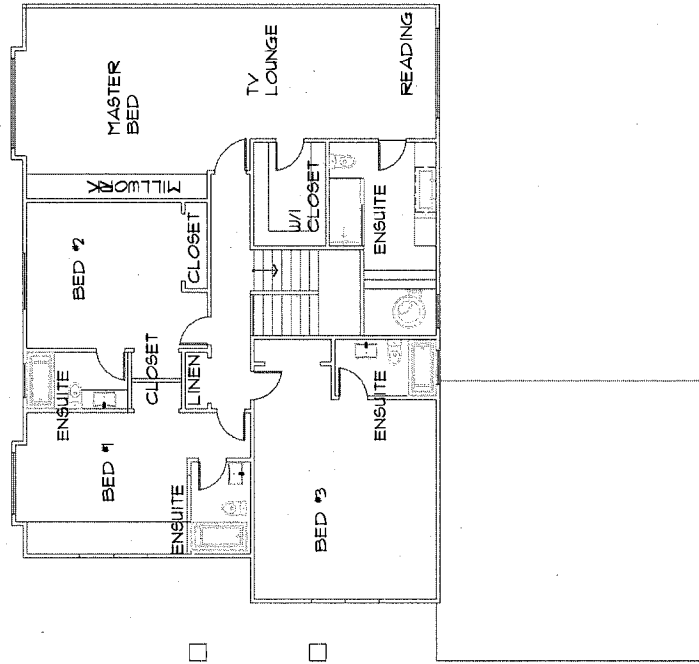
WEST ELEVATION $\frac{3}{32}'' = 1'0''$

PROPOSED LOT 1
 LOT AREA 8825 SF
 PERMITTED 3898 SF

CNCL - 207



MAIN FLOOR PLAN 3' = 1'-0"



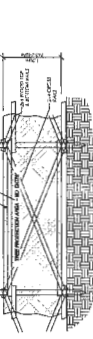
UPPER FLOOR PLAN 3' = 1'-0"



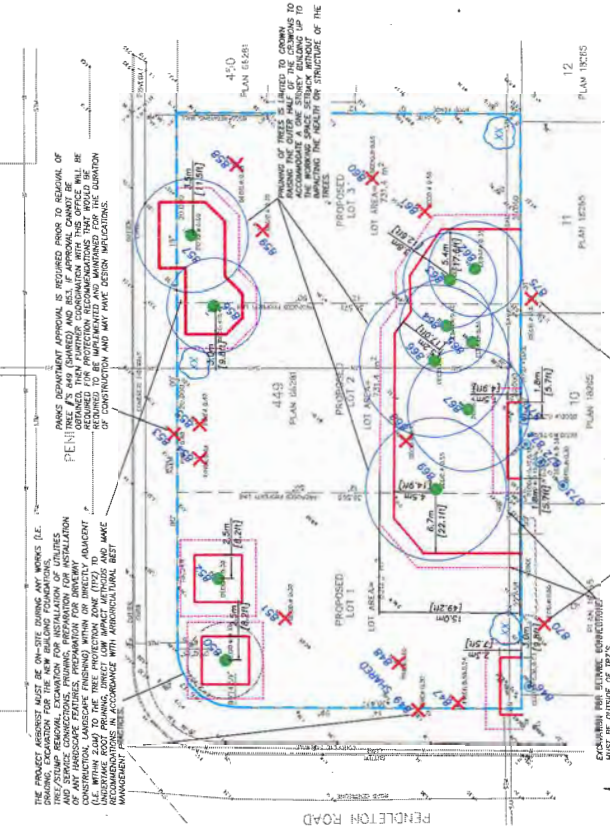
newly constructed for building shells, no formal structure was used within a CPE analysis within 1 day of a PPE inspection. Although the authors have not found any other studies, there is only a single study of comparison between the two approaches in the PPE area [10].

- No storage of raw rock, gravel, construction materials, waste materials, etc.
- No sorting or washing of concrete, stone, gravel, sand, or other construction materials.
- No parking or operation of vehicles or equipment.
- No excavation of new water channels or berms.
- No excavation of bank, ditches or any other features to replace or repair.

Figure 1 is a schematic diagram of the experimental setup. It shows a horizontal beam supported by a central pivot. A weight hanger is suspended from the left end of the beam. A string is attached to the right end of the beam, passes over a pulley, and supports a weight. A vertical scale is positioned to the right of the beam. Labels include 'Pivot', 'Beam', 'Weight hanger', 'String', 'Pulley', 'Weight', and 'Scale'.

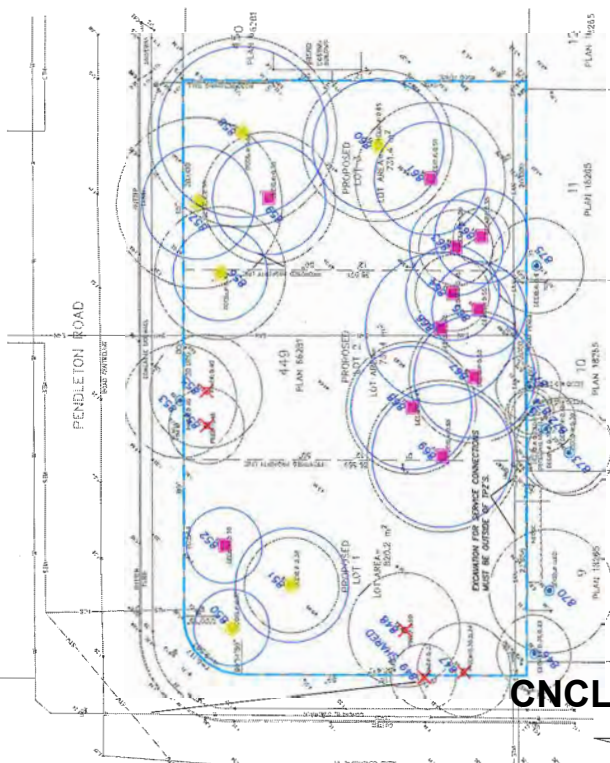


(SEE ARBORIST REPORT FOR MORE DETAILS)

[illegible]

OFF-SITE TREE #'S 870 AND 875 ARE IN DEAD/DYING CONDITION. RECOMMEND REFERRAL TO THE NEIGHBORING OWNER AND MUNICIPALITY FOR APPROVAL TO REMOVE THOSE TREES CONCURRENTLY WITH THIS DEVELOPMENT. IF APPROVAL CANNOT BE OBTAINED, THEN FURTHER COORDINATION WITH THIS OFFICE WILL BE REQUIRED FOR PROTECTION RECOMMENDATIONS THAT WOULD BE REQUIRED TO BE IMPLEMENTED AND MAINTAINED FOR THE DURATION OF CONSTRUCTION AND MAY HAVE DESIGN IMPLICATION.

ALL DISTANCES ARE IN METERS



10
5
0
NORTH
SCALE 1:250

FREE ASSESSMENT DETAIL - SURVEY BASE

LEGEND:

WILDLIFE DATA AND VIABILITY RATINGS (ON-SITE TREES ONLY):

THIS TAG NUMBER IS A REFERENCE.
THIS TAG IS IN SUITABLE CONDITION
INORDLE IF DESIGN CAN DOCUMENTATE IT.

 **GREEN** has been in MARGINAL CONDITION
loadable condenser subject to design and other conditions

**INSTRUMENTAL PROJECT-
MENT IN PROJECT-**

X **doing** **high RISK REMOVAL** free (perm?) may be required).

- **Cons** Has OFF-SITE tree use report for treatment.
- **Cons** Has NON-BYLAW underlize tree (as measured by a

TEST PROBLEMS:  **CROWN PROTECTION ZONE - CPT (cylinder extension)**

0.3m

is specified by project abstract for **MANAGED WORK** with Project Abstract Coordination and supervision.

do not **REPLACEMENT** proposed
(to conceptual location - see plan for details).

SUGGESTED PLAN TUS: REPLACEMENT TRIGS

Size: H denotes height and C denotes caliper.

CODE	SIZE	BOTANICAL NAME
------	------	----------------

DECIDUOUS - MEDIUM SCALE:

FSO	6cm C	<i>Fagus sylvatica</i> 'Dawydok'
PT	6cm C	<i>Paulownia tomentosa</i>
S9	6cm C	<i>Stewartia pseudocamellia</i>

DECIDUOUS - SM **ALL SCALE:**
15 34 km H Density 1000 adensis

Species	6cm C	6cm C
<i>Magnolia grandiflora</i>	100%	100%
<i>Quercus laevis</i>	0%	0%
<i>Myrica propinqua</i>	0%	0%

OVERGREEN - MEDIUM SCALE:

CC	2.5m H	Chamaecyparis obtusa
PIAC	3.5m H	Picea abies 'Cupressina'
AF	3.5m H	Abies foresti

EVERGREEN - SMALL SCALE:

PO	3.5m H	Picea densata



Address: 9560 Pendleton Road

File No.: RZ 16-732627

Prior to final adoption of Richmond Zoning Bylaw 8500, Amendment Bylaw 9661, the developer is required to complete the following:

1. Final Adoption of Official Community Plan Bylaw OCP Bylaw 9000, Amendment Bylaw 9662.
2. Submission of a Landscape Security in the amount of \$2,000 (\$500/tree) to ensure that a total of four replacement trees are planted and maintained in the development. **NOTE: minimum replacement size to be as per Tree Protection Bylaw No. 8057 Schedule A – 3.0 Replacement Trees.**
3. Submission of a Landscape Plan for Proposed Lot 1, prepared by a Registered Landscape Architect, to the satisfaction of the Director of Development, and deposit of a Landscaping Security based on 100% of the cost estimate provided by the Landscape Architect, including installation costs and a 10% contingency. The Landscape Plan should:
 - Comply with the requirements for landscaping on corner lots contained in Richmond Zoning Bylaw 8500.
 - Include a mix of coniferous and deciduous trees.
 - Include the dimensions of tree protection fencing as illustrated on the Tree Retention Plan attached to this report.
 - Include any required replacement trees.
4. City acceptance of the developer's offer to voluntarily contribute \$10,600 to the City's Tree Compensation Fund for the planting of replacement trees within the City.
5. Submission of a Contract entered into between the applicant and a Certified Arborist for supervision of any on-site works conducted within the tree protection zone of the trees to be retained. The Contract should include the scope of work to be undertaken, including: the proposed number of site monitoring inspections, and a provision for the Arborist to submit a post-construction assessment report to the City for review.
6. Submission of a Tree Survival Security to the City in the amount of \$100,000 for the 10 trees to be retained.
7. Registration of a flood indemnity covenant on Title.
8. Registration of a legal agreement on Title to ensure that the Building Permit application and ensuing development of Proposed Lot 1 is generally consistent with the preliminary conceptual plans contained in Attachment 5 of this report.
9. Registration of a legal agreement on Title to ensure that the Building Permit application and ensuing development of the site is generally consistent with the preliminary site plan contained in Attachment 6 of this report.
10. Registration of a legal agreement on Title to ensure that no final Building Permit inspection is granted until a secondary suite is constructed on two of the three future lots, to the satisfaction of the City in accordance with the BC Building Code and the City's Zoning Bylaw.
11. The City's acceptance of the applicant's voluntary contribution of \$2.00 per buildable square foot of the single-family development on Proposed Lot 1 (i.e. \$7,797.05) to the City's Affordable Housing Reserve Fund.

Prior to Demolition* stage, the developer must complete the following requirements:

1. Installation of appropriate tree protection fencing around all trees to be retained as part of the development prior to any construction activities, including building demolition, occurring on-site.

Prior to removal of Trees # 849 and 853 on City property, the developer must complete the following requirements:

1. Send notification to the City Parks Department at least four days prior to removal of the trees, to allow proper signage to be posted. Notification must be given by calling 604-244-1208 ext. 1317.

Prior to Building Permit Issuance, the developer must complete the following requirements:

1. Obtain a Building Permit (BP) for any construction hoarding. If construction hoarding is required to temporarily occupy a public street, the air space above a public street, or any part thereof, additional City approvals and associated fees may be required as part of the Building Permit. For additional information, contact the Building Approvals Department at 604-276-4285.

At Subdivision* stage, the developer must complete the following requirements:

1. Payment of the current year's taxes, Development Cost Charges (City and GVS & DD), School Site Acquisition Charge, and Address Assignment Fees.
2. Enter into a Servicing Agreement* for the design and construction of engineering infrastructure improvements. Works include, but may not be limited to the following:

Water Works:

- Using the OCP Model, there is 145 L/s of water available at a 20 psi residual at the Pendleton Road frontage. Based on your proposed development, your site requires a minimum fire flow of 95 L/s.
- The Developer is required to:
 - Submit Fire Underwriter Survey (FUS) or International Organization for Standardization (ISO) fire flow calculations to confirm the development has adequate fire flow for on-site fire protection. Calculations must be signed and sealed by a Professional Engineer and be based on Building Permit Stage Building designs.
- At the Developers cost, the City is to:
 - Install three new 25 mm water service connections, off of the existing 150 mm AC watermain on Pendleton Road; each complete with meter and meter box.
 - Cut and cap at main, the existing water service connection at the northeast corner of the subject site.

Storm Sewer Works:

- The Developer is required to:
 - Install approximately 200 m of 600 mm storm sewer pipe along and beyond both of the site's frontages, centered within the roadway. New manholes are required to tie into the existing drainage pipe fronting 9580 Pendleton Road and on Pendlebury Road. Subject to funding approval, the City will fund works beyond the subject site's frontage.
 - Install a new storm service connection for the eastern most subdivided lot complete with inspection chamber.
 - Install a new storm service connection complete with inspection chamber and dual service leads for the middle and western most subdivided lots.
 - Cut, cap and remove the existing storm lateral and inspection chamber STIC57588 and STIC48597 at the subject site's frontage.

Sanitary Sewer Works:

- The existing 200 mm AC sanitary sewer inside the subject site will need to be abandoned in order to subdivide as per the submitted plans. In order to maintain the service to the north, the sewer will need to be re-routed.

- The Developer is required to:
 - Remove or abandon the existing 200 mm AC sanitary sewer within the subject site prior to building construction and re-route the sanitary sewer by installing approximately 90.0 m of sanitary sewer along Pendleton Road, complete with three new manholes.
 - Provide a 3.0 m wide utility SRW along the entire south property line of the subject site.
 - Install a new sanitary service connection complete with inspection chamber and dual service leads for the middle and western most subdivided lots off of the newly installed sanitary sewer.
 - Install a new sanitary service connection extending off of the newly installed sanitary manhole north of the subject site, complete with inspection chamber for the eastern most subdivided lot.
- At Developer's cost, the City is to:
 - Cut and cap the existing service connection at the southeast corner of the subject site.
 - Complete all tie-in works to existing City infrastructure.

Frontage Improvements:

- The Developer is required to:
 - Coordinate with BC Hydro, Telus and other private communication service providers:
 - To underground Hydro service lines.
 - When relocating/modifying any of the existing power poles and/or guy wires within the property frontages.
 - To determine if above ground structures are required and coordinate their locations (e.g. Vista, PMT, LPT, Shaw cabinets, Telus Kiosks, etc.). These should be located on-site.

General Items:

- The Developer is required to:
 - Enter into, if required, additional legal agreements, as determined via the subject development's Servicing Agreement(s) and/or Development Permit(s), and/or Building Permit(s) to the satisfaction of the Director of Engineering, including, but not limited to, site investigation, testing, monitoring, site preparation, de-watering, drilling, underpinning, anchoring, shoring, piling, pre-loading, ground densification or other activities that may result in settlement, displacement, subsidence, damage or nuisance to City and private utility infrastructure.

Note:

- * This requires a separate application.
- Where the Director of Development deems appropriate, the preceding agreements are to be drawn not only as personal covenants of the property owner but also as covenants pursuant to Section 219 of the Land Title Act.

All agreements to be registered in the Land Title Office shall have priority over all such liens, charges and encumbrances as is considered advisable by the Director of Development. All agreements to be registered in the Land Title Office shall, unless the Director of Development determines otherwise, be fully registered in the Land Title Office prior to enactment of the appropriate bylaw.

The preceding agreements shall provide security to the City including indemnities, warranties, equitable/rent charges, letters of credit and withholding permits, as deemed necessary or advisable by the Director of Development. All agreements shall be in a form and content satisfactory to the Director of Development.

- Additional legal agreements, as determined via the subject development's Servicing Agreement(s) and/or Development Permit(s), and/or Building Permit(s) to the satisfaction of the Director of Engineering may be required including, but not limited to, site investigation, testing, monitoring, site preparation, de-watering, drilling, underpinning, anchoring, shoring, piling, pre-loading, ground densification or other activities that may result in settlement, displacement, subsidence, damage or nuisance to City and private utility infrastructure.

- Applicants for all City Permits are required to comply at all times with the conditions of the Provincial *Wildlife Act* and Federal *Migratory Birds Convention Act*, which contain prohibitions on the removal or disturbance of both birds and their nests. Issuance of Municipal permits does not give an individual authority to contravene these legislations. The City of Richmond recommends that where significant trees or vegetation exists on site, the services of a Qualified Environmental Professional (QEP) be secured to perform a survey and ensure that development activities are in compliance with all relevant legislation.

Signed

Date



**Richmond Zoning Bylaw 8500
Amendment Bylaw 9661 (RZ 16-732627)
9560 Pendleton Road**

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. Richmond Zoning Bylaw 8500, as amended, is further amended by:
 - a. Inserting the following into the table contained in Section 5.15.1A regarding Affordable Housing density bonusing provisions:

Zone	Sum Per Buildable Square Foot of Permitted Principal Building
"ZS28	\$2.00"

- b. Inserting the following into Section 15 (Site Specific Residential (Single Detached) Zones), in numerical order:

15.28 Single Detached (ZS28) – Pendleton Road (West Richmond)

15.28.1 Purpose

The **zone** provides for **single detached housing** with a range of compatible **secondary uses**, and provides for a **density bonus** that would be used for rezoning applications in order to help achieve the **City's** affordable housing objectives.

15.28.2 Permitted Uses

- **housing, single detached**

15.28.3 Secondary Uses

- **boarding and lodging**
- **community care facility, minor**
- **home business**
- **secondary suite**
- **bed and breakfast**

15.28.4 Permitted Density

1. The maximum **density** is one **principal dwelling unit** per lot.
2. The maximum **floor area ratio** is 0.40 applied to a maximum of 464.5 m² of the **lot area**, together with 0.30 applied to the balance of the **lot area** in excess of 464.5 m².

3. Notwithstanding Section 15.28.4.2, the reference to "0.40" is increased to a higher **density** of "0.55" if:
 - a) the building contains a **secondary suite**; or
 - b) the **owner**, at the time **Council** adopts a zoning amendment bylaw to include the **owner's lot** in the **ZS28 zone**, pays into the **affordable housing reserve** the sum specified in Section 5.15 of this bylaw.
4. Further to Section 15.28.4.3, the reference to "0.40" in Section 15.28.4.2 is increased to a higher **density** of "0.55" if:
 - a) an **owner** subdivides bare land to create new lots for single detached housing; and
 - b)
 - i) 100% of the **lots** contain **secondary suites**; or
 - ii) at least 50% of the **lots** contain a **secondary suite** and the **owner**, at the time **Council** adopts a zoning amendment bylaw to include the **owner's lot** in the **ZS28 zone**, pays into the **affordable housing reserve** the sum specified in Section 5.15 of this bylaw for the **floor area** permitted on any **lot** not containing a **secondary suite**; or
 - iii) at the time **Council** adopts a zoning amendment bylaw to include the **owner's lot** in the **ZS28 zone**, pays into the **affordable housing reserve** the sum specified in Section 5.15 of this bylaw.

15.28.5 Permitted Lot Coverage

1. The maximum **lot coverage** is 45% for **buildings**.
2. No more than 70% of a **lot** may be occupied by **buildings, structures and non-porous surfaces**.
3. 30% of the **lot area** is restricted to **landscaping** with live plant material.

15.28.6 Yards & Setbacks

1. The minimum **front yard** is 4.5 m.
2. The minimum **interior side yard** is:
 - a) 2.0 m for **lots** of 20.0 m or more in width;
 - b) 1.8 m for **lots** of 18.0 m or more but less than 20.0 m in width; or
 - c) 1.2 m for **lots** less than 18.0 m wide.
3. The minimum **exterior side yard** is 3.0 m.
4. The minimum **rear yard** is 6.0 m. For a **corner lot** where the **exterior side yard** is 6.0 m, the **rear yard** is reduced to 1.2 m.

15.28.7 Permitted Heights

1. The maximum **height** for **principal buildings** is 2 ½ **storeys**, but it shall not exceed the **residential vertical lot width envelope** and the **residential vertical lot depth envelope**. For a **principal building** with a flat roof, the maximum **height** is 7.5 m.
2. The maximum **height** for **accessory structures** is 9.0 m.
3. The **residential vertical lot depth envelope** in Section 15.28.7.1 is:
 - a) calculated from the **finished site grade**; and
 - b) formed by a plane rising vertically 5.0 m to a point and then extending upward and away from the required **yard setback** at a rate of two units of vertical rise for each single unit of horizontal run to the point at which the plane intersects to the maximum **building height**.

15.28.8 Subdivision Provisions/Minimum Lot Size

1. The minimum **lot** dimensions and areas are as follows, except that:
 - a) the minimum **lot width** for **corner lots** is 20.0 m.

Minimum frontage	Minimum lot width	Minimum lot depth	Minimum lot area
7.5 m	18.0 m	24.0 m	700.0 m ²

15.28.9 Landscaping & Screening

1. **Landscaping** and **screening** shall be provided according to the provisions of Section 6.0.

15.28.10 On-Site Parking and Loading

1. On-site **vehicle** parking shall be provided according to the standards set out in Section 7.0.
2. For the purpose of this **zone**, a driveway is defined as any **non-porous surface** of the **lot** that is used to provide space for **vehicle** parking or **vehicle access** to or from a public **road** or **lane**.

15.28.11 Other Regulations

1. In addition to the regulations listed above, the General Development Regulations in Section 4.0 and Specific Use Regulations in Section 5.0 apply.
2. The Zoning Map of the City of Richmond, which accompanies and forms part of Richmond Zoning Bylaw 8500, is amended by repealing the existing zoning designation of the following area and by designating it "**SINGLE DETACHED (ZS28) – PENDLETON ROAD (WEST RICHMOND)**".

P.I.D. 003-751-651

Lot 449 Section 26 Block 4 North Range 7 West New Westminster District Plan 66281

3. This Bylaw may be cited as **“Richmond Zoning Bylaw 8500, Amendment Bylaw 9661”**.

FIRST READING

A PUBLIC HEARING WAS HELD ON

SECOND READING

THIRD READING

OTHER CONDITIONS SATISFIED

ADOPTED



MAYOR

CORPORATE OFFICER



City of Richmond

Bylaw 9662

Richmond Official Community Plan Bylaw OCP Bylaw 9000 Amendment Bylaw 9662 (CP 16-733600) 9560 Pendleton Road

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. Richmond Official Community Plan Bylaw OCP Bylaw 9000 is amended by repealing the existing land use designation in Attachment 1 to Schedule 1 thereof of the following area and by designating it Neighbourhood Residential.

P.I.D. 003-751-651

Lot 449 Section 26 Block 4 North Range 7 West New Westminster District Plan 66281

2. This Bylaw may be cited as **“Richmond Official Community Plan Bylaw OCP Bylaw 9000, Amendment Bylaw 9662”**.

FIRST READING

PUBLIC HEARING

SECOND READING

THIRD READING

OTHER CONDITIONS SATISFIED

ADOPTED

MAYOR

CORPORATE OFFICER





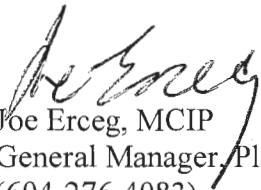
City of Richmond

Report to Committee

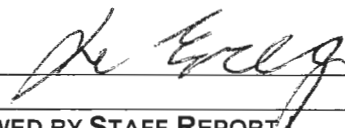

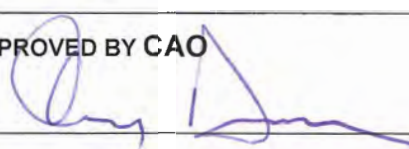
To: Planning Committee **Date:** May 8, 2017
From: Joe Erceg, MCIP **File:** 08-4040-01/2017-Vol 1
General Manager, Planning and Development
Re: **Richmond Response: Metro Vancouver Regional Growth Strategy Amendment
Bylaw No. 1243, 2017 and RGS Performance Monitoring Guide**

Staff Recommendation

1. That the staff report titled, "Richmond Response: Metro Vancouver Regional Growth Strategy Amendment Bylaw No. 1243, 2017 and RGS Performance Monitoring Guide", dated May 8, 2017 from the General Manager, Planning and Development, be received for information; and
2. That the staff recommendation to advise the Metro Vancouver Regional Board that the City of Richmond supports the proposed Metro Vancouver Regional Growth Strategy Amendment Bylaw 1243, 2017 and RGS Performance Monitoring Guide be endorsed.


Joe Erceg, MCIP
General Manager, Planning and Development
(604-276-4083)

Att. 1

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

Staff Report

Origin

On April 27, 2017, Metro Vancouver (MV) Board invited Richmond to comment, by June 2, 2017, on a proposed Regional Growth Strategy (RGS) Amendment Bylaw No. 1243, to amend RGS Section G, Performance Measures, to enable more detailed and flexible RGS monitoring and reporting. The proposed amendment is a Type 3 Amendment (i.e., requires a 50% + 1 weighted MV Board vote). As well, MV Board is proposing a RGS Performance Monitoring Guide, to clarify the monitoring and reporting details (e.g., intent, methodology) which is proposed to be adopted by the MV Board by resolution, after the Board adopts proposed Bylaw 1243, 2017.

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.

5.1. Advancement of City priorities through strong intergovernmental relationships.

Findings of Fact

The current Regional Growth Strategy was adopted by the Metro Vancouver Regional Board on July 29, 2011 with the consensus of the 21 local governments in the Metro Region, including the City of Richmond.

The Strategy includes policies regarding the monitoring and reporting of the Strategy, by Metro staff in implementing the Strategy. City staff advise that the proposed RGS Amendment is acceptable, as it will:

- enable more detailed and flexible RGS monitoring and reporting which will be useful,
- reduce the number of performance measures, from 55, to 15 key measures which will best illustrate progress toward achieving the RGS strategies (e.g., climate change, growth within the Urban Containment Boundary, type of dwelling, housing affordability, employment, transportation),
- use available data which can be regularly acquired in short or medium term intervals, and
- be meaningful over the long implementation of the RGS.

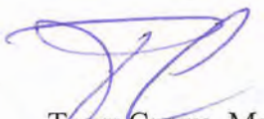
As well, City staff advise that the proposed RGS Performance Monitoring Guide is also acceptable, as it will clarify RGS monitoring and reporting details (e.g., intent, methodology).

Financial Impact

None.

Conclusion

Metro Vancouver Board has invited the City of Richmond to comment by June 6, 2017, on a proposed RGS Amendment Bylaw 1243 and RGS Performance Monitoring Guide, to improve RGS monitoring and reporting. City staff have reviewed the documents and recommend that they be supported, as they will facilitate the monitoring and reporting of Regional Growth Strategy implementation.



Terry Crowe, Manager,
Policy Planning
(604-276-4139)

Att. 1: Metro Vancouver letter dated March 31, 2017 received April 27, 2017

TC:cas



Board and Information Services, Legal and Legislative Services
Tel. 604 432-6250 Fax 604 451-6686

File: CR-12-01

Ref: RD 2017 Mar 31

Mr. David Weber, Director of City Clerks Office
City of Richmond
6911 No. 3 Road
Richmond BC V6Y 2C1



Dear Mr. Weber:

Re: Metro Vancouver 2040: Shaping our Future Amendment to Section G Performance Measures

At its March 31, 2017 regular meeting, the Board of Directors of the Metro Vancouver Regional District ('Metro Vancouver') adopted the following resolution:

That the MVRD Board:

- a) *Initiate the Metro Vancouver 2040: Shaping our Future amendment process for a Type 3 amendment to Section G of the regional growth strategy;*
- b) *Give first and second readings to "Greater Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1243, 2017"; and*
- c) *Direct staff to notify affected local governments and appropriate agencies as per Metro Vancouver 2040: Shaping our Future Section 6.4.2.*

This letter provides notification to affected local governments and other agencies, in accordance with Section 437 of the *Local Government Act*, and Sections 6.4.2, 6.4.4 and 6.4.5 of *Metro Vancouver 2040: Shaping our Future (Metro 2040)*, the regional growth strategy.

Annual reporting of *Metro 2040* is required by Part 13 of the British Columbia *Local Government Act* and *Metro 2040* Section 6.13.3. Three annual reports have been produced to date, covering four years of implementation of the regional growth strategy since its adoption in 2011, including baseline and annual monitoring of the performance measures listed in *Metro 2040* Section G. Through the process of collecting and analyzing data and drafting these early annual reports, opportunities were identified to improve performance monitoring.

Following a comprehensive review of the performance measures in 2015, staff identified opportunities to update the performance monitoring program, including an Type 3 amendment to update Section G of *Metro 2040* with improved and more flexible measures based on the results of the review and further consultation with municipal and partner agency staff.

Through the proposed amendment, the existing Section G Performance Measures would be replaced via Amendment Bylaw No. 1243 (Attachment 1). The proposed amendment reduces the number of performance measures included in *Metro 2040* from 55 total measures to 15 Key Summary Measures that best illustrate progress toward *Metro 2040* strategies. The reduced number of measures facilitates simpler and more useful annual reporting. Additional performance measures are defined in a draft Performance Monitoring Guideline.

The draft Performance Monitoring Guideline (Attachment 2) provides detailed information about the intent, methodology, source, and reporting timeline for each measure, including additional technical measures to support implementation that will be reported online as data is available or useful. The Performance Monitoring Guideline is intended to be adopted by resolution of the MVRD Board following adoption of Amendment Bylaw No. 1243. The Guideline offers an added level of transparency and commitment to performance monitoring, while simplifying annual reporting.

Metro 2040 Section 6.4.2 'Notification and Request for Comments', states that for all proposed *Metro 2040* amendments, the MVRD Board will provide written notice of the proposed amendment to all affected local governments; provide a minimum of 30 days for affected local governments, and the appropriate agencies, to respond to the proposed amendment; and post notification of the proposed amendment on the Metro Vancouver website, for a minimum of 30 days.

You are invited to provide written comments on the proposed amendment to *Metro 2040*. Please provide comments in the form of a Council/Board resolution, as applicable, and submit to chris.plagnol@metrovancover.org by June 2, 2017.

If you have any questions with respect to the proposed amendment or wish to receive a presentation, please contact Heather McNell, Acting Director of Regional Planning, at 604-436-6813 or heather.mcnell@metrovancover.org. More information and a copy of *Metro Vancouver 2040: Shaping our Future* can be found on our website at www.metrovancover.org.

Yours truly,



Chris Plagnol
Corporate Officer

CP/HM/lk

CC: Terry Crowe, Manager of Policy and Planning Department

Attachments:

1. Metro Vancouver Regional Growth Strategy Amendment Bylaw No. 1243 (*Doc #21326472*)
2. Draft *Metro Vancouver 2040: Shaping our Future* Performance Monitoring Guideline (*Doc #21323218*)
3. MVRD Board Report titled, "*Metro Vancouver 2040: Shaping our Future* Amendment to Section G Performance Measures" (*Doc #21325338*)

**METRO VANCOUVER REGIONAL DISTRICT
REGIONAL GROWTH STRATEGY AMENDMENT BYLAW NO. 1243, 2017**

A Bylaw to Amend

Greater Vancouver Regional District Regional Growth Strategy Bylaw Number 1136, 2010.

WHEREAS:

- A. The Board of the Metro Vancouver Regional District adopted the Greater Vancouver Regional District Regional Growth Strategy Bylaw Number 1136, 2010 on July 29, 2011 (the "Regional Growth Strategy");
- B. The Board wishes to replace the performance measures set out within Section G of the Regional Growth Strategy, with consolidated, updated, and clarified performance monitoring; and
- C. In accordance with Regional Growth Strategy section 6.3.4 (h), an amendment to performance measures is a Type 3 amendment.

NOW THEREFORE, the Board of the Metro Vancouver Regional District in open meeting assembled enacts as follows:

1. The Greater Vancouver Regional District Regional Growth Strategy Bylaw Number 1136, 2010 is hereby amended as follows:

Section G, entitled 'Performance Measures', of Greater Vancouver Regional District Regional Growth Strategy Bylaw Number 1136, 2010 is deleted in its entirety and replaced with Section G 'Performance Monitoring', attached hereto as Schedule A;

2. The official citation for this bylaw is "Metro Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1243, 2017". This bylaw may be cited as "Regional Growth Strategy Amendment Bylaw No. 1243, 2017".

Read a First time this _____ day of _____, ____

Read a Second time this _____ day of _____, ____

Read a Third time this _____ day of _____, ____

Passed and Finally Adopted this _____ day of _____, ____

Chris Plagnol
Corporate Officer

Greg Moore
Chair

G Performance Monitoring

Performance monitoring allows for the informed review and update of the regional growth strategy as required. Metro Vancouver will produce annual reports on implementation of the regional growth strategy and progress towards its goals using the following measures. Some measures can be monitored in the short-term (1-2 years) while others can be monitored in the medium term (3-5 years).

Regional Land Use Designations

REGIONAL DESIGNATIONS AND OVERLAYS

As measured by:

- total and cumulative change in hectares of land in each of the six regional land use designations
- total and cumulative change in hectares of land in the Urban Containment Boundary
- total and cumulative change in number of Urban Centres
- total and cumulative change in number of Frequent Transit Development Areas

Short-term measure.

Goal 1: Create a Compact Urban Area

URBAN CONTAINMENT

As measured by:

- percent of regional dwelling unit growth located within the Urban Containment Boundary

Short-term estimate & medium-term cumulative measure.

GROWTH IN PRIORITY AREAS

As measured by:

- percent of regional dwelling unit growth located in Urban Centres
- percent of regional dwelling unit growth located in Frequent Transit Development Areas

Short-term estimate & medium-term cumulative measure.

Goal 2: Support a Sustainable Economy

EMPLOYMENT IN PRIORITY AREAS

As measured by:

- percent of regional employment growth located in Urban Centres
- percent of regional employment growth located in Frequent Transit Development Areas

Medium-term measure.

EMPLOYMENT ACCESSIBILITY

As measured by:

- average number of kilometres travelled for commute region-wide
- average number of minutes travelled for commute region-wide

Medium-term measure.

INDUSTRIAL AND MIXED EMPLOYMENT AREAS

As measured by:

- percent of land designated Industrial and Mixed Employment that is developed

Medium-term measure.

AGRICULTURAL AREAS

As measured by:

- percent of land designated Agricultural that is actively farmed

Medium-term measure.

Goal 3:
Protect the Environment
and Respond to Climate
Change Impacts

ECOSYSTEM HEALTH

As measured by:

- hectares of land inventoried as a Sensitive or Modified Ecosystem
- percent of inventoried Sensitive and Modified Ecosystems rated high quality

Medium-term measure.

CLIMATE CHANGE MITIGATION

As measured by:

- tonnes and percent of regional greenhouse gas emissions produced by building and on-road transportation sources

Medium-term measure.

CLIMATE CHANGE PREPAREDNESS

As measured by:

- climate adaptation planning efforts (proxy measure)

Short-term measure.

Goal 4:
Develop Complete Communities

HOUSING AFFORDABILITY

As measured by:

- percent of median household income spent on average housing and transportation cost

Medium-term measure.

HOUSING DIVERSITY

As measured by:

- share of estimated regional rental housing demand achieved in new supply

Short-term measure.

COMPLETE COMMUNITIES AND HEALTH

As measured by:

- walkability

Medium-term measure.

Goal 5:
Support Sustainable
Transportation Choices

TRAVEL MODE CHOICE

As measured by:

- percent of total trips that are private vehicle-based
- percent of residents within walking distance of the Frequent Transit Network

Medium-term measure.

ROAD AND VEHICLE USE AND SAFETY

As measured by:

- annual per capita vehicle kilometres travelled

Medium-term measure.

METRO 2040 PERFORMANCE MONITORING GUIDELINE



DRAFT: JANUARY 10, 2017

DRAFT

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INTRODUCTION AND BACKGROUND

Metro Vancouver 2040: Shaping our Future

Metro Vancouver 2040: Shaping our Future (Metro 2040), the regional growth strategy, is the shared vision to guide urban growth in the province's largest metropolitan region.

Metro 2040 was created, adopted, and continues to be implemented by Metro Vancouver (GVRD), 21 member jurisdictions and TransLink.

The Importance of Performance Monitoring

The Progress toward Shaping Our Future annual reports monitor regional performance and provide a framework for discussions of *Metro 2040* implementation among Metro Vancouver Board members, member jurisdictions, TransLink, other regional agencies, and the general public. Metro Vancouver recognizes the important role performance monitoring plays in the implementation of the regional growth strategy and collective decision-making.

The *Metro 2040* performance measures provide the information necessary to benchmark and monitor our progress. Each year, the Greater Vancouver Regional District (GVRD) Board reviews the annual reports to evaluate the state of the region, how well we are doing and what issues may need further attention.

Performance Monitoring Requirements

Annual reporting of *Metro 2040* is required by Part 13 of the British Columbia *Local Government Act*, and by *Metro 2040* Section 6.13.3. A list of Key Summary Measures (defined in the following section, and provided on page 8 and 9 of this document) were adopted into *Metro 2040* (Section G: Performance Monitoring).

About this Guideline

The Performance Monitoring Guideline provides additional, often more detailed or technical performance measures that are not included in *Metro 2040* Section G, and includes detailed information about all performance measures, such as sources, methodologies and monitoring timelines.

The intent of the Guideline is to provide a resource to those using the performance monitoring data, including regional and municipal staff and researchers. In addition, the Guideline is intended to provide an added level of transparency and accountability in the planning process to politicians and the public. Detailing performance monitoring methodologies and intents, as they relate to the policies in *Metro 2040*, ensures progress toward goals is being tracked clearly and consistently over time.

The Guideline includes information about types of performance measures, reporting requirements, and communication mediums. The bulk of the Guideline provides detailed information about the intent, methodology, data source, and reporting timeline for each measure, including those Key Summary Measures provided in Section G of *Metro 2040*, and other detailed / technical measures.

The Guideline can be updated by the GVRD Board if new measures or data sources are identified in the future.

Reporting Formats

Performance Measures are reported online as data is available. An annual report is provided to the GVRD Board and member jurisdictions, highlighting updates to Key Summary Measures and providing additional information about implementation as necessary.

Procedural Reporting

Procedural reporting is also conducted annually and provided to the GVRD Board and member jurisdictions. The *Greater Vancouver Regional District Regional Growth Strategy Procedures Bylaw No. 1148, 2011 (RGS Procedures Bylaw)* was adopted by the GVRD Board in July 2011 at the same time as the regional growth strategy. The *RGS Procedures Bylaw* includes requirements for reporting on procedural performance associated with *Metro 2040*, such as the number of amendments processed and resources required to implement the regional growth strategy.

Procedural reporting details information about supporting work to implement *Metro 2040*, progress on the completion of, or updates to regional context statements, and *Metro 2040* amendments (including status and processing times for each amendment), as well as information about costs and staffing related to implementation of the regional growth strategy.

Measure Types and Purpose

KEY SUMMARY MEASURES

A measure of impact/outcome of Goals and Strategies.

Key Summary Measures provide an overview of how well *Metro 2040* Goals and Strategies are being achieved. Key Summary Measures are targeted to a broader, non-technical audience and are meant to quickly illustrate progress. In annual reporting, these measures will be communicated as a single number or chart that can easily depict change over time.

STRATEGY PERFORMANCE MEASURES

A measure of impact/outcome of Goals and Strategies.

Strategy Performance Measures provide more detail on achievement of specific Strategies and policy actions. These measures are meant to support implementation of *Metro 2040* and are aimed at a more technical audience. Detailed datasets will be provided online.

CONTEXT MEASURES

A description of broader trends to help make sense of other measures in the broader planning context.

These measures are helpful for all audiences and provide important contextual or background information, particularly in communications that tell the story of change or progress.

PARTICIPATION MEASURES

A measure of what's been accomplished by Metro Vancouver or member jurisdictions towards achievement of goals.

These measures are primarily for use by planners and analysts to make comparisons of the effect of different policies on a given planning challenge

Reporting Timelines

Some measures are reported in the short-term (every 1-2 years), while some are reported in medium-term intervals (every 3-5 years).

Measures that are dependent upon Census data will only be reported in 5 year intervals, following the release of Census data and the procurement of custom run data.

Measures that are dependent on Metro Vancouver inventories will be reported in 3-5 year intervals following inventory updates.

Measures that are dependent on external data collection, such as TransLink's Trip Diary will be updated following data releases, most typically at 3-5 year intervals.

Metro Vancouver will make an effort to update, or estimate change for measures on short-term basis as data and resources allow.

METRO 2040 KEY SUMMARY MEASURES

Reports on the Key Summary measures listed in this section will be provided annually. Some measures can be monitored in the short-term (1-2 years) while others can be monitored in the medium term (3-5 years). Some measures are noted as proxy measures and will be replaced in the future as improved data is available.

Regional Land Use Designations

REGIONAL DESIGNATIONS AND OVERLAYS

As measured by:

- total and cumulative change in hectares of land in each of the six regional land use designations
- total and cumulative change in hectares of land in the Urban Containment Boundary
- total and cumulative change in number of Urban Centres
- total and cumulative change in number of Frequent Transit Development Areas

Short-term measure.

Goal 1: Create a Compact Urban Area

URBAN CONTAINMENT

As measured by:

- percent of regional dwelling unit growth located within the Urban Containment Boundary

Short-term estimate & medium-term cumulative measure.

GROWTH IN PRIORITY AREAS

As measured by:

- percent of regional dwelling unit growth located in Urban Centres
- percent of regional dwelling unit growth located in Frequent Transit Development Areas

Short-term estimate & medium-term cumulative measure.

Goal 2:

Support a Sustainable Economy

EMPLOYMENT IN PRIORITY AREAS

As measured by:

- percent of regional employment growth located in Urban Centres
- percent of regional employment growth located in Frequent Transit Development Areas

Medium-term measure.

EMPLOYMENT ACCESSIBILITY

As measured by:

- average number of kilometres travelled for commute region-wide
- average number of minutes travelled for commute region-wide

Medium-term measure.

INDUSTRIAL AND MIXED EMPLOYMENT AREAS

As measured by:

- percent of land designated Industrial and Mixed Employment that is developed

Medium-term measure.

AGRICULTURAL AREAS

As measured by:

- percent of land designated Agricultural that is actively farmed

Medium-term measure.

**Goal 3:
Protect the Environment
and Respond to Climate
Change Impacts**

ECOSYSTEM HEALTH

As measured by:

- hectares of land inventoried as a Sensitive or Modified Ecosystem
- percent of inventoried Sensitive and Modified Ecosystems rated high quality

Medium-term measure.

CLIMATE CHANGE MITIGATION

As measured by:

- tonnes and percent of regional greenhouse gas emissions produced by building and on-road transportation sources

Medium-term measure.

CLIMATE CHANGE PREPAREDNESS

As measured by:

- climate adaptation planning efforts (proxy measure)

Short-term measure.

**Goal 4:
Develop Complete Communities**

HOUSING AFFORDABILITY

As measured by:

- percent of median household income spent on average housing and transportation cost

Medium-term measure.

HOUSING DIVERSITY

As measured by:

- share of estimated regional rental housing demand achieved in new supply

Short-term measure.

COMPLETE COMMUNITIES AND HEALTH

As measured by:

- walkability

Medium-term measure.

**Goal 5:
Support Sustainable
Transportation Choices**

TRAVEL MODE CHOICE

As measured by:

- percent of total trips that are private vehicle-based
- percent of residents within walking distance of the Frequent Transit Network

Medium-term measure.

ROAD AND VEHICLE USE AND SAFETY

As measured by:

- annual per capita vehicle kilometres travelled


Medium-term measure.

REGIONAL LAND USE MEASURES

Regional Land Use Designations and Overlays

Key Summary Measures

The following Key Summary Measures are listed in *Metro 2040* Section G: Performance Monitoring. These measures will be reported out regularly as data becomes available to illustrate progress.

Regional Land Use Designations CHANGE IN REGIONAL LAND USE DESIGNATIONS Key Summary Measure	
AS MEASURED BY <ul style="list-style-type: none">• Total and cumulative change in hectares of land in each of the six regional land use designations.• Total and cumulative change in hectares of land within the Urban Containment Boundary.	
REPORTING & TIMELINE <p>Annual and cumulative measure.</p> <p>Reported online and in annual reports as data is available.</p>	
SOURCE <p>Metro Vancouver Regional Planning geodata for the <i>Metro 2040</i> regional land use designations.</p>	
METHODOLOGY <p>Changes to the regional land use designations occur only through GVRD Board adopted amendments or generally consistent amendments within Regional Context Statements adopted by municipal Councils and accepted by the GVRD Board. Cumulative change is tracked from the adoption of the plan. Major amendments are noted.</p>	
INTENT <p>Regional land use designations and overlays are key tools in achieving the five goals of <i>Metro 2040</i>. This measure monitors annual and cumulative change in the designations over time.</p>	

Regional Land Use Designations

CHANGE IN REGIONAL LAND USE OVERLAYS

Key Summary Measure

short
term

AS MEASURED BY

- Total and cumulative change in number and hectares of Urban Centres.
- Total and cumulative change in number and hectares of Frequent Transit Development Areas.

REPORTING & TIMELINE

Annual and cumulative measure.

Reported online and in annual reports as data is available.

SOURCE

Metro Vancouver Regional Planning geodata for *Metro 2040* Urban Centre / Frequent Transit Development Area (FTDA) boundaries.

METHODOLOGY

Urban Centres and FTDA's, and their boundaries, are identified Regional Context Statements adopted by municipal Councils and accepted by the GVRD Board. FTDA's are created in consultation with the member jurisdiction, Metro Vancouver and TransLink. Cumulative change is tracked from the adoption of the plan. Major amendments are noted.

INTENT

Regional land use designations and overlays are key tools in achieving the five goals of *Metro 2040*. This measure monitors annual and cumulative change in the overlays over time.

GOAL 1 MEASURES

Create a Compact Urban Area

Key Summary Measures

The following Key Summary Measures are listed in *Metro 2040* Section G: Performance Monitoring. These measures will be reported out regularly as data becomes available to illustrate progress.

Urban Containment

GROWTH WITHIN THE URBAN CONTAINMENT BOUNDARY

Key Summary Measure

short
term

AS MEASURED BY

- Percent of regional dwelling unit growth located within the Urban Containment Boundary.

REPORTING & TIMELINE

Annual estimate (mid-year to mid-year). Five-year cumulative measure reported following Census data release.

Reported online and in annual reports as data is available.

SOURCE

Metro Vancouver Regional Planning geodata for the *Metro 2040* General Urban Containment Boundary.

Five-year intervals: Statistics Canada, Census.

Annually (mid-year to mid-year): BC Statistics, CMHC Completions and Demolitions, Municipal Building Permits (for estimated residential growth).

METHODOLOGY

Residential growth is estimated by Metro Vancouver and reported annually. Employment growth is reported at 5-year intervals following the release of Census data.

Changes to the UCB occur only through GVRD Board adopted amendments or regionally consistent amendments within adopted and accepted RCSs. Growth is tracked based on the 2011 Urban Containment Boundary.

INTENT

Metro 2040 targets 98% of dwelling unit growth to areas within the Urban Containment Boundary. This measure illustrates the performance of the Urban Containment Boundary as a tool to contain growth.

Growth in Priority Areas

RESIDENTIAL DEVELOPMENT IN PRIORITY AREAS

Key Summary Measure



AS MEASURED BY

- Percent of regional dwelling unit growth located in Urban Centres.
- Percent of regional dwelling unit growth located in Frequent Transit Development Areas.

REPORTING & TIMELINE

Annual estimate (mid-year to mid-year). Five-year cumulative measure reported following Census data release.

Combined percentage of regional growth to Urban Centres and FTDA provided in annual reports as data is available. Breakdown by individual Urban Centres and FTDA reported online as data is available.

SOURCE

Metro Vancouver Regional Planning geodata for *Metro 2040* Urban Centre / Frequent Transit Development Area (FTDA) boundaries.

Five-year intervals: Statistics Canada, custom Census runs.

Annually (mid-year to mid-year): Residential growth shares estimated based on BC Statistics, CMHC Completions and Demolitions, Municipal Building Permits.

METHODOLOGY

Share of residential growth by Urban Centre type and for areas in close proximity to transit is estimated by Metro Vancouver and reported annually. Detailed figures for Urban Centres and FTDA are reported at 5-year intervals following the release of Census data.

Metro Vancouver maintains geodata for Urban Centre and FTDA boundaries and submits the geographies to Statistics Canada for custom Census data. Boundaries are established and adjusted through regional context statements adopted by municipal Councils and accepted by the GVRD Board.

INTENT

Metro 2040 targets 40% of dwelling unit growth to Urban Centres, for a total of 31% of dwelling units to be located in Urban Centres by 2041. *Metro 2040* also targets 28% of dwelling unit growth, for a total of 27% of dwelling units to be located in FTDA by 2041.

Supplementary Measures

The following Strategy Performance, Context, and Participation Measures are supplementary to the Key Summary Measures. These measures may be reported out online as data and resources are available. The intent of supplementary measures is to illustrate progress, serve as a resource to member jurisdictions, and inform implementation.

Contain Development

REMAINING URBAN DEVELOPMENT

Strategy Performance Measure



AS MEASURED BY

- Percent of regional dwelling unit growth occurring in remaining General Urban areas.
- Net change in number of hectares of remaining General Urban areas.

REPORTING & TIMELINE

Annual estimate (mid-year to mid-year).

Reported online annually.

SOURCE

Metro Vancouver Regional Planning geodata for remaining areas in the *Metro 2040* General Urban designation.

BC Statistics, CMHC Completions and Demolitions and Municipal Building Permits.

METHODOLOGY

Remaining urban areas are lands that have a General Urban designation, but are not yet substantially developed. These areas have been identified through aerial photos and assessment of municipal plans. Absorption estimates are based on analysis of the above residential development statistics sources.

INTENT

Metro Vancouver estimates that 75% to 80% of growth will occur through infill or redevelopment in established General Urban areas. The remaining 20-25% will occur through new development in remaining General Urban areas.

Contain Development

ANNUAL GROWTH

Context Measure



AS MEASURED BY

- Annual regional and municipal population growth.
- Annual regional and municipal dwelling unit growth.
- Annual regional and municipal employment growth.

REPORTING & TIMELINE

Annual estimate (mid-year to mid-year). Five-year cumulative measure reported following Census data release.

Reported online annually.

SOURCE

Five-year intervals: Statistics Canada, Census.

Annually (mid-year to mid-year): BC Statistics, CMHC Completions and Demolitions, Municipal Building Permits (for population and dwelling units). Annual regional employment estimated as a percentage of total population.

REPORTING METHODOLOGY & TIMELINE

Total and growth in population and dwelling units reported annually for Metro Vancouver and member jurisdictions based on Metro Vancouver analysis; 5-year reporting from Census, including estimated Census undercount.

Total and growth in employment reported annually for Metro Vancouver (estimated as a percentage of the total population) and on 5-year basis for the region and member jurisdictions from Census, including estimated Census undercount.

INTENT

Growth projections are generated by a regional growth model and confirmed with member jurisdictions. The projections are not targets. Growth that vastly and consistently differs from the projections may trigger an update to the growth model, and potential policy considerations.

Growth in Priority Areas

DENSITY IN PRIORITY AREAS

Strategy Performance Measure



AS MEASURED BY

- Average number of dwelling units per hectare of land with a General Urban designation within Urban Centres.
- Average number of dwelling units per hectare of land with a General Urban designation within Frequent Development Areas.
- Average number of dwelling units per hectare of land with a General Urban designation outside of Urban Centres and Frequent Development Areas within the Urban Containment Boundary.

REPORTING & TIMELINE

Five-year estimate.

Reported online every five-years.

SOURCE

Metro Vancouver Regional Planning geodata for lands with a *Metro 2040* General Urban designation and Urban Centre / Frequent Transit Development Area (FTDA) boundaries.

Metro Vancouver Growth Model (traffic zone analysis); Statistics Canada custom Census runs; BC Statistics, CMHC Completions and Demolitions, Municipal Building Permits.

METHODOLOGY

Density is measured as a ratio of dwelling units to *Metro 2040* General Urban area (hectares) and Urban Centre / FTDA geographies. The measure is best illustrated graphically with Urban Centre and FTDA boundaries, and the Frequent Transit Network overlaid.

This measure is not monitored annually as changes would not accurately depict long-term trends.

INTENT

Higher density growth is anticipated to occur in Urban Centres, particularly Regional City Centres, and in areas along the Frequent Transit Network.

Protect Other Lands
SEWER SERVICE CONNECTIONS
Strategy Performance Measure



AS MEASURED BY

- Number and status of new regional sewerage service connection applications made for areas outside of the Urban Containment Boundary (UCB) to lands with an Agricultural, Rural, or Conservation and Recreation regional designation.

REPORTING & TIMELINE

Annual measure (January to December).

Reported online annually.

SOURCE

Metro Vancouver Liquid Waste Services and Regional Planning Departments.

METHODOLOGY

Status of Metro Vancouver applications (submitted, approved, denied, or under consideration) by designation area outside of the UCB, and percent of total applications outside of the UCB for the calendar year (January to December).

INTENT

While sewerage extensions beyond the Urban Containment Boundary are generally not expected, *Metro 2040* and associated guidelines allow for such extensions under certain exceptions. Sewerage extension applications may be approved without resulting in a net increase in sewerage connections outside of the UCB.

Protect Other Lands
RURAL DEVELOPMENT
Strategy Performance Measure



AS MEASURED BY

- Number of new residential developments by type and municipality on land designated Rural.

REPORTING & TIMELINE

Annual estimate (mid-year to mid-year).

Reported online annually.

SOURCE

Metro Vancouver Regional Planning geodata of lands with a Rural regional designation.

BC Statistics, CMHC Completions and Demolitions and Municipal Building Permits.

METHODOLOGY

Total residential growth estimated annually and categorized broadly as follows:

- Large lot single family (one acre or more)
- Small lot single family (less than one acre)
- Cluster development (lot with more than one unit where the undeveloped portion of the lot is greater than the developed portion of the lot).

INTENT

About 1% of residential growth is anticipated to occur on lands designated Rural by 2040 and the form of this growth has implications for regional planning. The intent of *Metro 2040* is to maintain the rural character of lands with the Rural designation, however, there is no prescribed density for this lands.


DRAFT

GOAL 2 MEASURES

Support a Sustainable Economy

Key Summary Measures

The following Key Summary Measures are listed in *Metro 2040* Section G: Performance Monitoring. These measures will be reported out regularly as data becomes available to illustrate progress.

Employment in Priority Areas JOB GROWTH IN PRIORITY AREAS Key Summary Measure	
AS MEASURED BY <ul style="list-style-type: none">• Percent of regional employment growth located in Urban Centres.• Percent of regional employment growth located in Frequent Transit Development Areas.	
REPORTING & TIMELINE <p>Five-year measure reported following Census data release.</p> <p>Combined percentage of regional growth to Urban Centres and FTDA's provided in annual reports as data is available. Breakdown by individual Urban Centres and FTDA's reported online as data is available.</p>	
SOURCE <p>Metro Vancouver Regional Planning geodata for <i>Metro 2040</i> Urban Centre / Frequent Transit Development Area (FTDA) boundaries.</p> <p>Statistics Canada custom data runs for geographic areas above, Census / NHS Place of Work data.</p>	
METHODOLOGY <p>Urban Centre and FTDA boundaries are established and adjusted through regional context statements adopted by municipal councils and accepted by the GVRD Board.</p> <p>Statistics Canada classifies jobs as having a usual / fixed place of work, working at home, or having no fixed workplace. This measure includes the total employed population aged 15 years and over with jobs with a usual / fixed place of work, or working at home.</p>	
INTENT <p><i>Metro 2040</i> targets 50% of employment growth to Urban Centres, for a total 43% of employment to be located in Urban Centres by 2041. <i>Metro 2040</i> also targets 27% of employment growth to FTDA's, 24% of employment to be located in FTDA's by 2041.</p>	

Employment Accessibility

COMMUTE TIME AND DISTANCE

Key Summary Measure



AS MEASURED BY

- Average number of kilometres travelled for commute region-wide.
- Average number of minutes travelled for commute region-wide.

REPORTING & TIMELINE

Five-year measure reported following Census and Trip Diary data release.

Regional averages provided in annual reports as data is available. Breakdown by mode and subregion reported online as data is available.

SOURCE

Statistics Canada Census / NHS median commuting durations and custom data runs for cross tabs and geographic areas.

TransLink Regional Trip Diary Data or Analysis Report, trip length by trip purpose.

METHODOLOGY

Statistics Canada classifies jobs as having a usual / fixed place of work, working at home, or having no fixed workplace. This measure includes the total employed population aged 15 years and over with a usual place of work or no fixed workplace address.

TransLink's Trip Diary estimates trip data on a typical fall weekday. Each trip is allocated to a trip purpose, one of which is Work / Post Secondary (including return trips home from those locations). Trip lengths are estimated for each reported trip based on the geocoded locations of trip start and end points.

INTENT

Metro 2040 aims to support more employment close to where people live. Average commute length and duration serve as indicators of employment accessibility. While an overall reduction in commute length and duration is a positive, analysis of this measure should be carefully balanced with analysis of Employment in Priority Areas measures, as commute length and duration could increase as use of transit increases, indicating jobs and dwelling units are locating in close proximity to transit, but jobs are not being filled by local residents.

Industrial and Mixed Employment Areas

INDUSTRIAL AND MIXED EMPLOYMENT LAND USE

Key Summary Measure



AS MEASURED BY

- Percent of land designated Industrial or Mixed Employment in *Metro 2040* that is 'developed'.

REPORTING & TIMELINE

Five-year (anticipated) measure reported following each update of the Metro Vancouver Industrial Lands Inventory.

SOURCE

Metro Vancouver Industrial Lands Inventory (ILI).

Metro Vancouver Regional Planning geodata for the *Metro 2040* Industrial and Mixed Employment designation.

METHODOLOGY

The ILI inventories parcels that are regionally or municipally designated or zoned for industrial uses. Some areas, including the Vancouver International Airport, and road and utility rights-of-way, though designated Industrial or Mixed Employment in *Metro 2040*, are not captured in the inventory.

For the purposes of annual reporting, 'developed' lands are those with industrial and quasi-industrial uses. 'Developed' lands may also include lands with some non-industrial uses that are building intensive and not likely to redevelop to industrial uses. 'Vacant' lands are those lands that are anticipated to redevelop to industrial uses. Specifically, these include lands that are municipally designated industrial, but currently are used for agriculture, residential, or resource extraction.

INTENT

Metro 2040 aims to ensure there is sufficient industrial capacity to meet the needs of the regional economy. Estimated absorption rates are provided in the Metro Vancouver 2015 Industrial Lands Inventory - Summary Report. Further information about supply and demand will be made available through the Industrial Lands Initiative.

Agricultural Areas

AGRICULTURAL LAND USE

Key Summary Measure



AS MEASURED BY

- Percent of land designated Agricultural in *Metro 2040* that is 'actively farmed'.

REPORTING & TIMELINE

Five-year (anticipated) measure reported following each update of the Regional Agricultural Land Use Inventory for Metro Vancouver.

SOURCE

Ministry of Agriculture (MoA), Regional Agricultural Land Use Inventory (ALUI), The Metro Vancouver Regional Report and data made available by the MoA.

Metro Vancouver Regional Planning geodata for the *Metro 2040* Agricultural designation.

Agricultural Land Commission geodata for the Agricultural Land Reserve (ALR) boundaries.

METHODOLOGY

The ALUI inventories all parcels that are within the ALR, have a *Metro 2040* Agricultural designation, or have farm class status.

For the purposes of annual reporting, actively farmed includes land that was farmed at the time of the inventory, as well as areas that support farming, such as farm buildings and roads. Land with potential for farming includes lands that do not have any significant topographical, physical, or existing land use constraints (natural, semi-natural, managed vegetation, or non-built/bare areas). Land that is unavailable for farming is land that has an existing incompatible use (e.g. parks, golf courses, residences), land with site limitations (drainage or topography), or rights-of-way.

INTENT

Metro 2040 aims to increase actively farmed land.

Supplementary Measures

The following Strategy Performance, Context, and Participation Measures are supplementary to the Key Summary Measures. These measures may be reported out online as data and resources are available. The intent of supplementary measures is to illustrate progress, serve as a resource to member jurisdictions, and inform implementation.

Employment in Priority Areas OFFICE DEVELOPMENT IN PRIORITY AREAS Strategy Performance Measure	
AS MEASURED BY <ul style="list-style-type: none"> Percent of office space development locating in Urban Centres by Urban Centre Type. Percent of office space development locating in FTDA's. Percent of office space development locating within 400 metres of the Frequent Transit Network or within 800 metres of a rapid transit station. 	
REPORTING & TIMELINE Online as data is available.	
SOURCE Metro Vancouver Regional Planning geodata for <i>Metro 2040</i> Urban Centre / Frequent Transit Development Area (FTDA) boundaries. Metro Vancouver Office Inventory (geodata). Frequent Transit Network (FTN) and rapid transit station geodata is provided by TransLink; latest versions are available upon request.	
METHODOLOGY The inventory includes all offices in region 10,000 square feet or larger and is based on commercial real estate brokers data and municipal data. The FTN is a network where transit service runs at least every 15 minutes in both directions throughout the day and into the evening, every day of the week. A 400 metre buffer around the FTN is used to identify a walk catchment (approximately 5 minutes) to frequent transit service, and an 800 metre buffer around rapid transit stations is used to identify a walk catchment (approximately 10 minutes) to rapid transit service. Rapid transit includes SkyTrain and Canada Line stations, as well as Sea Bus if frequent service is provided, not West Coast Express stations.	
INTENT <i>Metro 2040</i> encourages locating office and retail development in Urban Centres to support employment growth in these locations and to support the development of complete communities with access to a range of services and amenities.	

Employment in Priority Areas

RETAIL DEVELOPMENT IN PRIORITY AREAS

Strategy Performance Measure



AS MEASURED BY

- Estimated percent of businesses in the retail trade sector located in Urban Centres and Frequent Transit Development Areas.
- Employed Labour Force in Urban Centres and Frequent Transit Development Areas in the retail trade sector.

REPORTING & TIMELINE

Online as data is available.

SOURCE

Metro Vancouver Regional Planning geodata for *Metro 2040* Urban Centre / Frequent Transit Development Area (FTDA) boundaries.

Metro Vancouver Dun and Bradstreet Business Database (geodata), purchased by Metro Vancouver. Some use limitations apply.

Statistics Canada Census Place of Work data.

METHODOLOGY

Businesses identified with a primary North American Industry Classification System (NAICS) code beginning in 44 or 45 are classified as Retail Trade. The Retail Trade sector comprises establishments engaged in retailing merchandise, generally without transformation, and rendering services incidental to the sale of merchandise. The category includes both store and non-store retails. Retail establishments include office supply stores, computer and software stores, building materials dealers, plumbing supply stores, and electrical supply stores. Catalog showrooms, gasoline stations, automotive dealers and mobile home dealers are also treated as store retailers.

INTENT

Metro 2040 encourages locating office and retail development in Urban Centres to support employment growth in these locations and to support the development of complete communities with access to a range of services and amenities.

Employment Accessibility

EMPLOYMENT LEVELS

Context Measure



AS MEASURED BY

- Jobs to labour force ratio for each subregion.

REPORTING & TIMELINE

Online as data is available.

SOURCE

Metro Vancouver established subregions based on jurisdictional boundaries for the purpose of *Metro 2040* monitoring

The subregions are:

- North Shore (North Vancouver City, North Vancouver District, West Vancouver, and Lions Bay)
- Vancouver - UBC/UEL
- Richmond - Delta - Tsawwassen First Nation
- Burnaby - New Westminster
- Surrey - White Rock
- Northeast Sector (Coquitlam, Port Coquitlam, Port Moody, Anmore and Belcarra)
- Ridge - Meadows (Maple Ridge and Pitt Meadows)
- Langleys (Langley City and Langley Township)

Statistics Canada Census / National Household Survey, including estimated Census undercount;
Statistics Canada Labour Force Survey.

METHODOLOGY

Statistics Canada classifies jobs as having a usual / fixed place of work, working at home, or having no fixed workplace. This measure includes the total employed population aged 15 years and over with jobs with a usual / fixed place of work, or working at home.

INTENT

Metro 2040 aims to support more employment close to where people live. This measure tracks employment growth and distribution as context for economic activity and employment across the region.

Employment Accessibility

EMPLOYMENT TYPES AND LOCATIONS

Context Measure



AS MEASURED BY

- Total number and growth of employment by sector for each subregion.

REPORTING & TIMELINE

Online as data is available.

SOURCE

Metro Vancouver established subregions based on municipal boundaries for the purpose of *Metro 2040* monitoring.

The subregions are:

- North Shore (North Vancouver City, North Vancouver District, West Vancouver, and Lions Bay)
- Vancouver - UBC/UEL
- Richmond - Delta - Tsawwassen First Nation
- Burnaby - New Westminster
- Surrey - White Rock
- Northeast Sector (Coquitlam, Port Coquitlam, Port Moody, Anmore and Belcarra)
- Ridge - Meadows (Maple Ridge and Pitt Meadows)
- Langleys (Langley City and Langley Township)

Statistics Canada Census / National Household Survey (place of work), including estimated Census undercount; Statistics Canada Labour Force Survey.

METHODOLOGY

Statistics Canada classifies jobs as having a usual / fixed place of work, working at home, or having no fixed work location. This measure includes the total employed population aged 15 years and over with jobs with a usual / fixed place of work, or working at home.

Employment is measured by industry sector and industries may employ workers with a variety of occupations, such as a mining company with an accountant on staff.

INTENT

Metro 2040 aims to support a diverse regional economy. This measure tracks employment growth and distribution as context for economic activity and employment across the region.

Agricultural Areas

ACTIVE FOOD PRODUCING LANDS

Strategy Performance Measure



AS MEASURED BY

- Percent of lands designated Agricultural with active food production.

REPORTING & TIMELINE

Online as data is available.

SOURCE

Ministry of Agriculture (MoA), Regional Agricultural Land Use Inventory (ALUI), The Metro Vancouver Regional Report and data made available by the MoA.

Metro Vancouver Regional Planning geodata for the *Metro 2040* Agricultural designation.

Agricultural Land Commission geodata for the Agricultural Land Reserve (ALR) boundaries.

METHODOLOGY

The ALUI inventories all parcels that are within the ALR, have a *Metro 2040* Agricultural designation, or have farm class status.

For the purposes of annual reporting, lands under active food production are based on those lands captured within the ALUI as actively farmed cultivated land and greenhouse area. Food producing lands include lands actively farmed with berry, vegetable, cereal, vine fruit and nut tree, specialty crop, mushroom crop barn activities, as well as greenhouses with vegetable activities. Actively farmed forage and pasture land used for livestock activities are included, but those with primary horse activities are excluded. Bare and fallow lands and lands in transition are excluded. Although some nursery operations produce fruit trees, berry bushes and vegetable transplants, they are excluded as they are not the primary activity. Floriculture activities and greenhouses with floriculture and nursery activities are also excluded.

INTENT

Metro 2040 aims to increase actively farmed land with an emphasis food production.


DRAFT


GOAL 3 MEASURES

Protect the Environment and Respond to Climate Change Impacts

Key Summary Measures

The following Key Summary Measures are listed in *Metro 2040* Section G: Performance Monitoring. These measures will be reported out regularly as data becomes available to illustrate progress.

Ecosystem Health SENSITIVE ECOSYSTEMS QUALITY AND QUANTITY Key Summary Measure	
AS MEASURED BY <ul style="list-style-type: none">• Hectares of land inventoried as a Sensitive or Modified Ecosystem.• Percent of inventoried Sensitive and Modified Ecosystems rated high quality.	
REPORTING & TIMELINE <p>Five-year (anticipated) measure reported following each update of the Metro Vancouver Sensitive Ecosystem Inventory.</p> <p>Regional totals and averages provided in annual reports as data is available. Breakdown by quality and subregion reported online as data is available.</p>	
SOURCE <p>Metro Vancouver Sensitive Ecosystem Inventory (geodata).</p>	
METHODOLOGY <p>The Sensitive Ecosystem Inventory (SEI) tracks ecosystems throughout the region as a means of monitoring ecological health. The SEI was developed using provincial standards and identifies and map ecologically significant and relatively unmodified 'Sensitive Ecosystems', including wetlands, older forests and woodlands as well as some 'Modified Ecosystems' which are human modified but still have ecological value and importance to biodiversity (such as young forests).</p> <p>The 'quality' of a Sensitive or Modified Ecosystem is determined through evaluation of condition, landscape context and size. Condition is an assessment of disturbance factors within and immediately adjacent to a the area. Landscape context is an assessment of the land cover around an area and is a measure of the degree of fragmentation. Size is also considered because larger sites are generally better able to function more naturally than smaller sites of the same ecosystem.</p>	
INTENT <p><i>Metro 2040</i> aims to protect and enhance natural features and their connectivity. The SEI provides information about change over time and can help to focus ecosystem protection and enhancement efforts.</p>	

Climate Change Mitigation GREENHOUSE GAS EMISSIONS Key Summary Measure	
AS MEASURED BY <ul style="list-style-type: none"> Tonnes and percent of regional greenhouse gas emissions produced by building and on-road transportation sources. 	
REPORTING & TIMELINE Five-year (anticipated) measure reported following each update of the Lower Fraser Valley Emissions Inventory.	
SOURCE The Lower Fraser Valley Emissions Inventory and Forecast and Backcast is developed approximately every five years.	
METHODOLOGY The 2010 emissions inventory provides information on the types of air emission sources in the Lower Fraser Valley, their location and the amount of air contaminants emitted, for the year 2010. Greenhouse gases included in the emissions inventory are, Carbon dioxide (CO ₂), Methane (CH ₄), and Nitrous oxide (N ₂ O). Of the greenhouse gases, CO ₂ is the primary contributor and has the most relevant implications for climate change. Building emission sources include commercial, institutional and residential buildings, and on-road transportation sources include light-duty and heavy-duty vehicles.	
INTENT <i>Metro 2040</i> targets a 33% reduction in GHG emissions below 2007 levels by 2020, and an 80% reduction below 2007 levels by 2050.	

Climate Change Preparedness

CLIMATE ADAPTATION PLANNING EFFORTS

Proxy Key Summary Measure / Participation Measure



AS MEASURED BY

- Climate adaptation planning efforts (proxy measure).

REPORTING & TIMELINE

Online and in annual reports as new information is available.

SOURCE

Baseline information derived from The Climate Adaptation Scan and Gap Analysis Report (2015). Updates requested from Regional Planning Advisory Committee as appropriate (approximately every 2-3 years).

METHODOLOGY

Climate change adaptation efforts are often embedded in other policy documents or management plans, such as Official Community Plans, development plans, detailed environmental management plans, general climate change plans, or emergency management plans. This measures specifically tracks natural hazard risk assessments, natural hazard management plans, or climate change adaptation plans by municipality.

INTENT


Metro 2040 aims to improve the ability to withstand climate change and natural hazard risks (e.g. earthquake, flooding, erosion, subsidence, mudslides, interface fires).

DRAFT

Supplementary Measures

The following Strategy Performance, Context, and Participation Measures are supplementary to the Key Summary Measures. These measures may be reported out online as data and resources are available. The intent of supplementary measures is to illustrate progress, serve as a resource to member jurisdictions, and inform implementation.

<p>Ecosystem Health</p> <p>ENVIRONMENTAL PROTECTION EFFORTS</p> <p>Participation Measure</p>	
<p>AS MEASURED BY</p> <ul style="list-style-type: none"> Count of tools / mechanisms used by member jurisdictions to protect environmental areas. 	
<p>REPORTING & TIMELINE</p> <p>Online as new information is available.</p>	
<p>SOURCE</p> <p>Compiled by Metro Vancouver staff. Confirmed, and updates requested from Regional Planning Advisory Committee Environmental Subcommittee as appropriate (approximately every 2-3 years).</p>	
<p>METHODOLOGY</p> <p>Tools and mechanisms to protect important environmental areas may include:</p> <ul style="list-style-type: none"> Environmental Management Plans (EMPs) Environmental Development Permit Areas (EDPAs) Designated Environmentally Sensitive Areas (ESAs) Watercourse protection bylaws Tree protection bylaws Conservation covenants Land trusts Tax exemptions 	
<p>INTENT</p> <p><i>Metro 2040</i> aims to protect, enhance, and restore ecologically important systems and features.</p>	

Ecosystem Health AIR POLLUTANTS Strategy Performance Measure	
AS MEASURED BY <ul style="list-style-type: none"> Number of pollutant exceedances of regional and national objectives and standards. 	
REPORTING & TIMELINE Online as data is available.	
SOURCE Pollutant exceedances are tracked in the annual Integrated Air Quality and Greenhouse Gas Management Plan Progress Report produced by Metro Vancouver Air Quality.	
METHODOLOGY Exceedances of ambient objectives and standards are presented using the data from the Lower Fraser Valley Air Quality Monitoring Network, 28 air quality monitoring stations located from Horseshoe Bay to Hope. Metro Vancouver operates 22 of these stations in Metro Vancouver and 6 stations in the Fraser Valley in partnership with the Fraser Valley Regional District. Exceedances are reported for the following pollutants: <ul style="list-style-type: none"> Nitrogen dioxide Sulphur dioxide Ground-level ozone Fine particulate matter Other air contaminants 	
INTENT Metro 2040 aims to reduce energy consumption and greenhouse gas emissions, and improve air quality.	

Climate Change Preparedness

CLIMATE CHANGE PROJECTIONS

Context Measure



AS MEASURED BY

- Regional baseline and change projections for relevant climate variables.

REPORTING & TIMELINE

Online as data is available.

SOURCE

Climate Projections for Metro Vancouver (2015 report), supported by the Pacific Climate Impacts Consortium.

METHODOLOGY

The 2015 Metro Vancouver report provides an improved understanding of projected local climate change trends in temperature, precipitation, and related indices of extremes. The report is intended to describe a probable future and enable the region's planners, engineers, and policy makers to make better-informed decisions on how to plan and adapt to changes ahead. The full report is available online and www.metrovancouver.org. Key indicators for the years 2050 and 2080 are provided online for monitoring, including:

- Daytime High Temperature
- Nighttime Low Temperature
- Precipitation (seasonal total, mm)
- Extreme Precipitation Intensity (1-in-20-year 1-day event, mm)
- Snowpack depth (April 1st watershed average)

INTENT

Metro 2040 aims to improve the ability to withstand climate change. This measure provides regional climate change projections as context for anticipated impacts across the region.


DRAFT

GOAL 4 MEASURES

Create Complete Communities

Key Summary Measures

The following Key Summary Measures are listed in *Metro 2040* Section G: Performance Monitoring. These measures will be reported out regularly as data becomes available to illustrate progress.

Housing Affordability HOUSING + TRANSPORTATION COST BURDEN Key Summary Measure	
AS MEASURED BY <ul style="list-style-type: none"> Percent of median household income spent on average housing + transportation costs. 	
REPORTING & TIMELINE Five-year (anticipated) measure reported following the release of Census and Trip Diary data. Regional cost burden provided in annual reports as data is available. Detailed housing and transportation costs, and a breakdown by subregion and median income level reported online as data is available.	
SOURCE Statistics Canada Census / National Household Survey. Average annual housing costs for working households, including rent/mortgage, services, taxes, and fees. TransLink Trip Diary. Average annual transit and auto costs for working households (includes transit fares and cost of owning and operating a personal vehicle).	
METHODOLOGY Cost burden refers to the combined household expenditures on housing and transportation relative to gross household income. Methodology is detailed in the The Metro Vancouver Housing and Transportation Cost Burden Study (2015). Typically, if a household spends less than 30% of pre-tax on housing costs, then housing is considered affordable. However, housing and transportation choices are closely linked and represent the two largest expenditures for many working households.	
INTENT <i>Metro 2040</i> aims to provide diverse and affordable housing choices. This measure provides a comprehensive picture of affordability in the region.	

Housing Diversity

ESTIMATED RENTAL HOUSING DEMAND ACHIEVED IN NEW SUPPLY

Key Summary Measure



AS MEASURED BY

- Share of estimated regional rental housing demand achieved in new supply.

REPORTING & TIMELINE

Five-year (anticipated) measure reported following the release of Census data.

Regional average provided in annual reports as data is available. Breakdown by household type and income level reported online as data is available.

SOURCE

Statistics Canada Census / National Household Survey.

METHODOLOGY

Housing demand estimates are provided in *Metro 2040*. Rental supply is monitored through Metro Vancouver's Housing Data Book.

Income levels:

- Very low income (<\$30,000)
- Low income (\$30,000-\$50,000)
- Moderate income (\$50,000-\$75,000)
- Above moderate income (\$75,000-\$100,000)
- High income (\$100,000+)

Household types:

- Family Households
- Non-family households

Census family refers to a married couple and their children, if any, of either or both spouses; a couple living in common law and the children, if any, of either or both partners; or a lone parent of any marital status with at least one child living in the same dwelling and that child or those children. Non-Census families may have one or more persons.

INTENT

Metro 2040 aims to provide diverse and affordable housing choices. This measure monitors rental supply against anticipated demand as a key part of the housing continuum.

Complete Communities and Health

WALKABILITY

Key Summary Measure



AS MEASURED BY

- Walkability.

REPORTING & TIMELINE

Annual (anticipated) measure reported as data is available.

SOURCE

TBD

METHODOLOGY

TBD

INTENT


Metro 2040 aims to develop healthy and complete communities with access to a range of services and amenities.

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Supplementary Measures

The following Strategy Performance, Context, and Participation Measures are supplementary to the Key Summary Measures. These measures may be reported out online as data and resources are available. The intent of supplementary measures is to illustrate progress, serve as a resource to member jurisdictions, and inform implementation.

Housing Affordability AFFORDABLE HOUSING WITH ACCESS TO THE FREQUENT TRANSIT NETWORK Strategy Performance Measure	
AS MEASURED BY <ul style="list-style-type: none"> Percent and number of social housing / non-market housing with access to the Frequent Transit Network. 	
REPORTING & TIMELINE Online as data is available.	
SOURCE Metro Vancouver Regional Planning geodata for the <i>Metro 2040</i> Urban Centre / Frequent Transit Development Area (FTDA) boundaries. Frequent Transit Network (FTN) and rapid transit station geodata is provided by TransLink; latest versions are available upon request. BC Housing Homeowner Protection Office, Member jurisdictions, BC Assessment Authority.	
METHODOLOGY Housing data is geocoded and overlaid with the FTN. The FTN is a network where transit service runs at least every 15 minutes in both directions throughout the day and into the evening, every day of the week. A 400 metre buffer around the FTN is used to identify a walk catchment (5-10 minutes) to frequent transit service, and an 800 metre buffer around rapid transit stations is used to identify a walk catchment (10-15) minutes to rapid transit service.	
INTENT <i>Metro 2040</i> aims to provide diverse and affordable housing choices. This measure monitors social housing / non-market housing development in locations with transit service, a key amenity for residents in these housing types, as an important part of the housing continuum.	

Housing Diversity COMPOSITION OF HOUSING STOCK Context Measure <div>medium term</div>
AS MEASURED BY <ul style="list-style-type: none"> Composition of housing stock (type, tenure and cost).
REPORTING & TIMELINE Annual estimate and five-year (anticipated) measure reported following the release of Census data. Metro Vancouver provides annual estimates based on CMHC Completions and Demolitions.
SOURCE Statistics Canada Census, not including estimated Census undercount. CMHC Completions and Demolitions and Rental Market Activity reports. Greater Vancouver Real Estate Board (GVREB), Fraser Valley Real Estate Board (FVREB).
METHODOLOGY Type includes: <ul style="list-style-type: none"> Ground-oriented housing (single family and duplex) Row housing Apartment housing Tenure includes: <ul style="list-style-type: none"> Owner-occupied Renter-occupied Band housing Average rents are for purpose-built rental apartments with 3 units or more and are provided by CMHC Market Area. Multiple Service Listing (MLS) Housing Price Index (HPI) is the mid-year average and is broken down by GVREB and FVREB areas. Improved data sources for market rental costs are currently being explored.
INTENT <i>Metro 2040</i> aims to provide diverse and affordable housing choices. This measure monitors housing supply throughout the region as context for housing diversity.

Housing Diversity MUNICIPAL HOUSING ACTION PLANS Participation Measure	
AS MEASURED BY <ul style="list-style-type: none"> • Status of municipal housing action plans. • Count of municipal measures to support housing affordability and diversity. 	
REPORTING & TIMELINE Online as data is available (approximately every 2-3 years).	
SOURCE Metro Vancouver data.	
METHODOLOGY Metro Vancouver tracks the status of municipal housing action plans (adopted, updated, or pending), as well as measures in support of housing affordability and diversity, including: <ul style="list-style-type: none"> • Fiscal measures • Planning policies • Zoning/regulatory actions • Approval processes • Rental market incentives • Rental housing loss prevention • Education and advocacy 	
INTENT <i>Metro 2040</i> aims to provide diverse and affordable housing choices. This participation measure monitors the status and implementation of municipal housing action plans, which assess local market conditions, identify housing priorities, identify implementation measures which may encourage new rental housing, where appropriate mitigate the loss of existing rental housing, and identify opportunities to participate with other levels of government to secure additional rental units.	

Complete Communities and Health

AIR QUALITY HEALTH INDEX

Strategy Performance Measure



AS MEASURED BY

- Percent of hours with the Air Quality Health Index (AQHI) in the High and Low health risk categories.

REPORTING & TIMELINE

Online as data is available.

SOURCE


Air quality health index categories are monitored in the annual Integrated Air Quality and Greenhouse Gas Management Plan Progress Report produced by Metro Vancouver's Air Quality and Climate Change division.

METHODOLOGY

Data for this performance measure originate from the Lower Fraser Valley Air Quality Monitoring Network. The AQHI is calculated based on the relative risks to human health from exposure to ground-level ozone, fine particulate matter and nitrogen dioxide.

INTENT

Metro 2040 aims to develop healthy and complete communities with access to a range of services and amenities. This measure monitors air quality as an important element of healthy communities.

<p>Complete Communities and Health</p> <p>HEALTH IMPACTS IN PLANNING AND DEVELOPMENT</p> <p>Participation Measure</p>	
<p>AS MEASURED BY</p> <ul style="list-style-type: none"> Count of official considerations of health impacts in planning and development. 	
<p>REPORTING & TIMELINE</p> <p>Online as data is available (approximately every 2-3 years).</p>	
<p>SOURCE</p> <p>Metro Vancouver data. Updates requested from Regional Planning Advisory Committee Social Issue Subcommittee as appropriate, based on information derived from Metro Vancouver Health Impact Assessment Guidelines.</p>	
<p>METHODOLOGY</p> <p>Metro Vancouver collects information about the use of health impact assessments in municipal planning efforts.</p>	
<p>INTENT</p> <p><i>Metro 2040</i> aims to develop healthy and complete communities with access to a range of services and amenities. This participation measure tracks the the consideration of health impacts in planning and development.</p>	


DRAFT

GOAL 5 MEASURES

Support Sustainable Transportation Choices

Key Summary Measures

The following Key Summary Measures are listed in *Metro 2040* Section G: Performance Monitoring. These measures will be reported out regularly as data becomes available to illustrate progress.

Travel Mode Choice MODE SHARE Key Summary Measure	
AS MEASURED BY <ul style="list-style-type: none"> Percent of total trips that are private vehicle based. Total trips by mode, by region and municipality. 	
REPORTING & TIMELINE Five-year (anticipated) measure reported following the release of TransLink Trip Diary data. Regional share of trips that are private vehicle based reported online and in annual reports as data is available. Breakdown by mode and municipality provide online as data is available.	
SOURCE TransLink Trip Diary.	
METHODOLOGY TransLink's Trip Diary estimates trip data on a typical fall weekday. Each trip is allocated to a mode (walking, cycling, transit, auto passenger, or auto driver). Private vehicle-based trips include trips by auto driver and trips by auto passenger. Passenger trips are counted by the number of passengers in the vehicle for each trip (e.g. a single auto trip with one driver and three passengers is counted as one auto driver trip and three auto passenger trips).	
INTENT <i>Metro 2040</i> aims to encourage transit, multiple-occupancy vehicles, cycling, and walking.	

Travel Mode Choice

TRANSIT ACCESSIBILITY

Key Summary Measure



AS MEASURED BY

- Percent of population living within walking distance of Frequent Transit Network (FTN).

REPORTING & TIMELINE

Five-year (anticipated) measure reported following the release of Census data.

SOURCE

Statistics Canada Census, including estimated Census undercount.

Frequent Transit Network (FTN) and rapid transit station geodata is provided by TransLink; latest versions are available upon request.

METHODOLOGY

The FTN is a network where transit service runs at least every 15 minutes in both directions throughout the day and into the evening, every day of the week. A 400 metre buffer around the FTN is used to identify a walk catchment (5-10 minutes) to frequent transit service, and an 800 metre buffer around rapid transit stations is used to identify a walk catchment (10-15 minutes) to rapid transit service. Census Dissemination Blocks are used to estimate population within these catchments.

INTENT

Metro 2040 aims to encourage transit, multiple-occupancy vehicles, cycling, and walking.

Road and Vehicle Use and Safety

VEHICLE KILOMETRES TRAVELLED

Key Summary Measure



AS MEASURED BY

- Annual per capita Vehicle Kilometres Travelled (VKT).

REPORTING & TIMELINE

Five-year (anticipated) measure reported following the release of TransLink Trip Diary data.

Regional per capita VKT is reported online and in annual reports as data is available. Breakdown by subregion is provide online as data is available.

SOURCE

TransLink Trip Diary.

METHODOLOGY

TransLink's Trip Diary estimates trip data on a typical fall weekday. The average trip lengths of Auto Drivers is used to estimate the daily Vehicle Kilometres Travelled (VKT) of Metro Vancouver residents. These values are normalized using total population counts to further estimate weekday VKT per capita.


INTENT

Metro 2040 aims to support the safe and efficient movement of vehicles for passengers, goods and services.

DRAFT

Supplementary Measures

The following Strategy Performance, Context, and Participation Measures are supplementary to the Key Summary Measures. These measures may be reported out online as data and resources are available. The intent of supplementary measures is to illustrate progress, serve as a resource to member jurisdictions, and inform implementation.

Road and Vehicle Use INSURED VEHICLES Context Measure	
AS MEASURED BY <ul style="list-style-type: none">Number of actively insured vehicles.	
REPORTING & TIMELINE Online as data is available.	
SOURCE Insurance Corporation of British Columbia Report for Active Vehicle Count by City and Vehicle Type, Metro Vancouver.	
METHODOLOGY Reports provided monthly. Report annual average for year by municipality.	
INTENT <i>Metro 2040</i> aims to support the safe and efficient movement of vehicles for passengers, goods and services.	

Road and Vehicle Use and Safety	TBD
COLLISION STATISTICS	
Key Summary Measure	
AS MEASURED BY	
<ul style="list-style-type: none"> Collision statistics, including fatalities and injuries for the region as made available by ICBC. 	
REPORTING & TIMELINE	
Measure contingent on ICBC reporting.	
SOURCE	
Insurance Corporation of British Columbia data, as available.	
METHODOLOGY	
ICBC has made collision injury and fatality statistics available by region in the past, however, reporting is currently being updated.	
INTENT	
<i>Metro 2040</i> aims to support the safe and efficient movement of vehicles for passengers, goods and services.	

POTENTIAL FUTURE MEASURES

To Be Explored

This section includes a list of measures that would improve monitoring, but cannot yet be tracked due to data availability or resource constraints.

Growth in Priority Areas

TBD

MAJOR TRIP GENERATORS

Future Strategy Performance Measure

POTENTIAL MEASURES

- Number of new Major Trip Generators locating outside of Urban Centres and FTDA's.

INTENT

Metro 2040 aims to focus population and employment growth to Urban Centres and FTDA's and reduce the share of private vehicle trips.

LIMITATION

Requires an established definition for Major Trip Generators.

Industrial Areas

TBD

INDUSTRIAL DENSITY

Future Strategy Performance Measure

POTENTIAL MEASURES

- To be determined.

INTENT

Metro 2040 aims to protect the supply of industrial land, in part through industrial intensification.

LIMITATION

There are several forms of intensification that cannot all be accurately measured through a single measure of density (e.g. jobs per area, throughput per area, etc.). An appropriate measure may be established when resources permit, following the Regional Industrial Lands Initiative.

Ecosystem Health	TBD
ECOLOGICAL CONNECTIVITY	
Future Strategy Performance Measure	
POTENTIAL MEASURES	
<ul style="list-style-type: none"> Ecological Connectivity Index. 	
INTENT	
Metro 2040 aims to protect, enhance, and restore ecologically important systems and features.	
LIMITATION	
Index may be developed using the Sensitive Ecosystem Inventory and Land Cover Classification when resources permit.	

Ecosystem Health	TBD
STATUS OF CONSERVATION AND RECREATION AREAS	
Future Strategy Performance Measure	
POTENTIAL MEASURES	
<ul style="list-style-type: none"> Protection status of Conservation and Recreation areas. 	
INTENT	
Metro 2040 aims to protect, enhance, and restore ecologically important systems and features.	
LIMITATION	
Measure dependent on the Metro Vancouver protected areas layer, which is currently under development.	

Climate Change Mitigation	TBD
ENERGY USE Strategy Performance Measure	
POTENTIAL MEASURES <ul style="list-style-type: none"> Kilowatt-hours energy use per capita and by region. 	
INTENT <i>Metro 2040</i> aims to reduce energy consumption and greenhouse gas emissions, and improve air quality.	
SOURCE Detailed data not currently available.	

Climate Change Preparedness	TBD
PEOPLE AND INFRASTRUCTURE AT RISK Future Strategy Performance Measure	
POTENTIAL MEASURES <ul style="list-style-type: none"> Population and value of public assets in hazard areas. 	
INTENT <i>Metro 2040</i> aims to improve the ability to withstand climate change.	
LIMITATION Detailed data on specific areas at risk, and associated adaptation efforts is not yet available.	

Climate Change Preparedness	TBD
ECOLOGICAL ASSETS AT RISK	
Future Strategy Performance Measure	
POTENTIAL MEASURES	
<ul style="list-style-type: none"> Value of ecological assets at risk. 	
INTENT	
Metro 2040 aims to improve the ability to withstand climate change.	
LIMITATION	
Detailed data on specific areas at risk, and associated adaptation efforts is not yet available. Appropriate use of ecosystem valuation figures has not yet been determined.	

Complete Communities and Health	TBD
SHAPING OUR COMMUNITIES PERCEPTION MEASURES	
Future Key Summary Measure	
POTENTIAL MEASURES	
<ul style="list-style-type: none"> To be determined. 	
INTENT	
Metro 2040 aims to develop healthy and complete communities with access to a range of services and amenities.	
LIMITATION	
Shaping our Communities Survey is planned for 2016/2017. Perception data is intended to provide measures related to complete communities and quality of life.	

Road and Vehicle Use TRAVEL TIME RELIABILITY Future Key Summary Measure	TBD
POTENTIAL MEASURES <ul style="list-style-type: none"> Travel time reliability (variation in travel time from day to day, or week to week). 	
INTENT <i>Metro 2040</i> aims to support the safe and efficient movement of vehicles for passengers, goods and services.	
LIMITATION Metro Vancouver aims to work with TransLink on developing a measure related to travel time reliability or congestion.	
Road and Vehicle Use GOODS MOVEMENT MEASURE Future Key Summary Measure	TBD
POTENTIAL MEASURES <ul style="list-style-type: none"> Goods movement measure. 	
INTENT <i>Metro 2040</i> aims to support the safe and efficient movement of vehicles for passengers, goods and services.	
LIMITATION Following the completion of TransLink's Goods Movement Strategy, a goods movement measure may be included.	

DRAFT

APPENDIX I

Index of Performance Measures

Below is a complete list of Regional Planning performance measures related to *Metro 2040*. Key Summary (KS) measures are listed in Section G of *Metro 2040*. Strategy Performance (SP), Context (C), and Participation Measures (P) are listed in the Supplementary Measures sections of this document.

REGIONAL LAND USE MEASURES

Designations and Overlays

- Regional Land Use Designations (KS)
- Regional Land Use Overlays (KS)

GOAL 1: CREATE A COMPACT URBAN AREA

Contain Development

- Growth within the Urban Containment Boundary (KS)
- Remaining Urban Development (SP)
- Annual Growth (C)

Growth in Priority Areas

- Residential development in priority areas (KS)
- Density in priority areas (SP)

Protect Other Lands

- Sewer service connections (SP)
- Rural development (SP)

GOAL 2: SUPPORT A SUSTAINABLE ECONOMY

Employment in Priority Areas

- Job growth in priority areas (KS)
- Office development in priority areas (SP)
- Retail development in priority areas (SP)

Employment Accessibility

- Commute time and distance (KS)
- Employment levels (C)
- Employment types and locations (C)

Industrial and Mixed Employment Areas

- Industrial and Mixed Employment Land Use (KS)

Agricultural Areas

- Agricultural Land Use (KS)
- Active food producing lands (SP)

GOAL 3 PROTECT THE ENVIRONMENT AND RESPOND TO CLIMATE CHANGE IMPACTS

Ecosystem Health

- Sensitive Ecosystem quality and quantity (KS)
- Air pollutants (SP)
- Environmental protection efforts (P)

Climate Change Mitigation

- Greenhouse gas emissions (KS)

Climate Change Preparedness

- Climate adaptation efforts (KS)
- Climate change projections (C)

GOAL 4: DEVELOP COMPLETE COMMUNITIES

Housing Affordability

- Housing + Transportation Cost Burden (KS)
- Affordable housing with access to the Frequent Transit Network (SP)

Housing Diversity

- Rental housing demand achieved in new supply (KS)
- Composition of the housing stock (C)
- Municipal housing action plans (P)

Complete Communities and Health

- Walkability Index (KS)
- Air quality health index (SP)
- Health impacts in planning in development (P)

GOAL 5: SUPPORT SUSTAINABLE TRANSPORTATION CHOICES

Travel Mode Choice

- Transit accessibility (KS)
- Mode share (KS)

Road and Vehicle Use and Safety

- Vehicle kilometres travelled (KS)
- Collision statistics (KS)
- Insured vehicles (C)



To: Regional Planning Committee

From: Lauren Klose, Regional Planner, Parks, Planning and Environment Department

Date: January 10, 2017 Meeting Date: March 10, 2017

Subject: ***Metro Vancouver 2040: Shaping our Future Amendment to Section G Performance Measures***

RECOMMENDATION

That the MVRD Board:

- a) Initiate the *Metro Vancouver 2040: Shaping our Future* amendment process for a Type 3 amendment to Section G of the regional growth strategy;
 - b) Give first and second readings to "Greater Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1243, 2017"; and
 - c) Direct staff to notify affected local governments and appropriate agencies as per *Metro Vancouver 2040: Shaping our Future* Section 6.4.2.
-

PURPOSE

This report provides the GVRD Board with the opportunity to consider a proposed amendment to *Metro Vancouver 2040: Shaping our Future* Section G Performance Measures and the associated *Metro Vancouver 2040: Shaping our Future* Performance Monitoring Guideline.

BACKGROUND

Annual reporting of *Metro Vancouver 2040: Shaping our Future* (*Metro 2040*), the regional growth strategy, is required by Part 13 of the British Columbia *Local Government Act* and *Metro 2040* Section 6.13.3. Three annual reports have been produced to date, covering four years of implementation, including baseline and annual monitoring of the performance measures listed in *Metro 2040* Section G. Through the process of collecting and analyzing data and drafting these early annual reports, a number of opportunities were identified to improve performance monitoring.

Metro Vancouver undertook a review of the *Metro 2040* Performance Measures in 2015. At the May 6, 2016 Regional Planning Committee meeting, members were provided with the findings of the review in a report titled "*Metro 2040* Performance Measures Review Project: Findings and Next Steps". In this report, staff also noted next steps, including developing recommendations to update *Metro 2040* performance monitoring. Staff is now proposing a Type 3 amendment to update *Metro 2040* Section G with improved and more flexible measures based on the results of the review and further consultation with municipal and partner agency staff.

PROPOSED METRO 2040 TYPE 3 AMENDMENT TO SECTION G PERFORMANCE MEASURES

Through the proposed amendment, the existing Section G Performance Measures of *Metro 2040* would be replaced with Section G: Monitoring via a bylaw amendment (Attachment 1). The proposed Section G reduces the number of performance measures included in *Metro 2040* from 55 total measures to 15 Key Summary Measures.

These 15 Key Summary Measures were chosen because:

- they best illustrate progress toward strategies identified in *Metro 2040*;
- they measures are meaningful over the implementation of a long-range strategy; and
- data is available and can be regularly acquired in short or medium term intervals.

Additional performance measures, context measures, and participation measures are included in the associated Performance Monitoring Guideline (described in further detail in the following section) and would be reported out on as data is available. Annual reporting, however, will be primarily focused on the 15 Key Summary Measures that best depict progress toward the goals of the regional growth strategy. The Key Summary Measures include a few that are interim or proxy measures, and these may be replaced when new data is available for more robust indicators in the future.

***Metro 2040* Performance Monitoring Guideline**

The draft Performance Monitoring Guideline (Attachment 2) includes information about types of performance measures, reporting requirements, and communication mediums (e.g. online as available, or in annual reports). It provides detailed information about the intent, methodology, source, and reporting timeline for each performance measure. In addition to providing this information for the 15 Key Summary Measures proposed to be included in *Metro 2040*, the Guideline lists and describes additional technical / detailed measures for each *Metro 2040* goal that Metro Vancouver will track and report on as data is available or useful.

The intent of the Guideline is to provide a resource to those using the performance monitoring data, including regional and municipal staff and researchers. The Guideline also provides an added level of transparency and accountability in performance monitoring to politicians and the public.

Process for Amending *Metro 2040* and Adopting the Performance Monitoring Guideline

In accordance with *Metro 2040* Section 6.3.4(h), the proposed amendment to performance measures is a Type 3 amendment requiring an amendment bylaw passed with a 50% + 1 weighted vote of the GVRD Board. In accordance with *Metro 2040* Section 6.4.2, if the GVRD Board resolves to proceed with the amendment process, it will notify all affected local governments and provide a minimum 30 day notice period for comments.

It is intended that the Performance Monitoring Guideline be adopted by the GVRD Board as an accompanying document, subject to approval of the proposed *Metro 2040* amendment. Adoption of the Guideline provides transparency to the performance monitoring program, and allows for updates to the broader performance monitoring program without triggering an amendment to *Metro 2040*.

Regional Planning Advisory Committee Review

Regional Growth Strategy Procedures Bylaw No. 1148 sets out provisions for the Regional Planning Advisory Committee (RPAC) to receive information about, and comment on, all proposed amendments to *Metro 2040*. At its November 18, 2016 meeting, RPAC reviewed the proposed amendment to Section G of *Metro 2040* and the draft *Metro Vancouver 2040: Shaping our Future* Performance Monitoring Guideline. The Committee was provided with two options for updating Section G of *Metro 2040* with the 15 Key Summary Measures. One option included more detailed measures, as provided in the attached draft bylaw, while a second option (recommended at the time) included more generalized measures, allowing for greater flexibility in monitoring.

RPAC discussed the importance of accountability and transparency in performance monitoring and supported updating Section G with the 15 Key Summary Measures provided there would continue to be GVRD Board review of any amendments to measures, whether through an amendment to *Metro 2040* or through changes to the Performance Guideline. Following the RPAC meeting, staff continued review of the two options and the Performance Monitoring Guideline and determined the more detailed option is preferred and better addresses RPAC concerns regarding accountability and transparency. The amendment as proposed provides more clarity within *Metro 2040* itself, and the Performance Monitoring Guideline further ensures accountability and transparency.

ALTERNATIVES

1. That the MVRD Board:
 - a) Initiate the *Metro Vancouver 2040: Shaping our Future* amendment process for a Type 3 amendment to Section G of the regional growth strategy;
 - b) Give first and second readings to "Greater Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1243, 2017"; and
 - c) Direct staff to notify affected local governments and appropriate agencies as per *Metro Vancouver 2040: Shaping our Future* Section 6.4.2.
2. That the MVRD Board receive for information the report dated January 10, 2017, titled "*Metro Vancouver 2040: Shaping our Future* Amendment to Section G Performance Measures".

FINANCIAL IMPLICATIONS

In accordance with *Metro 2040* Section 6.3.4(h), the proposed amendment to performance measures is a Type 3 amendment requiring an amendment bylaw passed with a 50% + 1 weighted vote of the GVRD Board. No regional public hearing is required; therefore, there are no associated costs with the proposed amendment.

Data acquisition and development for performance monitoring is a regular component of the annual Regional Planning budget. High quality performance monitoring requires regular maintenance of internal datasets and inventories, noted in long term budget planning.

SUMMARY / CONCLUSION

Following the development of three annual reports and a comprehensive review of *Metro 2040* Performance Measures, staff are proposing an update to the *Metro 2040* performance monitoring program. The update includes a proposed Type 3 amendment to *Metro 2040* to replace Section G, which currently includes 55 performance measures, with a new Section G which would include 15 Key Summary Measures.

Subject to approval of the proposed amendment to Section G, staff will advance an associated Performance Monitoring Guideline for Board consideration that, if adopted, would provide additional detailed / technical measures, as well as information about performance monitoring data sources, methodology, and intent. The Guideline also provides an added level of accountability and transparency.

Attachments (Orbit #20450535)

1. Greater Vancouver Regional District Regional Growth Strategy Amendment Bylaw No. 1243, 2017

GNCL-290

2. Draft *Metro Vancouver 2040: Shaping our Future* Performance Monitoring Guideline



City of Richmond

Report to Committee

To: Planning Committee **Date:** May 8, 2017
From: Joe Erceg, MCIP **File:** 08-4040-01/2017-Vol 1
General Manager, Planning and Development
Re: **Richmond Response: Port of Vancouver Proposed Industrial Designation of
1700 No.6 Road**

Staff Recommendation

1. That the staff recommendation in the report "Richmond Response: Port of Vancouver Proposed Industrial Designation of 1700 No. 6 Road", dated May 8, 2017 from the General Manager, Planning and Development, to advise the Port of Vancouver board that the City of Richmond supports the Port's proposed Industrial designation of 1700 No. 6 Road in the Port's Master Plan be endorsed; and
2. That the staff recommendation to request the Port of Vancouver Board to work with the City of Richmond to establish the future OCP proposed Knox Way extension , OCP Major Greenway and OCP Major Cycling Route be endorsed.

Joe Erceg, MCIP
General Manager, Planning and Development
(604-276-4083)

Att. 2

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

Staff Report

Origin

On April 3, 2017, the Port of Vancouver Board invited Richmond to comment, by June 2, 2017, on a proposal to redesignate its recently purchased 1700 No 6 Road site, in its Master Plan, from the City's Zoning Bylaw Light Industrial designation, to the Port's Master Plan Industrial designation.

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.

5.1. Advancement of City priorities through strong intergovernmental relationships.

Findings of Fact

1700 No. 6 Road Details

A company owned by the Port called "Port of Vancouver Holdings Ltd" recently purchased 1700 No 6 Road (3.43 ha / 8.48 ac).

The Port company's purchase is welcomed, as it helps the Port avoid developing Port uses on farmland.

Currently, the Metro Vancouver Regional Growth Strategy (RGS) designates the site Industrial, and the City's 2041 Official Community Plan (OCP) designates it Industrial and the Zoning Bylaw designates it Light Industrial.

The current use at 1700 No 6 Road is an industrial warehouse facility and the Port's consultation document indicates that the proposed use is the same.

Transportation Comments

Transportation staff advise that, the 2041 OCP proposes a "Proposed Minor Arterial Road" through the 1700 No. 6 Road property (Attachment 2). The OCP proposes that the vehicle access to/from the property should be provided via the future Knox Way and not No. 6 Road or River Road. The proposed extension of Knox Way is important, as it would provide access to all abutting industrial parcels between No. 6 Road and No. 7 Road, and would allow the City to reduce the amount of traffic, particularly industrial truck traffic, along River Road.

It is also noted that sections of River Road and No. 6 Road that abut the 1700 No. 6 Road site are identified as a planned OCP Major Greenway and an OCP Major Cycling Route. Staff advise that the Port should be asked to recognize the above OCP policies and assist the City in achieving them (e.g., as forward planning, or as part of any land use development on the 1700 No. 6 Road site).

Summary

Staff advise that, to protect the City's interests, the Port be asked to continue industrial uses on the 1700 No. 6 Road site and work with the City, to achieve the 2041 OCP Proposed Minor Arterial Road, OCP Major Greenway and OCP Major Cycling Route, to enhance vehicle, truck, cycling and pedestrian safety in the area.

Financial Impact

None.

Conclusion

The Port of Vancouver has invited the City of Richmond to comment by June 2, 2017, on a proposed Port Master plan amendment to designate 1700 No. 6 road from the City's Light Industrial Zone, to the Port's Master Plan Industrial designation. Staff advise that this proposal is acceptable as, it allows Port industrial uses to occur on urban industrial land and not on farmland. Staff also suggest that the Port work with the City to establish the future OCP proposed Knox Way extension, OCP Major Greenway and OCP Major Cycling Route, to enhance vehicle, truck, cycling and pedestrian safety in the area.



Terry Crowe, Manager,
Policy Planning
(604- 276-4139)

Att. 1: Port of Vancouver email inviting comments April 3, 2017

Att. 2: City Map: 2041 OCP Knox Way Road Extension, Major Greenway and Major Cycling Route

TTC:cas

Thanks
Terry Crowe, RPP, MCIP,
Manager, Policy Planning Department (PPD)
City of Richmond,
Richmond, BC V6Y 2C1
Office Tel: (604) 276-4139
Office Fax: (604) 276-4052
Office Cell: (788) 228-2433

From: Vancouver Fraser Port Authority [<mailto:landuseplan@portvancouver.com>]
Sent: Monday, 3 April 2017 17:02
To: Russell, Peter
Subject: Notice of Land Use Plan Amendments 2017

[Web Version](#) | [Update preferences](#) | [Unsubscribe](#)

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PORT of
vancouver

Notice of Land Use Plan Amendments

Over the past year, the Vancouver Fraser Port Authority has purchased several industrial properties to protect trade-enabling industrial lands, ensuring the availability of these lands for future port uses. These purchases include four properties across the Lower Mainland, including Delta, District of North Vancouver, Richmond and Surrey. **Public consultation will take place from April 3 to June 2, 2017 regarding these proposed amendments.**

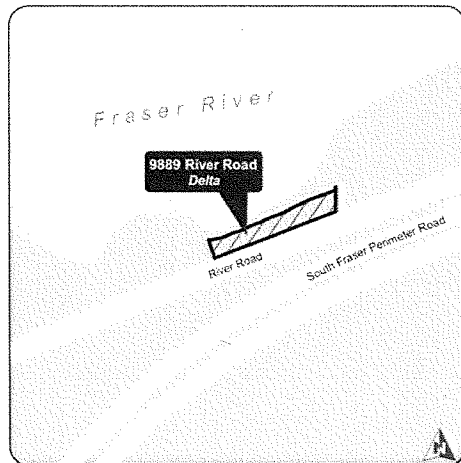
We now intend to include them in our Land Use Plan and redesignate the properties from their former municipal land use designations with a port authority land use designation. These include the following properties:

- 9889 River Road, Delta
- One consolidated parcel adjacent to the existing Lynnterm breakbulk terminal, District of North Vancouver
- 1700 No. 6 Road, Richmond
- 11715 Timberland Road, Surrey

Proposed Amendments

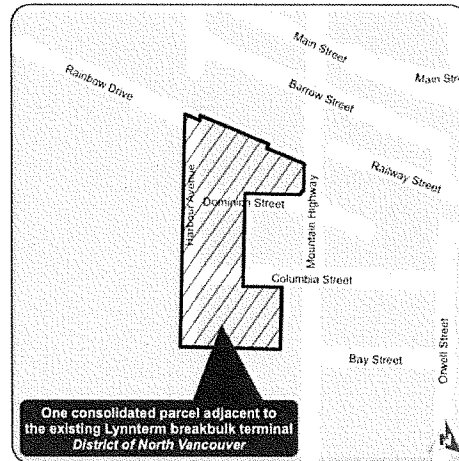
Delta

Proposed redesignation from "Industrial" to "Industrial"



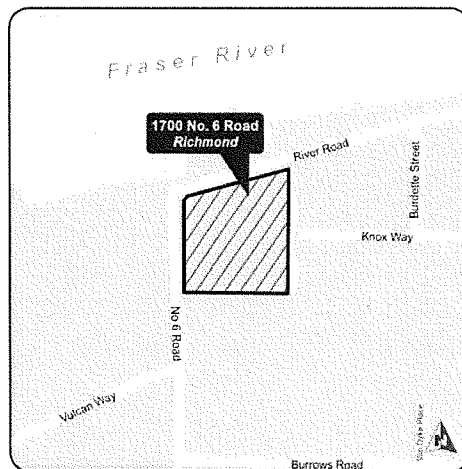
North Vancouver

Proposed redesignation from "Industrial" to "Port Terminal"



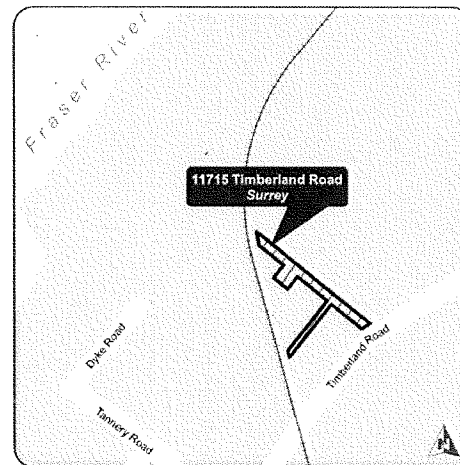
Richmond

Proposed redesignation from "Light Industrial" to "Industrial"



Surrey

Proposed redesignation from "Unzoned Road" to "Industrial"



Public Open Houses

We invite you to attend an open house and provide your feedback on the proposed amendments by Friday, June 2, 2017. All amendments will be shown at both open houses.

Delta | Thursday, April 20

4:00 p.m. – 7:00 p.m.

Port of Vancouver Delta Community Office

5525A Ladner Trunk Road

North Vancouver | Saturday, April 22

1:30 p.m. – 4:30 p.m.

John Braithwaite Community Centre, Anchor Room

145 West 1st Street

To learn more and fill out a feedback form, visit porttalk.ca/landuseplan. For more information,

email landuseplan@portvancouver.com or call 604.665.9092



About Our Land Use Plan

The Vancouver Fraser Port Authority is responsible for the stewardship of federal port lands in and around Vancouver, British Columbia. Our mandate is to facilitate Canada's trade objectives, ensuring goods are moved safely, while protecting the environment and considering local communities.

All Canadian port authorities are required to have a Land Use Plan, which is a high level policy document and framework to guide the development of a port authority's land and waters for the next 15 to 20 years. It is similar to a municipal official community plan and identifies the types of uses that are appropriate within different areas of the port authority's jurisdiction.


The Vancouver Fraser Port Authority's most recent Land Use Plan was adopted in 2014 and was developed in consultation with more than 1,000 people, representing municipalities, Aboriginal groups, government agencies, environmental organizations, businesses, industries and members of the public.

Read more about our approach to [land use planning](#).

This message is sent by the Vancouver Fraser Port Authority to keep subscribers up-to-date on events and activities. To stop receiving these emails click 'Unsubscribe' below at anytime. Please contact us if you have any questions or concerns.

[Edit your subscription](#) | [Unsubscribe](#)

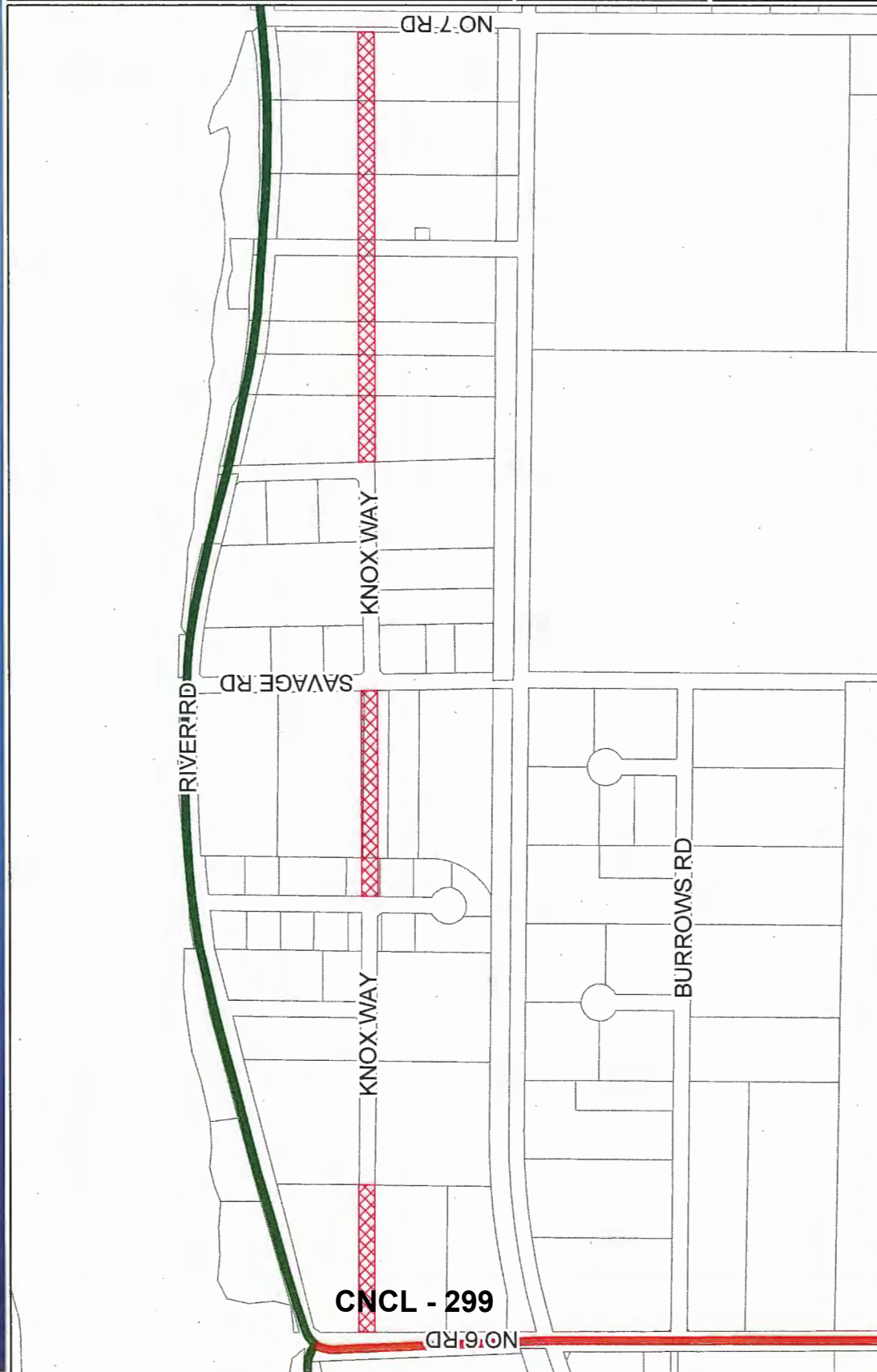
VANCOUVER FRASER
PORT AUTHORITY
100 The Pointe
999 Canada Place
Vancouver, B.C. V6C 3T4
Telephone: 604.665.9000

What is being amended?


Property Overview	Delta	North Vancouver	Richmond	Surrey
Properties	9889 River Road	One consolidated parcel adjacent to the existing Lynnterm breakbulk terminal, District of North Vancouver	1700 No. 6 Road	11715 Timberland Road
Site area	0.1 acres/ 0.04 ha	7.89 acres/3.19 ha	8.48 acres/3.43 ha	0.5 acres/ 0.2 ha
Current use	None, currently unoccupied.	Majority of the site is unoccupied. One industrial unit at 1440 Columbia Street is still operating.	Industrial warehouse facility.	Lumber distribution facility .
Future use	The property is currently vacant. Any proposed developments will be required to receive permits from the port authority and conform to the "Industrial" uses in the Land Use Plan.	The majority of the property is currently vacant. Any proposed developments will be required to receive permits from the port authority and conform to the "Port Terminal" designated use in the Land Use Plan.	Existing use, no change.	Existing use, no change.
Former municipal land use designation	Industrial	Employment Zone: Industrial	Light Industrial	Unzoned Road
*Proposed port authority Land Use Plan designation	Industrial	Port Terminal	Industrial	Industrial

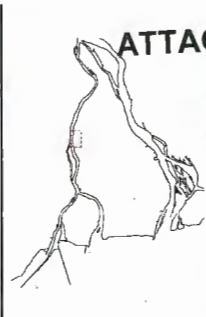
What are the properties currently being used for?

The properties in Delta, Richmond and Surrey are currently being used for existing industrial or commercial purposes. The properties in the District of North Vancouver are currently unoccupied, as the previous industrial businesses on those properties have vacated.



May 8, 2017
Prepared by Onkar Buttar

Note: The information shown on this map is compiled from various sources and the City makes no warranties, expressed or implied, as to the accuracy or completeness of the information. The City is not responsible for any damages or claims that may result from the use of this map. The City is not responsible for any damages or claims that may result from the use of this map. The City is not responsible for any damages or claims that may result from the use of this map.





City of Richmond

Report to Committee

To: Planning Committee **Date:** May 8, 2017
From: Joe Erceg, MCIP **File:** 08-4040-01/2017-Vol 1
General Manager, Planning and Development
Re: **Richmond Response: YVR Proposed Phase 2 North Runway End Safety Areas (RESA) Options**

Staff Recommendation

1. That the staff report titled "Richmond Response: YVR Proposed Phase 2 North Runway Safety End Areas (RESA) Options", dated May 8, 2017 from the General Manager, Planning and Development be received for information; and
2. That the staff recommendation to advise the Vancouver International Airport Authority (YVR) that the City of Richmond supports YVR's proposed Option 2 be endorsed.

Joe Erceg, MCIP
General Manager, Planning and Development
(604-276-4083)

Att. 3

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

Staff Report

Origin

On April 5, 2017, the Vancouver International Airport Authority (YVR) invited the City to comment on its proposed two Phase 2 Runway End Safety Areas (RESA) Options for the North Runway by May 23, 2017 (Attachment 1).

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.

5.1. Advancement of City priorities through strong intergovernmental relationships.

Findings of Fact

What are Runway End Safety Areas (RESAs)?

Transport Canada recommends that YVR (and other Canadian airports), construct runway end safety areas (RESA) which are a specialized surface, located at either end of a runway, designed to protect passengers, crew and the aircraft in the unlikely event of an aircraft undershoot or overrun of the runway. RESAs are intended to reduce the severity of aircraft damage, increase passenger safety and provide an area for better access for emergency response vehicles. In response, YVR is proactively providing RESAs for its three runways (north, south and crosswind). YVR is following best practices (e.g., the length of each RESA will be a minimum length of 300 m with widened shoulders)

YVR Phase 1 RESA Project

Phase 1 of the YVR's RESA Project involves YVR providing RESAs for the South and Crosswind runways which started in 2011. YVR is currently completing the construction of the third and final year of construction of Phase 1 of its RESA project. Phase 1 included the following considerations: have low noise impacts both during and after construction, no impact on the foreshore and maintain existing runway lengths (i.e., no extension of the takeoff and landing distances). Phase 1 generated few problems (e.g., YVR addressed a few Burkeville noise and dust complaints). For information, Attachment 2 contains the September 23, 2014 memo to Council regarding Phase 1.

YVR Phase 2 RESA Project

As Phase 1 nears completion, YVR is planning for Phase 2 which will add RESAs to the North Runway by identifying two RESA options, as shown on page 7 of YVR's Runway End Safety Area (RESA) - Phase 2 - North Runway Discussion Guide (Attachment 3).

Summary of Phase 2 North Runway RESA Options

- Option 1: Proposes RESAs: for both ends (e.g., 300m x 120m) and involves:
 - No perceptible increase in noise,
 - No change when landing from the east, (due to the Arthur Laing Bridge and Casino),
 - However, as the runway departures to the west would have 150m less length, the new airplane takeoff threshold point would move eastward, to accommodate the RESA within the westerly dyke,
 - This Option negatively affects flights heading north (e.g., Asia Pacific) which may only accommodate smaller planes – and one reason why YVR favours Option 2.
- Option 2: Proposes RESAs: West end 300m x 120m, same as Option 1, but a longer East at 450m x 120m and involves:
 - No perceptible increase in noise,
 - Maintains existing runway performance,
 - Enables YVR to have 20% more capacity, as it allows a mix of arrivals and departures on the same runway,
 - Reflects public YVR 2037 Master Plan feedback, as people said that they wanted more growth (e.g., in flights), by using the existing runway capacity, and
 - Provides more options for a possible future runway extension.

Summary

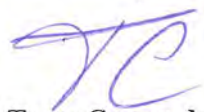
Staff advise that Option 2 is preferred, as it does not generate a perceptible increase in noise, enables YVR to have 20% more capacity and respects the public's request for more growth (e.g., in flights), while using the existing runway capacity,

Financial Impact

None.

Conclusion

On April 5, 2017, the Vancouver International Airport Authority (YVR) invited the City to comment on its proposed two Phase 2 Runway End Safety Areas (RESAs) Options for the North Runway by May 23, 2017. Staff advise that Option 2 is preferred as it has more benefits.



Terry Crowe, Manager,
Policy Planning
(604-276-4139)

Att. 1: YVR North Runway RESA Consultation

Att. 2: Council Memo Update: YVR Runway End Safety Areas (RESAs) September 30, 2014

Att. 3: YVR Runway End safety Area (RESA) - Phase 2 - North Runway Discussion Guide



As a key member of the community, we invite you to participate in a stakeholder meeting for Phase 2 of Vancouver International Airport's (YVR) Runway End Safety Area (RESA) project.

A RESA is a specialized surface, located at either end of a runway, designed to protect passengers, crew and the aircraft in the unlikely event of an aircraft undershoot or overrun of the runway. RESAs are required to improve safety. As an airport committed to excellence in safety, YVR is continuing to build RESAs which exceed the pending Canadian standard. RESA construction will be completed by 2020, in advance of the anticipated deadline for RESA implementation in Canada.

YVR is currently undertaking the third and final year of construction of Phase 1 of its RESA project, which includes building RESAs on the South and Crosswind Runways. YVR met with community members in the fall of 2014 about Phase 1.

As Phase 1 nears completion, we are now planning for Phase 2 of the RESA project which will add RESAs to the North Runway. We have developed several options for adding RESAs to our North Runway, and will be consulting with our stakeholders and community for their input on these options.

The purpose of the stakeholder meeting is to:

- Present options for the North Runway RESAs, including our preferred option
- Listen to and discuss your questions and feedback
- Get your input on RESA construction
- Discuss how you would like to be informed during Phase 2 construction
- Receive your questions and input on options for RESAs on the North Runway
- Keep you informed about major projects planned at YVR

Due to space limitations, meetings are by invitation only. Please let us know if someone else in your organization should attend or if you have colleagues who may be interested. Details for the meetings are as follows:

Date: Tuesday, April 11, 2017

Time: 9:30 to 10:30 a.m. or 3:30 to 4:30 p.m.

Location: Vancouver Airport Authority – Sea to Sky Room

Address: Vancouver International Airport, Domestic Terminal Building, Level 4

Please RSVP by Monday, April 10, 2017 to Andrea Pham at community_relations@yvr.ca or 604-276-6772.

Additionally, we will be holding a public open house on Monday, April 24, 2017, from 5:00 to 7:00 p.m. in the Graham Clarke Atrium at Vancouver International Airport, Link Building, Level 3. We will also be hosting an information booth at our Annual Public Meeting in YVR's East Concourse on May 11, 2017 at 3:00 p.m.

Thank you for your consideration. We look forward to your participation.

Sincerely,

The North Runway RESA Project Team

CNCL - 303



City of Richmond

Memorandum Planning and Development Department Transportation

To: Mayor and Councillors
From: Victor Wei, P. Eng.
Director, Transportation
Terry Crowe
Manager, Policy Planning
Date: September 30, 2014
File: 01-0153-01/2014-Vol 01
Re: **Update: YVR Runway End Safety Areas (RESAs)**

The purpose of this memorandum is to provide an update regarding YVR's upcoming Runway End Safety Area (RESA) initiative.

On September 23, 2014, YVR staff and consultants met with cross-divisional City staff to provide information and an update regarding YVR's planned Runway End Safety Area (RESA) construction project. Departments attending included: Transportation, Policy Planning, Emergency Programs, Engineering, and Sustainability. The RESA project is one of YVR's initiatives outlined in its 20-year Master Plan (*YVR: Your Airport 2027*), which was approved by Transport Canada in 2008.

RESA is a pending requirement from Transport Canada that would require an additional area at each end of a runway to enhance aircraft and passenger safety. These areas would reduce the severity of damage to an aircraft should one overrun or undershoot during landing thereby increasing passenger safety, as well as providing an area for better access for emergency response vehicles. There is no change to the operational length of the runway. In anticipation of the enactment of the Canadian standard within the next few years, YVR is proactively planning to construct RESAs for its three runways (north, south and crosswind) that will meet existing international safety recommendations. Following these best practices, the length of each RESA (300 m with widened shoulders) will exceed the anticipated Canadian standard of 150 m.

Option analysis for the south and crosswind runways began in 2011; construction will occur on these runways first due to relatively simpler operational, environmental and financial factors. Potential options were evaluated based on the following criteria: water and land impacts, land use, cost, construction, operational efficiency, and noise. The preferred options do not impact the foreshore, maintain existing runway lengths (i.e., there is no extension of the takeoff and landing distances) and have low noise impacts both during and after construction (see Attachment 1).

Modelling results by YVR indicate that there may be a negligible increase in noise levels for some areas of Burkeville, as a limited number of larger aircraft taking off to the west may begin their takeoff roll where the new pavement will be added for the RESA at the eastern end of the south runway, which would bring those aircraft approximately 200 m closer to the Burkeville area. The estimated increase in noise level is three decibels, which is imperceptible to humans, and operational procedures such as the use of reduced thrust will help mitigate noise exposure. This increased noise level would still be lower than what Burkeville residents currently experience for takeoffs to the east; these latter noise levels will

not change. On-going noise impacts will be monitored via YVR's network of Noise Monitoring Terminals throughout the community.

The preferred options being presented for consultation with stakeholder and the general public have already been presented to YVR's Environmental Advisory and Noise Management Committees and have been endorsed by YVR's Board of Directors. Stakeholder consultation commenced in early September 2014. Table 1 summarizes the schedule and identifies the participation or invitation of any City-related committees and organizations. A public information session will be held on September 30, 2014, from 4:00 pm to 8:00 pm, at the River Rock Resort & Hotel, Whistler "C" Ballroom (3rd Floor, East Tower, hotel side), 8811 River Road, Richmond, which staff will attend. Notices of this meeting have been placed in the Vancouver Sun, as well as local newspapers. Information is also posted on YVR's website (<http://www.yvr.ca/en/business-at-yvr/construction/projects.aspx>) including a Discussion Guide and on-line survey, which closes on October 31, 2014. A consultation summary report will be prepared and posted on YVR's website. YVR staff have offered to appear before Council to discuss the results of the survey findings. Staff will co-ordinate this meeting at a mutually convenient time.

Table 1: Schedule of RESA Public Consultation Activities		
Date	Group	Attended/Invited
September 9	Agricultural-Goods Movement	<ul style="list-style-type: none"> Richmond Agricultural Advisory Committee: staff liaison attended Richmond Farmers' Institute: invited
September 18	Environmental Organizations	<ul style="list-style-type: none"> Garden City Conservation Society: member attended Richmond Advisory Committee on the Environment: 2 members attended
September 23	City of Richmond	<ul style="list-style-type: none"> Staff from Transportation, Policy Planning, Emergency Programs, Engineering, and Sustainability
September 25	Community Organizations	<ul style="list-style-type: none"> East Richmond Community Association Hamilton Community Association Sea Island Community Association Steveston Community Society Thompson Community Association West Richmond Community Association South Arm Community Association City Centre Community Association
September 30	Business-Tourism-Recreation	<ul style="list-style-type: none"> Tourism Richmond Richmond Economic Advisory Committee Richmond Nature Park Richmond Chamber of Commerce Steveston 20/20 Steveston Merchants Association
September 30	General Public	<ul style="list-style-type: none"> General public Staff will attend

Construction is scheduled to occur during the summer months commencing in 2015 for both ends of the crosswind runway and the west end of the south runway. The east end of the south runway will require preload from Winter 2015 to Spring 2016, with construction occurring in Summer 2016 and 2017. Staff will continue to work with YVR to manage the construction impacts on the surrounding community.

Planning for RESAs on the north runway is currently in the early stages and consultation with the public and stakeholders will occur when more information is available.

Please contact either of us, if you have any questions or would like further information.

Victor Wei, P. Eng.
Director, Transportation

Terry Crowe, RPP, MCIP
Manager, Policy Planning

September 30, 2014

- 3 -

Att. 1




VW:dc

pc: SMT

Brendan McEwen, Manager, Sustainability
John Irving, Director, Engineering
Lloyd Bie, Manager, Engineering Planning

Tim Wilkinson, Deputy Fire Chief
Deborah Procter, Manager, Emergency Programs
Ted Townsend, Senior Manager, Corporate
Communications



-  RESA = 300 m in length by 120 m in width
-  South Runway = 3,500 m in length
-  Crosswind Runway = 2,200 in length



Beyond, Every Day.

Runway End Safety Area (RESA) – Phase 2 – North Runway

DISCUSSION GUIDE



CNCL - 308



YVR's RESA Consultation

ABOUT YVR

Vancouver International Airport (YVR) is Canada's second busiest airport. It is managed by Vancouver Airport Authority, a community-based, not-for-profit organization. YVR is a key hub between Asia and the Americas, connecting people and businesses to more than 120 non-stop destinations worldwide.

In 2016, YVR served a record 22.3 million passengers – a number that continues to grow, and accommodated over 319,000 aircraft movements including float planes and helicopters. More than 23,000 people work at YVR, an important economic contributor that generates \$5.3 billion in total gross domestic product and \$11.7 billion in total economic output into the Canadian economy annually.

In 2016, YVR received CAPA Centre for Aviation's prestigious Airport of the Year Award and in 2017 was voted Best Airport in North America for the eighth consecutive year in the Skytrax World Airport Awards: a global benchmark of airport excellence.

RUNWAY FACTS

→ YVR has three runways:

- South Runway
(3,505 metres long)
- Crosswind Runway
(2,225 metres long)
- North Runway
(3,030 metres long)

→ YVR also considers the Fraser River as a runway. It supports float plane activities as part of YVR's south-side operations.



YVR's RESA Consultation

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Being a Good Neighbour	9



YVR's RESA Consultation

WHY RESAs?

WHAT ARE RESAs?

RESA stands for Runway End Safety Area. It is a specialized area at the end of a runway designed to protect aircraft from damage in the unlikely event of an undershoot or overrun which in turn protects passengers and crew from injury and the aircraft from extensive damage. RESAs are designed to support the weight of aircraft without risk of major structural damage to the aircraft. RESAs also provide more ease of access for emergency-response vehicles. A RESA does not extend the runway length for aircraft arriving and departing. It is similar to a shoulder on a highway, which provides additional safety to motorists.

WHY BUILD RESAs?

Excellence in safety is at the core of all decisions made at YVR. YVR is proactively adding RESAs to all its runways to meet the international standard of 300 metres, which is anticipated to exceed the pending Canadian standard.

An undershoot occurs when a landing aircraft touches down before reaching the runway.

An overrun occurs when an aircraft travels beyond the end of the runway during take off or landing.

YVR's RESA Consultation

CONSULTATION PROCESS

In 2014, YVR consulted with the public and key stakeholders on Phase 1 of the RESA project, which included the design and construction of 300 metre RESAs on both ends of the South and Crosswind Runways. Construction on the South Runway RESAs began in the summer of 2015 and will be completed by the end of 2017.

As Phase 1 of the RESA project nears completion, we are now planning for Phase 2 of the RESA project as we add RESAs to the North Runway. We want to share with you the details of this project and collect public input.

HOW TO PARTICIPATE

We recognize the value and importance of our stakeholders and community to provide input on major projects prior to construction. There are multiple ways the public can provide input on the construction of Runway End Safety Areas on YVR's North Runway. The consultation period runs from April 10 to May 23, 2017. Here's how you can participate:

- Open House – A drop-in style, informal meeting accessible to all members of the community. The Open House is scheduled to take place on April 24, 2017.
- Stakeholder Meetings – Specific stakeholder groups will be invited for facilitated discussions. Groups include the Environmental Advisory Committee, Airline Consultative Committee, Aeronautical Noise Management Committee and local government and its representatives.
- Feedback Form – The community is encouraged to complete the feedback form, available online at yvr.ca/resa or in person at one of our consultation events.
- Email – Stakeholders and community members are encouraged to email questions to community_relations@yvr.ca, and a member of the RESA team will answer your questions.

JOIN OUR OPEN HOUSE!

April 24, 2017

5:00 p.m. – 7:00 p.m.

Graham Clarke Atrium

Level 3, Domestic Terminal Building

Vancouver International Airport



YVR's RESA Consultation

RESA PHASE 2

PROJECT DETAILS

In 2016, YVR began looking at options to build Runway End Safety Areas on the North Runway. YVR is now consulting on selected options to accommodate RESAs on the North Runway. This multi-year project will see RESA Phase 2 construction take place each summer from 2018 to 2020.

Although there is limited land on both ends of the North Runway, we have eliminated options that do not allow for 300 metre RESAs. The North Runway is used by our largest aircraft and we are committed to our role as an international hub with an unwavering commitment to safety.

In Phase 1 of our RESA project, the community asked that we address long-term noise and air quality impacts for nearby residential areas as well as impacts to the foreshore and migratory birds. They also expressed concerns about building RESAs or a runway extension through our dyke system because of potential impacts to the foreshore. We used this feedback to inform early decision-making in the Phase 2 RESA planning.

FAST FACTS

- North Runway RESA option development began in 2016
- A variety of options were considered in 300m lengths
- A multi-departmental team evaluated RESA options and reached a consensus recommendation on preferred options
- The preferred options were presented to YVR's Environmental Advisory, Airline Consultative and Aeronautical Noise Management Committees.



In addition to our Phase 1 RESA consultation, in the fall of 2016 we were consulting with our communities about YVR's 2037 Master Plan Phase 2. Feedback from the community showed support for YVR to building infrastructure incrementally when needed to enhance safety and support our growth.

As part of early design work on Phase 2, we applied the community feedback and identified and analyzed several possible RESA options. We explored options that included a runway extension to the west through the dyke into the foreshore but we decided this was not an option for further consideration based on cost, current demand and community input during Phase 1.

We also explored the option to include a runway extension at the east end of the North Runway. In addition to examining options for RESAs on the North Runway, the assessment of aircraft performance included determining the benefits of whether we should extend the North Runway as part of the RESA project.

The current length of the North Runway is 3,030 metres compared to the South Runway which is 3,505 metres. Adding more length to the North Runway increases efficiency, allows for more flexibility in the use of the runway system and in turn supports sustainability goals to reduce aircraft GHG emissions. We do not recommend this extension, but will revisit this in the future if and when we see the need for longer runway length.

The final options for the North Runway best maintain YVR's strong operational, financial and environmental performance.



YVR's RESA Consultation

NORTH RUNWAY RESA OPTIONS

YVR used the following criteria to comprehensively evaluate RESA options for the North Runway. The criteria used to evaluate the options include:

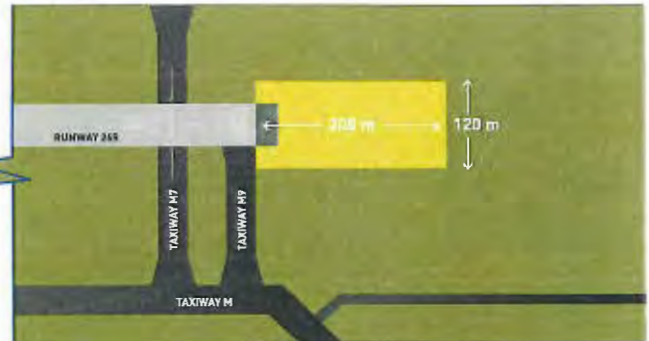
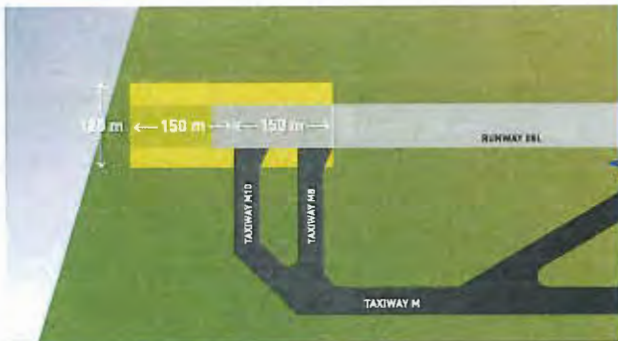
- Safety
- Sustainability
 - Land use
 - Emissions
 - Noise
 - Community Impact
- Cost
 - Construction
 - Operations
- Operational efficiency
- Runway performance



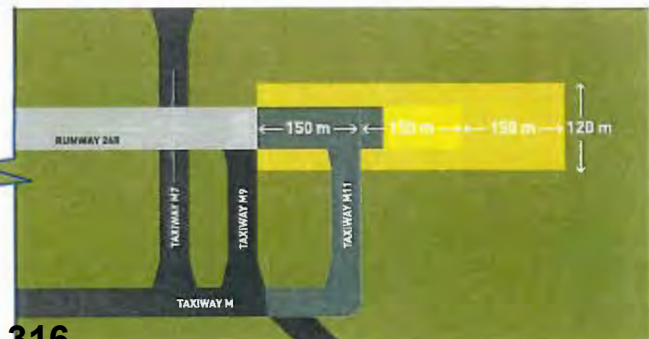
West End RESA

East End RESA

OPTION 1



OPTION 2



PREFERRED OPTION

Based on the evaluation criteria, YVR recommends Option 2 because it helps ensure we maintain runway performance for our airline partners while planning for potential future needs. This option also takes into account community and stakeholder consultation feedback from Phase 1.

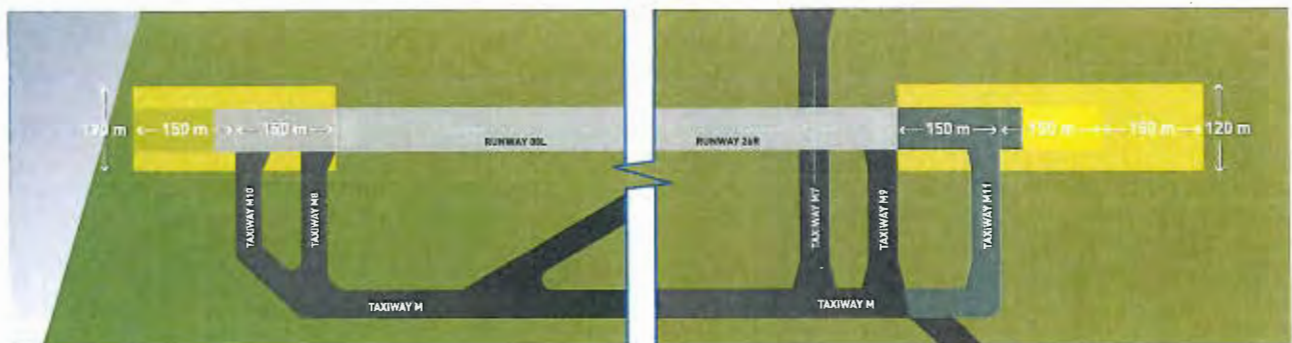
YVR recommends Option 2 for the following reasons:

- Option 2 results in no perceptible changes to noise.
- Operating and maintenance costs of Option 2 would likely be similar to today.
- Option 2 results in runway capacity similar to today.
- Option 2 provides YVR options for a future runway extension
- The existing Take-off Run Available (TORA) on Runway 08L and on 26R is maintained at 3,030 m.

TAKE-OFF RUN AVAILABLE

- The length of runway declared available and suitable for the ground run of an airplane taking off.

LEADING OPTION - OPTION 2





YVR's RESA Consultation

BEING A GOOD NEIGHBOUR

NOISE CONCERNS?

→ Email: noise@yvr.ca

→ Phone: 604.207.7077

CONSTRUCTION AND NOISE IMPACTS

YVR's commitment to its neighbouring communities includes managing airport noise to balance the community's need for safe, convenient 24-hour air travel with enjoyable urban living.

Building RESAs on the North Runway is a multi-year project. As the North Runway is typically closed in the evenings, there will be little to no change to normal runway usage at night and construction noise levels will also be minimal and is not anticipated to be significantly perceptible to local area residents.

ENVIRONMENT

YVR strives to address all environmental and social impacts associated with airport development.

Environmental factors were considered during the initial evaluation of RESA options. Options with significant environmental impacts to sensitive aquatic habitats were eliminated.

All of the options are located entirely on airport property and no sensitive environmental features or habitat will be affected by any of the proposed options. A detailed environmental review of the selected option will be conducted and will address a variety of components including:

- Soil quality
- Surface water
- Vegetation
- Fish and wildlife
- Air quality
- Noise
- Traffic
- Archaeological resources



YVR's RESA Consultation

STAY INFORMED

YVR is committed to providing accurate and timely information. Please let us know how best to keep you informed about the North Runway RESA construction. Your input is a valuable part of our process.

KEEP IN TOUCH

We encourage you to get involved and ask questions.

→ Phone: 604 276 6772

→ Email:
community_relations@yvr.ca

→ Website: yvr.ca/resa



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Beyond, Every Day.



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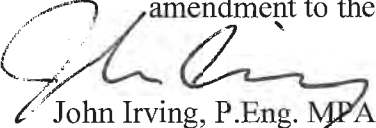
City of Richmond

Report to Committee



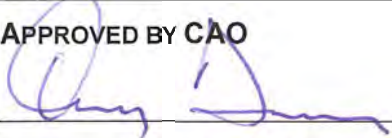
To: Public Works and Transportation Committee **Date:** April 11, 2017
From: John Irving, P.Eng. MPA **File:** 10-6125-07-02/2016-Vol 01
Director, Engineering
Re: **BC Energy Step Code for New Private Buildings**

Staff Recommendations

1. That the stakeholder consultation program in the report titled "BC Energy Step Code for New Private Buildings" dated April 11, 2017, from the Director, Engineering, be endorsed for the purpose of gaining feedback on how the Energy Step Code can be implemented in Richmond;
2. That the air barrier installation training program identified in the report titled "BC Energy Step Code for New Private Buildings" dated April 11, 2017, from the Director, Engineering, be approved with \$60,350 funding from the Carbon Tax Provision;
3. That the funding for the air barrier installation training program be included as an amendment to the 5 Year Financial Plan (2017-2021).


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

Att. 2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Law	<input checked="" type="checkbox"/>	
Building Approvals	<input checked="" type="checkbox"/>	
Development Applications	<input checked="" type="checkbox"/>	
Policy Planning	<input checked="" type="checkbox"/>	
Finance	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO 

Staff Report

Origin

In June 2016, Planning Committee received a report entitled “Energy Policies for New Private Buildings Update,” dated May 12, 2016, noting staff’s participation in the Energy Efficiency Working Group at the invitation of the Province, with regard to the development of what was then termed a “Stretch Code.” The report noted that once outcomes of this process were defined staff would bring forward a report to Council for consideration regarding a High Performance Policy for New Private Buildings for the purposes of stakeholder consultation.

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

Community Energy & Emissions

In 2010, Council adopted targets in Richmond’s Official Community Plan to reduce community-wide greenhouse gas (GHG) emissions 33% below 2007 levels by 2020, and 80% below 2007 levels by 2050. The 2041 Official Community Plan also includes a target to reduce energy use 10% by 2020 below 2007 levels. Richmond’s 2014 Community Energy and Emissions Plan (CEEP) outlines an array of strategies and actions for the City to take to reduce community energy use and GHG emissions, including:

Strategy 2: Increase Energy Efficiency in New Developments

- **Action 4:** Promote energy efficiency in all rezoning.
- **Action 5:** Develop incentives for new development to exceed the building code energy requirements.

Modeling undertaken as part of the CEEP indicates that in order for Richmond to meet its emissions targets, all new buildings will need to be constructed to achieve zero carbon emissions by 2025. Thus, pursuing Carbon Zero Buildings is one of the “Big Breakthroughs” called for in the CEEP.

Current Energy-Related Requirements in Private Developments

A variety of existing City policies support energy performance in new developments, including:

- The “Sustainability Package” in the City Centre Area Plan
 - Leadership in Energy and Environmental Design (LEED™) Silver in City Centre – The 2009 City Centre Area Plan includes a policy that new developments over 2000m² undergoing rezoning achieve a minimum of LEED™ Silver performance.
 - District Energy Ready – New mixed use and residential developments located in areas of the City Centre where district energy systems may be established are expected to be developed with mechanical system that can connect into these systems. This requirement allows for provision of heating, cooling and domestic hot water energy to developments using low-carbon sources.
- Townhouse Energy Efficiency and Renewable Energy policy – Section 12.4, Objective 2 of the OCP sets out energy efficiency and renewable energy considerations for new townhouse developments resulting from rezoning applications. This policy was implemented in summer 2014, and was revised in fall 2015. As of January 19, 2017, 558 townhouse units had been approved under this policy, with Building Permits issued for 348 of these units and a number of townhouse projects fully constructed. The policy sets out a choice of four options that each townhouse unit must achieve for compliance:
 - Connect to a district energy utility (e.g. Alexandra District Energy Utility [ADEU] or Oval Village District Energy Utility [OVDEU]); or
 - Achieve an Energuide 82 energy performance rating (i.e. approximately 15% better than minimum BC Building Code performance); or
 - Achieve the requirements of the Energy Star for New Homes standard (i.e. approximately 22% better than minimum BC Building Code performance); or
 - Achieve the majority (at least 51%) of heating, cooling and/or electrical energy load requirements with on-site renewable energy systems (e.g. solar water heating, photovoltaic energy, geo-exchange).

There are currently no energy related requirements or policies applicable to large “Part 3” developments (e.g. buildings that are 4 or more stories or with a building footprint greater than 600 m²) outside of the City Centre Area Plan. Likewise, there are no energy requirements or policies applicable to detached houses or other small “Part 9” buildings (e.g. buildings of less than four stories and building footprints of less than 600 m²).

The Building Act

In 2015, the provincial government enacted the *Building Act* for the intended purpose of standardizing building regulations and their implementation throughout British Columbia. Section 5 of the Act stipulates that as of December 2017, local government building requirements enacted by means of bylaw will have no effect to the extent that they relate to provincial building regulations such as the BC Building Code. Provincial staff also stated that the

Building Act will not impact local government policies, nor negotiated agreements at time of rezoning secured by legal agreement. Thus, policies that apply to rezoning may be unaffected by the *Building Act*.

Climate Leadership Plan

In September 2015, Council directed that the City send a letter to the Province, outlining important elements that should be included in the Climate Leadership Plan, including action to reduce GHG emissions from buildings. In November 2015, Council directed that the City be a signatory to the “Call for Action on Energy and Climate in the Building Sector”, an initiative of the Pembina Institute, Urban Development Institute Pacific Region, and the Royal Architectural Institute of Canada, calling on the Province to establish a roadmap to achieve net zero energy ready new buildings in BC as part of the Climate Leadership Plan.

In the summer of 2016, the Province released the Climate Leadership Plan. While the Plan did not identify measures sufficient to achieve the Province’s 2020 and 2050 emission reduction targets, it did include important actions pertaining to the building sector, committing the Province to:

- Accelerating increased energy requirements in the BC Building Code by taking incremental steps to make buildings “net zero ready” by 2032.
- Developing the “BC Energy Step Code”, consisting of energy efficiency requirements for new buildings that go beyond those in the BC Building Code that interested local governments could implement in their communities.

Analysis

Issues with Current Energy Requirements for New Developments

Richmond has shown leadership by requiring beyond-code energy and green building performance of new construction. However, further City action is necessary for Richmond’s community GHG and energy reduction targets to be achieved. Currently, not all building types are subject to beyond-code energy performance policy, as only developments in the City Centre greater than 2000 m² and townhouse rezonings are asked to commit to beyond-code energy requirements. The CEEP makes clear that better energy performance is needed of all new developments.

Achieving the City’s goals requires higher performance than what is currently specified in City policy. The minimum energy performance requirements of the BC Building Code have advanced over time to the point where they are almost equivalent to LEED Silver for new large (“Part 3”) buildings. Referencing the BC Energy Step Code (described below) is expected to better achieve the City’s energy and emissions goals than LEED’s means of measuring energy performance.¹

¹ The City’s Sustainable “High Performance” Buildings Policy – City Owned Facilities (Council Policy 2307) requires that City owned facilities achieve LEED Gold certification including at least 10 energy performance credits. This is a higher level of performance than achieved with the minimum LEED pre-requisites and results in improved

The BC Energy Step Code

In response to concerns by local governments that the *Building Act* would prevent local governments from implementing GHG emission reduction measures in the building sector, the Province convened the “Stretch Code Implementation Working Group” (SCIWG) in the spring of 2016 to develop a consistent standard for energy efficiency performance that local governments could reference in requirements and policies, termed the BC Energy Step Code. A variety of stakeholders were represented in the SCIWG, including the Urban Development Institute, Canadian Home Builders Association, Greater Vancouver Home Builders Association, BC Hydro, FortisBC, Architectural Institute of BC, the Association of Professional Engineers and Geoscientists of BC, BC Housing, the Local Government Management Association, and other local governments. City of Richmond staff participated on the SCIWG. In November 2016, the Province released the consensus recommendations of the SCIWG.

On April 11, 2017, the Province announced its adoption of the BC Energy Step Code as a technical regulation. The BC Energy Step Code is a voluntary compliance path within the BC Building Code. It establishes progressive performance targets (or steps) that support market transformation from the current energy-efficiency requirements in the BC Building Code to net zero energy ready buildings by 2032. The Province also updated the *Building Act* General Regulation’s unrestricted matters list, allowing local governments to require the Energy Step Code in bylaw and/or reference it in policies and voluntary programs. The Province published a “Provincial Policy: Local Government Implementation of the BC Energy Step Code” document, outlining expectations for local governments’ application of the Energy Step Code consistent with the recommendations of the SCIWG. The SCIWG has now been renamed the “Energy Step Code Council,” and will continue to advise the provincial government on the further development of, and revisions to, the Energy Step Code going forward. A City staff person is on the Energy Step Code Council.

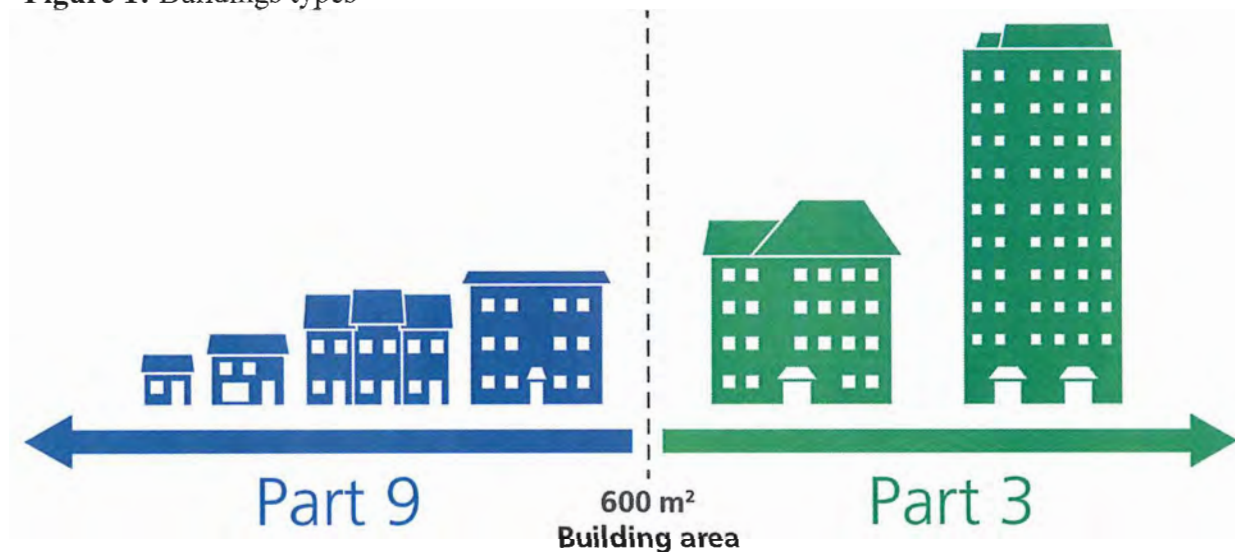
The BC Energy Step Code aims to provide consistency across BC by setting out a single set of building standards that can be voluntarily adopted by local governments. The BC Energy Step Code empowers local governments to take the lead in advancing building energy efficiency standards above and beyond the minimum requirements of the BC Building Code, as suitable for local development conditions. The BC Energy Step Code also reflects the consensus of stakeholders on the SCIWG on the need to shift away from extensive prescriptive regulations towards a target-based approach when setting energy-efficiency targets, as practiced in Europe.

The Energy Step Code consists of two broad sets of energy standards that respectively cover large “Part 3” buildings, and smaller “Part 9” residential buildings, as represented in Figure 1. Attachments 1 and 2 to this report respectively provide additional information on the technical requirements of the Energy Step Code for “Part 3” and “Part 9” buildings. Broadly, there are five steps for “Part 9”, four for “Part 3” residential buildings, and three for “Part 3” commercial and institutional.

environmental outcomes. Staff are evaluating the impact of other green building standards, including the Energy Step Code, on City owned facilities, as compares to the City’s current LEED policy.

Taken together, the “Steps” of the Energy Step Code form a framework by which the construction industry, over time, can incrementally “step up” to constructing new buildings at the near-net zero energy performance level that must be achieved if local, provincial and national GHG reduction targets are to be met. In this respect, the Energy Step Code represents a “Big Breakthrough” that can help enable the City, over time, to achieve the emissions reductions the CEEP identifies as necessary within the new building sector to achieve the City's climate action goals.

Figure 1: Buildings types



The table below summarizes how Richmond’s currently policies approximately align with the Energy Step Code.

	Current City Policy	Approximate Energy Step Code Performance Level
Part 9 Townhomes	Energuide 82, Energy Star, district energy, or 51% onsite renewables	~Step 2-3
Part 9 Other	B.C. Building Code	~Step 1
Part 3 (City Centre)²	LEED Silver equivalent	~Step 1-2
Part 3 (Outside City Centre)	B.C. Building Code	~Step 1

² Greater than 2000m²

How the Energy Step Code can be Used by Local Governments

Recognizing that builders, designers and trades will need to build capacity to construct higher performance buildings, the SCIWG's recommendations and subsequent provincial policy stress that during the early 2017-2020 phase of Energy Step Codes' implementation, local governments cite lower steps when setting bylaw requirements pertaining to all new construction in the community (Steps 1 through 3 for "Part 9" buildings; Steps 1 and 2 for most "Part 3" buildings, with Step 3 potentially also comprising a lower step for multifamily buildings 6 stories and less). The SCIWG recommended that a local government only make reference to higher steps if significant incentives are being offered; however, the City does not offer such incentives for energy performance. In later years, higher levels of performance could be referenced as requirements.

In addition to the type of development process and the level of incentives (broadly defined) available for new development, other aspects for consideration when considering options for implementing the Step Code requirements would include the following:

- **Building type:** Requirements for some Part 9 residential building types (e.g. townhouses) could differ from others. It should also be noted that the Part 9 Step Code has been developed with residential – rather than commercial and industrial – buildings in mind.
- **Size of houses:** Very small houses typically have lower heat retention, but higher occupancy rates per square meter. Conversely, very large homes may have low occupancy rates per square metre, resulting in higher per capita energy use.

The stated expectation of the SCIWG, echoed in the text of the Province's Climate Action Plan, is that as the construction industry familiarizes itself with new energy efficient building designs, methods, materials and technologies, local governments could gradually escalate requirements for new development under the Energy Step Code. Likewise, the BC Building Code will incorporate Steps in the Energy Step Code.

Opportunities to Limit GHGs

In addition to the Energy Step Code, specifying GHG emissions performance targets may support the City's climate objectives. The Energy Step Code encourages energy efficient buildings. Setting GHG targets would also encourage low-carbon energy sources, including renewable energy technologies such as air-source heat pumps or solar, in addition to energy efficiency. This GHG intensity metric is not included in the Energy Step Code. However, the City of Vancouver has adopted this metric as part of their "Zero Emissions Building Plan". The City of Richmond could reference this metric as a consideration of rezoning, which is not anticipated to be restricted by the *Building Act*. However, when applying the Energy Step Code as a requirement in bylaw, GHG intensity cannot be included.

Costs and Benefits

Some analysis has already been completed to develop a better understanding of the cost implications of different Energy Step Code performance levels for new Part 3 development. BC Housing is currently engaged in a detailed study of the costs associated with the Energy Step Code for both Part 3 and Part 9 construction. The results of the BC Housing study are expected in late spring 2017, and staff will use this information in local consultations with stakeholders and in developing recommendations regarding potential Energy Step Code policy regimes, pending Council's support for the recommendations in this report.

Available cost information for both Part 3 and Part 9 buildings is summarized below.

Part 3 Building costs

The City undertook a study to estimate costs associated with the different performance steps. The analysis estimates the cost of construction to the Step Code and GHG intensity targets for different Richmond building archetypes constructed to BC Building Code levels of performance and "district energy ready". The City's study assumed more stringent requirements than what are currently referenced in the BC Energy Step Code regulation; this regulation may be updated, informed by findings from the BC Housing research noted above. Thus, this analysis may over-estimate the costs of achieving different tiers of the Energy Step Code, unless the provincial regulation is updated. Results are summarized in the table below.

	% decrease/increase in construction cost relative to BC Building Code			
	High Rise Residential	Low Rise Residential (wood frame)	Office	Retail
Step 1	N/A – Equivalent to current code			
Step 2	-0.7% to 1.3%	-1.0% to 1.1%	-0.5% to 0.2%	0.2% to 0.3%
Step 3	-0.4% to 1.6%	-0.8% to 1.3%	-0.5% to 0.2%	0.5% to 0.6%
Step 4	2.4 to 3.6%	-0.2% to 1.3%	TBD	0.7% to 1.0%

This analysis suggests that high performance buildings can be achieved at a modest first cost of construction, and often at no or even negative costs. Moreover, the analysis suggests that substantial life cycle savings for occupants from reduced energy costs are expected for a multifamily building; Steps 2 and 3 have lower total costs on a net present value basis than a building built to minimum BC Building Code requirements, when construction, maintenance and energy costs are considered.

Staff recommends that industry be engaged regarding their technical and financial capacity to build to different levels of the Step Code before performance requirements are finalized.

Part 9 Building Costs

While single detached homes are not currently subject to an energy efficiency policy, staff has estimated the cost for new detached homes complying with Step 1 requirements³ to be less than 0.15% of the cost of an average new detached home, or 0.4% of a new townhouse. Given that the City's existing townhouse energy efficiency policy already results in buildings that are on average 13% more energy efficient than minimum code requirements, staff anticipate the incremental cost of building to Step 3 ("20% better than code") will be only modestly higher than at present. These cost estimates will be updated once the results of the BC Housing study are available.

It should also be noted that the SCIWG intentionally designed Steps 2 through 5 of the Part 9 Step Code to facilitate the use of branded building energy certification standards by builders (i.e. Built Green, Energy Star for New Homes, R-2000 and Passive House standards respectively), in order to assist the construction industry in effectively marketing the increased performance of these better-built buildings.

Additional Benefits of Energy Step Code Buildings

New buildings built to Energy Step Code requirements will not only provide owners and occupants with reduced energy bills, and their communities with community greenhouse gas emissions, but significant additional benefits as well:

- **Comfort** – Buildings with high performance building envelopes typically are more comfortable, being less drafty and warmer near exterior windows and walls.
- **Quiet** – Better insulated buildings better attenuate sound, resulting in quieter indoor conditions. This can help achieve the City's Aircraft Noise policy requirements for achieving CMHC noise standards and ASHRAE internal building thermal comfort levels.
- **Indoor air quality** – Constructing high performance systems requires greater attention to building ventilation. Typically, high performance residential buildings will use either direct to unit ventilation or suite-by-suite heat recovery ventilation. These systems can better deliver fresh air than is typical of current ventilation practices.
- **Simple building systems and ease of maintenance** – Low thermal energy demand can allow for relatively simple building heating strategies. This can reduce the operations and maintenance, as well as the potential for expensive repairs, which are often associated with more complicated mechanical systems. Moreover, attention to quality building envelop construction can increase building durability.
- **Regional economic development** – The Step Code encourages high performance building envelopes. Insulation, windows and wood framing components that are often associated with better envelopes tend to be manufactured locally, providing opportunities for local businesses and jobs.

³ Using data provided by City of Vancouver, regarding the cost of home energy modelling and blower door tests.

- **Climate change adaptation** – The better building envelope design associated with the proposed approach can help ensure that buildings remain comfortable in the warmer climates anticipated in the future.

Proposed Airtightness training initiative for new Part 9 construction

Achieving improved levels of airtightness in new construction is a key objective of the Energy Step Code, as this is a major determinant of overall building energy efficiency. Staff have secured funding from BC Hydro to provide training to local homebuilders and buildings approvals staff on improved practices for installing air barriers in new home construction. If funded and approved by Council, this project would commence in Summer 2017 and run to the end of the year, prior to the earliest possible start of Step Code requirements in January 2018. This training program would run concurrently with the proposed consultation program in this report.

Preliminary Proposed Policy Approach

As noted above, the City's existing energy related rezoning requirements are inconsistent with the objectives of the *Building Act*. In light of the improved performance associated with the Energy Step Code, it is intended that the City's current requirements be updated to reference the Energy Step Code. Existing reference to LEED Silver in the CCAP would be removed, and the range of options for compliance with the Townhouse Energy Efficiency and Renewable Energy policy would be revised. City-wide OCP rezoning policies and/or bylaw requirements referencing the Energy Step Code would replace these existing requirements. The table below outlines a preliminary proposed regime, for the purposes of stakeholder consultation.

		Preliminary Proposed Step – for Stakeholder Consultation		
	Current Approximate Energy Step Code Performance Level	2018	~2021	~2025
Part 9 townhomes	~Step 2-3	Step 2 or 3	Step 3 or 4	Step 4 or 5
Part 9 detached homes, duplex	BC Building Code	Step 1	Step 3	Step 4
Part 3 residential >6 story	~Step 1-2 (in City Centre) BC Building Code (outside CC)	Step 2	Step 3	Step 4
Part 3 residential ≤ 6 story	~Step 1-2 (in City Centre) BC Building Code (outside CC)	Step 2 or 3	Step 3 or 4	Step 4
Part 3 commercial	~Step 1-2 (in City Centre) BC Building Code (outside CC)	Step 2	Step 3	Step 3

The stakeholder consultation program outlined below will help determine the specific levels of Energy Step Code performance that are to be referenced as part of City requirements and policy.

The “Provincial Policy: Local Government Implementation of the BC Energy Step Code” document requests that local governments that are considering requiring Steps in the Energy Step Code notify the Energy Step Code Council. This is intended to provide the Energy Step Code Council with up-to-date information on Energy Step Code-related activity in the Province, to help ensure an orderly roll-out. Staff will notify the Energy Step Code Council if this report is ratified by Council.

Building Energy Specialist Position and Staffing Requirements

Upon completion of stakeholder consultation, staff will bring forward a report with recommendations regarding Energy Step Code adoption. This report may include a recommendation to create a Building Energy Specialist position to implement the Energy Step Code and related efforts to secure compliance with code energy requirements. This position would be within the Sustainability section in the Engineering Department and will work with the Building Approvals Department. Key tasks will include implementing policy compliance regimes for the Energy Step Code, training staff and industry stakeholders, and administering building reporting databases. BC Hydro offers \$50,000 per year to support this position, similar to corporate and community energy manager funding currently received from BC Hydro. Net costs could be offset through permit fees. Impacts on Building Approvals resources will also be evaluated as part of developing the City’s Energy Step Code compliance regime.

Stakeholder Consultation Program

It is recommended that Council endorse a stakeholder consultation program to develop options for an Energy Step Code policy regime for Council’s consideration, and associated amendments to the City’s existing building energy policies. This process will review the Step Code framework and possible policy regime with pertinent stakeholders; review impacts on development form and cost; develop, gather feedback on and refine the policy; and identify complementary supports for more energy efficient development. Staff are proposing stakeholder engagement with the following groups using the following methods:

- Small Builders Group at regularly scheduled meetings with staff;
- Greater Vancouver Home Builders Association as part of the Small Builders meetings;
- Urban Development Institute at regularly scheduled meetings with staff;
- Advisory Committee on the Environment at scheduled meetings with staff;
- Energy utilities (including BC Hydro, FortisBC and Lulu Island Energy Company) through direct engagements;
- Building industry stakeholders, including the Architectural Institute of BC, Association of Professional Engineers and Geoscientists of BC, BC Construction Association, the Homeowners Protection Office, and non-governmental associations (including the Canadian Green Building Council, Lighthouse Sustainable Building Centre, and Pembina Institute) in a large multi-stakeholder workshop;
- Certified Energy Advisors in a focus group meeting.

Following consultation, staff will bring forward proposed amendments to the Official Community Plan and any other bylaws to implement the Energy Step Code policy regime.

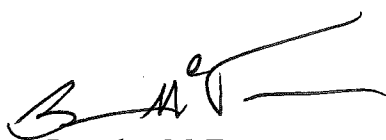
Financial Impact

The air barrier training program for Building Approvals staff and local builders will cost \$60,350, including \$16,000 for materials and project management salary, funded through the City's Carbon Tax Provision that is dedicated for community energy programs and projects. BC Hydro has granted \$13,725 toward the cost of this program, which would be returned to the Carbon Tax Provision upon receipt of the grant. Staff shall execute any necessary related agreements to deliver the air barrier installation training program per the City's purchasing policy, and the City's 5 Year Financial Plan (2017-2021) will be amended accordingly.

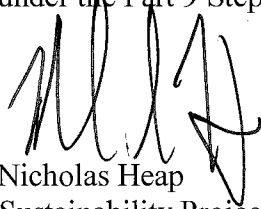
Following stakeholder consultation, staff will bring forward a report recommending the Energy Step Code policy regime and associated bylaw amendments, and a recommendation on whether to create the Building Energy Specialist position and/or additional Building Approvals resources.

Conclusion

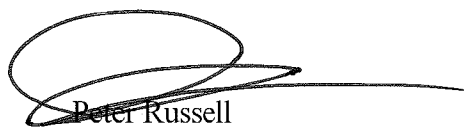
The Energy Step Code is an important development that will enable the City to advance large-scale and cost-effective GHG emission reductions throughout the community. The Energy Step Code provides a pathway by which the construction industry, over time, can incrementally "step up" to the near-net zero energy performance level that must be achieved if local, provincial and national greenhouse gas reduction targets for 2050 are to be achieved. This report proposes an Energy Step Code framework for the purposes of stakeholder consultation. Following public consultation, staff will bring forth a recommended policy package, including required Official Community Plan Bylaw No. 9000 and Bylaw No. 7100 amendments. The report also recommends that staff implement an air barrier installation training initiative for staff and local builders during 2017 to build implementation capacity for a key energy efficiency requirement of new residential construction under the Part 9 Step Code.



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Attachment 1: Energy Step Code for new Part 3 Buildings – Summary of Technical Requirements

Part 3 Construction

The Energy Step Code for large “Part 3” buildings (e.g. buildings that are 4 or more stories and greater than 600m²) involves a number of technical requirements, including:

Steps 1 to 4 - Adherence to an “Enhanced Compliance Package”, involving:

- **Energy modeling for all projects.** All projects will be required to produce an energy model of the building to confirm that it exceeds minimum energy and emissions targets. The Step Code references Energy Modeling Guidelines outlining standardized assumptions, acceptable modeling software, and processes. These Guidelines ensure a fair “apples to apples” evaluation of building performance. Energy models will be professionally signed and sealed. Submission of an energy model to the City is already required as part of district energy connection approvals, and a large percentage of buildings undertake energy modeling for LEED and/or Building Code compliance.
- **Whole building air-tightness testing.** Developments will be required to conduct a test of their air-tightness. At first, testing will be used to baseline performance. In subsequent years, the City may change to require specific air-tightness targets. Various jurisdictions already have mandatory air tightness testing, including the City of Vancouver (for homes), the State of Washington (for all buildings), and many European countries.
- **Energy commissioning requirements.** Commissioning of building equipment and systems is a quality assurance process that ensures that systems are able to operate as designed. The Stretch Code may include requirements for commissioning energy systems; alternately, expectations for commissioning in the BC Building Code may be clarified.
- **Building energy reporting.** Developments will be required to create an Energy STAR Portfolio Manager account used to track energy performance, and share it with the City. This will allow for future policy evaluation. The Portfolio Manager tool is widely used and considered the *de facto* energy reporting and benchmarking system, with over 20% of commercial floor space in Canada using the tool, and over 40% in the USA. The City uses Portfolio Manager to measure performance in its own larger buildings. Participation in the City’s Building Energy Challenge program relies on energy reporting with Portfolio Manager, with 95 buildings representing 7.1 million square feet of property currently sharing their account with the City.

Steps 2 to 4 - Exceeding minimum energy performance targets. In addition to the “enhanced compliance package” required of Step 1, developments will be required to exceed minimum energy performance targets. Different performance targets exist for different building types, including residential, office, retail, and hotel. Performance targets for mixed use buildings are pro-rated based on floor area. Targets include:

- **Thermal energy demand intensity (kWh/m²/year)** – The annual modeled thermal energy required to provide space heating for a development. This target encourages energy efficient building envelope and passive design features, to limit heating requirements.
- **Total energy use intensity (kWh/m²/year)** – The total annual modeled energy demand of a development. This target encourages all building systems to be energy efficient.

Additional option for consideration: Greenhouse gas intensity (kg CO₂e/m²/year) – The total annual greenhouse gas emissions from a development. This metric encourages efficiency, and low-carbon energy sources, including renewable energy. This metric is not included in the Provincial Step Code. However, the City of Vancouver has adopted this metric as part of their “Zero Emissions Building Plan”. The City of Richmond could reference this metric as part of policy applied to buildings undergoing rezoning, which is not anticipated to be restricted by the *Building Act*. However, when applying the Stretch Code as a requirement in bylaw, GHG intensity cannot be included.

Energy Step Code performance levels are summarized in the tables below. The specific targets cited in the Energy Step Code may be adjusted over time, as additional information becomes available, notably the BC Housing study now underway.

Energy Step Code Performance Levels for Residential Occupancies		
	Equipment and Systems – Maximum Total Energy Use Intensity (kWh/m ² /yr)	Building Envelop – Maximum Thermal Energy Demand Intensity (kWh/m ² /yr)
Step 1		
Step 2	130	45
Step 3	120	30
Step 4	100	15

Energy Step Code Performance Levels for Business and Personal Services or Mercantile Occupancies		
	Equipment and Systems – Maximum Total Energy Use Intensity (kWh/m ² /yr)	Building Envelop – Maximum Thermal Energy Demand Intensity (kWh/m ² /yr)
Step 1		
Step 2	170	30
Step 3	120	20

Attachment 2: Energy Step Code for new Part 9 Buildings – Summary of Technical Requirements –

All five steps of the Part 9 Step code require two basic “Enhanced Compliance” measures, which are not required under the BC Building Code:

- Energy modelling of the building is required at the design stage, in order to confirm that the structure as designed will achieve the Step Code targets.
- “Air-tightness” testing is also required once the building has been constructed, in order to measure uncontrolled flows of heat and moisture⁴ in and out of the building.

Beyond this, each tier of the Part 9 Step Code sets out three performance targets:

- The air-tightness of the completed building, usually measured in terms of air changes per hour when the home is pressured and depressurized by a defined amount.
- Mechanical energy performance – projects must meet performance thresholds for one of the following two metrics:
 - Mechanical Energy Use Intensity (MEUI) of the building.
 - Percentage reduction in total energy use relative to the same home built to BC Building Code minimum standards as measured by the Energuide Rating System’s reference house.
- Building envelope performance – projects must meet performance thresholds for one of the following two metrics:
 - Thermal Energy Demand Intensity (TEDI) which measure annual energy demand for heating a space.
 - Peak Thermal Load (PTL) which measure peak heat loss through the building envelope.

The table below summarizes Part 9 Energy Step Code requirements for Climate Zone 4, which includes Metro Vancouver.

⁴ Mostly as water vapour

Part 9 Step Code Requirements for Climate Zone 4 (Lower Mainland and southern Vancouver Island)

	Airtightness (Air changes per hour at 50 Pa Pressure Differential)	Performance Requirements for Building Equipment and Systems	Performance Requirements for Building Envelope
Step 1	NA	EnerGuide Rating % lower than EnerGuide Reference House: not less than 0% lower energy consumption - or - conform to Subsection 9.36.5.	
Step 2	≤ 3.0	EnerGuide Rating % lower than EnerGuide Reference House: not less than 10% lower energy consumption - or - mechanical energy use intensity $\leq 60 \text{ kWh/m}^2 \cdot \text{year}$	thermal energy demand intensity $\leq 45 \text{ kWh/m}^2 \cdot \text{year}$ - or - peak thermal load $\leq 35 \text{ W/m}^2$
Step 3	≤ 2.5	EnerGuide Rating % lower than EnerGuide Reference House: not less than 20% lower energy consumption - or - mechanical energy use intensity $\leq 45 \text{ kWh/m}^2 \cdot \text{year}$	thermal energy demand intensity $\leq 40 \text{ kWh/m}^2 \cdot \text{year}$ - or - peak thermal load $\leq 30 \text{ W/m}^2$
Step 4	≤ 1.5	EnerGuide Rating % lower than EnerGuide Reference House: not less than 40% lower energy consumption - or - mechanical energy use intensity $\leq 35 \text{ kWh/m}^2 \cdot \text{year}$	thermal energy demand intensity $\leq 25 \text{ kWh/m}^2 \cdot \text{year}$ or peak thermal load $\leq 25 \text{ W/m}^2$
Step 5	≤ 1.0	mechanical energy use intensity $\leq 25 \text{ kWh/m}^2 \cdot \text{year}$	thermal energy demand intensity $\leq 15 \text{ kWh/m}^2 \cdot \text{year}$ or peak thermal load $\leq 10 \text{ W/m}^2$

Viewed together, the five Steps of the Step Code span the large performance gap between current BC Building Code minimum requirements and the highest levels of building energy performance yet achieved in British Columbia.

- **Step 1** is quite literally intended to be a “first step” on the road to improved building energy efficiency performance, for communities and/or segments of the building market with limited previous requirements for building energy efficiency. Step 1 energy performance targets are modest, requiring only that that building achieve the same energy performance as the intended performance of a building built to minimum BC Building Code requirements. As noted above, however, achieving this target requires builders to do energy modeling, and install air-barriers in an effective manner, skills that are essential to achieving success at higher levels of the Step Code. Staff have developed a project leveraging BC Hydro funding to provide training in airtightness construction techniques for home and townhouse builders active in Richmond.
- **Step 2** calls for homes only 10% more efficient than that expected with Building Code minimum requirements, and a required air-tightness of 3.0 ACH50. Step 2 is best characterized a half-step relative to the larger jumps in performance between higher tiers. A home meeting the Step 2 standard would have comparable energy performance to that of a “Built Green”® home.
- A new home built to the **Step 3** standard would have an overall energy performance 20% better than one built to Building Code minimum requirements, and an airtightness of 2.5 ACH – i.e. about half that of the average actual performance of buildings currently built to minimum BC Building Code requirements. The overall energy target for this Step is a close match to two of the four available options under the City’s existing townhouse energy efficiency policy. Based on modeling information available to date, townhouses in Richmond designed to achieve an EnerGuide 82 rating are, on average, 13% more efficient than those built to code minimum requirements, while homes built to the Energy Star for New Homes standard are expected to be 22% more energy efficient than a minimally code compliant home.
- The **Step 4** standard is comparable to the energy performance of a home to Natural Resources Canada’s R-2000 ® standard. Homes meeting this standard would use 40% less energy than the expected performance of a minimally code compliant home, and have an airtightness of 1.5 ACH50 or better – less than a third of the average new home built to minimum building code requirements
- The **Step 5** standard approaches the performance required by the stringent “Passive House” standard, and broadly matches the level of energy performance that the Climate Leadership Plan has committed to for new construction in 2032. Homes achieving Step 5 would use less than half of the energy of a minimally code compliant home, and an airtightness level of just 1.0 ACH₅₀. At present, achieving this level of energy performance is exceptional: the Passive House database currently lists only 21 buildings in BC (of which 8 are “Passive House” certified). None are located in Richmond.⁵

⁵ <http://www.passivhausprojekte.de/index.php?lang=en>



City of Richmond

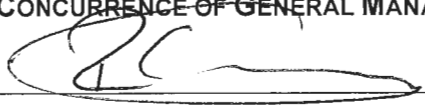

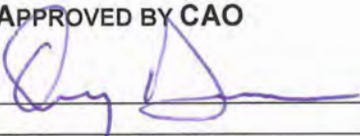
Report to Committee

To:	Public Works and Transportation Committee	Date:	April 27, 2017
From:	Tom Stewart, AScT. Director, Public Works Operations	File:	10-6370-04-01/2017- Vol 01
Re:	Award of Contract 5757 EOI - Recycling Depot Container Collection and Recycling Services		

Staff Recommendation

1. That Contract 5757 EOI, Recycling Depot Container Collection and Recycling Services, be awarded as follows:
 - a. Cascades Recovery Inc. – the container collection and recycling services for the following commodities at the unit rates quoted: newspaper, mixed paper and cardboard;
 - b. Super Save Group – the container collection and recycling services for the following commodities at the unit rates quoted: tin, scrap metal, aluminium, plastic and yard waste;
2. 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 as a new contract can be advertised and awarded.
3. That the Chief Administrative Officer and General Manager, Engineering and Public Works, be authorized to execute the above contracts.

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

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

Staff Report

Origin

The City contracts for the provision of recycling containers at the City Recycling Depot, including container collection, transportation, and processing and marketing of various recycling materials. The previous contract expired on October 31, 2016 and has been extended on a month-to-month basis pending issuance and review of Expression of Interest (EOI) 5757. This report presents the results of 5757 EOI and recommends award of the contract.

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.

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.

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

Analysis

5757 EOI is structured as a commodity contract, which allows the City to choose the best value based on each material commodity, and therefore award any one or more components of the work to any one or more respondents. For this reason, the recommendation is to award the contract to Cascades Recovery Inc. and Super Save Group, both of which are existing providers for Recycling Depot services.

Project Description

The scope of work for 5757 EOI includes the following services:

- Container rental charges for bins at the Recycling Depot for various recycling materials including: Newspaper, Mixed Paper, Cardboard, Aluminium, Scrap Metal, Tin, Plastic and Yard Waste.
- Container collection and emptying charges.
- Processing fees associated with recycling material handling and preparation.
- Any proposed marketing revenue to the City associated with the sale of the recycling materials as commodities.

5757 EOI - Recycling Depot Container Collection and Recycling Services

Request for Expression of Interest 5757 EOI was prepared and issued to the marketplace on August 19, 2016 and closed on September 21, 2016. It is proposed to commence the contract on August 1, 2017. The contract is for a three year term, or until July 31, 2020. The contract provides for two additional one-year extensions (up to a maximum of 5 years) upon mutual agreement of the City and the contractor/s. It is further proposed that the award provide for the ability to extend the contract beyond the five-year term on a month-by-month basis until such time as a new contract can be advertised and awarded. Any mutually agreed adjustments will be applied at the beginning of the extension terms.

Public Tendering

Expressions of Interest were received from the following vendors on September 21, 2016 as follows:

- Smithrite Disposal Ltd.
- Super Save Group
- Progressive Waste Solutions
- Emterra Environmental
- Sierra Waste Services Ltd.
- Cascades Recovery Inc.

As this is a component-based contract, bidders did not necessarily bid on all aspects of the work, but rather only those portions of interest to them. As such, each bidder's submission was reviewed for best value by individual recycling material. To achieve best value, it is recommended that the bids be awarded as follows:

- Cascades Recovery Inc. be awarded Newspaper, Mixed Paper and Cardboard
- Super Save Group be awarded Tin, Scrap Metal, Aluminium, Plastic and Yard Waste

This results in the following estimated annual amounts:

<u>Company</u>	<u>Rental/Freight</u>	<u>Processing/Marketing</u>	<u>Net Annual Overall</u>
Cascades Recovery	\$25,980	(\$52,440)	(\$26,460)
Super Save Group	\$158,088	(\$23,550)	\$134,538
Total	\$184,068	(\$75,990)	\$108,078

Under the contract, the City pays the cost items and the Contractor pays the City revenues for those recycling materials with commodity market value. This award results in a net positive revenue to the City for the items recommended for award to Cascades Recovery Inc. and a net annual cost for items recommended for award to Super Save Group. Council award of the contract is required to authorize the expenditure portions noted for the recommended contract term/duration.

The amounts noted will vary depending on the actual vs. estimated quantity of recycling materials received, therefore, the recommended award is based on the unit rates quoted by each bidder per material type.

Financial Impact

The total estimated value of the proposed contract award is \$184,068 for expenditure items, and \$75,990 in anticipated revenues, for an estimated net contract value of \$108,078 annually. The proposed contract can be accommodated within the current Sanitation and Recycling utility budget. Commodity revenues received are applied to offset the annual rates charged to residents.

Conclusion

The recommended award of this Request for Expressions of Interest is based on best value to the City for the various recycling material components of this contract. This results in awarding the work to two different contractors. The City has experience with both of the recommended contractors and their services have been satisfactory.

The contract term is from August 1, 2017 – July 31, 2020, with the ability to renew for an additional two, one-year terms upon mutual consent. The award also provides for extensions beyond the five-year term on a month-by-month basis until such time as a new contract can be advertised and awarded. It is further recommended that the Chief Administrative Officer and General Manager, Engineering and Public Works, be authorized to execute the above contracts.



Suzanne Bycraft
Manager – Fleet & Environmental Programs
(604-233-3338)



City of Richmond

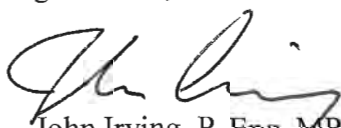
Report to Committee

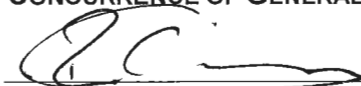

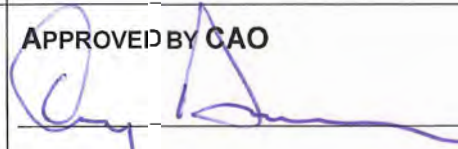
To: Public Works & Transportation Committee
From: John Irving, P. Eng. MPA
Director, Engineering
Re: Amendment to Water Use Restriction Bylaw

Date: April 24, 2017
File: 10-6160-07-06/2017-
Vol 01

Staff Recommendation

That the Water Use Restriction Bylaw No. 7784, Amendment Bylaw No. 9704 be introduced and given first, second and third readings.


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

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

Staff Report

Origin

In order to limit the damage to lawns associated with European chafer beetle infestations on private and City property, staff propose amendments to the City's Water Use Restriction Bylaw No. 7784. These amendments will allow a more flexible timeframe to apply nematodes, a biological control, in an effort to control European chafer beetles.

Background

Metro Vancouver's Water Shortage Response Plan (WSRP) governs drinking water usage during the summer months to reduce demand on outdoor water use. The WSRP guides municipalities to regulate water use during Stage 1, 2, 3 and 4 water restrictions. The proposed amendments to the City's Water Use Restriction Bylaw are in alignment with Metro Vancouver's WSRP.

The European chafer beetle is an invasive species that can impact lawns in residential, commercial and city landscapes. It was first discovered in New Westminster in 2001 and has subsequently spread to Richmond, Burnaby, Vancouver, Delta and Coquitlam. The European chafer beetle was first observed in Richmond in 2010, and is listed as a moderate risk invasive species under the City's Invasive Species Action Plan.

The European chafer beetle completes their life cycle in one year. Beetles emerge in late spring, and lay approximately 20 to 30 eggs in the soil in early summer. Eggs hatch and the chafer grubs forage on grass roots of turf lawns from mid-summer to late fall, then enter into a dormant stage over the winter, and finally emerge to forage again in the spring. By foraging on turf roots, the beetles can cause lawns to become wilted or dead and urban wildlife such as crows and raccoons can easily pull back the turf to feed on the chafer grubs.

Analysis

While there are pesticides available to control the European chafer beetle, their use is not permitted under the City's Pesticide Use Control Bylaw No. 8514. The Pesticide Use Control Bylaw No. 8514 is a part of the City's Enhanced Pesticide Management Program (EPMP), adopted in 2009 to reduce the exposure of Richmond residents to unnecessary pesticides. Through the EPMP, the City promotes natural yard and garden care methods including the application of nematodes, a biological control used to manage European chafer beetle grubs.

Nematodes are a type of roundworm that naturally occur in soil. They are harmless to human health and the environment, but are parasitic to soil dwelling insects like European chafer beetle grubs. To move through the soil and find the European chafer beetle grubs, the nematodes require a moist lawn throughout the course of the treatment, and may require lawn watering in the summer season when beetle eggs hatch. Under the Water Use Restriction Bylaw No. 7784, residents can obtain a Water Use Restriction Permit (Attachment 1) to water outside of the regulated hours during Stage 1 and Stage 2 water restrictions.

Presently, the Water Use Restriction Bylaw No. 7784 authorizes the issuance of Water Use Restriction Permits for nematode application between July 15 – August 15. Seasonal variations

in weather however, can impact the life cycle of the European chafer beetle and the associated treatment window.

Staff recommend bylaw amendments to remove the nematode application timeframe of July 15 - August 15 from the Water Use Restriction Bylaw No. 7784 and replace it with a permitted treatment window for a period of 21 days during Stage 1 and 2 water restrictions. These bylaw amendments are consistent with neighbouring municipalities including City of Vancouver, Surrey, Burnaby and Corporation of Delta.

Financial Impact

None.

Conclusion

To account for seasonal variation in weather, the associated impacts to the life cycle of the European chafer beetle, and the associated treatment window for nematode application, it is recommended to amend the Water Use Restriction Bylaw No. 7784 to allow residents and City staff to obtain a Water Use Exemption Permit for nematode application during Stage 1 and Stage 2 water restrictions.



Kimberly Armour
Acting Manager, Environmental Sustainability
(604-276-4230)

TH:th

Att. 1: Water Restriction Exemption Permit



Water Restriction Exemption Permit
Engineering and Public Works Division

Permit Fees

Description	Fee
New lawns or landscaping	\$34.25
Nematode application for European Chafer Beetle control (no water meter)	\$34.25
Nematode application for European Chafer Beetle control (water metered)	Nil

Application Date: _____
(mm/dd/yyyy)

1. Applicant Information

Applicant Name: _____ Phone: _____

☐ Applicant is Property Owner ☐ Applicant is Authorized Agent of Property Owner

Address: _____ Postal Code: _____

2. Service Address Information

Service Address: _____

Property No.: _____

3. Terms

This permit and its terms and conditions are governed by the City of Richmond Water Use Restriction Bylaw 7784 and subsequent amendments.

Properties without a water meter will have to accept a water meter installation as part of the permit approval process, where applicable.

Customer Initials: _____

Reasons for exemption:

- ☐ New lawn or landscaping ☐ Nematode application: (choose one below)
- ☐ Copy of receipt for nematodes is attached; or
- ☐ Copy of invoice from a company to the applicant's address

This permit shall only apply to:

- Installation of new lawns, either by placing sod or turf or by seeding, or new landscaping on a substantial part of the outdoor portion of a property;
- Residents applying nematodes to their lawn to control the spread European Chafer Beetle.

Permits are only issued under Stage 1 and Stage 2 water restrictions. Permits issued under Stage 2 water restrictions will remain valid under Stage 3 water restrictions within the permits validity period. All permits expire immediately if Stage 4 water restrictions are declared.

Permit requested for the purpose of watering a new lawn or landscaping is valid for a period of 21 days from the date of issue.

Permit requested for the purpose of nematode application may only be valid from July 15 to August 15 for a period of 21 days from the date of issue and permit cannot be renewed.

The City of Richmond reserves the right to revoke and/or cancel a permit for non-compliance with the terms or conditions of the permit.

Start Date: _____ **End Date:** _____
(mm/dd/yyyy) (mm/dd/yyyy)

Permit must be affixed to a post facing the street serving the premises, beside the principal driveway.

4. Signatures

Applicant's Signature: _____

Print Applicant Name: _____

Date: _____
(mm/dd/yyyy)

PROCESSED BY:

Staff Name: _____

Office Use Only	
Service	Amount
Permit Fee	

CNCL - 350



**Water Use Restriction Bylaw No. 7784
Amendment Bylaw No. 9704**

The Council of the City of Richmond enacts as follows:

1. Water Use Restriction Bylaw No. 7784, as amended, is further amended at subsection 3.1.7 by deleting subsection 3.1.7 and replacing it with the following:

“3.1.7 A **permit** is valid for a period of 21 days from the date of issue.”

2. This Bylaw is cited as “**Water Use Restriction Bylaw No. 7784, Amendment Bylaw No. 9704**”.

FIRST READING

SECOND READING

THIRD READING

ADOPTED

MAYOR

CORPORATE OFFICER

CITY OF RICHMOND
APPROVED for content by originating Division 
APPROVED for legality by Solicitor 



City of Richmond

Report to Committee

To: Public Works and Transportation Committee

Date: April 13, 2017

From: Tom Stewart, ASCT.
Director, Public Works Operations

File: 10-6000-01/2017-Vol
01

Re: 2016 Annual Water Quality Report

Staff Recommendation

That the staff report titled "2016 Annual Water Quality Report" dated April 13, 2017 from the Director, Public Works Operations, be endorsed and made available to the community through the City's website and through various communication tools including social media and as part of community outreach activities.

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

Att. 2

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

Staff Report

Origin

In 2001, the Province of British Columbia enacted the Drinking Water Protection Act, which provided the Minister of Health with the authority to implement and enforce standards for water supply systems in British Columbia. In May 2003, regulations to be implemented under the Drinking Water Protection Act were adopted by the legislature as the Drinking Water Protection Regulation. These Acts were updated on April 29, 2014 under Bill 18 – 2014: the Water Sustainability Act.

This report presents the City's "2016 Annual Water Quality Report" (Attachment 1), which enables the City to meet its obligations for public reporting to comply with applicable requirements in accordance with these regulations. A summary of the 2016 Annual Water Quality Report is also presented as Attachment 2.

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

6.1. Safe and sustainable infrastructure.

This report supports Council's 2014-2018 Term Goal #9 A Well-Informed Citizenry:

9.1. Understandable, timely, easily accessible public communication.

Analysis

The Drinking Water Protection Regulation requires water purveyors in BC to possess an operating permit, which confirms the Drinking Water Officer for the area has approved the water supply. The Drinking Water Officer is given the authority to monitor water purveyors to ensure they are providing safe drinking water through compliance with the British Columbia Drinking Water Protection Regulation, and any other conditions of the operating permit.

Under the Regulation, the City of Richmond is required to:

- Develop and maintain a process to notify the Medical Health Officer and the Drinking Water Officer of situations or conditions that render or could render the water unfit to drink;
- Implement and maintain a plan for collecting, shipping and analyzing water samples in compliance with the direction set by the Drinking Water Officer; and
- Implement and maintain a plan for reporting monitoring results to the Drinking Water Officer and to water users.

Richmond thrives on its ability to provide water for not only Richmond Fire-Rescue in the event of a fire, but for residents and businesses. To ensure a consistent supply, the capital watermain replacement program is a proactive approach to avoiding breaks and has proven to be a reliable and valuable tool in water distribution management. In 2016, Public Works staff attended to 38 watermain breaks. Repairs for a single watermain break can amount to \$100,000 plus damages to private properties and service disruptions to businesses and residents. As such, a proactive replacement and maintenance program is essential to minimizing costs and ensuring minimal to no disruptions in water quality and supply.

Highlights of the 2016 Annual Water Quality Report include:

- Richmond residents enjoy high-quality, reliable drinking water.
- 2,040 water samples were collected to ensure water quality and each passed with outstanding results.
- Test results confirm high quality water and demonstrate continuous improvement.
- 34.8M cubic metres of water were purchased in 2016 compared to 34.6M cubic metres in 2015.
- Richmond's tap water stations are used in many community events providing potable water to the public and promoting tap water usage.
- The educational program Project WET, where students learn about water conservation, water quality and water distribution, represents the partnership between Richmond School Board and Public Works.

These and many other initiatives are detailed in the attached "2016 Annual Water Quality Report".

Proposed Communication

Subject to Council's approval, the "2016 Annual Water Quality Report" will be posted on the City's website and made available through various communication tools including social media channels and as part of community outreach activities.

Financial Impact

None.

Conclusion

The 2016 Annual Water Quality Report outlines the methods in which the City manages its water system to ensure compliance with applicable provincial requirements under the Drinking Water Protection Act. In 2016, the City's water quality met and exceeded the required standards to ensure residents enjoyed high quality, reliable and safe drinking water.

This report has been reviewed and endorsed by the Medical Health Officer of Vancouver Coastal Health Authority as part of the City's reporting obligations.



Bryan Shepherd
Manager, Waterworks
(604-233-3334)

Att. 1: 2016 Annual Water Quality Report Summary
2: 2016 Annual Water Quality Report

2016 Annual Water Quality Report Summary

In 2016, Richmond residents enjoyed high-quality and reliable drinking water. Water Services staff collected 2,040 water samples from 40 sampling sites to ensure excellent water quality.

Richmond is dedicated to promoting the value of municipal tap water, maximizing opportunities for use of tap water in municipal facilities and developing strategies for making tap water the “water of choice” in our community.



Servicing a fire hydrant



Water quality sampling



Pressure management system installation



Testing the sample



Project WET

How does Richmond provide high-quality tap water?

- By testing all 40 water quality sites on a regular basis.
- By continuous preventative maintenance and monitoring.
- By providing the water system with the highest degree of care to ensure that it's an inhospitable environment for any harmful bacteria or toxins.
- By proactive watermain replacement and maintenance projects.

Multi-Barrier Approach

Richmond recognizes that in order to provide the highest quality water, several methods must be used to ensure its superiority – hence the “Multi-Barrier Approach”

The “Multi-Barrier Approach” includes:

- disinfection of the water at the source;
- water quality monitoring capabilities at seven pressure reducing valve (PRV) stations;
- weekly microbiological testing;
- system operators that are certified by the Environmental Operators Certification Program of BC;
- maintenance practices that are of the highest standard.

Heterotrophic Plate Count (HPC)

- The HPC count indicates the presence of nutrients that could facilitate the growth of harmful bacteria such as E. coli.
- By reducing the HPC levels, the possibility of bacteriological re-growth is essentially reduced.
- The minimal positive chlorine residual in our water also disinfects and eliminates harmful substances within our distribution system.

2016 Results

- Provided 34.8 million m³ of the highest quality drinking water to 218,307 Richmond residents.
- Conducted 2,040 microbiological tests.
- Maintained 13 pressure reducing value (PRV) stations.
- Maintained 4,817 fire hydrants to ensure water is available during an emergency.
- Repaired 38 watermain breaks without compromising the integrity of the water distribution system.
- Discovered and repaired 38 non-visible underground leaks through Richmond's leak detection program.
- Hosted over 300 students from Richmond elementary schools as part of the annual educational program: Project WET.
- Installed 5,000 m of new Capital watermain and 343 water services for new developments.

Summary

Richmond residents will continue to enjoy drinking water that is fresh, reliable and of high-quality. It is without a doubt that the City of Richmond consistently excels at providing tap water of excellent quality!

City of Richmond 2016 Annual Water Quality Report



Richmond is dedicated to promoting the value of municipal tap water, maximizing opportunities for use of tap water in municipal facilities and developing strategies for making tap water the “water of choice” in our community.

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Executive Summary

The purpose of this report is to fulfill the requirements set out in the British Columbia Drinking Water Protection Act (BCDWPA) by giving an overview of the water distribution system, describing the maintenance conducted, detailing some of the unique features of the system and providing the results of Richmond's water quality testing program.

Test results confirm high-quality water and demonstrate continuous improvement. Richmond's water system is provided with the highest degree of care to ensure that it's an inhospitable environment for any harmful bacteria or toxins. Also, Water Utility funding contributes to proactive watermain replacement and maintenance projects that will ensure the overall health of the system well into the future.

In 2016, the City of Richmond's Water Services staff undertook the following:

- provided 34.8 million m³ of the highest quality drinking water to nearly 218,307 Richmond residents;
- conducted 2,040 microbiological tests from 40 test locations;
- maintained 13 pressure reducing valve (PRV) stations;
- maintained 4,817 fire hydrants to ensure water is available during an emergency;
- repaired 38 watermain breaks without compromising the integrity of the water distribution system while maintaining positive pressure;
- discovered and repaired 38 non-visible underground leaks through Richmond's leak detection program using noise loggers measuring sound frequencies in the targeted pipe allowing any leaks to be heard and recorded;
- hosted over 300 students and teachers from Richmond elementary schools as part of the annual educational program: Project WET;
- repaired 303 service connections;
- installed 5,000 metres of new Capital watermain;
- installed 343 water services for new developments.

The City of Richmond's Water Services section takes its role as a water purveyor very seriously and is proud to be the guardian of such a precious resource.

Introduction

In 2002, the City of Richmond implemented a Drinking Water Quality Monitoring Program. This program was developed with input from the Vancouver Coastal Health Authority and is in accordance with the British Columbia Drinking Water Protection Act (BCDWPA), the Water Quality Monitoring and Reporting Plan for Metro Vancouver and member municipalities and the Guidelines for Canadian Drinking Water Quality (GCDWQ).

The Vancouver Coastal Health Authority requires the City of Richmond to provide the Annual Drinking Water Quality Report so that Richmond can maintain its operating permit. Richmond's Medical Health Officer reviews the report and upon request, the report is made public. It provides important information concerning Richmond's water distribution system and water quality.

The conditions set out in the British Columbia Drinking Water Protection Act (BCDWPA) require that all water systems in BC be classified as a Level I through IV facility. Richmond's system is classified as a Level III facility so all staff are responsible for possessing a valid Level I to Level III Equipment Operators Certification Program (EOCP) certificate. To obtain and maintain a level of certification, staff successfully complete the annual training. This is done to ensure that staff are able to respond appropriately and immediately to problems prior to becoming a risk to health or property.

As a water purveyor, Richmond complies with provincial legislation, including the British Columbia Drinking Water Protection Act (BCDWPA), and the British Columbia Drinking Water Protection Regulations (BCDWPR). Information is also compared to the federal Guidelines for Canadian Drinking Water Quality (GCDWQ). Under these various pieces of legislation the City of Richmond is required to:

- develop a process to notify the Medical Health Officer of any condition that could render unsafe drinking water;
- implement a sampling program that adequately represents all areas within the City;
- meet the requirements of the British Columbia Drinking Water Protection Act (BCDWPA), and ensure test results are immediately available to the Medical Health Officer;
- receive an annual construction permit for the construction, installation and extension of the water distribution system;
- ensure that the City's water distribution system is classified under the criteria for the Environmental Operators Certification Program (EOCP) and that Water Services staff are certified to the same level as the distribution system;
- produce an annual public report detailing the results of the City's water quality monitoring program.



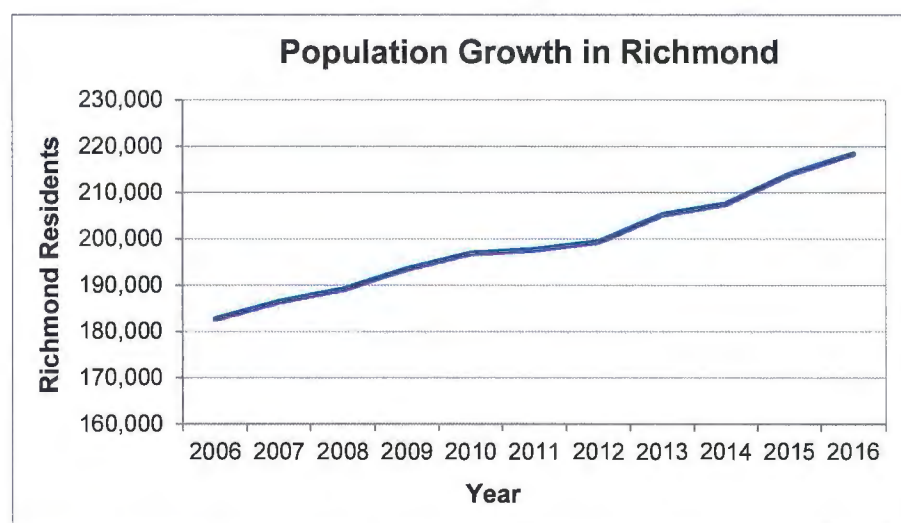
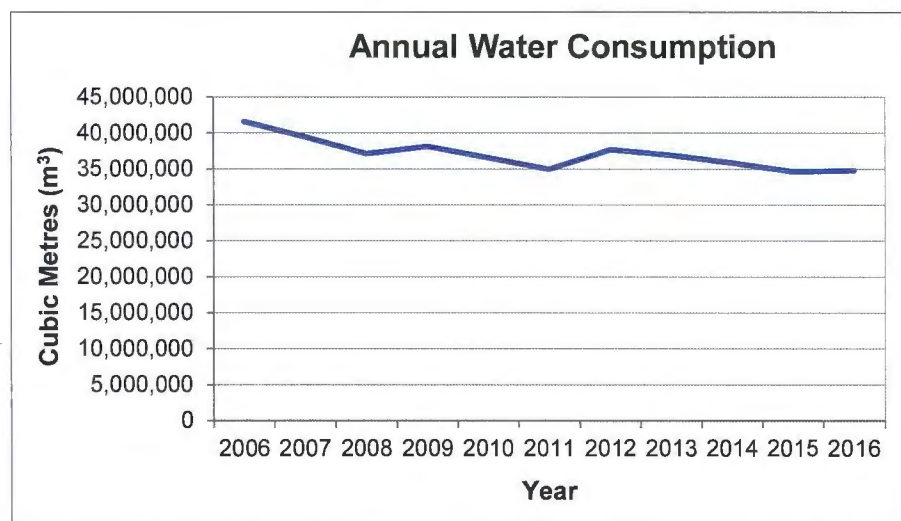
An hour of sprinkling uses as much water as 25 toilet flushes, five loads of laundry, and five dishwasher loads combined.



Each day, Metro Vancouver residents use enough water to fill BC Place.

Metro Vancouver Water District

In 2016, the City of Richmond purchased 34.8 million m³ of drinking water from the Metro Vancouver Water District.



Three watersheds supply regional water: Capilano Reservoir, Seymour Reservoir, and Coquitlam Reservoir. The Capilano and Seymour Reservoirs combined, supply approximately 70% of the water for the region. The Coquitlam Reservoir supplies the remaining approximate 30%. Richmond receives the majority of its water from the Capilano and Seymour reservoir.

Water from these reservoirs can be directed through a series of valves and transmission watermains to any city or municipality within the Metro Vancouver region. Source water is provided directly from the watersheds by Metro Vancouver. Source water is tested for a number of microbiological, chemical, and physical parameters.

During periods of turbidity (cloudy water), a reservoir may be taken out of service if levels become elevated. Water is then supplied by the remaining reservoirs. The plant has the capacity to filter up to 1.8 billion litres of water per day.



Metro Vancouver Watersheds

Run full loads in the dishwasher. 84% of homes have an automatic dishwasher. The average cycle uses 23 litres of water, down from older models at 38 litres. A half-full dishwasher uses the same amount of water as a full one.



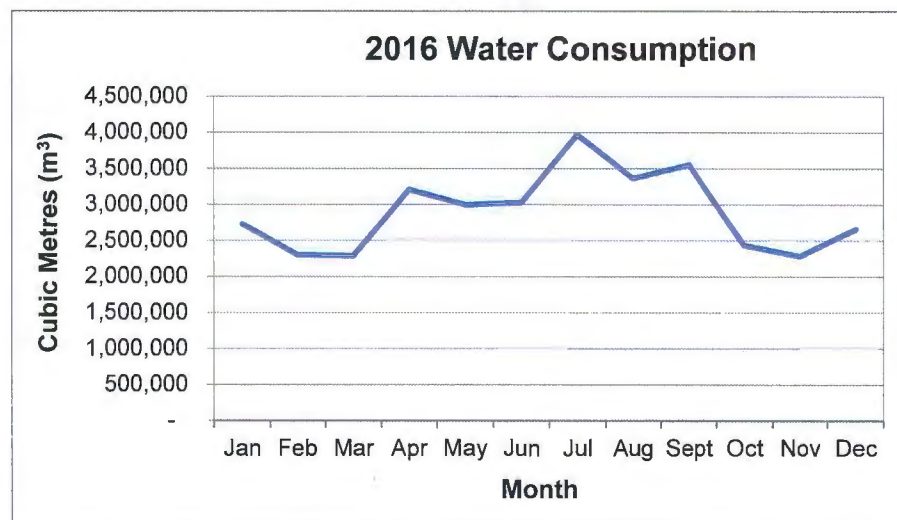
A healthy lawn only needs one hour of water per week. Too much water will drown its roots and encourage weeds.

Water Distribution System Overview

The City of Richmond's water distribution system begins at 13 separate connection points along Metro Vancouver's transmission mains. At each connection point there is a City owned pressure reducing valve (PRV) chamber. The City's responsibility for water quality begins at this chamber and ends at the residential or commercial property line.

Table 1 – Overview of Richmond's Water Distribution Network

Water Assets	2016
Hydrants	4,817
Valves	11,109
PRV chambers (active)	13
Pigging chambers	11
End caps	492
Watermains (City)	632.7 km
Service connections	31,397



Pressure Reducing Valves (PRV)

The Water Services section maintains 13 pressure reducing valve (PRV) stations throughout Richmond. PRV stations decrease the pressure of Metro Vancouver's water feed to one that is manageable for Richmond's water distribution system. The stations are connected to a supervisory control and data acquisition (SCADA) system that provides information to the Works Yard such as water pressure, quality and volume. This allows for certified Water Services staff to react to problems quickly and effectively 24 hours a day, seven days a week.

The table indicates the monthly water consumption in Richmond. It is estimated that most municipalities in North America lose anywhere from 12% to 15% of their potable water to undiscovered, underground leakage. The Water Loss Management Program allows City Engineering and Water Services staff to determine the total amount of water consumed through normal operational programs and practices such as single-family residential, multi-family residential and commercial metering programs. While combining these programs with watermain flushing, parks and median irrigation, and Richmond Fire Rescue water usage, it is reasonable to assume that the unidentified portion of the annual water consumption is attributed to water loss within the distribution system.

Water used in the kitchen for rinsing and cooking can be used again to water house plants.



PRV inspection



Data acquisition inside the PRV

Service Renewals

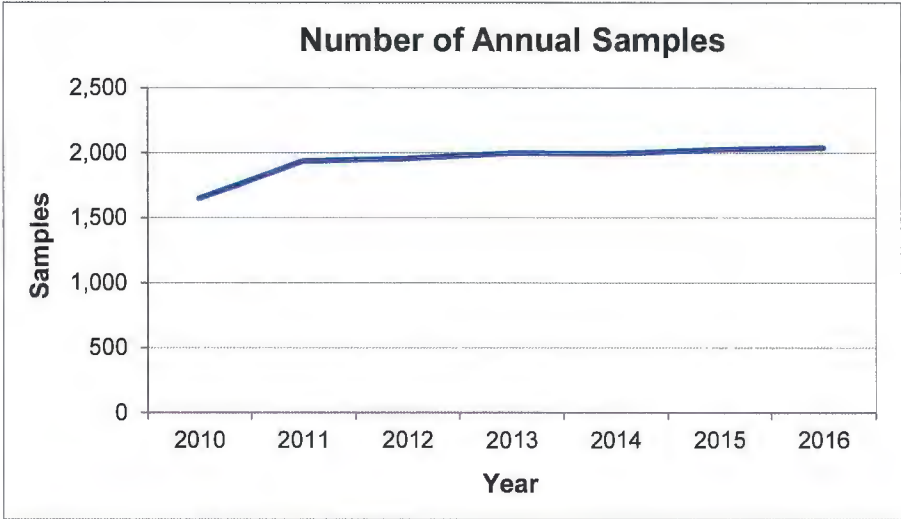
This program aims to prevent breaks and leaks by continuously upgrading and replacing older water services from the watermain to the property line. This preventative maintenance construction occurs throughout the year and requires minimal restoration.



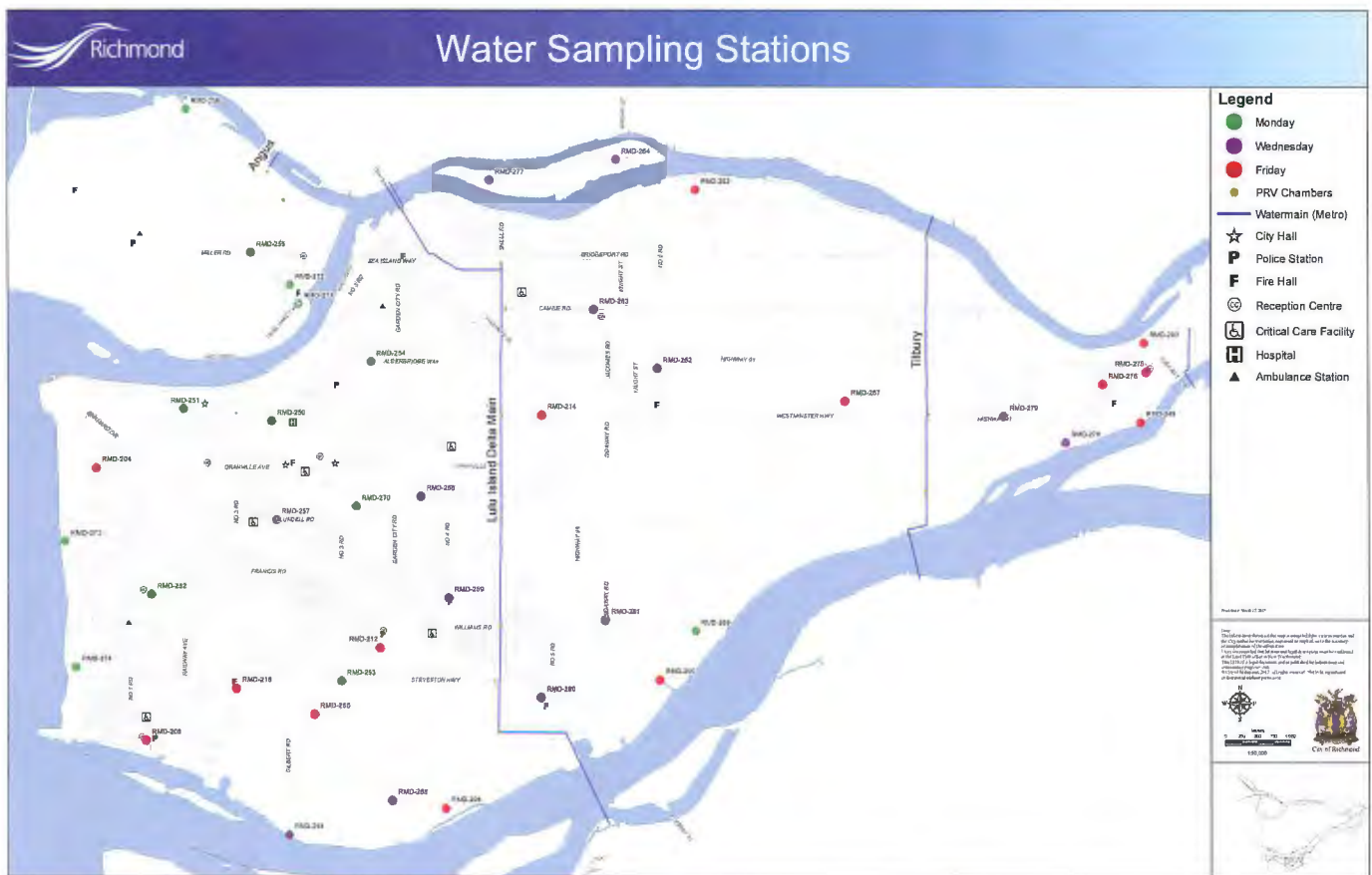
Use a broom instead of a hose. Sweep driveways, decks, patios and sidewalks with a broom instead of using a hose. That 15-minute job could use 675 litres of water.

Water Quality Monitoring

In 2016, the City of Richmond collected samples on a weekly basis at 40 dedicated sampling sites. These sites are strategically located throughout the City to give a good representation of the City's water quality across the distribution network. In 2016, 2,040 water samples were collected by Water Services staff and sent for analysis at Metro Vancouver laboratories. These sample results were reviewed by the Vancouver and Richmond Coastal Health Authority to ensure the drinking water met the standards outlined in the British Columbia Drinking Water Protection Regulations (BCDWPR).



Taking a sample



Bacteriological Tests

The City of Richmond and Metro Vancouver conduct bacteriological tests for total coliform, fecal coliform and heterotrophic plate counts (HPC). The presence of these organisms in drinking water indicates that the water may be contaminated and may contain potentially harmful bacteria, viruses or parasites.

Multi-Barrier Approach

Richmond recognizes that in order to provide the highest quality water, several methods must be used to ensure its superiority.

The "Multi-Barrier Approach" includes:

- disinfection of the water at the source;
- water quality monitoring capabilities at six PRV sites;
- weekly microbiological testing at 40 sites throughout Richmond;
- system operators are certified by Environmental Operators Certification Program (EOCP) of BC;
- maintenance practices that are of the highest standard.

Plants protected by mulch require less watering. Mulch can preserve moisture by reducing soil temperature and slowing evaporation.



Instead of running the tap until the water cools, keep a pitcher of cold drinking water on standby in the fridge.



Testing the sample



Samples for lab analysis

Total Coliforms

Total coliform bacteria reproduce in water, soil or digestive systems of animals. The presence of total coliforms indicates water may have been contaminated and that the disinfection process is inadequate. In distribution systems where more than 10 samples are collected in a given sampling period, as is the case in Richmond, no consecutive samples from the same site or no more than 10% of samples should show the presence of total coliform bacteria.

Testing for total coliforms should be carried out in all drinking water systems. The number, frequency and location of samples for total coliform testing will vary according to the type and size of the system and jurisdictional requirements.

Provincial standards state that no sample can contain more than 10 total coliforms per 100 ml, and that 90% of samples in a 30-day period must have zero coliform organisms. In 2016, no coliforms were detected.

Fecal Coliforms

Fecal coliforms are present in large numbers in the feces and intestinal tracts of humans and other warm-blooded animals, and can enter water bodies from human and animal waste. They are key indicators of sewerage contamination. Due to diseases and parasites, which are spread through sewerage, provincial standards state there can be no detectable fecal coliforms per 100 ml sample.

2016 Results

In 2016, 2,040 water samples were collected by City staff and analyzed by Metro Vancouver laboratory staff. All final results met drinking water requirements for fecal and total coliforms. The City of Richmond was in compliance with British Columbia Drinking Water Protection Regulations (BCDWPR) for bacteria in 2016.

Heterotrophic Plate Count

Heterotrophic Plate Counts (HPC) tests measure aerobic heterotrophic bacteria. This test indicates the presence of nutrients that could facilitate the growth of harmful bacteria such as E.coli, and in determines changes in water quality during treatment and distribution. HPC tests indicate the onset of bacterial re-growth within the distribution system commonly due to stagnant water contained in dead end and low flow water mains. By reducing the HPC levels, the possibility of bacteriological re-growth is essentially reduced because the pipes are an inhospitable environment for bacteria to grow. The minimal amount of positive chlorine residual in our water also disinfects and eliminates harmful substances within our distribution system. In 2016, none of the 2,040 water samples exceeded regulated levels for HPC's at >500 CFU/mls. In fact, none of the 2,040 water samples exceeded 100 CFU/mls.

Flushing

As part of a five-year program, Water Services successfully executed the annual flushing program. This important maintenance practice ensuring high-quality tap water by moving water through the pipes and eliminating stagnant water at dead-ends. By doing so, the pipes are cleared and the risk of high HPC levels which lead to bacteria re-growth is significantly reduced.



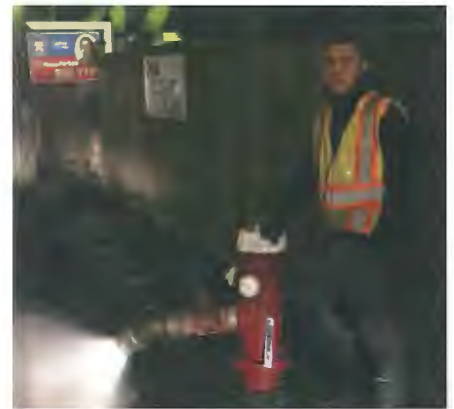
Servicing a fire hydrant

Failed samples

The standard response to a failed water sample is:

- re-sample at the site;
- flush the watermain extensively;
- re-sample;
- the watermain is then isolated to one feed until test results confirm compliance with the British Columbia Drinking Water Protection Regulations (BCDWPR).

A family of four washes about 300 loads of laundry per year. Running half loads uses more water to do the same amount of laundry. Even with an efficient washer, one load a day uses 340 litres over a week.



Flushing the watermain



Watering between 4 AM and 9 AM complies with sprinkling regulations, and reduces the amount of water lost to wind and evaporation.

Physical Parameters

Water in Richmond's distribution system is tested for the physical parameters of turbidity and temperature at the same time as bacteriological testing. Information is also collected on the taste and odour of Richmond's water by actively tracking water quality complaints.

Turbidity

Metro Vancouver is responsible for the quality of Richmond's source water. Turbidity is a measure of water clarity and cloudiness. Turbidity is measured in Nephelometric Turbidity Units (NTU). The guideline allows for turbidity levels up to 5 NTUs providing that source water protection, monitoring, and water treatment requirements are met including increased levels of residual chlorine. Turbidity is a concern because increased turbidity compromises the drinking water disinfection process. In 2016, the highest level of turbidity was measured at 3.8 NTU. Only 14 samples had turbidity levels of more than 1 NTU.

In general, sites with elevated turbidity are located in sections of the distribution network where there is low demand on the water system or where dead-end watermain exist. The increase may be attributed to sediment disturbance in the distribution system. During the year, when sampling indicates a turbidity level greater than >5 NTU's, affected watermain in the test area are flushed, and re-tested until a satisfactory result is obtained.

Temperature

High temperatures in the distribution system can affect the residual level of chlorine and can contribute to bacterial re-growth. Typically, the temperature of drinking water in the distribution system rises during summer months. Samples exceeded the aesthetic guideline of 15 °C 205 times out of 2,040; some temperatures as high as 21 °C were recorded. The majority of these elevated temperatures were recorded during the summer months.

Taste and Odour

Taste and odour are only monitored in response to customer complaints. Records indicate that 20 complaints were received regarding taste and three complaints were received regarding odour in 2016. These complaints generally relate to high levels of residual chlorine in that part of the system at that particular time. Residents who complained about taste or odour problems were advised to flush their internal system. If the problem was not resolved, Water Services staff were dispatched to the location until a satisfactory result was obtained and verified through laboratory analysis.

Chemical Parameters

The City of Richmond, in partnership with Metro Vancouver, tests for the following chemical parameters: chlorine residual, trihalomethanes (THM), haloacetic acids (HAA), and pH. Periodic testing is also performed to determine heavy metals levels in the water system.

Free Chlorine Residual

Chlorine residual is a measurement of the disinfecting agent remaining in the distribution system at the point of delivery to the customer. Ensuring proper levels of chlorine in the distribution system is essential in protecting Richmond's water supply from bacteriological contamination or re-growth. In recent years, the City has made great progress in improving chlorine residuals by implementing various flushing programs.

Disinfection By-Products

Disinfection by-products are potentially harmful compounds produced by the reaction of a water disinfectant (such as chlorine or ozone) with naturally occurring organic matter in water. Two common chlorination by-products are Trihalomethanes (THMs) and Haloacetic Acids (HAAs). In drinking water, THMs can enter the human body via multiple routes of exposure. These include ingestion by consuming water and inhalation and skin absorption from showering and bathing. Under the Guidelines for Canadian Drinking Water Quality (GCDWQ), the maximum acceptable concentration (IMAC) for THMs is 100 parts per billion (ppb). The 100 ppb level for THMs is based on an annual average of samples taken quarterly. High levels on a particular day are not of concern unless they are consistently high over a period of time. Typically, THM levels will be highest in the summer and lowest in the winter months. Likewise, under the GCDWD, the maximum acceptable concentration (IMAC) for HAAs is 0.08 mg/L. In 2016, the City utilized the Metro Vancouver laboratory to perform quarterly tests for HAA's and THM's. These were carried out at representative sampling sites in accordance with a joint Metro Vancouver/Richmond monitoring plan. In 2016, all results were within acceptable levels as defined in the GCDWQ. (Appendix 5)

The pH Value

The measurement of acidity is known as pH. A pH below 7.0 is considered acidic, above 7.0 is considered basic, with 7.0 being neutral. It is recognized that acidic water will accelerate the corrosion of metal pipes, often causing blue-green staining in household fixtures.

The Seymour-Capilano filtration plant includes pH adjustment and corrosion control in its treatment processes. It is expected that the pH of drinking water will rise in the coming years as the filtration plant reaches its full potential. This will extend the lifespan of water plumbing systems and enhance water quality.

Metals

The City's water quality program also includes testing for metals, such as copper, iron, lead, and zinc. All results were within GCDWQ limits for 2016. Complete test results are included in Appendix 6.



Kitchen sink food grinders require a lot of clean water to flush food scraps down the drain. Instead, compost your food scraps to be used in landscaping.



Taking a sample of the chlorine residual



According to Metro Vancouver, the average person uses 270 litres of water per day.

Toilets 24%

Faucets 20%

Shower 20%

Clothes washers 16%

Leaks 13%

Baths 3%

Other 3%

Dishwashers 2

Mobile Emergency Response Unit

Water Services staff are trained to operate the water treatment trailer for use during a major emergency where Richmond's water is contaminated. The treatment trailer is capable of producing 55,000 litres of potable water per day from non-potable sources. It is maintained and continuously tested by Water Services staff to ensure that the water is safe to serve Richmond residents in an emergency situation.

Public Notification

At the direction of the Medical Health Officer, water quality advisories will be issued to the general public if necessary. Similarly, the notification will be issued to the general public for any work being done that will affect the quality of their drinking water. An example is included in Appendix 7.

Table 2 – Agency Notification for Situations Drinking Water Safety

Situation	Notifying Agency	Agency Notified	Time Frame For Notification
Fecal positive sample	City of Richmond Metro Vancouver Lab	City of Richmond / Medical Health Officer	Immediate
Chemical/biological contamination	City of Richmond Metro Vancouver Lab	City of Richmond / Medical Health Officer	Immediate
Turbidity > 5 NTU	City of Richmond Metro Vancouver Control Centre Metro Vancouver Lab	City of Richmond / Medical Health Officer	Immediate
Disinfection failure primary or secondary disinfection	City of Richmond Metro Vancouver Control Centre Metro Vancouver Lab	City of Richmond / Medical Health Officer	Immediate, where BC DWPR or GCDWQ guidelines may not be met
Loss of pressure due to high demand	City of Richmond Metro Vancouver Control Centre	Medical Health Officer City of Richmond Metro Vancouver Control Centre	Immediate
Watermain break where the pressure drops below 20 psi	City of Richmond Metro Vancouver Control Centre	Medical Health Officer City of Richmond	Immediate



Shorten your shower by two minutes. Reducing your shower by two minutes can save 460 litres of water in one month.



Water meter



Pressure management system installation

Water Conservation Programs

The City of Richmond continues to succeed in reducing annual water consumption despite a growing population. Since 2012, population has grown by approximately 10% and overall water consumption has decreased by 8%. This equates to a total annual savings of over \$1,850,000. This can be explained by corporate and community wide initiatives including water metering, pressure management, the toilet rebate program, the clothes washer rebate program and the City's leak reduction program.

Reduction of water system pressure in lower demand periods such as the winter season extends water infrastructure service life and also reduces system water loss.

The leak reduction program identifies single-family properties with continuous leaks and educates the homeowner about the leak and significantly reduces overall private property leakage.

Universal Single-Family Water Meter Program

The universal single-family water meter program is in progress and will be completed by the end of 2017. Advanced notification is provided to flat rate customers prior to meter installation. Water meters are a fair and equitable way of charging residents for water and will reduce the overall water consumption throughout the City.

Multi-Family Water Meter Program

The volunteer multi-family water meter program allows residents to pay for the actual amount of water they use, rather than being billed on the flat-rate system. To date, 144 multi-family complexes have been completed, comprising of 9,002 dwelling units.

Pressure Management Program

For the past three years, the City of Richmond has reduced water pressure by 10 PSI between October and May, causing the system pressure to change from 90 PSI to 80 PSI. The purpose of this practice is to reduce the volume of leakage and extend the life of our water infrastructure. A decrease in nighttime flows and private leaks has been observed. Richmond is actively pursuing automated pressure management, where fluctuation would happen on a more regular basis through pilot systems on our pressure reducing valve (PRV) stations, which could recognize demand periods. Each one of Richmond's 13 PRV stations is turned down until the operating pressure is reached.

Toilet Rebate Program

The City of Richmond's Toilet Rebate Program provides a utility account rebate of \$100.00 to homeowners who install a low-flush toilet. Single and multi-family homeowners are eligible to apply for a lifetime maximum of two rebates per property. Industrial, commercial and other non-residential properties are not eligible at this time. The purpose of the toilet rebate program is to encourage homeowners to replace high volume toilets with low-flush toilets to conserve water and to reduce costs. Homeowners enjoy a reduction in their utility bill while contributing to a sustainable water conservation initiative. In 2016, there were 749 rebates submitted.

Clothes Washer Rebate Program

Through a partnership program with BC Hydro, residents could receive a rebate of up to \$200, equally cost shared between BC Hydro and the City of Richmond for the replacement of an inefficient clothes washer with a new high efficiency one. The bi-annual rebate program encourages homeowners to conserve water and energy. As of January 1, 2017, 437 clothes washer rebates have been issued to Richmond residents.

Rain Barrels

Rain barrels are excellent outdoor water-saving devices that collect and store rainwater from rooftops for lawn and garden use. Rain water is a great water source for lawns, plants and gardens. For water metered households, using rainwater will reduce the amount of tap water used for your garden therefore decreasing the utility bill.

Rain barrels are available for purchase at the City's Recycling Depot by Richmond residents only. Installation instructions are included. In 2016, 270 rain barrels were sold; a significant increase from the 207 sold in 2015.

SYSTEM rain barrel features:

- unique shape and neutral color suitable for any home and garden;
- 208 litre (55 gallon) capacity;
- mosquito mesh keeps out bugs and leaves;
- BPA free;
- made from recycled content;
- UV stabilizer is added to resist deterioration from sunlight;
- overflow hose can be linked to another SYSTEM or can be directed away from the house.

Metro Vancouver Water Restrictions

Due to dry and hot weather, continued high water demand and declining reservoir levels, Metro Vancouver imposed water sprinkling restrictions starting May 15th until mid-October. All Public Works sections and Parks Operations were involved in collecting and using recycled water for Richmond's parks, plants, street sweeping and vector operation.



An average garden hose delivers around 45 litres of water each minute. Install a shut-off nozzle on your hose so it runs only when in use.



Rain barrel

Water Education Programs

Project WET

Project WET is an interactive elementary school water education program aimed at teaching students about the importance of water. Largely targeted for Richmond students in grades four through seven, this program is designed to educate students on the importance of water quality and supply.

The acronym "WET" stands for "Water Education Team". Touring from station to station, the objective is to promote higher-level thinking skills while learning about the fundamentals of water. In 2016, over 300 students and teachers participated in the program.

During the tour to the Works Yard, students can expect to learn many exciting areas of water and drainage systems such as:

- Richmond's water distribution system and how water reaches the taps;
- water sampling and water quality testing;
- the importance of fire hydrants and how they work;
- portable drinking fountains and Richmond's high-quality tap water;
- water conservation and what students can do to help;
- the uses of watermains, automatic flushing units, valves and meters;
- inspection camera technology;
- sewerage and drainage pipes and systems;
- the importance of keeping toxic materials out of ditches and storm sewers;
- pump stations and how they work;
- recycling and other environmentally sustainable practices;
- how our dykes help to keep our island afloat;
- Richmond's emergency water treatment trailer.

Tap Water Initiative

In 2010, Metro Vancouver initiated its tap water campaign. The intent of this initiative is to encourage tap water consumption by the public and highlight public drinking fountains so that the public can refill water bottles or simply get a drink of water. On April 14th, 2009 Mayor Malcom Brodie endorsed this campaign indicating that the City of Richmond is dedicated to promoting the value of municipal tap water, maximizing opportunities for use of tap water in municipal facilities and developing strategies for making tap water the "water of choice".

To support this initiative, Richmond's Water Services section is proud to maintain several portable drinking fountains that are used at numerous community events to provide the public with potable tap water and to promote tap water usage as an alternative to bottled water consumption. Samples are tested upon installation ensuring good quality water for the public to enjoy. In 2016, Water Services' portable tap water stations were installed at 39 community events.



Project WET



New portable drinking fountain

The 24 water fountains found on Richmond's dykes and in parks have been maintained by Water Services since 2015. They are tested and inspected ensuring accessible and high-quality drinking water. They must be turned off in winter months to prevent freezing and costly damage. They are turned on in the spring for the public to enjoy. An auto-flushing unit was installed on one of the longer pipes, to a fountain, to turn over the water and maintain an accurate chlorine residual.

Public Works Open House

The Water Services section plays a large role in the annual Public Works Open House that takes place in May. This is an opportunity for staff to show residents some of the critical services that are provided such as maintaining our infrastructure. Likewise, staff showcase the work that is done on a daily basis to ensure the safety and health of the community. This event draws attention to the importance of public works in community life.

"H2Whoa!" Theatrical Presentation by DreamRider Productions

"H2Whoa!" teaches students in grades K-7 all about water, the water cycle and water conservation. The focus is on positive actions and educating family and friends about the use of water, the need to protect it and its importance to everyday living. Several Richmond elementary schools have and will continue to have the opportunity to view this theatrical presentation.



Automated drinking fountain



Public Works Open House



Public Works Open House

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Conclusion

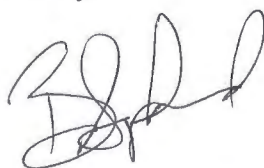
In 2016, Richmond residents enjoyed high-quality drinking water. From the protected watersheds to the local taps, both Metro Vancouver and the City of Richmond focus immensely on safe and high-quality drinking water.

Test results confirm high-quality water and demonstrate continuous improvement. Richmond's water system is provided with the highest degree of care to ensure that it's an inhospitable environment for any harmful bacteria or toxins. The City of Richmond's Water Services section takes its role as a water purveyor very seriously and is proud to be the guardian of such a precious resource.

Water Services staff continue to employ best management practices in the operation and maintenance of the water system. Certified by the Equipment Operators Certification Program (EOCP), staff meet all requirements of the British Columbia Drinking Water Protection Act (BCDWPA) and are well equipped to operate and maintain all aspects of the water system from source to property line.

The City appreciates the good working relationship with Vancouver Coastal Health Authority and acknowledges them as important partners in maintaining high quality drinking water throughout the City of Richmond.

Sincerely,

A handwritten signature in black ink, appearing to read 'Bryan Shepherd', with a stylized, cursive script.

Bryan Shepherd
Manager, Water Services
City of Richmond
604-233-3334
bshepherd@richmond.ca

Appendices

APPENDIX 1: REFERENCES

APPENDIX 2: WATER SAMPLING SITES

APPENDIX 3: 2016 WATER QUALITY RESULTS

APPENDIX 4: SCADA AND PRESSURE TESTING SITES

APPENDIX 5: 2016 THM AND HAA TEST RESULTS

APPENDIX 6: 2016 HEAVY METAL AND VINYL CHLORIDE TESTING RESULTS

APPENDIX 7: SAMPLE DRINKING WATER QUALITY ADVISORY

APPENDIX 8: SPECIFIC EMERGENCY RESPONSE PLANS

APPENDIX 1: REFERENCES

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[//city.richmond.bc.ca/RICHMOND/GIS DATA-ALL LOCATIONS/Engineering Planning/Shared/Water Works/
Water Sampling Station/mxd/water_sampling_stations_11x17.mxd](http://city.richmond.bc.ca/RICHMOND/GIS%20DATA-ALL%20LOCATIONS/Engineering%20Planning/Shared/Water%20Works/Water%20Sampling%20Station/mxd/water_sampling_stations_11x17.mxd)
11. Earth Easy – Solutions for Sustainable Living
http://eartheasy.com/live_water_saving.htm
12. Metro Vancouver – We Love Water
<http://www.metrovancouver.org/welovewater/Pages/default.aspx>

APPENDIX 2: WATER SAMPLING SITES

	SAMPLING STATION NUMBER	WATER SAMPLING SITES
MONDAY	RMD-250	6071 Azure Road
	RMD-251	5951 McCallan Road
	RMD-252	9751 Pendleton Road
	RMD-253	11051 No 3 Road
	RMD-254	5300 No. 3 Road
	RMD-255	6000 Blk. Miller Road
	RMD-256	1000 Blk. McDonald Road
	RMD-269	14951 Triangle Road
	RMD-270	8200 Jones Road
	RMD-271	3800 Cessna Drive
	RMD-272	751 Catalina Crescent
	RMD-273	Opp. 8331 Fairfax Place
	RMD-274	10920 Springwood Court
WEDNESDAY	RMD-257	6640 Blundell Road
	RMD-258	7000 Blk. Dyke Road
	RMD-259	10020 Amethyst Avenue
	RMD-260	11111 Horseshoe Way
	RMD-261	9911 Sidaway Road
	RMD-262	13799 Commerce Pkwy
	RMD-263	12560 Cambie Road
	RMD-264	13100 Mitchell Road
	RMD-266	9380 General Currie Road
	RMD-268	13800 No. 3 Road
	RMD-277	Opp. 11280 Twigg Place
	RMD-278	6651 Fraserwood Place
	RMD-279	Opp. 20371 Westminster Highway
FRIDAY	RMD-202	1500 Valemont Way
	RMD-203	23260 Westminster Highway
	RMD-204	3180 Granville Avenue
	RMD-205	13851 Steveston Highway
	RMD-206	4251 Moncton Street
	RMD-208	13200 No. 4 Road
	RMD-212	Opposite 8600 Ryan Road
	RMD-214	11720 Westminster Highway
	RMD-216	11080 No. 2 Road
	RMD-267	17240 Fedoruk Road
	RMD-249	23000 Block Dyke Road
	RMD-275	5180 Smith Crescent
	RMD-276	22271 Cochrane Drive
	RMD-280	11500 McKenzie Road

APPENDIX 3: 2016 WATER QUALITY RESULTS

Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
4-Jan-16	GRAB	5951 McCallan Rd.	4-Jan-16	0.89	<1	<2	5	<1	0.12
4-Jan-16	GRAB	5951 McCallan Rd.	4-Jan-16	0.89	<1	<2	5	<1	0.12
4-Jan-16	GRAB	Opp. 8331 Fairfax Place	4-Jan-16	0.76	<1	<2	6	<1	0.26
4-Jan-16	GRAB	9751 Pendleton Rd.	4-Jan-16	0.85	<1	<2	5	<1	0.14
4-Jan-16	GRAB	10920 Springwood Court	4-Jan-16	0.81	<1	<2	5	<1	0.15
4-Jan-16	GRAB	6071 Azure Rd.	4-Jan-16	0.85	<1	<2	5	<1	0.17
4-Jan-16	GRAB	3800 Cessna Drive	4-Jan-16	0.9	<1	2	7	<1	0.13
4-Jan-16	GRAB	751 Catalina Cres.	4-Jan-16	0.93	<1	<2	5	<1	0.11
4-Jan-16	GRAB	6000 Blk. Miller Rd.	4-Jan-16	0.86	<1	<2	6	<1	0.28
4-Jan-16	GRAB	1000 Blk. McDonald Rd.	4-Jan-16	0.43	<1	<2	6	<1	0.65
4-Jan-16	GRAB	5300 No. 3 Rd.	4-Jan-16	0.89	<1	<2	5	<1	0.14
4-Jan-16	GRAB	8200 Jones Rd.	4-Jan-16	0.86	<1	<2	5	<1	0.17
4-Jan-16	GRAB	14951 Triangle Rd.	4-Jan-16	0.76	<1	<2	5	<1	0.11
4-Jan-16	GRAB	11051 No 3 Rd.	4-Jan-16	0.92	<1	<2	5	<1	0.12
6-Jan-16	GRAB	12560 Cambie Rd.	6-Jan-16	0.83	<1	<2	6	<1	0.11
6-Jan-16	GRAB	13100 Mitchell Rd.	6-Jan-16	0.89	<1	<2	5	<1	0.2
6-Jan-16	GRAB	Opp. 11280 Twigg Place	6-Jan-16	0.85	<1	2	5	<1	0.18
6-Jan-16	GRAB	13799 Commerce Pkwy.	6-Jan-16	0.62	<1	<2	6	<1	0.11
6-Jan-16	GRAB	6651 Fraserwood Place	6-Jan-16	0.65	<1	<2	6	<1	0.11
6-Jan-16	GRAB	Opp. 20371 Westminster Hwy.	6-Jan-16	0.67	<1	<2	6	<1	0.08
6-Jan-16	GRAB	9911 Sidaway Rd.	6-Jan-16	0.72	<1	<2	7	<1	0.09
6-Jan-16	GRAB	11111 Horseshoe Way	6-Jan-16	0.54	<1	<2	7	<1	0.12
6-Jan-16	GRAB	10020 Amethyst Ave.	6-Jan-16	0.72	<1	<2	5	<1	0.12
6-Jan-16	GRAB	9380 General Currie Rd.	6-Jan-16	0.63	<1	<2	5	<1	0.11
6-Jan-16	GRAB	13800 No. 3 Rd. (off Garden City)	6-Jan-16	0.77	<1	<2	7	<1	0.11
6-Jan-16	GRAB	7000 Blk. Dyke Rd.	6-Jan-16	0.98	<1	<2	7	<1	0.14
6-Jan-16	GRAB	6640 Blundell Rd.	6-Jan-16	0.87	<1	<2	5	<1	0.25
7-Jan-16	GRAB	3180 Granville Ave.	7-Jan-16	0.95	<1	<2	6	<1	0.82
7-Jan-16	GRAB	4251 Moncton St.	7-Jan-16	0.69	<1	<2	6	<1	0.11
7-Jan-16	GRAB	11080 No. 2 Rd.	7-Jan-16	0.74	<1	<2	7	<1	0.11
7-Jan-16	GRAB	Opp. 8600 Ryan Rd.	7-Jan-16	0.65	<1	<2	7	<1	0.09
7-Jan-16	GRAB	13200 No. 4 Rd.	7-Jan-16	0.68	<1	<2	6	<1	0.13
7-Jan-16	GRAB	13851 Steveston Hwy.	7-Jan-16	0.65	<1	<2	6	<1	0.1
7-Jan-16	GRAB	1500 Valemont Way	7-Jan-16	0.76	<1	<2	5	<1	0.1
7-Jan-16	GRAB	11720 Westminster Hwy.	7-Jan-16	0.76	<1	<2	5	<1	0.12
7-Jan-16	GRAB	17240 Fedoruk	7-Jan-16	0.69	<1	<2	7	<1	0.09
7-Jan-16	GRAB	23000 Blk. Dyke Rd.	7-Jan-16	0.64	<1	2	6	<1	0.1
7-Jan-16	GRAB	22271 Cochrane Drive	7-Jan-16	0.59	<1	<2	7	<1	0.12
7-Jan-16	GRAB	5180 Smith Cres.	7-Jan-16	0.62	<1	<2	7	<1	0.12

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
7-Jan-16	GRAB	23260 Westminster Hwy.	7-Jan-16	0.55	<1	<2	6	<1	0.09
11-Jan-16	GRAB	5951 McCallan Rd.	11-Jan-16	0.93	<1	<2	5	<1	0.07
11-Jan-16	GRAB	Opp. 8331 Fairfax Place	11-Jan-16	0.81	<1	<2	7	<1	0.15
11-Jan-16	GRAB	9751 Pendleton Rd.	11-Jan-16	0.91	<1	<2	7	<1	0.09
11-Jan-16	GRAB	10920 Springwood Court	11-Jan-16	0.9	<1	<2	6	<1	0.09
11-Jan-16	GRAB	6071 Azure Rd.	11-Jan-16	0.92	<1	<2	7	<1	0.11
11-Jan-16	GRAB	3800 Cessna Drive	11-Jan-16	0.92	<1	<2	7	<1	0.08
11-Jan-16	GRAB	751 Catalina Cres.	11-Jan-16	0.98	<1	<2	5	<1	0.08
11-Jan-16	GRAB	6000 Blk. Miller Rd.	11-Jan-16	0.85	<1	<2	6	<1	0.2
11-Jan-16	GRAB	1000 Blk. McDonald Rd.	11-Jan-16	0.54	<1	<2	7	<1	0.45
11-Jan-16	GRAB	5300 No. 3 Rd.	11-Jan-16	0.96	<1	<2	6	<1	0.12
11-Jan-16	GRAB	8200 Jones Rd.	11-Jan-16	0.91	<1	<2	6	<1	0.14
11-Jan-16	GRAB	14951 Triangle Rd.	11-Jan-16	0.17	<1	<2	6	<1	0.07
11-Jan-16	GRAB	11051 No 3 Rd.	11-Jan-16	0.68	<1	<2	7	<1	0.1
13-Jan-16	GRAB	12560 Cambie Rd.	13-Jan-16	0.8	<1	<2	6	<1	0.08
13-Jan-16	GRAB	13100 Mitchell Rd.	13-Jan-16	0.84	<1	<2	7	<1	0.16
13-Jan-16	GRAB	Opp. 11280 Twigg Place	13-Jan-16	0.88	<1	<2	7	<1	0.13
13-Jan-16	GRAB	13799 Commerce Pkwy.	13-Jan-16	0.73	<1	<2	6	<1	0.08
13-Jan-16	GRAB	6651 Fraserwood Place	13-Jan-16	0.56	<1	<2	6	<1	0.13
13-Jan-16	GRAB	Opp. 20371 Westminster Hwy.	13-Jan-16	0.58	<1	<2	6	<1	0.09
13-Jan-16	GRAB	9911 Sidaway Rd.	13-Jan-16	0.7	<1	<2	7	<1	0.08
13-Jan-16	GRAB	11111 Horseshoe Way	13-Jan-16	0.6	<1	<2	7	<1	0.1
13-Jan-16	GRAB	10020 Amethyst Ave.	13-Jan-16	0.8	<1	<2	6	<1	0.08
13-Jan-16	GRAB	9380 General Currie Rd.	13-Jan-16	0.91	<1	2	6	<1	0.08
13-Jan-16	GRAB	13800 No. 3 Rd. (off Garden City)	13-Jan-16	0.87	<1	<2	7	<1	0.08
13-Jan-16	GRAB	7000 Blk. Dyke Rd.	13-Jan-16	0.84	<1	4	6	<1	0.08
13-Jan-16	GRAB	6640 Blundell Rd.	13-Jan-16	0.74	<1	<2	6	<1	0.08
15-Jan-16	GRAB	3180 Granville Ave.	15-Jan-16	0.9	<1	<2	6	<1	0.49
15-Jan-16	GRAB	4251 Moncton St.	15-Jan-16	0.88	<1	<2	5	<1	0.19
15-Jan-16	GRAB	11080 No. 2 Rd.	15-Jan-16	0.74	<1	<2	5	<1	0.14
15-Jan-16	GRAB	Opp. 8600 Ryan Rd.	15-Jan-16	0.79	<1	<2	5	<1	0.31
15-Jan-16	GRAB	13200 No. 4 Rd.	15-Jan-16	0.86	<1	<2	5	<1	0.08
15-Jan-16	GRAB	13851 Steveston Hwy.	15-Jan-16	0.55	<1	<2	6	<1	0.1
15-Jan-16	GRAB	1500 Valemont Way	15-Jan-16	0.75	<1	<2	5	<1	0.1
15-Jan-16	GRAB	11720 Westminster Hwy.	15-Jan-16	0.69	<1	<2	4	<1	0.13
15-Jan-16	GRAB	17240 Fedoruk	15-Jan-16	0.66	<1	<2	5	<1	0.09
15-Jan-16	GRAB	23000 Blk. Dyke Rd.	15-Jan-16	0.64	<1	<2	6	<1	0.09
15-Jan-16	GRAB	22271 Cochrane Drive	15-Jan-16	0.74	<1	<2	5	<1	0.13
15-Jan-16	GRAB	5180 Smith Cres.	15-Jan-16	0.62	<1	<2	6	<1	0.11
15-Jan-16	GRAB	23260 Westminster Hwy.	15-Jan-16	0.64	<1	<2	5	<1	0.12

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
18-Jan-16	GRAB	5951 McCallan Rd.	18-Jan-16	0.86	<1	<2	6	<1	0.26
18-Jan-16	GRAB	Opp. 8331 Fairfax Place	18-Jan-16	0.63	<1	<2	7	<1	0.15
18-Jan-16	GRAB	9751 Pendleton Rd.	18-Jan-16	0.73	<1	<2	6	<1	0.19
18-Jan-16	GRAB	10920 Springwood Court	18-Jan-16	0.92	<1	<2	7	<1	0.13
18-Jan-16	GRAB	6071 Azure Rd.	18-Jan-16	0.9	<1	<2	6	<1	0.11
18-Jan-16	GRAB	3800 Cessna Drive	18-Jan-16	0.91	<1	<2	6	<1	0.15
18-Jan-16	GRAB	751 Catalina Cres.	18-Jan-16	1	<1	<2	5	<1	0.1
18-Jan-16	GRAB	6000 Blk. Miller Rd.	18-Jan-16	0.96	<1	<2	4	<1	0.23
18-Jan-16	GRAB	1000 Blk. McDonald Rd.	18-Jan-16	0.6	<1	<2	6	<1	0.43
18-Jan-16	GRAB	5300 No. 3 Rd.	18-Jan-16	0.94	<1	<2	5	<1	0.13
18-Jan-16	GRAB	8200 Jones Rd.	18-Jan-16	0.86	<1	4	6	<1	0.11
18-Jan-16	GRAB	14951 Triangle Rd.	18-Jan-16	0.73	<1	<2	5	<1	0.13
18-Jan-16	GRAB	11051 No 3 Rd.	18-Jan-16	0.83	<1	<2	4	<1	0.1
20-Jan-16	GRAB	12560 Cambie Rd.	20-Jan-16	0.92	<1	<2	5	<1	0.13
20-Jan-16	GRAB	17240 Fedoruk	20-Jan-16	0.56	<1	<2	7	<1	0.13
20-Jan-16	GRAB	23000 Blk. Dyke Rd.	20-Jan-16	0.66	<1	<2	6	<1	0.17
20-Jan-16	GRAB	13100 Mitchell Rd.	20-Jan-16	0.81	<1	<2	6	<1	0.15
20-Jan-16	GRAB	22271 Cochrane Drive	20-Jan-16	0.48	<1	<2	6	<1	0.21
20-Jan-16	GRAB	Opp. 11280 Twigg Place	20-Jan-16	0.88	<1	<2	5	<1	0.12
20-Jan-16	GRAB	5180 Smith Cres.	20-Jan-16	0.61	<1	4	7	<1	0.12
20-Jan-16	GRAB	13799 Commerce Pkwy.	20-Jan-16	0.73	<1	<2	6	<1	0.15
20-Jan-16	GRAB	23260 Westminster Hwy.	20-Jan-16	0.55	<1	<2	6	<1	0.12
20-Jan-16	GRAB	6651 Fraserwood Place	20-Jan-16	0.69	<1	<2	5	<1	0.14
20-Jan-16	GRAB	1500 Valemont Way	20-Jan-16	0.63	<1	<2	6	<1	0.09
20-Jan-16	GRAB	Opp. 20371 Westminster Hwy.	20-Jan-16	0.65	<1	<2	6	<1	0.08
20-Jan-16	GRAB	9911 Sidaway Rd.	20-Jan-16	0.74	<1	ate spre	5	<1	0.09
20-Jan-16	GRAB	11720 Westminster Hwy.	20-Jan-16	0.82	<1	<2	5	<1	0.13
20-Jan-16	GRAB	11111 Horseshoe Way	20-Jan-16	0.64	<1	<2	5	<1	0.1
20-Jan-16	GRAB	13851 Steveston Hwy.	20-Jan-16	0.54	<1	ate spre	6	<1	0.08
20-Jan-16	GRAB	10020 Amethyst Ave.	20-Jan-16	0.79	<1	<2	5	<1	0.08
20-Jan-16	GRAB	13200 No. 4 Rd.	20-Jan-16	0.74	<1	<2	6	<1	0.11
20-Jan-16	GRAB	9380 General Currie Rd.	20-Jan-16	0.93	<1	<2	6	<1	0.12
20-Jan-16	GRAB	Opp. 8600 Ryan Rd.	20-Jan-16	0.82	<1	<2	6	<1	0.1
20-Jan-16	GRAB	11080 No. 2 Rd.	20-Jan-16	0.62	<1	<2	6	<1	0.17
20-Jan-16	GRAB	13800 No. 3 Rd. (off Garden City)	20-Jan-16	0.9	<1	<2	5	<1	0.1
20-Jan-16	GRAB	4251 Moncton St.	20-Jan-16	0.71	<1	<2	6	<1	0.09
20-Jan-16	GRAB	7000 Blk. Dyke Rd.	20-Jan-16	0.92	<1	<2	5	<1	0.09
20-Jan-16	GRAB	3180 Granville Ave.	20-Jan-16	0.79	<1	ate spre	6	<1	0.08
20-Jan-16	GRAB	6640 Blundell Rd.	20-Jan-16	0.98	<1	<2	5	<1	0.1
25-Jan-16	GRAB	5951 McCallan Rd.	25-Jan-16	1	<1	<2	6	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
25-Jan-16	GRAB	Opp. 8331 Fairfax Place	25-Jan-16	0.76	<1	<2	8	<1	0.11
25-Jan-16	GRAB	9751 Pendleton Rd.	25-Jan-16	0.68	<1	<2	7	<1	0.11
25-Jan-16	GRAB	10920 Springwood Court	25-Jan-16	0.77	<1	<2	8	<1	0.19
25-Jan-16	GRAB	6071 Azure Rd.	25-Jan-16	0.87	<1	<2	8	<1	0.25
25-Jan-16	GRAB	3800 Cessna Drive	25-Jan-16	0.87	<1	<2	8	<1	0.12
25-Jan-16	GRAB	751 Catalina Cres.	25-Jan-16	1	<1	<2	6	<1	0.16
25-Jan-16	GRAB	6000 Blk. Miller Rd.	25-Jan-16	0.84	<1	<2	6	<1	0.3
25-Jan-16	GRAB	1000 Blk. McDonald Rd.	25-Jan-16	0.56	<1	<2	7	<1	1.5
25-Jan-16	GRAB	5300 No. 3 Rd.	25-Jan-16	0.96	<1	<2	7	<1	0.12
25-Jan-16	GRAB	8200 Jones Rd.	25-Jan-16	0.94	<1	2	6	<1	0.11
25-Jan-16	GRAB	14951 Triangle Rd.	25-Jan-16	0.56	<1	<2	7	<1	0.11
25-Jan-16	GRAB	11051 No 3 Rd.	25-Jan-16	0.64	<1	<2	6	<1	0.12
27-Jan-16	GRAB	12560 Cambie Rd.	27-Jan-16	0.77	<1	<2	6	<1	0.12
27-Jan-16	GRAB	13100 Mitchell Rd.	27-Jan-16	0.9	<1	<2	6	<1	0.12
27-Jan-16	GRAB	Opp. 11280 Twigg Place	27-Jan-16	0.96	<1	<2	6	<1	0.11
27-Jan-16	GRAB	13799 Commerce Pkwy.	27-Jan-16	0.73	<1	<2	7	<1	0.11
27-Jan-16	GRAB	6651 Fraserwood Place	27-Jan-16	0.81	<1	<2	6	<1	0.13
27-Jan-16	GRAB	Opp. 20371 Westminster Hwy.	27-Jan-16	0.76	<1	<2	6	<1	0.09
27-Jan-16	GRAB	9911 Sidaway Rd.	27-Jan-16	0.65	<1	<2	7	<1	0.09
27-Jan-16	GRAB	11111 Horseshoe Way	27-Jan-16	0.67	<1	<2	7	<1	0.1
27-Jan-16	GRAB	10020 Amethyst Ave.	27-Jan-16	1	<1	<2	7	<1	0.09
27-Jan-16	GRAB	9380 General Currie Rd.	27-Jan-16	1	<1	<2	6	<1	0.12
27-Jan-16	GRAB	13800 No. 3 Rd. (off Garden City)	27-Jan-16	1	<1	<2	6	<1	0.11
27-Jan-16	GRAB	7000 Blk. Dyke Rd.	27-Jan-16	1	<1	<2	6	<1	0.09
27-Jan-16	GRAB	6640 Blundell Rd.	27-Jan-16	1	<1	<2	7	<1	0.1
29-Jan-16	GRAB	3180 Granville Ave.	29-Jan-16	0.72	<1	2	7	<1	0.11
29-Jan-16	GRAB	4251 Moncton St.	29-Jan-16	0.72	<1	2	7	<1	0.08
29-Jan-16	GRAB	11080 No. 2 Rd.	29-Jan-16	0.81	<1	<2	7	<1	0.08
29-Jan-16	GRAB	Opp. 8600 Ryan Rd.	29-Jan-16	0.63	<1	<2	8	<1	0.19
29-Jan-16	GRAB	13200 No. 4 Rd.	29-Jan-16	0.82	<1	4	7	<1	0.1
29-Jan-16	GRAB	13851 Steveston Hwy.	29-Jan-16	0.65	<1	2	6	<1	0.09
29-Jan-16	GRAB	11720 Westminster Hwy.	29-Jan-16	0.63	<1	<2	6	<1	0.09
29-Jan-16	GRAB	1500 Valemont Way	29-Jan-16	0.62	<1	2	6	<1	0.1
29-Jan-16	GRAB	17240 Fedoruk	29-Jan-16	0.67	<1	<2	6	<1	0.08
29-Jan-16	GRAB	23000 Blk. Dyke Rd.	29-Jan-16	0.61	<1	<2	6	<1	0.09
29-Jan-16	GRAB	22271 Cochrane Drive	29-Jan-16	0.65	<1	<2	6	<1	0.1
29-Jan-16	GRAB	5180 Smith Cres.	29-Jan-16	0.57	<1	<2	6	<1	0.1
29-Jan-16	GRAB	23260 Westminster Hwy.	29-Jan-16	0.56	<1	<2	7	<1	0.11
1-Feb-16	GRAB	5951 McCallan Rd.	1-Feb-16	0.94	<1	<2	6	<1	0.09
1-Feb-16	GRAB	Opp. 8331 Fairfax Place	1-Feb-16	0.79	<1	<2	9	<1	0.1

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
1-Feb-16	GRAB	9751 Pendleton Rd.	1-Feb-16	0.87	<1	<2	6	<1	0.12
1-Feb-16	GRAB	10920 Springwood Court	1-Feb-16	0.87	<1	<2	7	<1	0.1
1-Feb-16	GRAB	6071 Azure Rd.	1-Feb-16	0.84	<1	<2	7	<1	0.11
1-Feb-16	GRAB	3800 Cessna Drive	1-Feb-16	1	<1	<2	7	<1	0.09
1-Feb-16	GRAB	751 Catalina Cres.	1-Feb-16	0.99	<1	<2	7	<1	0.14
1-Feb-16	GRAB	6000 Blk. Miller Rd.	1-Feb-16	0.94	<1	<2	6	<1	0.22
1-Feb-16	GRAB	1000 Blk. McDonald Rd.	1-Feb-16	0.57	<1	<2	8	<1	0.64
1-Feb-16	GRAB	5300 No. 3 Rd.	1-Feb-16	0.91	<1	<2	6	<1	0.18
1-Feb-16	GRAB	8200 Jones Rd.	1-Feb-16	0.86	<1	<2	7	<1	0.14
1-Feb-16	GRAB	14951 Triangle Rd.	1-Feb-16	0.65	<1	<2	6	<1	0.16
1-Feb-16	GRAB	11051 No 3 Rd.	1-Feb-16	0.89	<1	<2	6	<1	0.19
3-Feb-16	GRAB	12560 Cambie Rd.	3-Feb-16	0.86	<1	<2	6	<1	0.12
3-Feb-16	GRAB	13100 Mitchell Rd.	3-Feb-16	0.71	<1	<2	6	<1	0.13
3-Feb-16	GRAB	Opp. 11280 Twigg Place	3-Feb-16	0.67	<1	<2	7	<1	0.2
3-Feb-16	GRAB	13799 Commerce Pkwy.	3-Feb-16	0.61	<1	<2	7	<1	0.12
3-Feb-16	GRAB	6651 Fraserwood Place	3-Feb-16	0.63	<1	2	6	<1	0.15
3-Feb-16	GRAB	Opp. 20371 Westminster Hwy.	3-Feb-16	0.35	<1	<2	6	<1	0.15
3-Feb-16	GRAB	9911 Sidaway Rd.	3-Feb-16	0.67	<1	<2	6	<1	0.15
3-Feb-16	GRAB	11111 Horseshoe Way	3-Feb-16	0.7	<1	2	7	<1	0.21
3-Feb-16	GRAB	10020 Amethyst Ave.	3-Feb-16	0.65	<1	<2	7	<1	0.11
3-Feb-16	GRAB	9380 General Currie Rd.	3-Feb-16	0.86	<1	<2	6	<1	0.13
3-Feb-16	GRAB	13800 No. 3 Rd. (off Garden City)	3-Feb-16	0.81	<1	<2	7	<1	0.12
3-Feb-16	GRAB	7000 Blk. Dyke Rd.	3-Feb-16	0.66	<1	<2	7	<1	0.11
3-Feb-16	GRAB	6640 Blundell Rd.	3-Feb-16	0.77	<1	<2	6	<1	0.13
4-Feb-16	GRAB	3180 Granville Ave.	4-Feb-16	0.83	<1	<2	7	<1	0.41
4-Feb-16	GRAB	4251 Moncton St.	4-Feb-16	0.8	<1	<2	7	<1	0.12
4-Feb-16	GRAB	11080 No. 2 Rd.	4-Feb-16	0.85	<1	<2	7	<1	0.15
4-Feb-16	GRAB	Opp. 8600 Ryan Rd.	4-Feb-16	0.83	<1	<2	7	<1	0.16
4-Feb-16	GRAB	13200 No. 4 Rd.	4-Feb-16	0.89	<1	<2	6	<1	0.16
4-Feb-16	GRAB	13851 Steveston Hwy.	4-Feb-16	0.65	<1	<2	6	<1	0.11
4-Feb-16	GRAB	1500 Valemont Way	4-Feb-16	0.64	<1	<2	5	<1	0.09
4-Feb-16	GRAB	11720 Westminster Hwy.	4-Feb-16	0.75	<1	<2	7	<1	0.12
4-Feb-16	GRAB	17240 Fedoruk	4-Feb-16	0.83	<1	2	7	<1	0.14
4-Feb-16	GRAB	23000 Blk. Dyke Rd.	4-Feb-16	0.66	<1	<2	7	<1	0.11
4-Feb-16	GRAB	22271 Cochrane Drive	4-Feb-16	0.63	<1	<2	7	<1	0.11
4-Feb-16	GRAB	5180 Smith Cres.	4-Feb-16	0.61	<1	<2	7	<1	0.11
4-Feb-16	GRAB	23260 Westminster Hwy.	4-Feb-16	0.74	<1	<2	6	<1	0.12
9-Feb-16	GRAB	5951 McCallan Rd.	9-Feb-16	0.85	<1	<2	6	<1	0.1
9-Feb-16	GRAB	Opp. 8331 Fairfax Place	9-Feb-16	0.76	<1	<2	9	<1	0.71
9-Feb-16	GRAB	9751 Pendleton Rd.	9-Feb-16	0.78	<1	<2	8	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
9-Feb-16	GRAB	10920 Springwood Court	9-Feb-16	0.79	<1	<2	8	<1	0.11
9-Feb-16	GRAB	6071 Azure Rd.	9-Feb-16	0.83	<1	<2	8	<1	0.15
9-Feb-16	GRAB	3800 Cessna Drive	9-Feb-16	0.87	<1	<2	8	<1	0.08
9-Feb-16	GRAB	751 Catalina Cres.	9-Feb-16	0.94	<1	<2	7	<1	0.1
9-Feb-16	GRAB	6000 Blk. Miller Rd.	9-Feb-16	0.92	<1	<2	7	<1	0.29
9-Feb-16	GRAB	1000 Blk. McDonald Rd.	9-Feb-16	0.52	<1	<2	7	<1	0.33
9-Feb-16	GRAB	5300 No. 3 Rd.	9-Feb-16	0.88	<1	<2	7	<1	0.14
9-Feb-16	GRAB	8200 Jones Rd.	9-Feb-16	0.87	<1	<2	8	<1	0.11
9-Feb-16	GRAB	14951 Triangle Rd.	9-Feb-16	0.69	<1	<2	6	<1	0.13
9-Feb-16	GRAB	11051 No 3 Rd.	9-Feb-16	0.81	<1	<2	6	<1	0.11
10-Feb-16	GRAB	12560 Cambie Rd.	10-Feb-16	0.86	<1	<2	6	<1	0.12
10-Feb-16	GRAB	13100 Mitchell Rd.	10-Feb-16	0.72	<1	<2	8	<1	0.16
10-Feb-16	GRAB	Opp. 11280 Twigg Place	10-Feb-16	0.88	<1	<2	6	<1	0.15
10-Feb-16	GRAB	13799 Commerce Pkwy.	10-Feb-16	0.76	<1	<2	6	<1	0.13
10-Feb-16	GRAB	6651 Fraserwood Place	10-Feb-16	0.75	<1	<2	6	<1	0.15
10-Feb-16	GRAB	Opp. 20371 Westminster Hwy.	10-Feb-16	0.69	<1	<2	6	<1	0.11
10-Feb-16	GRAB	9911 Sidaway Rd.	10-Feb-16	0.71	<1	<2	6	<1	0.42
10-Feb-16	GRAB	11111 Horseshoe Way	10-Feb-16	0.89	<1	<2	6	<1	0.13
10-Feb-16	GRAB	10020 Amethyst Ave.	10-Feb-16	0.81	<1	<2	7	<1	0.34
10-Feb-16	GRAB	9380 General Currie Rd.	10-Feb-16	1	<1	<2	6	<1	0.13
10-Feb-16	GRAB	13800 No. 3 Rd. (off Garden City)	10-Feb-16	0.89	<1	2	6	<1	0.19
10-Feb-16	GRAB	7000 Blk. Dyke Rd.	10-Feb-16	0.88	<1	<2	6	<1	0.18
10-Feb-16	GRAB	6640 Blundell Rd.	10-Feb-16	0.95	<1	<2	7	<1	0.66
12-Feb-16	GRAB	3180 Granville Ave.	12-Feb-16	0.91	<1	<2	7	<1	0.34
12-Feb-16	GRAB	4251 Moncton St.	12-Feb-16	0.91	<1	<2	6	<1	0.14
12-Feb-16	GRAB	11080 No. 2 Rd.	12-Feb-16	0.93	<1	<2	6	<1	0.13
12-Feb-16	GRAB	13200 No. 4 Rd.	12-Feb-16	0.78	<1	<2	7	<1	0.13
12-Feb-16	GRAB	Opp. 8600 Ryan Rd.	12-Feb-16	0.85	<1	<2	6	<1	0.11
12-Feb-16	GRAB	13851 Steveston Hwy.	12-Feb-16	0.77	<1	<2	7	<1	0.12
12-Feb-16	GRAB	1500 Valemont Way	12-Feb-16	0.68	<1	<2	8	<1	0.14
12-Feb-16	GRAB	11720 Westminster Hwy.	12-Feb-16	0.84	<1	<2	6	<1	0.15
12-Feb-16	GRAB	17240 Fedoruk	12-Feb-16	0.78	<1	<2	6	<1	0.11
12-Feb-16	GRAB	23000 Blk. Dyke Rd.	12-Feb-16	0.75	<1	<2	7	<1	0.13
12-Feb-16	GRAB	22271 Cochrane Drive	12-Feb-16	0.76	<1	<2	6	<1	0.1
12-Feb-16	GRAB	5180 Smith Cres.	12-Feb-16	0.78	<1	<2	7	<1	0.11
12-Feb-16	GRAB	23260 Westminster Hwy.	12-Feb-16	0.7	<1	<2	7	<1	0.09
15-Feb-16	GRAB	5951 McCallan Rd.	15-Feb-16	0.94	<1	<2	7	<1	0.21
15-Feb-16	GRAB	Opp. 8331 Fairfax Place	15-Feb-16	0.72	<1	<2	8	<1	0.24
15-Feb-16	GRAB	9751 Pendleton Rd.	15-Feb-16	0.87	<1	<2	7	<1	0.13
15-Feb-16	GRAB	10920 Springwood Court	15-Feb-16	0.81	<1	<2	9	<1	0.12

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
15-Feb-16	GRAB	6071 Azure Rd.	15-Feb-16	0.85	<1	<2	7	<1	0.16
15-Feb-16	GRAB	3800 Cessna Drive	15-Feb-16	0.87	<1	<2	8	<1	0.14
15-Feb-16	GRAB	751 Catalina Cres.	15-Feb-16	0.9	<1	<2	6	<1	0.23
15-Feb-16	GRAB	6000 Blk. Miller Rd.	15-Feb-16	0.85	<1	<2	7	<1	0.33
15-Feb-16	GRAB	1000 Blk. McDonald Rd.	15-Feb-16	0.48	<1	<2	8	<1	0.37
15-Feb-16	GRAB	5300 No. 3 Rd.	15-Feb-16	0.91	<1	<2	7	<1	0.18
15-Feb-16	GRAB	8200 Jones Rd.	15-Feb-16	0.93	<1	<2	7	<1	0.2
15-Feb-16	GRAB	14951 Triangle Rd.	15-Feb-16	0.73	<1	<2	7	<1	0.1
15-Feb-16	GRAB	11051 No 3 Rd.	15-Feb-16	0.86	<1	<2	7	<1	0.23
17-Feb-16	GRAB	12560 Cambie Rd.	17-Feb-16	0.6	<1	<2	7	<1	0.12
17-Feb-16	GRAB	13100 Mitchell Rd.	17-Feb-16	0.88	<1	<2	7	<1	0.13
17-Feb-16	GRAB	Opp. 11280 Twigg Place	17-Feb-16	0.87	<1	<2	7	<1	0.19
17-Feb-16	GRAB	13799 Commerce Pkwy.	17-Feb-16	0.57	<1	<2	7	<1	0.14
17-Feb-16	GRAB	6651 Fraserwood Place	17-Feb-16	0.66	<1	<2	7	<1	0.11
17-Feb-16	GRAB	Opp. 20371 Westminster Hwy.	17-Feb-16	0.66	<1	<2	7	<1	0.08
17-Feb-16	GRAB	9911 Sidaway Rd.	17-Feb-16	0.77	<1	8	7	<1	0.1
17-Feb-16	GRAB	11111 Horseshoe Way	17-Feb-16	1	<1	<2	7	<1	0.13
17-Feb-16	GRAB	10020 Amethyst Ave.	17-Feb-16	0.85	<1	<2	8	<1	0.11
17-Feb-16	GRAB	9380 General Currie Rd.	17-Feb-16	0.79	<1	<2	7	<1	0.15
17-Feb-16	GRAB	13800 No. 3 Rd. (off Garden City)	17-Feb-16	0.94	<1	<2	7	<1	0.13
17-Feb-16	GRAB	7000 Blk. Dyke Rd.	17-Feb-16	0.72	<1	<2	7	<1	0.17
17-Feb-16	GRAB	6640 Blundell Rd.	17-Feb-16	0.77	<1	4	7	<1	0.14
18-Feb-16	GRAB	3180 Granville Ave.	18-Feb-16	1	<1	<2	7	<1	0.31
18-Feb-16	GRAB	4251 Moncton St.	18-Feb-16	0.87	<1	<2	7	<1	0.11
18-Feb-16	GRAB	11080 No. 2 Rd.	18-Feb-16	0.91	<1	<2	7	<1	0.2
18-Feb-16	GRAB	Opp. 8600 Ryan Rd.	18-Feb-16	1	<1	<2	7	<1	0.42
18-Feb-16	GRAB	13200 No. 4 Rd.	18-Feb-16	0.86	<1	<2	6	<1	0.11
18-Feb-16	GRAB	13851 Steveston Hwy.	18-Feb-16	0.72	<1	<2	7	<1	0.13
18-Feb-16	GRAB	1500 Valemont Way	18-Feb-16	0.76	<1	<2	6	<1	0.11
18-Feb-16	GRAB	11720 Westminster Hwy.	18-Feb-16	0.91	<1	<2	8	<1	0.11
18-Feb-16	GRAB	17240 Fedoruk	18-Feb-16	0.72	<1	<2	7	<1	0.12
18-Feb-16	GRAB	23000 Blk. Dyke Rd.	18-Feb-16	0.7	<1	<2	8	<1	0.1
18-Feb-16	GRAB	22271 Cochrane Drive	18-Feb-16	0.74	<1	<2	7	<1	0.1
18-Feb-16	GRAB	5180 Smith Cres.	18-Feb-16	0.64	<1	<2	8	<1	0.11
18-Feb-16	GRAB	23260 Westminster Hwy.	18-Feb-16	0.69	<1	<2	6	<1	0.12
22-Feb-16	GRAB	5951 McCallan Rd.	22-Feb-16	0.85	<1	2	6	<1	0.2
22-Feb-16	GRAB	Opp. 8331 Fairfax Place	22-Feb-16	0.75	<1	2	8	<1	1.3
22-Feb-16	GRAB	9751 Pendleton Rd.	22-Feb-16	0.74	<1	<2	7	<1	0.14
22-Feb-16	GRAB	10920 Springwood Court	22-Feb-16	0.79	<1	<2	6	<1	0.12
22-Feb-16	GRAB	6071 Azure Rd.	22-Feb-16	0.84	<1	<2	8	<1	0.16

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
22-Feb-16	GRAB	3800 Cessna Drive	22-Feb-16	0.82	<1	<2	7	<1	0.14
22-Feb-16	GRAB	751 Catalina Cres.	22-Feb-16	0.94	<1	<2	6	<1	0.1
22-Feb-16	GRAB	6000 Blk. Miller Rd.	22-Feb-16	0.92	<1	<2	7	<1	0.15
22-Feb-16	GRAB	5300 No. 3 Rd.	22-Feb-16	0.9	<1	<2	6	<1	0.17
22-Feb-16	GRAB	8200 Jones Rd.	22-Feb-16	0.91	<1	<2	8	<1	0.16
22-Feb-16	GRAB	14951 Triangle Rd.	22-Feb-16	0.81	<1	<2	6	<1	0.09
22-Feb-16	GRAB	11051 No 3 Rd.	22-Feb-16	0.94	<1	<2	6	<1	0.17
24-Feb-16	GRAB	6640 Blundell Rd.	24-Feb-16	0.99	<1	<2	6	<1	0.13
24-Feb-16	GRAB	9380 General Currie Rd.	24-Feb-16	0.89	<1	<2	6	<1	0.09
24-Feb-16	GRAB	10020 Amethyst Ave.	24-Feb-16	0.66	<1	<2	6	<1	0.13
24-Feb-16	GRAB	11111 Horseshoe Way	24-Feb-16	0.91	<1	<2	6	<1	0.09
24-Feb-16	GRAB	7000 Blk. Dyke Rd.	24-Feb-16	0.83	<1	<2	7	<1	0.12
24-Feb-16	GRAB	13800 No. 3 Rd. (off Garden City)	24-Feb-16	0.92	<1	<2	7	<1	0.1
24-Feb-16	GRAB	9911 Sidaway Rd.	24-Feb-16	0.65	<1	<2	7	<1	0.11
24-Feb-16	GRAB	12560 Cambie Rd.	24-Feb-16	0.88	<1	<2	6	<1	0.16
24-Feb-16	GRAB	13100 Mitchell Rd.	24-Feb-16	0.83	<1	<2	7	<1	0.1
24-Feb-16	GRAB	Opp. 11280 Twigg Place	24-Feb-16	0.86	<1	<2	6	<1	0.1
24-Feb-16	GRAB	13799 Commerce Pkwy.	24-Feb-16	0.62	<1	<2	8	<1	0.33
24-Feb-16	GRAB	Opp. 20371 Westminster Hwy.	24-Feb-16	0.79	<1	<2	7	<1	0.14
24-Feb-16	GRAB	6651 Fraserwood Place	24-Feb-16	0.65	<1	<2	7	<1	0.13
26-Feb-16	GRAB	3180 Granville Ave.	26-Feb-16	1.2	<1	2	7	<1	0.38
26-Feb-16	GRAB	4251 Moncton St.	26-Feb-16	0.81	<1	<2	7	<1	0.13
26-Feb-16	GRAB	11080 No. 2 Rd.	26-Feb-16	0.84	<1	<2	6	<1	0.16
26-Feb-16	GRAB	Opp. 8600 Ryan Rd.	26-Feb-16	0.85	<1	<2	6	<1	0.17
26-Feb-16	GRAB	13200 No. 4 Rd.	26-Feb-16	0.91	<1	30	7	<1	0.14
26-Feb-16	GRAB	13851 Steveston Hwy.	26-Feb-16	0.71	<1	<2	5	<1	0.12
26-Feb-16	GRAB	1500 Valemont Way	26-Feb-16	0.71	<1	<2	6	<1	0.11
26-Feb-16	GRAB	11720 Westminster Hwy.	26-Feb-16	0.81	<1	<2	7	<1	0.12
26-Feb-16	GRAB	17240 Fedoruk	26-Feb-16	0.71	<1	<2	7	<1	0.1
26-Feb-16	GRAB	23000 Blk. Dyke Rd.	26-Feb-16	0.53	<1	<2	7	<1	0.17
26-Feb-16	GRAB	5180 Smith Cres.	26-Feb-16	0.72	<1	<2	7	<1	0.1
26-Feb-16	GRAB	22271 Cochrane Drive	26-Feb-16	0.65	<1	<2	7	<1	0.15
26-Feb-16	GRAB	23260 Westminster Hwy.	26-Feb-16	0.74	<1	<2	6	<1	0.11
29-Feb-16	GRAB	5951 McCallan Rd.	29-Feb-16	0.89	<1	<2	7	<1	0.21
29-Feb-16	GRAB	Opp. 8331 Fairfax Place	29-Feb-16	0.81	<1	<2	7	<1	0.47
29-Feb-16	GRAB	9751 Pendleton Rd.	29-Feb-16	0.87	<1	<2	7	<1	0.12
29-Feb-16	GRAB	10920 Springwood Court	29-Feb-16	0.92	<1	<2	8	<1	0.2
29-Feb-16	GRAB	6071 Azure Rd.	29-Feb-16	0.87	<1	<2	8	<1	0.39
29-Feb-16	GRAB	3800 Cessna Drive	29-Feb-16	0.83	<1	<2	7	<1	0.12
29-Feb-16	GRAB	751 Catalina Cres.	29-Feb-16	0.89	<1	<2	7	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
29-Feb-16	GRAB	6000 Blk. Miller Rd.	29-Feb-16	0.95	<1	<2	6	<1	0.32
29-Feb-16	GRAB	1000 Blk. McDonald Rd.	29-Feb-16	0.28	<1	<2	8	<1	0.59
29-Feb-16	GRAB	5300 No. 3 Rd.	29-Feb-16	0.88	<1	<2	7	<1	0.15
29-Feb-16	GRAB	8200 Jones Rd.	29-Feb-16	1	<1	<2	7	<1	0.2
29-Feb-16	GRAB	14951 Triangle Rd.	29-Feb-16	0.67	<1	<2	8	<1	0.16
29-Feb-16	GRAB	11051 No 3 Rd.	29-Feb-16	0.93	<1	<2	5	<1	0.17
2-Mar-16	GRAB	12560 Cambie Rd.	2-Mar-16	0.88	<1	<2	7	<1	0.25
2-Mar-16	GRAB	13100 Mitchell Rd.	2-Mar-16	1	<1	6	7	<1	0.14
2-Mar-16	GRAB	Opp. 11280 Twigg Place	2-Mar-16	0.96	<1	2	7	<1	0.19
2-Mar-16	GRAB	13799 Commerce Pkwy.	2-Mar-16	0.68	<1	<2	7	<1	0.15
2-Mar-16	GRAB	6651 Fraserwood Place	2-Mar-16	0.68	<1	<2	8	<1	0.19
2-Mar-16	GRAB	Opp. 20371 Westminster Hwy.	2-Mar-16	0.73	<1	<2	7	<1	0.2
2-Mar-16	GRAB	9911 Sidaway Rd.	2-Mar-16	0.75	<1	<2	6	<1	0.23
2-Mar-16	GRAB	11111 Horseshoe Way	2-Mar-16	0.93	<1	<2	7	<1	0.17
2-Mar-16	GRAB	10020 Amethyst Ave.	2-Mar-16	0.82	<1	<2	7	<1	0.16
2-Mar-16	GRAB	9380 General Currie Rd.	2-Mar-16	0.88	<1	<2	6	<1	0.19
2-Mar-16	GRAB	13800 No. 3 Rd. (off Garden City)	2-Mar-16	0.9	<1	<2	7	<1	0.27
2-Mar-16	GRAB	7000 Blk. Dyke Rd.	2-Mar-16	0.94	<1	<2	7	<1	0.11
2-Mar-16	GRAB	6640 Blundell Rd.	2-Mar-16	0.91	<1	<2	6	<1	0.12
3-Mar-16	GRAB	3180 Granville Ave.	3-Mar-16	0.92	<1	<2	7	<1	0.44
3-Mar-16	GRAB	4251 Moncton St.	3-Mar-16	0.98	<1	2	7	<1	0.13
3-Mar-16	GRAB	11080 No. 2 Rd.	3-Mar-16	0.96	<1	<2	7	<1	0.12
3-Mar-16	GRAB	Opp. 8600 Ryan Rd.	3-Mar-16	1.1	<1	<2	7	<1	0.16
3-Mar-16	GRAB	13200 No. 4 Rd.	3-Mar-16	0.91	<1	<2	8	<1	0.12
3-Mar-16	GRAB	13851 Steveston Hwy.	3-Mar-16	0.87	<1	<2	8	<1	0.12
3-Mar-16	GRAB	1500 Valemont Way	3-Mar-16	0.82	<1	<2	7	<1	0.11
3-Mar-16	GRAB	11720 Westminster Hwy.	3-Mar-16	0.84	<1	2	7	<1	0.11
3-Mar-16	GRAB	17240 Fedoruk	3-Mar-16	0.86	<1	<2	7	<1	0.1
3-Mar-16	GRAB	23000 Blk. Dyke Rd.	3-Mar-16	0.8	<1	<2	7	<1	0.23
3-Mar-16	GRAB	22271 Cochrane Drive	3-Mar-16	0.78	<1	6	8	<1	0.13
3-Mar-16	GRAB	5180 Smith Cres.	3-Mar-16	0.66	<1	<2	7	<1	0.11
3-Mar-16	GRAB	23260 Westminster Hwy.	3-Mar-16	0.9	<1	2	7	<1	0.1
7-Mar-16	GRAB	5951 McCallan Rd.	7-Mar-16	0.82	<1	<2	7	<1	0.21
7-Mar-16	GRAB	Opp. 8331 Fairfax Place	7-Mar-16	0.84	<1	<2	9	<1	2.7
7-Mar-16	GRAB	9751 Pendleton Rd.	7-Mar-16	0.83	<1	<2	8	<1	0.12
7-Mar-16	GRAB	10920 Springwood Court	7-Mar-16	0.8	<1	<2	8	<1	0.14
7-Mar-16	GRAB	6071 Azure Rd.	7-Mar-16	0.77	<1	<2	8	<1	0.1
7-Mar-16	GRAB	3800 Cessna Drive	7-Mar-16	0.98	<1	<2	7	<1	0.12
7-Mar-16	GRAB	751 Catalina Cres.	7-Mar-16	0.89	<1	<2	6	<1	0.15
7-Mar-16	GRAB	6000 Blk. Miller Rd.	7-Mar-16	0.79	<1	<2	7	<1	0.28

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
7-Mar-16	GRAB	1000 Blk. McDonald Rd.	7-Mar-16	0.46	<1	<2	9	<1	0.9
7-Mar-16	GRAB	5300 No. 3 Rd.	7-Mar-16	0.88	<1	<2	8	<1	0.13
7-Mar-16	GRAB	8200 Jones Rd.	7-Mar-16	0.79	<1	8	7	<1	0.16
7-Mar-16	GRAB	14951 Triangle Rd.	7-Mar-16	0.44	<1	<2	7	<1	0.13
7-Mar-16	GRAB	11051 No 3 Rd.	7-Mar-16	0.97	<1	<2	7	<1	0.13
9-Mar-16	GRAB	12560 Cambie Rd.	9-Mar-16	0.91	<1	<2	7	<1	0.14
9-Mar-16	GRAB	13100 Mitchell Rd.	9-Mar-16	1.1	<1	<2	7	<1	0.14
9-Mar-16	GRAB	Opp. 11280 Twigg Place	9-Mar-16	0.85	<1	<2	8	<1	0.19
9-Mar-16	GRAB	13799 Commerce Pkwy.	9-Mar-16	0.74	<1	<2	7	<1	0.17
9-Mar-16	GRAB	6651 Fraserwood Place	9-Mar-16	0.84	<1	<2	6	<1	0.18
9-Mar-16	GRAB	Opp. 20371 Westminster Hwy.	9-Mar-16	0.81	<1	<2	6	<1	0.13
9-Mar-16	GRAB	9911 Sidaway Rd.	9-Mar-16	1.1	<1	<2	7	<1	0.13
9-Mar-16	GRAB	11111 Horseshoe Way	9-Mar-16	0.96	<1	<2	6	<1	0.13
9-Mar-16	GRAB	10020 Amethyst Ave.	9-Mar-16	0.83	<1	<2	8	<1	0.14
9-Mar-16	GRAB	9380 General Currie Rd.	9-Mar-16	1	<1	<2	6	<1	0.14
9-Mar-16	GRAB	13800 No. 3 Rd. (off Garden City)	9-Mar-16	0.83	<1	<2	6	<1	0.12
9-Mar-16	GRAB	7000 Blk. Dyke Rd.	9-Mar-16	1	<1	<2	8	<1	0.26
9-Mar-16	GRAB	6640 Blundell Rd.	9-Mar-16	0.91	<1	<2	7	<1	0.15
11-Mar-16	GRAB	3180 Granville Ave.	11-Mar-16	0.75	<1	<2	6	<1	0.3
11-Mar-16	GRAB	4251 Moncton St.	11-Mar-16	0.91	<1	<2	7	<1	0.12
11-Mar-16	GRAB	11080 No. 2 Rd.	11-Mar-16	0.94	<1	<2	7	<1	0.13
11-Mar-16	GRAB	Opp. 8600 Ryan Rd.	11-Mar-16	0.8	<1	<2	7	<1	0.17
11-Mar-16	GRAB	13200 No. 4 Rd.	11-Mar-16	0.92	<1	<2	7	<1	0.19
11-Mar-16	GRAB	13851 Steveston Hwy.	11-Mar-16	0.72	<1	<2	7	<1	0.14
11-Mar-16	GRAB	11720 Westminster Hwy.	11-Mar-16	0.87	<1	<2	6	<1	0.18
11-Mar-16	GRAB	17240 Fedoruk	11-Mar-16	0.66	<1	<2	8	<1	0.21
11-Mar-16	GRAB	23000 Blk. Dyke Rd.	11-Mar-16	0.65	<1	<2	8	<1	0.16
11-Mar-16	GRAB	22271 Cochrane Drive	11-Mar-16	0.61	<1	<2	7	<1	0.14
11-Mar-16	GRAB	5180 Smith Cres.	11-Mar-16	0.64	<1	<2	7	<1	0.15
14-Mar-16	GRAB	5951 McCallan Rd.	14-Mar-16	0.91	<1	<2	7	<1	0.1
14-Mar-16	GRAB	Opp. 8331 Fairfax Place	14-Mar-16	0.77	<1	<2	7	<1	0.24
14-Mar-16	GRAB	9751 Pendleton Rd.	14-Mar-16	0.9	<1	<2	8	<1	0.11
14-Mar-16	GRAB	10920 Springwood Court	14-Mar-16	0.82	<1	<2	8	<1	0.16
14-Mar-16	GRAB	6071 Azure Rd.	14-Mar-16	0.88	<1	<2	7	<1	0.13
14-Mar-16	GRAB	3800 Cessna Drive	14-Mar-16	0.79	<1	<2	8	<1	0.11
14-Mar-16	GRAB	751 Catalina Cres.	14-Mar-16	0.91	<1	<2	8	<1	0.15
14-Mar-16	GRAB	6000 Blk. Miller Rd.	14-Mar-16	0.92	<1	<2	6	<1	0.25
14-Mar-16	GRAB	1000 Blk. McDonald Rd.	14-Mar-16	0.53	<1	<2	7	<1	0.24
14-Mar-16	GRAB	5300 No. 3 Rd.	14-Mar-16	0.87	<1	2	7	<1	0.12
14-Mar-16	GRAB	8200 Jones Rd.	14-Mar-16	0.93	<1	<2	6	<1	0.11

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
14-Mar-16	GRAB	14951 Triangle Rd.	14-Mar-16	0.69	<1	<2	7	<1	0.1
14-Mar-16	GRAB	11051 No 3 Rd.	14-Mar-16	0.8	<1	2	7	<1	0.12
16-Mar-16	GRAB	12560 Cambie Rd.	16-Mar-16	0.94	<1	<2	6	<1	0.1
16-Mar-16	GRAB	13100 Mitchell Rd.	16-Mar-16	0.79	<1	<2	8	<1	0.1
16-Mar-16	GRAB	Opp. 11280 Twigg Place	16-Mar-16	0.96	<1	<2	7	<1	0.13
16-Mar-16	GRAB	13799 Commerce Pkwy.	16-Mar-16	0.7	<1	<2	7	<1	0.09
16-Mar-16	GRAB	6651 Fraserwood Place	16-Mar-16	0.72	<1	<2	6	<1	0.18
16-Mar-16	GRAB	Opp. 20371 Westminster Hwy.	16-Mar-16	0.8	<1	<2	6	<1	0.18
16-Mar-16	GRAB	9911 Sidaway Rd.	16-Mar-16	0.83	<1	<2	6	<1	0.13
16-Mar-16	GRAB	11111 Horseshoe Way	16-Mar-16	1	<1	<2	6	<1	0.09
16-Mar-16	GRAB	10020 Amethyst Ave.	16-Mar-16	0.74	<1	<2	7	<1	0.18
16-Mar-16	GRAB	9380 General Currie Rd.	16-Mar-16	1	<1	<2	6	<1	0.09
16-Mar-16	GRAB	13800 No. 3 Rd. (off Garden City)	16-Mar-16	0.86	<1	<2	7	<1	0.15
16-Mar-16	GRAB	7000 Blk. Dyke Rd.	16-Mar-16	0.93	<1	<2	7	<1	0.1
16-Mar-16	GRAB	6640 Blundell Rd.	16-Mar-16	0.94	<1	<2	6	<1	0.11
17-Mar-16	GRAB	3180 Granville Ave.	17-Mar-16	0.84	<1	<2	8	<1	0.32
17-Mar-16	GRAB	4251 Moncton St.	17-Mar-16	0.81	<1	<2	7	<1	0.09
17-Mar-16	GRAB	11080 No. 2 Rd.	17-Mar-16	0.83	<1	<2	6	<1	0.12
17-Mar-16	GRAB	Opp. 8600 Ryan Rd.	17-Mar-16	0.97	<1	<2	6	<1	0.12
17-Mar-16	GRAB	13200 No. 4 Rd.	17-Mar-16	0.92	<1	<2	8	<1	0.13
17-Mar-16	GRAB	13851 Steveston Hwy.	17-Mar-16	0.69	<1	<2	7	<1	0.12
17-Mar-16	GRAB	1500 Valemont Way	17-Mar-16	0.73	<1	<2	7	<1	0.15
17-Mar-16	GRAB	11720 Westminster Hwy.	17-Mar-16	0.87	<1	<2	6	<1	0.09
17-Mar-16	GRAB	17240 Fedoruk	17-Mar-16	0.66	<1	<2	7	<1	0.09
17-Mar-16	GRAB	23000 Blk. Dyke Rd.	17-Mar-16	0.64	<1	<2	7	<1	0.12
17-Mar-16	GRAB	22271 Cochrane Drive	17-Mar-16	0.64	<1	<2	7	<1	0.1
17-Mar-16	GRAB	5180 Smith Cres.	17-Mar-16	0.68	<1	<2	7	<1	0.1
17-Mar-16	GRAB	23260 Westminster Hwy.	17-Mar-16	0.64	<1	<2	7	<1	0.14
21-Mar-16	GRAB	5951 McCallan Rd.	21-Mar-16	0.89	<1	<2	7	<1	0.17
21-Mar-16	GRAB	Opp. 8331 Fairfax Place	21-Mar-16	0.78	<1	<2	9	<1	0.25
21-Mar-16	GRAB	9751 Pendleton Rd.	21-Mar-16	0.98	<1	<2	8	<1	0.72
21-Mar-16	GRAB	10920 Springwood Court	21-Mar-16	0.84	<1	<2	9	<1	0.12
21-Mar-16	GRAB	11051 No 3 Rd.	21-Mar-16	0.83	<1	<2	8	<1	0.16
21-Mar-16	GRAB	14951 Triangle Rd.	21-Mar-16	0.71	<1	<2	7	<1	0.24
21-Mar-16	GRAB	8200 Jones Rd.	21-Mar-16	0.86	<1	<2	7	<1	0.29
21-Mar-16	GRAB	5300 No. 3 Rd.	21-Mar-16	0.93	<1	<2	7	<1	0.16
21-Mar-16	GRAB	1000 Blk. McDonald Rd.	21-Mar-16	0.7	<1	<2	8	<1	0.13
21-Mar-16	GRAB	6000 Blk. Miller Rd.	21-Mar-16	0.96	<1	<2	7	<1	0.2
21-Mar-16	GRAB	3800 Cessna Drive	21-Mar-16	0.88	<1	<2	7	<1	0.1
21-Mar-16	GRAB	751 Catalina Cres.	21-Mar-16	0.94	<1	<2	7	<1	0.15

Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
21-Mar-16	GRAB	6071 Azure Rd.	21-Mar-16	0.9	<1	<2	7	<1	0.23
23-Mar-16	GRAB	3180 Granville Ave.	23-Mar-16	0.9	<1	<2	8	<1	0.11
23-Mar-16	GRAB	6640 Blundell Rd.	23-Mar-16	0.94	<1	<2	7	<1	0.11
23-Mar-16	GRAB	4251 Moncton St.	23-Mar-16	0.92	<1	<2	7	<1	0.2
23-Mar-16	GRAB	9380 General Currie Rd.	23-Mar-16	0.85	<1	<2	6	<1	0.14
23-Mar-16	GRAB	11080 No. 2 Rd.	23-Mar-16	0.95	<1	<2	7	<1	0.08
23-Mar-16	GRAB	10020 Amethyst Ave.	23-Mar-16	0.73	<1	<2	6	<1	0.12
23-Mar-16	GRAB	Opp. 8600 Ryan Rd.	23-Mar-16	0.95	<1	2	7	<1	0.1
23-Mar-16	GRAB	9911 Sidaway Rd.	23-Mar-16	0.93	<1	<2	7	<1	0.11
23-Mar-16	GRAB	13200 No. 4 Rd.	23-Mar-16	0.99	<1	<2	7	<1	0.1
23-Mar-16	GRAB	11111 Horseshoe Way	23-Mar-16	0.67	<1	<2	7	<1	0.09
23-Mar-16	GRAB	13851 Steveston Hwy.	23-Mar-16	0.71	<1	<2	7	<1	0.08
23-Mar-16	GRAB	13800 No. 3 Rd. (off Garden City)	23-Mar-16	0.86	<1	<2	7	<1	0.11
23-Mar-16	GRAB	1500 Valemont Way	23-Mar-16	0.76	<1	<2	8	<1	0.1
23-Mar-16	GRAB	7000 Blk. Dyke Rd.	23-Mar-16	1	<1	<2	7	<1	0.13
23-Mar-16	GRAB	11720 Westminster Hwy.	23-Mar-16	0.92	<1	<2	7	<1	0.11
23-Mar-16	GRAB	12560 Cambie Rd.	23-Mar-16	0.92	<1	<2	7	<1	0.09
23-Mar-16	GRAB	17240 Fedoruk	23-Mar-16	0.63	<1	<2	8	<1	0.1
23-Mar-16	GRAB	13100 Mitchell Rd.	23-Mar-16	1	<1	2	8	<1	0.13
23-Mar-16	GRAB	23000 Blk. Dyke Rd.	23-Mar-16	0.65	<1	<2	7	<1	0.12
23-Mar-16	GRAB	Opp. 11280 Twigg Place	23-Mar-16	0.96	<1	<2	7	<1	0.26
23-Mar-16	GRAB	13799 Commerce Pkwy.	23-Mar-16	0.74	<1	<2	6	<1	0.11
23-Mar-16	GRAB	5180 Smith Cres.	23-Mar-16	0.63	<1	<2	7	<1	0.11
23-Mar-16	GRAB	Opp. 20371 Westminster Hwy.	23-Mar-16	0.6	<1	<2	7	<1	0.12
23-Mar-16	GRAB	23260 Westminster Hwy.	23-Mar-16	0.67	<1	<2	7	<1	0.11
23-Mar-16	GRAB	6651 Fraserwood Place	23-Mar-16	0.77	<1	<2	7	<1	0.11
29-Mar-16	GRAB	5951 McCallan Rd.	29-Mar-16	0.96	<1	<2	7	<1	0.11
29-Mar-16	GRAB	Opp. 8331 Fairfax Place	29-Mar-16	0.96	<1	<2	10	<1	0.11
29-Mar-16	GRAB	9751 Pendleton Rd.	29-Mar-16	0.85	<1	<2	8	<1	0.16
29-Mar-16	GRAB	10920 Springwood Court	29-Mar-16	0.87	<1	<2	10	<1	0.09
29-Mar-16	GRAB	6071 Azure Rd.	29-Mar-16	0.81	<1	<2	9	<1	0.11
29-Mar-16	GRAB	3800 Cessna Drive	29-Mar-16	0.83	<1	<2	8	<1	0.14
29-Mar-16	GRAB	751 Catalina Cres.	29-Mar-16	0.86	<1	<2	7	<1	0.11
29-Mar-16	GRAB	6000 Blk. Miller Rd.	29-Mar-16	0.87	<1	<2	7	<1	0.43
29-Mar-16	GRAB	1000 Blk. McDonald Rd.	29-Mar-16	0.67	<1	<2	9	<1	0.2
29-Mar-16	GRAB	5300 No. 3 Rd.	29-Mar-16	0.72	<1	<2	8	<1	0.12
29-Mar-16	GRAB	8200 Jones Rd.	29-Mar-16	0.85	<1	<2	8	<1	0.09
29-Mar-16	GRAB	14951 Triangle Rd.	29-Mar-16	0.73	<1	<2	8	<1	0.1
29-Mar-16	GRAB	11051 No 3 Rd.	29-Mar-16	0.73	<1	<2	7	<1	0.11
30-Mar-16	GRAB	12560 Cambie Rd.	30-Mar-16	0.83	<1	<2	7	<1	0.08

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
30-Mar-16	GRAB	13100 Mitchell Rd.	30-Mar-16	0.86	<1	<2	7	<1	0.15
30-Mar-16	GRAB	Opp. 11280 Twigg Place	30-Mar-16	0.81	<1	<2	7	<1	0.16
30-Mar-16	GRAB	13799 Commerce Pkwy.	30-Mar-16	0.68	<1	<2	6	<1	0.12
30-Mar-16	GRAB	6651 Fraserwood Place	30-Mar-16	0.69	<1	<2	7	<1	0.12
30-Mar-16	GRAB	Opp. 20371 Westminster Hwy.	30-Mar-16	0.74	<1	<2	8	<1	0.1
30-Mar-16	GRAB	9911 Sidaway Rd.	30-Mar-16	0.65	<1	<2	7	<1	0.08
30-Mar-16	GRAB	11111 Horseshoe Way	30-Mar-16	0.84	<1	<2	6	<1	0.1
30-Mar-16	GRAB	10020 Amethyst Ave.	30-Mar-16	0.68	<1	<2	7	<1	0.1
30-Mar-16	GRAB	9380 General Currie Rd.	30-Mar-16	0.89	<1	<2	6	<1	0.08
30-Mar-16	GRAB	13800 No. 3 Rd. (off Garden City)	30-Mar-16	0.72	<1	<2	7	<1	0.18
30-Mar-16	GRAB	7000 Blk. Dyke Rd.	30-Mar-16	0.89	<1	<2	7	<1	0.08
30-Mar-16	GRAB	6640 Blundell Rd.	30-Mar-16	0.98	<1	<2	6	<1	0.12
31-Mar-16	GRAB	3180 Granville Ave.	31-Mar-16	0.88	<1	<2	7	<1	0.13
31-Mar-16	GRAB	4251 Moncton St.	31-Mar-16	0.87	<1	<2	7	<1	0.09
31-Mar-16	GRAB	11080 No. 2 Rd.	31-Mar-16	0.91	<1	<2	8	<1	0.1
31-Mar-16	GRAB	Opp. 8600 Ryan Rd.	31-Mar-16	0.86	<1	<2	7	<1	2
31-Mar-16	GRAB	13200 No. 4 Rd.	31-Mar-16	0.85	<1	<2	7	<1	0.09
31-Mar-16	GRAB	13851 Steveston Hwy.	31-Mar-16	0.75	<1	<2	6	<1	0.07
31-Mar-16	GRAB	1500 Valemont Way	31-Mar-16	0.69	<1	<2	6	<1	0.09
31-Mar-16	GRAB	11720 Westminster Hwy.	31-Mar-16	0.93	<1	<2	7	<1	0.08
31-Mar-16	GRAB	17240 Fedoruk	31-Mar-16	0.72	<1	<2	7	<1	0.07
31-Mar-16	GRAB	23000 Blk. Dyke Rd.	31-Mar-16	0.46	<1	<2	7	<1	0.13
31-Mar-16	GRAB	22271 Cochrane Drive	31-Mar-16	0.7	<1	<2	8	<1	0.09
31-Mar-16	GRAB	5180 Smith Cres.	31-Mar-16	0.71	<1	<2	8	<1	0.12
31-Mar-16	GRAB	23260 Westminster Hwy.	31-Mar-16	0.69	<1	<2	7	<1	0.09
4-Apr-16	GRAB	5951 McCallan Rd.	4-Apr-16	0.87	<1	<2	8	<1	0.19
4-Apr-16	GRAB	Opp. 8331 Fairfax Place	4-Apr-16	0.79	<1	<2	11	<1	0.72
4-Apr-16	GRAB	9751 Pendleton Rd.	4-Apr-16	0.75	<1	<2	9	<1	0.17
4-Apr-16	GRAB	10920 Springwood Court	4-Apr-16	0.72	<1	<2	10	<1	0.15
4-Apr-16	GRAB	6071 Azure Rd.	4-Apr-16	0.78	<1	<2	10	<1	0.14
4-Apr-16	GRAB	3800 Cessna Drive	4-Apr-16	0.67	<1	<2	9	<1	0.14
4-Apr-16	GRAB	751 Catalina Cres.	4-Apr-16	0.97	<1	<2	7	<1	0.12
4-Apr-16	GRAB	6000 Blk. Miller Rd.	4-Apr-16	0.86	<1	<2	7	<1	0.24
4-Apr-16	GRAB	1000 Blk. McDonald Rd.	4-Apr-16	0.45	<1	4	10	<1	0.33
4-Apr-16	GRAB	5300 No. 3 Rd.	4-Apr-16	0.7	<1	<2	8	<1	0.18
4-Apr-16	GRAB	8200 Jones Rd.	4-Apr-16	0.71	<1	<2	8	<1	0.17
4-Apr-16	GRAB	14951 Triangle Rd.	4-Apr-16	0.68	<1	<2	8	<1	0.12
4-Apr-16	GRAB	11051 No 3 Rd.	4-Apr-16	0.93	<1	<2	7	<1	0.13
6-Apr-16	GRAB	12560 Cambie Rd.	6-Apr-16	0.75	<1	<2	7	<1	0.18
6-Apr-16	GRAB	13100 Mitchell Rd.	6-Apr-16	0.8	<1	<2	7	<1	0.14

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
6-Apr-16	GRAB	Opp. 11280 Twigg Place	6-Apr-16	0.79	<1	<2	7	<1	0.16
6-Apr-16	GRAB	13799 Commerce Pkwy.	6-Apr-16	0.61	<1	<2	7	<1	0.13
6-Apr-16	GRAB	6651 Fraserwood Place	6-Apr-16	0.62	<1	<2	9	<1	0.14
6-Apr-16	GRAB	Opp. 20371 Westminster Hwy.	6-Apr-16	0.71	<1	<2	8	<1	0.09
6-Apr-16	GRAB	9911 Sidaway Rd.	6-Apr-16	0.6	<1	2	8	<1	0.11
6-Apr-16	GRAB	11111 Horseshoe Way	6-Apr-16	0.71	<1	<2	8	<1	0.25
6-Apr-16	GRAB	10020 Amethyst Ave.	6-Apr-16	0.76	<1	<2	7	<1	3
6-Apr-16	GRAB	9380 General Currie Rd.	6-Apr-16	0.79	<1	<2	7	<1	0.16
6-Apr-16	GRAB	13800 No. 3 Rd. (off Garden City)	6-Apr-16	0.73	<1	<2	8	<1	0.17
6-Apr-16	GRAB	7000 Blk. Dyke Rd.	6-Apr-16	0.78	<1	<2	8	<1	0.26
6-Apr-16	GRAB	6640 Blundell Rd.	6-Apr-16	0.83	<1	<2	7	<1	0.17
8-Apr-16	GRAB	3180 Granville Ave.	8-Apr-16	0.78	<1	<2	9	<1	0.09
8-Apr-16	GRAB	4251 Moncton St.	8-Apr-16	0.76	<1	2	8	<1	0.16
8-Apr-16	GRAB	11080 No. 2 Rd.	8-Apr-16	0.77	<1	<2	8	<1	0.11
8-Apr-16	GRAB	Opp. 8600 Ryan Rd.	8-Apr-16	0.76	<1	<2	9	<1	0.11
8-Apr-16	GRAB	13200 No. 4 Rd.	8-Apr-16	0.75	<1	<2	8	<1	0.1
8-Apr-16	GRAB	13851 Steveston Hwy.	8-Apr-16	0.61	<1	<2	9	<1	0.09
8-Apr-16	GRAB	1500 Valemont Way	8-Apr-16	0.67	<1	<2	8	<1	0.08
8-Apr-16	GRAB	11720 Westminster Hwy.	8-Apr-16	0.88	<1	<2	8	<1	0.11
8-Apr-16	GRAB	17240 Fedoruk	8-Apr-16	0.69	<1	<2	9	<1	0.08
8-Apr-16	GRAB	23000 Blk. Dyke Rd.	8-Apr-16	0.67	<1	<2	9	<1	0.09
8-Apr-16	GRAB	22271 Cochrane Drive	8-Apr-16	0.6	<1	<2	8	<1	0.08
8-Apr-16	GRAB	5180 Smith Cres.	8-Apr-16	0.6	<1	<2	8	<1	0.1
8-Apr-16	GRAB	23260 Westminster Hwy.	8-Apr-16	0.64	<1	<2	9	<1	0.08
11-Apr-16	GRAB	5951 McCallan Rd.	11-Apr-16	1.08	<1	<2	8	<1	0.23
11-Apr-16	GRAB	Opp. 8331 Fairfax Place	11-Apr-16	0.86	<1	<2	13	<1	0.13
11-Apr-16	GRAB	9751 Pendleton Rd.	11-Apr-16	1.01	<1	<2	10	<1	0.18
11-Apr-16	GRAB	10920 Springwood Court	11-Apr-16	0.99	<1	<2	10	<1	0.15
11-Apr-16	GRAB	6071 Azure Rd.	11-Apr-16	0.94	<1	<2	10	<1	0.14
11-Apr-16	GRAB	3800 Cessna Drive	11-Apr-16	1.02	<1	<2	9	<1	0.1
11-Apr-16	GRAB	751 Catalina Cres.	11-Apr-16	1.06	<1	<2	8	<1	0.23
11-Apr-16	GRAB	6000 Blk. Miller Rd.	11-Apr-16	1.1	<1	<2	8	<1	0.12
11-Apr-16	GRAB	1000 Blk. McDonald Rd.	11-Apr-16	0.91	<1	<2	8	<1	0.72
11-Apr-16	GRAB	5300 No. 3 Rd.	11-Apr-16	1.17	<1	<2	8	<1	0.16
11-Apr-16	GRAB	8200 Jones Rd.	11-Apr-16	1.03	<1	<2	8	<1	0.11
11-Apr-16	GRAB	14951 Triangle Rd.	11-Apr-16	0.88	<1	<2	8	<1	0.12
11-Apr-16	GRAB	11051 No 3 Rd.	11-Apr-16	0.97	<1	<2	8	<1	0.11
13-Apr-16	GRAB	12560 Cambie Rd.	13-Apr-16	1.13	<1	<2	8	<1	0.1
13-Apr-16	GRAB	13100 Mitchell Rd.	13-Apr-16	1	<1	<2	9	<1	0.1
13-Apr-16	GRAB	Opp. 11280 Twigg Place	13-Apr-16	1.03	<1	<2	10	<1	0.11

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
13-Apr-16	GRAB	13799 Commerce Pkwy.	13-Apr-16	0.97	<1	<2	8	<1	0.15
13-Apr-16	GRAB	6651 Fraserwood Place	13-Apr-16	0.89	<1	<2	8	<1	0.12
13-Apr-16	GRAB	Opp. 20371 Westminster Hwy.	13-Apr-16	0.95	<1	<2	8	<1	0.13
13-Apr-16	GRAB	9911 Sidaway Rd.	13-Apr-16	0.76	<1	<2	8	<1	0.09
13-Apr-16	GRAB	11111 Horseshoe Way	13-Apr-16	0.97	<1	<2	8	<1	0.1
13-Apr-16	GRAB	10020 Amethyst Ave.	13-Apr-16	0.93	<1	<2	9	<1	0.12
13-Apr-16	GRAB	9380 General Currie Rd.	13-Apr-16	1.08	<1	<2	8	<1	0.1
13-Apr-16	GRAB	13800 No. 3 Rd. (off Garden City)	13-Apr-16	1.01	<1	2	8	<1	0.11
13-Apr-16	GRAB	7000 Blk. Dyke Rd.	13-Apr-16	0.99	<1	<2	8	<1	0.1
13-Apr-16	GRAB	6640 Blundell Rd.	13-Apr-16	1.02	<1	<2	8	<1	0.15
14-Apr-16	GRAB	3180 Granville Ave.	14-Apr-16	0.85	<1	<2	9	<1	0.14
14-Apr-16	GRAB	4251 Moncton St.	14-Apr-16	0.78	<1	<2	9	<1	0.11
14-Apr-16	GRAB	11080 No. 2 Rd.	14-Apr-16	0.61	<1	<2	9	<1	0.09
14-Apr-16	GRAB	Opp. 8600 Ryan Rd.	14-Apr-16	0.72	<1	<2	9	<1	0.15
14-Apr-16	GRAB	13200 No. 4 Rd.	14-Apr-16	0.84	<1	4	9	<1	0.09
14-Apr-16	GRAB	13851 Steveston Hwy.	14-Apr-16	0.72	<1	<2	9	<1	0.1
14-Apr-16	GRAB	1500 Valemont Way	14-Apr-16	0.73	<1	<2	9	<1	0.09
14-Apr-16	GRAB	11720 Westminster Hwy.	14-Apr-16	0.9	<1	<2	9	<1	0.09
14-Apr-16	GRAB	17240 Fedoruk	14-Apr-16	0.68	<1	<2	9	<1	0.08
14-Apr-16	GRAB	23000 Blk. Dyke Rd.	14-Apr-16	0.69	<1	<2	9	<1	0.09
14-Apr-16	GRAB	22271 Cochrane Drive	14-Apr-16	0.68	<1	<2	9	<1	0.12
14-Apr-16	GRAB	5180 Smith Cres.	14-Apr-16	0.62	<1	<2	9	<1	0.11
14-Apr-16	GRAB	23260 Westminster Hwy.	14-Apr-16	0.61	<1	<2	9	<1	0.14
18-Apr-16	GRAB	5951 McCallan Rd.	18-Apr-16	0.92	<1	<2	9	<1	0.19
18-Apr-16	GRAB	Opp. 8331 Fairfax Place	18-Apr-16	0.73	<1	<2	13	<1	0.14
18-Apr-16	GRAB	9751 Pendleton Rd.	18-Apr-16	0.84	<1	<2	10	<1	0.2
18-Apr-16	GRAB	10920 Springwood Court	18-Apr-16	0.8	<1	<2	10	<1	0.15
18-Apr-16	GRAB	6071 Azure Rd.	18-Apr-16	0.81	<1	<2	11	<1	0.15
18-Apr-16	GRAB	3800 Cessna Drive	18-Apr-16	0.75	<1	<2	10	<1	0.13
18-Apr-16	GRAB	751 Catalina Cres.	18-Apr-16	0.87	<1	<2	9	<1	0.12
18-Apr-16	GRAB	6000 Blk. Miller Rd.	18-Apr-16	0.82	<1	<2	9	<1	0.19
18-Apr-16	GRAB	1000 Blk. McDonald Rd.	18-Apr-16	0.65	<1	<2	10	<1	0.21
18-Apr-16	GRAB	5300 No. 3 Rd.	18-Apr-16	0.88	<1	<2	9	<1	0.13
18-Apr-16	GRAB	8200 Jones Rd.	18-Apr-16	0.86	<1	<2	9	<1	0.17
18-Apr-16	GRAB	14951 Triangle Rd.	18-Apr-16	0.65	<1	<2	9	<1	0.14
18-Apr-16	GRAB	11051 No 3 Rd.	18-Apr-16	0.83	<1	<2	9	<1	0.16
20-Apr-16	GRAB	12560 Cambie Rd.	20-Apr-16	0.89	<1	<2	10	<1	0.12
20-Apr-16	GRAB	13100 Mitchell Rd.	20-Apr-16	0.94	<1	2	12	<1	0.09
20-Apr-16	GRAB	Opp. 11280 Twigg Place	20-Apr-16	0.8	<1	<2	12	<1	0.13
20-Apr-16	GRAB	13799 Commerce Pkwy.	20-Apr-16	0.81	<1	<2	9	<1	0.38

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
20-Apr-16	GRAB	6651 Fraserwood Place	20-Apr-16	0.54	<1	<2	9	<1	0.34
20-Apr-16	GRAB	Opp. 20371 Westminster Hwy.	20-Apr-16	0.78	<1	<2	9	<1	0.36
20-Apr-16	GRAB	9911 Sidaway Rd.	20-Apr-16	0.76	<1	<2	10	<1	0.27
20-Apr-16	GRAB	11111 Horseshoe Way	20-Apr-16	1.06	<1	<2	10	<1	0.1
20-Apr-16	GRAB	10020 Amethyst Ave.	20-Apr-16	0.82	<1	<2	10	<1	0.13
20-Apr-16	GRAB	9380 General Currie Rd.	20-Apr-16	0.96	<1	<2	11	<1	0.1
20-Apr-16	GRAB	13800 No. 3 Rd. (off Garden City)	20-Apr-16	0.79	<1	<2	11	<1	0.12
20-Apr-16	GRAB	7000 Blk. Dyke Rd.	20-Apr-16	0.96	<1	<2	10	<1	0.08
20-Apr-16	GRAB	6640 Blundell Rd.	20-Apr-16	0.93	<1	2	10	<1	0.08
22-Apr-16	GRAB	3180 Granville Ave.	22-Apr-16	0.85	<1	<2	10	<1	0.12
22-Apr-16	GRAB	4251 Moncton St.	22-Apr-16	0.81	<1	<2	10	<1	0.12
22-Apr-16	GRAB	11080 No. 2 Rd.	22-Apr-16	0.88	<1	<2	10	<1	0.13
22-Apr-16	GRAB	11500 McKenzie Rd.	22-Apr-16	0.65	<1	<2	12	<1	0.15
22-Apr-16	GRAB	Opp. 8600 Ryan Rd.	22-Apr-16	0.82	<1	<2	10	<1	0.1
22-Apr-16	GRAB	13200 No. 4 Rd.	22-Apr-16	1.18	<1	<2	10	<1	0.12
22-Apr-16	GRAB	13851 Steveston Hwy.	22-Apr-16	0.82	<1	2	10	<1	0.16
22-Apr-16	GRAB	1500 Valemont Way	22-Apr-16	0.41	<1	<2	10	<1	0.14
22-Apr-16	GRAB	11720 Westminster Hwy.	22-Apr-16	0.81	<1	<2	10	<1	0.1
22-Apr-16	GRAB	17240 Fedoruk	22-Apr-16	0.73	<1	<2	10	<1	0.13
22-Apr-16	GRAB	23000 Blk. Dyke Rd.	22-Apr-16	0.65	<1	<2	10	<1	0.13
22-Apr-16	GRAB	22271 Cochrane Drive	22-Apr-16	0.66	<1	<2	10	<1	0.13
22-Apr-16	GRAB	5180 Smith Cres.	22-Apr-16	0.56	<1	<2	10	<1	0.2
22-Apr-16	GRAB	23260 Westminster Hwy.	22-Apr-16	0.84	<1	<2	10	<1	0.13
25-Apr-16	GRAB	5951 McCallan Rd.	25-Apr-16	0.84	<1	<2	9	<1	0.14
25-Apr-16	GRAB	Opp. 8331 Fairfax Place	25-Apr-16	0.77	<1	<2	14	<1	0.13
25-Apr-16	GRAB	9751 Pendleton Rd.	25-Apr-16	0.89	<1	<2	11	<1	0.16
25-Apr-16	GRAB	10920 Springwood Court	25-Apr-16	0.74	<1	<2	13	<1	0.14
25-Apr-16	GRAB	6071 Azure Rd.	25-Apr-16	0.86	<1	<2	11	<1	0.15
25-Apr-16	GRAB	3800 Cessna Drive	25-Apr-16	0.78	<1	<2	11	<1	0.16
25-Apr-16	GRAB	751 Catalina Cres.	25-Apr-16	0.86	<1	<2	11	<1	0.1
25-Apr-16	GRAB	6000 Blk. Miller Rd.	25-Apr-16	0.92	<1	<2	8	<1	0.13
25-Apr-16	GRAB	1000 Blk. McDonald Rd.	25-Apr-16	0.68	<1	<2	11	<1	0.46
25-Apr-16	GRAB	5300 No. 3 Rd.	25-Apr-16	0.9	<1	<2	9	<1	0.12
25-Apr-16	GRAB	8200 Jones Rd.	25-Apr-16	0.86	<1	<2	10	<1	0.11
25-Apr-16	GRAB	14951 Triangle Rd.	25-Apr-16	0.71	<1	<2	10	<1	0.22
25-Apr-16	GRAB	11051 No 3 Rd.	25-Apr-16	0.78	<1	<2	9	<1	0.14
27-Apr-16	GRAB	12560 Cambie Rd.	27-Apr-16	0.89	<1	4	10	<1	0.14
27-Apr-16	GRAB	13100 Mitchell Rd.	27-Apr-16	0.88	<1	<2	10	<1	0.13
27-Apr-16	GRAB	Opp. 11280 Twigg Place	27-Apr-16	0.86	<1	<2	10	<1	0.15
27-Apr-16	GRAB	13799 Commerce Pkwy.	27-Apr-16	0.79	<1	<2	10	<1	0.18

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
27-Apr-16	GRAB	6651 Fraserwood Place	27-Apr-16	0.73	<1	<2	10	<1	0.16
27-Apr-16	GRAB	Opp. 20371 Westminster Hwy.	27-Apr-16	0.79	<1	<2	10	<1	0.13
27-Apr-16	GRAB	9911 Sidaway Rd.	27-Apr-16	0.78	<1	<2	11	<1	0.28
27-Apr-16	GRAB	11111 Horseshoe Way	27-Apr-16	0.8	<1	<2	10	<1	0.13
27-Apr-16	GRAB	10020 Amethyst Ave.	27-Apr-16	0.84	<1	<2	10	<1	0.15
27-Apr-16	GRAB	9380 General Currie Rd.	27-Apr-16	1.01	<1	<2	10	<1	0.11
27-Apr-16	GRAB	13800 No. 3 Rd. (off Garden City)	27-Apr-16	0.91	<1	<2	10	<1	0.13
28-Apr-16	GRAB	3180 Granville Ave.	28-Apr-16	0.73	<1	<2	10	<1	0.12
28-Apr-16	GRAB	4251 Moncton St.	28-Apr-16	0.71	<1	<2	9	<1	0.14
28-Apr-16	GRAB	11080 No. 2 Rd.	28-Apr-16	0.76	<1	<2	9	<1	0.45
28-Apr-16	GRAB	11500 McKenzie Rd.	28-Apr-16	0.54	<1	<2	12	<1	0.1
28-Apr-16	GRAB	Opp. 8600 Ryan Rd.	28-Apr-16	0.84	<1	<2	10	<1	0.13
28-Apr-16	GRAB	13200 No. 4 Rd.	28-Apr-16	0.78	<1	<2	11	<1	0.13
28-Apr-16	GRAB	13851 Steveston Hwy.	28-Apr-16	0.81	<1	2	10	<1	0.21
28-Apr-16	GRAB	1500 Valemont Way	28-Apr-16	0.72	<1	<2	9	<1	0.21
28-Apr-16	GRAB	11720 Westminster Hwy.	28-Apr-16	0.85	<1	<2	9	<1	0.14
28-Apr-16	GRAB	17240 Fedoruk	28-Apr-16	0.64	<1	<2	12	<1	0.14
28-Apr-16	GRAB	23000 Blk. Dyke Rd.	28-Apr-16	0.59	<1	<2	11	<1	0.16
28-Apr-16	GRAB	22271 Cochrane Drive	28-Apr-16	0.63	<1	<2	11	<1	0.13
28-Apr-16	GRAB	5180 Smith Cres.	28-Apr-16	0.58	<1	<2	12	<1	0.21
28-Apr-16	GRAB	23260 Westminster Hwy.	28-Apr-16	0.6	<1	<2	10	<1	0.15
2-May-16	GRAB	5951 McCallan Rd.	2-May-16	0.94	<1	<2	10	<1	0.13
2-May-16	GRAB	Opp. 8331 Fairfax Place	2-May-16	0.93	<1	<2	14	<1	0.14
2-May-16	GRAB	9751 Pendleton Rd.	2-May-16	0.9	<1	<2	11	<1	0.15
2-May-16	GRAB	10920 Springwood Court	2-May-16	0.88	<1	<2	12	<1	0.11
2-May-16	GRAB	3800 Cessna Drive	2-May-16	0.8	<1	<2	11	<1	0.13
2-May-16	GRAB	751 Catalina Cres.	2-May-16	0.93	<1	<2	10	<1	0.13
2-May-16	GRAB	6000 Blk. Miller Rd.	2-May-16	0.89	<1	<2	9	<1	0.17
2-May-16	GRAB	1000 Blk. McDonald Rd.	2-May-16	0.7	<1	<2	12	<1	0.6
2-May-16	GRAB	5300 No. 3 Rd.	2-May-16	0.95	<1	<2	10	<1	0.14
2-May-16	GRAB	8200 Jones Rd.	2-May-16	0.94	<1	<2	10	<1	0.13
2-May-16	GRAB	14951 Triangle Rd.	2-May-16	0.78	<1	<2	10	<1	0.11
2-May-16	GRAB	11051 No 3 Rd.	2-May-16	0.9	<1	<2	10	<1	0.11
4-May-16	GRAB	13800 No. 3 Rd. (off Garden City)	4-May-16	0.98	<1	<2	10	<1	0.14
4-May-16	GRAB	7000 Blk. Dyke Rd.	4-May-16	0.92	<1	<2	10	<1	0.13
4-May-16	GRAB	6640 Blundell Rd.	4-May-16	0.92	<1	<2	10	<1	0.13
4-May-16	GRAB	10020 Amethyst Ave.	4-May-16	0.82	<1	<2	11	<1	0.14
4-May-16	GRAB	9380 General Currie Rd.	4-May-16	0.96	<1	<2	9	<1	0.12
4-May-16	GRAB	9911 Sidaway Rd.	4-May-16	0.76	<1	<2	10	<1	0.15
4-May-16	GRAB	11111 Horseshoe Way	4-May-16	0.95	<1	<2	9	<1	0.12

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
4-May-16	GRAB	12560 Cambie Rd.	4-May-16	1	<1	<2	10	<1	0.15
4-May-16	GRAB	13100 Mitchell Rd.	4-May-16	0.92	<1	<2	10	<1	0.17
4-May-16	GRAB	Opp. 11280 Twigg Place	4-May-16	0.89	<1	<2	9	<1	0.25
4-May-16	GRAB	13799 Commerce Pkwy.	4-May-16	0.81	<1	<2	10	<1	0.14
4-May-16	GRAB	Opp. 20371 Westminster Hwy.	4-May-16	0.78	<1	<2	10	<1	0.26
4-May-16	GRAB	6651 Fraserwood Place	4-May-16	0.74	<1	<2	10	<1	0.15
6-May-16	GRAB	3180 Granville Ave.	6-May-16	0.98	<1	2	11	<1	0.22
6-May-16	GRAB	4251 Moncton St.	6-May-16	0.83	<1	<2	10	<1	0.44
6-May-16	GRAB	11080 No. 2 Rd.	6-May-16	0.86	<1	<2	9	<1	0.43
6-May-16	GRAB	11500 McKenzie Rd.	6-May-16	0.51	<1	8	12	<1	0.19
6-May-16	GRAB	Opp. 8600 Ryan Rd.	6-May-16	0.87	<1	<2	10	<1	0.11
6-May-16	GRAB	13200 No. 4 Rd.	6-May-16	0.84	<1	<2	10	<1	0.14
6-May-16	GRAB	13851 Steveston Hwy.	6-May-16	0.76	<1	<2	9	<1	0.79
6-May-16	GRAB	1500 Valemont Way	6-May-16	0.72	<1	<2	9	<1	0.57
6-May-16	GRAB	11720 Westminster Hwy.	6-May-16	0.81	<1	<2	9	<1	1.1
6-May-16	GRAB	17240 Fedoruk	6-May-16	0.71	<1	<2	11	<1	0.54
6-May-16	GRAB	23000 Blk. Dyke Rd.	6-May-16	0.75	<1	<2	11	<1	0.59
6-May-16	GRAB	22271 Cochrane Drive	6-May-16	0.72	<1	<2	10	<1	0.7
6-May-16	GRAB	5180 Smith Cres.	6-May-16	0.57	<1	<2	12	<1	0.18
6-May-16	GRAB	23260 Westminster Hwy.	6-May-16	0.73	<1	<2	10	<1	0.51
9-May-16	GRAB	5951 McCallan Rd.	9-May-16	0.88	<1	2	9	<1	0.22
9-May-16	GRAB	Opp. 8331 Fairfax Place	9-May-16	0.7	<1	<2	14	<1	0.14
9-May-16	GRAB	9751 Pendleton Rd.	9-May-16	0.74	<1	<2	11	<1	0.13
9-May-16	GRAB	10920 Springwood Court	9-May-16	0.69	<1	<2	12	<1	0.19
9-May-16	GRAB	6071 Azure Rd.	9-May-16	0.75	<1	6	10	<1	0.36
9-May-16	GRAB	3800 Cessna Drive	9-May-16	0.72	<1	<2	11	<1	0.14
9-May-16	GRAB	751 Catalina Cres.	9-May-16	0.83	<1	<2	11	<1	0.21
9-May-16	GRAB	1000 Blk. McDonald Rd.	9-May-16	0.69	<1	<2	11	<1	0.63
9-May-16	GRAB	5300 No. 3 Rd.	9-May-16	0.68	<1	<2	11	<1	0.2
9-May-16	GRAB	8200 Jones Rd.	9-May-16	0.79	<1	<2	11	<1	0.13
9-May-16	GRAB	14951 Triangle Rd.	9-May-16	0.73	<1	<2	10	<1	0.21
9-May-16	GRAB	11051 No 3 Rd.	9-May-16	0.73	<1	<2	10	<1	0.17
11-May-16	GRAB	12560 Cambie Rd.	11-May-16	0.79	<1	<2	10	<1	0.17
11-May-16	GRAB	13100 Mitchell Rd.	11-May-16	0.82	<1	2	12	<1	0.22
11-May-16	GRAB	Opp. 11280 Twigg Place	11-May-16	0.67	<1	<2	11	<1	0.28
11-May-16	GRAB	13799 Commerce Pkwy.	11-May-16	0.88	<1	<2	10	<1	0.22
11-May-16	GRAB	6651 Fraserwood Place	11-May-16	0.73	<1	<2	11	<1	0.41
11-May-16	GRAB	Opp. 20371 Westminster Hwy.	11-May-16	0.84	<1	<2	10	<1	0.21
11-May-16	GRAB	9911 Sidaway Rd.	11-May-16	0.85	<1	<2	10	<1	0.27
11-May-16	GRAB	11111 Horseshoe Way	11-May-16	0.8	<1	<2	10	<1	0.17

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
11-May-16	GRAB	10020 Amethyst Ave.	11-May-16	0.79	<1	<2	12	<1	0.15
11-May-16	GRAB	9380 General Currie Rd.	11-May-16	1.05	<1	2	10	<1	0.16
11-May-16	GRAB	13800 No. 3 Rd. (off Garden City)	11-May-16	0.81	<1	<2	10	<1	0.17
11-May-16	GRAB	7000 Blk. Dyke Rd.	11-May-16	0.81	<1	<2	12	<1	0.11
11-May-16	GRAB	6640 Blundell Rd.	11-May-16	0.8	<1	24	10	<1	0.13
12-May-16	GRAB	3180 Granville Ave.	12-May-16	0.83	<1	<2	12	<1	0.22
12-May-16	GRAB	4251 Moncton St.	12-May-16	0.98	<1	<2	10	<1	0.33
12-May-16	GRAB	11080 No. 2 Rd.	12-May-16	0.87	<1	<2	10	<1	0.27
12-May-16	GRAB	11500 McKenzie Rd.	12-May-16	0.5	<1	4	10	<1	0.27
12-May-16	GRAB	Opp. 8600 Ryan Rd.	12-May-16	0.8	<1	<2	10	<1	0.24
12-May-16	GRAB	13200 No. 4 Rd.	12-May-16	0.79	<1	<2	10	<1	0.46
12-May-16	GRAB	13851 Steveston Hwy.	12-May-16	0.84	<1	<2	10	<1	0.2
12-May-16	GRAB	1500 Valemont Way	12-May-16	0.89	<1	<2	10	<1	0.27
12-May-16	GRAB	11720 Westminster Hwy.	12-May-16	0.93	<1	<2	10	<1	0.26
12-May-16	GRAB	17240 Fedoruk	12-May-16	0.87	<1	<2	12	<1	0.35
12-May-16	GRAB	23000 Blk. Dyke Rd.	12-May-16	0.82	<1	<2	10	<1	0.34
12-May-16	GRAB	22271 Cochrane Drive	12-May-16	0.82	<1	<2	10	<1	0.2
12-May-16	GRAB	5180 Smith Cres.	12-May-16	0.7	<1	<2	12	<1	0.24
12-May-16	GRAB	23260 Westminster Hwy.	12-May-16	0.83	<1	or spread	12	<1	0.31
16-May-16	GRAB	5951 McCallan Rd.	16-May-16	0.65	<1	<2	10	<1	0.51
16-May-16	GRAB	Opp. 8331 Fairfax Place	16-May-16	0.67	<1	<2	14	<1	0.3
16-May-16	GRAB	9751 Pendleton Rd.	16-May-16	0.67	<1	<2	12	<1	0.15
16-May-16	GRAB	10920 Springwood Court	16-May-16	0.68	<1	<2	14	<1	0.18
16-May-16	GRAB	6071 Azure Rd.	16-May-16	0.66	<1	<2	13	<1	0.23
16-May-16	GRAB	3800 Cessna Drive	16-May-16	0.91	<1	2	11	<1	0.13
16-May-16	GRAB	751 Catalina Cres.	16-May-16	0.73	<1	<2	10	<1	0.13
16-May-16	GRAB	1000 Blk. McDonald Rd.	16-May-16	0.64	<1	<2	13	<1	2.4
16-May-16	GRAB	5300 No. 3 Rd.	16-May-16	0.83	<1	<2	11	<1	0.23
16-May-16	GRAB	8200 Jones Rd.	16-May-16	0.88	<1	<2	11	<1	0.42
16-May-16	GRAB	14951 Triangle Rd.	16-May-16	0.91	<1	<2	10	<1	0.23
16-May-16	GRAB	11051 No 3 Rd.	16-May-16	0.76	<1	<2	10	<1	0.19
18-May-16	GRAB	12560 Cambie Rd.	18-May-16	0.88	<1	<2	10	<1	0.2
18-May-16	GRAB	13100 Mitchell Rd.	18-May-16	0.98	<1	<2	10	<1	0.24
18-May-16	GRAB	Opp. 11280 Twigg Place	18-May-16	0.85	<1	<2	11	<1	0.26
18-May-16	GRAB	13799 Commerce Pkwy.	18-May-16	0.86	<1	<2	10	<1	0.23
18-May-16	GRAB	6651 Fraserwood Place	18-May-16	0.84	<1	<2	10	<1	0.32
18-May-16	GRAB	Opp. 20371 Westminster Hwy.	18-May-16	0.96	<1	<2	9	<1	0.28
18-May-16	GRAB	9911 Sidaway Rd.	18-May-16	0.7	<1	<2	11	<1	0.29
18-May-16	GRAB	11111 Horseshoe Way	18-May-16	0.83	<1	<2	10	<1	0.19
18-May-16	GRAB	10020 Amethyst Ave.	18-May-16	0.85	<1	<2	11	<1	0.17

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
18-May-16	GRAB	9380 General Currie Rd.	18-May-16	0.91	<1	<2	9	<1	0.21
18-May-16	GRAB	13800 No. 3 Rd. (off Garden City)	18-May-16	0.81	<1	<2	11	<1	0.19
18-May-16	GRAB	7000 Blk. Dyke Rd.	18-May-16	0.83	<1	<2	11	<1	0.16
18-May-16	GRAB	6640 Blundell Rd.	18-May-16	0.78	<1	<2	10	<1	0.29
20-May-16	GRAB	4251 Moncton St.	20-May-16	0.78	<1	<2	10	<1	0.17
20-May-16	GRAB	11080 No. 2 Rd.	20-May-16	0.94	<1	<2	10	<1	0.16
20-May-16	GRAB	11500 McKenzie Rd.	20-May-16	0.65	<1	8	14	<1	0.15
20-May-16	GRAB	Opp. 8600 Ryan Rd.	20-May-16	0.85	<1	<2	10	<1	0.17
20-May-16	GRAB	13200 No. 4 Rd.	20-May-16	0.86	<1	8	10	<1	0.15
20-May-16	GRAB	13851 Steveston Hwy.	20-May-16	0.88	<1	<2	10	<1	0.23
20-May-16	GRAB	1500 Valemont Way	20-May-16	0.88	<1	<2	10	<1	0.21
20-May-16	GRAB	11720 Westminster Hwy.	20-May-16	0.88	<1	<2	10	<1	0.16
20-May-16	GRAB	17240 Fedoruk	20-May-16	0.83	<1	<2	11	<1	0.25
20-May-16	GRAB	23000 Blk. Dyke Rd.	20-May-16	0.69	<1	2	11	<1	0.21
20-May-16	GRAB	22271 Cochrane Drive	20-May-16	0.76	<1	<2	11	<1	0.2
20-May-16	GRAB	5180 Smith Cres.	20-May-16	0.71	<1	<2	11	<1	0.15
20-May-16	GRAB	23260 Westminster Hwy.	20-May-16	0.79	<1	<2	11	<1	0.23
24-May-16	GRAB	5951 McCallan Rd.	24-May-16	0.75	<1	4	11	<1	0.18
24-May-16	GRAB	Opp. 8331 Fairfax Place	24-May-16	0.7	<1	<2	16	<1	0.34
24-May-16	GRAB	9751 Pendleton Rd.	24-May-16	0.78	<1	<2	12	<1	0.18
24-May-16	GRAB	10920 Springwood Court	24-May-16	0.79	<1	<2	13	<1	0.14
24-May-16	GRAB	6071 Azure Rd.	24-May-16	0.79	<1	<2	12	<1	0.14
24-May-16	GRAB	3800 Cessna Drive	24-May-16	0.81	<1	spreadin	12	<1	0.16
24-May-16	GRAB	751 Catalina Cres.	24-May-16	0.84	<1	6	12	<1	0.14
24-May-16	GRAB	1000 Blk. McDonald Rd.	24-May-16	0.62	<1	<2	13	<1	0.79
24-May-16	GRAB	5300 No. 3 Rd.	24-May-16	0.88	<1	<2	12	<1	0.14
24-May-16	GRAB	8200 Jones Rd.	24-May-16	1.02	<1	4	12	<1	0.19
24-May-16	GRAB	14951 Triangle Rd.	24-May-16	0.85	<1	<2	11	<1	0.19
24-May-16	GRAB	11051 No 3 Rd.	24-May-16	0.86	<1	<2	10	<1	0.18
25-May-16	GRAB	12560 Cambie Rd.	25-May-16	0.84	<1	<2	10	<1	0.23
25-May-16	GRAB	13100 Mitchell Rd.	25-May-16	0.73	<1	<2	10	<1	0.27
25-May-16	GRAB	Opp. 11280 Twigg Place	25-May-16	0.71	<1	<2	11	<1	0.24
25-May-16	GRAB	13799 Commerce Pkwy.	25-May-16	0.93	<1	<2	10	<1	0.31
25-May-16	GRAB	6651 Fraserwood Place	25-May-16	0.83	<1	<2	10	<1	0.37
25-May-16	GRAB	Opp. 20371 Westminster Hwy.	25-May-16	0.79	<1	<2	11	<1	0.35
25-May-16	GRAB	9911 Sidaway Rd.	25-May-16	0.77	<1	<2	12	<1	0.24
25-May-16	GRAB	11111 Horseshoe Way	25-May-16	0.99	<1	<2	10	<1	0.21
25-May-16	GRAB	10020 Amethyst Ave.	25-May-16	0.7	<1	<2	11	<1	0.16
25-May-16	GRAB	9380 General Currie Rd.	25-May-16	0.74	<1	<2	11	<1	0.13
25-May-16	GRAB	13800 No. 3 Rd. (off Garden City)	25-May-16	0.87	<1	<2	10	<1	0.17

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
25-May-16	GRAB	7000 Blk. Dyke Rd.	25-May-16	0.82	<1	<2	10	<1	0.17
25-May-16	GRAB	6640 Blundell Rd.	25-May-16	0.73	<1	<2	11	<1	0.19
26-May-16	GRAB	4251 Moncton St.	26-May-16	0.8	<1	<2	11	<1	0.23
26-May-16	GRAB	11080 No. 2 Rd.	26-May-16	0.96	<1	<2	10	<1	0.18
26-May-16	GRAB	11500 McKenzie Rd.	26-May-16	0.68	<1	6	14	<1	0.18
26-May-16	GRAB	Opp. 8600 Ryan Rd.	26-May-16	0.91	<1	<2	10	<1	0.24
26-May-16	GRAB	13200 No. 4 Rd.	26-May-16	0.89	<1	<2	12	<1	0.26
26-May-16	GRAB	13851 Steveston Hwy.	26-May-16	0.92	<1	<2	11	<1	0.21
26-May-16	GRAB	1500 Valemont Way	26-May-16	0.79	<1	<2	12	<1	0.17
26-May-16	GRAB	11720 Westminster Hwy.	26-May-16	0.87	<1	<2	9	<1	0.27
26-May-16	GRAB	17240 Fedoruk	26-May-16	0.77	<1	<2	12	<1	0.19
26-May-16	GRAB	23000 Blk. Dyke Rd.	26-May-16	0.9	<1	<2	11	<1	0.29
26-May-16	GRAB	22271 Cochrane Drive	26-May-16	0.84	<1	2	11	<1	0.31
26-May-16	GRAB	5180 Smith Cres.	26-May-16	0.73	<1	<2	12	<1	0.34
26-May-16	GRAB	23260 Westminster Hwy.	26-May-16	0.83	<1	<2	10	<1	0.32
30-May-16	GRAB	5951 McCallan Rd.	30-May-16	0.7	<1	<2	10	<1	0.12
30-May-16	GRAB	Opp. 8331 Fairfax Place	30-May-16	0.75	<1	<2	16	<1	0.36
30-May-16	GRAB	9751 Pendleton Rd.	30-May-16	0.77	<1	<2	11	<1	0.17
30-May-16	GRAB	10920 Springwood Court	30-May-16	0.75	<1	<2	14	<1	0.19
30-May-16	GRAB	6071 Azure Rd.	30-May-16	0.71	<1	<2	12	<1	0.17
30-May-16	GRAB	3800 Cessna Drive	30-May-16	0.78	<1	<2	11	<1	0.22
30-May-16	GRAB	751 Catalina Cres.	30-May-16	0.93	<1	<2	11	<1	0.22
30-May-16	GRAB	1000 Blk. McDonald Rd.	30-May-16	0.35	<1	<2	15	<1	0.21
30-May-16	GRAB	5300 No. 3 Rd.	30-May-16	0.81	<1	<2	11	<1	0.19
30-May-16	GRAB	8200 Jones Rd.	30-May-16	0.74	<1	<2	11	<1	0.16
30-May-16	GRAB	14951 Triangle Rd.	30-May-16	0.84	<1	<2	11	<1	0.23
30-May-16	GRAB	11051 No 3 Rd.	30-May-16	0.69	<1	<2	11	<1	0.18
1-Jun-16	GRAB	12560 Cambie Rd.	1-Jun-16	0.88	<1	<2	10	<1	0.17
1-Jun-16	GRAB	13100 Mitchell Rd.	1-Jun-16	0.85	<1	<2	11	<1	0.19
1-Jun-16	GRAB	Opp. 11280 Twigg Place	1-Jun-16	0.91	<1	<2	11	<1	0.29
1-Jun-16	GRAB	13799 Commerce Pkwy.	1-Jun-16	0.77	<1	<2	10	<1	0.25
1-Jun-16	GRAB	6651 Fraserwood Place	1-Jun-16	0.65	<1	<2	11	<1	0.24
1-Jun-16	GRAB	Opp. 20371 Westminster Hwy.	1-Jun-16	0.96	<1	<2	10	<1	0.27
1-Jun-16	GRAB	9911 Sidaway Rd.	1-Jun-16	0.76	<1	<2	10	<1	0.16
1-Jun-16	GRAB	11111 Horseshoe Way	1-Jun-16	0.88	<1	<2	10	<1	0.16
1-Jun-16	GRAB	10020 Amethyst Ave.	1-Jun-16	0.82	<1	<2	11	<1	0.15
1-Jun-16	GRAB	9380 General Currie Rd.	1-Jun-16	0.92	<1	<2	10	<1	0.16
1-Jun-16	GRAB	13800 No. 3 Rd. (off Garden City)	1-Jun-16	0.76	<1	<2	12	<1	0.16
1-Jun-16	GRAB	6640 Blundell Rd.	1-Jun-16	0.82	<1	<2	10	<1	0.17
1-Jun-16	GRAB	7000 Blk. Dyke Rd.	1-Jun-16	0.86	<1	<2	12	<1	0.14

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
3-Jun-16	GRAB	3180 Granville Ave.	3-Jun-16	0.77	<1	<2	12	<1	0.2
3-Jun-16	GRAB	4251 Moncton St.	3-Jun-16	0.82	<1	<2	11	<1	0.12
3-Jun-16	GRAB	11080 No. 2 Rd.	3-Jun-16	0.84	<1	<2	12	<1	0.15
3-Jun-16	GRAB	11500 McKenzie Rd.	3-Jun-16	0.54	<1	2	16	<1	0.2
3-Jun-16	GRAB	Opp. 8600 Ryan Rd.	3-Jun-16	0.86	<1	<2	11	<1	0.11
3-Jun-16	GRAB	13200 No. 4 Rd.	3-Jun-16	0.92	<1	<2	11	<1	0.11
3-Jun-16	GRAB	13851 Steveston Hwy.	3-Jun-16	0.72	<1	<2	11	<1	0.33
3-Jun-16	GRAB	1500 Valemont Way	3-Jun-16	0.92	<1	<2	11	<1	0.27
3-Jun-16	GRAB	11720 Westminster Hwy.	3-Jun-16	0.88	<1	2	10	<1	0.28
3-Jun-16	GRAB	17240 Fedoruk	3-Jun-16	0.82	<1	<2	13	<1	0.25
3-Jun-16	GRAB	23000 Blk. Dyke Rd.	3-Jun-16	0.92	<1	<2	13	<1	0.21
3-Jun-16	GRAB	5180 Smith Cres.	3-Jun-16	0.51	<1	<2	13	<1	0.22
3-Jun-16	GRAB	22271 Cochrane Drive	3-Jun-16	0.96	<1	<2	12	<1	0.3
3-Jun-16	GRAB	23260 Westminster Hwy.	3-Jun-16	0.98	<1	2	10	<1	0.41
6-Jun-16	GRAB	5951 McCallan Rd.	6-Jun-16	0.82	<1	<2	11	<1	0.12
6-Jun-16	GRAB	Opp. 8331 Fairfax Place	6-Jun-16	0.76	<1	<2	17	<1	0.14
6-Jun-16	GRAB	9751 Pendleton Rd.	6-Jun-16	0.84	<1	<2	13	<1	0.16
6-Jun-16	GRAB	10920 Springwood Court	6-Jun-16	0.86	<1	2	14	<1	0.19
6-Jun-16	GRAB	6071 Azure Rd.	6-Jun-16	0.72	<1	<2	13	<1	0.42
6-Jun-16	GRAB	3800 Cessna Drive	6-Jun-16	0.86	<1	<2	13	<1	0.19
6-Jun-16	GRAB	751 Catalina Cres.	6-Jun-16	0.87	<1	<2	13	<1	0.14
6-Jun-16	GRAB	6000 Blk. Miller Rd.	6-Jun-16	0.87	<1	<2	10	<1	0.17
6-Jun-16	GRAB	1000 Blk. McDonald Rd.	6-Jun-16	0.46	<1	<2	14	<1	0.29
6-Jun-16	GRAB	5300 No. 3 Rd.	6-Jun-16	0.74	<1	<2	12	<1	0.17
6-Jun-16	GRAB	8200 Jones Rd.	6-Jun-16	0.88	<1	2	13	<1	0.13
6-Jun-16	GRAB	14951 Triangle Rd.	6-Jun-16	1.01	<1	<2	12	<1	0.23
6-Jun-16	GRAB	11051 No 3 Rd.	6-Jun-16	0.82	<1	<2	11	<1	0.14
8-Jun-16	GRAB	12560 Cambie Rd.	8-Jun-16	0.9	<1	<2	12	<1	0.13
8-Jun-16	GRAB	13100 Mitchell Rd.	8-Jun-16	0.85	<1	2	12	<1	0.21
8-Jun-16	GRAB	Opp. 11280 Twigg Place	8-Jun-16	0.82	<1	<2	13	<1	0.24
8-Jun-16	GRAB	13799 Commerce Pkwy.	8-Jun-16	0.85	<1	<2	12	<1	0.17
8-Jun-16	GRAB	6651 Fraserwood Place	8-Jun-16	0.8	<1	<2	13	<1	0.27
8-Jun-16	GRAB	Opp. 20371 Westminster Hwy.	8-Jun-16	0.78	<1	<2	13	<1	0.26
8-Jun-16	GRAB	9911 Sidaway Rd.	8-Jun-16	0.84	<1	<2	12	<1	0.22
8-Jun-16	GRAB	11111 Horseshoe Way	8-Jun-16	0.94	<1	2	12	<1	0.12
8-Jun-16	GRAB	10020 Amethyst Ave.	8-Jun-16	0.91	<1	<2	13	<1	0.13
8-Jun-16	GRAB	9380 General Currie Rd.	8-Jun-16	0.97	<1	<2	13	<1	0.13
8-Jun-16	GRAB	13800 No. 3 Rd. (off Garden City)	8-Jun-16	0.8	<1	<2	14	<1	0.13
8-Jun-16	GRAB	7000 Blk. Dyke Rd.	8-Jun-16	0.83	<1	<2	13	<1	0.11
8-Jun-16	GRAB	6640 Blundell Rd.	8-Jun-16	0.7	<1	<2	11	<1	0.13

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
9-Jun-16	GRAB	3180 Granville Ave.	9-Jun-16	0.62	<1	<2	12	<1	0.18
9-Jun-16	GRAB	4251 Moncton St.	9-Jun-16	0.7	<1	<2	12	<1	0.15
9-Jun-16	GRAB	11080 No. 2 Rd.	9-Jun-16	0.84	<1	<2	11	<1	0.2
9-Jun-16	GRAB	11500 McKenzie Rd.	9-Jun-16	0.54	<1	10	15	<1	0.25
9-Jun-16	GRAB	Opp. 8600 Ryan Rd.	9-Jun-16	0.78	<1	<2	12	<1	0.18
9-Jun-16	GRAB	13200 No. 4 Rd.	9-Jun-16	0.88	<1	<2	13	<1	0.25
9-Jun-16	GRAB	13851 Steveston Hwy.	9-Jun-16	0.97	<1	<2	11	<1	0.25
9-Jun-16	GRAB	1500 Valemont Way	9-Jun-16	0.79	<1	<2	12	<1	0.24
9-Jun-16	GRAB	11720 Westminster Hwy.	9-Jun-16	1.04	<1	<2	11	<1	0.15
9-Jun-16	GRAB	17240 Fedoruk	9-Jun-16	0.72	<1	<2	14	<1	0.24
9-Jun-16	GRAB	23000 Blk. Dyke Rd.	9-Jun-16	0.86	<1	<2	12	<1	0.26
9-Jun-16	GRAB	22271 Cochrane Drive	9-Jun-16	0.82	<1	<2	12	<1	0.22
9-Jun-16	GRAB	5180 Smith Cres.	9-Jun-16	0.74	<1	<2	14	<1	0.15
9-Jun-16	GRAB	23260 Westminster Hwy.	9-Jun-16	0.93	<1	<2	12	<1	0.24
13-Jun-16	GRAB	5951 McCallan Rd.	13-Jun-16	0.82	<1	<2	11	<1	0.13
13-Jun-16	GRAB	Opp. 8331 Fairfax Place	13-Jun-16	0.43	<1	<2	17	<1	0.26
13-Jun-16	GRAB	9751 Pendleton Rd.	13-Jun-16	0.77	<1	<2	13	<1	0.18
13-Jun-16	GRAB	10920 Springwood Court	13-Jun-16	0.87	<1	<2	15	<1	0.12
13-Jun-16	GRAB	11051 No 3 Rd.	13-Jun-16	1.13	<1	<2	11	<1	0.11
13-Jun-16	GRAB	14951 Triangle Rd.	13-Jun-16	1.16	<1	<2	11	<1	0.16
13-Jun-16	GRAB	8200 Jones Rd.	13-Jun-16	1.01	<1	<2	13	<1	0.12
13-Jun-16	GRAB	5300 No. 3 Rd.	13-Jun-16	0.85	<1	<2	12	<1	0.11
13-Jun-16	GRAB	1000 Blk. McDonald Rd.	13-Jun-16	0.31	<1	<2	16	<1	0.26
13-Jun-16	GRAB	6000 Blk. Miller Rd.	13-Jun-16	0.83	<1	<2	11	<1	0.18
13-Jun-16	GRAB	751 Catalina Cres.	13-Jun-16	0.87	<1	<2	12	<1	0.14
13-Jun-16	GRAB	3800 Cessna Drive	13-Jun-16	0.77	<1	<2	13	<1	0.13
13-Jun-16	GRAB	6071 Azure Rd.	13-Jun-16	0.66	<1	<2	13	<1	0.15
15-Jun-16	GRAB	12560 Cambie Rd.	15-Jun-16	0.81	<1	<2	12	<1	0.11
15-Jun-16	GRAB	13100 Mitchell Rd.	15-Jun-16	0.85	<1	<2	11	<1	0.12
15-Jun-16	GRAB	Opp. 11280 Twigg Place	15-Jun-16	0.82	<1	<2	12	<1	0.12
15-Jun-16	GRAB	13799 Commerce Pkwy.	15-Jun-16	0.84	<1	<2	14	<1	0.2
15-Jun-16	GRAB	6651 Fraserwood Place	15-Jun-16	0.81	<1	<2	14	<1	0.3
15-Jun-16	GRAB	Opp. 20371 Westminster Hwy.	15-Jun-16	0.85	<1	2	13	<1	0.25
15-Jun-16	GRAB	9911 Sidaway Rd.	15-Jun-16	0.9	<1	<2	13	<1	0.23
15-Jun-16	GRAB	11111 Horseshoe Way	15-Jun-16	0.85	<1	<2	12	<1	0.14
15-Jun-16	GRAB	10020 Amethyst Ave.	15-Jun-16	0.67	<1	<2	12	<1	0.13
15-Jun-16	GRAB	9380 General Currie Rd.	15-Jun-16	0.73	<1	<2	12	<1	0.22
15-Jun-16	GRAB	13800 No. 3 Rd. (off Garden City)	15-Jun-16	0.83	<1	<2	12	<1	0.11
15-Jun-16	GRAB	7000 Blk. Dyke Rd.	15-Jun-16	0.83	<1	<2	13	<1	0.11
15-Jun-16	GRAB	6640 Blundell Rd.	15-Jun-16	0.8	<1	<2	11	<1	0.1

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
17-Jun-16	GRAB	3180 Granville Ave.	17-Jun-16	0.78	<1	<2	12	<1	0.19
17-Jun-16	GRAB	4251 Moncton St.	17-Jun-16	0.86	<1	<2	11	<1	0.18
17-Jun-16	GRAB	11080 No. 2 Rd.	17-Jun-16	0.83	<1	<2	10	<1	0.22
17-Jun-16	GRAB	11500 McKenzie Rd.	17-Jun-16	0.64	<1	4	16	<1	0.22
17-Jun-16	GRAB	Opp. 8600 Ryan Rd.	17-Jun-16	0.9	<1	<2	10	<1	0.25
17-Jun-16	GRAB	13200 No. 4 Rd.	17-Jun-16	0.81	<1	<2	11	<1	0.34
17-Jun-16	GRAB	13851 Steveston Hwy.	17-Jun-16	0.99	<1	2	11	<1	0.23
17-Jun-16	GRAB	1500 Valemont Way	17-Jun-16	0.97	<1	<2	11	<1	0.17
17-Jun-16	GRAB	11720 Westminster Hwy.	17-Jun-16	0.9	<1	<2	10	<1	0.12
17-Jun-16	GRAB	17240 Fedoruk	17-Jun-16	0.97	<1	<2	13	<1	0.15
17-Jun-16	GRAB	23000 Blk. Dyke Rd.	17-Jun-16	0.86	<1	<2	12	<1	0.17
17-Jun-16	GRAB	22271 Cochrane Drive	17-Jun-16	0.94	<1	100	12	<1	0.16
17-Jun-16	GRAB	5180 Smith Cres.	17-Jun-16	0.68	<1	<2	14	<1	0.17
17-Jun-16	GRAB	23260 Westminster Hwy.	17-Jun-16	1.03	<1	<2	10	<1	0.23
20-Jun-16	GRAB	5951 McCallan Rd.	20-Jun-16	0.68	<1	<2	10	<1	0.15
20-Jun-16	GRAB	Opp. 8331 Fairfax Place	20-Jun-16	0.74	<1	<2	17	<1	0.2
20-Jun-16	GRAB	9751 Pendleton Rd.	20-Jun-16	0.71	<1	<2	11	<1	0.15
20-Jun-16	GRAB	10920 Springwood Court	20-Jun-16	0.77	<1	<2	12	<1	0.23
20-Jun-16	GRAB	11051 No 3 Rd.	20-Jun-16	0.87	<1	2	11	<1	0.11
20-Jun-16	GRAB	14951 Triangle Rd.	20-Jun-16	0.89	<1	<2	12	<1	0.19
20-Jun-16	GRAB	8200 Jones Rd.	20-Jun-16	0.63	<1	<2	12	<1	0.13
20-Jun-16	GRAB	5300 No. 3 Rd.	20-Jun-16	0.71	<1	<2	10	<1	0.19
20-Jun-16	GRAB	1000 Blk. McDonald Rd.	20-Jun-16	0.28	<1	<2	15	<1	0.33
20-Jun-16	GRAB	6000 Blk. Miller Rd.	20-Jun-16	1.06	<1	<2	10	<1	0.19
20-Jun-16	GRAB	751 Catalina Cres.	20-Jun-16	0.75	<1	<2	12	<1	0.12
20-Jun-16	GRAB	3800 Cessna Drive	20-Jun-16	1.03	<1	<2	15	<1	0.12
20-Jun-16	GRAB	6071 Azure Rd.	20-Jun-16	0.75	<1	<2	12	<1	0.12
22-Jun-16	GRAB	12560 Cambie Rd.	22-Jun-16	0.9	<1	2	10	<1	0.15
22-Jun-16	GRAB	13100 Mitchell Rd.	22-Jun-16	0.74	<1	<2	11	<1	0.16
22-Jun-16	GRAB	13799 Commerce Pkwy.	22-Jun-16	0.92	<1	<2	11	<1	0.19
22-Jun-16	GRAB	Opp. 11280 Twigg Place	22-Jun-16	0.73	<1	<2	13	<1	0.23
22-Jun-16	GRAB	9911 Sidaway Rd.	22-Jun-16	0.88	<1	2	10	<1	0.41
22-Jun-16	GRAB	11111 Horseshoe Way	22-Jun-16	0.84	<1	<2	11	<1	0.18
22-Jun-16	GRAB	10020 Amethyst Ave.	22-Jun-16	0.78	<1	<2	12	<1	0.15
22-Jun-16	GRAB	9380 General Currie Rd.	22-Jun-16	0.89	<1	<2	12	<1	0.11
22-Jun-16	GRAB	13800 No. 3 Rd. (off Garden City)	22-Jun-16	0.8	<1	<2	11	<1	0.14
22-Jun-16	GRAB	7000 Blk. Dyke Rd.	22-Jun-16	0.72	<1	<2	11	<1	0.11
22-Jun-16	GRAB	6640 Blundell Rd.	22-Jun-16	0.8	<1	<2	11	<1	0.16
23-Jun-16	GRAB	3180 Granville Ave.	23-Jun-16	0.64	<1	<2	13	<1	0.11
23-Jun-16	GRAB	4251 Moncton St.	23-Jun-16	0.82	<1	<2	11	<1	0.11

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
23-Jun-16	GRAB	11080 No. 2 Rd.	23-Jun-16	0.84	<1	2	11	<1	0.09
23-Jun-16	GRAB	11500 McKenzie Rd.	23-Jun-16	0.49	<1	<2	15	<1	0.16
23-Jun-16	GRAB	Opp. 8600 Ryan Rd.	23-Jun-16	0.72	<1	<2	10	<1	0.09
23-Jun-16	GRAB	13200 No. 4 Rd.	23-Jun-16	0.88	<1	<2	12	<1	0.09
23-Jun-16	GRAB	13851 Steveston Hwy.	23-Jun-16	0.99	<1	<2	11	<1	0.19
23-Jun-16	GRAB	1500 Valemont Way	23-Jun-16	1.01	<1	<2	11	<1	0.2
23-Jun-16	GRAB	11720 Westminster Hwy.	23-Jun-16	0.82	<1	<2	10	<1	0.13
23-Jun-16	GRAB	17240 Fedoruk	23-Jun-16	1.03	<1	<2	13	<1	0.16
23-Jun-16	GRAB	23000 Blk. Dyke Rd.	23-Jun-16	0.93	<1	<2	12	<1	0.22
23-Jun-16	GRAB	22271 Cochrane Drive	23-Jun-16	0.98	<1	<2	11	<1	0.24
23-Jun-16	GRAB	5180 Smith Cres.	23-Jun-16	0.73	<1	<2	13	<1	0.18
23-Jun-16	GRAB	23260 Westminster Hwy.	23-Jun-16	0.96	<1	<2	12	<1	0.19
27-Jun-16	GRAB	5951 McCallan Rd.	27-Jun-16	0.86	<1	<2	10	<1	0.17
27-Jun-16	GRAB	Opp. 8331 Fairfax Place	27-Jun-16	0.75	<1	<2	17	<1	0.6
27-Jun-16	GRAB	9751 Pendleton Rd.	27-Jun-16	0.59	<1	2	13	<1	0.14
27-Jun-16	GRAB	10920 Springwood Court	27-Jun-16	0.79	<1	<2	15	<1	0.17
27-Jun-16	GRAB	11051 No 3 Rd.	27-Jun-16	0.74	<1	<2	11	<1	0.33
27-Jun-16	GRAB	5300 No. 3 Rd.	27-Jun-16	0.77	<1	<2	11	<1	0.16
27-Jun-16	GRAB	14951 Triangle Rd.	27-Jun-16	0.87	<1	<2	11	<1	0.26
27-Jun-16	GRAB	8200 Jones Rd.	27-Jun-16	0.81	<1	<2	13	<1	0.19
27-Jun-16	GRAB	6071 Azure Rd.	27-Jun-16	0.62	<1	<2	14	<1	0.12
27-Jun-16	GRAB	3800 Cessna Drive	27-Jun-16	0.73	<1	<2	14	<1	0.16
27-Jun-16	GRAB	751 Catalina Cres.	27-Jun-16	0.82	<1	<2	12	<1	0.16
27-Jun-16	GRAB	6000 Blk. Miller Rd.	27-Jun-16	0.76	<1	<2	12	<1	0.16
27-Jun-16	GRAB	1000 Blk. McDonald Rd.	27-Jun-16	0.51	<1	<2	14	<1	0.53
29-Jun-16	GRAB	12560 Cambie Rd.	29-Jun-16	0.89	<1	4	12	<1	0.12
29-Jun-16	GRAB	13100 Mitchell Rd.	29-Jun-16	0.88	<1	<2	13	<1	0.15
29-Jun-16	GRAB	Opp. 11280 Twigg Place	29-Jun-16	0.82	<1	<2	12	<1	0.22
29-Jun-16	GRAB	13799 Commerce Pkwy.	29-Jun-16	0.8	<1	<2	12	<1	0.19
29-Jun-16	GRAB	6651 Fraserwood Place	29-Jun-16	0.85	<1	<2	11	<1	0.27
29-Jun-16	GRAB	Opp. 20371 Westminster Hwy.	29-Jun-16	0.91	<1	<2	11	<1	0.31
29-Jun-16	GRAB	9911 Sidaway Rd.	29-Jun-16	0.8	<1	<2	12	<1	0.34
29-Jun-16	GRAB	11111 Horseshoe Way	29-Jun-16	0.81	<1	<2	11	<1	0.14
29-Jun-16	GRAB	10020 Amethyst Ave.	29-Jun-16	0.82	<1	<2	10	<1	0.19
29-Jun-16	GRAB	9380 General Currie Rd.	29-Jun-16	0.88	<1	<2	12	<1	0.16
29-Jun-16	GRAB	13800 No. 3 Rd. (off Garden City)	29-Jun-16	0.82	<1	2	12	<1	0.2
29-Jun-16	GRAB	7000 Blk. Dyke Rd.	29-Jun-16	0.8	<1	<2	12	<1	0.24
29-Jun-16	GRAB	6640 Blundell Rd.	29-Jun-16	0.75	<1	<2	11	<1	0.12
30-Jun-16	GRAB	3180 Granville Ave.	30-Jun-16	0.73	<1	<2	13	<1	0.19
30-Jun-16	GRAB	4251 Moncton St.	30-Jun-16	0.75	<1	<2	12	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
30-Jun-16	GRAB	11080 No. 2 Rd.	30-Jun-16	0.87	<1	<2	11	<1	0.16
30-Jun-16	GRAB	11500 McKenzie Rd.	30-Jun-16	0.65	<1	6	15	<1	0.19
30-Jun-16	GRAB	Opp. 8600 Ryan Rd.	30-Jun-16	0.86	<1	<2	10	<1	0.17
30-Jun-16	GRAB	13200 No. 4 Rd.	30-Jun-16	0.89	<1	2	12	<1	0.16
30-Jun-16	GRAB	13851 Steveston Hwy.	30-Jun-16	0.94	<1	<2	12	<1	0.43
30-Jun-16	GRAB	1500 Valemont Way	30-Jun-16	0.89	<1	<2	11	<1	0.31
30-Jun-16	GRAB	11720 Westminster Hwy.	30-Jun-16	0.97	<1	<2	11	<1	0.16
30-Jun-16	GRAB	17240 Fedoruk	30-Jun-16	0.92	<1	2	13	<1	0.35
30-Jun-16	GRAB	23000 Blk. Dyke Rd.	30-Jun-16	0.95	<1	<2	13	<1	0.31
30-Jun-16	GRAB	22271 Cochrane Drive	30-Jun-16	0.91	<1	<2	13	<1	0.3
30-Jun-16	GRAB	5180 Smith Cres.	30-Jun-16	0.76	<1	<2	15	<1	0.25
30-Jun-16	GRAB	23260 Westminster Hwy.	30-Jun-16	0.71	<1	<2	13	<1	0.36
4-Jul-16	GRAB	5951 McCallan Rd.	4-Jul-16	0.74	<1	<2	12	<1	0.15
4-Jul-16	GRAB	Opp. 8331 Fairfax Place	4-Jul-16	0.72	<1	4	19	<1	0.36
4-Jul-16	GRAB	9751 Pendleton Rd.	4-Jul-16	0.71	<1	<2	11	<1	0.14
4-Jul-16	GRAB	10920 Springwood Court	4-Jul-16	0.9	<1	<2	15	<1	0.12
4-Jul-16	GRAB	6071 Azure Rd.	4-Jul-16	0.73	<1	<2	13	<1	0.17
4-Jul-16	GRAB	3800 Cessna Drive	4-Jul-16	0.83	<1	<2	13	<1	0.2
4-Jul-16	GRAB	751 Catalina Cres.	4-Jul-16	1.02	<1	<2	11	<1	0.13
4-Jul-16	GRAB	6000 Blk. Miller Rd.	4-Jul-16	0.85	<1	<2	12	<1	0.27
4-Jul-16	GRAB	1000 Blk. McDonald Rd.	4-Jul-16	0.41	<1	<2	16	<1	0.26
4-Jul-16	GRAB	5300 No. 3 Rd.	4-Jul-16	0.82	<1	2	12	<1	0.17
4-Jul-16	GRAB	8200 Jones Rd.	4-Jul-16	0.87	<1	2	13	<1	0.16
4-Jul-16	GRAB	14951 Triangle Rd.	4-Jul-16	0.97	<1	2	13	<1	0.21
4-Jul-16	GRAB	11051 No 3 Rd.	4-Jul-16	0.8	<1	<2	12	<1	0.16
6-Jul-16	GRAB	12560 Cambie Rd.	6-Jul-16	0.91	<1	<2	11	<1	0.13
6-Jul-16	GRAB	13100 Mitchell Rd.	6-Jul-16	0.81	<1	<2	11	<1	0.16
6-Jul-16	GRAB	Opp. 11280 Twigg Place	6-Jul-16	0.79	<1	<2	13	<1	0.15
6-Jul-16	GRAB	13799 Commerce Pkwy.	6-Jul-16	0.9	<1	<2	12	<1	0.13
6-Jul-16	GRAB	6651 Fraserwood Place	6-Jul-16	0.97	<1	<2	13	<1	0.21
6-Jul-16	GRAB	Opp. 20371 Westminster Hwy.	6-Jul-16	0.93	<1	<2	12	<1	0.17
6-Jul-16	GRAB	9911 Sidaway Rd.	6-Jul-16	1.01	<1	<2	12	<1	0.2
6-Jul-16	GRAB	11111 Horseshoe Way	6-Jul-16	0.86	<1	<2	11	<1	0.13
6-Jul-16	GRAB	10020 Amethyst Ave.	6-Jul-16	0.95	<1	<2	14	<1	0.14
6-Jul-16	GRAB	9380 General Currie Rd.	6-Jul-16	0.82	<1	<2	10	<1	0.16
6-Jul-16	GRAB	13800 No. 3 Rd. (off Garden City)	6-Jul-16	0.83	<1	<2	12	<1	0.12
6-Jul-16	GRAB	7000 Blk. Dyke Rd.	6-Jul-16	0.83	<1	<2	13	<1	0.17
6-Jul-16	GRAB	6640 Blundell Rd.	6-Jul-16	0.65	<1	<2	11	<1	0.12
7-Jul-16	GRAB	3180 Granville Ave.	7-Jul-16	0.73	<1	<2	12	<1	0.14
7-Jul-16	GRAB	4251 Moncton St.	7-Jul-16	0.83	<1	<2	12	<1	0.12

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
7-Jul-16	GRAB	11080 No. 2 Rd.	7-Jul-16	0.86	<1	<2	11	<1	0.13
7-Jul-16	GRAB	11500 McKenzie Rd.	7-Jul-16	0.37	<1	2	16	<1	0.21
7-Jul-16	GRAB	Opp. 8600 Ryan Rd.	7-Jul-16	0.83	<1	<2	12	<1	0.15
7-Jul-16	GRAB	13200 No. 4 Rd.	7-Jul-16	0.72	<1	<2	11	<1	0.11
7-Jul-16	GRAB	13851 Steveston Hwy.	7-Jul-16	1.11	<1	<2	11	<1	0.22
7-Jul-16	GRAB	1500 Valemont Way	7-Jul-16	0.9	<1	<2	13	<1	0.22
7-Jul-16	GRAB	11720 Westminster Hwy.	7-Jul-16	0.93	<1	<2	10	<1	0.11
7-Jul-16	GRAB	17240 Fedoruk	7-Jul-16	1.04	<1	<2	13	<1	0.21
7-Jul-16	GRAB	22271 Cochrane Drive	7-Jul-16	1.03	<1	<2	12	<1	0.22
7-Jul-16	GRAB	5180 Smith Cres.	7-Jul-16	0.76	<1	<2	14	<1	0.19
7-Jul-16	GRAB	23000 Blk. Dyke Rd.	7-Jul-16	1.02	<1	<2	13	<1	0.18
7-Jul-16	GRAB	23260 Westminster Hwy.	7-Jul-16	0.91	<1	<2	11	<1	0.2
11-Jul-16	GRAB	5951 McCallan Rd.	11-Jul-16	0.68	<1	<2	13	<1	0.1
11-Jul-16	GRAB	Opp. 8331 Fairfax Place	11-Jul-16	0.67	<1	<2	17	<1	0.36
11-Jul-16	GRAB	9751 Pendleton Rd.	11-Jul-16	0.61	<1	4	15	<1	0.1
11-Jul-16	GRAB	10920 Springwood Court	11-Jul-16	0.65	<1	<2	15	<1	0.11
11-Jul-16	GRAB	6071 Azure Rd.	11-Jul-16	0.71	<1	2	15	<1	0.13
11-Jul-16	GRAB	3800 Cessna Drive	11-Jul-16	0.78	<1	<2	13	<1	0.1
11-Jul-16	GRAB	751 Catalina Cres.	11-Jul-16	0.93	<1	<2	12	<1	0.1
11-Jul-16	GRAB	6000 Blk. Miller Rd.	11-Jul-16	0.75	<1	<2	11	<1	0.13
11-Jul-16	GRAB	1000 Blk. McDonald Rd.	11-Jul-16	0.41	<1	<2	15	<1	0.53
11-Jul-16	GRAB	5300 No. 3 Rd.	11-Jul-16	0.72	<1	<2	12	<1	0.11
11-Jul-16	GRAB	8200 Jones Rd.	11-Jul-16	0.86	<1	2	13	<1	0.11
11-Jul-16	GRAB	14951 Triangle Rd.	11-Jul-16	0.91	<1	<2	12	<1	0.17
11-Jul-16	GRAB	11051 No 3 Rd.	11-Jul-16	0.79	<1	<2	11	<1	0.09
13-Jul-16	GRAB	12560 Cambie Rd.	13-Jul-16	0.87	<1	<2	11	<1	0.1
13-Jul-16	GRAB	13100 Mitchell Rd.	13-Jul-16	0.86	<1	<2	12	<1	0.11
13-Jul-16	GRAB	Opp. 11280 Twigg Place	13-Jul-16	0.78	<1	2	12	<1	0.13
13-Jul-16	GRAB	13799 Commerce Pkwy.	13-Jul-16	0.92	<1	<2	13	<1	0.22
13-Jul-16	GRAB	6651 Fraserwood Place	13-Jul-16	0.97	<1	<2	13	<1	0.23
13-Jul-16	GRAB	Opp. 20371 Westminster Hwy.	13-Jul-16	0.99	<1	<2	12	<1	0.19
13-Jul-16	GRAB	9911 Sidaway Rd.	13-Jul-16	0.95	<1	<2	13	<1	0.19
13-Jul-16	GRAB	11111 Horseshoe Way	13-Jul-16	0.79	<1	<2	11	<1	0.2
13-Jul-16	GRAB	10020 Amethyst Ave.	13-Jul-16	0.86	<1	<2	14	<1	0.13
13-Jul-16	GRAB	9380 General Currie Rd.	13-Jul-16	0.85	<1	<2	12	<1	0.11
13-Jul-16	GRAB	13800 No. 3 Rd. (off Garden City)	13-Jul-16	0.87	<1	<2	12	<1	0.12
13-Jul-16	GRAB	7000 Blk. Dyke Rd.	13-Jul-16	0.86	<1	<2	13	<1	0.11
13-Jul-16	GRAB	6640 Blundell Rd.	13-Jul-16	0.72	<1	<2	10	<1	0.1
15-Jul-16	GRAB	3180 Granville Ave.	15-Jul-16	0.85	<1	<2	13	<1	0.14
15-Jul-16	GRAB	4251 Moncton St.	15-Jul-16	0.93	<1	<2	12	<1	0.1

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
15-Jul-16	GRAB	11080 No. 2 Rd.	15-Jul-16	0.84	<1	<2	12	<1	0.21
15-Jul-16	GRAB	11500 McKenzie Rd.	15-Jul-16	0.42	<1	52	17	<1	0.24
15-Jul-16	GRAB	Opp. 8600 Ryan Rd.	15-Jul-16	0.96	<1	<2	12	<1	0.12
15-Jul-16	GRAB	13200 No. 4 Rd.	15-Jul-16	0.74	<1	2	12	<1	0.12
15-Jul-16	GRAB	13851 Steveston Hwy.	15-Jul-16	1	<1	<2	12	<1	0.2
15-Jul-16	GRAB	1500 Valemont Way	15-Jul-16	1.15	<1	<2	13	<1	0.18
15-Jul-16	GRAB	11720 Westminster Hwy.	15-Jul-16	0.92	<1	2	11	<1	0.13
15-Jul-16	GRAB	17240 Fedoruk	15-Jul-16	0.99	<1	<2	14	<1	0.23
15-Jul-16	GRAB	23000 Blk. Dyke Rd.	15-Jul-16	1.18	<1	<2	13	<1	0.22
15-Jul-16	GRAB	22271 Cochrane Drive	15-Jul-16	1.02	<1	<2	13	<1	0.21
15-Jul-16	GRAB	5180 Smith Cres.	15-Jul-16	0.7	<1	2	16	<1	0.21
15-Jul-16	GRAB	23260 Westminster Hwy.	15-Jul-16	1.13	<1	<2	14	<1	0.25
18-Jul-16	GRAB	5951 McCallan Rd.	18-Jul-16	0.97	<1	2	12	<1	0.1
18-Jul-16	GRAB	Opp. 8331 Fairfax Place	18-Jul-16	0.6	<1	<2	19	<1	0.39
18-Jul-16	GRAB	9751 Pendleton Rd.	18-Jul-16	0.77	<1	<2	15	<1	0.25
18-Jul-16	GRAB	10920 Springwood Court	18-Jul-16	0.89	<1	<2	17	<1	0.15
18-Jul-16	GRAB	6071 Azure Rd.	18-Jul-16	0.87	<1	<2	13	<1	0.13
18-Jul-16	GRAB	3800 Cessna Drive	18-Jul-16	1.03	<1	<2	14	<1	0.16
18-Jul-16	GRAB	751 Catalina Cres.	18-Jul-16	0.89	<1	<2	13	<1	0.13
18-Jul-16	GRAB	6000 Blk. Miller Rd.	18-Jul-16	1.13	<1	<2	13	<1	0.18
18-Jul-16	GRAB	1000 Blk. McDonald Rd.	18-Jul-16	0.44	<1	<2	17	<1	0.32
18-Jul-16	GRAB	5300 No. 3 Rd.	18-Jul-16	0.85	<1	<2	13	<1	0.17
18-Jul-16	GRAB	8200 Jones Rd.	18-Jul-16	0.95	<1	<2	13	<1	0.18
18-Jul-16	GRAB	14951 Triangle Rd.	18-Jul-16	1	<1	<2	13	<1	0.25
18-Jul-16	GRAB	11051 No 3 Rd.	18-Jul-16	0.99	<1	<2	11	<1	0.16
20-Jul-16	GRAB	12560 Cambie Rd.	20-Jul-16	0.76	<1	<2	11	<1	0.39
20-Jul-16	GRAB	13100 Mitchell Rd.	20-Jul-16	0.78	<1	<2	12	<1	0.22
20-Jul-16	GRAB	Opp. 11280 Twigg Place	20-Jul-16	0.74	<1	<2	12	<1	0.21
20-Jul-16	GRAB	13799 Commerce Pkwy.	20-Jul-16	0.82	<1	<2	12	<1	0.3
20-Jul-16	GRAB	6651 Fraserwood Place	20-Jul-16	0.68	<1	<2	13	<1	0.33
20-Jul-16	GRAB	Opp. 20371 Westminster Hwy.	20-Jul-16	0.91	<1	<2	11	<1	0.42
20-Jul-16	GRAB	9911 Sidaway Rd.	20-Jul-16	0.86	<1	4	13	<1	0.29
20-Jul-16	GRAB	10020 Amethyst Ave.	20-Jul-16	0.73	<1	<2	15	<1	0.22
20-Jul-16	GRAB	11111 Horseshoe Way	20-Jul-16	0.87	<1	<2	13	<1	0.34
20-Jul-16	GRAB	9380 General Currie Rd.	20-Jul-16	0.77	<1	<2	12	<1	0.27
20-Jul-16	GRAB	13800 No. 3 Rd. (off Garden City)	20-Jul-16	0.85	<1	<2	13	<1	0.13
20-Jul-16	GRAB	7000 Blk. Dyke Rd.	20-Jul-16	0.76	<1	2	14	<1	0.17
20-Jul-16	GRAB	6640 Blundell Rd.	20-Jul-16	0.81	<1	<2	11	<1	0.18
21-Jul-16	GRAB	3180 Granville Ave.	21-Jul-16	0.85	<1	<2	13	<1	0.23
21-Jul-16	GRAB	4251 Moncton St.	21-Jul-16	0.9	<1	2	12	<1	0.22

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
21-Jul-16	GRAB	11080 No. 2 Rd.	21-Jul-16	0.94	<1	<2	13	<1	0.21
21-Jul-16	GRAB	11500 McKenzie Rd.	21-Jul-16	0.79	<1	6	17	<1	0.23
21-Jul-16	GRAB	Opp. 8600 Ryan Rd.	21-Jul-16	1.23	<1	<2	11	<1	0.24
21-Jul-16	GRAB	13200 No. 4 Rd.	21-Jul-16	1.14	<1	<2	12	<1	0.27
21-Jul-16	GRAB	13851 Steveston Hwy.	21-Jul-16	1.15	<1	<2	12	<1	0.19
21-Jul-16	GRAB	1500 Valemont Way	21-Jul-16	0.92	<1	<2	14	<1	0.19
21-Jul-16	GRAB	11720 Westminster Hwy.	21-Jul-16	1	<1	<2	12	<1	0.16
21-Jul-16	GRAB	17240 Fedoruk	21-Jul-16	1.35	<1	<2	15	<1	0.23
21-Jul-16	GRAB	23000 Blk. Dyke Rd.	21-Jul-16	1.34	<1	<2	13	<1	0.24
21-Jul-16	GRAB	22271 Cochrane Drive	21-Jul-16	0.98	<1	<2	14	<1	0.22
21-Jul-16	GRAB	5180 Smith Cres.	21-Jul-16	0.56	<1	<2	14	<1	0.21
21-Jul-16	GRAB	23260 Westminster Hwy.	21-Jul-16	1.08	<1	<2	12	<1	0.22
25-Jul-16	GRAB	5951 McCallan Rd.	25-Jul-16	0.61	<1	<2	12	<1	0.14
25-Jul-16	GRAB	Opp. 8331 Fairfax Place	25-Jul-16	0.54	<1	<2	18	<1	0.63
25-Jul-16	GRAB	9751 Pendleton Rd.	25-Jul-16	0.53	<1	<2	14	<1	0.2
25-Jul-16	GRAB	10920 Springwood Court	25-Jul-16	0.38	<1	<2	15	<1	0.12
25-Jul-16	GRAB	11051 No 3 Rd.	25-Jul-16	0.52	<1	2	12	<1	0.18
25-Jul-16	GRAB	14951 Triangle Rd.	25-Jul-16	0.69	<1	<2	12	<1	0.15
25-Jul-16	GRAB	5300 No. 3 Rd.	25-Jul-16	0.64	<1	2	14	<1	0.14
25-Jul-16	GRAB	8200 Jones Rd.	25-Jul-16	0.58	<1	<2	15	<1	0.12
25-Jul-16	GRAB	6071 Azure Rd.	25-Jul-16	0.6	<1	<2	14	<1	0.22
25-Jul-16	GRAB	3800 Cessna Drive	25-Jul-16	0.53	<1	2	14	<1	0.15
25-Jul-16	GRAB	751 Catalina Cres.	25-Jul-16	0.61	<1	<2	13	<1	0.19
25-Jul-16	GRAB	6000 Blk. Miller Rd.	25-Jul-16	0.58	<1	<2	12	<1	0.16
25-Jul-16	GRAB	1000 Blk. McDonald Rd.	25-Jul-16	0.46	<1	<2	15	<1	0.58
27-Jul-16	GRAB	12560 Cambie Rd.	27-Jul-16	0.85	<1	<2	12	<1	0.19
27-Jul-16	GRAB	13100 Mitchell Rd.	27-Jul-16	0.78	<1	<2	14	<1	0.18
27-Jul-16	GRAB	Opp. 11280 Twigg Place	27-Jul-16	0.81	<1	<2	14	<1	0.21
27-Jul-16	GRAB	13799 Commerce Pkwy.	27-Jul-16	0.91	<1	<2	12	<1	0.17
27-Jul-16	GRAB	6651 Fraserwood Place	27-Jul-16	0.72	<1	<2	14	<1	0.13
27-Jul-16	GRAB	Opp. 20371 Westminster Hwy.	27-Jul-16	0.65	<1	<2	13	<1	0.13
27-Jul-16	GRAB	9911 Sidaway Rd.	27-Jul-16	0.65	<1	<2	14	<1	0.1
27-Jul-16	GRAB	11111 Horseshoe Way	27-Jul-16	0.86	<1	<2	12	<1	0.14
27-Jul-16	GRAB	10020 Amethyst Ave.	27-Jul-16	0.8	<1	<2	15	<1	0.12
27-Jul-16	GRAB	9380 General Currie Rd.	27-Jul-16	0.87	<1	2	11	<1	0.13
27-Jul-16	GRAB	13800 No. 3 Rd. (off Garden City)	27-Jul-16	0.85	<1	<2	14	<1	0.13
27-Jul-16	GRAB	7000 Blk. Dyke Rd.	27-Jul-16	0.84	<1	<2	14	<1	0.32
27-Jul-16	GRAB	6640 Blundell Rd.	27-Jul-16	0.79	<1	<2	14	<1	0.12
29-Jul-16	GRAB	3180 Granville Ave.	29-Jul-16	0.81	<1	<2	14	<1	0.13
29-Jul-16	GRAB	4251 Moncton St.	29-Jul-16	1.09	<1	<2	13	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
29-Jul-16	GRAB	11080 No. 2 Rd.	29-Jul-16	1.16	<1	2	12	<1	0.15
29-Jul-16	GRAB	11500 McKenzie Rd.	29-Jul-16	1.13	<1	14	19	<1	0.15
29-Jul-16	GRAB	Opp. 8600 Ryan Rd.	29-Jul-16	1.23	<1	<2	12	<1	0.14
29-Jul-16	GRAB	13200 No. 4 Rd.	29-Jul-16	0.75	<1	<2	14	<1	0.12
29-Jul-16	GRAB	13851 Steveston Hwy.	29-Jul-16	0.89	<1	<2	13	<1	0.13
29-Jul-16	GRAB	1500 Valemont Way	29-Jul-16	0.74	<1	<2	14	<1	0.13
29-Jul-16	GRAB	11720 Westminster Hwy.	29-Jul-16	0.77	<1	<2	13	<1	0.12
29-Jul-16	GRAB	23000 Blk. Dyke Rd.	29-Jul-16	0.73	<1	<2	14	<1	0.13
29-Jul-16	GRAB	17240 Fedoruk	29-Jul-16	0.68	<1	<2	14	<1	0.12
29-Jul-16	GRAB	22271 Cochrane Drive	29-Jul-16	0.68	<1	2	13	<1	0.16
29-Jul-16	GRAB	5180 Smith Cres.	29-Jul-16	0.57	<1	<2	15	<1	0.12
29-Jul-16	GRAB	23260 Westminster Hwy.	29-Jul-16	0.63	<1	<2	13	<1	0.15
2-Aug-16	GRAB	5951 McCallan Rd.	2-Aug-16	0.92	<1	2	13	<1	0.11
2-Aug-16	GRAB	Opp. 8331 Fairfax Place	2-Aug-16	0.89	<1	<2	19	<1	0.81
2-Aug-16	GRAB	9751 Pendleton Rd.	2-Aug-16	0.81	<1	<2	14	<1	0.11
2-Aug-16	GRAB	10920 Springwood Court	2-Aug-16	0.64	<1	<2	17	<1	0.15
2-Aug-16	GRAB	6071 Azure Rd.	2-Aug-16	0.91	<1	2	14	<1	0.12
2-Aug-16	GRAB	3800 Cessna Drive	2-Aug-16	0.69	<1	<2	15	<1	0.15
2-Aug-16	GRAB	751 Catalina Cres.	2-Aug-16	1.02	<1	<2	12	<1	0.12
2-Aug-16	GRAB	6000 Blk. Miller Rd.	2-Aug-16	1.15	<1	<2	13	<1	0.17
2-Aug-16	GRAB	1000 Blk. McDonald Rd.	2-Aug-16	0.42	<1	<2	15	<1	0.32
2-Aug-16	GRAB	5300 No. 3 Rd.	2-Aug-16	0.86	<1	<2	14	<1	0.16
2-Aug-16	GRAB	8200 Jones Rd.	2-Aug-16	0.91	<1	<2	14	<1	0.14
2-Aug-16	GRAB	14951 Triangle Rd.	2-Aug-16	0.74	<1	<2	12	<1	0.2
2-Aug-16	GRAB	11051 No 3 Rd.	2-Aug-16	0.72	<1	<2	12	<1	0.2
3-Aug-16	GRAB	6640 Blundell Rd.	3-Aug-16	0.89	<1	4	12	<1	0.15
3-Aug-16	GRAB	7000 Blk. Dyke Rd.	3-Aug-16	0.85	<1	<2	14	<1	0.13
3-Aug-16	GRAB	13800 No. 3 Rd. (off Garden City)	3-Aug-16	0.77	<1	<2	15	<1	0.16
3-Aug-16	GRAB	9380 General Currie Rd.	3-Aug-16	0.91	<1	2	12	<1	0.16
3-Aug-16	GRAB	10020 Amethyst Ave.	3-Aug-16	0.88	<1	2	14	<1	0.14
3-Aug-16	GRAB	11111 Horseshoe Way	3-Aug-16	1.05	<1	<2	14	<1	0.18
3-Aug-16	GRAB	9911 Sidaway Rd.	3-Aug-16	0.71	<1	2	13	<1	0.13
3-Aug-16	GRAB	12560 Cambie Rd.	3-Aug-16	0.78	<1	<2	13	<1	0.1
3-Aug-16	GRAB	13100 Mitchell Rd.	3-Aug-16	0.82	<1	<2	14	<1	0.1
3-Aug-16	GRAB	Opp. 11280 Twigg Place	3-Aug-16	0.8	<1	<2	20	<1	0.16
3-Aug-16	GRAB	13799 Commerce Pkwy.	3-Aug-16	0.71	<1	<2	14	<1	0.13
3-Aug-16	GRAB	Opp. 20371 Westminster Hwy.	3-Aug-16	0.95	<1	2	12	<1	0.11
3-Aug-16	GRAB	6651 Fraserwood Place	3-Aug-16	0.93	<1	<2	13	<1	0.2
4-Aug-16	GRAB	3180 Granville Ave.	4-Aug-16	0.6	<1	2	14	<1	0.11
4-Aug-16	GRAB	4251 Moncton St.	4-Aug-16	0.54	<1	<2	12	<1	0.16

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
4-Aug-16	GRAB	11080 No. 2 Rd.	4-Aug-16	0.79	<1	<2	13	<1	0.11
4-Aug-16	GRAB	11500 McKenzie Rd.	4-Aug-16	0.32	<1	10	19	<1	0.17
4-Aug-16	GRAB	Opp. 8600 Ryan Rd.	4-Aug-16	0.63	<1	<2	13	<1	0.15
4-Aug-16	GRAB	13200 No. 4 Rd.	4-Aug-16	0.68	<1	<2	13	<1	0.14
4-Aug-16	GRAB	13851 Steveston Hwy.	4-Aug-16	0.62	<1	<2	13	<1	0.1
4-Aug-16	GRAB	1500 Valemont Way	4-Aug-16	0.5	<1	2	14	<1	0.12
4-Aug-16	GRAB	11720 Westminster Hwy.	4-Aug-16	0.63	<1	<2	12	<1	0.14
4-Aug-16	GRAB	17240 Fedoruk	4-Aug-16	0.59	<1	spreadir	15	<1	0.1
4-Aug-16	GRAB	23000 Blk. Dyke Rd.	4-Aug-16	0.62	<1	<2	19	<1	0.11
4-Aug-16	GRAB	22271 Cochrane Drive	4-Aug-16	0.61	<1	8	15	<1	0.22
4-Aug-16	GRAB	5180 Smith Cres.	4-Aug-16	0.48	<1	<2	14	<1	0.12
4-Aug-16	GRAB	23260 Westminster Hwy.	4-Aug-16	0.68	<1	spreadir	15	<1	0.1
8-Aug-16	GRAB	5951 McCallan Rd.	8-Aug-16	0.72	<1	<2	12	<1	0.15
8-Aug-16	GRAB	Opp. 8331 Fairfax Place	8-Aug-16	0.6	<1	<2	20	<1	0.27
8-Aug-16	GRAB	9751 Pendleton Rd.	8-Aug-16	0.62	<1	<2	15	<1	0.15
8-Aug-16	GRAB	10920 Springwood Court	8-Aug-16	0.66	<1	4	16	<1	0.15
8-Aug-16	GRAB	6071 Azure Rd.	8-Aug-16	0.64	<1	<2	14	<1	0.14
8-Aug-16	GRAB	3800 Cessna Drive	8-Aug-16	0.77	<1	2	15	<1	0.15
8-Aug-16	GRAB	751 Catalina Cres.	8-Aug-16	0.83	<1	<2	12	<1	0.2
8-Aug-16	GRAB	6000 Blk. Miller Rd.	8-Aug-16	0.73	<1	<2	12	<1	0.14
8-Aug-16	GRAB	1000 Blk. McDonald Rd.	8-Aug-16	0.38	<1	<2	18	<1	1.3
8-Aug-16	GRAB	5300 No. 3 Rd.	8-Aug-16	0.76	<1	<2	14	<1	0.2
8-Aug-16	GRAB	8200 Jones Rd.	8-Aug-16	0.6	<1	2	15	<1	0.19
8-Aug-16	GRAB	14951 Triangle Rd.	8-Aug-16	0.62	<1	<2	13	<1	0.12
8-Aug-16	GRAB	11051 No 3 Rd.	8-Aug-16	0.64	<1	<2	12	<1	0.15
10-Aug-16	GRAB	12560 Cambie Rd.	10-Aug-16	0.62	<1	<2	13	<1	0.13
10-Aug-16	GRAB	13100 Mitchell Rd.	10-Aug-16	0.79	<1	<2	14	<1	0.23
10-Aug-16	GRAB	Opp. 11280 Twigg Place	10-Aug-16	0.76	<1	<2	14	<1	0.18
10-Aug-16	GRAB	13799 Commerce Pkwy.	10-Aug-16	0.61	<1	<2	14	<1	0.12
10-Aug-16	GRAB	6651 Fraserwood Place	10-Aug-16	0.63	<1	<2	14	<1	0.13
10-Aug-16	GRAB	Opp. 20371 Westminster Hwy.	10-Aug-16	0.7	<1	<2	13	<1	0.1
10-Aug-16	GRAB	9911 Sidaway Rd.	10-Aug-16	0.68	<1	<2	13	<1	0.11
10-Aug-16	GRAB	11111 Horseshoe Way	10-Aug-16	0.81	<1	<2	14	<1	0.14
10-Aug-16	GRAB	10020 Amethyst Ave.	10-Aug-16	0.66	<1	<2	14	<1	0.11
10-Aug-16	GRAB	9380 General Currie Rd.	10-Aug-16	0.75	<1	2	14	<1	0.1
10-Aug-16	GRAB	13800 No. 3 Rd. (off Garden City)	10-Aug-16	0.79	<1	<2	14	<1	0.12
10-Aug-16	GRAB	7000 Blk. Dyke Rd.	10-Aug-16	0.75	<1	<2	14	<1	0.15
10-Aug-16	GRAB	6640 Blundell Rd.	10-Aug-16	0.7	<1	<2	12	<1	0.13
12-Aug-16	GRAB	3180 Granville Ave.	12-Aug-16	0.69	<1	<2	12	<1	0.1
12-Aug-16	GRAB	4251 Moncton St.	12-Aug-16	0.74	<1	2	14	<1	0.08

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
12-Aug-16	GRAB	11080 No. 2 Rd.	12-Aug-16	0.81	<1	<2	14	<1	0.09
12-Aug-16	GRAB	11500 McKenzie Rd.	12-Aug-16	0.41	<1	32	19	<1	0.1
12-Aug-16	GRAB	Opp. 8600 Ryan Rd.	12-Aug-16	0.81	<1	<2	14	<1	0.08
12-Aug-16	GRAB	13200 No. 4 Rd.	12-Aug-16	0.78	<1	<2	15	<1	0.1
12-Aug-16	GRAB	13851 Steveston Hwy.	12-Aug-16	0.73	<1	2	13	<1	0.07
12-Aug-16	GRAB	1500 Valemont Way	12-Aug-16	0.72	<1	<2	14	<1	0.13
12-Aug-16	GRAB	11720 Westminster Hwy.	12-Aug-16	0.8	<1	<2	13	<1	0.07
12-Aug-16	GRAB	17240 Fedoruk	12-Aug-16	0.68	<1	<2	15	<1	0.08
12-Aug-16	GRAB	23000 Blk. Dyke Rd.	12-Aug-16	0.46	<1	8	14	<1	0.13
12-Aug-16	GRAB	22271 Cochrane Drive	12-Aug-16	0.69	<1	6	14	<1	0.08
12-Aug-16	GRAB	5180 Smith Cres.	12-Aug-16	0.68	<1	<2	15	<1	0.09
12-Aug-16	GRAB	23260 Westminster Hwy.	12-Aug-16	0.58	<1	<2	15	<1	0.12
15-Aug-16	GRAB	5951 McCallan Rd.	15-Aug-16	0.73	<1	<2	14	<1	0.1
15-Aug-16	GRAB	Opp. 8331 Fairfax Place	15-Aug-16	0.65	<1	4	20	<1	0.08
15-Aug-16	GRAB	9751 Pendleton Rd.	15-Aug-16	0.63	<1	4	14	<1	0.08
15-Aug-16	GRAB	10920 Springwood Court	15-Aug-16	0.73	<1	<2	16	<1	0.08
15-Aug-16	GRAB	6071 Azure Rd.	15-Aug-16	0.72	<1	2	15	<1	0.17
15-Aug-16	GRAB	3800 Cessna Drive	15-Aug-16	0.81	<1	<2	15	<1	0.11
15-Aug-16	GRAB	751 Catalina Cres.	15-Aug-16	0.81	<1	<2	15	<1	0.1
15-Aug-16	GRAB	6000 Blk. Miller Rd.	15-Aug-16	0.9	<1	2	13	<1	0.11
15-Aug-16	GRAB	1000 Blk. McDonald Rd.	15-Aug-16	0.53	<1	<2	15	<1	0.53
15-Aug-16	GRAB	5300 No. 3 Rd.	15-Aug-16	0.79	<1	<2	NA	<1	0.09
15-Aug-16	GRAB	8200 Jones Rd.	15-Aug-16	0.74	<1	<2	14	<1	0.11
15-Aug-16	GRAB	14951 Triangle Rd.	15-Aug-16	0.71	<1	<2	14	<1	0.2
15-Aug-16	GRAB	11051 No 3 Rd.	15-Aug-16	0.68	<1	<2	14	<1	0.16
17-Aug-16	GRAB	12560 Cambie Rd.	17-Aug-16	0.78	<1	2	14	<1	0.18
17-Aug-16	GRAB	13100 Mitchell Rd.	17-Aug-16	0.75	<1	<2	14	<1	0.21
17-Aug-16	GRAB	Opp. 11280 Twigg Place	17-Aug-16	0.7	<1	<2	15	<1	0.23
17-Aug-16	GRAB	13799 Commerce Pkwy.	17-Aug-16	1.19	<1	2	15	<1	0.39
17-Aug-16	GRAB	6651 Fraserwood Place	17-Aug-16	0.82	<1	<2	15	<1	0.35
17-Aug-16	GRAB	Opp. 20371 Westminster Hwy.	17-Aug-16	0.76	<1	<2	15	<1	0.23
17-Aug-16	GRAB	9911 Sidaway Rd.	17-Aug-16	0.71	<1	<2	15	<1	0.25
17-Aug-16	GRAB	11111 Horseshoe Way	17-Aug-16	0.72	<1	<2	15	<1	0.13
17-Aug-16	GRAB	10020 Amethyst Ave.	17-Aug-16	0.71	<1	<2	15	<1	0.15
17-Aug-16	GRAB	9380 General Currie Rd.	17-Aug-16	0.78	<1	<2	15	<1	0.16
17-Aug-16	GRAB	13800 No. 3 Rd. (off Garden City)	17-Aug-16	0.7	<1	<2	15	<1	0.11
17-Aug-16	GRAB	7000 Blk. Dyke Rd.	17-Aug-16	0.73	<1	<2	15	<1	0.13
17-Aug-16	GRAB	6640 Blundell Rd.	17-Aug-16	0.74	<1	<2	14	<1	0.11
18-Aug-16	GRAB	3180 Granville Ave.	18-Aug-16	0.37	<1	<2	15	<1	0.13
18-Aug-16	GRAB	4251 Moncton St.	18-Aug-16	0.8	<1	<2	14	<1	0.21

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
18-Aug-16	GRAB	11080 No. 2 Rd.	18-Aug-16	0.72	<1	<2	14	<1	0.14
18-Aug-16	GRAB	11500 McKenzie Rd.	18-Aug-16	0.49	<1	40	19	<1	0.14
18-Aug-16	GRAB	Opp. 8600 Ryan Rd.	18-Aug-16	0.65	<1	<2	14	<1	0.13
18-Aug-16	GRAB	13200 No. 4 Rd.	18-Aug-16	0.73	<1	2	14	<1	0.1
18-Aug-16	GRAB	13851 Steveston Hwy.	18-Aug-16	0.67	<1	2	15	<1	0.28
18-Aug-16	GRAB	1500 Valemont Way	18-Aug-16	0.68	<1	<2	14	<1	0.17
18-Aug-16	GRAB	11720 Westminster Hwy.	18-Aug-16	0.73	<1	<2	14	<1	0.14
18-Aug-16	GRAB	17240 Fedoruk	18-Aug-16	0.65	<1	<2	17	<1	0.22
18-Aug-16	GRAB	23000 Blk. Dyke Rd.	18-Aug-16	0.73	<1	<2	16	<1	0.41
18-Aug-16	GRAB	22271 Cochrane Drive	18-Aug-16	0.96	<1	<2	16	<1	0.71
18-Aug-16	GRAB	5180 Smith Cres.	18-Aug-16	0.55	<1	2	15	<1	0.16
18-Aug-16	GRAB	23260 Westminster Hwy.	18-Aug-16	1.14	<1	<2	15	<1	0.55
22-Aug-16	GRAB	5951 McCallan Rd.	22-Aug-16	0.83	<1	<2	14	<1	0.11
22-Aug-16	GRAB	Opp. 8331 Fairfax Place	22-Aug-16	0.74	<1	<2	19	<1	0.39
22-Aug-16	GRAB	9751 Pendleton Rd.	22-Aug-16	0.65	<1	<2	14	<1	0.09
22-Aug-16	GRAB	10920 Springwood Court	22-Aug-16	0.72	<1	<2	18	<1	0.12
22-Aug-16	GRAB	6071 Azure Rd.	22-Aug-16	0.79	<1	<2	15	<1	0.1
22-Aug-16	GRAB	3800 Cessna Drive	22-Aug-16	0.92	<1	<2	15	<1	0.12
22-Aug-16	GRAB	751 Catalina Cres.	22-Aug-16	0.85	<1	<2	14	<1	0.09
22-Aug-16	GRAB	6000 Blk. Miller Rd.	22-Aug-16	0.86	<1	<2	14	<1	0.15
22-Aug-16	GRAB	1000 Blk. McDonald Rd.	22-Aug-16	0.42	<1	<2	17	<1	0.16
22-Aug-16	GRAB	5300 No. 3 Rd.	22-Aug-16	0.83	<1	<2	15	<1	0.12
22-Aug-16	GRAB	8200 Jones Rd.	22-Aug-16	0.84	<1	<2	16	<1	0.11
22-Aug-16	GRAB	14951 Triangle Rd.	22-Aug-16	0.62	<1	<2	15	<1	0.14
22-Aug-16	GRAB	11051 No 3 Rd.	22-Aug-16	0.79	<1	<2	15	<1	0.12
24-Aug-16	GRAB	12560 Cambie Rd.	24-Aug-16	0.76	<1	<2	15	<1	0.14
24-Aug-16	GRAB	13100 Mitchell Rd.	24-Aug-16	0.7	<1	<2	15	<1	0.12
24-Aug-16	GRAB	Opp. 11280 Twigg Place	24-Aug-16	0.67	<1	2	17	<1	0.12
24-Aug-16	GRAB	13799 Commerce Pkwy.	24-Aug-16	0.8	<1	<2	15	<1	0.13
24-Aug-16	GRAB	6651 Fraserwood Place	24-Aug-16	0.66	<1	<2	17	<1	0.15
24-Aug-16	GRAB	Opp. 20371 Westminster Hwy.	24-Aug-16	0.74	<1	<2	17	<1	0.15
24-Aug-16	GRAB	9911 Sidaway Rd.	24-Aug-16	0.68	<1	<2	16	<1	0.14
24-Aug-16	GRAB	11111 Horseshoe Way	24-Aug-16	0.65	<1	<2	15	<1	0.12
24-Aug-16	GRAB	10020 Amethyst Ave.	24-Aug-16	0.79	<1	<2	15	<1	0.12
24-Aug-16	GRAB	9380 General Currie Rd.	24-Aug-16	0.77	<1	<2	17	<1	0.12
24-Aug-16	GRAB	13800 No. 3 Rd. (off Garden City)	24-Aug-16	0.56	<1	<2	15	<1	0.08
24-Aug-16	GRAB	7000 Blk. Dyke Rd.	24-Aug-16	0.71	<1	<2	17	<1	0.07
24-Aug-16	GRAB	6640 Blundell Rd.	24-Aug-16	0.7	<1	<2	16	<1	0.12
26-Aug-16	GRAB	3180 Granville Ave.	26-Aug-16	0.72	<1	<2	15	<1	0.08
26-Aug-16	GRAB	4251 Moncton St.	26-Aug-16	0.67	<1	2	15	<1	0.09

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
26-Aug-16	GRAB	11080 No. 2 Rd.	26-Aug-16	0.76	<1	<2	15	<1	0.07
26-Aug-16	GRAB	11500 McKenzie Rd.	26-Aug-16	0.34	<1	12	18	<1	0.12
26-Aug-16	GRAB	Opp. 8600 Ryan Rd.	26-Aug-16	0.81	<1	<2	14	<1	0.08
26-Aug-16	GRAB	13200 No. 4 Rd.	26-Aug-16	0.75	<1	<2	15	<1	0.08
26-Aug-16	GRAB	13851 Steveston Hwy.	26-Aug-16	0.87	<1	<2	15	<1	0.25
26-Aug-16	GRAB	1500 Valemont Way	26-Aug-16	0.81	<1	<2	16	<1	0.14
26-Aug-16	GRAB	11720 Westminster Hwy.	26-Aug-16	0.74	<1	<2	15	<1	0.09
26-Aug-16	GRAB	17240 Fedoruk	26-Aug-16	0.8	<1	<2	15	<1	0.18
26-Aug-16	GRAB	23000 Blk. Dyke Rd.	26-Aug-16	0.92	<1	<2	17	<1	0.19
26-Aug-16	GRAB	5180 Smith Cres.	26-Aug-16	0.89	<1	<2	16	<1	0.2
26-Aug-16	GRAB	22271 Cochrane Drive	26-Aug-16	0.68	<1	<2	16	<1	0.18
26-Aug-16	GRAB	23260 Westminster Hwy.	26-Aug-16	0.85	<1	2	16	<1	0.22
29-Aug-16	GRAB	5951 McCallan Rd.	29-Aug-16	0.74	<1	<2	15	<1	0.11
29-Aug-16	GRAB	Opp. 8331 Fairfax Place	29-Aug-16	0.61	<1	<2	21	<1	0.42
29-Aug-16	GRAB	9751 Pendleton Rd.	29-Aug-16	0.66	<1	<2	17	<1	0.14
29-Aug-16	GRAB	10920 Springwood Court	29-Aug-16	0.64	<1	<2	19	<1	0.13
29-Aug-16	GRAB	11051 No 3 Rd.	29-Aug-16	0.76	<1	<2	16	<1	0.18
29-Aug-16	GRAB	14951 Triangle Rd.	29-Aug-16	0.83	<1	<2	16	<1	0.24
29-Aug-16	GRAB	8200 Jones Rd.	29-Aug-16	0.77	<1	<2	17	<1	0.18
29-Aug-16	GRAB	5300 No. 3 Rd.	29-Aug-16	0.78	<1	<2	17	<1	0.12
29-Aug-16	GRAB	1000 Blk. McDonald Rd.	29-Aug-16	0.47	<1	<2	19	<1	0.87
29-Aug-16	GRAB	6000 Blk. Miller Rd.	29-Aug-16	0.82	<1	4	16	<1	0.24
29-Aug-16	GRAB	3800 Cessna Drive	29-Aug-16	0.76	<1	<2	16	<1	0.19
29-Aug-16	GRAB	751 Catalina Cres.	29-Aug-16	0.84	<1	<2	15	<1	0.14
29-Aug-16	GRAB	6071 Azure Rd.	29-Aug-16	0.69	<1	4	17	<1	0.11
31-Aug-16	GRAB	12560 Cambie Rd.	31-Aug-16	0.74	<1	<2	16	<1	0.11
31-Aug-16	GRAB	13100 Mitchell Rd.	31-Aug-16	0.76	<1	<2	16	<1	0.42
31-Aug-16	GRAB	Opp. 11280 Twigg Place	31-Aug-16	0.7	<1	2	16	<1	0.32
31-Aug-16	GRAB	13799 Commerce Pkwy.	31-Aug-16	0.78	<1	<2	17	<1	0.18
31-Aug-16	GRAB	6651 Fraserwood Place	31-Aug-16	0.69	<1	<2	16	<1	0.19
31-Aug-16	GRAB	Opp. 20371 Westminster Hwy.	31-Aug-16	0.74	<1	<2	16	<1	0.11
31-Aug-16	GRAB	9911 Sidaway Rd.	31-Aug-16	0.69	<1	2	16	<1	0.19
31-Aug-16	GRAB	11111 Horseshoe Way	31-Aug-16	0.76	<1	<2	15	<1	0.14
31-Aug-16	GRAB	10020 Amethyst Ave.	31-Aug-16	0.68	<1	<2	17	<1	0.11
31-Aug-16	GRAB	9380 General Currie Rd.	31-Aug-16	0.76	<1	<2	15	<1	0.09
31-Aug-16	GRAB	13800 No. 3 Rd. (off Garden City)	31-Aug-16	0.73	<1	<2	16	<1	0.17
31-Aug-16	GRAB	7000 Blk. Dyke Rd.	31-Aug-16	0.75	<1	6	16	<1	0.17
31-Aug-16	GRAB	6640 Blundell Rd.	31-Aug-16	0.77	<1	<2	16	<1	0.14
1-Sep-16	GRAB	3180 Granville Ave.	1-Sep-16	0.99	<1	<2	17	<1	0.1
1-Sep-16	GRAB	4251 Moncton St.	1-Sep-16	0.78	<1	<2	15	<1	0.11

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
1-Sep-16	GRAB	11080 No. 2 Rd.	1-Sep-16	0.76	<1	<2	15	<1	0.14
1-Sep-16	GRAB	11500 McKenzie Rd.	1-Sep-16	0.54	<1	8	18	<1	0.1
1-Sep-16	GRAB	Opp. 8600 Ryan Rd.	1-Sep-16	0.79	<1	<2	15	<1	0.13
1-Sep-16	GRAB	13200 No. 4 Rd.	1-Sep-16	0.75	<1	2	17	<1	0.1
1-Sep-16	GRAB	13851 Steveston Hwy.	1-Sep-16	0.69	<1	<2	17	<1	0.11
1-Sep-16	GRAB	1500 Valemont Way	1-Sep-16	0.73	<1	<2	16	<1	0.12
1-Sep-16	GRAB	11720 Westminster Hwy.	1-Sep-16	0.76	<1	<2	15	<1	0.15
1-Sep-16	GRAB	17240 Fedoruk	1-Sep-16	0.44	<1	<2	16	<1	0.08
1-Sep-16	GRAB	23000 Blk. Dyke Rd.	1-Sep-16	0.63	<1	<2	19	<1	0.14
1-Sep-16	GRAB	22271 Cochrane Drive	1-Sep-16	0.74	<1	<2	16	<1	0.07
1-Sep-16	GRAB	5180 Smith Cres.	1-Sep-16	0.63	<1	<2	17	<1	0.13
1-Sep-16	GRAB	23260 Westminster Hwy.	1-Sep-16	0.68	<1	<2	16	<1	0.1
6-Sep-16	GRAB	5951 McCallan Rd.	6-Sep-16	0.72	<1	<2	16	<1	0.15
6-Sep-16	GRAB	Opp. 8331 Fairfax Place	6-Sep-16	0.66	<1	<2	20	<1	0.25
6-Sep-16	GRAB	9751 Pendleton Rd.	6-Sep-16	0.59	<1	<2	17	<1	0.11
6-Sep-16	GRAB	10920 Springwood Court	6-Sep-16	0.7	<1	<2	18	<1	0.23
6-Sep-16	GRAB	6071 Azure Rd.	6-Sep-16	0.68	<1	<2	17	<1	0.3
6-Sep-16	GRAB	3800 Cessna Drive	6-Sep-16	0.69	<1	<2	18	<1	0.11
6-Sep-16	GRAB	751 Catalina Cres.	6-Sep-16	0.77	<1	<2	17	<1	0.12
6-Sep-16	GRAB	6000 Blk. Miller Rd.	6-Sep-16	0.52	<1	2	16	<1	0.23
6-Sep-16	GRAB	1000 Blk. McDonald Rd.	6-Sep-16	0.42	<1	<2	18	<1	1.2
6-Sep-16	GRAB	5300 No. 3 Rd.	6-Sep-16	0.44	<1	<2	17	<1	0.13
6-Sep-16	GRAB	8200 Jones Rd.	6-Sep-16	0.71	<1	2	16	<1	0.13
6-Sep-16	GRAB	14951 Triangle Rd.	6-Sep-16	0.68	<1	<2	18	<1	0.11
6-Sep-16	GRAB	11051 No 3 Rd.	6-Sep-16	0.74	<1	<2	17	<1	0.16
7-Sep-16	GRAB	12560 Cambie Rd.	7-Sep-16	0.8	<1	<2	16	<1	0.17
7-Sep-16	GRAB	13100 Mitchell Rd.	7-Sep-16	0.83	<1	2	17	<1	0.15
7-Sep-16	GRAB	Opp. 11280 Twigg Place	7-Sep-16	0.65	<1	2	17	<1	0.19
7-Sep-16	GRAB	13799 Commerce Pkwy.	7-Sep-16	0.82	<1	<2	17	<1	0.37
7-Sep-16	GRAB	6651 Fraserwood Place	7-Sep-16	0.77	<1	<2	18	<1	0.14
7-Sep-16	GRAB	Opp. 20371 Westminster Hwy.	7-Sep-16	0.83	<1	<2	16	<1	0.16
7-Sep-16	GRAB	9911 Sidaway Rd.	7-Sep-16	0.71	<1	<2	17	<1	0.18
7-Sep-16	GRAB	11111 Horseshoe Way	7-Sep-16	0.81	<1	<2	17	<1	0.17
7-Sep-16	GRAB	10020 Amethyst Ave.	7-Sep-16	0.78	<1	<2	17	<1	0.09
7-Sep-16	GRAB	9380 General Currie Rd.	7-Sep-16	0.74	<1	<2	18	<1	0.13
7-Sep-16	GRAB	13800 No. 3 Rd. (off Garden City)	7-Sep-16	0.74	<1	<2	17	<1	0.12
7-Sep-16	GRAB	7000 Blk. Dyke Rd.	7-Sep-16	0.79	<1	12	17	<1	0.1
7-Sep-16	GRAB	6640 Blundell Rd.	7-Sep-16	0.76	<1	<2	17	<1	0.09
9-Sep-16	GRAB	3180 Granville Ave.	9-Sep-16	0.71	<1	<2	17	<1	0.1
9-Sep-16	GRAB	4251 Moncton St.	9-Sep-16	0.77	<1	2	16	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
9-Sep-16	GRAB	11080 No. 2 Rd.	9-Sep-16	0.72	<1	<2	17	<1	0.12
9-Sep-16	GRAB	11500 McKenzie Rd.	9-Sep-16	0.87	<1	20	17	<1	0.08
9-Sep-16	GRAB	Opp. 8600 Ryan Rd.	9-Sep-16	0.81	<1	2	17	<1	0.12
9-Sep-16	GRAB	13200 No. 4 Rd.	9-Sep-16	0.86	<1	<2	17	<1	0.12
9-Sep-16	GRAB	13851 Steveston Hwy.	9-Sep-16	0.79	<1	<2	17	<1	0.11
9-Sep-16	GRAB	1500 Valemont Way	9-Sep-16	0.74	<1	<2	17	<1	0.12
9-Sep-16	GRAB	11720 Westminster Hwy.	9-Sep-16	0.74	<1	<2	17	<1	0.11
9-Sep-16	GRAB	17240 Fedoruk	9-Sep-16	0.78	<1	<2	17	<1	0.1
9-Sep-16	GRAB	23000 Blk. Dyke Rd.	9-Sep-16	0.69	<1	<2	18	<1	0.11
9-Sep-16	GRAB	22271 Cochrane Drive	9-Sep-16	0.73	<1	<2	18	<1	0.14
9-Sep-16	GRAB	5180 Smith Cres.	9-Sep-16	0.59	<1	<2	18	<1	0.11
9-Sep-16	GRAB	23260 Westminster Hwy.	9-Sep-16	0.71	<1	2	18	<1	0.11
12-Sep-16	GRAB	5951 McCallan Rd.	12-Sep-16	0.67	<1	<2	15	<1	0.16
12-Sep-16	GRAB	Opp. 8331 Fairfax Place	12-Sep-16	0.69	<1	<2	18	<1	0.27
12-Sep-16	GRAB	9751 Pendleton Rd.	12-Sep-16	0.6	<1	<2	16	<1	0.16
12-Sep-16	GRAB	10920 Springwood Court	12-Sep-16	0.67	<1	<2	18	<1	0.15
12-Sep-16	GRAB	6071 Azure Rd.	12-Sep-16	0.75	<1	<2	16	<1	0.22
12-Sep-16	GRAB	3800 Cessna Drive	12-Sep-16	0.67	<1	2	16	<1	0.11
12-Sep-16	GRAB	751 Catalina Cres.	12-Sep-16	0.82	<1	<2	17	<1	0.2
12-Sep-16	GRAB	6000 Blk. Miller Rd.	12-Sep-16	0.77	<1	<2	16	<1	0.26
12-Sep-16	GRAB	1000 Blk. McDonald Rd.	12-Sep-16	0.41	<1	<2	18	<1	0.21
12-Sep-16	GRAB	5300 No. 3 Rd.	12-Sep-16	0.63	<1	2	16	<1	0.17
12-Sep-16	GRAB	8200 Jones Rd.	12-Sep-16	0.55	<1	<2	16	<1	0.2
12-Sep-16	GRAB	14951 Triangle Rd.	12-Sep-16	0.6	<1	<2	14	<1	0.22
12-Sep-16	GRAB	11051 No 3 Rd.	12-Sep-16	0.62	<1	<2	16	<1	0.29
14-Sep-16	GRAB	12560 Cambie Rd.	14-Sep-16	0.75	<1	<2	16	<1	0.21
14-Sep-16	GRAB	13100 Mitchell Rd.	14-Sep-16	0.77	<1	<2	17	<1	0.25
14-Sep-16	GRAB	Opp. 11280 Twigg Place	14-Sep-16	0.68	<1	<2	18	<1	0.19
14-Sep-16	GRAB	13799 Commerce Pkwy.	14-Sep-16	1	<1	<2	16	<1	0.46
14-Sep-16	GRAB	6651 Fraserwood Place	14-Sep-16	0.86	<1	<2	18	<1	0.25
14-Sep-16	GRAB	Opp. 20371 Westminster Hwy.	14-Sep-16	1.1	<1	<2	17	<1	0.31
14-Sep-16	GRAB	9911 Sidaway Rd.	14-Sep-16	0.86	<1	<2	16	<1	0.25
14-Sep-16	GRAB	11111 Horseshoe Way	14-Sep-16	0.69	<1	<2	17	<1	0.19
14-Sep-16	GRAB	10020 Amethyst Ave.	14-Sep-16	0.71	<1	<2	17	<1	0.14
14-Sep-16	GRAB	9380 General Currie Rd.	14-Sep-16	0.75	<1	<2	17	<1	0.19
14-Sep-16	GRAB	13800 No. 3 Rd. (off Garden City)	14-Sep-16	0.75	<1	<2	18	<1	0.16
14-Sep-16	GRAB	7000 Blk. Dyke Rd.	14-Sep-16	0.61	<1	<2	17	<1	0.16
14-Sep-16	GRAB	6640 Blundell Rd.	14-Sep-16	0.67	<1	<2	16	<1	0.21
15-Sep-16	GRAB	3180 Granville Ave.	15-Sep-16	0.83	<1	<2	17	<1	3.8
15-Sep-16	GRAB	4251 Moncton St.	15-Sep-16	0.79	<1	<2	17	<1	0.36

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
15-Sep-16	GRAB	11080 No. 2 Rd.	15-Sep-16	0.88	<1	<2	16	<1	0.33
15-Sep-16	GRAB	11500 McKenzie Rd.	15-Sep-16	0.69	<1	4	17	<1	0.12
15-Sep-16	GRAB	Opp. 8600 Ryan Rd.	15-Sep-16	0.82	<1	<2	16	<1	0.24
15-Sep-16	GRAB	13200 No. 4 Rd.	15-Sep-16	0.91	<1	<2	17	<1	0.23
15-Sep-16	GRAB	13851 Steveston Hwy.	15-Sep-16	1	<1	2	16	<1	0.36
15-Sep-16	GRAB	1500 Valemont Way	15-Sep-16	0.92	<1	<2	16	<1	0.33
15-Sep-16	GRAB	11720 Westminster Hwy.	15-Sep-16	0.96	<1	<2	17	<1	0.19
15-Sep-16	GRAB	17240 Fedoruk	15-Sep-16	0.82	<1	<2	18	<1	0.23
15-Sep-16	GRAB	23000 Blk. Dyke Rd.	15-Sep-16	0.96	<1	<2	17	<1	0.27
15-Sep-16	GRAB	22271 Cochrane Drive	15-Sep-16	1.02	<1	<2	17	<1	0.24
15-Sep-16	GRAB	5180 Smith Cres.	15-Sep-16	0.99	<1	<2	17	<1	0.2
15-Sep-16	GRAB	23260 Westminster Hwy.	15-Sep-16	0.99	<1	<2	17	<1	0.2
19-Sep-16	GRAB	5951 McCallan Rd.	19-Sep-16	0.76	<1	<2	17	<1	0.11
19-Sep-16	GRAB	Opp. 8331 Fairfax Place	19-Sep-16	0.61	<1	<2	18	<1	0.18
19-Sep-16	GRAB	9751 Pendleton Rd.	19-Sep-16	0.62	<1	<2	18	<1	0.09
19-Sep-16	GRAB	10920 Springwood Court	19-Sep-16	0.52	<1	2	20	<1	0.17
19-Sep-16	GRAB	11051 No 3 Rd.	19-Sep-16	0.68	<1	<2	17	<1	0.14
19-Sep-16	GRAB	14951 Triangle Rd.	19-Sep-16	1.05	<1	2	16	<1	0.26
19-Sep-16	GRAB	5300 No. 3 Rd.	19-Sep-16	0.77	<1	<2	18	<1	0.38
19-Sep-16	GRAB	8200 Jones Rd.	19-Sep-16	0.75	<1	<2	17	<1	0.11
19-Sep-16	GRAB	6071 Azure Rd.	19-Sep-16	0.55	<1	<2	17	<1	0.12
19-Sep-16	GRAB	6000 Blk. Miller Rd.	19-Sep-16	0.76	<1	4	17	<1	0.28
19-Sep-16	GRAB	1000 Blk. McDonald Rd.	19-Sep-16	0.4	<1	<2	18	<1	0.18
21-Sep-16	GRAB	12560 Cambie Rd.	21-Sep-16	0.86	<1	<2	16	<1	0.16
21-Sep-16	GRAB	13100 Mitchell Rd.	21-Sep-16	0.79	<1	<2	17	<1	0.17
21-Sep-16	GRAB	Opp. 11280 Twigg Place	21-Sep-16	0.74	<1	<2	17	<1	0.17
21-Sep-16	GRAB	13799 Commerce Pkwy.	21-Sep-16	0.98	<1	<2	16	<1	0.25
21-Sep-16	GRAB	6651 Fraserwood Place	21-Sep-16	0.78	<1	<2	17	<1	0.25
21-Sep-16	GRAB	Opp. 20371 Westminster Hwy.	21-Sep-16	0.9	<1	<2	16	<1	0.21
21-Sep-16	GRAB	9911 Sidaway Rd.	21-Sep-16	0.99	<1	<2	17	<1	0.26
21-Sep-16	GRAB	11111 Horseshoe Way	21-Sep-16	0.71	<1	2	16	<1	0.15
21-Sep-16	GRAB	10020 Amethyst Ave.	21-Sep-16	0.76	<1	<2	17	<1	0.15
21-Sep-16	GRAB	9380 General Currie Rd.	21-Sep-16	0.78	<1	<2	17	<1	0.12
21-Sep-16	GRAB	13800 No. 3 Rd. (off Garden City)	21-Sep-16	0.71	<1	<2	17	<1	0.18
21-Sep-16	GRAB	7000 Blk. Dyke Rd.	21-Sep-16	0.75	<1	<2	17	<1	0.11
21-Sep-16	GRAB	6640 Blundell Rd.	21-Sep-16	0.73	<1	2	17	<1	0.13
23-Sep-16	GRAB	3180 Granville Ave.	23-Sep-16	0.58	<1	<2	16	<1	0.16
23-Sep-16	GRAB	4251 Moncton St.	23-Sep-16	0.74	<1	<2	16	<1	0.17
23-Sep-16	GRAB	11080 No. 2 Rd.	23-Sep-16	0.88	<1	<2	15	<1	0.16
23-Sep-16	GRAB	11500 McKenzie Rd.	23-Sep-16	0.87	<1	<2	16	<1	0.14

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
23-Sep-16	GRAB	Opp. 8600 Ryan Rd.	23-Sep-16	0.72	<1	<2	16	<1	0.12
23-Sep-16	GRAB	13200 No. 4 Rd.	23-Sep-16	0.82	<1	<2	15	<1	0.18
23-Sep-16	GRAB	13851 Steveston Hwy.	23-Sep-16	0.72	<1	<2	15	<1	0.28
23-Sep-16	GRAB	1500 Valemont Way	23-Sep-16	0.93	<1	<2	15	<1	0.13
23-Sep-16	GRAB	11720 Westminster Hwy.	23-Sep-16	0.73	<1	<2	15	<1	0.17
23-Sep-16	GRAB	17240 Fedoruk	23-Sep-16	0.68	<1	<2	17	<1	0.22
23-Sep-16	GRAB	23000 Blk. Dyke Rd.	23-Sep-16	0.89	<1	<2	15	<1	0.23
23-Sep-16	GRAB	22271 Cochrane Drive	23-Sep-16	0.89	<1	<2	15	<1	0.27
23-Sep-16	GRAB	5180 Smith Cres.	23-Sep-16	0.67	<1	<2	16	<1	0.2
23-Sep-16	GRAB	23260 Westminster Hwy.	23-Sep-16	0.85	<1	<2	15	<1	0.2
26-Sep-16	GRAB	5951 McCallan Rd.	26-Sep-16	0.57	<1	<2	14	<1	0.12
26-Sep-16	GRAB	Opp. 8331 Fairfax Place	26-Sep-16	0.42	<1	4	17	<1	0.39
26-Sep-16	GRAB	9751 Pendleton Rd.	26-Sep-16	0.56	<1	<2	15	<1	0.12
26-Sep-16	GRAB	10920 Springwood Court	26-Sep-16	0.47	<1	<2	16	<1	0.11
26-Sep-16	GRAB	11051 No 3 Rd.	26-Sep-16	0.44	<1	<2	14	<1	0.14
26-Sep-16	GRAB	14951 Triangle Rd.	26-Sep-16	0.59	<1	<2	15	<1	0.25
26-Sep-16	GRAB	5300 No. 3 Rd.	26-Sep-16	0.55	<1	<2	15	<1	0.15
26-Sep-16	GRAB	8200 Jones Rd.	26-Sep-16	0.47	<1	<2	16	<1	0.21
26-Sep-16	GRAB	6071 Azure Rd.	26-Sep-16	0.68	<1	<2	16	<1	0.39
26-Sep-16	GRAB	3800 Cessna Drive	26-Sep-16	0.52	<1	<2	16	<1	0.11
26-Sep-16	GRAB	751 Catalina Cres.	26-Sep-16	0.85	<1	<2	14	<1	0.2
26-Sep-16	GRAB	6000 Blk. Miller Rd.	26-Sep-16	0.68	<1	<2	15	<1	0.14
26-Sep-16	GRAB	1000 Blk. McDonald Rd.	26-Sep-16	0.39	<1	<2	15	<1	0.85
28-Sep-16	GRAB	12560 Cambie Rd.	28-Sep-16	0.6	<1	2	14	<1	0.24
28-Sep-16	GRAB	13100 Mitchell Rd.	28-Sep-16	0.59	<1	<2	14	<1	0.51
28-Sep-16	GRAB	Opp. 11280 Twigg Place	28-Sep-16	0.61	<1	<2	14	<1	0.13
28-Sep-16	GRAB	13799 Commerce Pkwy.	28-Sep-16	0.89	<1	<2	15	<1	0.22
28-Sep-16	GRAB	6651 Fraserwood Place	28-Sep-16	0.72	<1	<2	15	<1	0.2
28-Sep-16	GRAB	Opp. 20371 Westminster Hwy.	28-Sep-16	0.74	<1	<2	14	<1	0.19
28-Sep-16	GRAB	9911 Sidaway Rd.	28-Sep-16	0.72	<1	<2	14	<1	0.2
28-Sep-16	GRAB	11111 Horseshoe Way	28-Sep-16	0.63	<1	<2	15	<1	0.2
28-Sep-16	GRAB	10020 Amethyst Ave.	28-Sep-16	0.63	<1	<2	15	<1	0.2
28-Sep-16	GRAB	9380 General Currie Rd.	28-Sep-16	0.65	<1	<2	15	<1	0.21
28-Sep-16	GRAB	13800 No. 3 Rd. (off Garden City)	28-Sep-16	0.64	<1	<2	15	<1	0.54
28-Sep-16	GRAB	7000 Blk. Dyke Rd.	28-Sep-16	0.65	<1	6	15	<1	0.19
28-Sep-16	GRAB	6640 Blundell Rd.	28-Sep-16	0.64	<1	<2	14	<1	0.12
29-Sep-16	GRAB	3180 Granville Ave.	29-Sep-16	0.87	<1	<2	14	<1	0.16
29-Sep-16	GRAB	4251 Moncton St.	29-Sep-16	0.59	<1	<2	14	<1	0.17
29-Sep-16	GRAB	11080 No. 2 Rd.	29-Sep-16	0.71	<1	<2	14	<1	0.13
29-Sep-16	GRAB	11500 McKenzie Rd.	29-Sep-16	0.35	<1	<2	15	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
29-Sep-16	GRAB	Opp. 8600 Ryan Rd.	29-Sep-16	0.52	<1	<2	14	<1	0.23
29-Sep-16	GRAB	13200 No. 4 Rd.	29-Sep-16	0.6	<1	4	15	<1	0.11
29-Sep-16	GRAB	13851 Steveston Hwy.	29-Sep-16	0.8	<1	<2	14	<1	0.13
29-Sep-16	GRAB	1500 Valemont Way	29-Sep-16	0.78	<1	6	13	<1	0.16
29-Sep-16	GRAB	11720 Westminster Hwy.	29-Sep-16	0.73	<1	2	13	<1	0.15
29-Sep-16	GRAB	17240 Fedoruk	29-Sep-16	0.5	<1	<2	14	<1	0.12
29-Sep-16	GRAB	23000 Blk. Dyke Rd.	29-Sep-16	0.57	<1	<2	13	<1	0.13
29-Sep-16	GRAB	22271 Cochrane Drive	29-Sep-16	0.74	<1	<2	14	<1	0.14
29-Sep-16	GRAB	5180 Smith Cres.	29-Sep-16	0.62	<1	<2	15	<1	0.16
29-Sep-16	GRAB	23260 Westminster Hwy.	29-Sep-16	0.62	<1	<2	14	<1	0.14
3-Oct-16	GRAB	5951 McCallan Rd.	3-Oct-16	0.68	<1	<2	13	<1	0.37
3-Oct-16	GRAB	Opp. 8331 Fairfax Place	3-Oct-16	0.56	<1	<2	16	<1	0.46
3-Oct-16	GRAB	9751 Pendleton Rd.	3-Oct-16	0.48	<1	<2	14	<1	0.13
3-Oct-16	GRAB	10920 Springwood Court	3-Oct-16	0.45	<1	<2	15	<1	0.12
3-Oct-16	GRAB	11051 No 3 Rd.	3-Oct-16	0.68	<1	<2	13	<1	0.23
3-Oct-16	GRAB	14951 Triangle Rd.	3-Oct-16	0.8	<1	<2	14	<1	0.21
3-Oct-16	GRAB	5300 No. 3 Rd.	3-Oct-16	0.69	<1	<2	15	<1	0.27
3-Oct-16	GRAB	8200 Jones Rd.	3-Oct-16	0.65	<1	<2	14	<1	0.72
3-Oct-16	GRAB	6071 Azure Rd.	3-Oct-16	0.71	<1	<2	14	<1	0.39
3-Oct-16	GRAB	3800 Cessna Drive	3-Oct-16	0.73	<1	<2	14	<1	0.14
3-Oct-16	GRAB	751 Catalina Cres.	3-Oct-16	0.85	<1	<2	13	<1	0.13
3-Oct-16	GRAB	6000 Blk. Miller Rd.	3-Oct-16	0.77	<1	<2	13	<1	0.16
3-Oct-16	GRAB	1000 Blk. McDonald Rd.	3-Oct-16	0.65	<1	<2	15	<1	1.3
5-Oct-16	GRAB	12560 Cambie Rd.	5-Oct-16	0.64	<1	<2	15	<1	0.14
5-Oct-16	GRAB	13100 Mitchell Rd.	5-Oct-16	0.62	<1	<2	15	<1	0.12
5-Oct-16	GRAB	Opp. 11280 Twigg Place	5-Oct-16	0.7	<1	<2	16	<1	0.23
5-Oct-16	GRAB	13799 Commerce Pkwy.	5-Oct-16	0.8	<1	<2	15	<1	0.15
5-Oct-16	GRAB	6651 Fraserwood Place	5-Oct-16	0.71	<1	<2	15	<1	0.17
5-Oct-16	GRAB	Opp. 20371 Westminster Hwy.	5-Oct-16	0.92	<1	<2	15	<1	0.16
5-Oct-16	GRAB	9911 Sidaway Rd.	5-Oct-16	0.73	<1	<2	15	<1	0.15
5-Oct-16	GRAB	11111 Horseshoe Way	5-Oct-16	0.66	<1	<2	15	<1	0.19
5-Oct-16	GRAB	10020 Amethyst Ave.	5-Oct-16	0.69	<1	<2	15	<1	0.1
5-Oct-16	GRAB	9380 General Currie Rd.	5-Oct-16	0.81	<1	<2	15	<1	0.11
5-Oct-16	GRAB	13800 No. 3 Rd. (off Garden City)	5-Oct-16	0.74	<1	4	16	<1	0.83
5-Oct-16	GRAB	7000 Blk. Dyke Rd.	5-Oct-16	0.81	<1	16	15	<1	0.11
5-Oct-16	GRAB	6640 Blundell Rd.	5-Oct-16	0.7	<1	<2	15	<1	0.22
7-Oct-16	GRAB	3180 Granville Ave.	7-Oct-16	0.63	<1	<2	14	<1	0.11
7-Oct-16	GRAB	4251 Moncton St.	7-Oct-16	0.71	<1	<2	16	<1	0.12
7-Oct-16	GRAB	11080 No. 2 Rd.	7-Oct-16	0.67	<1	8	15	<1	0.11
7-Oct-16	GRAB	11500 McKenzie Rd.	7-Oct-16	0.36	<1	36	15	<1	0.25

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
7-Oct-16	GRAB	Opp. 8600 Ryan Rd.	7-Oct-16	0.72	<1	<2	14	<1	0.1
7-Oct-16	GRAB	13200 No. 4 Rd.	7-Oct-16	0.68	<1	4	16	<1	0.11
7-Oct-16	GRAB	13851 Steveston Hwy.	7-Oct-16	0.68	<1	<2	15	<1	0.2
7-Oct-16	GRAB	1500 Valemont Way	7-Oct-16	0.7	<1	<2	15	<1	0.15
7-Oct-16	GRAB	11720 Westminster Hwy.	7-Oct-16	0.67	<1	<2	15	<1	0.17
7-Oct-16	GRAB	17240 Fedoruk	7-Oct-16	0.71	<1	<2	16	<1	0.15
7-Oct-16	GRAB	23000 Blk. Dyke Rd.	7-Oct-16	0.68	<1	<2	16	<1	0.23
7-Oct-16	GRAB	22271 Cochrane Drive	7-Oct-16	0.74	<1	<2	15	<1	0.15
7-Oct-16	GRAB	5180 Smith Cres.	7-Oct-16	0.66	<1	<2	16	<1	0.22
7-Oct-16	GRAB	23260 Westminster Hwy.	7-Oct-16	0.71	<1	<2	15	<1	0.17
11-Oct-16	GRAB	5951 McCallan Rd.	11-Oct-16	0.61	<1	4	15	<1	0.18
11-Oct-16	GRAB	Opp. 8331 Fairfax Place	11-Oct-16	0.46	<1	<2	14	<1	0.2
11-Oct-16	GRAB	9751 Pendleton Rd.	11-Oct-16	0.53	<1	<2	12	<1	0.22
11-Oct-16	GRAB	10920 Springwood Court	11-Oct-16	0.55	<1	<2	14	<1	0.16
11-Oct-16	GRAB	11051 No 3 Rd.	11-Oct-16	0.79	<1	2	15	<1	0.19
11-Oct-16	GRAB	14951 Triangle Rd.	11-Oct-16	0.67	<1	<2	13	<1	0.2
11-Oct-16	GRAB	5300 No. 3 Rd.	11-Oct-16	0.72	<1	<2	13	<1	0.29
11-Oct-16	GRAB	8200 Jones Rd.	11-Oct-16	0.7	<1	<2	13	<1	0.16
11-Oct-16	GRAB	6071 Azure Rd.	11-Oct-16	0.63	<1	2	13	<1	0.12
11-Oct-16	GRAB	3800 Cessna Drive	11-Oct-16	0.54	<1	<2	14	<1	0.22
11-Oct-16	GRAB	751 Catalina Cres.	11-Oct-16	0.62	<1	<2	12	<1	0.15
11-Oct-16	GRAB	6000 Blk. Miller Rd.	11-Oct-16	0.75	<1	2	12	<1	0.29
11-Oct-16	GRAB	1000 Blk. McDonald Rd.	11-Oct-16	0.51	<1	2	14	<1	0.41
12-Oct-16	GRAB	12560 Cambie Rd.	12-Oct-16	0.66	<1	<2	12	<1	0.18
12-Oct-16	GRAB	13100 Mitchell Rd.	12-Oct-16	0.7	<1	loading err	13	<1	0.2
12-Oct-16	GRAB	Opp. 11280 Twigg Place	12-Oct-16	0.68	<1	<2	14	<1	0.17
12-Oct-16	GRAB	13799 Commerce Pkwy.	12-Oct-16	0.71	<1	10	13	<1	0.22
12-Oct-16	GRAB	6651 Fraserwood Place	12-Oct-16	0.68	<1	<2	14	<1	0.21
12-Oct-16	GRAB	Opp. 20371 Westminster Hwy.	12-Oct-16	0.8	<1	<2	13	<1	0.17
12-Oct-16	GRAB	9911 Sidaway Rd.	12-Oct-16	0.6	<1	<2	14	<1	0.14
12-Oct-16	GRAB	11111 Horseshoe Way	12-Oct-16	0.61	<1	<2	14	<1	0.14
12-Oct-16	GRAB	10020 Amethyst Ave.	12-Oct-16	0.67	<1	<2	14	<1	0.12
12-Oct-16	GRAB	9380 General Currie Rd.	12-Oct-16	0.64	<1	<2	14	<1	0.14
12-Oct-16	GRAB	13800 No. 3 Rd. (off Garden City)	12-Oct-16	0.64	<1	<2	14	<1	0.51
12-Oct-16	GRAB	7000 Blk. Dyke Rd.	12-Oct-16	0.59	<1	14	14	<1	0.16
12-Oct-16	GRAB	6640 Blundell Rd.	12-Oct-16	0.69	<1	<2	14	<1	0.15
13-Oct-16	GRAB	3180 Granville Ave.	13-Oct-16	0.58	<1	2	12	<1	0.11
13-Oct-16	GRAB	4251 Moncton St.	13-Oct-16	0.56	<1	<2	12	<1	0.13
13-Oct-16	GRAB	11080 No. 2 Rd.	13-Oct-16	0.62	<1	2	13	<1	0.14
13-Oct-16	GRAB	11500 McKenzie Rd.	13-Oct-16	0.41	<1	4	14	<1	0.13

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
13-Oct-16	GRAB	Opp. 8600 Ryan Rd.	13-Oct-16	0.67	<1	2	12	<1	0.12
13-Oct-16	GRAB	13200 No. 4 Rd.	13-Oct-16	0.64	<1	<2	12	<1	0.12
13-Oct-16	GRAB	13851 Steveston Hwy.	13-Oct-16	0.59	<1	<2	13	<1	0.16
13-Oct-16	GRAB	1500 Valemont Way	13-Oct-16	0.58	<1	<2	13	<1	0.15
13-Oct-16	GRAB	11720 Westminster Hwy.	13-Oct-16	0.79	<1	<2	12	<1	0.19
13-Oct-16	GRAB	17240 Fedoruk	13-Oct-16	0.78	<1	<2	13	<1	0.17
13-Oct-16	GRAB	23000 Blk. Dyke Rd.	13-Oct-16	0.74	<1	2	13	<1	0.17
13-Oct-16	GRAB	22271 Cochrane Drive	13-Oct-16	0.61	<1	<2	14	<1	0.17
13-Oct-16	GRAB	5180 Smith Cres.	13-Oct-16	0.64	<1	<2	13	<1	0.22
13-Oct-16	GRAB	23260 Westminster Hwy.	13-Oct-16	0.63	<1	<2	13	<1	0.14
17-Oct-16	GRAB	5951 McCallan Rd.	17-Oct-16	0.63	<1	<2	10	<1	0.11
17-Oct-16	GRAB	Opp. 8331 Fairfax Place	17-Oct-16	0.39	<1	2	14	<1	0.11
17-Oct-16	GRAB	9751 Pendleton Rd.	17-Oct-16	0.43	<1	<2	13	<1	0.17
17-Oct-16	GRAB	10920 Springwood Court	17-Oct-16	0.48	<1	<2	15	<1	0.1
17-Oct-16	GRAB	11051 No 3 Rd.	17-Oct-16	0.74	<1	<2	11	<1	0.1
17-Oct-16	GRAB	14951 Triangle Rd.	17-Oct-16	0.75	<1	2	12	<1	0.15
17-Oct-16	GRAB	8200 Jones Rd.	17-Oct-16	0.55	<1	2	13	<1	0.11
17-Oct-16	GRAB	5300 No. 3 Rd.	17-Oct-16	0.66	<1	<2	13	<1	0.16
17-Oct-16	GRAB	1000 Blk. McDonald Rd.	17-Oct-16	0.4	<1	<2	12	<1	1.4
17-Oct-16	GRAB	6000 Blk. Miller Rd.	17-Oct-16	0.77	<1	<2	12	<1	0.18
17-Oct-16	GRAB	3800 Cessna Drive	17-Oct-16	0.7	<1	<2	12	<1	0.11
17-Oct-16	GRAB	751 Catalina Cres.	17-Oct-16	0.77	<1	<2	12	<1	0.12
17-Oct-16	GRAB	6071 Azure Rd.	17-Oct-16	0.68	<1	2	12	<1	0.14
19-Oct-16	GRAB	6640 Blundell Rd.	19-Oct-16	0.73	<1	<2	11	<1	0.12
19-Oct-16	GRAB	7000 Blk. Dyke Rd.	19-Oct-16	0.59	<1	12	11	<1	0.12
19-Oct-16	GRAB	13800 No. 3 Rd. (off Garden City)	19-Oct-16	0.55	<1	<2	12	<1	0.12
19-Oct-16	GRAB	9380 General Currie Rd.	19-Oct-16	0.73	<1	<2	11	<1	0.13
19-Oct-16	GRAB	10020 Amethyst Ave.	19-Oct-16	0.61	<1	<2	12	<1	0.12
19-Oct-16	GRAB	11111 Horseshoe Way	19-Oct-16	0.64	<1	<2	13	<1	0.1
19-Oct-16	GRAB	9911 Sidaway Rd.	19-Oct-16	0.72	<1	<2	11	<1	0.1
19-Oct-16	GRAB	12560 Cambie Rd.	19-Oct-16	0.66	<1	<2	11	<1	0.12
19-Oct-16	GRAB	13100 Mitchell Rd.	19-Oct-16	0.62	<1	<2	11	<1	0.12
19-Oct-16	GRAB	Opp. 11280 Twigg Place	19-Oct-16	0.71	<1	<2	11	<1	0.39
19-Oct-16	GRAB	13799 Commerce Pkwy.	19-Oct-16	0.63	<1	<2	11	<1	0.21
19-Oct-16	GRAB	Opp. 20371 Westminster Hwy.	19-Oct-16	0.68	<1	<2	11	<1	0.17
19-Oct-16	GRAB	6651 Fraserwood Place	19-Oct-16	0.68	<1	2	12	<1	0.36
21-Oct-16	GRAB	3180 Granville Ave.	21-Oct-16	0.48	<1	<2	11	<1	0.13
21-Oct-16	GRAB	4251 Moncton St.	21-Oct-16	0.64	<1	<2	11	<1	0.12
21-Oct-16	GRAB	11080 No. 2 Rd.	21-Oct-16	0.67	<1	<2	11	<1	0.11
21-Oct-16	GRAB	11500 McKenzie Rd.	21-Oct-16	0.46	<1	<2	12	<1	0.13

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
21-Oct-16	GRAB	Opp. 8600 Ryan Rd.	21-Oct-16	0.56	<1	<2	11	<1	0.12
21-Oct-16	GRAB	13200 No. 4 Rd.	21-Oct-16	0.49	<1	<2	12	<1	0.11
21-Oct-16	GRAB	13851 Steveston Hwy.	21-Oct-16	0.51	<1	<2	11	<1	0.14
21-Oct-16	GRAB	1500 Valemont Way	21-Oct-16	0.59	<1	<2	11	<1	0.15
21-Oct-16	GRAB	11720 Westminster Hwy.	21-Oct-16	0.74	<1	<2	11	<1	0.16
21-Oct-16	GRAB	17240 Fedoruk	21-Oct-16	0.56	<1	<2	11	<1	0.11
21-Oct-16	GRAB	23000 Blk. Dyke Rd.	21-Oct-16	0.57	<1	<2	11	<1	0.16
21-Oct-16	GRAB	22271 Cochrane Drive	21-Oct-16	0.53	<1	<2	11	<1	0.14
21-Oct-16	GRAB	5180 Smith Cres.	21-Oct-16	0.58	<1	<2	11	<1	0.14
21-Oct-16	GRAB	23260 Westminster Hwy.	21-Oct-16	0.57	<1	<2	11	<1	0.15
24-Oct-16	GRAB	5951 McCallan Rd.	24-Oct-16	0.56	<1	<2	11	<1	0.15
24-Oct-16	GRAB	Opp. 8331 Fairfax Place	24-Oct-16	0.61	<1	<2	13	<1	0.19
24-Oct-16	GRAB	9751 Pendleton Rd.	24-Oct-16	0.51	<1	2	13	<1	0.17
24-Oct-16	GRAB	10920 Springwood Court	24-Oct-16	0.7	<1	<2	12	<1	0.14
24-Oct-16	GRAB	11051 No 3 Rd.	24-Oct-16	0.64	<1	4	10	<1	0.12
24-Oct-16	GRAB	14951 Triangle Rd.	24-Oct-16	0.64	<1	<2	10	<1	0.13
24-Oct-16	GRAB	5300 No. 3 Rd.	24-Oct-16	0.62	<1	<2	13	<1	0.13
24-Oct-16	GRAB	8200 Jones Rd.	24-Oct-16	0.69	<1	<2	11	<1	0.17
24-Oct-16	GRAB	6071 Azure Rd.	24-Oct-16	0.73	<1	<2	11	<1	0.15
24-Oct-16	GRAB	3800 Cessna Drive	24-Oct-16	0.71	<1	<2	12	<1	0.14
24-Oct-16	GRAB	751 Catalina Cres.	24-Oct-16	0.73	<1	<2	10	<1	0.2
24-Oct-16	GRAB	6000 Blk. Miller Rd.	24-Oct-16	0.7	<1	<2	12	<1	0.19
24-Oct-16	GRAB	1000 Blk. McDonald Rd.	24-Oct-16	0.35	<1	<2	10	<1	0.63
26-Oct-16	GRAB	12560 Cambie Rd.	26-Oct-16	0.42	<1	<2	12	<1	0.17
26-Oct-16	GRAB	13100 Mitchell Rd.	26-Oct-16	0.72	<1	2	12	<1	0.23
26-Oct-16	GRAB	Opp. 11280 Twigg Place	26-Oct-16	0.7	<1	<2	12	<1	0.32
26-Oct-16	GRAB	13799 Commerce Pkwy.	26-Oct-16	0.61	<1	<2	12	<1	0.15
26-Oct-16	GRAB	Opp. 20371 Westminster Hwy.	26-Oct-16	0.64	<1	<2	11	<1	0.14
26-Oct-16	GRAB	9911 Sidaway Rd.	26-Oct-16	0.6	<1	<2	11	<1	0.2
26-Oct-16	GRAB	6651 Fraserwood Place	26-Oct-16	0.59	<1	<2	12	<1	0.1
26-Oct-16	GRAB	11111 Horseshoe Way	26-Oct-16	0.66	<1	<2	11	<1	0.15
26-Oct-16	GRAB	10020 Amethyst Ave.	26-Oct-16	0.59	<1	<2	11	<1	0.11
26-Oct-16	GRAB	9380 General Currie Rd.	26-Oct-16	0.93	<1	<2	10	<1	0.27
26-Oct-16	GRAB	13800 No. 3 Rd. (off Garden City)	26-Oct-16	0.62	<1	<2	10	<1	0.41
26-Oct-16	GRAB	7000 Blk. Dyke Rd.	26-Oct-16	0.7	<1	6	12	<1	0.22
26-Oct-16	GRAB	6640 Blundell Rd.	26-Oct-16	0.78	<1	<2	10	<1	0.2
27-Oct-16	GRAB	3180 Granville Ave.	27-Oct-16	0.8	<1	2	12	<1	0.16
27-Oct-16	GRAB	4251 Moncton St.	27-Oct-16	0.86	<1	<2	12	<1	0.2
27-Oct-16	GRAB	11080 No. 2 Rd.	27-Oct-16	0.9	<1	<2	12	<1	0.15
27-Oct-16	GRAB	11500 McKenzie Rd.	27-Oct-16	0.42	<1	<2	12	<1	0.16

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
27-Oct-16	GRAB	Opp. 8600 Ryan Rd.	27-Oct-16	0.71	<1	<2	12	<1	0.14
27-Oct-16	GRAB	13200 No. 4 Rd.	27-Oct-16	0.64	<1	32	12	<1	0.13
27-Oct-16	GRAB	13851 Steveston Hwy.	27-Oct-16	0.7	<1	<2	11	<1	0.15
27-Oct-16	GRAB	1500 Valemont Way	27-Oct-16	0.63	<1	<2	11	<1	0.26
27-Oct-16	GRAB	11720 Westminster Hwy.	27-Oct-16	0.92	<1	<2	10	<1	0.15
27-Oct-16	GRAB	17240 Fedoruk	27-Oct-16	0.63	<1	<2	10	<1	0.11
27-Oct-16	GRAB	23000 Blk. Dyke Rd.	27-Oct-16	0.59	<1	<2	12	<1	0.11
27-Oct-16	GRAB	22271 Cochrane Drive	27-Oct-16	0.62	<1	<2	12	<1	0.12
27-Oct-16	GRAB	5180 Smith Cres.	27-Oct-16	0.65	<1	<2	11	<1	0.16
27-Oct-16	GRAB	23260 Westminster Hwy.	27-Oct-16	0.69	<1	<2	11	<1	0.12
31-Oct-16	GRAB	5951 McCallan Rd.	31-Oct-16	0.7	<1	2	8	<1	0.13
31-Oct-16	GRAB	Opp. 8331 Fairfax Place	31-Oct-16	0.62	<1	<2	12	<1	0.29
31-Oct-16	GRAB	9751 Pendleton Rd.	31-Oct-16	0.73	<1	<2	10	<1	0.12
31-Oct-16	GRAB	10920 Springwood Court	31-Oct-16	0.7	<1	<2	10	<1	0.18
31-Oct-16	GRAB	11051 No 3 Rd.	31-Oct-16	0.77	<1	<2	9	<1	0.1
31-Oct-16	GRAB	14951 Triangle Rd.	31-Oct-16	0.68	<1	<2	10	<1	0.08
31-Oct-16	GRAB	5300 No. 3 Rd.	31-Oct-16	0.78	<1	<2	10	<1	0.12
31-Oct-16	GRAB	8200 Jones Rd.	31-Oct-16	0.77	<1	4	10	<1	0.13
31-Oct-16	GRAB	3800 Cessna Drive	31-Oct-16	0.86	<1	<2	10	<1	0.1
31-Oct-16	GRAB	751 Catalina Cres.	31-Oct-16	0.92	<1	<2	10	<1	0.1
31-Oct-16	GRAB	6000 Blk. Miller Rd.	31-Oct-16	0.98	<1	<2	9	<1	0.16
31-Oct-16	GRAB	1000 Blk. McDonald Rd.	31-Oct-16	0.58	<1	<2	9	<1	0.3
31-Oct-16	GRAB	6071 Azure Rd.	31-Oct-16	0.79	<1	<2	9	<1	0.13
2-Nov-16	GRAB	12560 Cambie Rd.	2-Nov-16	0.86	<1	4	9	<1	0.26
2-Nov-16	GRAB	13100 Mitchell Rd.	2-Nov-16	0.98	<1	<2	10	<1	0.2
2-Nov-16	GRAB	Opp. 11280 Twigg Place	2-Nov-16	0.89	<1	<2	9	<1	0.18
2-Nov-16	GRAB	13799 Commerce Pkwy.	2-Nov-16	0.73	<1	<2	10	<1	0.14
2-Nov-16	GRAB	6651 Fraserwood Place	2-Nov-16	0.75	<1	4	11	<1	0.09
2-Nov-16	GRAB	Opp. 20371 Westminster Hwy.	2-Nov-16	0.76	<1	<2	11	<1	0.07
2-Nov-16	GRAB	9911 Sidaway Rd.	2-Nov-16	0.83	<1	<2	11	<1	0.09
2-Nov-16	GRAB	11111 Horseshoe Way	2-Nov-16	0.69	<1	<2	11	<1	0.14
2-Nov-16	GRAB	10020 Amethyst Ave.	2-Nov-16	0.83	<1	<2	11	<1	0.14
2-Nov-16	GRAB	9380 General Currie Rd.	2-Nov-16	0.97	<1	<2	10	<1	0.15
2-Nov-16	GRAB	13800 No. 3 Rd. (off Garden City)	2-Nov-16	0.79	<1	<2	11	<1	0.15
2-Nov-16	GRAB	7000 Blk. Dyke Rd.	2-Nov-16	0.84	<1	2	11	<1	0.11
2-Nov-16	GRAB	6640 Blundell Rd.	2-Nov-16	0.8	<1	<2	10	<1	0.13
4-Nov-16	GRAB	3180 Granville Ave.	4-Nov-16	0.67	<1	<2	9	<1	0.08
4-Nov-16	GRAB	4251 Moncton St.	4-Nov-16	0.79	<1	2	9	<1	0.08
4-Nov-16	GRAB	11080 No. 2 Rd.	4-Nov-16	0.82	<1	<2	10	<1	0.07
4-Nov-16	GRAB	11500 McKenzie Rd.	4-Nov-16	0.74	<1	12	12	<1	0.09

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
4-Nov-16	GRAB	Opp. 8600 Ryan Rd.	4-Nov-16	0.9	<1	<2	11	<1	0.1
4-Nov-16	GRAB	13200 No. 4 Rd.	4-Nov-16	0.8	<1	<2	12	<1	0.09
4-Nov-16	GRAB	13851 Steveston Hwy.	4-Nov-16	0.66	<1	<2	10	<1	0.07
4-Nov-16	GRAB	1500 Valemont Way	4-Nov-16	0.7	<1	<2	10	<1	0.09
4-Nov-16	GRAB	11720 Westminster Hwy.	4-Nov-16	1.07	<1	<2	10	<1	0.09
4-Nov-16	GRAB	17240 Fedoruk	4-Nov-16	0.76	<1	<2	12	<1	0.08
4-Nov-16	GRAB	23000 Blk. Dyke Rd.	4-Nov-16	0.68	<1	<2	11	<1	0.07
4-Nov-16	GRAB	22271 Cochrane Drive	4-Nov-16	0.69	<1	<2	10	<1	0.08
4-Nov-16	GRAB	5180 Smith Cres.	4-Nov-16	0.65	<1	<2	12	<1	0.14
4-Nov-16	GRAB	23260 Westminster Hwy.	4-Nov-16	0.7	<1	<2	11	<1	0.09
7-Nov-16	GRAB	5951 McCallan Rd.	7-Nov-16	0.74	<1	2	9	<1	0.59
7-Nov-16	GRAB	Opp. 8331 Fairfax Place	7-Nov-16	0.66	<1	<2	13	<1	0.35
7-Nov-16	GRAB	9751 Pendleton Rd.	7-Nov-16	0.72	<1	<2	10	<1	0.25
7-Nov-16	GRAB	10920 Springwood Court	7-Nov-16	0.84	<1	<2	12	<1	0.25
7-Nov-16	GRAB	11051 No 3 Rd.	7-Nov-16	0.93	<1	<2	10	<1	0.43
7-Nov-16	GRAB	14951 Triangle Rd.	7-Nov-16	0.71	<1	<2	9	<1	0.38
7-Nov-16	GRAB	8200 Jones Rd.	7-Nov-16	0.74	<1	2	10	<1	0.12
7-Nov-16	GRAB	5300 No. 3 Rd.	7-Nov-16	0.82	<1	<2	10	<1	0.16
7-Nov-16	GRAB	1000 Blk. McDonald Rd.	7-Nov-16	0.46	<1	<2	10	<1	0.5
7-Nov-16	GRAB	6000 Blk. Miller Rd.	7-Nov-16	0.81	<1	<2	9	<1	0.42
7-Nov-16	GRAB	3800 Cessna Drive	7-Nov-16	0.84	<1	14	11	<1	0.24
7-Nov-16	GRAB	751 Catalina Cres.	7-Nov-16	0.87	<1	<2	9	<1	0.49
7-Nov-16	GRAB	6071 Azure Rd.	7-Nov-16	0.84	<1	<2	10	<1	0.2
8-Nov-16	GRAB	12560 Cambie Rd.	8-Nov-16	0.88	<1	2	9	<1	0.1
8-Nov-16	GRAB	13100 Mitchell Rd.	8-Nov-16	0.89	<1	<2	10	<1	0.08
8-Nov-16	GRAB	Opp. 11280 Twigg Place	8-Nov-16	0.7	<1	<2	12	<1	0.17
8-Nov-16	GRAB	13799 Commerce Pkwy.	8-Nov-16	0.68	<1	2	10	<1	0.09
8-Nov-16	GRAB	6651 Fraserwood Place	8-Nov-16	0.67	<1	<2	10	<1	0.11
8-Nov-16	GRAB	Opp. 20371 Westminster Hwy.	8-Nov-16	0.69	<1	2	10	<1	0.1
8-Nov-16	GRAB	9911 Sidaway Rd.	8-Nov-16	0.84	<1	24	10	<1	0.13
8-Nov-16	GRAB	11111 Horseshoe Way	8-Nov-16	0.79	<1	<2	11	<1	0.07
8-Nov-16	GRAB	10020 Amethyst Ave.	8-Nov-16	0.84	<1	<2	10	<1	0.09
8-Nov-16	GRAB	9380 General Currie Rd.	8-Nov-16	0.9	<1	<2	10	<1	0.1
8-Nov-16	GRAB	13800 No. 3 Rd. (off Garden City)	8-Nov-16	0.55	<1	<2	11	<1	0.15
8-Nov-16	GRAB	7000 Blk. Dyke Rd.	8-Nov-16	0.78	<1	6	10	<1	0.09
8-Nov-16	GRAB	6640 Blundell Rd.	8-Nov-16	0.78	<1	<2	11	<1	0.1
9-Nov-16	GRAB	3180 Granville Ave.	9-Nov-16	0.71	<1	<2	9	<1	0.11
9-Nov-16	GRAB	4251 Moncton St.	9-Nov-16	0.75	<1	4	10	<1	0.1
9-Nov-16	GRAB	11080 No. 2 Rd.	9-Nov-16	0.8	<1	<2	9	<1	0.08
9-Nov-16	GRAB	11500 McKenzie Rd.	9-Nov-16	0.61	<1	4	11	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
9-Nov-16	GRAB	Opp. 8600 Ryan Rd.	9-Nov-16	0.79	<1	<2	9	<1	0.08
9-Nov-16	GRAB	13200 No. 4 Rd.	9-Nov-16	0.74	<1	<2	10	<1	0.09
9-Nov-16	GRAB	13851 Steveston Hwy.	9-Nov-16	0.61	<1	<2	9	<1	0.07
9-Nov-16	GRAB	1500 Valemont Way	9-Nov-16	0.68	<1	2	8	<1	0.08
9-Nov-16	GRAB	11720 Westminster Hwy.	9-Nov-16	0.81	<1	<2	9	<1	0.1
9-Nov-16	GRAB	17240 Fedoruk	9-Nov-16	0.71	<1	<2	10	<1	0.11
9-Nov-16	GRAB	23000 Blk. Dyke Rd.	9-Nov-16	0.59	<1	2	10	<1	0.08
9-Nov-16	GRAB	22271 Cochrane Drive	9-Nov-16	0.73	<1	4	10	<1	0.08
9-Nov-16	GRAB	5180 Smith Cres.	9-Nov-16	0.68	<1	<2	10	<1	0.09
9-Nov-16	GRAB	23260 Westminster Hwy.	9-Nov-16	0.71	<1	<2	10	<1	0.09
14-Nov-16	GRAB	5951 McCallan Rd.	14-Nov-16	0.84	<1	<2	8	<1	0.07
14-Nov-16	GRAB	Opp. 8331 Fairfax Place	14-Nov-16	0.67	<1	<2	12	<1	0.24
14-Nov-16	GRAB	9751 Pendleton Rd.	14-Nov-16	0.73	<1	<2	10	<1	0.08
14-Nov-16	GRAB	10920 Springwood Court	14-Nov-16	0.78	<1	2	10	<1	0.11
14-Nov-16	GRAB	11051 No 3 Rd.	14-Nov-16	0.81	<1	<2	10	<1	0.09
14-Nov-16	GRAB	14951 Triangle Rd.	14-Nov-16	0.61	<1	<2	10	<1	0.08
14-Nov-16	GRAB	8200 Jones Rd.	14-Nov-16	0.73	<1	<2	10	<1	0.08
14-Nov-16	GRAB	5300 No. 3 Rd.	14-Nov-16	0.82	<1	<2	9	<1	0.08
14-Nov-16	GRAB	1000 Blk. McDonald Rd.	14-Nov-16	0.58	<1	<2	10	<1	0.16
14-Nov-16	GRAB	6000 Blk. Miller Rd.	14-Nov-16	0.91	<1	<2	10	<1	0.17
14-Nov-16	GRAB	3800 Cessna Drive	14-Nov-16	0.89	<1	<2	9	<1	0.08
14-Nov-16	GRAB	751 Catalina Cres.	14-Nov-16	0.95	<1	<2	9	<1	0.1
14-Nov-16	GRAB	6071 Azure Rd.	14-Nov-16	0.86	<1	<2	9	<1	0.12
16-Nov-16	GRAB	12560 Cambie Rd.	16-Nov-16	0.79	<1	<2	9	<1	0.13
16-Nov-16	GRAB	13100 Mitchell Rd.	16-Nov-16	0.76	<1	<2	10	<1	0.12
16-Nov-16	GRAB	Opp. 11280 Twigg Place	16-Nov-16	0.95	<1	<2	10	<1	0.15
16-Nov-16	GRAB	13799 Commerce Pkwy.	16-Nov-16	0.68	<1	<2	10	<1	0.1
16-Nov-16	GRAB	6651 Fraserwood Place	16-Nov-16	0.65	<1	<2	10	<1	0.09
16-Nov-16	GRAB	Opp. 20371 Westminster Hwy.	16-Nov-16	0.69	<1	<2	10	<1	0.12
16-Nov-16	GRAB	9911 Sidaway Rd.	16-Nov-16	0.77	<1	<2	8	<1	0.1
16-Nov-16	GRAB	11111 Horseshoe Way	16-Nov-16	0.71	<1	<2	10	<1	0.14
16-Nov-16	GRAB	10020 Amethyst Ave.	16-Nov-16	0.79	<1	<2	10	<1	0.11
16-Nov-16	GRAB	9380 General Currie Rd.	16-Nov-16	0.84	<1	<2	9	<1	0.13
16-Nov-16	GRAB	13800 No. 3 Rd. (off Garden City)	16-Nov-16	0.71	<1	<2	9	<1	0.12
16-Nov-16	GRAB	7000 Blk. Dyke Rd.	16-Nov-16	0.82	<1	4	9	<1	0.32
16-Nov-16	GRAB	6640 Blundell Rd.	16-Nov-16	0.72	<1	<2	10	<1	0.12
18-Nov-16	GRAB	3180 Granville Ave.	18-Nov-16	0.54	<1	<2	9	<1	0.15
18-Nov-16	GRAB	4251 Moncton St.	18-Nov-16	0.64	<1	<2	9	<1	0.27
18-Nov-16	GRAB	11080 No. 2 Rd.	18-Nov-16	0.76	<1	<2	9	<1	0.13
18-Nov-16	GRAB	11500 McKenzie Rd.	18-Nov-16	0.57	<1	<2	10	<1	0.17

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
18-Nov-16	GRAB	Opp. 8600 Ryan Rd.	18-Nov-16	0.73	<1	2	10	<1	0.24
18-Nov-16	GRAB	13200 No. 4 Rd.	18-Nov-16	0.74	<1	<2	10	<1	0.17
18-Nov-16	GRAB	13851 Steveston Hwy.	18-Nov-16	0.56	<1	<2	10	<1	0.24
18-Nov-16	GRAB	1500 Valemont Way	18-Nov-16	0.57	<1	<2	10	<1	0.19
18-Nov-16	GRAB	11720 Westminster Hwy.	18-Nov-16	0.92	<1	<2	8	<1	0.19
18-Nov-16	GRAB	17240 Fedoruk	18-Nov-16	0.6	<1	<2	9	<1	0.27
18-Nov-16	GRAB	23000 Blk. Dyke Rd.	18-Nov-16	0.62	<1	<2	10	<1	0.13
18-Nov-16	GRAB	22271 Cochrane Drive	18-Nov-16	0.66	<1	64	9	<1	0.15
18-Nov-16	GRAB	5180 Smith Cres.	18-Nov-16	0.55	<1	<2	10	<1	0.11
18-Nov-16	GRAB	23260 Westminster Hwy.	18-Nov-16	0.55	<1	<2	9	<1	0.14
21-Nov-16	GRAB	5951 McCallan Rd.	21-Nov-16	0.72	<1	<2	10	<1	0.15
21-Nov-16	GRAB	Opp. 8331 Fairfax Place	21-Nov-16	0.53	<1	<2	10	<1	0.23
21-Nov-16	GRAB	9751 Pendleton Rd.	21-Nov-16	0.68	<1	<2	10	<1	0.23
21-Nov-16	GRAB	10920 Springwood Court	21-Nov-16	0.72	<1	<2	10	<1	0.12
21-Nov-16	GRAB	11051 No 3 Rd.	21-Nov-16	0.91	<1	<2	9	<1	0.16
21-Nov-16	GRAB	14951 Triangle Rd.	21-Nov-16	0.65	<1	<2	10	<1	0.1
21-Nov-16	GRAB	5300 No. 3 Rd.	21-Nov-16	0.79	<1	<2	10	<1	0.14
21-Nov-16	GRAB	8200 Jones Rd.	21-Nov-16	0.74	<1	<2	10	<1	0.16
21-Nov-16	GRAB	6071 Azure Rd.	21-Nov-16	0.74	<1	<2	10	<1	0.13
21-Nov-16	GRAB	3800 Cessna Drive	21-Nov-16	0.85	<1	<2	10	<1	0.16
21-Nov-16	GRAB	751 Catalina Cres.	21-Nov-16	0.87	<1	<2	9	<1	0.15
21-Nov-16	GRAB	6000 Blk. Miller Rd.	21-Nov-16	0.83	<1	<2	10	<1	0.17
21-Nov-16	GRAB	1000 Blk. McDonald Rd.	21-Nov-16	0.52	<1	<2	10	<1	0.61
23-Nov-16	GRAB	12560 Cambie Rd.	23-Nov-16	0.78	<1	<2	8	<1	0.13
23-Nov-16	GRAB	13100 Mitchell Rd.	23-Nov-16	0.6	<1	<2	8	<1	0.11
23-Nov-16	GRAB	Opp. 11280 Twigg Place	23-Nov-16	0.75	<1	<2	9	<1	0.15
23-Nov-16	GRAB	13799 Commerce Pkwy.	23-Nov-16	0.66	<1	<2	9	<1	0.11
23-Nov-16	GRAB	6651 Fraserwood Place	23-Nov-16	0.57	<1	<2	9	<1	0.21
23-Nov-16	GRAB	Opp. 20371 Westminster Hwy.	23-Nov-16	0.67	<1	<2	8	<1	0.19
23-Nov-16	GRAB	9911 Sidaway Rd.	23-Nov-16	0.68	<1	<2	10	<1	0.14
23-Nov-16	GRAB	11111 Horseshoe Way	23-Nov-16	0.59	<1	Contamina	10	<1	0.12
23-Nov-16	GRAB	10020 Amethyst Ave.	23-Nov-16	0.74	<1	<2	8	<1	0.1
23-Nov-16	GRAB	9380 General Currie Rd.	23-Nov-16	0.77	<1	<2	10	<1	0.12
23-Nov-16	GRAB	13800 No. 3 Rd. (off Garden City)	23-Nov-16	0.72	<1	<2	9	<1	0.12
23-Nov-16	GRAB	7000 Blk. Dyke Rd.	23-Nov-16	0.73	<1	<2	9	<1	0.15
23-Nov-16	GRAB	6640 Blundell Rd.	23-Nov-16	0.63	<1	<2	8	<1	0.11
24-Nov-16	GRAB	3180 Granville Ave.	24-Nov-16	0.5	<1	<2	8	<1	0.1
24-Nov-16	GRAB	4251 Moncton St.	24-Nov-16	0.66	<1	<2	9	<1	0.12
24-Nov-16	GRAB	11080 No. 2 Rd.	24-Nov-16	0.76	<1	4	9	<1	0.11
24-Nov-16	GRAB	11500 McKenzie Rd.	24-Nov-16	0.38	<1	<2	10	<1	0.11

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
24-Nov-16	GRAB	Opp. 8600 Ryan Rd.	24-Nov-16	0.68	<1	<2	10	<1	0.13
24-Nov-16	GRAB	13200 No. 4 Rd.	24-Nov-16	0.67	<1	<2	9	<1	0.08
24-Nov-16	GRAB	13851 Steveston Hwy.	24-Nov-16	0.4	<1	<2	10	<1	0.16
24-Nov-16	GRAB	1500 Valemont Way	24-Nov-16	0.53	<1	<2	10	<1	0.14
24-Nov-16	GRAB	11720 Westminster Hwy.	24-Nov-16	0.8	<1	<2	10	<1	0.11
24-Nov-16	GRAB	17240 Fedoruk	24-Nov-16	0.55	<1	<2	9	<1	0.12
24-Nov-16	GRAB	23000 Blk. Dyke Rd.	24-Nov-16	0.52	<1	<2	10	<1	0.16
24-Nov-16	GRAB	22271 Cochrane Drive	24-Nov-16	0.5	<1	<2	9	<1	0.17
24-Nov-16	GRAB	5180 Smith Cres.	24-Nov-16	0.54	<1	<2	9	<1	0.18
24-Nov-16	GRAB	23260 Westminster Hwy.	24-Nov-16	0.54	<1	<2	9	<1	0.14
28-Nov-16	GRAB	5951 McCallan Rd.	28-Nov-16	0.68	<1	<2	9	<1	0.23
28-Nov-16	GRAB	Opp. 8331 Fairfax Place	28-Nov-16	0.44	<1	<2	9	<1	0.19
28-Nov-16	GRAB	9751 Pendleton Rd.	28-Nov-16	0.64	<1	<2	9	<1	0.15
28-Nov-16	GRAB	10920 Springwood Court	28-Nov-16	0.69	<1	<2	9	<1	0.14
28-Nov-16	GRAB	11051 No 3 Rd.	28-Nov-16	0.79	<1	<2	8	<1	0.11
28-Nov-16	GRAB	14951 Triangle Rd.	28-Nov-16	0.58	<1	<2	10	<1	0.13
28-Nov-16	GRAB	5300 No. 3 Rd.	28-Nov-16	0.76	<1	<2	9	<1	0.14
28-Nov-16	GRAB	8200 Jones Rd.	28-Nov-16	0.75	<1	<2	9	<1	0.19
28-Nov-16	GRAB	6071 Azure Rd.	28-Nov-16	0.73	<1	<2	9	<1	0.1
28-Nov-16	GRAB	3800 Cessna Drive	28-Nov-16	0.82	<1	2	9	<1	0.16
28-Nov-16	GRAB	751 Catalina Cres.	28-Nov-16	0.92	<1	<2	9	<1	0.18
28-Nov-16	GRAB	6000 Blk. Miller Rd.	28-Nov-16	1	<1	<2	8	<1	0.22
28-Nov-16	GRAB	1000 Blk. McDonald Rd.	28-Nov-16	0.47	<1	6	9	<1	0.42
30-Nov-16	GRAB	12560 Cambie Rd.	30-Nov-16	0.78	<1	<2	10	<1	0.11
30-Nov-16	GRAB	13100 Mitchell Rd.	30-Nov-16	0.63	<1	<2	8	<1	0.19
30-Nov-16	GRAB	Opp. 11280 Twigg Place	30-Nov-16	0.64	<1	<2	8	<1	0.2
30-Nov-16	GRAB	13799 Commerce Pkwy.	30-Nov-16	0.61	<1	6	8	<1	0.14
30-Nov-16	GRAB	6651 Fraserwood Place	30-Nov-16	0.54	<1	<2	9	<1	0.14
30-Nov-16	GRAB	Opp. 20371 Westminster Hwy.	30-Nov-16	0.58	<1	<2	9	<1	0.21
30-Nov-16	GRAB	9911 Sidaway Rd.	30-Nov-16	0.63	<1	2	9	<1	0.12
30-Nov-16	GRAB	11111 Horseshoe Way	30-Nov-16	0.58	<1	<2	9	<1	0.13
30-Nov-16	GRAB	10020 Amethyst Ave.	30-Nov-16	0.62	<1	<2	9	<1	0.1
30-Nov-16	GRAB	9380 General Currie Rd.	30-Nov-16	0.66	<1	<2	9	<1	0.13
30-Nov-16	GRAB	13800 No. 3 Rd. (off Garden City)	30-Nov-16	0.64	<1	<2	10	<1	0.1
30-Nov-16	GRAB	7000 Blk. Dyke Rd.	30-Nov-16	0.6	<1	2	9	<1	0.08
30-Nov-16	GRAB	6640 Blundell Rd.	30-Nov-16	0.73	<1	<2	8	<1	0.12
2-Dec-16	GRAB	3180 Granville Ave.	2-Dec-16	0.84	<1	<2	7	<1	0.09
2-Dec-16	GRAB	4251 Moncton St.	2-Dec-16	0.76	<1	<2	7	<1	0.1
2-Dec-16	GRAB	11080 No. 2 Rd.	2-Dec-16	0.8	<1	48	7	<1	0.11
2-Dec-16	GRAB	11500 McKenzie Rd.	2-Dec-16	0.49	<1	<2	7	<1	0.2

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
2-Dec-16	GRAB	Opp. 8600 Ryan Rd.	2-Dec-16	0.66	<1	<2	8	<1	0.08
2-Dec-16	GRAB	13200 No. 4 Rd.	2-Dec-16	0.71	<1	<2	8	<1	0.09
2-Dec-16	GRAB	13851 Steveston Hwy.	2-Dec-16	0.52	<1	<2	7	<1	0.09
2-Dec-16	GRAB	1500 Valemont Way	2-Dec-16	0.57	<1	<2	8	<1	0.1
2-Dec-16	GRAB	11720 Westminster Hwy.	2-Dec-16	0.67	<1	<2	9	<1	0.08
2-Dec-16	GRAB	17240 Fedoruk	2-Dec-16	0.61	<1	<2	9	<1	0.09
2-Dec-16	GRAB	23000 Blk. Dyke Rd.	2-Dec-16	0.56	<1	<2	8	<1	0.15
2-Dec-16	GRAB	22271 Cochrane Drive	2-Dec-16	0.51	<1	<2	9	<1	0.1
2-Dec-16	GRAB	5180 Smith Cres.	2-Dec-16	0.38	<1	2	9	<1	0.11
2-Dec-16	GRAB	23260 Westminster Hwy.	2-Dec-16	0.51	<1	<2	9	<1	0.11
5-Dec-16	GRAB	5951 McCallan Rd.	5-Dec-16	0.67	<1	<2	8	<1	0.16
5-Dec-16	GRAB	Opp. 8331 Fairfax Place	5-Dec-16	0.63	<1	<2	8	<1	0.2
5-Dec-16	GRAB	9751 Pendleton Rd.	5-Dec-16	0.66	<1	<2	8	<1	0.14
5-Dec-16	GRAB	10920 Springwood Court	5-Dec-16	0.64	<1	<2	9	<1	0.11
5-Dec-16	GRAB	11051 No 3 Rd.	5-Dec-16	0.69	<1	<2	9	<1	0.2
5-Dec-16	GRAB	14951 Triangle Rd.	5-Dec-16	0.58	<1	2	8	<1	0.19
5-Dec-16	GRAB	5300 No. 3 Rd.	5-Dec-16	0.72	<1	<2	9	<1	0.21
5-Dec-16	GRAB	8200 Jones Rd.	5-Dec-16	0.7	<1	<2	9	<1	0.11
5-Dec-16	GRAB	6071 Azure Rd.	5-Dec-16	0.71	<1	<2	9	<1	0.17
5-Dec-16	GRAB	3800 Cessna Drive	5-Dec-16	0.74	<1	<2	9	<1	0.11
5-Dec-16	GRAB	751 Catalina Cres.	5-Dec-16	0.76	<1	<2	9	<1	0.17
5-Dec-16	GRAB	6000 Blk. Miller Rd.	5-Dec-16	0.8	<1	<2	8	<1	0.31
5-Dec-16	GRAB	1000 Blk. McDonald Rd.	5-Dec-16	0.53	<1	<2	9	<1	0.36
7-Dec-16	GRAB	3180 Granville Ave.	7-Dec-16	0.65	<1	<2	5	<1	0.11
7-Dec-16	GRAB	12560 Cambie Rd.	7-Dec-16	0.83	<1	<2	8	<1	0.11
7-Dec-16	GRAB	4251 Moncton St.	7-Dec-16	0.71	<1	<2	4	<1	0.15
7-Dec-16	GRAB	13100 Mitchell Rd.	7-Dec-16	0.75	<1	2	7	<1	0.09
7-Dec-16	GRAB	11080 No. 2 Rd.	7-Dec-16	0.73	<1	<2	4	<1	0.08
7-Dec-16	GRAB	Opp. 11280 Twigg Place	7-Dec-16	0.76	<1	<2	7	<1	0.19
7-Dec-16	GRAB	11500 McKenzie Rd.	7-Dec-16	0.62	<1	<2	7	<1	0.13
7-Dec-16	GRAB	13799 Commerce Pkwy.	7-Dec-16	0.68	<1	<2	8	<1	0.13
7-Dec-16	GRAB	13200 No. 4 Rd.	7-Dec-16	0.74	<1	<2	6	<1	0.09
7-Dec-16	GRAB	9911 Sidaway Rd.	7-Dec-16	0.75	<1	<2	8	<1	0.15
7-Dec-16	GRAB	Opp. 8600 Ryan Rd.	7-Dec-16	0.75	<1	<2	6	<1	0.1
7-Dec-16	GRAB	11111 Horseshoe Way	7-Dec-16	0.48	<1	2	8	<1	0.14
7-Dec-16	GRAB	13851 Steveston Hwy.	7-Dec-16	0.63	<1	<2	6	<1	0.12
7-Dec-16	GRAB	10020 Amethyst Ave.	7-Dec-16	0.77	<1	<2	8	<1	0.08
7-Dec-16	GRAB	9380 General Currie Rd.	7-Dec-16	0.79	<1	<2	7	<1	0.11
7-Dec-16	GRAB	1500 Valemont Way	7-Dec-16	0.62	<1	<2	6	<1	0.09
7-Dec-16	GRAB	13800 No. 3 Rd. (off Garden City)	7-Dec-16	0.75	<1	<2	8	<1	0.15

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
7-Dec-16	GRAB	7000 Blk. Dyke Rd.	7-Dec-16	0.69	<1	2	8	<1	0.09
7-Dec-16	GRAB	17240 Fedoruk	7-Dec-16	0.61	<1	<2	7	<1	0.1
7-Dec-16	GRAB	6640 Blundell Rd.	7-Dec-16	0.76	<1	<2	8	<1	0.17
7-Dec-16	GRAB	23000 Blk. Dyke Rd.	7-Dec-16	0.67	<1	<2	7	<1	0.11
7-Dec-16	GRAB	22271 Cochrane Drive	7-Dec-16	0.71	<1	<2	7	<1	0.13
7-Dec-16	GRAB	5180 Smith Cres.	7-Dec-16	0.59	<1	<2	7	<1	0.12
7-Dec-16	GRAB	23260 Westminster Hwy.	7-Dec-16	0.54	<1	4	6	<1	0.1
7-Dec-16	GRAB	6651 Fraserwood Place	7-Dec-16	0.65	<1	<2	8	<1	0.1
7-Dec-16	GRAB	Opp. 20371 Westminster Hwy.	7-Dec-16	0.61	<1	<2	8	<1	0.18
13-Dec-16	GRAB	5951 McCallan Rd.	13-Dec-16	0.64	<1	<2	3	<1	0.26
13-Dec-16	GRAB	Opp. 8331 Fairfax Place	13-Dec-16	0.74	<1	<2	4	<1	0.12
13-Dec-16	GRAB	9751 Pendleton Rd.	13-Dec-16	0.65	<1	<2	5	<1	0.1
13-Dec-16	GRAB	10920 Springwood Court	13-Dec-16	0.59	<1	<2	6	<1	0.11
13-Dec-16	GRAB	14951 Triangle Rd.	13-Dec-16	0.67	<1	<2	6	<1	0.17
13-Dec-16	GRAB	8200 Jones Rd.	13-Dec-16	0.74	<1	<2	6	<1	0.11
13-Dec-16	GRAB	5300 No. 3 Rd.	13-Dec-16	0.78	<1	2	5	<1	0.1
13-Dec-16	GRAB	1000 Blk. McDonald Rd.	13-Dec-16	0.25	<1	<2	6	<1	0.57
13-Dec-16	GRAB	6000 Blk. Miller Rd.	13-Dec-16	0.74	<1	<2	6	<1	0.5
13-Dec-16	GRAB	3800 Cessna Drive	13-Dec-16	0.77	<1	<2	6	<1	0.14
13-Dec-16	GRAB	751 Catalina Cres.	13-Dec-16	0.72	<1	<2	5	<1	0.28
14-Dec-16	GRAB	12560 Cambie Rd.	14-Dec-16	0.74	<1	<2	5	<1	0.11
14-Dec-16	GRAB	13100 Mitchell Rd.	14-Dec-16	0.59	<1	<2	4	<1	0.09
14-Dec-16	GRAB	Opp. 11280 Twigg Place	14-Dec-16	0.69	<1	<2	5	<1	0.11
14-Dec-16	GRAB	13799 Commerce Pkwy.	14-Dec-16	0.67	<1	2	5	<1	0.13
14-Dec-16	GRAB	6651 Fraserwood Place	14-Dec-16	0.64	<1	<2	5	<1	0.13
14-Dec-16	GRAB	9911 Sidaway Rd.	14-Dec-16	0.73	<1	<2	5	<1	0.14
14-Dec-16	GRAB	11111 Horseshoe Way	14-Dec-16	0.67	<1	2	5	<1	0.11
14-Dec-16	GRAB	10020 Amethyst Ave.	14-Dec-16	0.73	<1	<2	5	<1	0.13
14-Dec-16	GRAB	9380 General Currie Rd.	14-Dec-16	0.8	<1	<2	5	<1	0.14
14-Dec-16	GRAB	13800 No. 3 Rd. (off Garden City)	14-Dec-16	0.58	<1	<2	5	<1	0.12
14-Dec-16	GRAB	6640 Blundell Rd.	14-Dec-16	0.72	<1	<2	5	<1	0.11
16-Dec-16	GRAB	3180 Granville Ave.	16-Dec-16	0.44	<1	<2	7	<1	0.12
16-Dec-16	GRAB	4251 Moncton St.	16-Dec-16	0.51	<1	<2	7	<1	0.14
16-Dec-16	GRAB	11500 McKenzie Rd.	16-Dec-16	0.72	<1	<2	4	<1	0.13
16-Dec-16	GRAB	Opp. 8600 Ryan Rd.	16-Dec-16	0.65	<1	<2	4	<1	0.12
16-Dec-16	GRAB	13200 No. 4 Rd.	16-Dec-16	0.7	<1	<2	4	<1	0.17
16-Dec-16	GRAB	11720 Westminster Hwy.	16-Dec-16	0.67	<1	<2	5	<1	0.12
16-Dec-16	GRAB	17240 Fedoruk	16-Dec-16	0.59	<1	<2	5	<1	0.1
16-Dec-16	GRAB	23000 Blk. Dyke Rd.	16-Dec-16	0.66	<1	<2	5	<1	0.35
16-Dec-16	GRAB	22271 Cochrane Drive	16-Dec-16	0.46	<1	<2	5	<1	0.11

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
16-Dec-16	GRAB	5180 Smith Cres.	16-Dec-16	0.64	<1	<2	6	<1	0.13
16-Dec-16	GRAB	23260 Westminster Hwy.	16-Dec-16	0.63	<1	<2	5	<1	0.12
19-Dec-16	GRAB	5951 McCallan Rd.	19-Dec-16	0.65	<1	<2	4	<1	0.07
19-Dec-16	GRAB	Opp. 8331 Fairfax Place	19-Dec-16	0.56	<1	<2	5	<1	0.09
19-Dec-16	GRAB	9751 Pendleton Rd.	19-Dec-16	0.47	<1	<2	5	<1	0.07
19-Dec-16	GRAB	10920 Springwood Court	19-Dec-16	0.56	<1	<2	7	<1	0.1
19-Dec-16	GRAB	14951 Triangle Rd.	19-Dec-16	0.63	<1	<2	5	<1	0.13
19-Dec-16	GRAB	8200 Jones Rd.	19-Dec-16	0.64	<1	<2	6	<1	0.12
19-Dec-16	GRAB	5300 No. 3 Rd.	19-Dec-16	0.69	<1	<2	5	<1	0.09
19-Dec-16	GRAB	3800 Cessna Drive	19-Dec-16	0.65	<1	<2	6	<1	0.07
19-Dec-16	GRAB	751 Catalina Cres.	19-Dec-16	0.69	<1	<2	5	<1	0.09
19-Dec-16	GRAB	6000 Blk. Miller Rd.	19-Dec-16	0.75	<1	<2	4	<1	0.16
19-Dec-16	GRAB	1000 Blk. McDonald Rd.	19-Dec-16	0.49	<1	<2	6	<1	0.13
19-Dec-16	GRAB	6071 Azure Rd.	19-Dec-16	0.75	<1	<2	4	<1	0.08
21-Dec-16	GRAB	12560 Cambie Rd.	21-Dec-16	0.73	<1	<2	4	<1	0.12
21-Dec-16	GRAB	13100 Mitchell Rd.	21-Dec-16	0.7	<1	<2	5	<1	0.16
21-Dec-16	GRAB	Opp. 11280 Twigg Place	21-Dec-16	0.67	<1	<2	4	<1	0.22
21-Dec-16	GRAB	13799 Commerce Pkwy.	21-Dec-16	0.63	<1	<2	5	<1	0.39
21-Dec-16	GRAB	6651 Fraserwood Place	21-Dec-16	0.65	<1	<2	5	<1	0.18
21-Dec-16	GRAB	Opp. 20371 Westminster Hwy.	21-Dec-16	0.61	<1	<2	4	<1	0.19
21-Dec-16	GRAB	9911 Sidaway Rd.	21-Dec-16	0.61	<1	<2	5	<1	0.11
21-Dec-16	GRAB	11111 Horseshoe Way	21-Dec-16	0.66	<1	<2	5	<1	0.16
21-Dec-16	GRAB	10020 Amethyst Ave.	21-Dec-16	0.68	<1	<2	6	<1	0.29
21-Dec-16	GRAB	9380 General Currie Rd.	21-Dec-16	0.72	<1	<2	5	<1	0.12
21-Dec-16	GRAB	13800 No. 3 Rd. (off Garden City)	21-Dec-16	0.65	<1	4	5	<1	0.1
21-Dec-16	GRAB	7000 Blk. Dyke Rd.	21-Dec-16	0.62	<1	<2	6	<1	0.15
21-Dec-16	GRAB	6640 Blundell Rd.	21-Dec-16	0.68	<1	<2	5	<1	0.18
22-Dec-16	GRAB	3180 Granville Ave.	22-Dec-16	0.75	<1	<2	5	<1	0.1
22-Dec-16	GRAB	4251 Moncton St.	22-Dec-16	0.67	<1	<2	5	<1	0.14
22-Dec-16	GRAB	11080 No. 2 Rd.	22-Dec-16	0.63	<1	<2	5	<1	0.12
22-Dec-16	GRAB	11500 McKenzie Rd.	22-Dec-16	0.45	<1	<2	6	<1	0.08
22-Dec-16	GRAB	Opp. 8600 Ryan Rd.	22-Dec-16	0.6	<1	<2	5	<1	0.17
22-Dec-16	GRAB	13200 No. 4 Rd.	22-Dec-16	0.6	<1	<2	5	<1	0.22
22-Dec-16	GRAB	13851 Steveston Hwy.	22-Dec-16	0.56	<1	<2	5	<1	0.1
22-Dec-16	GRAB	1500 Valemont Way	22-Dec-16	0.56	<1	<2	5	<1	0.14
22-Dec-16	GRAB	11720 Westminster Hwy.	22-Dec-16	0.67	<1	<2	5	<1	0.15
22-Dec-16	GRAB	17240 Fedoruk	22-Dec-16	0.6	<1	<2	5	<1	0.12
22-Dec-16	GRAB	23000 Blk. Dyke Rd.	22-Dec-16	0.56	<1	4	5	<1	0.1
22-Dec-16	GRAB	22271 Cochrane Drive	22-Dec-16	0.56	<1	<2	5	<1	0.12
22-Dec-16	GRAB	5180 Smith Cres.	22-Dec-16	0.51	<1	<2	5	<1	0.16

CNCL - 432

Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
22-Dec-16	GRAB	23260 Westminster Hwy.	22-Dec-16	0.55	<1	<2	5	<1	0.12
28-Dec-16	GRAB	5951 McCallan Rd.	28-Dec-16	0.71	<1	NA	4	<1	0.14
28-Dec-16	GRAB	Opp. 8331 Fairfax Place	28-Dec-16	0.63	<1	NA	5	<1	0.11
28-Dec-16	GRAB	9751 Pendleton Rd.	28-Dec-16	0.67	<1	NA	4	<1	0.22
28-Dec-16	GRAB	10920 Springwood Court	28-Dec-16	0.71	<1	NA	4	<1	0.18
28-Dec-16	GRAB	11051 No 3 Rd.	28-Dec-16	0.69	<1	NA	4	<1	0.18
28-Dec-16	GRAB	14951 Triangle Rd.	28-Dec-16	0.64	<1	NA	4	<1	0.13
28-Dec-16	GRAB	8200 Jones Rd.	28-Dec-16	0.7	<1	NA	4	<1	0.19
28-Dec-16	GRAB	5300 No. 3 Rd.	28-Dec-16	0.74	<1	NA	4	<1	0.16
28-Dec-16	GRAB	6071 Azure Rd.	28-Dec-16	0.73	<1	NA	5	<1	0.12
28-Dec-16	GRAB	3800 Cessna Drive	28-Dec-16	0.69	<1	NA	5	<1	0.12
28-Dec-16	GRAB	751 Catalina Cres.	28-Dec-16	0.73	<1	NA	4	<1	2
28-Dec-16	GRAB	6000 Blk. Miller Rd.	28-Dec-16	0.83	<1	NA	5	<1	1.3
28-Dec-16	GRAB	1000 Blk. McDonald Rd.	28-Dec-16	0.6	<1	NA	4	<1	0.16
29-Dec-16	GRAB	3180 Granville Ave.	29-Dec-16	0.8	<1	NA	5	<1	0.09
29-Dec-16	GRAB	6640 Blundell Rd.	29-Dec-16	0.57	<1	NA	4	<1	0.08
29-Dec-16	GRAB	4251 Moncton St.	29-Dec-16	0.6	<1	NA	5	<1	0.09
29-Dec-16	GRAB	7000 Blk. Dyke Rd.	29-Dec-16	0.59	<1	NA	4	<1	0.11
29-Dec-16	GRAB	11080 No. 2 Rd.	29-Dec-16	0.74	<1	NA	5	<1	0.1
29-Dec-16	GRAB	13800 No. 3 Rd. (off Garden City)	29-Dec-16	0.66	<1	NA	5	<1	0.11
29-Dec-16	GRAB	11111 Horseshoe Way	29-Dec-16	0.56	<1	NA	5	<1	0.1
29-Dec-16	GRAB	11500 McKenzie Rd.	29-Dec-16	0.61	<1	NA	5	<1	0.12
29-Dec-16	GRAB	Opp. 8600 Ryan Rd.	29-Dec-16	0.68	<1	NA	4	<1	0.1
29-Dec-16	GRAB	10020 Amethyst Ave.	29-Dec-16	0.63	<1	NA	5	<1	0.12
29-Dec-16	GRAB	13200 No. 4 Rd.	29-Dec-16	0.72	<1	NA	5	<1	0.1
29-Dec-16	GRAB	9380 General Currie Rd.	29-Dec-16	0.67	<1	NA	5	<1	0.09
29-Dec-16	GRAB	13851 Steveston Hwy.	29-Dec-16	0.53	<1	NA	5	<1	0.08
29-Dec-16	GRAB	9911 Sidaway Rd.	29-Dec-16	0.68	<1	NA	5	<1	0.09
29-Dec-16	GRAB	12560 Cambie Rd.	29-Dec-16	0.59	<1	NA	5	<1	0.13
29-Dec-16	GRAB	1500 Valemont Way	29-Dec-16	0.65	<1	NA	5	<1	0.1
29-Dec-16	GRAB	13100 Mitchell Rd.	29-Dec-16	0.7	<1	NA	5	<1	0.13
29-Dec-16	GRAB	11720 Westminster Hwy.	29-Dec-16	0.74	<1	NA	5	<1	0.09
29-Dec-16	GRAB	Opp. 11280 Twigg Place	29-Dec-16	0.56	<1	NA	5	<1	0.17
29-Dec-16	GRAB	17240 Fedoruk	29-Dec-16	0.64	<1	NA	6	<1	0.15
29-Dec-16	GRAB	13799 Commerce Pkwy.	29-Dec-16	0.62	<1	NA	5	<1	0.12
29-Dec-16	GRAB	23000 Blk. Dyke Rd.	29-Dec-16	0.62	<1	NA	5	<1	0.12
29-Dec-16	GRAB	Opp. 20371 Westminster Hwy.	29-Dec-16	0.58	<1	NA	5	<1	0.1
29-Dec-16	GRAB	22271 Cochrane Drive	29-Dec-16	0.63	<1	NA	5	<1	0.11
29-Dec-16	GRAB	5180 Smith Cres.	29-Dec-16	0.58	<1	NA	5	<1	0.13
29-Dec-16	GRAB	6651 Fraserwood Place	29-Dec-16	0.56	<1	NA	5	<1	0.1

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Sampling Point	Sample Type	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
29-Dec-16	GRAB	23260 Westminster Hwy.	29-Dec-16	0.67	<1	NA	5	<1	0.09

* The lab did not perform HPC analysis from December 28th to 29th.

APPENDIX 4: SCADA AND PRESSURE TESTING SITES

	STATION NAME	STATION TYPE	INSTALLATION
216	SHELL & STEVESTON PRV	WATER PRV	PERMANENT
217	NELSON & BLUNDELL PRV	WATER PRV	PERMANENT
218	SHELL & BLUNDELL PRV	WATER PRV	PERMANENT
219	SHELL & WILLIAMS PRV	WATER PRV	PERMANENT
220	SHELL & BIRD PRV	WATER PRV	PERMANENT
251	NELSON & WESTMINSTER PRV	WATER PRV	WIP
252	FERGUSON PRV	WATER PRV	PERMANENT
253	GRAUER PRV	WATER PRV	PERMANENT
254	OAKSTREET PRV	WATER PRV	PERMANENT
	NELSON NORTH PRV	WATER PRV	PERMANENT
	CAMBIE PRV	WATER PRV	NO SCADA
	OAK & RIVER	WATER PRV	NO SCADA
	SHELL & MONTEITH	WATER PRV	NO SCADA
	SHELL & WESTMINSTER	WATER PRV	NO SCADA
1	PRESSURE SITES		
5	QUEENSBOROUGH	DRAINAGE	PERMANENT
40	NO 6 ROAD SOUTH	DRAINAGE	PERMANENT
48	STEVESTON	SANI PUMPS	PERMANENT
80	BARNARD	SANI PUMPS	PERMANENT
106	LYNAS	SANI PUMPS	PERMANENT
167	BRIGHOUSE	SANI PUMPS	PERMANENT
206	EDGEMERE	SANI PUMPS	PERMANENT
42	GRAYBAR	SANI PUMPS	PERMANENT
110	RICHMOND PARK	SANI PUMPS	PERMANENT
174	LESLIE	SANI PUMPS	PERMANENT
189	SIMPSON	SANI PUMPS	PERMANENT
193	BURROWS	SANI PUMPS	PERMANENT
190	BURKEVILLE	SANI PUMPS	PERMANENT
119	TWIGG	SANI PUMPS	PERMANENT
180	RICHMOND CENTRE	SANI PUMPS	PERMANENT
89	WOODHEADEAST	SANI PUMPS	PERMANENT
122	MAPLE	SANI PUMPS	PERMANENT
	ROBINSON	SANI PUMPS	PERMANENT

APPENDIX 5: 2016 THM AND HAA TEST RESULTS

Sample	Date Sampled	THM (ppb)						HAA (ppb)						
		Bromodichloromethane	Bromoform	Chlorodibromomethane	Chloroform	Total Trihalomethanes	Total THM Quarterly Average (Guilleline Limit 100ppb/mL)	Dibromoacetic Acid	Dichloroacetic Acid	Monobromoacetic Acid	Monochloroacetic Acid	Trichloroacetic Acid	Total Haloacetic Acid	Total HAA Quarterly Average Guilleline Limit 80ppb/mL)
RMD-250	2015/05/20	<1	<1	<1	24	25.1		<0.5	8	<1	4	5.8	18.6	
RMD-250	2015/08/19	<1	<1	<1	16	16.9		<0.5	12	<1	10	11.9	34.7	
RMD-250	2015/11/25	<1	<1	<1	26	27.6		<0.5	10	<1	9	9.8	30.5	
RMD-250	2016/03/02	<1	<1	<1	25	26.1	24	<0.5	9	<1	3	11.3	25.3	27
RMD-250	2016/06/01	<1	<1	<1	21	21.7	23	<0.5	8	<1	4	6	18.9	27
RMD-250	2016/08/31	1	<1	<1	21	24	25	<0.5	9	<1	4	7.3	20.9	24
RMD-250	2016/10/19	<1	<1	<1	24	26	24	<0.5	9	<1	5	12.7	27.3	23
RMD-251	2015/05/20	<1	<1	<1	22	22.9		<0.5	10	<1	4	10.3	25.3	
RMD-251	2015/08/19	2	<1	<1	27	28.6		<0.5	14	<1	10	15	40.1	
RMD-251	2015/11/25	<1	<1	<1	23	24.2		<0.5	9	<1	7	7.2	23.9	
RMD-251	2016/03/02	<1	<1	<1	23	24.3	25	<0.5	9	<1	4	10.9	25.5	29
RMD-251	2016/06/01	<1	<1	<1	20	20.6	24	<0.5	8	<1	4	6.4	18.6	27
RMD-251	2016/08/31	1	<1	<1	26	28	24	<0.5	9	<1	3	7	20.4	22
RMD-251	2016/10/19	<1	<1	<1	23	25	24	<0.5	9	<1	6	10.9	26.2	23
RMD-258	2015/05/20	<1	<1	<1	25	25.4		<0.5	10	<1	5	13.2	29.1	
RMD-258	2015/08/19	2	<1	<1	29	30.5		<0.5	18	<1	8	16.7	43.6	
RMD-258	2015/11/25	<1	<1	<1	25	26.6		<0.5	10	<1	9	9.1	29.7	
RMD-258	2016/03/02	<1	<1	<1	23	23.8	27	<0.5	9	<1	9	10.4	29	33
RMD-258	2016/06/01	<1	<1	<1	21	21	25	<0.5	7	<1	5	5.6	18	30
RMD-258	2016/08/31	1	<1	<1	26	28	25	<0.5	10	<1	4	7.9	22.8	25
RMD-258	2016/10/19	1	<1	<1	24	26	25	<0.5	11	<1	7	17	35.7	26
							25							
RMD-259	2015/05/20	<1	<1	<1	14	14.3		<0.5	10	<1	4	11.8	26.7	
RMD-259	2015/08/19	1	<1	<1	34	35.1		<0.5	19	<1	9	20.2	48.9	
RMD-259	2015/11/25	<1	<1	<1	25	26.3		<0.5	10	<1	7	10.7	29.7	
RMD-259	2016/03/02	<1	<1	<1	24	25.5	25	<0.5	9	<1	3	10.8	23.5	32
RMD-259	2016/06/01	<1	<1	<1	26	26.8	28	<0.5	12	<1	6	14.1	33.2	34
RMD-259	2016/08/31	2	<1	<1	29	32	28	<0.5	12	<1	5	10.1	27.7	29
RMD-259	2016/10/19	1	<1	<1	27	29	28	<0.5	12	<1	7	17.2	36.4	30

Sample	Sample Reported Name	Date Sampled	THM (ppb)					HAA (ppb)						Extras
			Bromodichloromethane	Bromoform	Chlorodibromomethane	Chloroform	Total Trihalomethanes	Dibromoacetic Acid	Dichloroacetic Acid	Monobromoacetic Acid	Monochloroacetic Acid	Trichloroacetic Acid	Total Haloacetic Acid	pH units pH
RMD-250	6071 Azure Rd.	19-Oct-16	<1	<1	<1	24	26	<0.5	9	<1	5	12.7	27.3	
RMD-251	5951 McCallan Rd.	19-Oct-16	<1	<1	<1	23	25	<0.5	9	<1	6	10.9	26.2	
RMD-258	7000 Blk. Dyke Rd.	19-Oct-16	1	<1	<1	24	26	<0.5	11	<1	7	17	35.7	
RMD-259	10020 Amethyst Ave.	19-Oct-16	1	<1	<1	27	29	<0.5	12	<1	7	17.2	36.4	7.2

APPENDIX 6: 2016 HEAVY METAL AND VINYL CHLORIDE TESTING RESULTS

Semi Annual Metals Analysis - 2016

Metal	Sample Description	RMD-250	RMD-257	RMD-263
		6071 Azure Rd.	6640 Blundell Rd.	12560 Cambie Rd.
		2016/10/26 15:20	2016/10/26 15:10	2016/10/26 15:35
	Sample Type	GRAB	GRAB	GRAB
Aluminum Total	µg/L	41	41	39
Antimony Total	µg/L	<0.5	<0.5	<0.5
Arsenic Total	µg/L	<0.5	<0.5	<0.5
Barium Total	µg/L	3.1	3.2	3.1
Boron Total	µg/L	<10	<10	<10
Cadmium Total	µg/L	<0.2	<0.2	<0.2
Calcium Total	µg/L	2920	2890	2860
Chromium Total	µg/L	0.13	0.28	0.32
Cobalt Total	µg/L	<0.5	<0.5	<0.5
Copper Total	µg/L	1.2	1.0	2.0
Iron Total	µg/L	<5	<5	5
Lead Total	µg/L	<0.5	<0.5	<0.5
Magnesium Total	µg/L	153	153	148
Manganese Total	µg/L	4.6	4.6	7.0
Mercury Total	µg/L	<0.05	<0.05	<0.05
Molybdenum Total	µg/L	<0.5	<0.5	<0.5
Nickel Total	µg/L	<0.5	<0.5	<0.5
Potassium Total	µg/L	186	194	186
Selenium Total	µg/L	<0.5	<0.5	<0.5
Silver Total	µg/L	<0.5	<0.5	<0.5
Sodium Total	µg/L	1660	1590	1720
Zinc Total	µg/L	<3.0	<3.0	<3.0

Vinyl Chloride Testing Results

Sample Site Number	Sample Reported Name	Sampled Date	Vinyl Chloride (mg/L)
RMD-205	13851 Steveston Hwy.	7-Dec-16	<0.0010
RMD-206	4251 Moncton St.	7-Dec-16	<0.0010
RMD-253	11051 No 3 Rd.	7-Dec-16	<0.0010
RMD-256	1000 Blk. McDonald Rd.	7-Dec-16	<0.0010
RMD-263	12560 Cambie Rd.	7-Dec-16	<0.0010

Metal Limits

Parameter	Canadian Guideline Limit	Reason Guideline Established
Aluminium Total (µg/L)	200	aesthetic
Antimony Total (µg/L)	6	health
Arsenic Total (µg/L)	10	health
Barium Total (µg/L)	1000	health
Boron Total (µg/L)	5000	health
Cadmium Total (µg/L)	5	health
Calcium Total (µg/L)	none	
Chromium Total (µg/L)	50	health
Cobalt Total (µg/L)	none	
Copper Total (µg/L)	≤1000	aesthetic
Iron Total (µg/L)	≤ 300	aesthetic
Lead Total (µg/L)	10	health
Magnesium Total (µg/L)	none	
Manganese Total (µg/L)	≤ 50	aesthetic
Mercury Total (µg/L)	1.0	health
Molybdenum Total (µg/L)	none	
Nickel Total (µg/L)	none	
Potassium Total (µg/L)	none	
Selenium Total (µg/L)	50	health
Silver Total (µg/L)	none	
Sodium Total (µg/L)	≤ 200,000	aesthetic
Zinc Total (µg/L)	≤ 5000	aesthetic

*Checked June 2016

APPENDIX 7: SAMPLE DRINKING WATER QUALITY ADVISORY

CITY OF RICHMOND ANNUAL WATERMAIN FLUSHING NOTIFICATION

On Sunday, February 21, the Water Services section will begin the annual watermain flushing program. To minimize disruptions, this work will be conducted from Sunday to Friday, 9:00 p.m. to 6:30 a.m. for the duration of approximately nine weeks.

Flushing watermain is required to maintain water quality. Your water will not be turned off; however, during this time you may experience water pressure fluctuation or discolouration. This is not a health concern and should only last for a short time. It is recommended that you run the cold water until the discolouration clears.

If you have any questions, please contact 604-270-8721. For more information on Richmond's high-quality tap water and other water education programs, visit: www.richmond.ca/water.

APPENDIX 8: SPECIFIC EMERGENCY RESPONSE PLANS

Positive Response for Fecal or E. coli

If a water sample tests positive for fecal coliform, the following response plan will occur:

- The municipality's water quality personnel and the Medical Health Officer will be notified by the Metro Vancouver laboratory.
- Interim samples from the site will be examined. Interim samples are samples in the period between when the fecal positive sample was taken, and when it was determined to be fecal positive.
- Arrangements will be made for the immediate collection of a repeat sample including, where possible, samples from upstream and downstream of the fecal positive sample.
- The chlorine residual for the sample noted on the sampler's Water Sample Data Sheet will be reviewed to determine if a localized loss of disinfectant occurred.
- All water utility personnel will be contacted to determine if there was any loss of pressure, or other unusual events, that may have led to contaminants entering the system.
- The need for a boil-water advisory will be evaluated by the City and the Medical Health Officer. If a boil-water advisory is deemed necessary, the municipality will carry out various means to inform the public. Metro Vancouver will be informed of this public advisory.
- The City, in consultation with the Medical Health Officer, will determine the need and extent for a boil-water advisory.
- The Metro Vancouver laboratory will initiate procedures to identify species of the fecal positive organism with standard biochemical tests.
- The Medical Health Officer will be contacted with the repeat sample results and the results of the species identification on the fecal positive sample when these tests are complete.

In the event of possible E. coli or fecal coliform contamination, all steps to ensure public health and safety will be taken including banning water usage if necessary.

Chemical or Biological Contamination Response

In the event of chemical or biological contamination, in source waters or the City's distribution system, the following actions will be taken by both, the City of Richmond and Metro Vancouver:

- Immediately notify Vancouver Coastal Health.
- Identify the chemical and any public health risk factors associated with its presence in potable water.
- Isolate the contaminated zone area and determine the level of contamination.
- Issue a public advisory in consultation with the Medical Health Officer.

In the event of possible biological or chemical contamination, all steps to safety will be taken to ensure public health including banning water usage if necessary.

Turbidity Response

Turbidity (cloudy water) occurs during periods of heavy rain at and surrounding Metro Vancouver water sources. The City of Richmond, in conjunction with Vancouver Coastal Health, has developed a turbidity response plan, which considers the City's responsibility for due diligence without unreasonably constraining the water utility's ability to operate the system.

During turbidity events of >1 NTU the staff will:

- Begin a rigorous sampling program for microbiological activity and residual chlorine.
- Monitor the City's supervisory control and data acquisition (SCADA) system with updates sent to Vancouver Coastal Health on a predetermined schedule.
- Issue a public communication in consultation with the regional Health Authority.
- If necessary, issue a boil-water advisory to residents receiving turbid water.

Response to Interruption of Primary and/or Secondary Disinfection

Upon notification by Metro Vancouver Operations that an interruption in disinfection has occurred:

- Staff will monitor residual levels of chlorine at strategic locations in the Metro Vancouver supply area.
- The City's SCADA system will be monitored with updates sent to Vancouver Coastal Health on a predetermined schedule, as set by the health authority.
- In cases where chlorine residual is less than 0.2 ppm, City crews will flush the affected area until an acceptable level is achieved.
- These actions will continue until disinfection is resumed and adequate levels of residual chlorine have been reached in the distribution system.

Response to Loss of Pressure Due to High Demand

In the event of a pressure loss due to high demand:

- City staff will attempt to rectify the problem as soon as possible using various demands management techniques and by supplementing supply to problem areas.
- Metro Vancouver and the Medical Health Officer will be notified of any water quality issues.
- City staff will perform chlorine residual tests at various locations to determine if adequate disinfectant is present in the distribution.
- All water quality complaints from the public will be thoroughly investigated due to the potential for water contamination during low water pressure.

Response to Watermain Breaks with Suspected Contamination

All watermain breaks where chemical or microbiological contamination of the system is suspected will be immediately reported to the Medical Health Officer. The municipality will isolate the contaminated section from the rest of the distribution system. Once the watermain has been repaired, chlorine residual testing will be conducted at various locations affected by the main break. If low chlorine residuals are found, necessary actions to increase the levels of free chlorine will be carried out. If bacterial contamination is suspected, water samples will be analyzed and appropriate action taken.



City of Richmond

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City of Richmond

Report to Committee

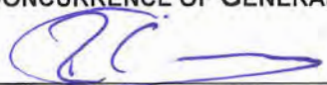

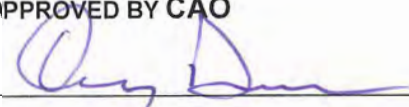
To: Public Works and Transportation Committee **Date:** April 27, 2017
From: John Irving, P.Eng., MPA **File:** 10-6125-07-03/2017-
Director, Engineering Vol 01
Re: **2016 Climate Action Revenue Incentive Program and Carbon Neutral
Progress Report**

Staff Recommendation

1. That the 2016 Climate Action Revenue Incentive Program (CARIP) and Carbon Neutral Progress Report from the Director, Engineering dated April 27, 2017, be received for information.
2. That, in accordance with Provincial requirements, the CARIP Report and Carbon Neutral Progress Report be posted on the City's website for public access.

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

Att. 3

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

Staff Report

Origin

The City of Richmond is committed to maintaining carbon neutral corporate operations, first achieved in 2013. The purpose of this report is to update Council on the 2016 corporate greenhouse gas (GHG) emissions and on the City's carbon neutrality strategy and activities.

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

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

Background

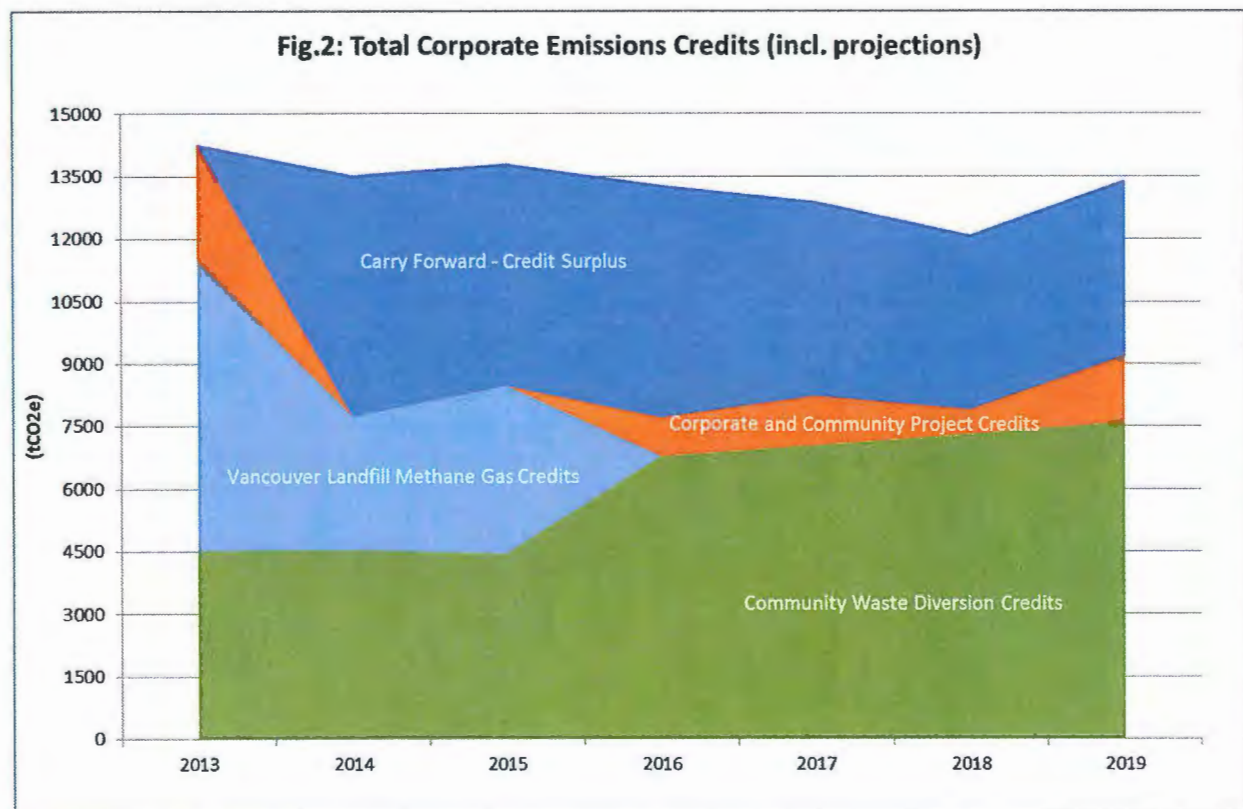
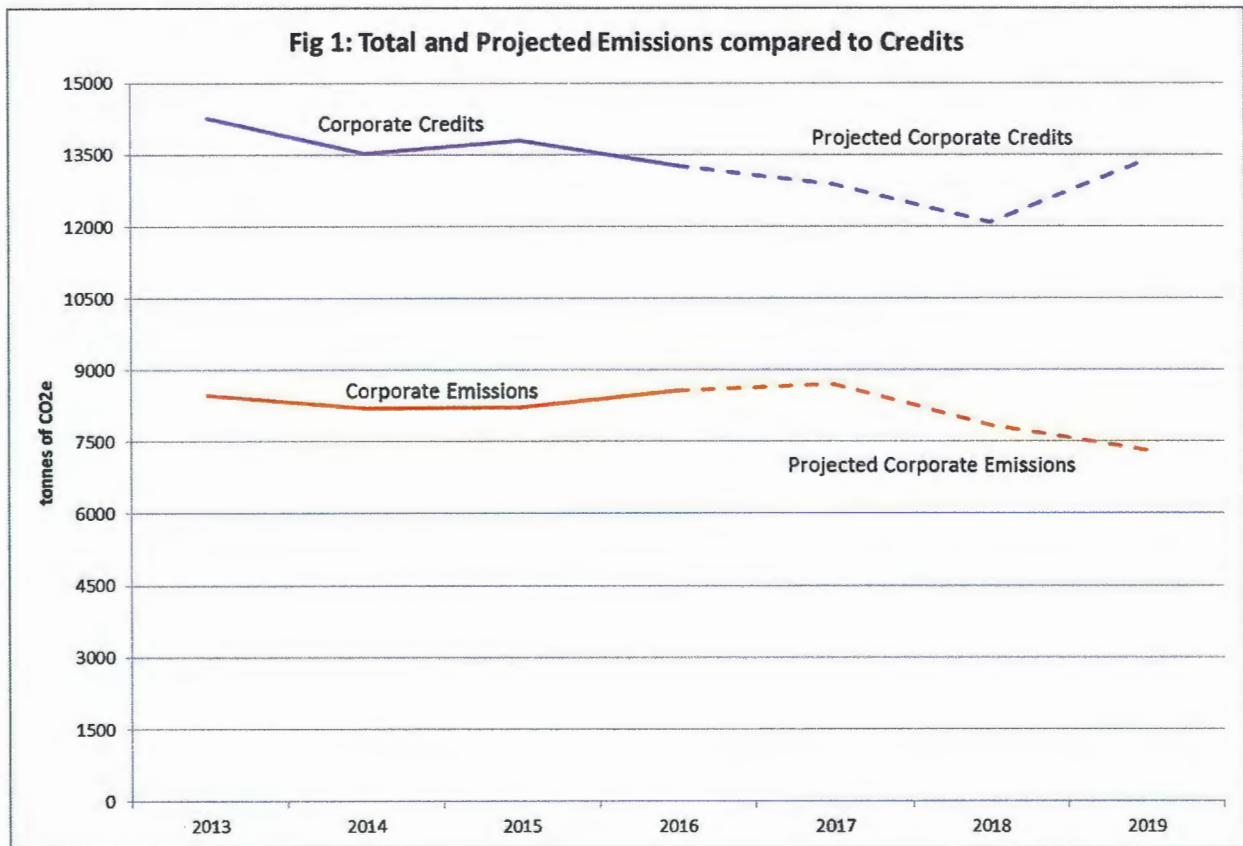
In September 2008, Council signed the BC Climate Action Charter, voluntarily committing the City to annual corporate GHG emissions reporting and to achieving carbon neutral operations. In 2013, Richmond City Council adopted the "*Towards Carbon Neutrality: Implementation Strategy*," which put in place an effective framework defined by four key steps for meeting carbon neutrality commitments: measure, reduce, compensate (or offset) and report.

Key mechanisms identified in the 2013 strategy to address the need for compensation included assessing and quantifying beyond "business as usual" corporate activities that reduce GHG emissions and the implementation of the Richmond Carbon Market pilot program to purchase offsets from Richmond-based projects.

Guided by the City's 2013 Green Fleet Action Plan and Energy Management Program for buildings and infrastructure, the City is constantly working on reducing its corporate GHG emissions footprint and energy use. To meet the City's community commitment of 33% reduction from 2007 levels by 2020, Council has endorsed a 20% GHG emissions reduction target for Fleet by 2020 from 2011 levels and a 65% reduction for corporate buildings by 2020 from 2007 levels.

Analysis

The City has achieved carbon neutral operations for the past four reporting years, including 2016. Achieving carbon neutrality for corporate operations entails that the City reduces corporate emissions where possible and offsets corporate emissions as necessary. Due to the City's involvement in and completion of several emissions reduction projects since 2013, the City has been carrying forward a surplus of credits. The surplus has been allocated to following years as needed to achieve carbon neutrality. Based on the ongoing work to reduce corporate emissions and the ongoing accumulation of verified emission credits, the City is projecting that carbon neutrality will be maintained through to the 2019 reporting year, as shown below in Figure 1. The source of credits that the City has achieved and projects to achieve up to 2019 is shown below in Figure 2.



2016 Corporate Carbon Emissions and Offsets

Based on the figures in Table 1 and 2 below, outlining GHG emissions associated with corporate operations in City buildings, civic infrastructure and fleet activities for 2016 and the associated credits to offset these emissions, staff anticipate that the City will again be eligible for a “Level 3: Achievement of Carbon Neutrality” in 2016 through the Climate Action Recognition Program. A formal announcement is expected to be provided at the Union of British Columbia Municipalities’ annual conference. It is estimated that the City will carry forward approximately 4,669 tonnes of GHG (tCO₂e) emission offsets for use in future years. Table 2 also includes future credits that are currently being quantified and will be used in future reporting years once completed.

The reported corporate figures adhere to the BC Ministry of Environment’s reporting methodology, and include GHG reductions resulting from the City’s purchase of renewable natural gas. The 2016 total includes GHG emissions associated with “traditional municipal services,” including those that are contracted out (community waste collection). Compared to the year prior to the City signing the BC Climate Action Charter, corporate emissions in 2016 were approximately 20% lower than in 2007. This reduction was achieved despite an increase in population of approximately 17% and corresponding increases in corporate services that are associated with this growth.

Table 1: 2016 Emission Sources

	Tonnes CO₂e	Quantification Method
Emissions from services delivered directly by the City	6,688	Derived from metered energy consumption and associated GHG emissions from stationary sources (buildings, lighting, and pumps – except police services energy use) and corporate mobile sources (fleet – except construction related fuel use) used directly by the City
Emissions from contracted services delivering services on the City’s behalf	1,877	The BC government standard methodology and guidance for estimated contracted emissions. Fuel usage values and Option 3 (Vehicle/Equipment Type and Hours of Usage) were used to determine the contracted emissions value.
TOTAL	8,565	

Table 2: Anticipated Emission Credits (Offsets)

Offsets	Tonnes CO ₂ e	Quantification Method
Household Organic Waste Composting – Municipally Collected	6,765	BC Government Option 1 GHG Reduction Projects reporting method.
Corporate concrete and asphalt recycling – Sidaway Yard	831	BC Government Option 2 GHG Reduction Projects reporting methods (for 2014-2016).
Richmond Carbon Market – Pacific Gateway Hotel energy efficiency credits	106	BC Government Option 1 GHG Reduction Projects reporting method.
Surplus GHG emission credits from 2015 Reporting Year	5,575 ^a	As per BC Government reporting protocol.
Alexandra District Energy Utility (2017)	500-700*	BC Government Option 2 GHG Reduction Projects reporting methods (for 2013-2016)
Northeast Bog (2018)	Over 1,000*	BC Government Option 2 GHG Reduction Projects reporting methods (for 2011-2016)
Total projected credits	14,777-14,977*	
Estimated surplus carry forward for 2017	4,712	
Anticipated additional surplus credits	1,500-1,700*	

^a) In 2015, based on previous reporting years it was anticipated that the City's carry forward credit surplus would be 6,004 tCO₂e. As a result of unexpected changes to Metro Vancouver conversion factors for waste diversion, the carry forward surplus dropped to 5,575 tCO₂e. This change made no difference in the City's carbon neutrality status for 2015.

*) current estimates, projects to still be quantified

2016 Corporate and Community Carbon Credits (Offset Projects)

As shown above in Table 2, emission credits from diverted household organic waste contributed significantly to offsetting the City's corporate emissions footprint. As compared to 2015, the total amount of diverted organic waste from the City's community collection program increased 16% to 21,477 tonnes in 2016. The total diverted organics for 2016 corresponds to avoided GHG emissions of 6,765 tonnes of CO₂e, representing 79% of the City's 2016 total corporate emissions.

In accordance with BC Government Carbon Neutral reporting protocol, the City completed the necessary reporting, quantification and verification of two corporate projects outside of the City's traditional services boundary.

1. Concrete/Asphalt Recycling: Since 2014, the City has been periodically recycling concrete and asphalt at its Sidaway Yard, which is then used as road base material on City construction sites. This activity helps to displace the use of mined and processed virgin road base material. A third-party certifier reviewed the GHG emissions reductions associated with this recycling activity. Since the corporate recycling activity began in 2014, 831 tonnes of emissions have been avoided from the reduction of virgin road base use through to the end of 2016. As further recycling and reprocessing is conducted in the future, emissions reductions associated with this activity will continue to be used to offset corporate emissions.

2. Building Energy Efficiency Retrofit: Through the Richmond Carbon Market pilot program, the City worked with Pacific Gateway Hotels to assess and quantify the emissions reductions the facility achieved from various energy efficiency upgrades completed prior to 2015. By upgrading mechanical equipment and improving the building envelope, Pacific Gateway reduced its GHG emissions by 106 tonnes in 2015. This project was the first project the City completed through the Richmond Carbon Market program, with the credits being transferred to the City through a purchase and transfer agreement. The City is the first municipality in the Lower Mainland to utilize this method to support emissions reductions in the community while at the same time reducing its own emissions footprint. For future reporting years, the City will have the opportunity to continue purchasing these annual credits from Pacific Gateway through this program. Further detail on the Richmond Carbon Market pilot program is presented below.

“Non-Traditional” Corporate GHG Emissions Reduction Projects

The quantification and verification of two non-traditional municipal service projects that are “beyond business as usual” are on-going (described below in Table 3), and it is expected that the associated credits from these projects will be used to offset corporate emissions in 2017 and 2018 respectively.

Table 3: Corporate GHG Emissions Reduction Quantification Projects

		Status	Estimated GHG (tCO ₂ e)
1. Alexandra District Energy Utility	Renewable energy transfer for community housing, displacing natural gas and electricity	A verification consultant has engaged to complete the quantification of this project and final verification is expected to be completed in July 2017 – in time for 2017 reporting	500-700*
2. Northeast Bog	Conservation purchase and enhancement of a bog ecosystem to maintain its carbon storage capacity	Undergoing carbon assessment and hydrogeological study – quantification project is in initial stages and final verification is expected to be completed in May 2018 – in time for 2018 reporting	Over 1,000
*Estimated credits include reduction actions for 2016 and prior years			Total 1,500-1,700

Since operations and assets at Alexandra District Energy Utility (ADEU) were transferred to the City’s Lulu Island Energy Corporation (LIEC) on January 1, 2017, emission reduction credits from past ADEU operations (2014-2016) will be quantified and verified, and will be used to offset 2017 reported corporate emissions.

As the City works to shift its energy systems to use more sustainable sources, the City has identified district energy utilities (DEUs) as a key component of sustainable energy systems that can be implemented in neighbourhoods undergoing redevelopment. Some of the key benefits of implementing DEU systems include; using energy more wisely with less waste, increasing energy security and reliance, providing cost effective energy to the community, and reducing the associated GHG emissions. As the City’s DEU operations grow through LIEC, so too will the associated GHG emissions reductions that are derived from the displacement of conventional energy sources with renewable systems. Since LIEC is a separate corporation, it will have the

opportunity to continue to quantify and verify emissions reduction on a yearly basis for ADEU, as well as for other district utility systems. Based on Provincial reporting protocols, those reduction credits could be transferred back to the City through a purchase agreement or sold to a third party, if desired.

The GHG emission offsets associated with the Northeast Bog can be pursued since the City intends to conserve the land and maintain the carbon storage capacity of the bog. The carbon storage amount of the Northeast Bog is compared to the scenario where the land would have otherwise been developed for agricultural purposes. The conserving of the Northeast Bog is expected to result in significant GHG emission reduction credits. This quantification project is very unique, in terms of the type of ecosystem being assessed, the focus on carbon storage capacity of the Site, and the development of a carbon quantification methodology. It is believed that this work will help to inform the City and the region on the importance of conserving and enhancing this type of ecosystem.

Richmond Carbon Market

Council endorsed the Richmond Carbon Market is a program designed to reduce GHG emissions and build community resilience by re-investing Climate Action Revenue Incentive Program funds in Richmond-based emissions reduction projects.

- Phase 1: Determine the Potential for Local GHG Reduction Projects (through outreach)
- Phase 2: Identify Potential Local GHG Reduction / Offset Projects, and complete pre-feasibility assessments
- Phase 3: Complete final assessments and quantify the RCM submissions, and enter into agreements with proponents to offset corporate GHG emissions
- Phase 4: Maintain corporate carbon neutrality
- Phase 5: Continue to help grow the City's low carbon economy

Staff have completed Phases 1 to 3 of this initial round of the pilot project, and finalized its first agreement with Pacific Gateway Hotels through this program. Unfortunately due to unexpected circumstances, three of the proponents identified in the original request for projects are not able to complete the quantification of their projects for inclusion in the RCM program. One original RCM project remains a potential source of future corporate credits, Ecowaste Industries' enhanced landfill re-vegetation and carbon sequestration project. Quantification of emissions reductions from the Ecowaste project has been delayed due to alterations to the original project parameters. The City remains committed to trying to reach an agreement with Ecowaste Industries if possible, although the project is not expected to be re-stabilized for another year or two. The funding for the RCM pilot program, allocated from the Provincial Climate Action Revenue Incentive Program grant, was previously approved in the 2014 operating budget process and remains in place to fulfill the completion of a potential Ecowaste purchase and funding agreement.

The City remains committed to identifying additional potential community partners with quantifiable GHG emissions reduction projects for inclusion in the program. Through an upcoming round of request for projects, Staff expects that further community projects can be brought forward for Council consideration, and further carbon credits can be accumulated to support the City's carbon neutral status.

Public Reporting

Another tool to build community awareness regarding the importance of GHG emissions reduction is through public reporting. The City will carry out public reporting on the City's website (Climate Action Charter related reports Attachments 1-3). Staff will continue to use the City's Richmond Carbon Market as a means to engage Richmond business to develop potential credits, and promote its general objectives to the business community to encourage greater awareness and focus on overall community GHG emissions reductions.

Financial Impact

None at this time.

Conclusion

The City of Richmond is a leader amongst BC municipalities through its innovative corporate projects and programs to reduce community and corporate GHG emissions. Through the continued strategic implementation of the *Towards Carbon Neutrality – Implementation Strategy*, the City is well positioned to maximize corporate and community benefits of transitioning towards a low carbon community and maintain carbon neutral corporate operations in the long term.



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LH:lh

- Att. 1: Carbon Emissions Provincial Reporting Worksheet - 2016
- Att. 2: Climate Action Revenue Incentive Public Report - 2016
- Att. 3: Contracted Emissions Estimates (Hired Equipment and Cascade) - 2016

2016 Carbon Neutral Progress Report



Emissions/Offsets	Tonnes CO2e
Annual City of Richmond corporate emissions (as per Provincial reporting protocol)	8,565
<i>Emissions from services delivered directly by the local government</i>	6,688
<i>Emissions from contracted services</i>	1,877
Less: GHG reductions being claimed for this reporting year from Option 1 - GHG reduction project	6,871
<i>Household Organic Waste Composting</i>	6,765
<i>Solar Thermal</i>	
<i>Energy Efficient Building Retrofits and Fuel Switching (Pacific Gateway Hotels)</i>	106
<i>Low Emissions Vehicles</i>	
<i>Forest Conservation</i>	
Less: GHG reductions being claimed for this reporting year from Option 2 - GHG reduction projects	6,406
<i>Option 2 Project A –Corporate Concrete and Asphalt Recycling at Sidaway Yard</i>	831
<i>Option 2 Project B – Surplus Carbon Credits from 2015 Reporting Year</i>	5,575
Less: <i>Offsets purchased for this reporting year (Option 3). Please identify your offset provider in the offset provider information section below.</i>	n/a
Total GHG emissions reductions claimed for 2016	13,277
Balance of corporate emissions for this reporting year. <i>(If the corporate emissions balance is zero or negative, your local government is carbon neutral for this reporting year)</i>	-4,712

Climate Action Revenue Incentive Program (CARIP) Public Report

Climate Action Revenue Incentive (CARIP) Public Report for YEAR 2016

City of Richmond

Metro Vancouver



Report Submitted by

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The City of Richmond has completed the 2016 Climate Action Revenue Incentive Program (CARIP) Public Report as required by the Province of BC. The CARIP report summarizes actions taken in 2016 and proposed for 2017 to reduce corporate and community-wide energy consumption and greenhouse gas emissions (GHG), as well as general sustainability related initiatives.

April 19, 2017

General Information

Name of Local Government	City of Richmond
Member of Regional District (RD)	Metro Vancouver
Regional Growth Strategy (RGS) in region	Yes
Population	218,000

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1. GENERAL REPORT INFORMATION

This 2016 Climate Action Revenue Incentive Program (CARIP) Public Report documents the actions that the City of Richmond has taken corporately and in the community to support the reduction of greenhouse gas (GHG) emissions and energy use, as well as other sustainability related initiatives. The actions are separated into seven main categories; Broad Planning, Buildings and Lighting, Energy Generation, Greenspace/Natural Resource Protection, Solid Waste, Transportation, Water and Wastewater, and Climate Adaptation. There are also is an Innovation category, which the City has inputted action items. The categories are further divided into corporate and community related actions, with general climate action questions at the beginning of each category.

This report encompasses a majority of the action items that the City is involved in to support GHG and energy reduction, but does not cover all sustainability related initiatives that the City conducts or supports. The report represents a "snapshot" of City activities over the past year, and proposed actions for 2017.

2. BROAD PLANNING

Broad planning refers to high level planning that sets the stage for GHG emissions reductions, including plans such as Official Community Plans, Integrated Community Sustainability Plans, Climate Action Plans or Community Energy Emissions Plans. Land use planning that focuses on Smart Growth principles (compact, complete, connected, and centred). Broad Planning plays an especially important role in energy and GHG reduction. Summarized below are the City of Richmond's responses to the Provincial inquiries regarding broad planning issues, and summary of initiatives conducted in 2016 and planned in 2017.

General Climate Action Questions	
What is (are) your current GHG reduction target(s)?	GHG reduction targets of 33% by 2020, and 80% by 2050, below 2007 levels. Reduce energy use by 10%.
Has your local government used the Community Energy and Emissions Inventory (CEEI) to measure progress?	Yes
Which of the following does your local government use to guide climate action implementation? <ul style="list-style-type: none">• Community Energy and Emissions Plan• Integrated Community Sustainability Plan• Community-Wide Action Plan	Yes Yes Yes
Does your local government have a corporate GHG reduction plan?	Yes
Does your local government have a climate reserve fund or something similar?	Yes

2.1. Community Actions

Community-Wide Actions Taken in 2016

	The City's OCP was amended to incorporate the Arterial Road Land Use Policy, which identifies areas along the City's Arterial Roads that are appropriate for more energy efficient housing types such as duplex, triplex and row house development.
	Continued to implement the OCP and City Centre Area Plan (CCAP) directives as new development applications are processed. The plans direct the majority of Richmond's urban growth to the City Centre and near major transit stations.
	Continued to ensure new developments within the City Centre Area were "District Energy Utility (DEU) Ready" for future connection to a district energy system, as per the City by-law.
	Worked with Translink in developing the Southwest Area Transport Plan to define Richmond's long-term transportation network and priorities, which also encompasses, South Delta and Tsawwassen First Nation.
	Met regularly with Richmond's Small Home Builders and Urban Development Institute when preparing new community building related sustainability initiatives

Community-Wide Actions Proposed for 2017

	Revise zoning regulations on the size of homes on agricultural land to ensure farmland is protected.
	Continue to implement OCP and CCAP policies as new development applications are processed.
	Continue to meet with Richmond's Small Home Builders and Urban Development Institute when preparing new community building related sustainability initiatives.
	Revise the Steveston Area Plan and include measures that promote a more compact, sustainable, energy efficient, and pedestrian friendly built environment
	Continue development of the Southwest Area Transport Plan.
	Implement and support the installation electric vehicle charging infrastructure in select new private developments.
	Continue to follow City by-law requirements and implement "DEU" ready development in the City Centre and West Cambie neighborhood areas

2.2. Corporate Actions

Corporate Wide Actions Taken in 2016	
	Continued to implement the corporate High Performance Building Sustainability Policy. This policy sets targets for the construction of energy efficient new corporate buildings and sets in place processes to ensure that energy and resources are used efficiently in existing buildings.
	Continued to implement action items from the City's Green Fleet Action Plan, to reduce GHG emissions associated with the City's vehicle and equipment use.
	Continued to adhere to the Corporate Building, Equipment, Monitoring, and Integration Requirements, which sets out guidelines for equipment energy efficiency, energy and GHG emissions monitoring requirements, and the integration of buildings and equipment into the City's network.

Corporate Wide Actions Proposed for 2017	
	Review the incorporation of a step code for new corporate buildings, with the goal of effectively improving building energy and sustainability performance
	Continue to implement the corporate High Performance Building Sustainability Policy.
	Continue to implement action items from the City's Green Fleet Action Plan
	Continue to implement Corporate Building, Equipment, Monitoring, and Integration Requirements

3. BUILDINGS AND LIGHTING

Low-carbon buildings use the minimum amount of energy needed to provide comfort and safety for their inhabitants and tap into renewable energy sources for heating, cooling and power. These buildings can save money, especially when calculated over the long term. This category also includes reductions realized from energy efficient street lights and lights in parks or other public spaces. Below are the City of Richmond's responses to the Provincial inquiries regarding building and lighting initiatives conducted in 2016 and planned for 2017.

General Climate Action Questions	
Does your local government have green building/construction policies, plans or programs?	Yes

3.1. Community Actions

Community-Wide Actions Taken in 2016	
	Continued to implement building and district energy policies. Secured commitments from new development in the City Centre to achieve LEED Silver, and townhome developments city-wide to build to EnerGuide 82 standard.
	Established a "Solar Friendly Richmond Framework", outlining actions to better enable solar energy system implementation in Richmond.
	Continued with the following EnergySave Richmond suite of programs. <ul style="list-style-type: none"> • Building Energy Challenge, a friendly competition to save energy use over the course of the year, 2016 was the second year of the program that now has over 95 buildings involved and over 7.0 million square feet of property. • Richmond Carbon Marketplace pilot program, which supports community based GHG emissions reduction projects through facilitation and funding • Smart Thermostat Pilot Program involved 150 participants, providing a \$125 rebate on a smart thermostat. • Climate Smart program that provides coaching to Richmond-based businesses on cost-effective opportunities to reduce GHG emissions, energy use, and waste generation
	Through a water and energy save program, installed efficient spray-valves and water fixture aerators, and conducted energy and water savings assessments at 99 food service facilities. The program is projected to save 73 million litres of water and over 500 tonnes CO ₂ e annually.
	Supported implementation of the Climate Change Showdown in 20 Richmond Grades 4-7 classrooms.

Community-Wide Actions Proposed for 2017	
	Implement electric vehicle direct current fast charging stations in the City, to further encourage the use and development of electrical vehicles.
	Implement new BC Energy Step Code requirements for new developments through bylaw requirements and policies applied at rezoning.
	Implement a benchmarking, reporting and disclosure bylaw for buildings.
	Continue to implement EnergySave Richmond suite of programs. <ul style="list-style-type: none"> • Host Year 3 of Building Energy Challenge. • Continue to provide the Smart Thermostat Program. • Continue to host Climate Smart program for businesses. • Continue to implement water and energy saving programs. • Continue to offer the Richmond Carbon Marketplace pilot program to Richmond businesses.
	Continue to support climate change education in up to 20 Richmond classrooms.

3.2. Corporate Actions

Corporate Wide Actions Taken in 2016	
	Completed energy efficiency upgrades at City Hall, Steveston Community Centre, Fire Halls, and other corporate facilities that will reduce energy use by approximately 1.3 GWh, or equal to annual energy use of 30 single family homes in Richmond
	Completed Phase 1 of the City of Richmond street lighting conversion project, with the replacement of approximately 1,050 less energy efficient street light fixtures with new more efficient LED technology, for an estimated energy savings of over 240,000 kWh annually
	Initiated the internal Energy Statement reporting functionality to further engage City staff in corporate energy reduction initiatives.
	Initiated the upgrade of the mechanical building automation system at the Library Cultural Centre to help improve overall occupant comfort and equipment scheduling and monitoring

Corporate Wide Actions Proposed for 2017	
	Complete mechanical upgrades at Watermania, Richmond Ice Centre, and at Library Cultural Centre
	Complete the upgrade of the building automation systems at Fire Hall No.4 and No.5, and at the Community Safety Building to improve overall occupant comfort and equipment scheduling and monitoring
	Complete Phase 2 of the City of Richmond street lighting conversion project, with the replacement of approximately 1,000 less energy efficient street light fixtures with new more efficient LED technology
	Continue to work towards achieving key targets in the City's High Performance Building Policy for new and existing facilities, with focus on energy efficiency, reduced resource use, and environmental sustainability.

4. ENERGY GENERATION

A transition to renewable or low-emission energy sources for heating, cooling and power supports large, long-term GHG emissions reductions. Renewable energy including waste heat recovery, geo-exchange, micro hydroelectric, solar thermal and solar photovoltaic, heat pumps, tidal, wave, and wind energy can be implemented at different scales, e.g. in individual homes, or integrated across neighbourhoods through district energy or co-generation systems. Below are the City of Richmond's responses to the Provincial inquiries regarding energy generation, and summary of initiatives conducted in 2016 and planned in 2017.

General Climate Action Questions

Is your local government currently developing or constructing new district energy projects?	Yes
Is your local government currently developing or constructing a new renewable energy system?	Yes
Is your local government operating a district energy centre?	Yes
Is your local government operating a renewable energy system?	Yes
Is your local government connected to a district energy system that is operated by another energy provider?	No
Are you aware of the integrated resource recovery (IRR) guidance page on the BC Climate Action Toolkit?	Yes

4.1. Community Actions

Community-Wide Actions Taken in 2016

Completed Phase 4 of the Alexandra District Energy Utility (ADEU), which included the construction of a new energy centre to service the ADEU's first commercial customers, new residential customers, and a connection to the new Fire Hall No.3. The expansion increased ADEU's service totals to 1,200,000 ft ² of residential space and 335,000 ft ² non-residential space.
Increased the floor space serviced by the Oval Village District Energy Utility (OVDEU), in partnership with a private utility, to 1,413,000 ft ² (a total of 1,343 units).
Issued a request for proposals to find a partner to design, finance, build and operate City Centre North District Energy Utility (CCNDEU).

Community-Wide Actions Proposed for 2017

Continue to connect buildings and expand the ADEU distribution system as development requires. Currently, one new residential building (115,000 ft ²) is scheduled for connection.
Continue OVDEU construction in partnership with private utility partner. Install additional distribution piping and connect two new developments with a total of 480,000 ft ² of building gross floor area.
Negotiate a partnership agreement to design, finance, build and operate CCNDEU with a private utility partner.
Complete a feasibility study on the potential of micro sewer heat recovery infrastructure to be included as part of new multi-family and commercial development.

4.2. Corporate Actions

Corporate Wide Actions Taken in 2016	
	Completed a feasibility study on the installation of solar photovoltaic array at the new Minoru Complex and Fire Hall No.1
	Completed the connection of the new Fire Hall No.3 to the corporate Alexandra District Energy Utility Centre, which provides heating and cooling through a renewable geoechange system.

Corporate Wide Actions Proposed for 2017	
	Continue to target renewable energy integration, a key component of the City's High Performance Building Policy, during design development of new corporate facilities.
	Install solar photovoltaic array at Fire Hall No.1 to offset electrical demand.

5. GREENSPACE/NATURAL RESOURCE PROTECTION

Greenspace/Natural Resource Protection refers to the creation of parks and greenways, boulevards, community forests, urban agriculture, riparian areas, gardens, recreation/school sites, and other green spaces, such as remediated brownfield/contaminated sites as well as the protection of wetlands, waterways and other naturally occurring features. Greenspaces support climate change mitigation (reducing emissions by absorbing and sequestering GHG) and adaptation (providing shade, cooling, deflecting strong wind, and improving air quality). Below are the City of Richmond responses to the Provincial inquiry regarding "greenspace" management in the City, and summary of community initiatives conducted in 2016 and planned in 2017.

General Climate Action Questions	
Does your local government have urban forest policies, plans or programs?	Yes

5.1. Community Actions

Community-Wide Actions Taken in 2016	
	Adopted an Invasive Species Action Plan (ISAP), which is a strategic, risk based approach to guide and prioritized invasive species management in Richmond.
	Integrated the Ecological Network Management Strategy (ENMS) directives in over 15 projects, increasing native planting, connecting areas, and protecting sensitive habitat in the City.
	Planted 590 trees on City streets and parks, as per the City's Tree Management Plan
	In partnership with the David Suzuki Foundation and the Richmond School District, the City mentored the Richmond's Green Ambassadors who developed and delivered the 5 th annual ReaDY Summit – a youth led conference promoting environmental awareness and action. The theme for the 2016 summit was "Change Happens Now: The World is Rooted in our Backyard"
	Began development of the 136 acre Garden City Lands Conservation Area and Farm site that is within the ALR and is a remnant of the former Greater Lulu Island Bog.

Community-Wide Actions Proposed for 2017	
	Complete the Urban Forest Management Strategy and begin implementation of the Strategy's recommendations.
	Continue to advance the actions and initiatives identified in the City's ENMS to protect, restore and connect the City's Ecological Network in the following focus areas: <ul style="list-style-type: none"> - Green infrastructure and development; - Vegetation, habitat and wildlife; - Parks and public spaces; and stewardship and collaboration.
	At the Garden City Lands Conservation Area and Farm, complete the construction of the 900m seepage barrier to protect the bog, complete tree and shrub planting around the perimeter of the site including 935 trees and 55,224 shrubs, grasses, perennials, etc., and prepare a 5 acre farm area to facilitate Kwantlen Polytechnic University's Sustainable Agriculture degree program
	Continue to work in partnership with the David Suzuki Foundation and Richmond School District to mentor Richmond's Green Ambassadors to develop and deliver the 6 th annual Ready Summit –where the 2017 theme is “Going toward another 150.”
	Host 29 free community workshops under the Enhanced Pesticide Management Program to reduce pesticide use and create a more sustainable community.

5.2. Corporate Actions

Corporate-Wide Actions Taken in 2016	
	Initiated a carbon assessment of the Northeast Bog Conservation Area, to model the carbon storage implications of the land as compared to agricultural development.
	Undertook a riparian compliance review to inform regulatory changes to protect and enhance the riparian area in accordance with the Riparian Area Regulation.
	Undertook a multi-year program to manage Japanese Knotweed infestations in and around City infrastructure and sensitive habitat.
	Developed a planting plan and completed site preparation for native species and shrubs planting along the City's new 5 km Railway corridor greenway, which is intended to function as an ecological corridor.
	At the City owned Terra Nova Rural Park Pollinator Pasture, planted 60 trees and 160 shrubs and forbes to enhance pollinator habitat and assist the agricultural production of the Sharing Farm's farming programs in the park.
	Established two demonstration lawns, one at City Hall, the other at Garden City to showcase alternative ground covers that utilize pollinator attracting/native grass species to mitigate infestations of European Chaffer Beetles.

Corporate Wide Actions Proposed for 2017	
	Complete a hydrological assessment of the City's Northeast Bog conservation area, to help finalize the City's carbon assessment.
	Complete the development of the Garden City Lands Water and Ecological Resource Management Strategy including recommendations for construction and management practices and long-term monitoring of the bog ecosystem.
	Complete the planned planting of native trees and shrubs along the Railway Greenway Corridor for Phase 2 of the project.
	Continue to detect and respond to invasive species encroachment on City property effectively

6. SOLID WASTE

Reducing, reusing, recycling, recovering and managing the disposal of solid waste minimizes environmental impacts and supports sustainable environmental management, greenhouse gas reductions, and improved air and water quality. Below are the City of Richmond responses to the Provincial inquiries regarding solid waste management in the City, and summary of initiatives conducted in 2016 and planned in 2017.

General Climate Action Questions	
Does your local government have construction and demolition waste reduction policies, plans or programs?	Yes
Does your local government have organics reduction/diversion policies, plans or programs?	Yes

6.1. Community Actions

Community-Wide Actions Taken in 2016	
	Introduced Bylaw 9516, which effective April 1, 2016, requires that 70% of waste from single-family home demolitions to be diverted from disposal – Contractors are assessed a \$2.00 per square foot refundable fee if they meet the 70% waste diversion requirement.
	Served approximately 145,000 customers at the Recycling Depot, using the facility to recycle material such as; large appliances, batteries, cell phones, and Styrofoam.

Community-Wide Actions Taken in 2016

Conducted numerous community engagement and information on waste reduction, recycling and avoiding food wastage. <ul style="list-style-type: none">• Delivered 38 recycling and waste reduction workshops with approximately 860 attendees• Organized 10 DreamRider theatrical shows for Zero Heroes with more than 3,710 attendees• Provided five Recycling Depot tours for 105 students/teachers• Participated in six community events to promote waste reduction and recycling initiatives.
Green Ambassadors contributed 2,327 hours to promote waste diversion at special events and participated in community outreach and invasive plant removals.
Introduced Donation Bin Regulation Bylaw No. 9502 that established approved locations for non-profit group to place bins for clothing or other household items throughout the community.
Supported recycling and waste reduction at over 50 community events.

Community-Wide Actions Proposed for 2017

Review and report progress on Demolition and Recycling Material Bylaw.
Update the Multi-Family and Commercial Guidelines to ensure multi-family and commercial developments are designed with accessible and adequate space for garbage and recycling services.
Install in-ground containers in high traffic and/or remote public spaces to increase waste capacity concerns and reduce service frequency.
Continue public engagement through workshops, depot tours, community displays, and theatrical shows.
Continue to increase awareness of the expanded range of materials accepted in the Blue Box and Blue Cart recycling programs, including proper recycling practices under the MMBC partnership, to reduce contamination and increase recycling levels.

6.2. Corporate Actions

Corporate Wide Actions Taken in 2016

Continued to expand in-house recycling to more City facilities through the City's WeRecycle program, which includes organics collection and expanded the range of materials accepted for recycling.
Supported Community Services department with their Annual Purge Event to properly recycle paper, large/small appliances, batteries, electronics and hazardous materials.
Assisted with the implementation of the Sustainable Food Service Quick Guide to ensure all facilities are using sustainable dinnerware that can be recycled/composted through Richmond recycling programs.

Corporate Wide Actions Proposed for 2017	
	Conduct corporate site and visual audits of the garbage and recycling stations to ensure that staff are disposing of materials in the correct receptacles and develop a renewed communication plan based on its results.
	Conduct a waste reduction lunch and learn event for City staff to inform them of community and corporate opportunities to reduce waste
	Continue promoting the corporate WeRecycle program, to encourage staff to increase corporate waste diversion

7. TRANSPORTATION

Transportation actions that increase transportation system efficiency, emphasize the movement of people and goods, and give priority to more efficient modes, e.g. walking, cycling, ridesharing, and public transit, can contribute to reductions in greenhouse gas emissions and more livable communities. Below are the City of Richmond responses to the Provincial inquiries regarding transportation system management in the City, and summary of initiatives conducted in 2016 and planned in 2017.

General Climate Action Questions	
Does your local government have policies, plans or programs to support: <ul style="list-style-type: none"> • Walking • Cycling • Transit Use • Electric Vehicle Use • Other: car-sharing, carpooling 	Yes Yes Yes Yes Yes
Does your local government have a transportation demand management (TDM) strategy (e.g. to reduce single-vehicle occupancy trips, increase travel options, provide incentives to encourage individuals to modify travel behavior)?	Yes
Does your local government have policies, plans or programs to support local food production (thus reducing transportation emissions)?	Yes

7.1. Community Actions

Community-Wide Actions Taken in 2016	
	<p>Completed multiple projects to improve transit, biking, and pedestrian accessibility including:</p> <ul style="list-style-type: none"> • Upgraded two special crosswalks on arterial roads (No. 2 Road and Gilbert Road) to pedestrian signals to support the implementation of the Crosstown local street bikeway • Completed the Parkside local street bikeway along Ash Street (Williams Road-Granville Ave) • Upgraded special crosswalk on arterial road (Westminster Hwy) as part of northern extension of the Railway Greenway multi-use pathway to the Middle Arm Dyke Trail • Upgraded 24 bus stops to improve accessibility, • Initiated construction of off-street multi-use pathway on Dyke Road • Rehabilitated off-street multi-use pathway on Shell Road • Constructed sidewalk and pathways on 7th Avenue and Bridgeport Rd to support walking and access to nearby transit services. • Upgraded 27 signalized intersections to include accessible pedestrian signal features
	Staged 16 th annual "Island City, by Bike" tour for the community to encourage cycling as a mode of transportation.
	Supported education and encouragement programs for cycling and walking (e.g., Bike to Work/School Week, cycling education courses for students and adults, Walk Richmond program, school travel planning partnership with TransLink)
	Continued partnership with TransLink to identify and encourage alternative travel modes to decrease single occupant vehicles trips to/from business parks and industrial areas in Richmond

Community-Wide Actions Proposed for 2017	
	<p>As part of the approved Transportation Capital Budget, the following improvements and enhancements are planned to be completed in 2017:</p> <ul style="list-style-type: none"> • Construct or enhance eight new sidewalks/pathways to encourage alternative modes of transportation • Install 2 special crosswalks and 3 new pedestrian signals including one to support access to new Minoru Complex, which includes aquatic centre and older adult's centre • Complete the construction of road improvement projects on Lansdowne Road (Minoru Blvd-Alderbridge Way) and Westminster Hwy (Nelson Rd-McMillan Way), which will include off-street multi-use pathways. • Install new transit shelters
	Continue to support expansion of car-share services in Richmond
	Stage 17 th annual "Island City, by Bike" tour for the community to encourage cycling as a mode of transportation.
	Continue to support education and encouragement programs for cycling and walking.

7.2. Corporate Actions

Corporate Actions Taken in 2016	
	Continued the City's vehicle replacement program to replace older, less fuel-efficient vehicles with newer, more fuel-efficient vehicles and with best in class fuel efficiency, where possible. In 2016, 37 units were replaced and 12 more units were ordered for 2017.
	Implemented a GPS system Fleet vehicle tracking project in 60 select vehicles to help with route planning and weather response, to improve fuel efficiency and reduce emissions.
	Developed and delivered a unique "Auntie"-idling and driver awareness campaign for staff, along with newsletters, t-shirts, key chains, message boards and posters
	Continued other operational improvements as described in the Green Fleet Action Plan, including reducing growth and downsizing the Fleet, incorporation of more electric and hybrid vehicles where possible, and right sizing of existing and new assets. The Green Fleet Action Plan target is to reduce the City's overall Fleet emissions by 20% in 2020 from 2011 levels.
	Implemented a car sharing pilot program for City Hall and City Center Community staff
	Completed a Fleet usage audit by the Finance department that reviewed the usage of the Fleet to see where reductions in the fleet size could be accomplished.
	Continued existing initiatives that encourage the use of alternative modes of transportation for commuting to and from work and corporate travel such as sponsorship and promotion of Bike to Work week, use of corporate bike fleet, pilot use of pedal-electric bike, and promotion of transit fare passes for work travel

Corporate Actions Proposed for 2017	
	Continue replacing older less efficient City fleet vehicles with newer, more fuel- efficient vehicles, where possible.
	Evaluate the results of the Fleet's GPS tracking project involving 60 select vehicles to and institute routing efficiency initiatives to reduce Fleet vehicle trip times and fuel use
	Continue corporate subsidy of City Employee Carpool Program
	Continue with the Auntie Idling Campaign and newsletter and focusing on what staff have done to reduce emissions and highlighting why they care
	Continue to support use of alternative modes of transportation for work related travel, including cycling, providing transit passes for work trips, and carpooling.
	Continue to explore alternative fuelling options for Fleet vehicles that will reduce emissions and operational issues

8. WATER AND WASTEWATER

Managing and reducing water consumption and wastewater is an important aspect of developing a sustainable built environment that supports healthy communities, protects ecological integrity, and reduces greenhouse gas emissions. Below are the City of Richmond responses to the Provincial inquiry regarding water and wastewater management in the City, and summary of initiatives conducted in 2016 and planned in 2017.

General Climate Action Questions

Does your local government have water conservation policies, plans or programs?	Yes
---	-----

8.1. Community Actions

Community-Wide Actions Taken in 2016

	Installed 2,225 water meters at single-family residences (approximately 93% of single-family homes in the City of Richmond are now metered)
	Issued 748 toilet rebates to homeowners that replaced old toilets with a low-flush toilet to reduce residential water use. The total incentive paid to homeowners through this program in 2016 was \$74,800.
	Partnered with BC Hydro to provide a clothes washer rebate program to reduce home water and electricity use. In 2016, 294 rebates were issued to homeowners who replaced their less efficient (water and electricity) washer for a new efficient model at a total cost to the City of \$20,200. This program in 2016 is expected to result in an estimated annual savings in water and energy of 1,655,600 liters per year and 53,800 kilowatt hours per year, respectively.
	Installed meters for 141 existing multi-family residential complexes (comprising 8,585 dwelling units) through the volunteer water meter program. It is mandatory for new multi-family residences to have a water meter. A total of 40% of the multi-family units in Richmond now have a water meter.
	Provided 150 free water saving kits to Richmond households that included a low-flow showerhead, kitchen and bathroom tap aerators and a pop-flush device for toilets.

Community-Wide Actions Proposed for 2017

	Continue the single family and multi-family water meter installation programs
	Continue the toilet rebate program (\$100,000 in funding for 2017)
	Continue offering the water saving kits and free leak audits to homeowners with a newly installed water meter.
	Continue to participate in the clothes washer rebate joint program in May/June and October/November with BC Hydro in 2017.
	Continue the City's Rain Barrel Program and promote the use of rain water for gardening and irrigation purposes.

8.2. Corporate Actions

Corporate Actions Taken in 2016	
	Continued to participate in the Metro Vancouver Municipal Water Conservation Coordinator Committee. The meetings revolve around networking with other municipalities and discussing initiatives, progresses, updates in policies and results through group communication.
	The City of Richmond corporately supported Metro Vancouver's We Love Water campaign by utilizing their comprehensive assortment of Twitter and Facebook digital graphics, internally and in the community.
	Installed further recommended conservation measures at the ten previously water audited buildings

Corporate Actions Proposed for 2017	
	Continue to take part in the Metro Vancouver Municipal Water Conservation Coordinator Committee.
	Continue to follow the City's landscaping best practices, which emphasize planting grasses and plants at corporate facilities that require little or no irrigation water.
	Replace all domestic hot and water copper mains in the City Hall building with Aquatherm pipe to address pin hole leaks

9. CLIMATE ADAPTION

For local governments, adaptation to a changing climate can take the form of changes in policy, management, technology and behaviour that minimize negative impacts or exploit opportunities. It can involve both "hard" and "soft" solutions, including: changes in infrastructure engineering, planning, zoning, bylaws and public education. Below are the City of Richmond responses to the Provincial inquiries regarding climate change adaption, and summary of initiatives conducted in 2016 and planned in 2017.

General Climate Action Questions	
Are you familiar with the Plan2Adapt guidance located on the Climate Action Toolkit Website?	Yes
Are you familiar with "Preparing for Climate Change - An Implementation Guide for Local Governments in BC?"	Yes
Have you visited the climate change adaptation guidance page on the BC Climate Action Toolkit?	Yes

9.1. Community Actions

Community-Wide Actions Taken in 2016	
	Continued development of Dike Master Plan Phase 2, which is a blue print for dike improvements in advance of Climate Change Induced Sea Level Rise.
	Continued implementing the 2008-2031 Richmond Flood Protection Strategy
	Established the Integrated Rainwater Resource Management Strategy that aims to protect and enhance the City's stormwater conveyance infrastructure and ecological assets under more frequent rainfall events and considers rainwater as a resource to be utilized, by promoting its conservation and public re-use where possible.

Community-Wide Actions Proposed for 2017	
	Complete the design for Phase 3 of the Dike Master Plan, which includes raising the South Dike from Gilbert Rd to No.3 Rd to 4.7m geodectic
	Continue implementing the 2008-2031 Richmond Flood Protection Strategy
	Engage and communicate with locals about the tsunami risks in Richmond using the simulation model developed by DFO through the City's website and at public events.

10.INNOVATION

This section is intended to give the opportunity to describe any innovative Corporate and/or Community-Wide GHG reduction or climate change adaptation activity that have been undertaken over the past year(s) that your local government is particularly proud of and would like to share with other local governments. Below is summary of two of the innovated initiatives that the City implemented in 2016.

Community-Wide Innovative Action	
	Implemented and supported a free City workshop, entitled "An Introduction to Electric Vehicles", that was offered to residences to try to reduce any misconceptions about owning an electric car and to answer any questions residents might have. The course was delivered by a Richmond resident that owns an electric vehicle.

Corporate Innovative Action	
	Completed the Fraser Basin Councils Fleet certification program, called E3 Fleet, which awarded the City's Fleet Operations a Platinum rating, the highest rating that can be awarded. Through its efficient operation and detailed reporting the City has successfully implemented its Green Fleet Action Plan, to help reduce Fleet fuel use, improve driver training, down size and right size vehicles, and reduce idling.

11. PROGRAMS, PARTNERSHIPS AND FUNDING OPPORTUNITIES

Local governments often rely on programs, partnerships and funding opportunities to achieve their climate action goals. Please share the names of programs and organizations that have supported your local government's climate actions by listing each entry in the box below.

Programs and Funding	
	Through BC Hydro's Commercial and Community Energy Savings Programs, the City has partnered and received support from BC Hydro on numerous infrastructure and community engagement related projects, including, lighting upgrades, electrical vehicle infrastructure and engagement, and policy initiatives.
	In conjunction with Municipal programs and funding, TransLink provides funding to support a variety of alternative modes of transportation initiatives and community engagement activities towards cycling education and promotion initiatives including; <ul style="list-style-type: none">• Bike to Work/School Week• cycling education courses for elementary students and adults• construction of pedestrian and cycling-related infrastructure
	Additional support for transportation related infrastructure was received by the City from BikeBC (BC Ministry of Transportation & Infrastructure) and ICBC.
	In conjunction with BC Hydro's clothes washer rebate program, the City further increased the rebates received by local residents and promoted this program through City mailouts.
	The City was successful in securing support funding from the Federation of Canadian Municipalities to complete feasibility studies researching the cost and opportunity to install solar PV systems at two new facilities, and the cost and opportunity to extract energy from community wastewater during re-development.

12. CONCLUSION

This report highlights a wide range of initiatives that the City is undertaking to continue to advance sustainability corporately and in the community, with focus on reducing greenhouse gas emissions, and energy and resource use. This report does not encompass all of the sustainability related initiatives and actions that the City is involved in, but simply provides a "snapshot" of some of the key areas and work that the City has completed and is planning on completing. These efforts help to position the City as a leader in our region and beyond. The City has set aggressive sustainability targets on a range of fronts, including for greenhouse gas emissions reduction and waste diversion. The City will continue to pursue best practices and innovation to achieve its sustainability related goals, which are recognized as critical to Richmond's Vision of "being the most appealing, liveable and well-managed community in Canada".

CARIP/Carbon Neutral Progress Report Reporting Year 2016

Supporting Documentation Contracted Emissions Template

LOCAL GOVERNMENT
City of Richmond 6911 No. 3 Road Richmond, BC V6Y 2C1
PROJECT DESIGNATE
Levi Higgs, Corporate Energy Manager, Sustainability & District Energy Direct 604-244-1239 lhiggs@richmond.ca
RATIONALE
<p>An estimation methodology for hired equipment contractor emissions is being utilized for 2016 since actual emissions for some contracts over \$25,000 have not provided fuel usage values.</p> <p>The City has identified four main contract areas that deliver traditional municipal services:</p> <ol style="list-style-type: none"> 1. Cascades Recovery Inc. and BFI provide recycling depot container collection and recycling services 2. Sierra Waste Services provide residential solid waste and recycling services; 3. Progressive Waste Solutions provides waste and recycling collection services at City facilities. 4. Individual Hired Equipment. <p>Contractor emissions associated with the delivery of traditional municipal services by Sierra Waste Services and Progressive Waste Solutions have been included in our mobile fleet emissions reporting spreadsheet, as fuel usage and vehicle type information was provided for 2016. Contractor emissions associated with the delivery of services by Cascades Recovery and Hired Equipment were estimated by from total kilometers and hours driven, respectively.</p> <p>The hired equipment contracted emissions, with the exception of equipment used outside of the defined traditional service boundaries or for construction rather than maintenance activities, is listed in the table below by traditional service area.</p> <p>Option 3 is the estimation methodology used:</p> <ol style="list-style-type: none"> 1. Hired equipment records sorted to exclude out of scope contracts; 2. City equipment operating records assessed to determine average consumption factors in litres per charge hour or kilometers driven for each equipment family; 3. Consumption factors used to estimated fuel consumption for contractor or hired equipment; 4. BC GHG emissions factors applied to calculate GHG emissions.

CONTRACTED EMISSIONS	
Option 3: Vehicle/Equipment Type and Kilometers or Hours of Usage	
Traditional Service Area	Estimated Annual GHGs (tonnes)
Drinking, Storm and Wastewater	331.6
Solid Waste Collection, Transportation and Diversion	10.3
Roads and Traffic Operations	83.4
Parks, Recreation, Arts, and Cultural Services	26.7
Corporate Operations	3.0
Total	455.0



To:	General Purposes Committee	Date:	April 25, 2017
From:	Carli Edwards, P.Eng. Manager, Customer Services and Licencing	File:	12-8275-30-001/2017- Vol 01
Re:	Application for A New Liquor Primary Liquor Licence - 1063035 BC Ltd Doing Business As: V + Club, 8171 Ackroyd Rd Unit 140		

Staff Recommendation

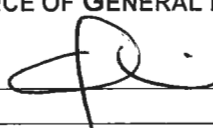

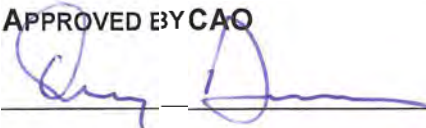
1. That the application from 1063035 BC Ltd., doing business as, V + Club, for a new Liquor Primary Liquor Licence to operate a Karaoke Box Room, at premises located at 8171 Ackroyd Rd Unit 140, with liquor service, be supported for;
 - a) A new Liquor Primary Liquor Licence with primary business focus of entertainment, specifically Karaoke Box Room with total person capacity of 100 persons;
 - b) Family Food Service to permit minors in all licensed areas until 10:00 PM when accompanied by a parent or guardian;
 - c) Liquor service hours for Monday to Sunday, from 12:00 PM to 2:00 AM;
2. That a letter be sent to Liquor Control and Licensing Branch advising that:
 - a) Council supports the conditions as listed above, for a new Liquor Primary Liquor Licence as the issuance will not pose a significant impact on the community; and
 - b) Council's comments on the prescribed criteria (set out in Section 71(9) of the Liquor Control and Licensing Regulations) are as follows:
 - i) The potential for additional noise and traffic in the area was considered;
 - ii) The impact on the community was assessed through a community consultation process; and
 - iii) Given that this is a new business, there is no history of non-compliance with this operation;
 - c) As the operation of a licenced establishment may effect nearby residents the City gathered the views of the residents as follows:

- i) Property owners and businesses within a 50 meter radius of the subject property were contacted by letter detailing the application, providing instructions on how community comments or concerns could be submitted; and
 - ii) Signage was posted at the subject property and three public notices were published in a local newspaper. The signage and the notice provided information on the application and instructions on how community comments and concerns could be submitted; and
- d) Council's comments and recommendations respecting the views of the residents are as follows:
- i) That based on the number of letters sent and the few responses received from all public notifications, Council considers that the approval of this application is acceptable to the majority of the residents in the area and the community.



Carli Edwards, P.Eng.
Chief Licence Inspector
(604-276-4136)

Att. 12

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

Staff Report

Origin

The Provincial Liquor Control and Licensing Branch (LCLB) issues licences in accordance with the *Liquor Control and Licensing Act* (the Act) and the Regulations made pursuant to the Act.

This report deals with an application to the LCLB and the City of Richmond by 1063035 BC Ltd., doing business as V+ Club, (hereinafter referred to as V+ Club), for a new Liquor Primary Liquor Licence to:

- operate, Monday to Sunday, 12:00 PM to 2:00 AM;
- permit a total person capacity of 100 persons;
- operate a karaoke box room with 17 rooms with entertainment being the primary focus of the business; and
- operate with a term and condition, "Family Food Service", to permit minors in all licensed areas until 10:00 PM when accompanied by a parent or guardian.

The City is given the opportunity to provide written comments by way of a resolution to the LCLB with respect to the proposed Liquor Primary application. Regulatory criteria local government must consider are:

- the location of the establishment;
- the proximity of the establishment to other social or recreational facilities and public buildings;
- the person capacity and hours of liquor service of the establishment;
- the number and market focus or clientele of liquor primary licence establishments within a reasonable distance of the proposed location;
- the impact of noise on the community in the immediate vicinity of the establishment; and
- the impact on the community if the application is approved.

Analysis

Location of the Establishment

The applicant is proposing to operate a Karaoke Box Room establishment located at 8171 Ackroyd Rd Unit 140 under the business trade name of V+ Club together with a Liquor Primary Liquor Licence. This property is zoned Downtown Commercial CDT1, which has a number of permitted uses, liquor primary establishment and recreation, indoor are among the permitted uses in this zone. The primary focus of this business is to operate as a Karaoke Box Room with 17 rooms, entertainment business with liquor service.

This business is new and has no history in the City of Richmond. V+ Club received a licence to operate the karaoke box room on March 17, 2017, without liquor service. V+ Club is situated in the Richmond downtown core area close to the intersection of Ackroyd Road and No. 3 Road. There is a large commercial complex at this location with over 50 businesses operating. The businesses range from a variety of uses such as medical and dental services, legal services, financial services, retail

shops and restaurants. There is also a large number of commercial properties as well as residential towers in the surrounding area of this business.

Proximity of the Establishment to Other Social, Recreational and Public Building

There are no schools or other liquor primary establishments within the vicinity of this establishment and no other social, recreational or public buildings within the proximity of this proposed location.

Person Capacity and Hours of Liquor Service of The Establishment

The applicant is proposing to operate V+ Club with an occupant load of 100 patrons. The applicants proposed operating hours of liquor service are Monday to Sunday, 12:00 PM to 2:00 AM which is consistent with Policy 9400 as well as the Business Regulation Bylaw No 7538, Part Ten: Karaoke Box Room Regulation.

The Number and Market Focus or Clientele of Liquor Primary Licence Establishments Within a Reasonable Distance of The Proposed Location

This is a new Liquor Primary Liquor Licence application which is situated more than 500 meters from other Karaoke Box Room establishments with a Liquor Primary Liquor Licence. The applicant is looking for more of a family atmosphere operation with "Family Food Service" as a term and condition to the Liquor Primary Liquor Licence.

The Impact of Noise on The Community in The Immediate Vicinity of The Establishment

Staff believe that there would be no noticeable increase in noise if the liquor primary licence application is supported.

The Impact on The Community if The Application is Approved

The City's process for reviewing applications for liquor related licences is prescribed by the Development Application Fees Bylaw 8951 which under Section 1.8.1 calls for:

1.8.1 Every **applicant** seeking approval from the **City** in connection with:

- (a) a licence to serve liquor under the *Liquor Control and Licensing Act and Regulations*;

must proceed in accordance with subsection 1.8.2.

1.8.2 Pursuant to an application under subsection 1.8.1, every **applicant** must:

- (b) post and maintain on the subject property a clearly visible sign which indicates:
 - (i) type of licence or amendment application;
 - (ii) proposed person capacity;
 - (iii) type of entertainment (if application is for patron participation entertainment); and

(iv) proposed hours of liquor service; and

- (c) publish a notice in at least three consecutive editions of a newspaper that is distributed at least weekly in the area affected by the application, providing the same information required in subsection 1.8.2(b) above.

The required signage was posted on March 22, 2017 and three advertisements were published in the local newspaper on March 22, 2017, March 24, 2017 and March 29, 2017.

In addition to the advertised public notice requirements set out in Section 1.8.1, staff sent letters to businesses, residents and property owners within a 50 meter radius of the property. There are 1014 properties identified within the consultation area. On March 21, 2017, letters were sent to 1311 businesses, residents and property owners within the 50 meter radius of the property. The letter provided details of the proposed liquor licence application and requests the public to communicate any concerns to the City. The period for comment for all public notifications' ended April 21, 2017.

The City relies, in part, on the response from the community to determine any negative impact of the liquor licence application. There were ten responses received by the City and the responses were as follows:

1. Competing business establishment (Attachment 1);
2. Opposed to the operating hours proposed (Attachment 2);
3. Opposed to liquor establishment in area – Property Owner living in Calgary (Attachment 3);
4. Opposed to liquor establishment in area - lives in Vancouver (Attachment 4);
5. Opposed to liquor establishment in area - lives in Chaiwan, Hong Kong (Attachment 5);
6. Opposed to liquor establishment in area (Attachment 6);
7. Opposed to liquor establishment in area (Attachment 7);
8. Opposed to liquor establishment in area (Attachment 8);
9. Opposed to liquor establishment in area (Attachment 9);
10. Opposed to liquor establishment in area (Attachment 10);

Public were consulted by signage posted on property; three advertisements posted in the local paper and 1311 letters mailed out to property owners within a 50 meter vicinity of this establishment. Through this process only ten responses were received. Of these ten, one of the opposing letters was received from a competing business and should not be considered due to this factor.

The second letter received was opposed to the hours of service only and not opposed to the granting of a liquor primary licence. Attachments three, four and five were received from individuals who do not live in the vicinity of the business and would not be directly impacted. The remaining five attached letters of opposition to the issuance of the liquor primary licence are from local residents.

The concerns of the local residents relate to intoxicated individuals in public causing concerns for the safety of their children or to themselves. The Richmond RCMP were consulted for any files/complaints received in the vicinity of 8171 Ackroyd Road in relation to intoxication. The Richmond RCMP have looked into this and report that there doesn't appear to be anything that stands out in relation to this issue. (Attachment 11)

It is staff's recommendation that these concerns are mitigated by the operator following the terms and conditions of the Liquor Control and Licensing Branch and staff have no reason to believe otherwise. Having received only 10 responses from the 1311 letters sent, posted signage and three advertisements in the local newspaper, staff feel that support of this application is warranted.

Other Agency Comments

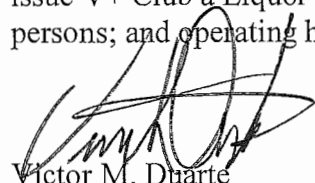
As part of the review process, staff requested comments from other agencies and departments such as Vancouver Coastal Health, Richmond R.C.M.P., Richmond Fire-Rescue, Building Approvals and Business Licence Department. These agencies and departments generally provide comments on the compliance history of the applicant's operations and premises. All the agencies and departments expressed no concern regarding this application.

Financial Impact

None

Conclusion

Following the public consultation period, staff reviewed the Liquor Primary Liquor Licence application against the LCLB review criteria and recommend that Council support the application to issue V+ Club a Liquor Primary Liquor Licence, with occupant seating/standing capacity of 100 persons; and operating hours from, Monday to Sunday; 12:00 PM to 2:00 AM.



Victor M. Duarte
Supervisor Business Licence
(604-276-4389)

VMD:vmd

- Att. 1: (Competitor) Opposed letter 1
- 2: Opposed letter 2
- 3: (Calgary Resident) Opposed letter 3
- 4: (Vancouver Resident) Opposed letter 4
- 5: (Hong Kong Resident) Opposed letter 5
- 6: Opposed email 6
- 7: Opposed letter 7
- 8: Opposed letter 8
- 9: Opposed letter 9
- 10: Opposed letter 10
- 11: RCMP Email
- 12: Ariel Map with 50 meter buffer area.

APR 12 2017

RECEIVED

Zodiac Karaoke Cabaret

155-8291 Alexandra Rd V6X 1C3

c/o Kenny Gu , Director

Tel: 778 822 8100

5 Apr 2017

Attachment 1

BY HAND DELIVERY

City of Richmond

Business License Division

Liquor License Applications

6911 No 3 Road Richmond,

BC, V6Y 2C1

Tel: 604-276-4328

Dear Sir / Madam

Re: Object to 1063035 BC Ltd. being granted a new Liquor Primary Licence

We have recently notice a Public Notice of Intent under the Liquor Control and Licensing Act being posted in front of V+ Club on Ackroyd Road. We are the operator of Zodiac Karaoke Cabaret ('Zodiac') with liquor permit and we like to oppose the granting of a new liquor license to V+ Club for the following reasons.

First of all, by limiting the number of enterprises with liquor permits in this commercial zone, we can avoid the possibility of pricing war which would result in a huge influx of heavy drinkers with escalating noise levels.

Secondly, we were told by the liquor board that there would be no more liquor license to be issued within five (5) km of where my location of Zodiac when we applied for our license.

Thirdly, the owner of V+ Club also owns another restaurant called "To Hot Restaurant." They are closed to each other. Therefore, it would be difficult for the V+ Club staffs to prohibit clients who are under the age of 19 to come into V+ Club for alcoholic drinks.

Last but not least, there are already two karaoke (Zodiac and Millennium Karaoke) with liquor license plus many other karaoke enterprises which locating in the same area. By not limiting the number of enterprises with liquor permits in this commercial zone, there would be too many enterprises with and without liquor permits to chase after the already saturated market of limited clientele.

Zodiac Karaoke Cabaret

155-8291 Alexandra Rd V6X 1C3

c/o Kenny Gu , Director

Tel: 778 822 8100

As is, we, the existing operators, are striving to survive with very low profit margin. So the public notice of having another permit in the commercial zone is raising a lot of concerns for many of us who would appreciate your consideration for our objection.

Sincerely,

A handwritten signature in black ink, consisting of a large loop and a horizontal stroke.

On behalf of Zodiac Karaoke

Dear Mr. Victor Duarte,

As a resident near 8171 Ackroyd Road, I would like to comment on the liquor license application by V+club, 1063035 BC Ltd. This location is nearly right beneath my unit's balcony. At night, I can clearly hear noises in the shopping strip's parking lot. My concern over a 12PM - 2AM liquor license Mon-Sun is that there will be increased late night noise activities that would disturb my family and surrounding neighbours. Noises echo in that plaza, as sometimes cars might gather there. Having late night liquor license may encourage more hanging out in that location after hours. I (and my family) am against such long license hours, especially past 10-11pm.

Regards,
Sally Gwo
Apr 19/2017

Attachment 3

Eileen Li
287 Edgebrook Rise NW
Calgary
AB T3A 5J9

CITY OF RICHMOND

APR -5 2017

RECEIVED

March 31, 2017

City of Richmond
Finance & Corporate Services Dept-Business Licences
6911 no.3 Rd.
Richmond
BC V6Y 2C1

Attn: Mr. Victor Duarte

Dear Mr. Duarte,

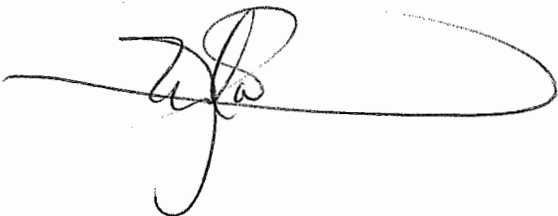
Re: NOTICE OF LIQUOR LICENCE AMENDMENT APPLICATION IN YOUR NEIGHBOURHOOD

1063035 BC LTD, DOING BUSINESS AS V+CLUB AT 140-8171 ACKROYD RD.

Thank you for your letter dated March 20, 2017 regarding to the above-mentioend matter. As one of the property owners in the neighbourhood, I am not receptive to a have a Club opening in the neighbourhood for simple reason - it will generate a lot of traffic and noises after hours.

Thank you.

Sincerely yours,

A handwritten signature in black ink, appearing to be 'Eileen Li', written over a horizontal line.

Eileen Li

1988 ACKROYD



City of Richmond

6911 No. 3 Road,
Richmond, BC V6Y 2C1
www.richmond.ca

March 20, 2017

Finance and Corporate Services Department

Business Licences

Telephone: 604-276-4328

Fax: 604-276-4157

Email: BusLic@richmond.ca

Dear Property/ Occupant:

Re: Notice of Liquor Licence Amendment Application in Your Neighbourhood

This notice serves to advise you of an application received by the Liquor Control and Licensing Branch and by the City of Richmond for a liquor licence amendment in your neighbourhood.

An application has been received from: **1063035 BC Ltd.** doing business as; **V + Club**, operating from premises located at **140-8171 Ackroyd Rd.**

The intent of the application is to apply for:

*a new Liquor Primary Liquor Licence to operate
From: 12:00 PM to 2:00 AM, Monday to Sunday;
The Seating Capacity Will Be 100 Occupants*

You are receiving this notice because you own property, own a business, or reside near the establishment that is applying for a change to their liquor licence.

A copy of this application may be viewed Mondays to Fridays from 8:15 am to 5:00 pm at Richmond City Hall, 6911 No. 3 Road. You may comment on this application by writing to:

CITY OF RICHMOND
BUSINESS LICENCES
LIQUOR LICENCE APPLICATIONS
6911 NO. 3 Rd
RICHMOND BC V6Y 2C1

To ensure the consideration of your views, your letter must be received on or before, **April 20, 2017**. Your name and address must be included on your letter.

Petitions will not be considered in the review process.

Please note that your comments may be made available to the applicant where disclosure is necessary to administer the licensing process.

If you have further questions on this matter, please contact me at 604-276-4389.

Yours truly,


Victor Duarte
Supervisor, Business Licences

VMD:vmd

To the city of Richmond,

Awhile back, I was at Pricemart one night, leaving the parking lot. Another car swerved recklessly out of the plaza across the small street and almost hit my vehicle. The driver had the nerve to roll down his window and yell profanity at me, and he was obviously drunk. It was raining and I couldn't see his license plate clearly before he drove off. Otherwise, I would have called 911.

I don't actually live in Richmond, but I visit often. This is a main area for many I'm sure. So I saw this notice that says V+ wants an alcohol license. I think it'd be unwise to allow this to happen. There's currently ~~a~~ many drunks that loiter in that area already.

Thank you.

Regards,

Anne 604 724 6185 - phone.
6962 Balmoral St. Van, BC V5P 3P7

Attachment 5

Vilia S.Y. Kwong/Chun Keung Lo,
Rm. 307, 3/F., Blk. 30,
Heng Fa Chuen,
Chaiwan, Hong Kong.
March 27, 2017.

City of Richmond,
Business Licences, Liquor Licence Applications,
6911 No. 3 Road,
Richmond BC V6Y 2C1,
Canada.

Dear Sirs,

Re: A new Liquor Primary Liquor Licence to operate, application from:
1063035 BC Ltd. – V+Club, at 140-8171 Ackroyd Rd.

We thank you for your advice of the above application, we refuse its application because we consider it may have some drunk problems and disturb our community when it opens.

We thank you for your close attention.

Very truly yours,



Vilia S.Y. Kwong



Chun Keung Lo

Duarte,Victor

From: BusLic
Sent: April 18, 2017 10:25
To: Duarte,Victor
Subject: FW: opinion

From: Fred Feng [<mailto:fred1688@hotmail.com>]
Sent: Sunday, 16 April 2017 20:45
To: BusLic
Subject: opinion

Dear finance and corporate services department

I am a resident in quintet B apartment. I don't approve of the idea on liquid control because we have kids in the house and think it might be dangerous when they come after school to home and meet alcoholics.

Sincerely

Fred

1608 - 7979 firbridge way

Hello, The City of Richmond.

I am writing to you as a concerned civilian and parent of Richmond.

Regarding granting V+ Club an alcohol license, I am highly against this act. I live quite close to this surrounding area, and commute to these plazas on a regular basis. Recently, I went to the RBC bank one night to use the ATM; with my young son of 2.5 years old, and some drunk young men started yelling at us. This frightened my son and he started crying. I pulled out my phone to call the police but they had ran off already. How do I explain to my son why these strangers were terrorizing us? What if next time they attack us? There's a liquor store in the plaza right across from it, and many restaurants with alcohol licenses already. That's more than enough establishments for people to drink at. There shouldn't be another bar around, and

opened till 2 a.m. 7 days a week! That's absurd. This isn't downtown Vancouver club district. If people want to party, they should go downtown. I also ~~go~~ go to Pricemart and Staples regularly, and do not want to be in the crossfire of drunks causing havoc. Fights may break out, more irresponsible young drunk drivers on the road. They might damage property such as cars or get into fights. I don't want to be scared going to the supermarket and I don't want my son seeing drunks running about. On the notice, it says they also want the license to be made valid so that parents can bring their children into the bar. Why would the government allow this? Are children allowed ~~to~~ in liquor stores? Are children allowed to go into bars and clubs now? That is ridiculous and create higher risk of underage drinking. If this establishment's liquor license act is passed, I will definitely file a complaint to the government. As a loving and caring mother, for the safety

of our community, I strongly urge you to please
deny this notion.

Thank you kindly for your time and consideration.

Sincerely,

Sophia Shao.

Home Address: 1006-5028 Kwantlen St. Richmond.
B.C. V6X 4K2.

Phone Number: 778-898-8266.

Please contact me by E-mail: 31322693@qq.com.

Attachment 8

To. City of Richmond

Finance and Corportaion Services Depart. Business Licences

Dear Victor Duarte/Supervisor,Business Licences

Thanks for your letter.

As a resident and owner of my property as below

I and all my family don't want a liquor business as mentioned
enclosed your letter copy.

Thanks,

From Kisun kim

A handwritten signature in black ink, consisting of a stylized 'K' followed by a horizontal line.

#1508-5811 No.3 Road Richmond B.C.

April 4, 2017



City of Richmond

6911 No. 3 Road,
Richmond, BC V6Y 2C1
www.richmond.ca

March 20, 2017

Finance and Corporate Services Department
Business Licences
Telephone: 604-276-4328
Fax: 604-276-4157
Email: BusLic@richmond.ca

Dear Property/ Occupant:

Re: Notice of Liquor Licence Amendment Application in Your Neighbourhood

This notice serves to advise you of an application received by the Liquor Control and Licensing Branch and by the City of Richmond for a liquor licence amendment in your neighbourhood.

An application has been received from: **1063035 BC Ltd.** doing business as; **V + Club**, operating from premises located at **140-8171 Ackroyd Rd.**

The intent of the application is to apply for:

*a new Liquor Primary Liquor Licence to operate
From: 12:00 PM to 2:00 AM, Monday to Sunday;
The Seating Capacity Will Be 100 Occupants*

You are receiving this notice because you own property, own a business, or reside near the establishment that is applying for a change to their liquor licence.

A copy of this application may be viewed Mondays to Fridays from 8:15 am to 5:00 pm at Richmond City Hall, 6911 No. 3 Road. You may comment on this application by writing to:

CITY OF RICHMOND
BUSINESS LICENCES
LIQUOR LICENCE APPLICATIONS
6911 NO. 3 Rd
RICHMOND BC V6Y 2C1

To ensure the consideration of your views, your letter must be received on or before, **April 20, 2017**. Your name and address must be included on your letter.

Petitions will not be considered in the review process.

Please note that your comments may be made available to the applicant where disclosure is necessary to administer the licensing process.

If you have further questions on this matter, please contact me at 604-276-4389.

Yours truly,


Victor Duarte
Supervisor, Business Licences

VMD:vmd

TO THE CITY OF RICHMOND,

My sister and I currently live in 5640 Arcadia Rd.

We take the skytrain everyday and walk pass Ackroyd Rd.

As we have work and school, we go pass that area every night. We have already seen a lot of drunk people in that area since they opened a new restaurant.

Both my sister and I strongly opposed giving another alcohol license out. We feel dangerous having drunk

people smoking and yelling at us. There was ^{even} a time

that a drunk guy was chasing after me and wanted

to grab me or something. After all, we definitely don't

think it is a good idea to have alcohol served at

that area at night since it's so close to skytrain

and bus stops. It's just too dangerous for our

neighborhood. There is already a liquor store on the

same street. We don't need another place that sells alcohol. Thank you for listening.

Vivian Chan
March 26, 2017

Our address is 5640 Arcadia Road, Richmond, BC.
V6X 2G9

Name is Vivian Wai Ying Chan phone: 778-859-9001
and
Vinci Wai Kay Chan phone: 778-859-9101

To City of Richmond

My name is Si, I live on 8411 Ackroyd Rd. Richmond, BC and my phone number is (613) 983-1074. I'm writing to you regarding

V+ Club (address 140-8171 Ackroyd, Richmond BC) application for Liquor License.

They are located on my way home from the sky train station and sometimes I get off quite late from work. Few days ago I was walking home crossing through

that plaza as per usual and there were a group of people standing ~~and~~ ~~and~~

on the side walk near V+ Club. They started yelling at me as I walked

by, I think they were pretty drunk. I was actually suppose to stop by

RBC and get some cash from the ATM, but I was too scared to stay at that

plaza for too long. What if those people see me coming out from RBC and

know I have cash on me and rob me. I don't know where those people

had been drinking at but I am highly against giving a liquor license to

V+ Club. There are enough places for people to drink at around this area, and

there is even a Liquor Store in the plaza across the road. Giving them

a liquor license also increases the ~~number~~ ~~the~~ chances of people driving
drunk. I would we seemed to get hit by them. Please take my experience
in consideration when deciding on their liquor license.

Sincerely

Si Si

Duarte,Victor

From: Ted Lewko <ted.lewko@rcmp-grc.gc.ca>
Sent: April 25, 2017 12:18
To: Duarte,Victor
Subject: Re: 8171 Ackroyd Rd Unit 140 - V + Club

Hi. I looked into it. There doesn't seem to be anything that stands out.

>>> "Duarte,Victor" <VDuarte@richmond.ca> 2017/04/25 8:02 AM >>>
Hello Ted,

I am commencing my Report to Council on the application for a proposed Liquor Primary Liquor Licence to operate karaoke Box Room with 17 Karaoke rooms and Family Food Service to allow minors until 10:00 PM.

As part of the community impact, notice was placed on the property for 30 days and 3 newspaper articles were posted in local paper, as well as, letters mailed out to property owners, residents and businesses within a 50 meter radius. The city mailed out 1311 letters and received 9 responses. Four of the responses appear similar in content and address impact of drunks in the area already creating unsafe conditions for these individuals. As the letters are almost identical in content, I am a little sceptical as to individual input, however as part of my due diligence, I am looking to see if RCMP have had any calls in this area over last few months which revolved around drunks in the area. I would appreciate any input you could provide which I can share with Council.

Regards,

Vic

Victor Duarte | Supervisor, Business Licence
Finance and Corporate Services
City of Richmond
Bus: 604.276.4389 | Cell: 604.516.9314
vduarte@richmond.ca

City of Richmond Interactive Map



157.2 0 78.60 157.2 Meters

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

© City of Richmond

THIS MAP IS NOT TO BE USED FOR NAVIGATION

CNCL - 498



City of Richmond

Report to Committee

To: General Purposes Committee

Date: May 8, 2017

From: Gavin Woo, P. Eng.
Senior Manager, Building Approvals

File: 12-8360-20-01/2017-Vol01

Re: Building Permit Application at 7251 No. 6 Road

Staff Recommendation

That Building Permit Application No. 17-770896 for a single family dwelling at 7251 No. 6 Road, with a total floor area (including garage) of 1,246.3 m² (13,414.9 ft²) be withheld for a period of 30 days beginning on the date of application (April 26, 2017) pursuant to Section 463(1) of the *Local Government Act*, as Council considers that the proposed house size, farm home plate and setbacks are in conflict with the proposed Zoning Bylaw amendments under preparation.

Gavin Woo, P. Eng.
Senior Manager, Building Approvals
(604-276-4113)

Att. (1)

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Development Applications Policy Planning Law		
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

On March 27, 2017, Council adopted the following resolution:

Whereas Section 463 of the Local Government Act allows the withholding of building permits that conflict with bylaws in preparation; and

Whereas Council directed staff to conduct public consultation regarding house size, farm home plate and setbacks, including residential accessory buildings,

- 1. That staff be directed to prepare for Council's consideration a bylaw to limit house size, farm home plate and setbacks, including residential accessory buildings in the Agriculture (AG) zones; and*
- 2. That staff bring all building permit applications for residential development, including residential accessory buildings, in the Agriculture (AG) zones received more than 7 days after the passage of resolution #1 to Council, to determine whether such applications are in conflict with the proposed bylaw to limit house size, farm home plate and setbacks, including residential accessory buildings in the Agriculture (AG) zones.*

As a result of Council's resolution, and Section 463 of the *Local Government Act*, all completed building permit applications for residential buildings in the Agriculture (AG) Zones received after April 3, 2017 (7 days after the resolution) must be forwarded to Council for a decision, as to whether the building permit application is in conflict with the bylaws under preparation.

The purpose of this report is to bring forward a building permit application at 7251 No. 6 Road (No. 17-770896) for Council's consideration under Section 463 of the *Local Government Act* ("LGA"). Pursuant to Section 463(1) of the LGA, Council must:

- (a) identify what it considers to be the conflict between the proposed building permit application and the proposed Zoning amendment bylaws under preparation, and
- (b) if a conflict is identified, then resolve to withhold the building permit application for 30 days beginning on the date of application.

Then, pursuant to section 463(3) of the LGA, following consideration of the application, and as a separate resolution to that above, Council may direct that the building permit be withheld for a further 60 days.

Staff recommends that Council find that proposed building permit application (No. 17-770896) is in conflict with proposed zoning bylaw amendments to the Agriculture (AG) zones as they relate to house size and farm home plate size.

Findings of Fact

A building permit application was submitted on April 26, 2017 for the property at 7251 No. 6 Road (Attachment 1; Location Map). The proposal is for a 1,148.0 m² (12,357.1 ft²) single family house along with a 148.3 m² (1,596.2 ft²) detached garage for a total considered area of

1,246.3 m² (13,414.9 ft²). The proposed area defined as a Home Farm Plate to accommodate new construction for the house, detached garage and associated driveways and porches is 3,218.0 m² (34,640.0 ft²).

Details on the property can be found in Table 1 below. Details on the proposed size of the farm home plate, house, and residential accessory buildings, in addition to the maximum setbacks for both the house and residential accessory buildings can be found in Table 2.

Table 1 – Property Data	
Address:	7251 No. 6 Road
Applicant:	Jaswant & Interjit Virk
Owner:	Jaswant & Interjit Virk
Site Size:	20,635.0 m ² (222,113.3 ft ²)
Land Uses:	Existing Single Family House and Agricultural Uses
OCP Designation:	Agriculture
Zoning:	Agriculture (AG1)

Table 2 – Building Permit Details		
Zoning Criteria	Existing Bylaw Requirement	Proposed Building Permit Application
Farm Home Plate	Not regulated	3,218.0 m ² (34,640.0 ft ²)
House Size	Maximum not regulated provided that the total building size is no greater than 0.6 floor area ratio	1,148.0 m ² (12,357.1 ft ²)
Residential Accessory Buildings Size	Maximum not regulated provided that the total building size is no greater than 0.6 floor area ratio	148.3 m ² (1,596.2 ft ²)
Maximum Setback for House	50.0 m (164.0 ft.)	50.0 m (164.0 ft.)
Maximum Setback for Residential Accessory Buildings	50.0 m (164.0 ft.) building separation from house	7.9 m (26.0 ft.)

Analysis

Staff Review

On April 24, 2017, Council gave first reading to bylaw amendments regulating single family dwelling development on agricultural zoned land. At Council, modifications were made to the Zoning Bylaw 9707 to increase the maximum Farm Home Plate setback, from 60.0 m (196.9 ft.) to 75.0 m (246.1 ft.) and to remove the septic field from the definition of Farm Home Plate.

Staff considered the proposed Building Permit Application No. 17-770896 in relation to the proposed bylaws under preparation by the City, and are of the opinion that the application is in conflict with the bylaws under preparation.

- The proposed Home Farm Plate at 3,218.0 m² (34,640.0 ft²), is 1,218.0 m² (13,110.4 ft²) or 60.9% greater than the 2,000.0 m² (21,528.0 ft²) maximum considered in the proposed bylaw amendments.

- The total floor area of the house at 1,148.0 m² (12,357.1 ft²) and detached garage at 148.0 m² (1,593.1 ft²) or 15% greater than the proposed 1,000.0 m² (10,764.3 ft²) floor area cap, as permitted in the proposed Bylaw 9712.

Building Permit Application at 7251 No 6 Road

If Council resolves that there is a conflict between the bylaws under preparation and the building permit application, then issuance of the building permit may be withheld for the balance of the 30 day period. If Council does not resolve that there is a conflict, then, if the building permit application is complete and otherwise compliant, the building permit must be issued.

As previously set out, prior to the end of the initial 30 day period, Council may consider a second resolution to either:

- grant a building permit, but impose conditions on it that would be in the public interest, having regard to the bylaw that is under preparation; or
- direct the permit issuance to be withheld for a further 60 days.

If the bylaws under preparation are not adopted by Council, and/or the applicant does not modify or re-submit their application such that it is not in conflict, within the initial 30 day period, staff intend to bring forward another report to recommend that Council withhold the issuance of this building permit for a further 60 days.

Financial Impact

None

Conclusion

Staff recommend that Council determine that the application for the proposed house located at 7251 No. 6 Road is in conflict with the bylaws under preparation to limit house size, farm home plate and setbacks, including residential accessory buildings in the Agriculture (AG) zones. It is recommended that the building permit application be withheld for 30 days from the date of submission (April 26, 2017).

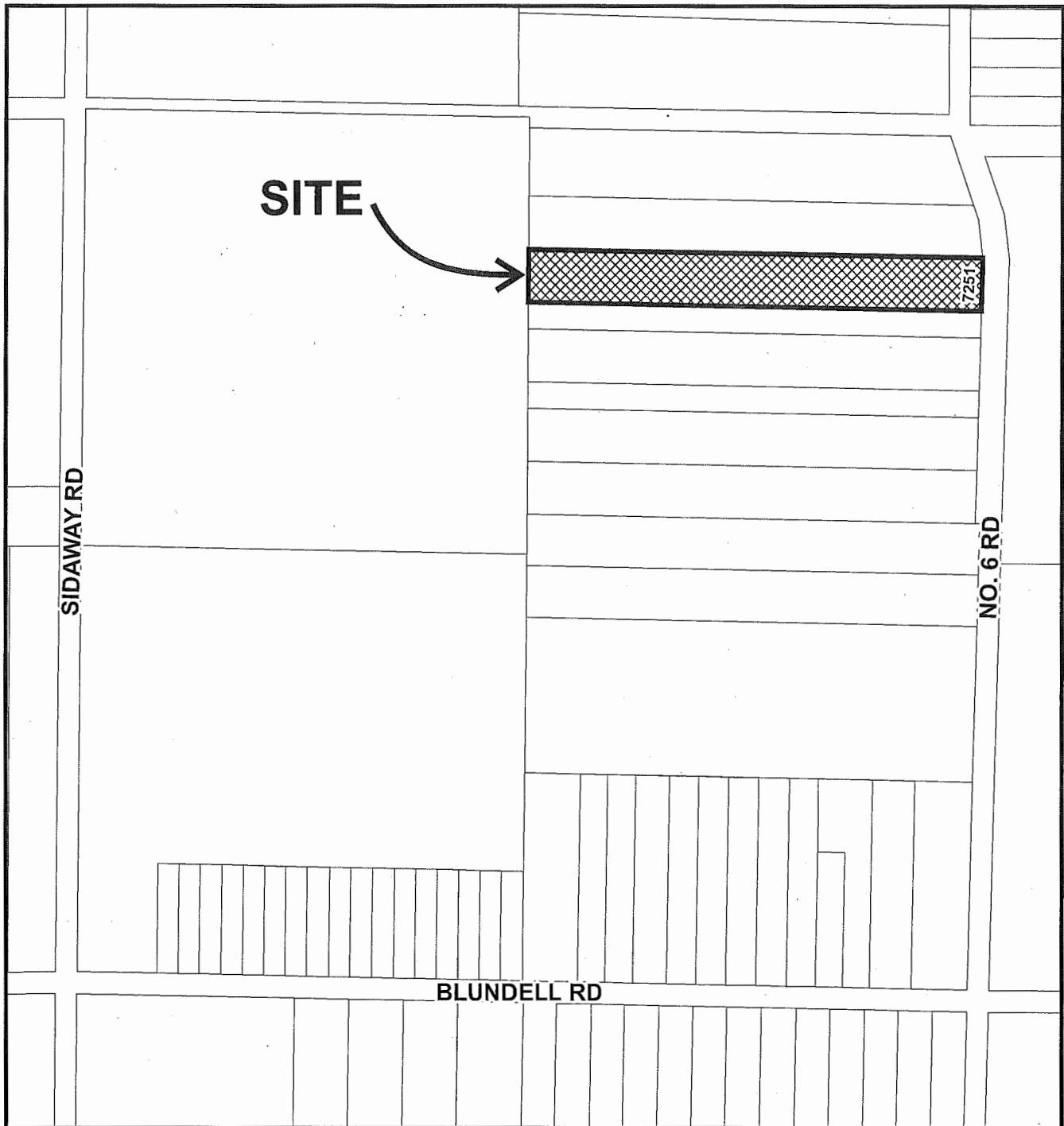


Gavin Woo, P. Eng.
Senior Manager, Building Approvals

Att.(1): Location Map



City of
Richmond



7251 No. 6 Road

Original Date: 05/08/17

Revision Date:

Note: Dimensions are in METRES



CNCL - 504

Kwantlen St. Farmers Market

Tuesdays, May 9 to Oct 31, 12pm to 4pm

Lansdowne Plaza at KPU Richmond

Our Story

Our market features locally grown and crafted produce, baking and artisan created products.

We specifically highlight KPU's own Sustainable Agriculture students who grow vegetables on-campus.

We have created Richmond's first and only weekly market. Our market enables our community to feed themselves, meet their neighbours, and learn about local seasonal foods.

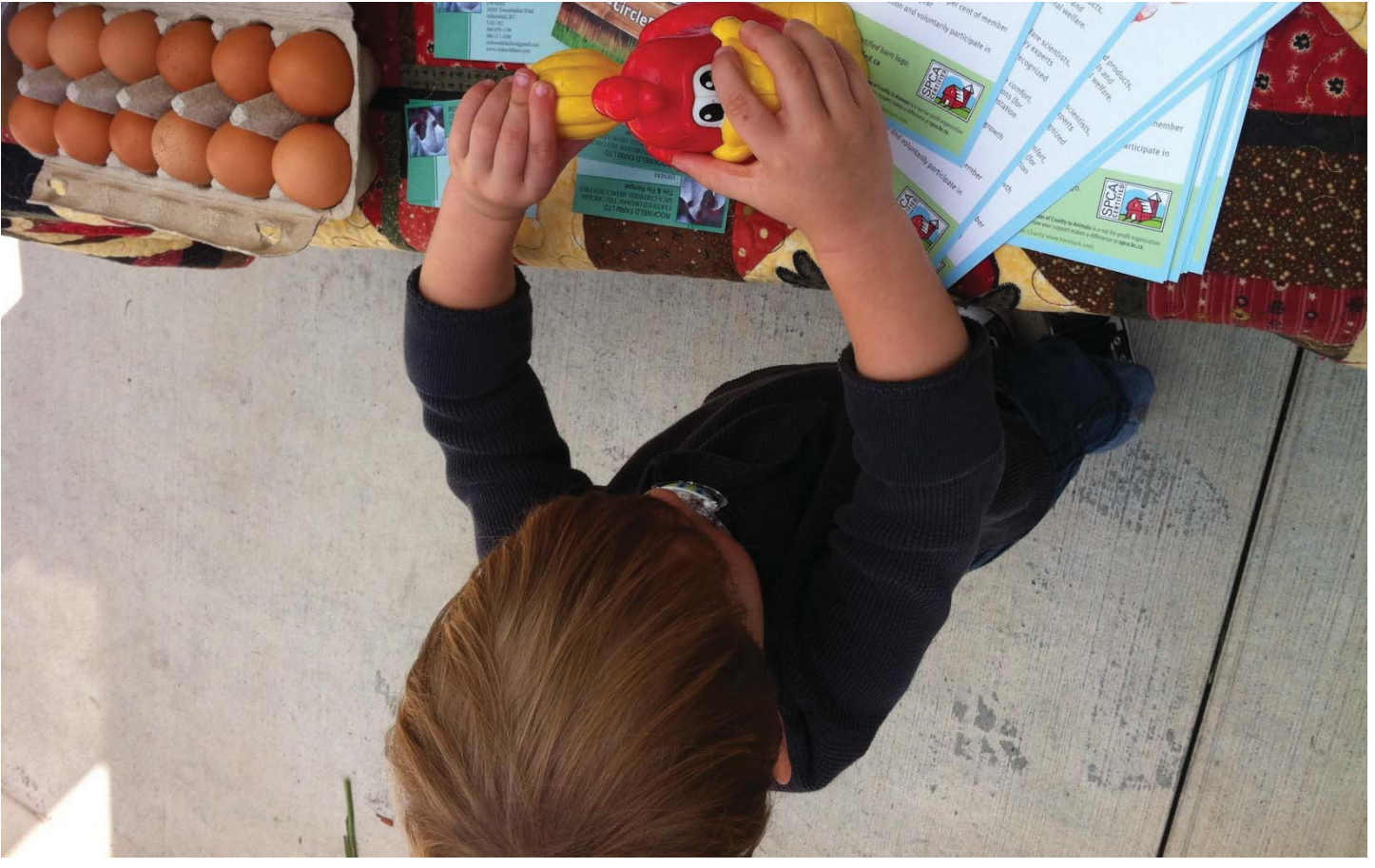
Managed by Farm Fresh Events
Operated by the Kwantlen Student Association



Special Events

- May 9 – Opening Day
- May 30 – Bike to Work Week
- July 11 – Kids Day
- Sept 5 – Welcome Back to School
- Sept 12 – Back to School Stock Up
- Oct 31 – Halloween Celebration

CNCL - 506



Our Ask: Social Media

CNCL - 507



@KwantlenStMkt

Our Ask: Signage





KwantlenStMarket.ca
@KwantlenStMkt

Anne Janzen | 778-688-3663
Caitlin McCutchen | 604-599-2126

CNCL - 509





CNCL - 510



Market

Local Fresh
Tong Chai
\$3.00

Local
Junk

ORIENTAL VEGETABLES

YU CHOI 200g 20.00	YU CHOI 20.00
BABY BOK CHOI 200g 20.00	BABY BOK CHOI 20.00
BABY BOK CHOI 200g 20.00	BABY BOK CHOI 20.00
LONG CHOI 200g 20.00	LONG CHOI 200g 20.00
SALAD 200g 20.00	SPECIAL CHOI 200g 20.00
BEAN SPRING 200g 20.00	BABY BOK CHOI 20.00

PRODUCE OF U.S.A.

Local fresh
Baby Artichoke
\$3.00



Bachelor of
Applied Science

Sustainable Agriculture



FARMERS MARKET

農夫市場

RICHMOND, BC
TUESDAYS 每週二
12PM - 4PM

Produce
Pastries & Bread
Meat & Eggs
Artisans & Live Music
Free Parking



@KwantlenStMkt

CNCL - 513kwantlenstmarket.ca

Mark your Calendars!

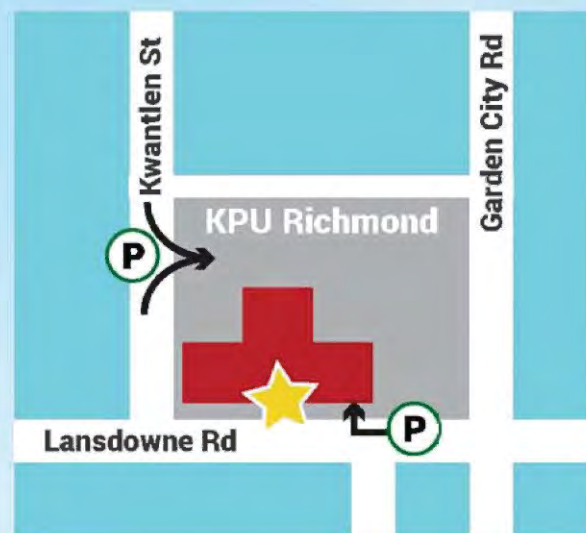
Rain or shine, every Tuesday 12pm to 4pm
from May 9 to October 31, 2017

May 9 - Opening Day

July 11 - Kids Day

September 12 - Back to School Stock Up

October 31 - Halloween Celebration



KPU Richmond – 8771 Lansdowne Road

For accessibility information see our website.
Free parking is available in the KPU parking lot.

kwantlenstmarket.ca

Many thanks to our sponsors & supporters!



CNCL - 514



**Soil Removal and Fill Deposit Regulation Bylaw No. 8094,
Amendment Bylaw No. 9002**

The Council of the City of Richmond enacts as follows:

1. Soil Removal and Fill Deposit Regulation Bylaw No. 8094, as amended, is further amended:
 - (a) by deleting paragraph 4.1.1(a) and substituting the following:
 - “(a) a non-refundable application fee of Six Hundred Dollars (\$600) for the purposes of the **permit** application under this bylaw, together with the prescribed application fee under the *Agricultural Land Commission Act*.
 - (b) by adding the following after section 5.1.2:

“5.2 Identification

5.2.1 Upon request by the **Manager** or a **City** Bylaw Enforcement Officer:

 - (a) the driver or operator of a vehicle or any equipment being used for **deposit** or **removal** activity, or the person in charge of the vehicle or equipment, shall provide his or her full name and current address (including photo identification to verify this information), the full name and current address of the owner of the vehicle or equipment, the full name and current address of the person directing the **deposit** or **removal** activity, and the addresses of the **parcel** or **parcels** to or from which the **deposit** or **removal** is being transported; and
 - (b) a person who has allegedly contravened any provision of this bylaw shall provide his or her full name and current address and photo identification to verify this information.”
 - (c) by adding the following after section 7.1.1:

“7.1.2 A violation of any of the provisions identified in this bylaw shall result in liability for penalties and late payment amounts established in Schedule A of the Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122.

- 7.1.3 A violation of any of the provisions identified in this bylaw shall be subject to the procedures, restrictions, limits, obligations and rights established in the Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122 in accordance with the *Local Government Bylaw Notice Enforcement Act, SBC 2003, c.60.*"

2. This Bylaw is cited as "Soil Removal and Fill Deposit Regulation Bylaw No. 8094, Amendment Bylaw No. 9002".

FIRST READING

NOV 09 2015

SECOND READING

NOV 09 2015

THIRD READING

NOV 09 2015

MINISTER APPROVALS

APR 11 2017 MAY 04 2017

ADOPTED

CITY OF RICHMOND
APPROVED for content by originating dept. <i>E.W.</i>
APPROVED for legality by Solicitor

MAYOR

CORPORATE OFFICER



**Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122,
Amendment Bylaw No. 9003**

The Council of the City of Richmond enacts as follows:

1. Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122, as amended, is further amended at Part One – Application by adding the following after section 1.1(l):

“(n) Soil Removal and Fill Deposit Regulation Bylaw 8094, as amended,”
2. Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122, as amended, is further amended by adding to the end of the table in Schedule A of Bylaw No. 8122 the content of the table in Schedule A attached to and forming part of this bylaw.
3. This Bylaw is cited as “Notice of Bylaw Violation Dispute Adjudication Bylaw No. 8122, Amendment Bylaw No. 9003.

FIRST READING

NOV 09 2015

SECOND READING

NOV 09 2015

THIRD READING

NOV 09 2015

ADOPTED

MAYOR

CORPORATE OFFICER

CITY OF RICHMOND
APPROVED for content by originating Division <i>E.L.</i>
APPROVED for legality by Solicitor

SCHEDULE A to BYLAW NO. 9003

SCHEDULE A to BYLAW NO. 8122

Designated Bylaw Contraventions and Corresponding Penalties

A1 Bylaw	A2 Description of Contravention	A3 Section	A4 Compliance Agreement Available	A5 Penalty	A6 Early Payment Option	A7 Late Payment Amount	A8 Compliance Agreement Discount
			n/a	29 to 60 days	1 to 28 days	61 days or more	n/a
Soil Removal and Fill Deposit Regulation Bylaw 8094 (2007)	Soil deposit or removal without valid permit	3.1.2	No	\$ 500.00	\$ 475.00	\$ 525.00	n/a
	Not complying with term or condition of permit	3.1.2	No	\$500.00	\$475.00	\$525.00	n/a
	Deposit or remove soil or fill between the hours of 8:00 p.m. and 7:00 a.m.	5.1.1(a)	No	\$500.00	\$ 475.00	\$ 525.00	n/a
	Deposit or remove soil or fill on a Sunday or any statutory holiday	5.1.1(b)	No	\$500.00	\$ 475.00	\$ 525.00	n/a
	Failing to properly license and insure vehicle used for hauling soil or fill	5.1.1(c)	No	\$200.00	\$175.00	\$225.00	n/a
	Failing to cover soil or fill to prevent blowing or falling from vehicle	5.1.1(d)	No	\$300.00	\$275.00	\$325.00	n/a
	Failing to repair damage to drainage, watercourse, highway or other property	5.1.1(e)	No	\$500.00	\$ 475.00	\$ 525.00	n/a

A1 Bylaw	A2 Description of Contravention	A3 Section	A4 Compliance Agreement Available	A5 Penalty	A6 Early Payment Option	A7 Late Payment Amount	A8 Compliance Agreement Discount
	Failing to keep drainage or watercourse free of soil or fill	5.1.1 (f)	No	\$500.00	\$ 475.00	\$ 525.00	n/a
	Removal or deposit greater than 0.5 metre within 2.5 metre of utility pole, pipeline, structure or highway without approval	5.1.1 (g)	No	\$500.00	\$475.00	\$525.00	n/a
	Removal or deposit soil or fill on highway, statutory right-of-way or easement without permission	5.1.1 (h)	No	\$500.00	\$ 475.00	\$ 525.00	n/a
	Failure to remove temporary structures	5.1.1 (i)	No	\$200.00	\$175.00	\$225.00	n/a
	Failure to adequately fence or protect hazards	5.1.1 (j)	No	\$500.00	\$ 475.00	\$ 525.00	n/a
	Failure to protect from erosion, collapse, or run-off water or mud	5.1.1 (k)	No	\$300.00	\$275.00	\$325.00	n/a
	Stockpiling soil or fill other than location in permit or causing damage or nuisance	5.1.1 (l)	No	\$300.00	\$275.00	\$325.00	n/a
	Allow soil to encroach, undermine, damage or endanger adjacent property or setback area	5.1.1 (m)	No	\$400.00	\$375.00	\$425.00	n/a

A1 Bylaw	A2 Description of Contravention	A3 Section	A4 Compliance Agreement Available	A5 Penalty	A6 Early Payment Option	A7 Late Payment Amount	A8 Compliance Agreement Discount
	Driver fail to provide required information	5.2.1(a)	No	\$200.00	\$175.00	\$225.00	n/a
	Person fail to provide name, address or photo identification	5.2.1(b)	No	\$200.00	\$175.00	\$225.00	n/a
	Prevent or obstruct entry by Manager	6.1.2	No	\$500.00	\$ 475.00	\$ 525.00	n/a
	Failure to comply with notice of non-compliance	6.2.1	No	\$500.00	\$ 475.00	\$ 525.00	n/a



**Business Regulation Bylaw No. 7538,
Amendment Bylaw No. 9649**

The Council of the City of Richmond enacts as follows:

1. **Business Regulation Bylaw No. 7538**, as amended, is further amended by deleting Part 22 and replacing it with the following:

**“PART TWENTY-TWO: BED & BREAKFAST ESTABLISHMENT
REGULATIONS**

- 22.1. Without first obtaining a **licence** for a **bed and breakfast establishment**, persons must not provide guests with **residential rental accommodation** for rental periods of less than 30 days.
- 22.2 **Bed and Breakfast Establishments** shall be subject to the following regulations:
 - 22.2.1. the premises must be the **operator’s principal residence**;
 - 22.2.2. the **operator** must be an **individual registered owner** of the premises or a **family member** of the **individual registered owner** of the premises;
 - 22.2.3. the **operator** must permit the **City’s Licence Inspector** to inspect the operator’s guest register maintained pursuant to the *Hotel Guest Registration Act* to determine whether the applicable zoning bylaw restrictions on the number of guests permitted in the premises are being complied with;
 - 22.2.4. the **operator** must prepare a fire evacuation plan showing the location of exits, fire extinguishers and smoke detectors, install and maintain the fire safety equipment, and post a copy of the fire evacuation plan in each bedroom used for guest accommodation; and
 - 22.2.5. the **operator** must not provide or install any equipment or facilities used for the preparation of food in any bedroom or sleeping unit used for guest accommodation.”

2. **Business Regulation Bylaw No. 7538**, as amended, is further amended at Part 23 by deleting Section 23.1 and replacing it with the following:

“23.1 Any **licencee, operator**, or any other person who:

- (a) violates or contravenes any provision of this bylaw, or who causes or allows any provision of this bylaw to be violated or contravened; or
- (b) fails to comply with any of the provisions of this bylaw; or
- (c) neglects or refrains from doing anything required under the provisions of this bylaw or the **Business Licence Bylaw**; or
- (d) fails to maintain the standard of qualification required for the issuing of a **licence**; or
- (e) makes any false or misleading statement,

commits an offence and upon conviction shall be liable to a fine of not more than Ten Thousand Dollars (\$10,000.00), in addition to the costs of the prosecution, and where the offence is a continuing one, each day that the offence is continued shall constitute a separate offence.”.

3. **Business Regulation Bylaw No. 7538**, as amended, is further amended at Section 26.1 by:

- (a) adding the following as the definition of “**boarding and lodging**” in alphabetical order:

“**boarding and lodging** means **boarding and lodging** as defined in the City’s zoning bylaw.”;

- (b) adding the following as the definition of “**community care facility**” in alphabetical order:

“**community care facility** means a **community care facility** as defined in the City’s zoning bylaw.”;

- (c) adding the following as the definition of “**dormitory**” in alphabetical order:

“**dormitory** means a **dormitory** as defined in the City’s zoning bylaw.”;

- (d) adding the following as the definition of “**dwelling**” in alphabetical order:

“**dwelling** means a dwelling as defined in the City’s zoning bylaw.”;

- (e) adding the following as the definition of “**family member**” in alphabetical order:

“**family member** means a family member as defined in the City’s zoning

bylaw.”;

- (f) adding the following as the definition of “**individual registered owner**” in alphabetical order:

“**individual registered owner** means an individual registered owner as defined in the City’s zoning bylaw.”;

- (g) adding the following as the definition of “**principal residence**” in alphabetical order:

“**principal residence** means a principal residence as defined in the City’s zoning bylaw.”; and

- (h) adding the following as the definition of “**residential rental accommodation**” in alphabetical order:

“**residential rental accommodation** means the accommodation of guests in all or a portion of a dwelling, with or without food service, but excludes accommodation that is a **boarding and lodging, community care facility, or dormitory.**”;

4. This Bylaw is cited as “**Business Regulation Bylaw No. 7538, Amendment Bylaw No. 9649**”.

FIRST READING

SECOND READING


THIRD READING

ADOPTED

MAR 27 2017

MAR 27 2017

MAR 27 2017

CITY OF RICHMOND
APPROVED for content by originating Division 
APPROVED for legality by Solicitor 

MAYOR

CORPORATE OFFICER



**Business Licence Bylaw No. 7360,
Amendment Bylaw No. 9650**

The Council of the City of Richmond enacts as follows:

1. **Business Licence Bylaw No. 7360**, as amended, is further amended by deleting Section 2.4.1 and replacing it with the following:

“2.4.1 Every **Bed & Breakfast Establishment applicant** must at the time of application:

- (a) certify that they reside in the premises as their **principal residence** and provide proof that the premises are the **applicant’s principal residence**. To demonstrate that the premises is their **principal residence**, an **applicant** must be able to produce copies of the **applicant’s** government issued picture identification showing the **applicant’s** address as the premises, and copies of either one or both of the following:
 - (i) a tax assessment for the current year for the lot upon which the premises are constructed showing the **applicant** as payor, or
 - (ii) a utility bill (electricity, district energy, gas, or telephone) issued within the previous 3 months for the premises showing the **applicant** as payor, or
 - (iii) such other evidence as required by the **City** from time to time;
- (b) provide proof that the **individual registered owner(s)** of the premises has consented to the use of the premises as a **bed & breakfast establishment** by providing one of the following, as applicable:
 - (i) if the **applicant** is an **individual registered owner** of the premises, a copy of legal title to the premises showing the **applicant** as an **individual registered owner**, or
 - (ii) if the **applicant** is a **family member** of an **individual registered owner** of the premises, a copy of legal title to the premises identifying the **individual registered owner(s)** and a declaration from an **individual registered owner** of the premises certifying that the **applicant** is the **individual registered owner’s family member** and that use of the premises as a **short-term rental** is permitted; and
- (c) provide a copy of the guest register format to be used in the recording of guests stays under the *Hotel Guest Registration Act* (British Columbia).

- (d) prepare a notification letter that:
 - (i) describes the operation and the number of bedrooms that will be rented to overnight guests; and
 - (ii) includes information on how to contact the operator by phone;
 - (e) mail or deliver the notification letter to all residents and owners of residential dwellings (i) abutting or across the street from the premises, or (ii) within a 50 metre radius of the premises, whichever is greater;
 - (f) provide a copy of the notification letter and a list with the addresses of all persons that received the notification letter;
 - (g) provide a copy of the fire evacuation plan required by the **Business Regulation Bylaw**;
 - (h) provide floor plans, drawn to scale, of the entire floor area of each level of the residence, indicating the use of each room of the residence and clearly identifying the guest rooms to be used in the **bed & breakfast establishment**; and
 - (i) provide a property site plan showing:
 - (i) the location and dimension of the driveway identifying vehicle parking spaces for residences and guests for each guest room;
 - (ii) the location of the residence on the property with setbacks indicated from all property lines;
 - (iii) landscaping and open areas as required by the **Zoning Bylaw**;
 - (iv) signage size and placement as permitted by the **Zoning Bylaw**; and
 - (j) pay the required annual bed & breakfast business licence fee specified in the Consolidated Fee Bylaw No. 8636 for the Bed & Breakfast Use category of this bylaw.”.
2. **Business Licence Bylaw No. 7360**, as amended, is further amended at Part 3 by adding the following as a new Section 3.7A following the Section 3.7:

“**3.7A BED & BREAKFAST USE CATEGORY** means the use of premises or facilities as **Bed & Breakfast Establishments**, as permitted by this bylaw, the **Business Regulation Bylaw**, and the **Zoning Bylaw**.”.

3. **Business Licence Bylaw No. 7360**, as amended, is further amended at Part 5 by deleting Section 5.1 and replacing it with the following:

“5.1 Any **licencee**, operator, or any other **person** who:

- (a) violates or contravenes any provision of this bylaw or a **licence** issued hereunder, or who causes or allows any provision of this bylaw or a **licence** issued hereunder to be violated or contravened; or
- (b) fails to comply with any of the provisions of this bylaw or a **licence** issued hereunder; or
- (c) neglects or refrains from doing anything required under the provisions of this bylaw, or a **licence** issued hereunder, or the **Business Regulation Bylaw**; or
- (d) fails to maintain the standard of qualification required for the issuing of a **licence** under this bylaw; or
- (e) makes any false or misleading statement,

commits an offence and upon conviction shall be liable to a fine of not more than Ten Thousand Dollars (\$10,000.00), in addition to the costs of the prosecution, and where the offence is a continuing one, each day that the offence is continued shall constitute a separate offence, and may result in the suspension, cancellation or revocation of the **licence** in question.”.

4. **Business Licence Bylaw No. 7360**, as amended, is further amended at Part 5 by deleting Section 5.3 and replacing it with the following:

“5.3 Every **licencee** must comply with the requirements of this, or any other bylaw of the **City**, which governs or regulates the **business** for which such **licence** was granted, must comply with any requirements imposed by the **Medical Health Officer**, and must comply with all applicable statutes, regulations, rules, codes and orders of all federal or provincial authorities having jurisdiction of such **business**, and any **person** failing to comply with the requirements of this Part commits an offence and, upon conviction, is liable for the penalties specified.”.

5. **Business Licence Bylaw No. 7360**, as amended, is further amended at Section 7.1 by adding the following as the definition of “**family member**” in alphabetical order:

“**Family Member** means a family member as defined in the **City’s zoning bylaw**.”.

6. **Business Licence Bylaw No. 7360**, as amended, is further amended at Section 7.1 by adding the following as the definition of “**individual registered owner**” in alphabetical order:

“**Individual Registered Owner** means a registered owner as defined in the **City’s zoning bylaw.**”.

7. **Business Licence Bylaw No. 7360**, as amended, is further amended at Section 7.1 by adding the following as the definition of “**principal residence**” in alphabetical order:

“**Principal Residence** means a principal residence as defined in the **City’s zoning bylaw.**”.

8. This Bylaw is cited as “**Business Licence Bylaw No. 7360, Amendment Bylaw No. 9650.**”.

FIRST READING

MAR 27 2017

SECOND READING

MAR 27 2017



THIRD READING

MAR 27 2017

ADOPTED

MAYOR

CORPORATE OFFICER

CITY OF RICHMOND
APPROVED for content by originating Division

APPROVED for legality by Solicitor




**Municipal Ticket Information Authorization Bylaw No. 7321,
Amendment Bylaw No. 9651**

The Council of the City of Richmond enacts as follows:

1. **Municipal Ticket Information Authorization Bylaw No. 7321**, as amended, is further amended at Section 2.1 by deleting the definition of Bylaw Enforcement Officer and replacing it with the following:

**“BYLAW
ENFORCEMENT
OFFICER**

means an employee of the **City**, appointed to the job position or title of bylaw enforcement officer, or acting in another capacity, on behalf of the **City** for the purpose of the enforcement of one or more of the **City** bylaws.”.

2. **Municipal Ticket Information Authorization Bylaw No. 7321**, as amended, is further amended at Section 2.1 by deleting the definition of Licence Inspector and replacing it with the following:

**“LICENCE
INSPECTOR**

means an employee of the **City**, appointed to the job position or title of licence inspector, and includes **Bylaw Enforcement Officers** and the Chief Licence Inspector.”.

3. **Municipal Ticket Information Authorization Bylaw No. 7321**, as amended, is further amended at Schedule B 3 by deleting the following portion of Schedule B 3:

SCHEDULE B 3

BUSINESS REGULATION BYLAW NO. 7538

Column 1 Offence	Column 2 Section	Column 3 Fine
Failure to maintain Fire Evacuation Plan	22.1.1	\$250
No access to Guest Register	22.1.2	\$250
Food preparation in room used for guest accommodation	22.1.3	\$250
Failure to maintain Approved Accommodation Status	22.1.4	\$250

4. **Municipal Ticket Information Authorization Bylaw No. 7321**, as amended, is further amended at Schedule B 3 by adding the following to the end of Schedule B 3:

SCHEDULE B 3

BUSINESS REGULATION BYLAW NO. 7538

Column 1 Offence	Column 2 Section	Column 3 Fine
Rentals for less than 30 days without licence	22.1	\$1000
Premises not operator's principal residence	22.2.1	\$1000
Operator not registered owner of premises or family member	22.2.2	\$1000
No access to Guest Register	22.2.3	\$1000
Failure to maintain Fire Evacuation Plan	22.2.4	\$1000
Food preparation in room used for guest accommodation	22.2.5	\$250

5. **Municipal Ticket Information Authorization Bylaw No. 7321**, as amended, is further amended at Schedule B 17 by deleting Schedule B 17 and replacing it with the following:

SCHEDULE B 17

ZONING BYLAW NO. 8500

Column 1 Offence	Column 2 Section	Column 3 Fine
Bed and Breakfast – stay exceeding 30 days	1.4.2	\$250
Parking or storing large commercial vehicle shipping container	3.5.3	\$100
Parking or storing large commercial vehicle	3.5.4	\$100
Bed and Breakfast - not operator's principal residence	5.5.3	\$1000
Bed and Breakfast - operator not owner or family member	5.5.3A	\$1000
Bed and Breakfast - excess guest rooms	5.5.5	\$1000
Bed and Breakfast - excess guest capacity	5.5.5A	\$1000
Bed and Breakfast - excess guest room capacity	5.5.6	\$1000
Bed and Breakfast - excess signage	5.5.8	\$250
Dwellings – rentals for less than 30 days	5.20.1	\$1000
Failure to maintain required parking spaces	7.7.1	\$250

6. This Bylaw is cited as **"Municipal Ticket Information Authorization Bylaw No. 7321, Amendment Bylaw No. 9651"**.

FIRST READING

MAR 27 2017

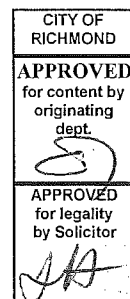
SECOND READING

MAR 27 2017

THIRD READING

MAR 27 2017

ADOPTED



MAYOR

CORPORATE OFFICER



**CONSOLIDATED FEES BYLAW NO. 8636,
AMENDMENT BYLAW NO. 9652**

The Council of the City of Richmond enacts as follows:

1. The **Consolidated Fees Bylaw No. 8636**, as amended, is further amended by adding the Business Licence Bylaw No. 7360, Bed & Breakfast Use Table set out in Schedule A to this Bylaw following the Business Licence Bylaw No. 7360, Residential Use Table forming part of SCHEDULE – BUSINESS LICENCE to Consolidated Fees Bylaw No. 8636.
2. This Bylaw is cited as “**Consolidated Fees Bylaw No. 8636, Amendment Bylaw No. 9652**”.

FIRST READING

SECOND READING

THIRD READING

ADOPTED

MAR 27 2017

MAR 27 2017

MAR 27 2017

CITY OF RICHMOND
APPROVED for content by originating dept.

APPROVED for legality by Solicitor


MAYOR

CORPORATE OFFICER

**Business Licence Bylaw No. 7360
Bed & Breakfast Use**

Description	Fee
Bed & Breakfast Business Licence	\$162.00



Business Licence Bylaw No. 7360, Amendment Bylaw No. 9696

The Council of the City of Richmond enacts as follows:

1. Business Licence Bylaw No. 7360, as amended, is further amended by deleting subsection 2.1.27.3 (a) and substituting the following:

(a) For use as Class A taxicabs is 114; and
2. This Bylaw is cited as **"Business Licence Bylaw No. 7360, Amendment Bylaw No. 9696"**.

FIRST READING

APR 10 2017

SECOND READING

APR 10 2017

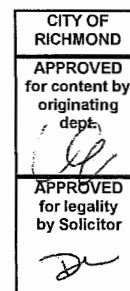
THIRD READING

APR 10 2017

LEGAL REQUIREMENTS SATISFIED

APR 21 2017 APR 28 2017

ADOPTED



MAYOR

CORPORATE OFFICER



**Richmond Zoning Bylaw 8500
Amendment Bylaw 9558 (RZ 15-710852)
3471 Moncton Street, 12060 and 12040 3rd Avenue, 3560, 3580 and
3600 Chatham Street**

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. Richmond Zoning Bylaw 8500 is amended by:
 - a. Inserting the following table into the existing table contained in Section 5.15.1:

Zone	Sum Per Buildable Square Foot of Permitted Principal Building
ZMU33	\$4.00

- b. Insert the following into Section 20 – Site Specific Mixed Use Zones, in numerical order:

“20.33 **Commercial Mixed Use (ZMU33) – Steveston Village**

20.33.1 **Purpose**

The **zone** provides for a combination of commercial, industrial and residential **uses**.

20.33.2 **Permitted Uses**

- **animal grooming**
- **broadcasting studio**
- **child care**
- **education**
- **education, commercial**
- **government service**
- **health service, minor**
- **housing, apartment**
- **industrial, general**
- **liquor primary establishment**

- manufacturing, custom indoor
- microbrewery, winery and distillery
- office
- parking, non-accessory
- recreation, indoor
- recycling depot
- restaurant
- retail, convenience
- retail, general
- retail, second hand
- service, business support
- service, financial
- service, household repair
- service, personal
- studio
- veterinary service

20.33.3 Secondary Uses

- boarding and lodging
- community care facility, minor
- home business

20.33.4 Permitted Density

1. The maximum **floor area ratio** is 1.0.
2. Notwithstanding Section 20.33.4.1, the reference to “1.0” **floor area ratio** is increased to a higher **density** of “1.2” **floor area ratio** if the owner pays into the **affordable housing reserve** the sum specified in Section 5.15.1 of this bylaw, at the time **Council** adopts a zoning amendment bylaw to include the **site** in the ZMU33 zone.
3. Notwithstanding Section 20.33.4.2, the reference to “1.2” **floor area ratio** is increased to a higher **density** of “1.52” **floor area ratio** if the owner pays into the **City’s** Heritage Trust Account, Steveston Village Heritage Conservation Grant Program the sum of \$739,842 (calculated at \$47/sq. ft. multiplied by the “0.32” **floor area ratio density** increase from “1.2” to “1.52” **floor area ratio** multiplied by the **lot** area less the sum paid into the **affordable housing reserve** in accordance with Section 20.33.4.2.)
4. There is no maximum **floor area ratio** for non-accessory parking as a **principal use**.

5. For the purposes of this **zone** only, a maximum floor area of 8 m² for a washroom facility that is provided in the **development** and secured through a legal agreement with the **City** is not included in the calculation of maximum **floor area ratio**.

20.33.5 Permitted Lot Coverage

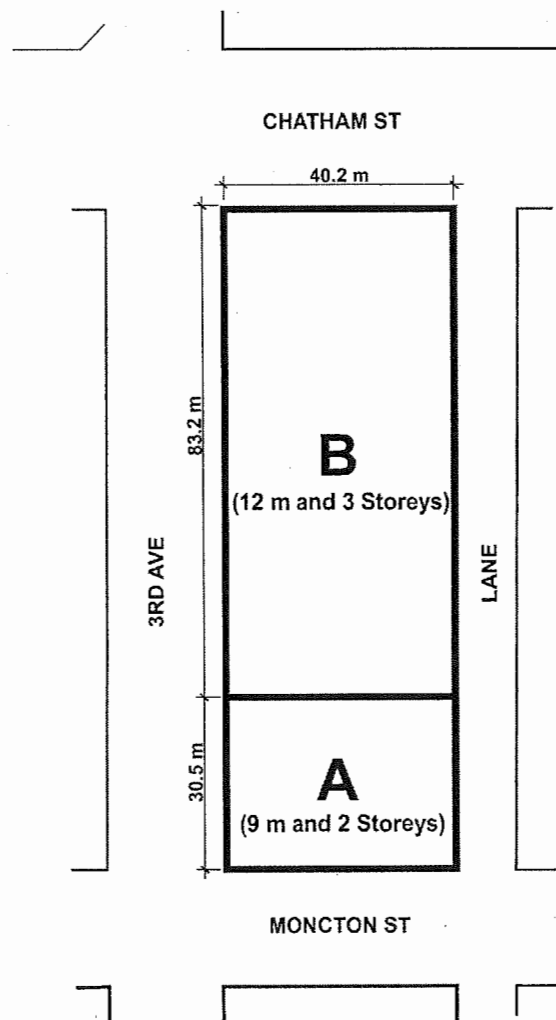
1. The maximum **lot coverage** is 100% for **buildings**.

20.33.6 Yards & Setbacks

1. There is no minimum **front yard**, **rear yard** or **side yard setback**.

20.33.7 Permitted Heights

1. The maximum **building heights** for the **site** are identified in Diagram 1 in Section 20.33.7.2.
2. Diagram 1



20.33.8 Subdivision Provisions/Minimum Lot Size

1. There are no minimum **lot width, lot depth** or **lot area** requirements.

20.33.9 Landscaping & Screening

1. **Landscaping** and **screening** shall be provided according to the provision of Section 6.0.

20.33.10 On-Site Parking

1. **On-site vehicle** and bicycle parking and loading shall be provided according to the standards set-out in Section 7.0 except that:
 - a) Required **parking spaces** for residential **use** visitors and non-residential **uses** may be shared.
 - b) **On-site** vehicle parking shall be provided at the following rate:
 - i) Non-residential **uses** – **on-site** parking requirements contained in this Section 7 of this Bylaw are reduced by 33% with the exception that a rate of 2 spaces per 100 m² of **gross leasable floor area** be applied to **retail convenience, retail general, retail second hand, service business support, service financial** and **service personal**.

20.33.11 Other Regulations

1. For **apartment housing**, no portion of the first **storey** of a **building** within 9.0 m of the **lot line** abutting a **road** shall be used for residential purposes.
2. For **apartment housing**, an entrance to the residential **use** or parking area above or behind the commercial space is permitted if the entrance does not exceed 7.5 m in width.
3. Signage must comply with the City of Richmond's Sign Bylaw No. 5560, as it applies to **development** in the Steveston Commercial (CS3) **zone**.
4. In addition to the regulations listed above, the General Development Regulations in Section 4.0 and the Specific Use Regulations in Section 5.0 apply.”

2. The Zoning Map of the City of Richmond, which accompanies and forms part of Richmond Zoning Bylaw 8500, is amended by repealing the existing zoning designation of the following area and by designating it **"COMMERCIAL MIXED USE (ZMU33) – STEVESTON VILLAGE"**.

P.I.D. 004-257-944

Lot 'A' Block 7 Section 10 Block 3 North Range 7 West New Westminster District Plan 249

P.I.D 006-713-254

Lot 14 Block 7 Section 10 Block 3 North Range 7 West New Westminster District Plan 249

P.I.D 003-427-323

Lot 13 Block 7 Section 10 Block 3 North Range 7 West New Westminster District Plan 249

P.I.D 004-062-841

Lot 12 Block 7 Section 10 Block 3 North Range 7 West New Westminster District Plan 249

P.I.D 003-969-720

Lot 11 Block 7 Section 10 Block 3 North Range 7 West New Westminster District Plan 249

P.I.D 004-138-651

Lot 10 Block 7 Section 10 Block 3 North Range 7 West New Westminster District Plan 249

3. This Bylaw may be cited as **"Richmond Zoning Bylaw 8500, Amendment Bylaw 9558"**.

FIRST READING

A PUBLIC HEARING WAS HELD ON

SECOND READING

THIRD READING

OTHER CONDITIONS SATISFIED

ADOPTED

MAY 24 2016

JUN 20 2016

JUN 20 2016

JUN 20 2016

MAY 17 2017

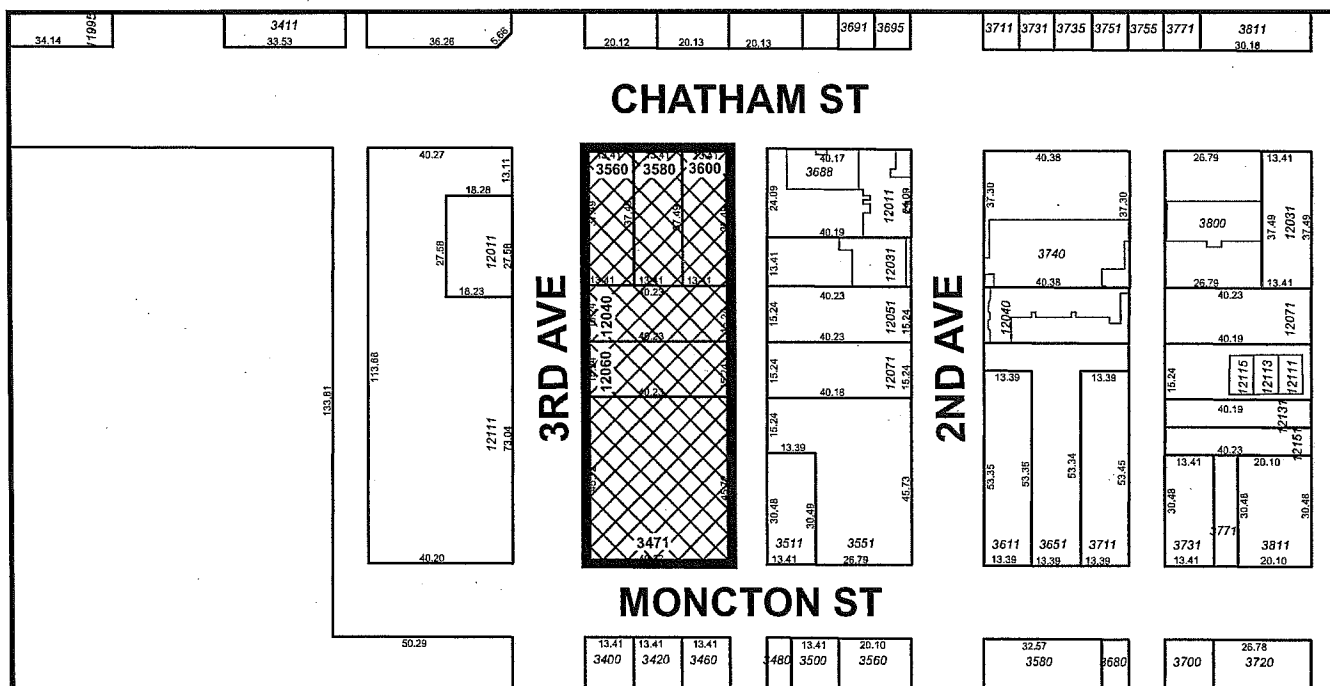
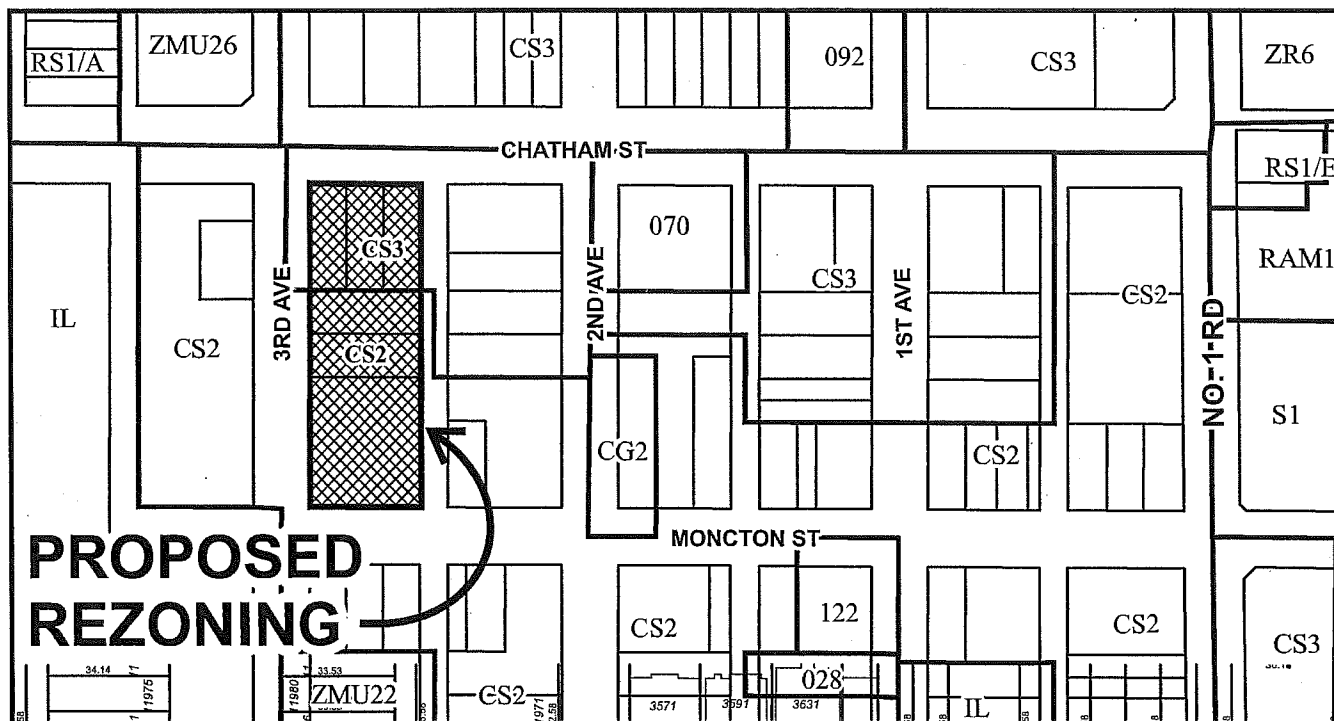


MAYOR

CORPORATE OFFICER



City of Richmond



RZ 15-710852

Original Date: 10/08/15

Revision Date:

Note: Dimensions are in METRES



**Richmond Zoning Bylaw 8500
Amendment Bylaw 9624 (RZ 16-735119)
9320 Dixon Avenue**

The Council of the City of Richmond, in open meeting assembled, enacts as follows:

1. The Zoning Map of the City of Richmond, which accompanies and forms part of Richmond Zoning Bylaw 8500, is amended by repealing the existing zoning designation of the following area and by designating it **"SINGLE DETACHED (RS2/K)"**.

P.I.D. 003-890-643

Parcel "644" Section 22 Block 4 North Range 6 West New Westminster District Reference Plan 66597

2. This Bylaw may be cited as **"Richmond Zoning Bylaw 8500, Amendment Bylaw 9624"**.

FIRST READING

FEB 14 2017

A PUBLIC HEARING WAS HELD ON

MAR 20 2017

SECOND READING

MAR 20 2017

THIRD READING

MAR 20 2017

OTHER CONDITIONS SATISFIED

MAY 09 2017

ADOPTED

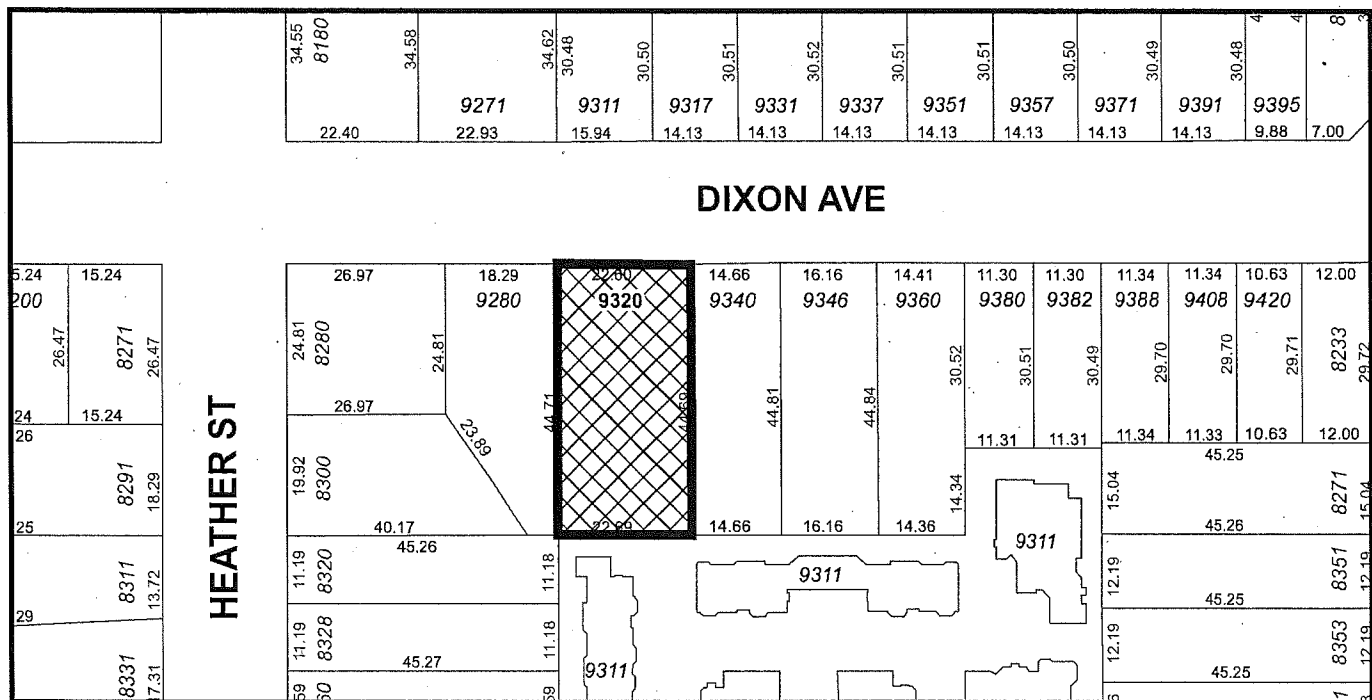
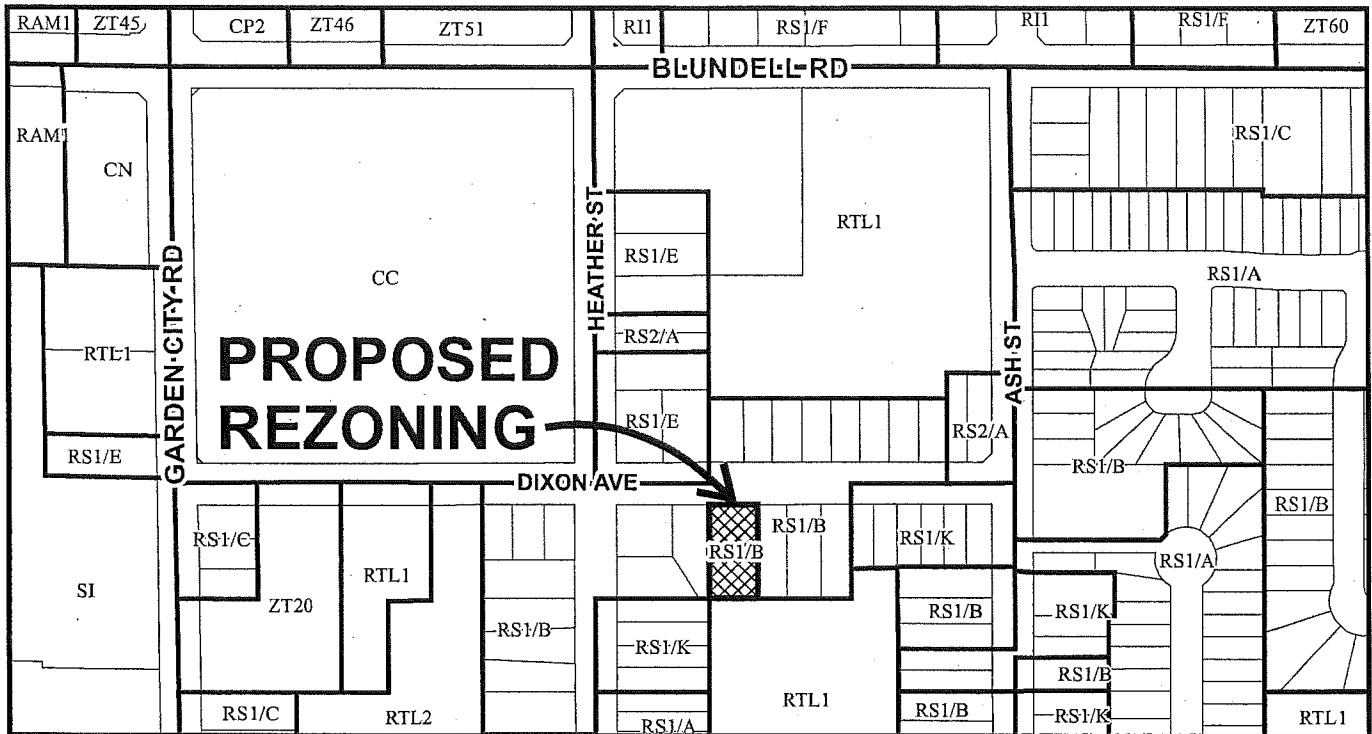
MAYOR

CORPORATE OFFICER





City of Richmond



RZ 16-735119

Original Date: 07/11/16

Revision Date:

Note: Dimensions are in METRES

CNCL - 541



**Development Permit Panel
Wednesday, May 10, 2017**

Time: 3:30 p.m.
Place: Council Chambers
Richmond City Hall
Present: Joe Erceg, Chair
Robert Gonzalez, General Manager, Engineering and Public Works
Peter Russell, Senior Manager, Sustainability and District Energy

The meeting was called to order at 3:30p.m.

Minutes

It was moved and seconded

That the minutes of the meeting of the Development Permit Panel held on April 12, 2017, be adopted.

CARRIED

1. Development Permit 16-753377

(Xr: HA 17-763809) (REDMS No. 5371150)

APPLICANT: Platform Properties (Steveston) Ltd. and Platform Properties (Steveston Residential) Ltd.

PROPERTY LOCATION: 3471 Moncton Street, 12040 and 12060 3rd Avenue and 3560, 3580 and 3600 Chatham Street

INTENT OF PERMIT:

1. Permit the construction of a mixed use development ranging from 1 to 3 storeys containing commercial space at grade and approximately 32 residential units at 3471 Moncton Street, 12040 and 12060 3rd Avenue and 3560, 3580 and 3600 Chatham Street on a site zoned "Commercial Mixed Use (ZMU33) – Steveston Village";
2. Vary the provisions of Richmond Zoning Bylaw 8500 to:
 - (a) Increase the maximum permitted building height up to 1.5 m to allow portions

1.

Development Permit Panel

Wednesday, May 10, 2017

of the building's roof and rooftop deck structures to project beyond the maximum permitted building height of 12 m and 9 m in the "Commercial Mixed Use (ZMU33) – Steveston Village" zone; and

3. Issue a Heritage Alteration Permit (HA 17-763809) at 3471 Moncton Street, 12040 and 12060 3rd Avenue and 3560, 3580 and 3600 Chatham Street in accordance with the Development Permit.

Applicant's Comments

Patrick Cotter, ZGF Cotter Architects, provided background information on the proposed development and highlighted the following:

- the proposed form and character for the mixed used development is the result of the applicant's consultations with the community and Richmond Heritage Commission and responds to the Steveston Area Plan Development Permit guidelines and requirements;
- the one-storey massing on the south portion of the site facing Moncton Street transitions to three-storeys to the north facing Chatham Street;
- larger scale retail is proposed to be located at the north portion while three smaller scale retail units are proposed at the south portion in consideration of the site context;
- building façade treatments were developed in coordination with historic lot lines;
- the proposed central boardwalk on the second level, reminiscent of the boardwalk sidewalks from historic Steveston streets, provides an open air access to residential units; and
- proposed building materials were considered for durability and sustainability.

In addition, Mr. Cotter noted that proposed upgrades for the site's public road frontages include planting of street trees, incorporating grass and treed boulevards, and introducing sidewalk paving patterns.

Brian McCarter, ZGF Architects, briefed the Panel on the main landscaping features for the proposed development, noting that (i) a landscaped open courtyard area is proposed on the podium level, (ii) low to medium plants and shrubs in raised planters along the communal walkways provide separation to semi-private patios of residential units, (iii) a central gathering space with outdoor amenities is proposed to be located at the southern portion of the podium level to receive maximum sunlight exposure, (iv) decorative vines will be introduced along the vertical wall facing the central gathering space, (v) plank paving is proposed for the boardwalk, and (vi) rooftop decks of residential units provide opportunities for residents to personalize programming of their private outdoor spaces.

Development Permit Panel

Wednesday, May 10, 2017

Panel Discussion

In response to queries from the Panel, Mr. Cotter advised that (i) elevator access is proposed from the parking area to the second and third level apartments and to the front entries of the two-level units, (ii) commercial loading and refuse area is accessed from the rear lane, (iii) the applicant is looking at the potential for heat recovery at the larger retail space to enhance sustainability, (iv) 120 volt electric vehicle charging is proposed at ground level parking, (v) the low percentage of openings in the proposed mixed use building facilitates heat retention, (vi) the proposed height variances noted at rezoning are consistent with the requested variances at development permit stage, (vii) individual unit rooftop deck stair access structures are not full height and set back from the street to minimize visual impacts from surrounding areas, and (viii) proposed materials for screening ground level parking at the building's west façade include decorative metal security screening and exposed wood beams and posts.

Staff Comments

Wayne Craig, Director, Development, noted that (i) the project was reviewed and supported by the Richmond Heritage Commission and Advisory Design Panel, (ii) the proposed development includes four basic universal housing units and an additional eight residential units with convertibility features, (iii) a washroom facility will be incorporated into the subject development for Coast Mountain Bus Company and TransLink employees in accordance with rezoning considerations, and (iv) there is a Servicing Agreement for upgrades along the site's public road frontages, lane upgrades, off-site pedestrian pathway upgrades and City services.

In response to a query from the Panel, Mr. Craig confirmed that the proposed height variances identified at rezoning are consistent with variances currently proposed in the subject development permit application.

Gallery Comments

None.

Correspondence

None.

Panel Discussion

The Panel expressed support for the project, noting that (i) the project is well designed and addresses all the street frontages, (ii) the private outdoor spaces and shared outdoor amenity areas are well designed, and (iii) the stepping down of the building massing in response to Steveston Area Plan Development Permit guidelines is appreciated.

Development Permit Panel
Wednesday, May 10, 2017

Panel Decision

It was moved and seconded

1. *That a Development Permit be issued which would permit the construction of a mixed use development ranging from 1 to 3 storeys containing commercial space at grade and approximately 32 residential units at 3471 Moncton Street, 12040 and 12060 3rd Avenue and 3560, 3580 and 3600 Chatham Street on a site zoned "Commercial Mixed Use (ZMU33) – Steveston Village";*
2. *Vary the provisions of Richmond Zoning Bylaw 8500 to:*
 - (a) *Increase the maximum permitted building height up to 1.5 m to allow portions of the building's roof and rooftop deck structures to project beyond the maximum permitted building height of 12 m and 9 m in the "Commercial Mixed Use (ZMU33) – Steveston Village" zone; and*
3. *That a Heritage Alteration Permit (HA 17-763809) be issued at 3471 Moncton Street, 12040 and 12060 3rd Avenue and 3560, 3580 and 3600 Chatham Street in accordance with the Development Permit.*

CARRIED

2. **Date of Next Meeting: May 24, 2017**

3. **Adjournment**

It was moved and seconded

That the meeting be adjourned at 4:00 p.m.

CARRIED

Certified a true and correct copy of the Minutes of the meeting of the Development Permit Panel of the Council of the City of Richmond held on Wednesday, May 10, 2017.

Joe Erceg
Chair

Rustico Agawin
Auxiliary Committee Clerk



City of Richmond

Report to Council

To: Richmond City Council

Date: May 16, 2017

From: Joe Erceg
Chair, Development Permit Panel

File: 01-0100-20-DPER1-
01/2017-Vol 01

Re: Development Permit Panel Meeting Held on May 10, 2017

Staff Recommendation

1. That the recommendation of the Panel to authorize the issuance of:
 - a) A Development Permit (DP 16-753377) and Heritage Alteration Permit (HA 17-763809 for the properties at 3471 Moncton Street, 12040 & 12060 3rd Avenue and 3560, 3580 & 3600 Chatham Street;

be endorsed, and the Permits so issued.

Joe Erceg
Chair, Development Permit Panel

SB:blg

Panel Report

The Development Permit Panel considered the following items at its meeting held on May 10, 2017.

DP 16-753377 AND HA 17-763809 – PLATFORM PROPERTIES (STEVESTON) LTD. AND PLATFORM PROPERTIES (STEVESTON RESIDENTIAL) LTD.
– 3471 MONCTON STREET, 12040 & 12060 3RD AVENUE AND 3560, 3580 AND 3600 CHATHAM STREET
(May 10, 2017)

The Panel considered a Development Permit application and Heritage Alteration Permit application to permit the construction of a mixed use development ranging from one to three storeys containing commercial space at grade and approximately 32 residential units on a site zoned “Commercial Mixed Use (ZMU33) – Steveston Village”. A variance is included in the proposal for increased building height for portions of the building’s roof and rooftop deck structures.

Architect, Patrick Cotter, and Landscape Architect, Brian McCarter, of ZGF Cotter Architects, provided a brief presentation, noting that:

- The proposed form and character for the mixed used development is the result of the applicant’s consultations with the community and Richmond Heritage Commission.
- The single-storey massing with smaller scale retail units on the south portion of the site facing Moncton Street transitions to three-storey massing with larger scale retail space to the north facing Chatham Street.
- Building façade treatments were developed in coordination with historic lot lines.
- The proposed central boardwalk on the second level, reminiscent of the boardwalk sidewalks from historic Steveston streets, provides an open air access to residential units.
- Proposed building materials were considered for durability and sustainability.
- Proposed upgrades for the site’s public road frontages include planting of street trees, incorporating grass and treed boulevards, and introducing sidewalk paving patterns.
- At the podium level, low to medium plants and shrubs in raised planters along the communal walkways provide separation to private patios of residential units.
- A central gathering space with outdoor amenities and vertical vine planting is proposed to be located at the southern portion of the podium level to receive maximum sunlight exposure.
- Residential units include rooftop decks for private outdoor space.

In response to Panel queries, Mr. Cotter advised that:

- The retail entrances at grade and residential entrances on the second and third levels can be accessed from ground level parking.
- The applicant is investigating potential for heat recovery from the larger retail space.

- Electric vehicle charging is proposed at ground level parking.
- The low percentage of openings in the proposed building facilitates heat retention.
- The proposed height variances are consistent with those identified at the rezoning stage.
- Individual unit rooftop deck access structures are not full height and are set back from the street to minimize visual impacts from surrounding areas.
- Ground level parking is screened from 3rd Avenue with decorative metal panels designed to reflect Steveston's maritime history.

Staff noted that: (i) the project was reviewed and supported by the Richmond Heritage Commission and Advisory Design Panel; (ii) the proposed development includes four basic universal housing units and an additional eight residential units with convertibility features; (iii) a washroom facility is incorporated into the subject development for Coast Mountain Bus Company employees; and (iv) there is a Servicing Agreement for upgrades along the site's public road frontages, lane upgrades, off-site pedestrian pathway upgrades and City services.

In response to a Panel query, staff confirmed that the proposed height variances are consistent with those identified at rezoning.

No correspondence was submitted to the Development Permit Panel regarding the applications.

The Panel expressed support for the project, noting that: (i) the project is well designed and addresses all the street frontages; (ii) the private outdoor spaces and shared outdoor amenity areas are well designed; and (iii) the stepping down of the building massing in response to Steveston Area Plan Development Permit guidelines is appreciated.

The Panel recommends that the Permits be issued.