City of Richmond

Agenda

Public Works & Transportation Committee

Anderson Room, City Hall
6911 No. 3 Road

Wednesday, July 18, 2012
4:00 p.m.

Pg. # ITEM

MINUTES

PWT-7 ***Motion to adopt the minutes of the meeting of the Public Works & Transportation Committee held on Wednesday, June 20, 2012.***

NEXT COMMITTEE MEETING DATE

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

ENGINEERING AND PUBLIC WORKS DEPARTMENT

1. **REACHING CARBON NEUTRALITY – CORPORATE GREENHOUSE GAS EMISSIONS INVENTORY TO INCLUDE DIRECT EMISSIONS**
(File Ref. No.) (REDMS No. 3553494 v.6)

PWT-11 See Page **PWT-11** for full report

Designated Speaker: Margot Daykin

STAFF RECOMMENDATION

(1) That the City continues its current practice to only include emissions from direct activities in its corporate greenhouse gas emission inventory at this time; and

Pg. # ITEM

(2) That a letter be sent to the Joint Provincial–UBCM Green Communities Committee, requesting that amendments be made to the "Guidance on Including Contracted Emissions in Local Government Corporate Inventories" to resolve inequities, ensure that no new costs are borne by local governments without adequate funding and that action is being directed towards appropriate priorities.

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2. **2011 ANNUAL WATER QUALITY REPORT**
(File Ref. No. 10-6650-01) (REDMS No. 3569613)

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

Designated Speaker: Doug Anderson

STAFF RECOMMENDATION

That the 2011 Annual Water Quality Report dated July 10, 2012 be received for information.

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3. **ANNUAL FLOOD PROTECTION REPORT 2012**
(File Ref. No. 10-6060-04-01) (REDMS No. 3529445)

PWT-111 See Page **PWT-111** for full report

Designated Speaker: Lloyd Bie

STAFF RECOMMENDATION

That the staff report titled Annual Flood Protection Report 2012 (dated June 20, 2012, from the Director, Engineering) be received for information.

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4. **DIKE MASTER PLAN – PHASE 1**
(File Ref. No. 10-6060-01) (REDMS No. 3553300 v.3)

PWT-125 See Page **PWT-125** for full report

Designated Speaker: Andy Bell

STAFF RECOMMENDATION

That the public and key external stakeholders be consulted to provide feedback on the Steveston area and the West Dike flood protection concepts identified in the staff report titled Dike Master Plan – Phase 1 (dated June 27, 2012 from the Director, Engineering).

5. **CITY INFRASTRUCTURE PROTOCOL AGREEMENT AND CANADA LINE RICHMOND ACCESS AGREEMENT AMENDMENT NO. 3**
(File Ref. No.) (REDMS No. 3417174 v.5)

PWT-151 See Page **PWT-151** for full report

Designated Speaker: Tom Stewart

STAFF RECOMMENDATION

(1) That the City enter into the following attached agreements:

(a) the City Infrastructure Protocol Agreement dated for reference May 1, 2011 between the City of Richmond, South Coast British Columbia Transportation Authority and Intransit BC Limited Partnership; and

(b) the Canada Line Richmond Access Agreement Amendment No. 3 made as of August 12, 2009 between the City of Richmond and the South Coast British Columbia Transportation Authority; and

(2) That the Mayor and City Clerk be authorized to execute the above-mentioned agreements on the City's behalf.

PLANNING AND DEVELOPMENT DEPARTMENT

6. **PROVINCIAL 2012-2013 BIKEBC PROGRAM – SUBMISSIONS FOR COST-SHARING**
(File Ref. No. 01-0150-20-THIG1) (REDMS No. 3559232 v.4)

PWT-175 See Page **PWT-175** for full report

Designated Speaker: Joan Caravan

STAFF RECOMMENDATION

(1) That the submission for cost-sharing to the Province's 2012-2013 BikeBC Program of the following two projects:

(a) the Railway Avenue Corridor Greenway; and

(b) Phase 1 of the Parkside Neighbourhood Bike Route;

as described in the staff report titled Provincial 2012-2013 BikeBC Program – Submissions For Cost-Sharing (dated June 20, 2012 from the Director, Transportation and the Senior Manager, Parks) be endorsed; and

(2) That should the above applications be successful, the Chief Administrative Officer and the General Manager, Planning and Development, be authorized to execute the funding agreements as outlined in the staff report dated June 20, 2012.

7. **DEVELOPMENT OF NATIONAL RAILWAY-ROADWAY GRADE CROSSING STANDARDS AND REGULATIONS**
(File Ref. No. 01-0140-20-TCAN1) (REDMS No. 3559698)

PWT-183

See Page **PWT-183** for full report

Designated Speaker: Joan Caravan

STAFF RECOMMENDATION

(1) That a letter be sent to the Minister of Transport requesting that:

(a) the proposed Railway-Roadway Grade Crossings Standards be revised to be engineering guidelines, to allow for a risk-based approach that provides flexibility for owners of railway crossings, including road authorities, to address any identified safety concerns in light of limited financial resources and technical constraints;

(b) a dedicated program be established to provide adequate funding support to owners of railway crossings, including municipalities, for any upgrades required to meet the new guidelines; and

(2) That a copy of the above letter be sent to all Richmond Members of Parliament and Lower Mainland municipalities affected by the proposed Regulations for support of the above request.

Pg. # ITEM

8. **MANAGER'S REPORT**

ADJOURNMENT

City of Richmond

Minutes

Public Works & Transportation Committee

Date:	Wednesday, June 20, 2012
Place:	Anderson Room Richmond City Hall
Present:	Councillor Linda Barnes, Chair Councillor Chak Au, Vice-Chair Councillor Derek Dang Councillor Harold Steves
Absent:	Councillor Linda McPhail
Call to Order:	The Chair called the meeting to order at 4:02 p.m.

MINUTES

It was moved and seconded
That the minutes of the meeting of the Public Works & Transportation Committee held on Wednesday, May 24, 2012, be adopted as circulated.

CARRIED

PLANNING AND DEVELOPMENT DEPARTMENT

1. **PROPOSED ROAD SECTIONS IN RICHMOND TO BE ADDED TO TRANSLINK'S MAJOR ROAD NETWORK**
(File Ref. No. 10-6360-12-01) (REDMS No. 3516106)

Victor Wei, Director, Transportation, noted that the figures presented in Table 2 *(Impact of Proposed Changes to MRN and BICCS Funding)*, of the report are subject to change as a result of TransLink's current funding situation.

It was moved and seconded
That the map of road sections proposed to be added to TransLink's Major Road Network, as shown in Attachment 1 and described in Table 3 of the staff report dated May 24, 2012 from the Director, Transportation, be endorsed.

CARRIED

2. **PROPOSED CHANGES TO TRANSLINK'S TAXISAVER PROGRAM**
(File Ref. No. 01-0154-04/2012-Vol 01) (REDMS No. 3550714)

Victor Wei, Director, Transportation, advised that TransLink is planning on conducting a public consultation over the summer of 2012, and that the earliest a report on the matter may be anticipated is the fall of 2012.

Frances Clark, Richmond Centre for Disability (RCD), expressed concerns about the process undertaken by TransLink in relation to the proposed changes to the TaxiSaver Program. Ms. Clark stated that the decision about the TaxiSaver Program was made at an in-camera TransLink meeting, and was then placed on an open agenda without warning. She expressed her belief that TransLink should be investigating methods for improving the current program rather than eliminating it, and made the following comments about the services currently provided by HandiDart: (i) users must book with HandiDart many days in advance, and even then, there is no guarantee of service; (ii) users who receive service from HandiDart may not be guaranteed a ride back home; (iii) the TaxiSaver program assists those with lower incomes and medical issues; (iv) a ride from HandiDart has an associated cost of approximately $30.00 and a ride using the TaxiSaver Program costs approximately $8.00.

Aileen McCormick, 12931 Gilbert Road, advised that TransLink has contracted out the HandiDart services to an American company. She further advised that the HandiDart contract will expire in 2015, and expressed her belief that the public should have access to the contract details. Ms. McCormick also noted that Peter Hill, Manager Access Transit, TransLink, will be making a presentation in October, 2012, and that she would send members of City Council with an invitation to attend the presentation.

Louise Young, Coordinator, Richmond Seniors Network, advised the Committee of a meeting taking place at Richmond Addiction Services (RAS), at which a discussion related to transportation for seniors, including the TaxiSaver Program will take place. Ms. Young stated that the TaxiSaver Program is only one part of the system, and expressed concern about how the entire system currently places vulnerable seniors at risk. She expressed her opinion that the entire system needs to be reviewed to meet the needs of the increasing population of seniors.

A discussion then ensued among staff and members of Committee about:

- the need for a study by TransLink on how to make the system more efficient;
- the long waits HandiDart users experience as other users are dropped off. It was noted that there are usually fiver users on a trip, and some may have to wait for an hour or longer before reaching their destination;
- how the TaxiSaver Program provides flexibility, and that most users prefer to use the TaxiSaver Program instead of HandiDart; and
- the need for enhancements to the TaxiSaver Program to reduce the amount of abuse and fraud.

It was moved and seconded
That TransLink be requested to:

(1) maintain the TaxiSaver Program;

(2) conduct full consultation, particularly with the Richmond Seniors Advisory Committee and the Richmond Centre for Disability; and

(3) investigate enhancements to the system during the consultation period that meet the needs of the users.

CARRIED

A Richmond Resident, spoke about the benefits of the TaxiSaver Program, and the concerns related to HandiDart. The delegation stated that since HandiDart does not allow users to bring their carts on board, those who need transportation in order to go grocery shopping are unable to use HandiDart. The delegation also expressed her concerns about the financial burden of transportation for seniors with a limited income, and stated that people with disabilities such as blindness are eligible for free bus passes regardless of their income level.

3. MANAGER'S REPORT

Andy Bell, Drainage and Roads Project Engineer, provided an update on the Fraser River Freshnet as per his memo, titled Fraser River Freshnet Udate – June 19, 2012 (on file City Clerk's Office).

Victor Wei, Director, Transportation, provided an update on the traffic lights at No. 1 Road and Chatham, and stated that the design would be completed over the summer of 2012, and implementation will follow in the fall. Mr. Wei was requested by the Chair to provide an update regarding the traffic lights to the Army Navy Air Force (ANAF).

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 Public Works & Transportation Committee of the Council of the City of Richmond held on Wednesday, June 20, 2012.

Councillor Linda Barnes
Chair

Shanan Dhaliwal
Executive Assistant
City Clerk's Office

City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	June 26, 2012
From:	Cecilia Achiam, MCIP, BCSLA Interim Director, Sustainability and District Energy; Senior Program Manager, CPMG, CAO's Office	**File:**	01-0370-01/2011-Vol01
Re:	**Reaching Carbon Neutrality – Corporate Greenhouse Gas Emissions Inventory to Include Direct Emissions**		

Staff Recommendation

1. That the City continues its current practice to only include emissions from direct activities in its corporate greenhouse gas emission inventory at this time.

2. That a letter be sent to the Joint Provincial–UBCM Green Communities Committee, requesting that amendments be made to the "*Guidance on Including Contracted Emissions in Local Government Corporate Inventories*" to resolve inequities, ensure that no new costs are borne by local governments without adequate funding and that action is being directed towards appropriate priorities.

for

Cecilia Achiam, MCIP, BCSLA
Interim Director, Sustainability and District Energy
Senior Program Manager, CPMG, CAO's Office
(604-276-4122)

Atts: 2

REPORT CONCURRENCE			
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**	
Finance	☑		
Fleet	☑		
Engineering	☑		
Public Works	☑		
REVIEWED BY SMT SUBCOMMITTEE	**INITIALS:**	**REVIEWED BY CAO**	**INITIALS:**

Staff Report

Origin

The City of Richmond has committed to becoming carbon neutral in its operations. The purpose of this report is to provide an update on the City's carbon neutral agenda and recommend a response to a recent proposal by the Province to include emissions from contracted services in the City's corporate greenhouse gas emissions inventory. This report recommends that the City continue to include emissions from direct services only at this time.

This report supports the Council Term Goal pertaining to sustainability:

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

Background

The City's Approach to Carbon Neutrality

In broad terms, carbon neutrality involves two main actions: reducing greenhouse gas emissions originating from operations and making investments to "offset" or compensate for unavoidable emissions. Compensatory measures are made in areas external to an organization's core service activities. Investments that reduce greenhouse gas emissions within a core service area are reductions and decrease the amount of compensation required.

The City's target to achieve carbon neutrality originated from the City's decision to sign the BC Climate Action Charter, a voluntary agreement among the Province, UBCM and local governments. The Charter commits local government to becoming carbon neutral in civic operations by 2012; measuring and reporting on their community greenhouse gas emissions profile; and, creating complete, compact and more energy efficient communities.

The City's carbon neutral commitment is 1 of 5 climate change response targets adopted by Richmond Council as part of the City's Sustainability Framework (**Attachment 1**). Formally embedding carbon neutrality as one target within a broader sustainability agenda means that the City of Richmond is able to advance carbon neutrality within a complete and balanced approach to sustainability[1].

In 2011, Richmond Council adopted a Carbon Responsible Strategy in 2011 to guide City action in implementing carbon neutrality (**Attachment 2**). This Strategy aims to ensure that:

- Public funds are used appropriately and that local tax dollars are invested in the Richmond community (i.e., enables carbon offsets to be invested locally);
- Carbon neutrality is fiscally sustainable for local governments (e.g., focuses on high value action, minimizes administrative costs, enables municipalities to reduce their own greenhouse gas emissions and costs over time, recognizes and values local government policy and community capacity action);
- An appropriate level of investment is directed to carbon neutrality in proportion to investment needs in other areas; and,

[1] A key factor of consideration is ensuring that the City does not invest in carbon neutrality, which focuses on about 1% of overall community-based emissions, at the expense of broader action that is of higher priority and yield greater results.

- An appropriate level of investment is directed at both creating less harm such as reducing greenhouse gas emissions and creating healthier conditions such as increasing carbon sequestration.

Emerging Provincial Climate Neutral Framework

The Province has been working with a joint committee, the Green Communities Committee (GCC) with representatives from UBCM and local governments, to develop a framework for establishing a carbon neutral protocol. A number of measures have been taken to influence framework development and incorporate local government interests. Much progress has been made, including:

- Introduction of a Provincial program (Climate Action Revenue Incentive Program – CARIP) that enables local governments who have signed the Charter to be reimbursed for their carbon tax expenditures[2];
- A change in Provincial direction to include the option for local community investment; and,
- The announcement of a "Making Progress" option that recognizes that the Carbon Neutral Framework is still under developed and enables municipalities to meet commitments in the Climate Action Charter without formally achieving carbon neutrality by 2012.

Proposed New Provincial Guidelines to Include Contracted Emissions

Recently, the Province released new guidelines proposing that local governments include emissions from contracted services in their emission inventories. The proposal is for local governments to include a requirement for vendors of certain contracts to provide fuel use consumption to the City. The City would then be required to offset these emissions by investing monies in activities to compensate for emissions generated from the fuel use from contracted services. This proposal is outlined in the Province's new "*Guidance on Including Contracted Emissions in Local Government Corporate Inventories*".

Analysis

The intention of the Province is to ensure that a level playing field exists among local governments. Many local governments deliver all or some of their services directly while others deliver the same activities through contracted parties. Currently, local governments have only included emissions from activities they deliver directly in their corporate greenhouse gas emissions inventories. To ensure equity, the Province is seeking that greenhouse gas emissions from the same suite of activities, regardless of whether they are delivered directly or via contract, be included.

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[2] In Richmond, carbon tax reimbursements are directed into a Carbon provisional Account. This account was established by Council to support activities to meet corporate carbon neutrality, including certain corporate greenhouse gas emission reduction action and specific local community-based greenhouse compensation action. The account also provides the option to purchase some external offsets (investments outside of the Richmond community) should Council choose to do so.

However, there are 2 key concerns with the current approach for including contracted emissions:

1. Increased Costs without Revenue Source/ Generation of New Inequities

   The inclusion of emissions from contracted services has replaced one inequitable situation with another. Through the CARIP, local governments receive carbon tax refunds on fuels purchased for the delivery of direct services. However, local governments do not receive any tax refunds if the same service is delivered by a contractor. In this case, the carbon tax is paid by the contractor but remains with the Province. In this respect, local governments who contract services have an additional cost to pay, lowering their financial ability to achieve carbon neutrality[3].

2. Administrative Burden/ Diversion of Resource Away from Higher Value Action

   It is anticipated that collecting emission data from contracted services will require significant time and increase costs for local governments and contractors. While local governments may expend substantial effort to implement the collection and storage of fuel use data, they are unlikely to have meaningful influence over reduction of greenhouse gas emissions from contractors. As such, including emissions from contractors is likely to divert local government attention and resources away from areas of higher impact such as reducing emissions from corporate sources under direct control and investing in community-based initiatives that advance sustainability.

Recommended Response by the City of Richmond

Given the above concerns, it is recommended that the City of Richmond:

1. Continues its current practice to include emissions from direct activities only at this time;
2. Sends a letter to the Joint Provincial–UBCM Green Communities Committee, requesting that amendments be made to the *"Guidance on Including Contracted Emissions in Local Government Corporate Inventories"* to resolve inequities, ensure that no new costs are borne by local governments without adequate funding and that action is being directed towards appropriate priorities.

This approach enables the City to remain aligned with the City's Carbon Responsible Strategy and work towards meeting its carbon neutrality commitment in a more sustainable manner. Staff will continue to work with the Province, the UBCM, Metro Vancouver and other local governments.

One option currently being explored is to enable local governments to be reimbursed for the carbon tax associated with contracted services. The City can choose to include emissions from contracted services at a later time should changes occur. Staff will provide an update on Richmond's overall progress towards carbon neutrality in late Fall 2012.

Financial and Other Implications

The specific request to include fuel use from contracted services as part of corporate inventories without carbon tax re-imbursement will increase costs. The recommended response avoids these costs and enables the City to continue to direct resources towards action with high greenhouse emission reduction benefit.

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[3] In one municipality, including contracted services was estimated to increase costs by $75,000 each year.

It is possible that local governments who do not include contracted services will not be recognized for achieving carbon neutrality by the Province. However, given the "Making Progress" option, this outcome is not expected to result in significant impact for the City. In particular, it will not impact the City's existing carbon tax reimbursement.

The recommended approach does support the City in meeting carbon neutrality effectively in the future. This is because it allows the City to focus resources on reducing its corporate greenhouse gas emissions and reduce the amount that needs to be compensated for over time. The alternative, including fuel use from contracted services without a revenue source, will make it more difficult to achieve carbon neutrality.

Financial Impact

None

Conclusion

Demonstrating corporate leadership in doing its part to protect the climate and avoid dangerous levels of climate change, the City of Richmond committed to achieving carbon neutrality in its corporate operations.

Carbon neutrality is a relatively new concept and best management practices are developing. To ensure that carbon neutrality is advanced in a way that is itself inherently sustainable (e.g., can be supported over the long-term, uses fiscal resources wisely, doesn't come at the expense of other important sustainability objectives, etc.), Richmond Council adopted a made-in-Richmond "Carbon Responsible Strategy".

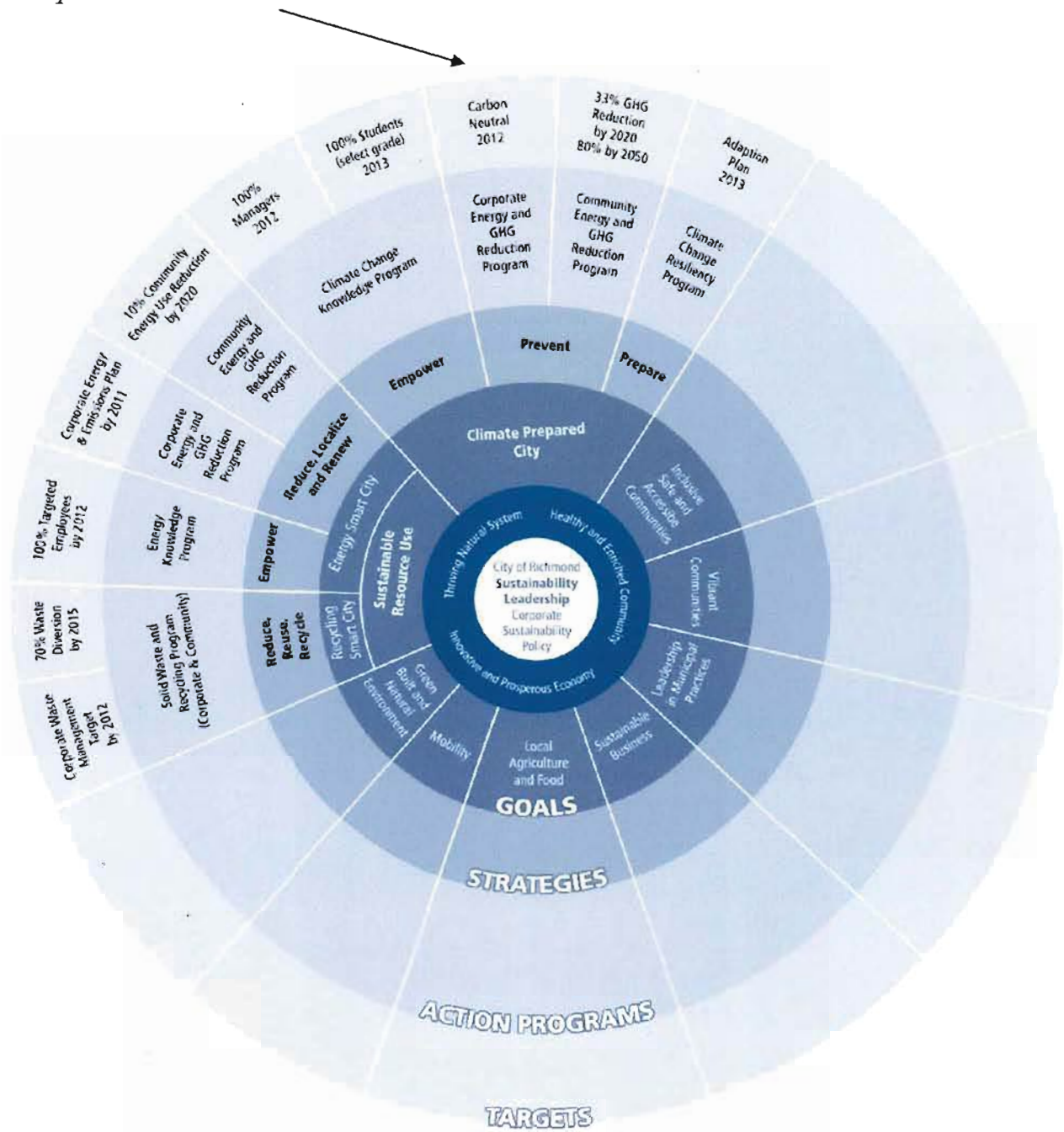
A recently developed guideline by the Province for including emissions from contracted services creates inequities, increases costs and diverts attention away from higher priority action. This report recommends that the City of Richmond continue with its current practice of including direct emissions only.

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

Attachment 1

City of Richmond's Corporate Sustainability Framework
– Carbon Neutral Commitment –

City's carbon neutral commitment for corporate emissions



Attachment 2

Reaching Carbon Neutrality: City of Richmond's Carbon Responsible Strategy

Guiding Principles

- *Focus on Sustainability* (advance carbon neutrality as one component strategy within the broader sustainability agenda);
- *Invest Locally* (retain greenhouse gas emission expenditures within the local community);
- *Reduce First, Offset Second* (prioritize greenhouse gas emission reduction, not offsetting to demonstrate strong corporate leadership and reduce long-term corporate costs);
- *Focus on Action, not Accounting* (focus on big value action that yields significant community benefit and minimizes low-value costs associated with greenhouse gas administration); and
- *Be Carbon-Balanced* (direct action towards both greenhouse gas emission reduction and carbon sequestration).

Prepare for Carbon Neutrality – Develop a Carbon Responsible Program

1. Position Carbon Neutrality within the City's Sustainability Framework. (*Complete*)
2. Establish a Carbon Neutral Provisional Fund to support accelerated corporate greenhouse gas emission reduction and other carbon neutral action, including the purchase of offsets if required. (*Complete*)
3. Incorporate considerations of greenhouse gas emissions (growth and reductions) into project submission information as part of the City's Land and Capital process. (*Complete*)
4. Establish a baseline of emissions and identify strategic focus areas to reduce the City's carbon liability to largest extent possible over the next 2 years. (*Complete*)
5. Work with the Province to recognize local compensation action initiatives. (*In Progress*)
6. By end of 2012, establish a Carbon Responsible Program for Council consideration.

Be Carbon Neutral – Implement Carbon Responsible Program

If adopted, the Carbon Responsible Program will manage the following four main steps on an annual basis:

1. **Embed**
   - Review City's Carbon Responsible Program in accordance with City's broader sustainability goals and objectives

Original adopted July 11, 2011. Progress on "*Prepare for Carbon Neutrality – Develop a Carbon Responsible Program*" updated June 13, 2012.

- Establish and manage the measurement of the City's greenhouse gas emissions to meet all City commitments (e.g., BC Climate Action Charter, Mexico Pact, etc.)

3. **Avoid and Reduce, Strategically**
   - Develop and realize a corporate greenhouse gas emission reduction target
   - Collaboratively advance action to avoid future greenhouse gas emissions and reduce the City's existing emissions through a variety of means such as:
     - ~ *Corporate capacity building* initiatives (e.g., general climate change and carbon management awareness, low-carbon driving training, etc.)
     - ~ *Corporate policy development* (e.g., "no net carbon increase" for new projects, energy standards incorporated into the City's High Performance Building Policy, etc.)
     - ~ *Strategic planning* (e.g., trip reduction plans for departments)
     - ~ *Strategic project action* (e.g., fleet conversion, IT systems to reduce mobility demand, etc.).
   - Develop supportive tools and embed the cost of greenhouse gas emissions within relevant City decision-making processes (e.g., carbon calculator embedded within the Land and Capital Model)
   - Prepare Corporate Energy and Carbon Neutral Action Plan to identify strategic opportunities for integrated corporate energy and emissions reduction initiatives, identify strategic credit generating initiatives and secure carbon rights.
   - Manage the City's Carbon Neutral Provisional Fund and develop principles, financing mechanisms (e.g., setting up an endowment to provide partial support, etc.) and other tools to support the advancement of strategic greenhouse gas emission reduction action

4. **Balance** - invest in local carbon compensation action (sequestering and greenhouse gas emission reduction)
   - Advance compensation action that directs investments within Richmond
   - Capture carbon compensation credit from post-2007 and future City investments (e.g., organic recycling program, ecological areas acquisition, etc.) and advance strategic future local carbon compensation action that leverages City programs and supports other City objectives

5. **Report and Improve**
   - Coordinate and manage reporting
   - Identify opportunities for improvement

City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	July 10, 2012
From:	Tom Stewart Director of Public Works Operations	**File:**	
Re:	**2011 Annual Water Quality Report**		

Staff Recommendation

That the 2011 Annual Water Quality Report dated July 10, 2012 be received for information.

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

Att. 1

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

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.

Analysis

The Drinking Water Protection Regulation requires water purveyors in BC to possess an Operating Permit, which in effect, confirms that the Drinking Water Officer (DWO) for the area has approved the water supply. The DWO 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 (BCDWPR), and any other conditions of the Operating Permit. The Government of Canada has developed the Guidelines for Canadian Drinking Water Quality (GCDWQ) to assist in understanding water quality considerations. The requirement to monitor and address the parameters outlined in the GCDWQ that are not listed in the BCDWPR is at the discretion of the Drinking Water Officer.

Under the BCDWPR, the City of Richmond is required to:

- Develop and maintain a process to notify the Medical Health Officer (MHO) and the Drinking Water Officer (DWO) 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 DWO and;

- Implement and maintain a plan for reporting monitoring results to the DWO and to water users

The foregoing requirements are satisfied by the attached Annual Water Quality Report.

Highlights of the 2011 Annual Water Quality Report include:

- Richmond residents enjoyed high quality reliable drinking water in 2011

- 1,936 water samples were collected to ensure water quality in 2011. All samples passed

- Test results confirm the high quality of the water and our continuous improvement over previous years, primarily due to additional water utility funding, resulting in additional proactive water main replacement prior to actual failure

- 34.9M cubic metres of water were purchased in 2011 (4.5% decrease from 2010).

- Water maintenance programs and capital improvements projects funded through Water Utility rates.

- Richmond's two mobile water supply units that are used in many community events to promote tap water usage

- Richmond's Mobile Emergency Response unit capable of producing over 55,000 litres of potable water per day (over 14,000 gpd) from non potable sources (i.e. river/ditch water)

- Project WET – an educational program and partnership between the Richmond School Board and Public Works was fully subscribed by elementary school students to learn about the benefits of water conservation

These and many other initiatives are detailed in the attached "2011 Annual Water Quality Report".

Financial Impact

None

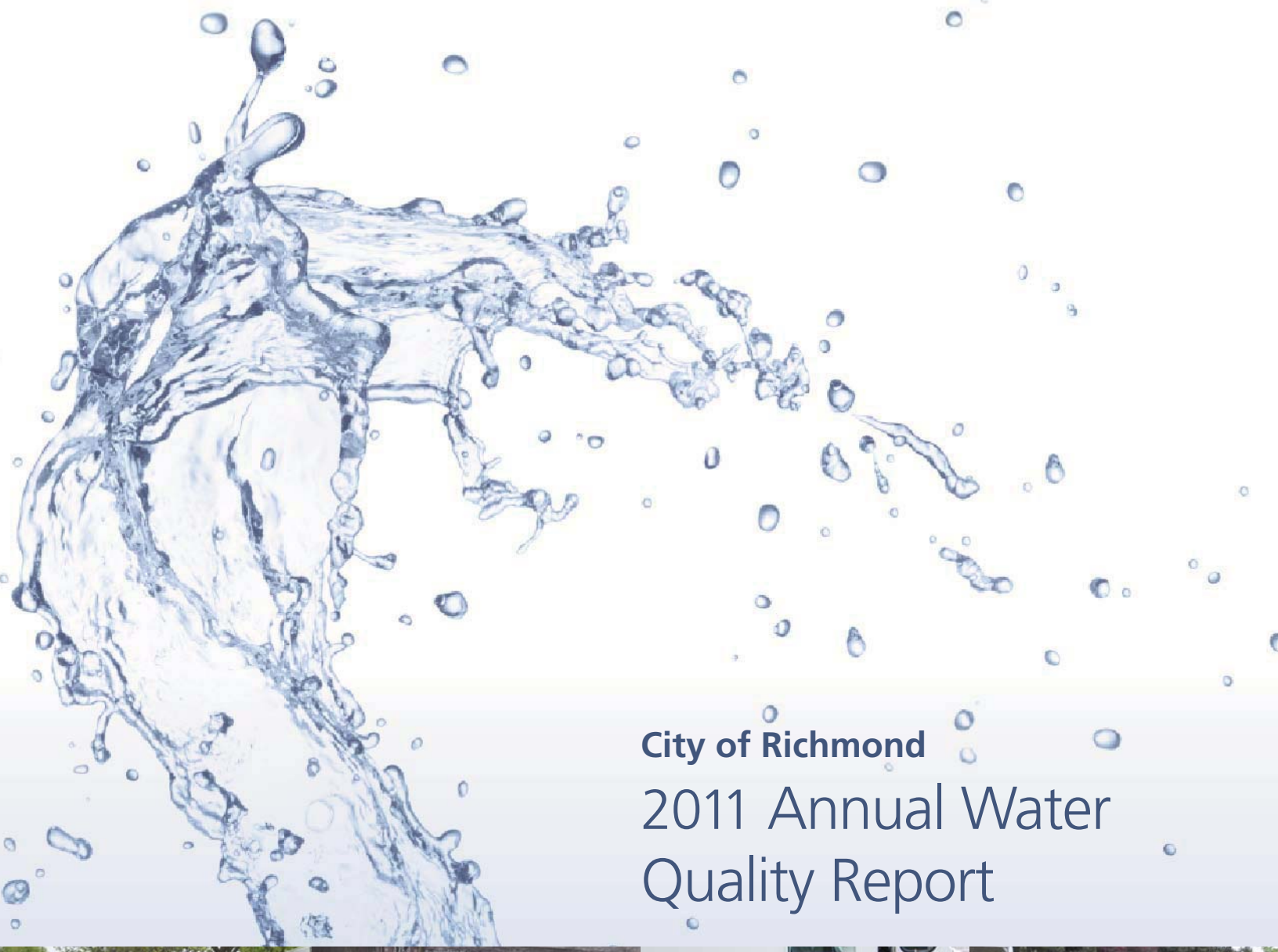
Conclusion

This plan has been reviewed and endorsed by the MHO (Medical Health Officer of Vancouver Coastal Health Authority) for the City of Richmond and satisfies Provincial requirements under the Drinking Water Protection Act.

Doug Anderson

Doug Anderson

Manager, Water Services.
(604-233-3334)
DA:da



City of Richmond

2011 Annual Water Quality Report

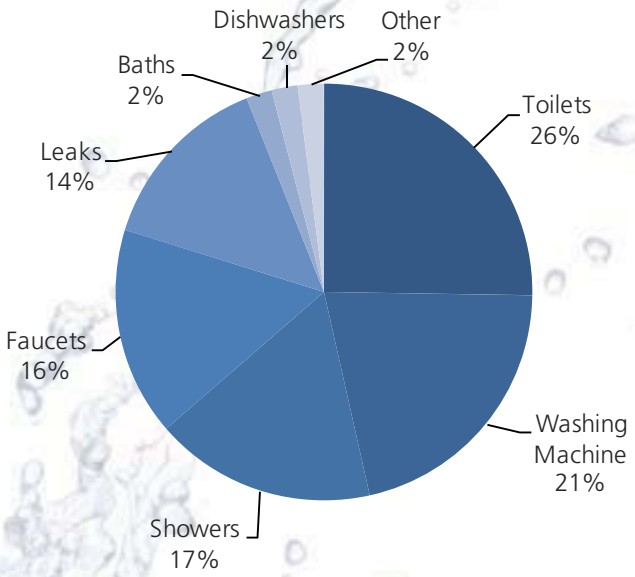
Richmond

Contents

Typical Household Water Usage

Fixture/Appliance	Litres Used
Fast drips	750 litres used per week
Steady stream	3785 litres per week
Toilet flush	6 to 30 litres per flush
Fraction of leaking toilets	up to 30%
Showering	5.7-18.9 litres per minute
Bathtub	115 to 190 litres per full tub
Washing machine	170 to 190 litres per cycle
Dishwasher	40 to 55 litres per minute
Kitchen faucet	7.6 to 11.3 litres per minute
Bathroom faucet	7.6 to 11.3 litres per minute
Slow & stead drips	280 litres per week
Car washing	Approximately 400 litres per car
Lawn watering	10 to 35 litres per minute

Table from Metro Vancouver 2012 www.metrovancouver.org



Executive Summary

The purpose of this report is to fulfill the requirements set out in the Drinking Water Protection Act by giving an overview of the water distribution system, detailing the maintenance conducted on our infrastructure components, describing some of the unique features of our system, and summarizing the results of our water quality testing program.

In summary, City of Richmond Water Services staff undertook the following in 2011:

- maintained 14 Pressure Reducing Valve stations
- replaced 7,500 metres of water main to provide for increased fire flows and longer service life
- maintained 4,618 fire hydrants to ensure water is available during an emergency
- repaired 35 water main breaks without compromising the integrity of the water distribution system
- conducted 1,936 microbiological tests
- detected no faecal coliform in any test
- provided about 34,9000,000 cubic metres of the highest quality water to nearly 199,000 residents
- reduced water consumption from 2010 by nearly 4.5% through water conservation measures
- hosted over 200 students from Richmond elementary schools as part of our annual educational program: Project WET
- discovered and repaired 22 non-visible underground leaks through our Leak Detection Program

For 2011, Richmond City residents were once again provided with some of the best drinking water in the world. We take our role as a water purveyor very seriously and are proud to be the guardian of such a precious resource.

We trust you'll find the information presented in this report to be of interest and hope you enjoy reading it as much as we enjoyed preparing it.

Introduction

In, 2002, the City of Richmond implemented a Drinking Water Quality Monitoring Program. This monitoring program was developed in accordance with the Water Quality Monitoring and Reporting Plan for Metro Vancouver and Member Municipalities, the Guidelines for Canadian Drinking Water Quality (GCDWQ), with input from the Vancouver Coastal Health Authority.

The Vancouver Coastal Health Authority requires that the City of Richmond provides the Annual Drinking Water Quality Report so that the City of Richmond's Water Services Division can receive an operating permit. Richmond's Medical Health Officer (MHO) has reviewed the report. As requested, this report will be made public. It provides important information concerning Richmond's water distribution system and water quality for Richmond residents.

As a water purveyor, Richmond must comply with provincial legislation, including the British Columbia Drinking Water Protection Act (BCDWPA), and 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 was required to:

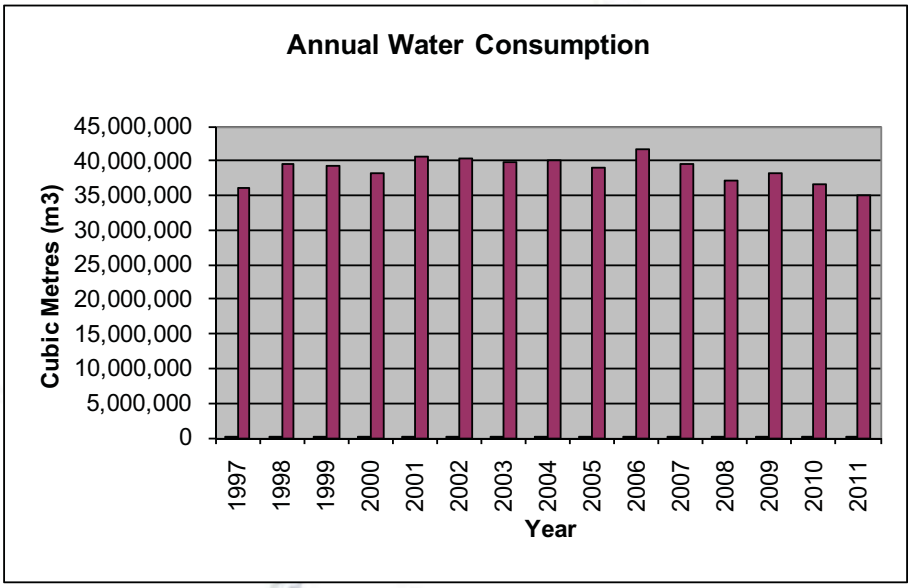
- Develop a process to notify the MHO of any condition that could render drinking water unsafe.
- Implement a sampling program that adequately represents all areas within the City.
- Meet the requirements of the BCDWPRA, and ensure test results are immediately available to the MHO.
- Receive an annual construction permit for the construction, installation and extension of the water distribution system.
- Ensure the City's water distribution system is classified under the criteria for the Environmental Operators Certification Program 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.

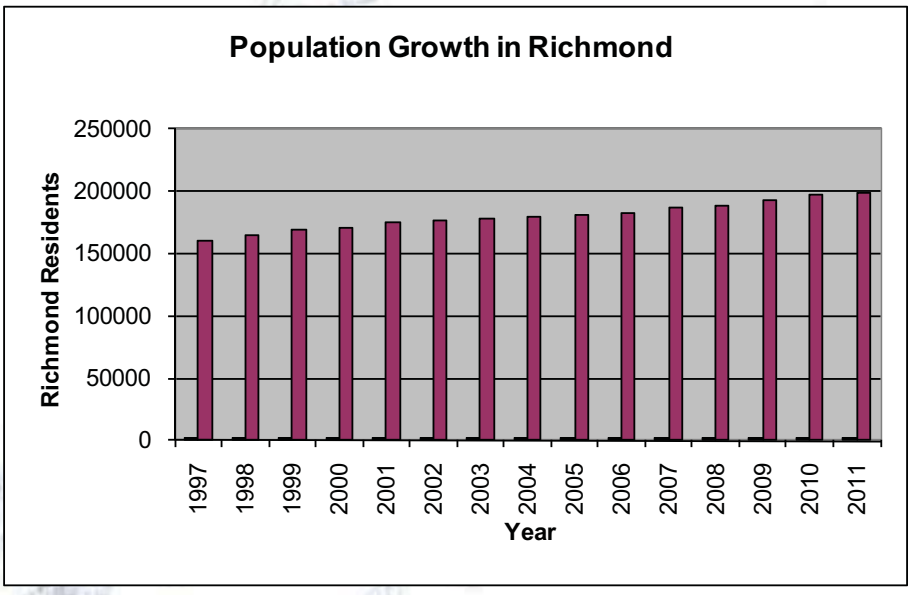
97% of the world's water is saline. Another 2% is ice (glaciers). That leaves 1% available for drinking, community needs, agriculture and industry.

To see if your toilet is leaking, put a few drops of food colouring in the tank. Wait a few minutes, if the water in the bowl colours, you know you have a leak. Remember to fix it after you find it.

Metro Vancouver Water District

In 2011, the City of Richmond purchased approximately 34.9 million cubic meters of drinking water from the Metro Vancouver Water District (formerly GVWD). This represents a 4.5% decrease over the 2010 water purchase. This method of supply is similar for all other jurisdictions within the Regional District.





*BC Stats, Ministry of Labour and Citizens' Services, September 2011

Three watersheds supply regional water: The Capilano Reservoir, the Seymour Reservoir, and the Coquitlam Reservoir. The Capilano and Seymour Reservoirs combined, supply 70% of the water for the region. The Coquitlam Reservoir supplies the remaining 30%. Richmond receives the majority of its water from the Capilano and Seymour reservoir.

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Water from these reservoirs can be directed through a series of valves and transmission water mains to any City or Municipality within the Metro Vancouver region.

During periods of turbidity (cloudy water), a reservoir may be taken out of service if turbidity levels become elevated. Water is then supplied by the remaining reservoirs. This was the situation in October 2011, when the turbidity levels at the Capilano Reservoir became elevated due to a series of mudslides caused by heavy rainfall. The Capilano supply was taken out of service and Richmond's water was supplied from the Seymour Reservoir. The Capilano supply remained out of service until early March of 2012 and consequently Richmond received filtered water supplied through the Seymour/Capilano Water Filtration Plant. The plant has the capacity to filter up to 1.8 billion liters of water per day.

Less than 1% of water treated for potable use is consumed. The rest is put down the drains and into the sewerage system for treatment.

Source Water Quality

Source water is provided directly from the watersheds by Metro Vancouver. Source water is tested for a number of microbiological, chemical, and physical parameters. For information related to source water, refer to The Greater Vancouver Water District Quality Control Annual Report, 2010, available from the Metro Vancouver's website (this is the most recent information available at this time),

www.metrovancouver.org/about/publications/Publications/2010WaterQualityAnnualReportVolume1.pdf

www.metrovancouver.org/about/publications/Publications/2010WaterQualityAnnualReportVolume2.pdf

Seymour Capilano Water Utility Projects

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When you go to a restaurant and they give you that complimentary glass of water, remember, it takes another 2 glasses to wash it. Decline if you do not plan to drink it.

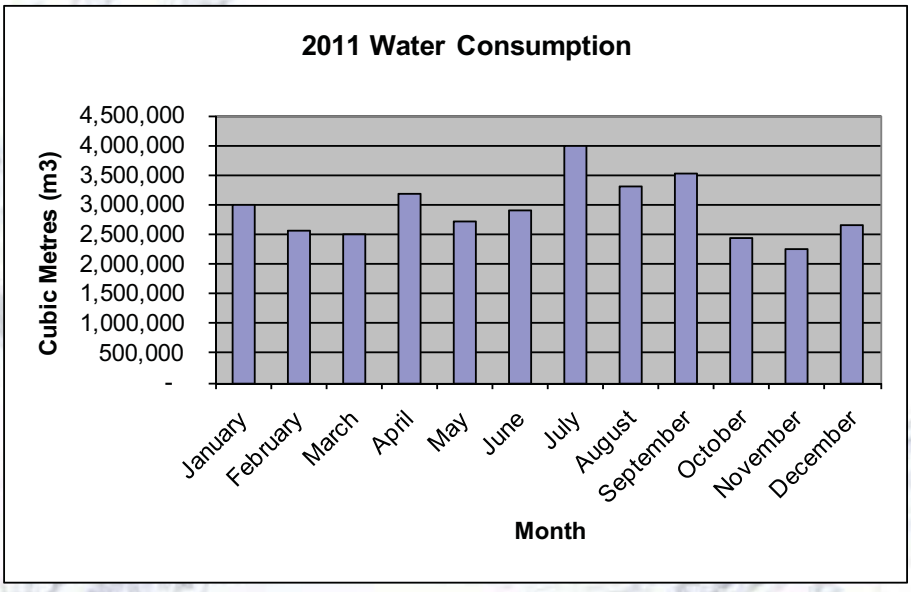
Water Distribution System Overview

The City of Richmond's water distribution system begins at 14 separate connections points along Metro Vancouver's transmission mains. At each connection point there is a City owned pressure reducing valve chamber. The City's responsibility for water quality begins at this chamber and ends at the residential/commercial property line. An outline of the City's water supply and distribution system is provided below

Table 1 – Overview of Richmond's Water Distribution Network

Water Assets	2011 Count
Water Works Valves	7196
Water Works Hydrants	4618
Water Works PRV Chambers	14
Water Works Pigging Chambers	7
Water Works Caps	515
Water Mains	641.00 Km
Water Connections Total	34,170

The City maintains 14 pressure-reducing valve stations (PRV's). These stations decrease the transmission pressure of Metro Vancouver's mains to Richmond's operating pressure. Ten of these facilities are connected to a remote telemetry system (S.C.A.D.A.) that provides real time data on water quality, pressure, and volume. It also allows certified Water Services staff to react to problems quickly and effectively, 24 hours a day, seven days a week. The S.C.A.D.A. monitoring equipment will eventually be installed in the four remaining PRV stations to ensure early detection and prompt response to any problems with the water distribution system. In early 2011, the City's Engineering and Public Works staff embarked on a project to install meters at all 14 PRV stations so that the City would have an accurate way of measuring the amount of water it receives from the Metro Vancouver Transmission System. These meters were primarily installed as the first step in implementing a new Water Loss Management Program.



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The graph indicates the monthly water consumption in Richmond. It is presumed 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 will allow 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 water main flushing, parks and median irrigation, and Richmond Fire Rescue water usage for fire fighting and training purposes, it is reasonable to assume that the unidentified portion of the annual water consumption may well be attributed to water loss within the distribution system. In the past, the City of Richmond had no way of confirming that the amount of water billed for by Metro Vancouver annually matched the amount of water received by Richmond's distribution system.

Don't leave the water running when you brush your teeth or shave. A tap runs at approximately 9 litres per minute. If it takes 10 minutes to shave in the morning and 3 to brush your teeth, that's about 120 litres of water in 13 minutes of your morning routine.

Inside the pressure-reducing valve station

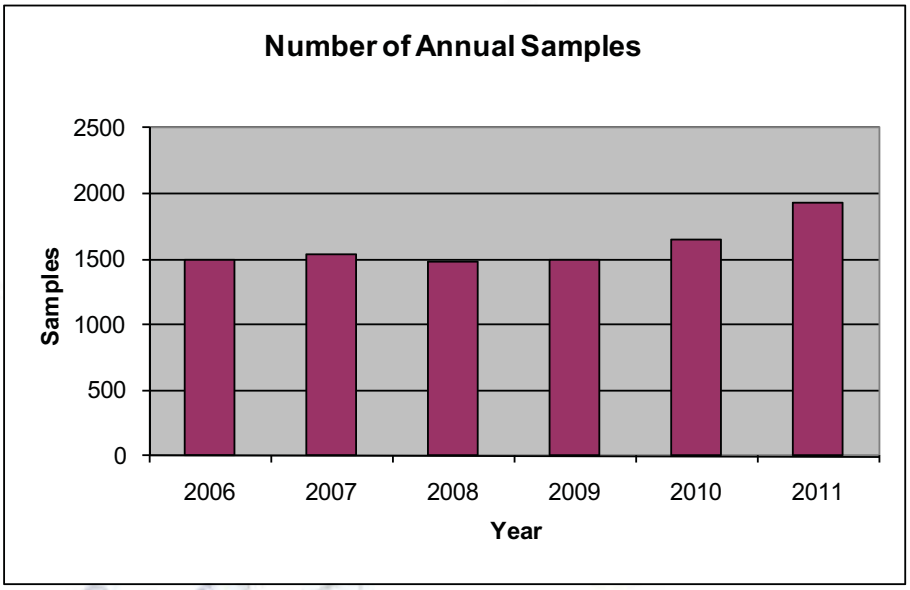
Pressure-reducing valve station that connects to S.C.A.D.A. telemetry system

City of Richmond's water quality sampling site

Water Services employee taking water sample

Water Quality Monitoring

In 2011, the City of Richmond collected samples on a weekly basis at 39 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 2011, 1,936 water samples were collected by Richmond Water Services staff and sent for analysis at Metro Vancouver Laboratories. These sample results were reviewed by the Vancouver/ Richmond Coastal Health Authority to ensure the drinking water met the standards outlined in the BCDWPR.



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. Beginning on April 1, 2006, the BC Drinking Water Protection Regulations required additional monitoring for Escherichia coli (E. coli).

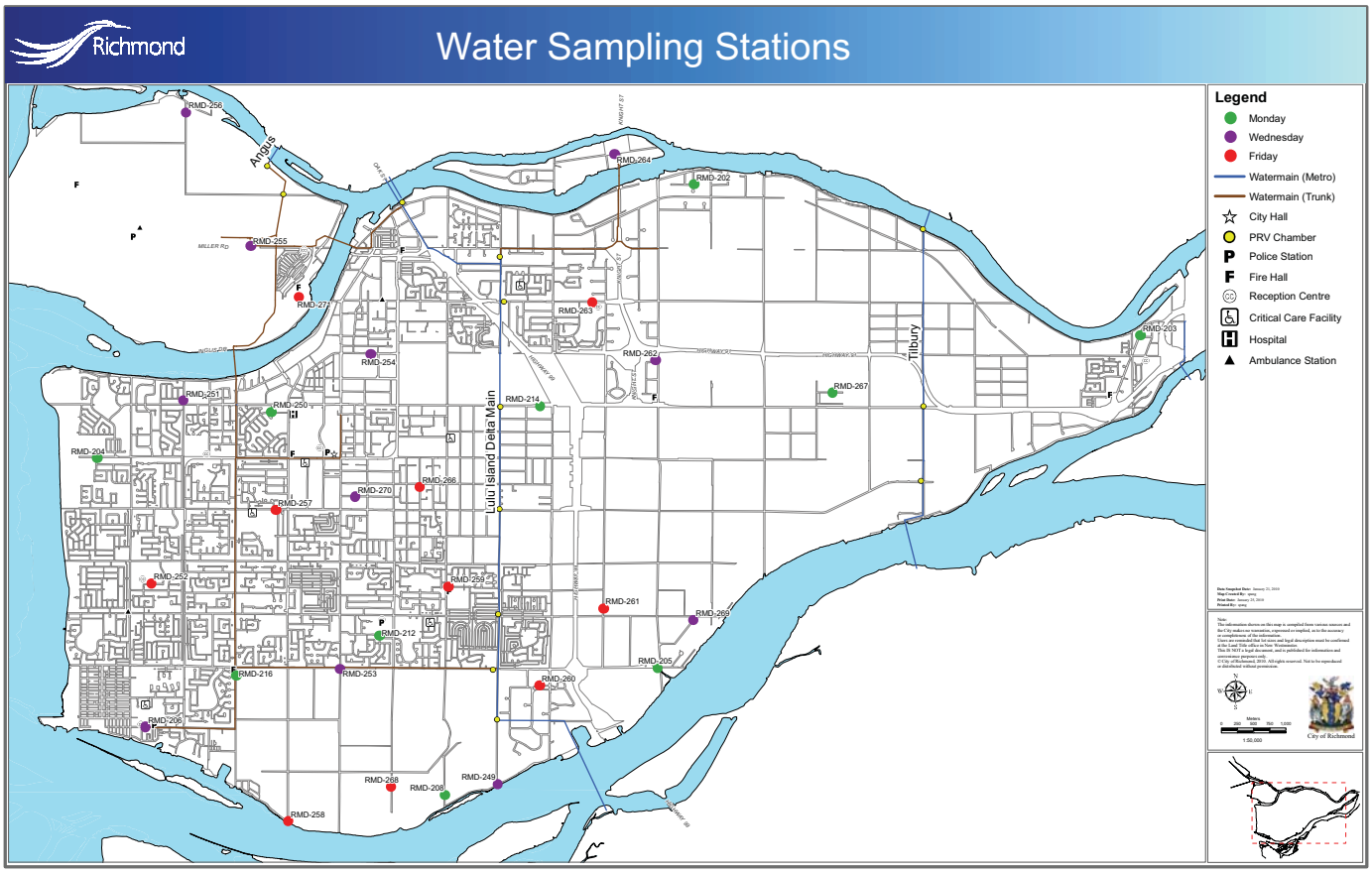
Total Coliforms

Total coliform bacteria reproduce in water, soil, or the 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 milliliters, and that 90 percent of samples in a 30-day period must have zero coliform organisms.



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 standard state there can be no detectable fecal coliforms per 100ml sample.

Results

In 2011, 1,936 water samples were collected by City staff and analyzed by Metro Vancouver Laboratory staff. All samples met drinking water requirements for fecal and total coliforms. The City of Richmond was in compliance with BCDWPR for bacteria in 2011.

Failed samples

The standard response to a failed water sample, should there be one, is to:

1. Re-sample at the site
2. Flush the water main extensively
3. Re-sample

The water main is then isolated to one feed until test results confirm compliance with BCDWPR regulation.

Check your quarterly water bill to track usage and get a feel of the impact of consumption habits.

Heterotrophic Plate Count

HPC tests measure aerobic heterotrophic bacteria. This test is useful in monitoring the effectiveness of disinfection and in determining 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. In 2011,

none of 1,936 (33 samples of the total of 1936 samples were not tested for HPC levels) exceeded regulated levels for HPC's at >500 CFU/mls. One sample registered 480 CFU/mls and as a precautionary measure, Water Services staff flushed the corresponding section of water main until a satisfactory result was obtained and verified through additional sampling procedure. No results indicated increased levels of fecal or total coliform bacteria in any samples collected and analyzed.

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.

This photo demonstrates low turbidity

This photo demonstrates high turbidity

Turbidity

Metro Vancouver is responsible for the quality of Richmond's source water. Turbidity, a measure of water clarity, was monitored on a regular basis in 2011. Turbidity is measured in Nephelometric Turbidity Units (NTU). In 2001 the Chief Medical Health Officer (CMHO) made it a requirement that the Metro Vancouver Water District must meet the British Columbia Drinking Water Protection Regulation's (BCDWPR) criteria for drinking water quality. The guideline for turbidity (cloudiness) was established at ≤1 NTU. Early in 2006, Health Canada published a new guideline for turbidity, which includes requirements for unfiltered water sources. The new guideline allows for turbidity levels up to 5 NTUs providing source water protection, monitoring, and water treatment requirements are met including increased levels of residual chlorine. We are concerned about turbidity because studies have shown that as turbidity increases, the risk of gastrointestinal illness increases. Increased turbidity compromises the drinking water disinfection process.

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 water mains exist. During the year, when sampling indicates a turbidity level greater than >5 NTU's, affected water mains in the test area are flushed, and re-tested until a satisfactory result is obtained.

The pictures to the left demonstrates the differences between a fish swimming in water with low turbidity compared to a fish swimming in water with high turbidity. Occurrences of high turbidity in supply reservoirs are usually a direct result of storm water run off during periods of heavy rainfall within the watershed.

In 2011, all but one sample out of the 1,936 samples collected from the City's water distribution system met the aesthetic objective of ≤5 NTU at the tap. The section of water main which had a reading of 6.6 NTU was extensively flushed and retested to confirm that the elevated turbidity level had been removed.

The original BCDWPR requirement that turbidity levels are ≤1 NTU was not met for 6 of 1,936 samples tested in 2011. There is a marked decrease in the number of recorded elevated turbidity events in 2011 compared to the same time period in 2010 when the numbers were 11 of 1489 samples. In 2008, there were 59 of 1483 samples with NTUs >1. In 2007, there were 259 samples out 1543 samples, which indicated turbidity levels above 1 NTU.

Year	HPC CFU/mls > 5NTUs
2006	25 of 1491
2007	6 of 1543
2008	1 of 1483
2009	3 of 1489
2010	0 of 1649
2011	1 of 1936

The majority of elevated results in 2011 were only slightly higher than 1 NTU, and were lower than 5 NTU'S which did not pose any serious threat to the water quality. The decrease in samples of >1 NTU can be attributed to distribution system maintenance practice performed by Richmond Water Services staff, but the impact of the new Seymour/Capilano Filtration Plant must once again be acknowledged as a major contributor in the control of turbidity in the water distribution system. As we move towards 2013, the turbidity problem will be further reduced as more filtered water is delivered to the region from the reservoirs. However, the full potential of the filtration plant will not be realized until 2013, when the tunnels which will deliver water from the Capilano water shed to the filtration plant at the Seymour water shed are put into service.

Keep a pitcher of water in the refrigerator instead of running the tap for cold drinks.

Know where your master water shut-off valve is located. This could save litres of water and damage to your home if a pipe were to burst.

Seymour Capilano Water Filtration Projects

Seymour Falls Dam Upgrade

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 49 times out of 1,936 samples with temperatures as high as 20 °C were recorded. The majority of these elevated temperatures were recorded during the summer months.

Capilano Water Filtration Projects

Try to avoid using recreational water toys that require a constant flow of water.

Taste and Odour

Taste and odour are only monitored in response to customer complaints. Records indicate that 11 complaints were received regarding taste and 5 complaints were received regarding odour in 2011. 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 where they flushed the corresponding sections of water main 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. In 2011, the majority of all samples met the guideline for adequate chlorine residual in the water distribution system. Some samples taken in the east end of Richmond did fall below the minimum chlorine residual level but never reached the point where there was no residual present. Richmond Water Services staff recognized the deficiency immediately in the water sample results and flushing of the affected sections of water main was immediately carried out until the chlorine residual was elevated to a more satisfactory level.

Run the washing machine and dishwasher only with a full load. This could save 3,700 litres per month.

There were 2 sites in Richmond that had been identified as problem areas for maintaining adequate chlorine residual levels on a regular basis. The Water Services division had installed environmentally friendly automatic flushing units which flush the water main at pre-scheduled times to help maintain adequate chlorine residual levels at all times. At one of these sites staff were able to remove the automatic flushing station because the water system was modified at Triangle Road in the first quarter of 2011. The flushing unit is no longer required at this site.

The automatic units are used to minimize the labor costs associated with manual flushing procedures.

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. THMs are not actually regulated and are only a guideline as they only come under GCDWQ with an interim maximum acceptable concentration (IMAC) of 100 ppb (parts per billion). The 100 ppb level for THMs is based on an annual average. 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. In 2011, 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 2011, all results were within acceptable levels as defined in the GCDWQ. (Appendix 5)

Currently there are no regulations or guidelines for HAA in Canada; a maximum level of 60 ppb (parts per billion) has recently been adopted in the United States.

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. In 2011, Metro Vancouver treated water recorded a pH of 6.1 to 7.0 meeting the aesthetic objective. It is recognized that acidic water will accelerate the corrosion of metal pipes, often causing blue-green staining in household fixtures.

The new 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 in 2013. 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 2011. Complete test results are included in Appendix 6.

Challenges and Issues

The City of Richmond faces a number of challenges to maintain the water distribution system, including:

- Annual Water main flushing programs. These programs prevent the build up of sediment deposits and discourage bacterial re-growth. The only flushing performed in 2011 was on a demand basis when water quality did not reach the required standard. Specific water mains were flushed based on water quality analysis results provided by the staff at Metro Vancouver Laboratories. It is anticipated that the new filtration plant will further minimize the need to flush water mains. The target is to develop a five year flushing program, during which 20% of the water distribution system will be flushed each year. The start date for this program is scheduled for the Spring of 2013.
- Water main breaks remain a possible source of contamination. Assessment of the appropriate level for the water main replacement program is currently on going by the City's Engineering Planning and Water Services sections.
- Richmond has a large number of dead end and low flow water mains, this leads to reduced levels of chlorine and increased HPC counts. Weekly and monthly flushing programs minimize these water quality issues. City staff intend to eliminate dead end water mains by creating looped systems wherever possible in the future.
- Service connection failures occur periodically in various locations within the City. Water service connection failures continue to be a maintenance issue. This is mostly attributed to service piping materials that have not met projected service life or have reached the end of anticipated life expectations. In 2011, the Water Services division continued to perform upgrades to water service lines in areas where these material problems have been identified.
- A number of Water Services staff, currently employed by the City of Richmond, will be eligible for retirement in the next three years. A strong focus on staff training is on going to ensure a succession plan is in place. High priority has been set around staff training and development.

Match the water level to the size of the load when doing laundry.

Water Services crew installing a large residential/commercial water supply line.

Water Services crew upgrading an existing supply line

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Did you know that the City of Richmond Water Services section installs water lines a minimum of 450mm below ground so they won't freeze in cold conditions?

Current and Proposed Work

In 2011, the following work was completed to ensure the quality of water provided to customers by the City:

- Continued progress on the metering projects for both single and multi family residential customers.
- On-going water main replacement program.
- PRV station upgrades, both for seismic retrofitting and installation of S.C.A.D.A systems. In 2011, the replacement of the Nelson Road and Westminster Highway PRV station was completed as part of the new Nelson Road interchange project.
- A program to upgrade water supply lines where there has been on-going maintenance issues. This includes the installation of water meters at these sites to support the water metering program.

The following work is planned for 2012:

- Continued residential water meter installations through the volunteer programs, capital projects and planned maintenance programs.
- Continued meter installations at multi family complexes.
- $7 million in water main upgrades through the Capital Water Main Replacement program.
- On-going additional PRV station upgrades.
- Continued implementation of a comprehensive water loss management and leak detection program to ensure effective financial management of Richmond's Water Distribution System.

Annual System Maintenance

The following annual maintenance functions were undertaken by the City of Richmond to maintain water quality in distribution system in 2011.

Did you know that the water temperature in the pipes is approximately 9 degrees?

Water Sampling and Analysis

2011 Budget: $74,300.00

Sampling and analysis are conducted on an on-going basis in conjunction with Metro Vancouver. Sampling results are reviewed by the MHO. The City takes approximately 1936 water samples in a year.

S.C.A.D.A

2011 Budget: $179,500.00

This program currently provides for maintenance and operation of the City's Supervisory Control And Data Acquisition system. S.C.A.D.A allows for the collection of real-time data related to water quality and the City's water distribution system in general.

Pressure reducing valve (PRV) stations are monitored by S.C.A.D.A.

Water Main Flushing

2011 Budget: $260,800.00

The Water Services Division conducts various flushing programs to remove sediment in order to maintain water quality. These programs are scheduled on an on-going basis throughout the year. Targeted flushing in a number of areas has greatly improved levels of chlorine residual. The City continues to explore ways to improve residual chlorine levels through water modeling, the replacement of dead end water mains, and the installation of automated flushing stations. In 2011 $171,269.75 of the allotted budget amount (63.72%) was expended to fund these flushing programs.

Water Services staff flushing the main line as part of the low flow flushing program

PWT - 41

Did you know that most of the average household's indoor water usage is from the toilet?

- *Toilets 25%*
- *Washing machines 21%*
- *Showers 17%*
- *Faucets 16%*
- *Leaks 14%*
- *Baths 2%*
- *Dishwashers 2%*
- *Other 2%*

Demand Water Main Flushing

2011 Budget $59,900.00

This program covers unscheduled flushing of water mains due to Customer Service requests related to degraded water quality caused by bacteria, turbidity, or other water quality issues. The City responded to 83 water quality complaints in 2011. This number is down from 119 incidents in 2010. In 2011 $25,811.55 of the allotted budget amount (43.09%) was expended to fund these demand flushing situations.

Cross-Connection Control

2011 Budget: $38,300.00

This program is designed to prevent contamination from entering the system via uncontrolled "cross-connections". The installation of back flow prevention devices and the review of new plumbing installations protect the public from this threat. The use of fire hydrants for construction is also a potential source of backflow. To prevent contamination, City staff are required to install a "backflow prevention" device before a hydrant is used for any type of construction work. City Meter Shop staff also test backflow devices installed on internal plumbing systems at all City owned facilities.

Blow Off/Scour Valve Installations

2011 Budget: $30,700.00

This program is for the installation of blow off valves throughout the City. These valves are located on streets where no fire hydrant is available for flushing, and water quality may become an issue. The current service level for this program budgets for the installation of 4 blows off valves per year. These valves allow for effective operation of our annual flushing program.

Water Main Replacement

2011 Budget: $7,600,000

To reflect the 100-year life of Richmond's water distribution system comprising of asbestos cement, plastic (C-900) and steel water mains, an annual expenditure of approximately $7.5M is required to maintain the replacement cycle. Provisions have been made in the long-range financial plan to maintain this level of funding within the next few years.

Mobile Emergency Response Unit

The Water Services division has a mobile unit for use during major emergencies caused by cross contamination events or natural disasters. This unit is capable of taking a non-potable water supply such as Minoru Lake or water from the Fraser River, which has a very high saline content through a combination of five stage filtration processes to produce potable water. The unit is capable of producing 21,000 gallons of potable water per day from non-saline, non-potable supplies or 14,000 gallons of potable water per day from water supplies, which have a saline content. This unit is one of only two such units in British Columbia and is the only unit in British Columbia capable of filtering water from the Fraser River if necessary. This unit can also be used to assist staff when chlorination and de-chlorination of new and existing water infrastructure prior to activation.

Inside the Mobile Emergency Response Unit

Did you know that Water Services section specialists use acoustic instruments to hear and detect water leaking underground?

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The Tap Water Station display

Water Services crew setting up the Tap Water Station

The donated rain barrels by Coca-cola

Standard City of Richmond rain barrel

Water Conservation Programs

Tap Water Initiative

In 2010, Metro Vancouver initiated it's tap water usage promotion. The intent of this initiative is to make the public aware of the locations of all municipal drinking fountains so that the public can refill water bottles or simply get a drink of water. It is hoped that this initiative will work towards reducing and eventually eliminating the need for the public to purchase bottled water, which will, in turn help to protect the environment. To support this initiative the City of Richmond Water Services division purchased two Tap Water Stations similar to those that belong to the City of Vancouver. In 2011, these units were made available at all City endorsed functions and community events taking place at various locations around Richmond. The stations received many positive comments from members of the public who attended the events.

Toilet Rebate

The City of Richmond's Toilet Rebate Program provides a utility tax 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 household. 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 will enjoy a reduction in their utility bill while contributing to a sustainable water conservation initiative.

Rain Barrel

The rain barrel program promotes water conservation and sustainability by collecting and storing water for outdoor usage such as watering your garden. Using rainwater will reduce the amount of tap water you use, therefore, saving money on your utility bill. Other benefits include:

- decreasing water demand during peak summer months and using it as a backup water source for outdoor usage during times of drought,
- decreasing the strain on water treatment facilities and municipal drainage systems during storms,
- reducing the amount of water entering the sewerage treatment facility,
- maintaining healthy plants and lawn because rainwater is chlorine-free, and
- preventing drainage problems around your home's foundation.

Rain barrels may be purchased at the City's Recycling Depot by Richmond residents only. The City offers 45 gallon barrels (202 litres) and 50 gallon barrels (225 litres) for $20.00. In 2011 the City of Richmond entered into an agreement with Coca Cola. Through the agreement Coca Cola provides the City with empty product barrels. The City retrofits the barrels for use as rain barrels. These barrels are available to the public at a cost of $12.50. All rain barrels require a water diverter unit ($16.00) to hook up to the downspout of the water runoff from the roof.

Single Family and Multi-Family Water Meter Programs

This voluntary water meter program was endorsed by Richmond City Council in 2003, and is designed as a strategy for fairness and equity of water use. The City of Richmond is working with Neptune Technology Group (Canada) Ltd. to implement a program that will allow residents to pay only for the actual amount of water they use, rather than being billed on the flat-rate system.

Why does Richmond have a Voluntary Water Meter Program?

In the face of rising water rates, Richmond residents wanted a more equitable way of paying for their water use. In response to these requests, the City developed the Water Meter Program.

Features:

- An installation process is required, costs estimates for your home would be determined by the City.
- Quarterly payments: When you switch to a water meter, your bill is divided over four smaller payments, one every three months, instead of paying everything at the beginning of the year. This enables you to track water usage more closely.
- Free water conservation devices: To help save you water and money, all volunteers qualify for a water conservation kit, which includes the following:
    - Low-flow showerhead
    - Low-flow faucet aerators (for kitchens and bathrooms)
    - Toilet leak detection dye tablets

For more information, please contact:
Richmond Water Meter Program: 604-271-9700
www.watermeter.ca

Water Meter Installation

Installed water meter

Project WET

Project WET is an interactive elementary school water education program aimed at teaching students about the importance of water. Largely targeted for grades four to seven, this program is designed to inform, educate and entertain students on the importance of water quality and supply.

Project WET is an exciting partnership program between the City of Richmond and the Richmond School Board. The acronym "WET" stands for "Water Education Team". Our main objective is to promote higher-level thinking skills while learning about the fundamentals of water consumption, conservation, quality and waste in an interactive and fun environment.

Four Key Elements of the Project WET are:

1. Water as a System–Tracing how water falls on the local mountains in the form of rain or snow, making its way through the water infrastructure system and arriving in our homes when we turn on the tap.
2. Water Conservation and Water Quality–Why water conservation and water quality are important, what the City is doing to sustain our water capacity and what students can do to help.

Did you know that more plants die from over-watering than from under-watering? Be sure to only water plants when necessary and choose low-water-use plants for year-round landscape colour in order to save up to 2,000 litres per year.

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Did you know that reusing the water from your fish tank to water your plants is providing your plant with a free fertilizer since it is rich in nitrogen and phosphorous?

3. Why Drainage is so Important–The storm system carries runoff to the river, in compliment with an essential ditch-drainage system in Richmond. Students will learn how these drainage systems work and the importance of keeping toxic materials out of ditches and storm sewers.
4. Richmond is a Unique Island–Richmond is the only city in North America completely surrounded by dykes. Students will learn why dykes are critical in Richmond and how important it is to maintain them.

Staff demonstrating the City's water systems

Staff educating students on acoustics

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Public Notification

At the direction of the Richmond medical health officer (MHO), water quality advisories can be issued to the general public at large, small local areas, or issued recommending that immuno-compromised persons or the elderly and very young should boil, filter, or distil drinking water from surface sources. A sample of the drinking water quality advisory is included in Appendix 7.

Did you know that weeds compete with other plants for nutrients, light and water?

Operator Qualifications and System Classification

Provincial drinking water standards require certification of both potable water systems and staff. This classification is done through the Environmental Operators Certification Program (EOCP). The Walkerton outbreak, which occurred in May 2000 serves as an illustration of the need to ensure system operators are properly trained. Operators need to know not only how to supply safe water on a day-to-day basis, but also how to respond to sudden source contamination, industrial spills, equipment failures, water main breaks, vandalism, and other emergencies.

System Classification

System classification involves the evaluation of a water system, to determine and rank its complexity. Levels of complexity range from "Small System", to Class I though Class IV. Richmond is classified as a Class III water distribution system.

Operators Certification

"Section 12" of the Drinking Water Protection Act proclaims a person is qualified to operate, maintain or repair a water supply system if the person is certified by the Environmental Operators Certification Program (EOCP) to the same level as the system they operate. The implementation date for a Class III system was January 1, 2007.

Currently, all full-time staff with the exception of one person and many of the temporary full-time staff have achieved the EOCP certifications at the level 1 or higher. In the City of Richmond, currently 3 full-time staff have a Level III certificate.

Benefits of a Certification Program

With water and wastewater employees being properly trained and certified, the public, the corporation, regulatory agencies, and managers can be confident that water services and sewer and drainage staff have the skills, knowledge, abilities, experience, and judgment to competently perform their job.

Certified employees can:

- Maximize the performance of water and wastewater infrastructure
- Minimize health risks and environmental concerns
- Optimize operational cost
- Protect infrastructure investment

Certification has resulted in:

- Improved safety and reduced accident rates.

Did you know that installing aerators with flow restrictors on faucets and installing low-flow showerheads significantly reduce water consumption?

- Compliance with water/pollution control legislation.
- Enhanced career opportunities for certified operators, ease of hiring, promotion, and establishing of salary levels based on certification.
- Minimum qualification standards requiring operators to pass a comprehensive exam.
- A focus on the development of training materials based on "need to know" criteria.
- A means of recognition of peers, owners, and managers of the water distribution system.

Operator Training

Through obtaining certification, members of staff are able to gain a better understanding of the work they perform, giving staff the confidence to make informed decisions. In 2011, the training budget was $75,000 for the Water Services division. All staff are encouraged to take the courses, which will enable them to advance to higher levels. In addition, participation in additional training seminars and courses is encouraged with fees paid by the City, upon successful completion.

Security Measures

In preparation for the 2010 Winter Olympic Games security was enhanced at all of the City's PRV stations to insure that access to these facilities was only available to authorized personnel. On-going upgrades to the City's S.C.A.D.A system include security intrusion alarms. This program will continue until all sites are protected.

Emergency Response Plan

In the event of possible contamination of the water system, the City of Richmond, Metro Vancouver, and regional health authority have developed a number of emergency response plans.

If contamination of the water system is suspected, water services staff must:

- Ensure safety of response crew.
- Notify the appropriate agencies and City personal (Table 4).
- Isolate the actual or suspected contamination, and determine its source.
- Provide water samples to the Metro Vancouver Lab.
- Flush water from an uncontaminated source to purge actual or suspected contaminant, following procedures for de-chlorination and the proper disposal of water.
- Through the continuous feed method, inject sodium chloride 12% into the contaminated water main with a dosage of 300 mg/l or 300 ppm.
- This dosage should be maintained for 3 hours after which the chlorine should be removed and neutralized with sodium thiosulphate to ensure no environmental impact.
- Provide additional water samples to the Metro Vancouver Lab for re-testing.

Depending on the nature of the contamination, the Medical Health Officer (MHO) may decide to leave the water main in service and issue a boil water advisory, or may instruct the City to provide alternative water to those

affected. Once water samples are confirmed as being within normal water quality standards within the affected sections of the water distribution system, the water mains can be placed back in service. See Appendix 7 for specific emergency response plans.

Table 2 – Agency Notification for Situations Drinking Water Safety

Situation	Notifying Agency	Agency Notified	Time Frame For Notification
Fecal positive sample	City of RichmondMetro Vancouver Lab	City of Richmond / MHO	Immediate
Chemical/biological contamination	City of RichmondMetro Vancouver Lab	City of Richmond / MHO	Immediate
Turbidity > 5 NTU	City of Richmond Metro Vancouver Control CentreMetro Vancouver Lab	City of Richmond / MHO	Immediate
Disinfection failure primary or secondary disinfection	City of RichmondMetro Vancouver Control CentreMetro Vancouver Lab	City of Richmond / MHO	Immediate, where BC DWPR or GCDWQ guidelines may not be met
Loss of pressure due to high demand	City of RichmondMetro Vancouver Control Centre	MHOCity of RichmondMetro Vancouver Control Centre	Immediate
Water main break where the pressure drops below 20 psi.	City of RichmondMetro Vancouver Control Centre	MHOCity of Richmond	Immediate

Conclusion

Richmond residents enjoyed very high quality drinking water in 2011. While colour, temperature, and low pH can cause occasional aesthetic problems, the protected nature of the Metro Vancouver watersheds allows the City to supply water to residents with a low potential for microorganism contamination.

In previous years, portions of the distribution system have experienced lower than desirable chlorine residual values. However, the extent of these conditions has improved greatly with the implementation of weekly and monthly flushing, installation of automated flushing points, and active replacement of water services and water main infrastructure.

In addition, turbidity in sections of the water distribution system has been an issue. To combat these problems, staff continue to employ best management practices in the operation and maintenance of the water system. The completion of the Seymour-Capilino Filtration Plant has significantly reduced the level of turbidity in Metro Vancouver source water and prevented any drinking water advisories, like the one experienced in November 2006.

The City achieved a milestone in 2006 by meeting "Section 12" of the Drinking Water Protection Act. This ensures that water service staff have been certified by the EOCP, to the same level as the distribution system. Experienced and highly trained Water Services staff are well equipped to operate and maintain all aspects of the water system from source to property line.

The City of Richmond has steadily improved and upgraded its water distribution system, with water sample test results indicating a significant improvement in water quality over the past number of years. The City of Richmond remains diligent in ensuring this system is maintained to the high standards expected by Richmond residents, and that its contingency plans, in the event of an emergency, are thorough and up to date.0

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.

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Appendicies

APPENDIX 1: DRINKING WATER/WATER QUALITY WEBSITES AND REFERENCES

APPENDIX 2: COMPLETE 2010 CITY OF RICHMOND WATER QUALITY RESULTS

APPENDIX 3: CITY OF RICHMOND S.C.A.D.A AND PREASURE TESTING SITES

APPENDIX 4: CITY OF RICHMOND WATER SAMPLING SITES

APPENDIX 5: 2011 THM AND HAA TEST RESULTS

APPENDIX 6: CITY OF RICHMOND: 2011 HEAVEY METAL TESTING RESULTS

APPENDIX 7: SAMPLE DRINKING WATER QUALITY ADVISORY

APPENDIX 8: SPECIFIC EMERGENCY RESPONSE PLANS

APPENDIX 1: DRINKING WATER/WATER QUALITY WEBSITES AND REFERENCES

1. Health Canada Drinking Water Guild Lines
   www.hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/index_e.html
2. Provincial Drinking Water Protection Act (2003)
   www.qp.gov.bc.ca/statreg/reg/D/200_2003.htm#section8
3. Greater Vancouver Regional District – Source Water Quality and Supply
   www.gvrd.ca/water/index.htm
4. Richmond Health Services (Regional Health Authority)
   www.rhss.bc.ca/bins/index.asp
5. British Columbia Water Works Association
   www.bcwwa.org/
6. American Water Works Association
   www.awwa.org/
7. Metro Vancouver
   www.metrovancouver.org

APPENDIX 2: COMPLETE 2010 CITY OF RICHMOND WATER QUALITY RESULTS

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-251	5951McCallan Rd.	5-Jan-11	0.86	<1	<2	6	<1	0.13
RMD-273	Opp. 8331 Fairfax Place	5-Jan-11	0.77	<1	<2	7	<1	0.19
RMD-252	9751 Pendleton Rd.	5-Jan-11	0.83	<1	<2	7	<1	0.14
RMD-274	10920 Springwood Court	5-Jan-11	0.76	<1	<2	9	<1	0.21
RMD-250	6071 Azure Rd.	5-Jan-11	0.94	<1	<2	7	<1	0.13
RMD-271	3800 Cessna Drive	5-Jan-11	0.83	<1	<2	9	<1	0.16
RMD-272	751 Catalina Cres.	5-Jan-11	0.80	<1	<2	6	<1	0.15
RMD-255	6000 Blk. Miller Rd.	5-Jan-11	0.87	<1	<2	5	<1	0.31
RMD-256	1000 Blk. McDonald Rd.	5-Jan-11	0.78	<1	<2	7	<1	0.15
RMD-254	5300 No. 3 Rd.	5-Jan-11	0.79	<1	<2	6	<1	0.14
RMD-270	8200 Jones Rd.	5-Jan-11	0.83	<1	<2	6	<1	0.14
RMD-253	11051 No 3 Rd.	5-Jan-11	0.87	<1	<2	6	<1	0.17
RMD-257	6640 Blundell Rd.	7-Jan-11	0.88	<1	<2	5	<1	0.16
RMD-266	9380 General Currie Rd.	7-Jan-11	0.82	<1	<2	5	<1	0.10
RMD-259	10020 Amethyst Ave.	7-Jan-11	0.81	<1	<2	5	<1	0.14
RMD-268	13800 No. 3 Rd. (off Garden City)	7-Jan-11	0.86	<1	<2	5	<1	0.13
RMD-263	12560 Cambie Rd.	7-Jan-11	0.75	<1	<2	5	<1	0.15
RMD-278	6651 Fraserwood Place	7-Jan-11	0.04	<1	8	7	<1	0.22
RMD-279	Opp. 20371 Westminster Hwy.	7-Jan-11	0.16	<1	14	6	<1	0.30
RMD-264	13100 Mitchell Rd.	7-Jan-11	0.79	<1	<2	6	<1	0.19
RMD-204	3180 Granville Ave.	10-Jan-11	0.82	<1	<2	6	<1	0.13
RMD-206	4251 Moncton St.	10-Jan-11	0.84	<1	<2	6	<1	0.11
RMD-216	11080 No. 2 Rd.	10-Jan-11	0.81	<1	<2	5	<1	0.10
RMD-258	7000 Blk. Dyke Rd.	10-Jan-11	0.80	<1	<2	4	<1	0.12
RMD-212	Opp. 8880 Williams Rd.	10-Jan-11	0.85	<1	<2	5	<1	0.13
RMD-260	11111 Horseshoe Way	10-Jan-11	0.84	<1	<2	4	<1	0.12
RMD-208	13200 No. 4 Rd.	10-Jan-11	0.85	<1	<2	6	<1	0.13
RMD-261	9911 Sidaway Rd.	10-Jan-11	0.8	<1	<2	4	<1	0.10
RMD-205	13851 Steveston Hwy.	10-Jan-11	0.86	<1	<2	6	<1	0.31
RMD-262	13799 Commerce Pkwy.	10-Jan-11	0.82	<1	<2	4	<1	0.10
RMD-267	17240 Fedoruk	10-Jan-11	0.77	<1	<2	6	<1	0.13
RMD-249	23000 Blk. Dyke Rd.	10-Jan-11	0.33	<1	<2	7	<1	0.53
RMD-277	Opp. 11280 Twigg Place	10-Jan-11	0.67	<1	<2	6	<1	0.14
RMD-275	5180 Smith Cres.	10-Jan-11	0.37	<1	<2	7	<1	0.52
RMD-276	22271 Cochrane Drive	10-Jan-11	0.29	<1	<2	7	<1	0.42
RMD-203	23260 Westminster Hwy.	10-Jan-11	0.42	<1	<2	7	<1	0.52
RMD-202	1500 Valemont Way	10-Jan-11	0.63	<1	<2	6	<1	0.28
RMD-214	11720 Westminster Hwy.	10-Jan-11	0.90	<1	<2	5	<1	0.17

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-251	5951McCallan Rd.	12-Jan-11	0.82	<1	<2	6	<1	0.17
RMD-273	Opp. 8331 Fairfax Place	12-Jan-11	0.72	<1	2	7	<1	0.18
RMD-252	9751 Pendleton Rd.	12-Jan-11	0.79	<1	<2	7	<1	0.13
RMD-274	10920 Springwood Court	12-Jan-11	0.58	<1	<2	9	<1	0.15
RMD-250	6071 Azure Rd.	12-Jan-11	0.67	<1	<2	7	<1	0.14
RMD-271	3800 Cessna Drive	12-Jan-11	0.60	<1	<2	9	<1	0.14
RMD-272	751 Catalina Cres.	12-Jan-11	0.78	<1	2	7	<1	0.12
RMD-255	6000 Blk. Miller Rd.	12-Jan-11	0.81	<1	<2	5	<1	0.31
RMD-256	1000 Blk. McDonald Rd.	12-Jan-11	0.75	<1	<2	6	<1	0.13
RMD-254	5300 No. 3 Rd.	12-Jan-11	0.80	<1	<2	6	<1	0.12
RMD-270	8200 Jones Rd.	12-Jan-11	0.77	<1	2	6	<1	0.11
RMD-269	14951 Triangle Rd.	12-Jan-11	0.82	<1	<2	7	<1	0.16
RMD-253	11051 No 3 Rd.	12-Jan-11	0.65	<1	<2	5	<1	0.14
RMD-257	6640 Blundell Rd.	14-Jan-11	0.85	<1	<2	5	<1	0.15
RMD-258	7000 Blk. Dyke Rd.	14-Jan-11	0.73	<1	<2	6	<1	0.18
RMD-268	13800 No. 3 Rd. (off Garden City)	14-Jan-11	0.73	<1	<2	6	<1	0.13
RMD-259	10020 Amethyst Ave.	14-Jan-11	0.77	<1	<2	7	<1	0.12
RMD-266	9380 General Currie Rd.	14-Jan-11	0.63	<1	<2	5	<1	0.12
RMD-260	11111 Horseshoe Way	14-Jan-11	0.87	<1	<2	5	<1	0.14
RMD-261	9911 Sidaway Rd.	14-Jan-11	0.9	<1	<2	5	<1	0.17
RMD-263	12560 Cambie Rd.	14-Jan-11	0.73	<1	<2	6	<1	0.17
RMD-262	13799 Commerce Pkwy.	14-Jan-11	0.85	<1	2	6	<1	0.12
RMD-264	13100 Mitchell Rd.	14-Jan-11	0.69	<1	<2	7	<1	0.14
RMD-277	Opp. 11280 Twigg Place	14-Jan-11	0.67	<1	<2	9	<1	0.13
RMD-278	6651 Fraserwood Place	14-Jan-11	0.03	<1	30	8	<1	0.29
RMD-279	Opp. 20371 Westminster Hwy.	14-Jan-11	0.12	<1	8	7	<1	0.30
RMD-204	3180 Granville Ave.	17-Jan-11	0.81	<1	<2	5	<1	0.15
RMD-206	4251 Moncton St.	17-Jan-11	0.87	<1	<2	5	<1	0.13
RMD-216	11080 No. 2 Rd.	17-Jan-11	0.89	<1	<2	5	<1	0.14
RMD-212	Opp. 8880 Williams Rd.	17-Jan-11	0.78	<1	<2	6	<1	0.18
RMD-208	13200 No. 4 Rd.	17-Jan-11	0.87	<1	2	5	<1	0.12
RMD-205	13851 Steveston Hwy.	17-Jan-11	0.74	<1	220	5	<1	0.15
RMD-267	17240 Fedoruk	17-Jan-11	0.89	<1	<2	5	<1	0.13
RMD-249	23000 Blk. Dyke Rd.	17-Jan-11	0.57	<1	<2	6	<1	0.49
RMD-276	22271 Cochrane Drive	17-Jan-11	0.33	<1	<2	5	<1	0.41
RMD-275	5180 Smith Cres.	17-Jan-11	0.45	<1	<2	6	<1	0.50
RMD-203	23260 Westminster Hwy.	17-Jan-11	0.58	<1	<2	5	<1	0.58
RMD-202	1500 Valemont Way	17-Jan-11	0.80	<1	<2	5	<1	0.17
RMD-214	11720 Westminster Hwy.	17-Jan-11	1.0	<1	<2	4	<1	0.12
RMD-251	5951McCallan Rd.	19-Jan-11	0.86	<1	<2	6	<1	0.15

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-273	Opp. 8331 Fairfax Place	19-Jan-11	0.78	<1	<2	8	<1	0.11
RMD-252	9751 Pendleton Rd.	19-Jan-11	0.76	<1	<2	7	<1	0.09
RMD-274	10920 Springwood Court	19-Jan-11	0.78	<1	<2	9	<1	0.17
RMD-250	6071 Azure Rd.	19-Jan-11	0.74	<1	<2	7	<1	0.14
RMD-271	3800 Cessna Drive	19-Jan-11	0.67	<1	2	8	<1	0.20
RMD-272	751 Catalina Cres.	19-Jan-11	0.82	<1	<2	6	<1	0.11
RMD-255	6000 Blk. Miller Rd.	19-Jan-11	0.83	<1	<2	6	<1	0.26
RMD-256	1000 Blk. McDonald Rd.	19-Jan-11	0.76	<1	<2	7	<1	0.10
RMD-254	5300 No. 3 Rd.	19-Jan-11	0.79	<1	2	6	<1	0.15
RMD-270	8200 Jones Rd.	19-Jan-11	0.81	<1	4	6	<1	0.13
RMD-253	11051 No 3 Rd.	19-Jan-11	0.82	<1	<2	7	<1	0.12
RMD-257	6640 Blundell Rd.	21-Jan-11	0.87	<1	<2	4	<1	0.12
RMD-266	9380 General Currie Rd.	21-Jan-11	0.85	<1	<2	4	<1	0.15
RMD-259	10020 Amethyst Ave.	21-Jan-11	0.85	<1	<2	5	<1	0.11
RMD-268	13800 No. 3 Rd. (off Garden City)	21-Jan-11	0.74	<1	<2	5	<1	0.14
RMD-258	7000 Blk. Dyke Rd.	21-Jan-11	0.72	<1	<2	5	<1	0.11
RMD-260	11111 Horseshoe Way	21-Jan-11	0.87	<1	<2	4	<1	0.10
RMD-261	9911 Sidaway Rd.	21-Jan-11	0.85	<1	<2	4	<1	0.14
RMD-263	12560 Cambie Rd.	21-Jan-11	0.69	<1	<2	5	<1	0.21
RMD-262	13799 Commerce Pkwy.	21-Jan-11	0.71	<1	<2	5	<1	0.14
RMD-278	6651 Fraserwood Place	21-Jan-11	0.05	<1	4	8	<1	0.41
RMD-279	Opp. 20371 Westminster Hwy.	21-Jan-11	0.26	<1	6	8	<1	0.37
RMD-277	Opp. 11280 Twigg Place	21-Jan-11	0.76	<1	<2	6	<1	0.12
RMD-264	13100 Mitchell Rd.	21-Jan-11	0.74	<1	<2	6	<1	0.18
RMD-204	3180 Granville Ave.	24-Jan-11	0.78	<1	<2	7	<1	0.12
RMD-206	4251 Moncton St.	24-Jan-11	0.60	<1	<2	8	<1	0.10
RMD-216	11080 No. 2 Rd.	24-Jan-11	0.80	<1	<2	7	<1	0.09
RMD-212	Opp. 8880 Williams Rd.	24-Jan-11	0.71	<1	4	8	<1	0.12
RMD-208	13200 No. 4 Rd.	24-Jan-11	0.85	<1	2	6	<1	0.09
RMD-205	13851 Steveston Hwy.	24-Jan-11	0.79	<1	<2	6	<1	0.09
RMD-267	17240 Fedoruk	24-Jan-11	0.86	<1	<2	6	<1	0.08
RMD-249	23000 Blk. Dyke Rd.	24-Jan-11	0.46	<1	2	7	<1	0.37
RMD-276	22271 Cochrane Drive	24-Jan-11	0.22	<1	<2	7	<1	0.25
RMD-275	5180 Smith Cres.	24-Jan-11	0.51	<1	<2	7	<1	0.39
RMD-203	23260 Westminster Hwy.	24-Jan-11	0.50	<1	<2	7	<1	0.39
RMD-202	1500 Valemont Way	24-Jan-11	0.74	<1	<2	6	<1	0.13
RMD-214	11720 Westminster Hwy.	24-Jan-11	0.79	<1	<2	7	<1	0.11
RMD-251	5951McCallan Rd.	26-Jan-11	0.86	<1	<2	6	<1	0.11
RMD-273	Opp. 8331 Fairfax Place	26-Jan-11	0.70	<1	<2	8	<1	0.14
RMD-252	9751 Pendleton Rd.	26-Jan-11	0.77	<1	<2	7	<1	0.10

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-274	10920 Springwood Court	26-Jan-11	0.74	<1	2	9	<1	0.17
RMD-253	11051 No 3 Rd.	26-Jan-11	0.70	<1	<2	7	<1	0.10
RMD-269	14951 Triangle Rd.	26-Jan-11	0.76	<1	<2	8	<1	0.11
RMD-270	8200 Jones Rd.	26-Jan-11	0.79	<1	<2	7	<1	0.11
RMD-254	5300 No. 3 Rd.	26-Jan-11	0.71	<1	<2	6	<1	0.09
RMD-250	6071 Azure Rd.	26-Jan-11	0.86	<1	<2	7	<1	0.11
RMD-271	3800 Cessna Drive	26-Jan-11	0.70	<1	<2	7	<1	0.19
RMD-272	751 Catalina Cres.	26-Jan-11	0.79	<1	<2	5	<1	0.11
RMD-255	6000 Blk. Miller Rd.	26-Jan-11	0.85	<1	<2	4	<1	0.60
RMD-256	1000 Blk. McDonald Rd.	26-Jan-11	0.65	<1	<2	6	<1	0.15
RMD-257	6640 Blundell Rd.	28-Jan-11	0.89	<1	<2	4	<1	0.13
RMD-258	7000 Blk. Dyke Rd.	28-Jan-11	0.60	<1	2	6	<1	0.15
RMD-268	13800 No. 3 Rd. (off Garden City)	28-Jan-11	0.76	<1	<2	6	<1	0.12
RMD-259	10020 Amethyst Ave.	28-Jan-11	0.79	<1	<2	5	<1	0.11
RMD-266	9380 General Currie Rd.	28-Jan-11	0.84	<1	<2	4	<1	0.11
RMD-260	11111 Horseshoe Way	28-Jan-11	0.80	<1	<2	4	<1	0.13
RMD-261	9911 Sidaway Rd.	28-Jan-11	0.82	<1	<2	5	<1	0.15
RMD-262	13799 Commerce Pkwy.	28-Jan-11	0.63	<1	<2	5	<1	0.17
RMD-263	12560 Cambie Rd.	28-Jan-11	0.74	<1	<2	5	<1	0.13
RMD-264	13100 Mitchell Rd.	28-Jan-11	0.73	<1	<2	6	<1	0.19
RMD-277	Opp. 11280 Twigg Place	28-Jan-11	0.55	<1	<2	7	<1	0.17
RMD-278	6651 Fraserwood Place	28-Jan-11	0.04	<1	20	8	<1	0.24
RMD-279	Opp. 20371 Westminster Hwy.	28-Jan-11	0.21	<1	2	7	<1	0.30
RMD-204	3180 Granville Ave.	31-Jan-11	0.84	<1	<2	6	<1	0.14
RMD-206	4251 Moncton St.	31-Jan-11	0.78	<1	<2	5	<1	0.11
RMD-216	11080 No. 2 Rd.	31-Jan-11	0.80	<1	<2	5	<1	0.15
RMD-212	Opp. 8880 Williams Rd.	31-Jan-11	0.67	<1	<2	6	<1	0.17
RMD-208	13200 No. 4 Rd.	31-Jan-11	0.79	<1	<2	5	<1	0.12
RMD-205	13851 Steveston Hwy.	31-Jan-11	0.61	<1	<2	5	<1	0.10
RMD-267	17240 Fedoruk	31-Jan-11	0.73	<1	<2	5	<1	0.17
RMD-249	23000 Blk. Dyke Rd.	31-Jan-11	0.48	<1	<2	6	<1	0.34
RMD-276	22271 Cochrane Drive	31-Jan-11	0.31	<1	<2	6	<1	0.23
RMD-275	5180 Smith Cres.	31-Jan-11	0.41	<1	<2	6	<1	0.27
RMD-203	23260 Westminster Hwy.	31-Jan-11	0.55	<1	<2	6	<1	0.28
RMD-202	1500 Valemont Way	31-Jan-11	0.75	<1	<2	5	<1	0.13
RMD-214	11720 Westminster Hwy.	31-Jan-11	0.90	<1	<2	5	<1	0.11
RMD-251	5951McCallan Rd.	2-Feb-11	0.60	<1	<2	6	<1	0.14
RMD-273	Opp. 8331 Fairfax Place	2-Feb-11	0.72	<1	<2	6	<1	0.14
RMD-252	9751 Pendleton Rd.	2-Feb-11	0.67	<1	<2	5	<1	0.17
RMD-274	10920 Springwood Court	2-Feb-11	0.71	<1	<2	7	<1	0.15

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-250	6071 Azure Rd.	2-Feb-11	0.53	<1	<2	5	<1	0.14
RMD-271	3800 Cessna Drive	2-Feb-11	0.67	<1	<2	7	<1	0.14
RMD-272	751 Catalina Cres.	2-Feb-11	0.70	<1	<2	4	<1	0.14
RMD-255	6000 Blk. Miller Rd.	2-Feb-11	0.78	<1	<2	4	<1	0.18
RMD-256	1000 Blk. McDonald Rd.	2-Feb-11	0.65	<1	<2	5	<1	0.15
RMD-254	5300 No. 3 Rd.	2-Feb-11	0.72	<1	<2	5	<1	0.13
RMD-270	8200 Jones Rd.	2-Feb-11	0.70	<1	<2	5	<1	0.17
RMD-269	14951 Triangle Rd.	2-Feb-11	0.70	<1	<2	4	<1	0.13
RMD-253	11051 No 3 Rd.	2-Feb-11	0.75	<1	<2	5	<1	0.14
RMD-257	6640 Blundell Rd.	4-Feb-11	0.78	<1	<2	4	<1	0.07
RMD-266	9380 General Currie Rd.	4-Feb-11	0.68	<1	<2	5	<1	0.08
RMD-259	10020 Amethyst Ave.	4-Feb-11	0.71	<1	<2	5	<1	0.10
RMD-268	13800 No. 3 Rd. (off Garden City)	4-Feb-11	0.61	<1	<2	5	<1	0.09
RMD-258	7000 Blk. Dyke Rd.	4-Feb-11	0.66	<1	<2	6	<1	0.10
RMD-260	11111 Horseshoe Way	4-Feb-11	0.72	<1	<2	4	<1	0.08
RMD-261	9911 Sidaway Rd.	4-Feb-11	0.73	<1	<2	5	<1	0.08
RMD-263	12560 Cambie Rd.	4-Feb-11	0.60	<1	<2	5	<1	0.13
RMD-262	13799 Commerce Pkwy.	4-Feb-11	0.57	<1	<2	5	<1	0.11
RMD-278	6651 Fraserwood Place	4-Feb-11	0.03	<1	100	7	<1	0.27
RMD-279	Opp. 20371 Westminster Hwy.	4-Feb-11	0.26	<1	<2	7	<1	0.21
RMD-277	Opp. 11280 Twigg Place	4-Feb-11	0.56	<1	<2	7	<1	0.14
RMD-264	13100 Mitchell Rd.	4-Feb-11	0.56	<1	<2	6	<1	0.13
RMD-204	3180 Granville Ave.	7-Feb-11	0.64	<1	<2	7	<1	0.13
RMD-206	4251 Moncton St.	7-Feb-11	0.64	<1	<2	6	<1	0.18
RMD-212	Opp. 8880 Williams Rd.	7-Feb-11	0.61	<1	<2	8	<1	0.15
RMD-208	13200 No. 4 Rd.	7-Feb-11	0.63	<1	<2	6	<1	0.14
RMD-205	13851 Steveston Hwy.	7-Feb-11	0.65	<1	<2	6	<1	0.14
RMD-267	17240 Fedoruk	7-Feb-11	0.67	<1	<2	6	<1	0.13
RMD-249	23000 Blk. Dyke Rd.	7-Feb-11	0.54	<1	<2	7	<1	0.43
RMD-276	22271 Cochrane Drive	7-Feb-11	0.39	<1	<2	7	<1	0.32
RMD-275	5180 Smith Cres.	7-Feb-11	0.42	<1	<2	7	<1	0.12
RMD-203	23260 Westminster Hwy.	7-Feb-11	0.56	<1	<2	7	<1	0.46
RMD-202	1500 Valemont Way	7-Feb-11	0.62	<1	<2	6	<1	0.18
RMD-214	11720 Westminster Hwy.	7-Feb-11	0.74	<1	<2	6	<1	0.14
RMD-216	11080 No. 2 Rd.	7-Feb-11	0.53	<1	<2	7	<1	0.15
RMD-251	5951McCallan Rd.	9-Feb-11	0.63	<1	<2	5	<1	0.13
RMD-273	Opp. 8331 Fairfax Place	9-Feb-11	0.65	<1	<2	7	<1	0.14
RMD-252	9751 Pendleton Rd.	9-Feb-11	0.63	<1	<2	6	<1	0.12
RMD-274	10920 Springwood Court	9-Feb-11	0.64	<1	2	6	<1	0.18
RMD-250	6071 Azure Rd.	9-Feb-11	0.59	<1	<2	5	<1	0.11

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-271	3800 Cessna Drive	9-Feb-11	0.61	<1	<2	7	<1	0.13
RMD-272	751 Catalina Cres.	9-Feb-11	0.64	<1	<2	5	<1	0.11
RMD-255	6000 Blk. Miller Rd.	9-Feb-11	0.71	<1	<2	4	<1	0.17
RMD-256	1000 Blk. McDonald Rd.	9-Feb-11	0.61	<1	<2	5	<1	0.15
RMD-254	5300 No. 3 Rd.	9-Feb-11	0.65	<1	<2	5	<1	0.11
RMD-270	8200 Jones Rd.	9-Feb-11	0.70	<1	<2	5	<1	0.12
RMD-269	14951 Triangle Rd.	9-Feb-11	0.65	<1	<2	5	<1	0.16
RMD-253	11051 No 3 Rd.	9-Feb-11	0.66	<1	<2	4	<1	0.14
RMD-257	6640 Blundell Rd.	11-Feb-11	0.77	<1	<2	6	<1	0.15
RMD-258	7000 Blk. Dyke Rd.	11-Feb-11	0.66	<1	<2	7	<1	0.15
RMD-268	13800 No. 3 Rd. (off Garden City)	11-Feb-11	0.73	<1	<2	7	<1	0.14
RMD-259	10020 Amethyst Ave.	11-Feb-11	0.73	<1	<2	7	<1	0.14
RMD-266	9380 General Currie Rd.	11-Feb-11	0.71	<1	<2	6	<1	0.16
RMD-260	11111 Horseshoe Way	11-Feb-11	0.76	<1	<2	6	<1	0.16
RMD-261	9911 Sidaway Rd.	11-Feb-11	0.86	<1	<2	6	<1	0.17
RMD-263	12560 Cambie Rd.	11-Feb-11	0.63	<1	<2	7	<1	0.17
RMD-262	13799 Commerce Pkwy.	11-Feb-11	0.6	<1	<2	6	<1	0.13
RMD-264	13100 Mitchell Rd.	11-Feb-11	0.65	<1	<2	7	<1	0.14
RMD-277	Opp. 11280 Twigg Place	11-Feb-11	0.57	<1	<2	9	<1	0.16
RMD-279	Opp. 20371 Westminster Hwy.	11-Feb-11	0.26	<1	<2	8	<1	0.31
RMD-278	6651 Fraserwood Place	11-Feb-11	0.05	<1	14	8	<1	0.25
RMD-204	3180 Granville Ave.	14-Feb-11	0.84	<1	2	5	<1	0.12
RMD-206	4251 Moncton St.	14-Feb-11	0.85	<1	<2	5	<1	0.11
RMD-216	11080 No. 2 Rd.	14-Feb-11	0.91	<1	<2	5	<1	0.10
RMD-212	Opp. 8880 Williams Rd.	14-Feb-11	0.85	<1	<2	5	<1	0.09
RMD-208	13200 No. 4 Rd.	14-Feb-11	0.89	<1	<2	5	<1	0.10
RMD-205	13851 Steveston Hwy.	14-Feb-11	0.83	<1	<2	5	<1	0.10
RMD-267	17240 Fedoruk	14-Feb-11	0.62	<1	<2	5	<1	0.16
RMD-249	23000 Blk. Dyke Rd.	14-Feb-11	0.51	<1	<2	5	<1	0.29
RMD-276	22271 Cochrane Drive	14-Feb-11	0.4	<1	<2	5	<1	0.21
RMD-275	5180 Smith Cres.	14-Feb-11	0.63	<1	<2	5	<1	0.28
RMD-203	23260 Westminster Hwy.	14-Feb-11	0.56	<1	<2	5	<1	0.26
RMD-202	1500 Valemont Way	14-Feb-11	0.49	<1	<2	5	<1	0.17
RMD-214	11720 Westminster Hwy.	14-Feb-11	0.79	<1	<2	4	<1	0.11
RMD-251	5951McCallan Rd.	16-Feb-11	0.92	<1	<2	5	<1	0.11
RMD-273	Opp. 8331 Fairfax Place	16-Feb-11	0.83	<1	<2	6	<1	0.13
RMD-252	9751 Pendleton Rd.	16-Feb-11	0.77	<1	<2	5	<1	0.15
RMD-274	10920 Springwood Court	16-Feb-11	0.97	<1	<2	6	<1	0.26
RMD-250	6071 Azure Rd.	16-Feb-11	0.88	<1	<2	5	<1	0.14
RMD-271	3800 Cessna Drive	16-Feb-11	0.61	<1	<2	7	<1	0.13

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-272	751 Catalina Cres.	16-Feb-11	0.81	<1	<2	5	<1	0.10
RMD-255	6000 Blk. Miller Rd.	16-Feb-11	0.76	<1	<2	4	<1	0.27
RMD-256	1000 Blk. McDonald Rd.	16-Feb-11	0.91	<1	<2	6	<1	0.11
RMD-254	5300 No. 3 Rd.	16-Feb-11	0.89	<1	<2	5	<1	0.16
RMD-270	8200 Jones Rd.	16-Feb-11	0.85	<1	<2	5	<1	0.11
RMD-269	14951 Triangle Rd.	16-Feb-11	0.79	<1	<2	6	<1	0.10
RMD-253	11051 No 3 Rd.	16-Feb-11	0.93	<1	<2	5	<1	0.6
RMD-258	7000 Blk. Dyke Rd.	17-Feb-11	0.66	<1	2	5	<1	0.33
RMD-259	10020 Amethyst Ave.	17-Feb-11	0.74	<1	<2	5	<1	0.11
RMD-257	6640 Blundell Rd.	18-Feb-11	0.77	<1	<2	5	<1	0.10
RMD-266	9380 General Currie Rd.	18-Feb-11	0.69	<1	<2	5	<1	0.21
RMD-260	11111 Horseshoe Way	18-Feb-11	0.71	<1	<2	5	<1	0.10
RMD-268	13800 No. 3 Rd. (off Garden City)	18-Feb-11	0.77	<1	<2	5	<1	0.13
RMD-261	9911 Sidaway Rd.	18-Feb-11	0.70	<1	<2	5	<1	0.13
RMD-263	12560 Cambie Rd.	18-Feb-11	0.63	<1	<2	5	<1	0.15
RMD-262	13799 Commerce Pkwy.	18-Feb-11	0.55	<1	<2	5	<1	0.14
RMD-278	6651 Fraserwood Place	18-Feb-11	0.09	<1	<2	7	<1	0.23
RMD-279	Opp. 20371 Westminster Hwy.	18-Feb-11	0.32	<1	2	6	<1	0.27
RMD-277	Opp. 11280 Twigg Place	18-Feb-11	0.75	<1	<2	6	<1	0.19
RMD-264	13100 Mitchell Rd.	18-Feb-11	0.62	<1	<2	6	<1	0.28
RMD-204	3180 Granville Ave.	21-Feb-11	0.93	<1	<2	5	<1	0.16
RMD-206	4251 Moncton St.	21-Feb-11	0.77	<1	<2	5	<1	0.13
RMD-216	11080 No. 2 Rd.	21-Feb-11	0.85	<1	<2	5	<1	0.08
RMD-212	Opp. 8880 Williams Rd.	21-Feb-11	0.87	<1	<2	5	<1	0.11
RMD-208	13200 No. 4 Rd.	21-Feb-11	0.91	<1	<2	5	<1	0.08
RMD-205	13851 Steveston Hwy.	21-Feb-11	0.78	<1	<2	5	<1	0.09
RMD-267	17240 Fedoruk	21-Feb-11	0.70	<1	<2	5	<1	0.07
RMD-249	23000 Blk. Dyke Rd.	21-Feb-11	0.67	<1	<2	5	<1	0.21
RMD-276	22271 Cochrane Drive	21-Feb-11	0.51	<1	<2	5	<1	0.25
RMD-275	5180 Smith Cres.	21-Feb-11	0.73	<1	<2	5	<1	0.25
RMD-203	23260 Westminster Hwy.	21-Feb-11	0.68	<1	<2	5	<1	0.24
RMD-202	1500 Valemont Way	21-Feb-11	0.56	<1	<2	5	<1	0.14
RMD-214	11720 Westminster Hwy.	21-Feb-11	1.1	<1	<2	5	<1	0.11
RMD-269	14951 Triangle Rd.	23-Feb-11	0.64	<1	<2	5	<1	0.10
RMD-253	11051 No 3 Rd.	23-Feb-11	0.66	<1	<2	5	<1	0.11
RMD-274	10920 Springwood Court	23-Feb-11	0.65	<1	<2	6	<1	0.51
RMD-252	9751 Pendleton Rd.	23-Feb-11	0.68	<1	<2	5	<1	0.09
RMD-273	Opp. 8331 Fairfax Place	23-Feb-11	0.73	<1	<2	6	<1	0.10
RMD-270	8200 Jones Rd.	23-Feb-11	0.66	<1	<2	5	<1	0.13
RMD-254	5300 No. 3 Rd.	23-Feb-11	0.61	<1	<2	5	<1	0.11

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-271	3800 Cessna Drive	23-Feb-11	0.70	<1	<2	6	<1	0.12
RMD-272	751 Catalina Cres.	23-Feb-11	0.64	<1	<2	5	<1	0.09
RMD-255	6000 Blk. Miller Rd.	23-Feb-11	0.67	<1	4	4	<1	0.26
RMD-256	1000 Blk. McDonald Rd.	23-Feb-11	0.73	<1	<2	5	<1	0.12
RMD-250	6071 Azure Rd.	23-Feb-11	0.69	<1	<2	5	<1	0.11
RMD-251	5951McCallan Rd.	23-Feb-11	0.64	<1	<2	5	<1	0.11
RMD-257	6640 Blundell Rd.	25-Feb-11	0.63	<1	<2	2	<1	0.09
RMD-258	7000 Blk. Dyke Rd.	25-Feb-11	0.64	<1	<2	5	<1	0.17
RMD-268	13800 No. 3 Rd. (off Garden City)	25-Feb-11	0.61	<1	<2	5	<1	0.09
RMD-259	10020 Amethyst Ave.	25-Feb-11	0.60	<1	<2	5	<1	0.26
RMD-266	9380 General Currie Rd.	25-Feb-11	0.62	<1	<2	4	<1	0.13
RMD-260	11111 Horseshoe Way	25-Feb-11	0.7	<1	<2	5	<1	0.09
RMD-261	9911 Sidaway Rd.	25-Feb-11	0.63	<1	<2	4	<1	0.17
RMD-262	13799 Commerce Pkwy.	25-Feb-11	0.63	<1	<2	4	<1	0.11
RMD-263	12560 Cambie Rd.	25-Feb-11	0.52	<1	<2	5	<1	0.15
RMD-264	13100 Mitchell Rd.	25-Feb-11	0.66	<1	<2	6	<1	0.13
RMD-277	Opp. 11280 Twigg Place	25-Feb-11	0.65	<1	<2	6	<1	0.12
RMD-278	6651 Fraserwood Place	25-Feb-11	0.20	<1	2	7	<1	0.24
RMD-279	Opp. 20371 Westminster Hwy.	25-Feb-11	0.32	<1	<2	6	<1	0.27
RMD-204	3180 Granville Ave.	28-Feb-11	0.67	<1	<2	5	<1	0.15
RMD-206	4251 Moncton St.	28-Feb-11	0.61	<1	<2	4	<1	0.11
RMD-216	11080 No. 2 Rd.	28-Feb-11	0.67	<1	<2	4	<1	0.10
RMD-212	Opp. 8880 Williams Rd.	28-Feb-11	0.63	<1	<2	4	<1	0.09
RMD-208	13200 No. 4 Rd.	28-Feb-11	0.67	<1	<2	4	<1	0.15
RMD-205	13851 Steveston Hwy.	28-Feb-11	0.64	<1	<2	4	<1	0.23
RMD-267	17240 Fedoruk	28-Feb-11	0.63	<1	<2	4	<1	0.10
RMD-249	23000 Blk. Dyke Rd.	28-Feb-11	0.48	<1	<2	4	<1	0.36
RMD-276	22271 Cochrane Drive	28-Feb-11	0.44	<1	<2	5	<1	0.28
RMD-275	5180 Smith Cres.	28-Feb-11	0.49	<1	2	5	<1	0.35
RMD-203	23260 Westminster Hwy.	28-Feb-11	0.63	<1	<2	4	<1	0.28
RMD-202	1500 Valemont Way	28-Feb-11	0.69	<1	<2	4	<1	0.15
RMD-214	11720 Westminster Hwy.	28-Feb-11	0.67	<1	<2	4	<1	0.43
RMD-251	5951McCallan Rd.	2-Mar-11	0.59	<1	<2	5	<1	0.15
RMD-252	9751 Pendleton Rd.	2-Mar-11	0.59	<1	<2	6	<1	0.13
RMD-273	Opp. 8331 Fairfax Place	2-Mar-11	0.55	<1	<2	7	<1	0.10
RMD-274	10920 Springwood Court	2-Mar-11	0.56	<1	2	8	<1	0.21
RMD-250	6071 Azure Rd.	2-Mar-11	0.57	<1	<2	6	<1	0.12
RMD-271	3800 Cessna Drive	2-Mar-11	0.49	<1	Contaminated NA	8	<1	0.12
RMD-272	751 Catalina Cres.	2-Mar-11	0.67	<1	<2	6	<1	0.08

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-255	6000 Blk. Miller Rd.	2-Mar-11	0.70	<1	<2	5	<1	0.19
RMD-256	1000 Blk. McDonald Rd.	2-Mar-11	0.39	<1	<2	8	<1	0.18
RMD-254	5300 No. 3 Rd.	2-Mar-11	0.58	<1	<2	5	<1	0.11
RMD-270	8200 Jones Rd.	2-Mar-11	0.54	<1	<2	6	<1	0.14
RMD-269	14951 Triangle Rd.	2-Mar-11	0.58	<1	<2	6	<1	0.12
RMD-253	11051 No 3 Rd.	2-Mar-11	0.58	<1	<2	5	<1	0.15
RMD-257	6640 Blundell Rd.	4-Mar-11	0.61	<1	<2	4	<1	0.13
RMD-266	9380 General Currie Rd.	4-Mar-11	0.65	<1	<2	3	<1	0.08
RMD-259	10020 Amethyst Ave.	4-Mar-11	0.56	<1	2	4	<1	0.10
RMD-268	13800 No. 3 Rd. (off Garden City)	4-Mar-11	0.55	<1	<2	4	<1	0.08
RMD-258	7000 Blk. Dyke Rd.	4-Mar-11	0.62	<1	<2	4	<1	0.15
RMD-260	11111 Horseshoe Way	4-Mar-11	0.60	<1	<2	3	<1	0.11
RMD-261	9911 Sidaway Rd.	4-Mar-11	0.55	<1	<2	4	<1	0.09
RMD-262	13799 Commerce Pkwy.	4-Mar-11	0.59	<1	2	4	<1	0.09
RMD-263	12560 Cambie Rd.	4-Mar-11	0.55	<1	<2	4	<1	0.12
RMD-264	13100 Mitchell Rd.	4-Mar-11	0.5	<1	<2	4	<1	0.11
RMD-277	Opp. 11280 Twigg Place	4-Mar-11	0.46	<1	<2	6	<1	0.14
RMD-278	6651 Fraserwood Place	4-Mar-11	0.16	<1	<2	6	<1	0.18
RMD-279	Opp. 20371 Westminster Hwy.	4-Mar-11	0.42	<1	2	5	<1	0.20
RMD-204	3180 Granville Ave.	7-Mar-11	0.57	<1	<2	5	<1	0.11
RMD-206	4251 Moncton St.	7-Mar-11	0.52	<1	<2	4	<1	0.15
RMD-216	11080 No. 2 Rd.	7-Mar-11	0.41	<1	<2	4	<1	0.10
RMD-212	Opp. 8880 Williams Rd.	7-Mar-11	0.53	<1	<2	5	<1	0.13
RMD-208	13200 No. 4 Rd.	7-Mar-11	0.45	<1	2	4	<1	0.13
RMD-205	13851 Steveston Hwy.	7-Mar-11	0.55	<1	<2	4	<1	0.13
RMD-267	17240 Fedoruk	7-Mar-11	0.61	<1	<2	4	<1	0.10
RMD-249	23000 Blk. Dyke Rd.	7-Mar-11	0.69	<1	<2	5	<1	0.32
RMD-276	22271 Cochrane Drive	7-Mar-11	0.48	<1	<2	5	<1	0.27
RMD-275	5180 Smith Cres.	7-Mar-11	0.70	<1	<2	5	<1	0.31
RMD-203	23260 Westminster Hwy.	7-Mar-11	0.67	<1	<2	5	<1	0.35
RMD-202	1500 Valemont Way	7-Mar-11	0.63	<1	2	4	<1	0.18
RMD-214	11720 Westminster Hwy.	7-Mar-11	0.55	<1	<2	3	<1	0.17
RMD-251	5951McCallan Rd.	9-Mar-11	0.66	<1	<2	6	<1	0.13
RMD-273	Opp. 8331 Fairfax Place	9-Mar-11	0.66	<1	<2	8	<1	0.16
RMD-274	10920 Springwood Court	9-Mar-11	0.50	<1	<2	8	<1	0.15
RMD-250	6071 Azure Rd.	9-Mar-11	0.55	<1	<2	7	<1	0.10
RMD-252	9751 Pendleton Rd.	9-Mar-11	0.53	<1	<2	7	<1	0.12
RMD-271	3800 Cessna Drive	9-Mar-11	0.47	<1	<2	9	<1	0.15
RMD-255	6000 Blk. Miller Rd.	9-Mar-11	0.60	<1	<2	6	<1	0.28
RMD-272	751 Catalina Cres.	9-Mar-11	0.58	<1	2	6	<1	0.13

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-256	1000 Blk. McDonald Rd.	9-Mar-11	0.41	<1	<2	8	<1	0.17
RMD-254	5300 No. 3 Rd.	9-Mar-11	0.60	<1	<2	6	<1	0.11
RMD-270	8200 Jones Rd.	9-Mar-11	0.53	<1	<2	7	<1	0.13
RMD-269	14951 Triangle Rd.	9-Mar-11	0.56	<1	<2	8	<1	0.15
RMD-253	11051 No 3 Rd.	9-Mar-11	0.64	<1	<2	6	<1	0.10
RMD-257	6640 Blundell Rd.	11-Mar-11	0.60	<1	<2	5	<1	0.10
RMD-258	7000 Blk. Dyke Rd.	11-Mar-11	0.61	<1	<2	7	<1	0.10
RMD-268	13800 No. 3 Rd. (off Garden City)	11-Mar-11	0.57	<1	<2	6	<1	0.13
RMD-259	10020 Amethyst Ave.	11-Mar-11	0.65	<1	2	6	<1	0.12
RMD-266	9380 General Currie Rd.	11-Mar-11	0.70	<1	<2	5	<1	0.11
RMD-260	11111 Horseshoe Way	11-Mar-11	0.66	<1	<2	5	<1	0.10
RMD-261	9911 Sidaway Rd.	11-Mar-11	0.66	<1	<2	6	<1	0.09
RMD-278	6651 Fraserwood Place	11-Mar-11	0.23	<1	<2	9	<1	0.28
RMD-279	Opp. 20371 Westminster Hwy.	11-Mar-11	0.41	<1	<2	7	<1	0.31
RMD-262	13799 Commerce Pkwy.	11-Mar-11	0.69	<1	<2	6	<1	0.11
RMD-263	12560 Cambie Rd.	11-Mar-11	0.60	<1	<2	6	<1	0.10
RMD-264	13100 Mitchell Rd.	11-Mar-11	0.50	<1	<2	7	<1	0.12
RMD-277	Opp. 11280 Twigg Place	11-Mar-11	0.39	<1	<2	8	<1	0.15
RMD-204	3180 Granville Ave.	14-Mar-11	0.48	<1	<2	6	<1	0.08
RMD-206	4251 Moncton St.	14-Mar-11	0.50	<1	<2	6	<1	0.08
RMD-216	11080 No. 2 Rd.	14-Mar-11	0.61	<1	<2	6	<1	0.10
RMD-212	Opp. 8880 Williams Rd.	14-Mar-11	0.54	<1	<2	6	<1	0.08
RMD-208	13200 No. 4 Rd.	14-Mar-11	0.55	<1	<2	6	<1	0.08
RMD-205	13851 Steveston Hwy.	14-Mar-11	0.57	<1	<2	6	<1	0.09
RMD-267	17240 Fedoruk	14-Mar-11	0.51	<1	<2	6	<1	0.08
RMD-249	23000 Blk. Dyke Rd.	14-Mar-11	0.62	<1	<2	7	<1	0.49
RMD-276	22271 Cochrane Drive	14-Mar-11	0.49	<1	<2	7	<1	0.43
RMD-275	5180 Smith Cres.	14-Mar-11	0.78	<1	2	7	<1	0.46
RMD-203	23260 Westminster Hwy.	14-Mar-11	0.93	<1	<2	7	<1	0.47
RMD-202	1500 Valemont Way	14-Mar-11	0.62	<1	<2	6	<1	0.14
RMD-214	11720 Westminster Hwy.	14-Mar-11	0.55	<1	<2	5	<1	0.10
RMD-271	3800 Cessna Drive	16-Mar-11	0.44	<1	<2	7	<1	0.13
RMD-272	751 Catalina Cres.	16-Mar-11	0.53	<1	<2	5	<1	0.12
RMD-255	6000 Blk. Miller Rd.	16-Mar-11	0.61	<1	2	4	<1	0.32
RMD-256	1000 Blk. McDonald Rd.	16-Mar-11	0.38	<1	<2	7	<1	0.19
RMD-254	5300 No. 3 Rd.	16-Mar-11	0.55	<1	<2	5	<1	0.16
RMD-270	8200 Jones Rd.	16-Mar-11	0.55	<1	<2	5	<1	0.11
RMD-269	14951 Triangle Rd.	16-Mar-11	0.52	<1	<2	6	<1	0.11
RMD-253	11051 No 3 Rd.	16-Mar-11	0.58	<1	<2	5	<1	0.13
RMD-274	10920 Springwood Court	16-Mar-11	0.52	<1	<2	7	<1	4.50

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-252	9751 Pendleton Rd.	16-Mar-11	0.50	<1	2	5	<1	0.35
RMD-273	Opp. 8331 Fairfax Place	16-Mar-11	0.51	<1	<2	7	<1	0.09
RMD-250	6071 Azure Rd.	16-Mar-11	0.43	<1	<2	5	<1	0.12
RMD-251	5951McCallan Rd.	16-Mar-11	0.54	<1	<2	5	<1	0.11
RMD-257	6640 Blundell Rd.	18-Mar-11	0.58	<1	<2	4	<1	0.13
RMD-266	9380 General Currie Rd.	18-Mar-11	0.55	<1	<2	4	<1	0.17
RMD-259	10020 Amethyst Ave.	18-Mar-11	0.54	<1	<2	4	<1	0.14
RMD-268	13800 No. 3 Rd. (off Garden City)	18-Mar-11	0.46	<1	<2	5	<1	0.14
RMD-258	7000 Blk. Dyke Rd.	18-Mar-11	0.49	<1	2	5	<1	0.10
RMD-260	11111 Horseshoe Way	18-Mar-11	0.58	<1	<2	4	<1	0.17
RMD-261	9911 Sidaway Rd.	18-Mar-11	0.51	<1	<2	4	<1	0.14
RMD-262	13799 Commerce Pkwy.	18-Mar-11	0.47	<1	<2	4	<1	0.21
RMD-263	12560 Cambie Rd.	18-Mar-11	0.51	<1	<2	5	<1	0.17
RMD-264	13100 Mitchell Rd.	18-Mar-11	0.49	<1	<2	5	<1	0.11
RMD-277	Opp. 11280 Twigg Place	18-Mar-11	0.44	<1	<2	7	<1	0.18
RMD-278	6651 Fraserwood Place	18-Mar-11	0.28	<1	2	7	<1	0.34
RMD-279	Opp. 20371 Westminster Hwy.	18-Mar-11	0.42	<1	<2	6	<1	0.47
RMD-204	3180 Granville Ave.	21-Mar-11	0.55	<1	<2	7	<1	0.11
RMD-206	4251 Moncton St.	21-Mar-11	0.51	<1	<2	6	<1	0.10
RMD-216	11080 No. 2 Rd.	21-Mar-11	0.57	<1	<2	6	<1	0.14
RMD-212	Opp. 8880 Williams Rd.	21-Mar-11	0.53	<1	<2	7	<1	0.15
RMD-208	13200 No. 4 Rd.	21-Mar-11	0.50	<1	<2	7	<1	0.11
RMD-205	13851 Steveston Hwy.	21-Mar-11	0.52	<1	<2	7	<1	0.12
RMD-267	17240 Fedoruk	21-Mar-11	0.52	<1	<2	7	<1	0.11
RMD-249	23000 Blk. Dyke Rd.	21-Mar-11	0.75	<1	<2	7	<1	0.40
RMD-276	22271 Cochrane Drive	21-Mar-11	0.45	<1	<2	8	<1	0.32
RMD-275	5180 Smith Cres.	21-Mar-11	0.71	<1	<2	8	<1	0.43
RMD-203	23260 Westminster Hwy.	21-Mar-11	0.83	<1	<2	7	<1	0.42
RMD-202	1500 Valemont Way	21-Mar-11	0.69	<1	<2	6	<1	0.15
RMD-214	11720 Westminster Hwy.	21-Mar-11	0.55	<1	<2	6	<1	0.12
RMD-251	5951McCallan Rd.	23-Mar-11	0.55	<1	4	7	<1	0.11
RMD-273	Opp. 8331 Fairfax Place	23-Mar-11	0.43	<1	<2	10	<1	0.12
RMD-274	10920 Springwood Court	23-Mar-11	0.49	<1	<2	9	<1	0.10
RMD-252	9751 Pendleton Rd.	23-Mar-11	0.50	<1	<2	7	<1	0.08
RMD-250	6071 Azure Rd.	23-Mar-11	0.51	<1	<2	7	<1	0.10
RMD-271	3800 Cessna Drive	23-Mar-11	0.37	<1	<2	9	<1	0.11
RMD-272	751 Catalina Cres.	23-Mar-11	0.56	<1	<2	7	<1	0.09
RMD-255	6000 Blk. Miller Rd.	23-Mar-11	0.57	<1	<2	6	<1	0.20
RMD-256	1000 Blk. McDonald Rd.	23-Mar-11	0.23	<1	<2	9	<1	0.20
RMD-254	5300 No. 3 Rd.	23-Mar-11	0.58	<1	<2	6	<1	0.08

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-270	8200 Jones Rd.	23-Mar-11	0.57	<1	<2	7	<1	0.12
RMD-269	14951 Triangle Rd.	23-Mar-11	0.42	<1	<2	8	<1	0.11
RMD-253	11051 No 3 Rd.	23-Mar-11	0.55	<1	<2	6	<1	0.09
RMD-257	6640 Blundell Rd.	25-Mar-11	0.56	<1	<2	6	<1	0.08
RMD-258	7000 Blk. Dyke Rd.	25-Mar-11	0.5	<1	2	8	<1	0.16
RMD-268	13800 No. 3 Rd. (off Garden City)	25-Mar-11	0.54	<1	<2	7	<1	0.18
RMD-259	10020 Amethyst Ave.	25-Mar-11	0.58	<1	<2	7	<1	0.12
RMD-266	9380 General Currie Rd.	25-Mar-11	0.50	<1	<2	6	<1	0.14
RMD-260	11111 Horseshoe Way	25-Mar-11	0.45	<1	<2	8	<1	0.13
RMD-261	9911 Sidaway Rd.	25-Mar-11	0.49	<1	<2	7	<1	0.10
RMD-262	13799 Commerce Pkwy.	25-Mar-11	0.51	<1	<2	7	<1	0.13
RMD-263	12560 Cambie Rd.	25-Mar-11	0.50	<1	<2	7	<1	0.13
RMD-264	13100 Mitchell Rd.	25-Mar-11	0.39	<1	<2	8	<1	0.12
RMD-277	Opp. 11280 Twigg Place	25-Mar-11	0.33	<1	<2	10	<1	0.18
RMD-279	Opp. 20371 Westminster Hwy.	25-Mar-11	0.18	<1	<2	8	<1	0.33
RMD-278	6651 Fraserwood Place	25-Mar-11	0.11	<1	<2	10	<1	0.26
RMD-204	3180 Granville Ave.	28-Mar-11	0.54	<1	<2	8	<1	0.12
RMD-206	4251 Moncton St.	28-Mar-11	0.54	<1	<2	8	<1	0.14
RMD-216	11080 No. 2 Rd.	28-Mar-11	0.59	<1	<2	7	<1	0.32
RMD-212	Opp. 8880 Williams Rd.	28-Mar-11	0.51	<1	<2	7	<1	0.11
RMD-208	13200 No. 4 Rd.	28-Mar-11	0.56	<1	<2	7	<1	0.10
RMD-205	13851 Steveston Hwy.	28-Mar-11	0.54	<1	<2	7	<1	0.11
RMD-267	17240 Fedoruk	28-Mar-11	0.58	<1	<2	7	<1	0.17
RMD-249	23000 Blk. Dyke Rd.	28-Mar-11	0.70	<1	<2	8	<1	0.29
RMD-276	22271 Cochrane Drive	28-Mar-11	0.55	<1	<2	8	<1	0.26
RMD-275	5180 Smith Cres.	28-Mar-11	0.76	<1	<2	8	<1	0.31
RMD-202	1500 Valemont Way	28-Mar-11	0.64	<1	<2	7	<1	0.17
RMD-214	11720 Westminster Hwy.	28-Mar-11	0.54	<1	<2	7	<1	0.15
RMD-203	23260 Westminster Hwy.	28-Mar-11	0.76	<1	<2	8	<1	0.31
RMD-251	5951McCallan Rd.	30-Mar-11	0.64	<1	<2	8	<1	0.09
RMD-273	Opp. 8331 Fairfax Place	30-Mar-11	0.48	<1	<2	11	<1	0.15
RMD-274	10920 Springwood Court	30-Mar-11	0.59	<1	<2	9	<1	0.37
RMD-252	9751 Pendleton Rd.	30-Mar-11	0.54	<1	<2	8	<1	0.11
RMD-250	6071 Azure Rd.	30-Mar-11	0.55	<1	<2	8	<1	0.11
RMD-271	3800 Cessna Drive	30-Mar-11	0.50	<1	2	10	<1	0.17
RMD-272	751 Catalina Cres.	30-Mar-11	0.58	<1	<2	7	<1	0.11
RMD-255	6000 Blk. Miller Rd.	30-Mar-11	0.20	<1	<2	6	<1	0.29
RMD-256	1000 Blk. McDonald Rd.	30-Mar-11	0.94	<1	<2	10	<1	0.16
RMD-254	5300 No. 3 Rd.	30-Mar-11	0.65	<1	<2	7	<1	0.09
RMD-270	8200 Jones Rd.	30-Mar-11	0.46	<1	<2	9	<1	0.14

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-269	14951 Triangle Rd.	30-Mar-11	0.43	<1	<2	10	<1	0.12
RMD-253	11051 No 3 Rd.	30-Mar-11	0.51	<1	2	7	<1	0.10
RMD-257	6640 Blundell Rd.	1-Apr-11	0.53	<1	<2	5	<1	0.11
RMD-266	9380 General Currie Rd.	1-Apr-11	0.56	<1	2	5	<1	0.09
RMD-259	10020 Amethyst Ave.	1-Apr-11	0.54	<1	<2	5	<1	0.08
RMD-268	13800 No. 3 Rd. (off Garden City)	1-Apr-11	0.52	<1	<2	5	<1	0.11
RMD-258	7000 Blk. Dyke Rd.	1-Apr-11	0.55	<1	<2	6	<1	0.09
RMD-260	11111 Horseshoe Way	1-Apr-11	0.57	<1	<2	5	<1	0.10
RMD-261	9911 Sidaway Rd.	1-Apr-11	0.49	<1	<2	5	<1	0.13
RMD-262	13799 Commerce Pkwy.	1-Apr-11	0.48	<1	<2	5	<1	0.27
RMD-263	12560 Cambie Rd.	1-Apr-11	0.53	<1	<2	5	<1	0.14
RMD-264	13100 Mitchell Rd.	1-Apr-11	0.48	<1	<2	6	<1	0.13
RMD-277	Opp. 11280 Twigg Place	1-Apr-11	0.46	<1	<2	6	<1	0.13
RMD-278	6651 Fraserwood Place	1-Apr-11	0.17	<1	<2	8	<1	0.22
RMD-279	Opp. 20371 Westminster Hwy.	1-Apr-11	0.59	<1	<2	7	<1	0.43
RMD-204	3180 Granville Ave.	4-Apr-11	0.52	<1	2	9	<1	0.14
RMD-206	4251 Moncton St.	4-Apr-11	0.53	<1	2	8	<1	0.09
RMD-216	11080 No. 2 Rd.	4-Apr-11	0.58	<1	<2	8	<1	0.09
RMD-212	Opp. 8880 Williams Rd.	4-Apr-11	0.52	<1	<2	8	<1	0.09
RMD-208	13200 No. 4 Rd.	4-Apr-11	0.62	<1	<2	8	<1	0.09
RMD-205	13851 Steveston Hwy.	4-Apr-11	0.56	<1	<2	8	<1	0.19
RMD-267	17240 Fedoruk	4-Apr-11	0.59	<1	<2	8	<1	0.13
RMD-249	23000 Blk. Dyke Rd.	4-Apr-11	1.0	<1	<2	8	<1	0.46
RMD-276	22271 Cochrane Drive	4-Apr-11	0.79	<1	<2	9	<1	0.40
RMD-275	5180 Smith Cres.	4-Apr-11	1.0	<1	<2	8	<1	0.44
RMD-203	23260 Westminster Hwy.	4-Apr-11	1.0	<1	<2	8	<1	0.42
RMD-202	1500 Valemont Way	4-Apr-11	0.72	<1	<2	8	<1	0.18
RMD-214	11720 Westminster Hwy.	4-Apr-11	0.59	<1	<2	7	<1	0.08
RMD-251	5951McCallan Rd.	6-Apr-11	0.55	<1	<2	6	<1	0.10
RMD-273	Opp. 8331 Fairfax Place	6-Apr-11	0.45	<1	<2	8	<1	0.10
RMD-252	9751 Pendleton Rd.	6-Apr-11	0.53	<1	<2	6	<1	0.09
RMD-274	10920 Springwood Court	6-Apr-11	0.49	<1	<2	7	<1	0.20
RMD-253	11051 No 3 Rd.	6-Apr-11	0.57	<1	<2	6	<1	0.09
RMD-269	14951 Triangle Rd.	6-Apr-11	0.37	<1	<2	7	<1	0.17
RMD-270	8200 Jones Rd.	6-Apr-11	0.47	<1	<2	6	<1	0.11
RMD-254	5300 No. 3 Rd.	6-Apr-11	0.47	<1	<2	6	<1	0.18
RMD-271	3800 Cessna Drive	6-Apr-11	0.35	<1	<2	8	<1	0.11
RMD-272	751 Catalina Cres.	6-Apr-11	0.46	<1	<2	6	<1	0.11
RMD-255	6000 Blk. Miller Rd.	6-Apr-11	0.52	<1	<2	5	<1	0.34
RMD-256	1000 Blk. McDonald Rd.	6-Apr-11	0.29	<1	<2	8	<1	0.14

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-250	6071 Azure Rd.	6-Apr-11	0.29	<1	<2	6	<1	0.12
RMD-257	6640 Blundell Rd.	8-Apr-11	0.55	<1	<2	7	<1	0.10
RMD-258	7000 Blk. Dyke Rd.	8-Apr-11	0.38	<1	<2	9	<1	0.13
RMD-268	13800 No. 3 Rd. (off Garden City)	8-Apr-11	0.53	<1	<2	9	<1	0.13
RMD-259	10020 Amethyst Ave.	8-Apr-11	0.57	<1	<2	8	<1	0.10
RMD-266	9380 General Currie Rd.	8-Apr-11	0.55	<1	<2	7	<1	0.13
RMD-260	11111 Horseshoe Way	8-Apr-11	0.57	<1	<2	7	<1	0.09
RMD-261	9911 Sidaway Rd.	8-Apr-11	0.57	<1	<2	8	<1	0.11
RMD-263	12560 Cambie Rd.	8-Apr-11	0.50	<1	<2	8	<1	0.19
RMD-262	13799 Commerce Pkwy.	8-Apr-11	0.56	<1	<2	8	<1	0.23
RMD-264	13100 Mitchell Rd.	8-Apr-11	0.52	<1	<2	10	<1	0.13
RMD-277	Opp. 11280 Twigg Place	8-Apr-11	0.39	<1	<2	11	<1	0.13
RMD-278	6651 Fraserwood Place	8-Apr-11	0.19	<1	<2	11	<1	0.24
RMD-279	Opp. 20371 Westminster Hwy.	8-Apr-11	0.52	<1	2	8	<1	0.34
RMD-204	3180 Granville Ave.	11-Apr-11	0.48	<1	<2	8	<1	0.09
RMD-206	4251 Moncton St.	11-Apr-11	0.37	<1	<2	7	<1	0.09
RMD-216	11080 No. 2 Rd.	11-Apr-11	0.48	<1	<2	7	<1	0.15
RMD-212	Opp. 8880 Williams Rd.	11-Apr-11	0.51	<1	2	7	<1	0.09
RMD-208	13200 No. 4 Rd.	11-Apr-11	0.53	<1	<2	7	<1	0.12
RMD-205	13851 Steveston Hwy.	11-Apr-11	0.52	<1	<2	7	<1	0.24
RMD-267	17240 Fedoruk	11-Apr-11	0.60	<1	<2	7	<1	0.12
RMD-249	23000 Blk. Dyke Rd.	11-Apr-11	0.72	<1	2	6	<1	0.41
RMD-276	22271 Cochrane Drive	11-Apr-11	0.51	<1	<2	8	<1	0.31
RMD-275	5180 Smith Cres.	11-Apr-11	0.68	<1	<2	8	<1	0.39
RMD-203	23260 Westminster Hwy.	11-Apr-11	0.80	<1	<2	7	<1	0.42
RMD-202	1500 Valemont Way	11-Apr-11	0.44	<1	<2	6	<1	0.19
RMD-214	11720 Westminster Hwy.	11-Apr-11	0.62	<1	<2	6	<1	0.09
RMD-251	5951McCallan Rd.	13-Apr-11	0.59	<1	<2	8	<1	0.15
RMD-273	Opp. 8331 Fairfax Place	13-Apr-11	0.49	<1	<2	11	<1	0.13
RMD-252	9751 Pendleton Rd.	13-Apr-11	0.54	<1	<2	9	<1	0.12
RMD-274	10920 Springwood Court	13-Apr-11	0.52	<1	2	10	<1	0.30
RMD-250	6071 Azure Rd.	13-Apr-11	0.54	<1	<2	9	<1	0.13
RMD-271	3800 Cessna Drive	13-Apr-11	0.51	<1	<2	10	<1	0.10
RMD-272	751 Catalina Cres.	13-Apr-11	0.57	<1	<2	8	<1	0.08
RMD-255	6000 Blk. Miller Rd.	13-Apr-11	0.58	<1	<2	8	<1	0.16
RMD-256	1000 Blk. McDonald Rd.	13-Apr-11	0.45	<1	<2	11	<1	0.11
RMD-254	5300 No. 3 Rd.	13-Apr-11	0.48	<1	<2	8	<1	0.10
RMD-270	8200 Jones Rd.	13-Apr-11	0.40	<1	<2	9	<1	0.12
RMD-269	14951 Triangle Rd.	13-Apr-11	0.45	<1	<2	10	<1	0.13
RMD-253	11051 No 3 Rd.	13-Apr-11	0.53	<1	<2	8	<1	0.12

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-257	6640 Blundell Rd.	15-Apr-11	0.42	<1	<2	5	<1	0.08
RMD-266	9380 General Currie Rd.	15-Apr-11	0.57	<1	<2	6	<1	0.08
RMD-259	10020 Amethyst Ave.	15-Apr-11	0.52	<1	<2	6	<1	0.13
RMD-268	13800 No. 3 Rd. (off Garden City)	15-Apr-11	0.47	<1	<2	6	<1	0.12
RMD-258	7000 Blk. Dyke Rd.	15-Apr-11	0.51	<1	<2	7	<1	0.19
RMD-260	11111 Horseshoe Way	15-Apr-11	0.55	<1	<2	6	<1	0.08
RMD-261	9911 Sidaway Rd.	15-Apr-11	0.59	<1	<2	6	<1	0.09
RMD-262	13799 Commerce Pkwy.	15-Apr-11	0.49	<1	<2	7	<1	0.22
RMD-263	12560 Cambie Rd.	15-Apr-11	0.48	<1	<2	6	<1	0.15
RMD-264	13100 Mitchell Rd.	15-Apr-11	0.41	<1	<2	8	<1	0.13
RMD-277	Opp. 11280 Twigg Place	15-Apr-11	0.4	<1	<2	7	<1	0.12
RMD-278	6651 Fraserwood Place	15-Apr-11	0.23	<1	2	8	<1	0.23
RMD-279	Opp. 20371 Westminster Hwy.	15-Apr-11	0.42	<1	<2	7	<1	0.29
RMD-204	3180 Granville Ave.	18-Apr-11	0.53	<1	<2	10	<1	0.12
RMD-206	4251 Moncton St.	18-Apr-11	0.48	<1	<2	9	<1	0.08
RMD-216	11080 No. 2 Rd.	18-Apr-11	0.54	<1	<2	9	<1	0.11
RMD-212	Opp. 8600 Riyan Rd.	18-Apr-11	0.43	<1	<2	9	<1	0.09
RMD-208	13200 No. 4 Rd.	18-Apr-11	0.44	<1	<2	9	<1	0.09
RMD-205	13851 Steveston Hwy.	18-Apr-11	0.38	<1	<2	10	<1	0.15
RMD-267	17240 Fedoruk	18-Apr-11	0.53	<1	<2	9	<1	0.09
RMD-249	23000 Blk. Dyke Rd.	18-Apr-11	0.72	<1	<2	9	<1	0.33
RMD-203	23260 Westminster Hwy.	18-Apr-11	0.77	<1	<2	8	<1	0.33
RMD-275	5180 Smith Cres.	18-Apr-11	0.69	<1	<2	9	<1	0.34
RMD-276	22271 Cochrane Drive	18-Apr-11	0.51	<1	<2	9	<1	0.26
RMD-202	1500 Valemont Way	18-Apr-11	0.58	<1	<2	9	<1	0.14
RMD-214	11720 Westminster Hwy.	18-Apr-11	0.56	<1	<2	8	<1	0.08
RMD-251	5951McCallan Rd.	20-Apr-11	0.61	<1	<2	6	<1	0.20
RMD-273	Opp. 8331 Fairfax Place	20-Apr-11	0.80	<1	<2	10	<1	0.15
RMD-252	9751 Pendleton Rd.	20-Apr-11	0.62	<1	<2	7	<1	0.10
RMD-274	10920 Springwood Court	20-Apr-11	0.73	<1	<2	7	<1	0.34
RMD-250	6071 Azure Rd.	20-Apr-11	0.76	<1	<2	7	<1	0.10
RMD-271	3800 Cessna Drive	20-Apr-11	0.39	<1	<2	7	<1	0.12
RMD-272	751 Catalina Cres.	20-Apr-11	0.56	<1	<2	7	<1	0.14
RMD-255	6000 Blk. Miller Rd.	20-Apr-11	1.4	<1	<2	6	<1	0.40
RMD-256	1000 Blk. McDonald Rd.	20-Apr-11	0.74	<1	<2	10	<1	0.17
RMD-254	5300 No. 3 Rd.	20-Apr-11	0.53	<1	2	6	<1	0.19
RMD-270	8200 Jones Rd.	20-Apr-11	0.55	<1	<2	7	<1	0.21
RMD-269	14951 Triangle Rd.	20-Apr-11	0.51	<1	<2	9	<1	0.19
RMD-253	11051 No 3 Rd.	20-Apr-11	0.59	<1	<2	6	<1	0.12
RMD-204	3180 Granville Ave.	26-Apr-11	0.48	<1	<2	10	<1	0.10

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-206	4251 Moncton St.	26-Apr-11	0.40	<1	<2	9	<1	0.11
RMD-216	11080 No. 2 Rd.	26-Apr-11	0.50	<1	<2	10	<1	0.15
RMD-212	Opp. 8600 Riyan Rd.	26-Apr-11	0.50	<1	<2	10	<1	0.15
RMD-205	13851 Steveston Hwy.	26-Apr-11	0.19	<1	<2	9	<1	0.22
RMD-208	13200 No. 4 Rd.	26-Apr-11	0.51	<1	<2	10	<1	0.12
RMD-267	17240 Fedoruk	26-Apr-11	0.58	<1	<2	10	<1	0.16
RMD-249	23000 Blk. Dyke Rd.	26-Apr-11	0.86	<1	8	9	<1	0.36
RMD-276	22271 Cochrane Drive	26-Apr-11	0.55	<1	<2	10	<1	0.24
RMD-275	5180 Smith Cres.	26-Apr-11	0.75	<1	<2	10	<1	0.37
RMD-203	23260 Westminster Hwy.	26-Apr-11	0.89	<1	<2	10	<1	0.34
RMD-202	1500 Valemont Way	26-Apr-11	0.61	<1	<2	9	<1	0.17
RMD-214	11720 Westminster Hwy.	26-Apr-11	0.51	<1	<2	9	<1	0.14
RMD-251	5951McCallan Rd.	27-Apr-11	0.45	<1	<2	9	<1	0.14
RMD-273	Opp. 8331 Fairfax Place	27-Apr-11	0.45	<1	<2	13	<1	0.12
RMD-252	9751 Pendleton Rd.	27-Apr-11	0.52	<1	<2	9	<1	0.10
RMD-274	10920 Springwood Court	27-Apr-11	0.46	<1	<2	11	<1	0.20
RMD-250	6071 Azure Rd.	27-Apr-11	0.52	<1	<2	10	<1	0.11
RMD-271	3800 Cessna Drive	27-Apr-11	0.49	<1	<2	11	<1	0.09
RMD-272	751 Catalina Cres.	27-Apr-11	0.49	<1	<2	10	<1	0.12
RMD-255	6000 Blk. Miller Rd.	27-Apr-11	0.52	<1	<2	9	<1	0.21
RMD-256	1000 Blk. McDonald Rd.	27-Apr-11	0.31	<1	<2	12	<1	0.14
RMD-254	5300 No. 3 Rd.	27-Apr-11	0.54	<1	<2	9	<1	0.24
RMD-270	8200 Jones Rd.	27-Apr-11	0.48	<1	<2	10	<1	0.12
RMD-269	14951 Triangle Rd.	27-Apr-11	0.52	<1	<2	11	<1	0.13
RMD-253	11051 No 3 Rd.	27-Apr-11	0.49	<1	<2	9	<1	0.13
RMD-257	6640 Blundell Rd.	29-Apr-11	0.65	<1	<2	6	<1	0.10
RMD-266	9380 General Currie Rd.	29-Apr-11	0.66	<1	<2	7	<1	0.09
RMD-259	10020 Amethyst Ave.	29-Apr-11	0.62	<1	<2	7	<1	0.09
RMD-268	13800 No. 3 Rd. (off Garden City)	29-Apr-11	0.52	<1	<2	7	<1	0.10
RMD-258	7000 Blk. Dyke Rd.	29-Apr-11	0.49	<1	4	7	<1	0.11
RMD-260	11111 Horseshoe Way	29-Apr-11	0.61	<1	<2	7	<1	0.09
RMD-261	9911 Sidaway Rd.	29-Apr-11	0.61	<1	<2	7	<1	0.12
RMD-262	13799 Commerce Pkwy.	29-Apr-11	0.42	<1	<2	7	<1	0.22
RMD-263	12560 Cambie Rd.	29-Apr-11	0.56	<1	<2	7	<1	0.11
RMD-278	6651 Fraserwood Place	29-Apr-11	0.29	<1	<2	9	<1	0.20
RMD-279	Opp. 20371 Westminster Hwy.	29-Apr-11	0.33	<1	<2	8	<1	0.26
RMD-264	13100 Mitchell Rd.	29-Apr-11	0.41	<1	<2	8	<1	0.12
RMD-277	Opp. 11280 Twigg Place	29-Apr-11	0.30	<1	<2	9	<1	0.11
RMD-204	3180 Granville Ave.	2-May-11	0.67	<1	<2	9	<1	0.13
RMD-206	4251 Moncton St.	2-May-11	0.58	<1	<2	8	<1	0.14

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-216	11080 No. 2 Rd.	2-May-11	0.69	<1	<2	8	<1	0.17
RMD-212	Opp. 8600 Riyan Rd.	2-May-11	0.69	<1	<2	8	<1	0.22
RMD-208	13200 No. 4 Rd.	2-May-11	0.69	<1	<2	8	<1	0.26
RMD-205	13851 Steveston Hwy.	2-May-11	0.55	<1	<2	9	<1	0.18
RMD-267	17240 Fedoruk	2-May-11	0.73	<1	<2	8	<1	0.10
RMD-249	23000 Blk. Dyke Rd.	2-May-11	0.75	<1	<2	7	<1	0.31
RMD-276	22271 Cochrane Drive	2-May-11	0.51	<1	2	8	<1	0.22
RMD-275	5180 Smith Cres.	2-May-11	0.78	<1	2	8	<1	0.31
RMD-203	23260 Westminster Hwy.	2-May-11	0.81	<1	<2	7	<1	0.28
RMD-202	1500 Valemont Way	2-May-11	0.49	<1	<2	8	<1	0.26
RMD-214	11720 Westminster Hwy.	2-May-11	0.72	<1	<2	8	<1	0.20
RMD-251	5951McCallan Rd.	4-May-11	0.70	<1	2	8	<1	0.24
RMD-273	Opp. 8331 Fairfax Place	4-May-11	0.66	<1	2	12	<1	0.57
RMD-252	9751 Pendleton Rd.	4-May-11	0.65	<1	<2	9	<1	0.23
RMD-274	10920 Springwood Court	4-May-11	0.70	<1	<2	9	<1	6.60
RMD-253	11051 No 3 Rd.	4-May-11	0.65	<1	<2	8	<1	0.25
RMD-269	14951 Triangle Rd.	4-May-11	0.60	<1	<2	10	<1	0.21
RMD-270	8200 Jones Rd.	4-May-11	0.69	<1	<2	9	<1	0.25
RMD-254	5300 No. 3 Rd.	4-May-11	0.63	<1	<2	8	<1	0.43
RMD-271	3800 Cessna Drive	4-May-11	0.44	<1	<2	9	<1	0.20
RMD-272	751 Catalina Cres.	4-May-11	0.71	<1	<2	8	<1	0.21
RMD-255	6000 Blk. Miller Rd.	4-May-11	0.83	<1	<2	7	<1	0.78
RMD-256	1000 Blk. McDonald Rd.	4-May-11	0.41	<1	<2	10	<1	0.17
RMD-250	6071 Azure Rd.	4-May-11	0.71	<1	<2	8	<1	0.21
RMD-257	6640 Blundell Rd.	6-May-11	0.83	<1	<2	9	<1	0.19
RMD-258	7000 Blk. Dyke Rd.	6-May-11	0.65	<1	<2	11	<1	0.16
RMD-268	13800 No. 3 Rd. (off Garden City)	6-May-11	0.76	<1	2	10	<1	0.16
RMD-259	10020 Amethyst Ave.	6-May-11	0.89	<1	<2	10	<1	0.19
RMD-266	9380 General Currie Rd.	6-May-11	0.76	<1	<2	9	<1	0.19
RMD-260	11111 Horseshoe Way	6-May-11	0.86	<1	<2	9	<1	0.17
RMD-261	9911 Sidaway Rd.	6-May-11	0.89	<1	<2	10	<1	0.19
RMD-262	13799 Commerce Pkwy.	6-May-11	0.91	<1	<2	10	<1	0.19
RMD-263	12560 Cambie Rd.	6-May-11	0.68	<1	<2	10	<1	0.18
RMD-264	13100 Mitchell Rd.	6-May-11	0.65	<1	<2	11	<1	0.18
RMD-277	Opp. 11280 Twigg Place	6-May-11	0.35	<1	<2	13	<1	0.13
RMD-278	6651 Fraserwood Place	6-May-11	0.12	<1	<2	13	<1	0.22
RMD-279	Opp. 20371 Westminster Hwy.	6-May-11	0.48	<1	<2	11	<1	0.25
RMD-274	10920 Springwood Court	6-May-11	0.74	<1	<2	11	<1	0.23
RMD-204	3180 Granville Ave.	9-May-11	0.83	<1	<2	12	<1	0.12
RMD-206	4251 Moncton St.	9-May-11	0.82	<1	<2	11	<1	0.13

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-216	11080 No. 2 Rd.	9-May-11	0.88	<1	<2	11	<1	0.15
RMD-212	Opp. 8600 Riyan Rd.	9-May-11	0.85	<1	<2	11	<1	0.18
RMD-208	13200 No. 4 Rd.	9-May-11	0.82	<1	<2	11	<1	0.21
RMD-205	13851 Steveston Hwy.	9-May-11	0.71	<1	<2	11	<1	0.14
RMD-267	17240 Fedoruk	9-May-11	0.84	<1	<2	11	<1	0.12
RMD-249	23000 Blk. Dyke Rd.	9-May-11	0.77	<1	<2	11	<1	0.37
RMD-276	22271 Cochrane Drive	9-May-11	0.71	<1	<2	11	<1	0.29
RMD-275	5180 Smith Cres.	9-May-11	0.75	<1	<2	10	<1	0.36
RMD-203	23260 Westminster Hwy.	9-May-11	0.87	<1	<2	11	<1	0.30
RMD-202	1500 Valemont Way	9-May-11	0.80	<1	<2	10	<1	0.24
RMD-214	11720 Westminster Hwy.	9-May-11	0.92	<1	<2	10	<1	0.13
RMD-251	5951McCallan Rd.	11-May-11	0.32	<1	4	10	<1	0.18
RMD-273	Opp. 8331 Fairfax Place	11-May-11	0.33	<1	<2	14	<1	0.17
RMD-274	10920 Springwood Court	11-May-11	0.22	<1	<2	12	<1	0.17
RMD-252	9751 Pendleton Rd.	11-May-11	0.54	<1	<2	11	<1	0.17
RMD-250	6071 Azure Rd.	11-May-11	0.50	<1	<2	10	<1	0.17
RMD-271	3800 Cessna Drive	11-May-11	0.71	<1	<2	12	<1	0.21
RMD-272	751 Catalina Cres.	11-May-11	0.96	<1	<2	10	<1	0.18
RMD-255	6000 Blk. Miller Rd.	11-May-11	0.97	<1	<2	9	<1	0.23
RMD-256	1000 Blk. McDonald Rd.	11-May-11	0.89	<1	<2	12	<1	0.20
RMD-254	5300 No. 3 Rd.	11-May-11	0.93	<1	<2	10	<1	0.16
RMD-270	8200 Jones Rd.	11-May-11	0.82	<1	<2	11	<1	0.14
RMD-253	11051 No 3 Rd.	11-May-11	0.88	<1	<2	10	<1	0.17
RMD-269	14951 Triangle Rd.	11-May-11	0.73	<1	2	13	<1	0.19
RMD-257	6640 Blundell Rd.	13-May-11	0.89	<1	<2	8	<1	0.16
RMD-266	9380 General Currie Rd.	13-May-11	0.86	<1	<2	8	<1	0.17
RMD-259	10020 Amethyst Ave.	13-May-11	0.83	<1	<2	8	<1	0.21
RMD-268	13800 No. 3 Rd. (off Garden City)	13-May-11	0.81	<1	<2	9	<1	0.15
RMD-258	7000 Blk. Dyke Rd.	13-May-11	0.85	<1	<2	9	<1	0.19
RMD-260	11111 Horseshoe Way	13-May-11	0.86	<1	<2	8	<1	0.15
RMD-261	9911 Sidaway Rd.	13-May-11	0.82	<1	<2	8	<1	0.16
RMD-262	13799 Commerce Pkwy.	13-May-11	0.73	<1	<2	8	<1	0.19
RMD-263	12560 Cambie Rd.	13-May-11	0.76	<1	<2	9	<1	0.17
RMD-264	13100 Mitchell Rd.	13-May-11	0.71	<1	<2	9	<1	0.18
RMD-277	Opp. 11280 Twigg Place	13-May-11	0.80	<1	<2	10	<1	0.15
RMD-278	6651 Fraserwood Place	13-May-11	0.09	<1	<2	11	<1	0.22
RMD-279	Opp. 20371 Westminster Hwy.	13-May-11	0.35	<1	<2	11	<1	0.28
RMD-212	Opp. 8600 Riyan Rd.	16-May-11	0.89	<1	2	9	<1	0.21
RMD-208	13200 No. 4 Rd.	16-May-11	0.86	<1	<2	9	<1	0.19
RMD-205	13851 Steveston Hwy.	16-May-11	0.37	<1	<2	9	<1	0.15

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-267	17240 Fedoruk	16-May-11	0.95	<1	<2	9	<1	0.11
RMD-249	23000 Blk. Dyke Rd.	16-May-11	0.86	<1	<2	8	<1	0.30
RMD-276	22271 Cochrane Drive	16-May-11	0.47	<1	<2	9	<1	0.22
RMD-275	5180 Smith Cres.	16-May-11	0.85	<1	<2	8	<1	0.33
RMD-203	23260 Westminster Hwy.	16-May-11	0.97	<1	<2	8	<1	0.29
RMD-202	1500 Valemont Way	16-May-11	0.75	<1	<2	8	<1	0.21
RMD-214	11720 Westminster Hwy.	16-May-11	0.96	<1	<2	8	<1	0.12
RMD-216	11080 No. 2 Rd.	16-May-11	0.82	<1	<2	9	<1	0.17
RMD-206	4251 Moncton St.	16-May-11	0.84	<1	<2	9	<1	0.18
RMD-204	3180 Granville Ave.	16-May-11	0.81	<1	<2	9	<1	0.27
RMD-251	5951McCallan Rd.	18-May-11	0.96	<1	<2	8	<1	0.15
RMD-273	Opp. 8331 Fairfax Place	18-May-11	0.77	<1	<2	13	<1	0.23
RMD-252	9751 Pendleton Rd.	18-May-11	0.83	<1	<2	9	<1	0.28
RMD-274	10920 Springwood Court	18-May-11	0.81	<1	<2	10	<1	0.16
RMD-253	11051 No 3 Rd.	18-May-11	0.96	<1	<2	8	<1	0.17
RMD-269	14951 Triangle Rd.	18-May-11	0.74	<1	<2	11	<1	0.23
RMD-270	8200 Jones Rd.	18-May-11	0.85	<1	<2	10	<1	0.16
RMD-254	5300 No. 3 Rd.	18-May-11	0.93	<1	<2	8	<1	0.21
RMD-271	3800 Cessna Drive	18-May-11	0.72	<1	<2	10	<1	0.23
RMD-272	751 Catalina Cres.	18-May-11	0.86	<1	<2	8	<1	0.22
RMD-255	6000 Blk. Miller Rd.	18-May-11	1.0	<1	<2	8	<1	0.31
RMD-256	1000 Blk. McDonald Rd.	18-May-11	0.81	<1	<2	10	<1	0.24
RMD-250	6071 Azure Rd.	18-May-11	0.92	<1	2	9	<1	0.23
RMD-257	6640 Blundell Rd.	20-May-11	0.99	<1	<2	9	<1	0.12
RMD-258	7000 Blk. Dyke Rd.	20-May-11	0.82	<1	<2	12	<1	0.15
RMD-268	13800 No. 3 Rd. (off Garden City)	20-May-11	0.77	<1	<2	10	<1	0.17
RMD-259	10020 Amethyst Ave.	20-May-11	0.82	<1	<2	10	<1	0.14
RMD-266	9380 General Currie Rd.	20-May-11	0.79	<1	<2	10	<1	0.14
RMD-260	11111 Horseshoe Way	20-May-11	1.2	<1	<2	10	<1	0.18
RMD-261	9911 Sidaway Rd.	20-May-11	0.74	<1	2	11	<1	0.13
RMD-262	13799 Commerce Pkwy.	20-May-11	0.78	<1	<2	10	<1	0.20
RMD-263	12560 Cambie Rd.	20-May-11	0.86	<1	<2	11	<1	0.18
RMD-264	13100 Mitchell Rd.	20-May-11	0.81	<1	<2	12	<1	0.13
RMD-277	Opp. 11280 Twigg Place	20-May-11	0.81	<1	<2	13	<1	0.15
RMD-278	6651 Fraserwood Place	20-May-11	0.1	<1	<2	14	<1	0.22
RMD-279	Opp. 20371 Westminster Hwy.	20-May-11	0.47	<1	<2	12	<1	0.26
RMD-204	3180 Granville Ave.	24-May-11	0.59	<1	<2	12	<1	0.12
RMD-206	4251 Moncton St.	24-May-11	0.85	<1	<2	12	<1	0.14
RMD-216	11080 No. 2 Rd.	24-May-11	0.85	<1	82	11	<1	0.27
RMD-212	Opp. 8600 Riyan Rd.	24-May-11	1.0	<1	<2	11	<1	0.15

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-208	13200 No. 4 Rd.	24-May-11	0.99	<1	2	11	<1	0.13
RMD-205	13851 Steveston Hwy.	24-May-11	0.76	<1	<2	11	<1	0.15
RMD-267	17240 Fedoruk	24-May-11	0.87	<1	<2	11	<1	[Two bottles labelled 267 no 249] LA
RMD-249	23000 Blk. Dyke Rd.	24-May-11	0.83	<1	<2	10	<1	[Two bottles labelled 267 no 249] LA
RMD-276	22271 Cochrane Drive	24-May-11	0.58	<1	<2	12	<1	0.24
RMD-275	5180 Smith Cres.	24-May-11	0.81	<1	<2	11	<1	0.35
RMD-203	23260 Westminster Hwy.	24-May-11	0.82	<1	<2	10	<1	0.38
RMD-202	1500 Valemont Way	24-May-11	0.92	<1	<2	10	<1	0.11
RMD-214	11720 Westminster Hwy.	24-May-11	1.0	<1	<2	10	<1	0.15
RMD-251	5951McCallan Rd.	25-May-11	0.87	<1	2	11	<1	0.14
RMD-273	Opp. 8331 Fairfax Place	25-May-11	0.77	<1	<2	16	<1	0.18
RMD-274	10920 Springwood Court	25-May-11	0.79	<1	<2	13	<1	0.20
RMD-252	9751 Pendleton Rd.	25-May-11	0.85	<1	<2	11	<1	0.15
RMD-250	6071 Azure Rd.	25-May-11	0.93	<1	<2	11	<1	0.15
RMD-271	3800 Cessna Drive	25-May-11	0.71	<1	<2	11	<1	0.14
RMD-272	751 Catalina Cres.	25-May-11	0.94	<1	<2	10	<1	0.13
RMD-255	6000 Blk. Miller Rd.	25-May-11	0.89	<1	<2	9	<1	0.27
RMD-256	1000 Blk. McDonald Rd.	25-May-11	0.96	<1	<2	11	<1	0.14
RMD-254	5300 No. 3 Rd.	25-May-11	0.98	<1	<2	11	<1	0.16
RMD-270	8200 Jones Rd.	25-May-11	0.78	<1	<2	12	<1	0.24
RMD-269	14951 Triangle Rd.	25-May-11	0.75	<1	<2	14	<1	0.15
RMD-253	11051 No 3 Rd.	25-May-11	0.97	<1	<2	10	<1	0.13
RMD-257	6640 Blundell Rd.	27-May-11	1.0	<1	<2	8	<1	0.17
RMD-266	9380 General Currie Rd.	27-May-11	0.97	<1	<2	8	<1	0.25
RMD-259	10020 Amethyst Ave.	27-May-11	1.0	<1	2	9	<1	0.15
RMD-268	13800 No. 3 Rd. (off Garden City)	27-May-11	0.82	<1	<2	9	<1	0.20
RMD-258	7000 Blk. Dyke Rd.	27-May-11	0.9	<1	<2	10	<1	0.13
RMD-260	11111 Horseshoe Way	27-May-11	0.97	<1	<2	8	<1	0.13
RMD-261	9911 Sidaway Rd.	27-May-11	0.96	<1	<2	9	<1	0.13
RMD-262	13799 Commerce Pkwy.	27-May-11	0.75	<1	<2	9	<1	0.19
RMD-263	12560 Cambie Rd.	27-May-11	0.79	<1	<2	9	<1	0.14
RMD-278	6651 Fraserwood Place	27-May-11	0.21	<1	2	11	<1	0.21

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-279	Opp. 20371 Westminster Hwy.	27-May-11	0.32	<1	<2	10	<1	0.27
RMD-264	13100 Mitchell Rd.	27-May-11	0.85	<1	<2	10	<1	0.32
RMD-277	Opp. 11280 Twigg Place	27-May-11	0.58	<1	<2	13	<1	0.12
RMD-204	3180 Granville Ave.	30-May-11	0.84	<1	<2	12	<1	0.14
RMD-206	4251 Moncton St.	30-May-11	0.89	<1	<2	12	<1	0.14
RMD-216	11080 No. 2 Rd.	30-May-11	0.95	<1	<2	11	<1	0.16
RMD-212	Opp. 8600 Riyan Rd.	30-May-11	0.95	<1	<2	11	<1	0.14
RMD-208	13200 No. 4 Rd.	30-May-11	0.92	<1	2	11	<1	0.15
RMD-205	13851 Steveston Hwy.	30-May-11	0.91	<1	2	11	<1	0.22
RMD-267	17240 Fedoruk	30-May-11	0.76	<1	<2	12	<1	0.15
RMD-249	23000 Blk. Dyke Rd.	30-May-11	0.7	<1	4	10	<1	0.31
RMD-276	22271 Cochrane Drive	30-May-11	0.4	<1	<2	11	<1	0.34
RMD-275	5180 Smith Cres.	30-May-11	0.8	<1	<2	10	<1	0.27
RMD-203	23260 Westminster Hwy.	30-May-11	0.75	<1	<2	10	<1	0.33
RMD-202	1500 Valemont Way	30-May-11	0.54	<1	2	11	<1	0.14
RMD-214	11720 Westminster Hwy.	30-May-11	1.0	<1	<2	10	<1	0.16
RMD-251	5951McCallan Rd.	1-Jun-11	0.97	<1	<2	11	<1	0.19
RMD-273	Opp. 8331 Fairfax Place	1-Jun-11	0.84	<1	<2	16	<1	0.90
RMD-252	9751 Pendleton Rd.	1-Jun-11	0.93	<1	<2	12	<1	0.18
RMD-274	10920 Springwood Court	1-Jun-11	0.97	<1	2	13	<1	0.30
RMD-250	6071 Azure Rd.	1-Jun-11	1.0	<1	2	12	<1	0.19
RMD-271	3800 Cessna Drive	1-Jun-11	0.73	<1	2	13	<1	0.14
RMD-272	751 Catalina Cres.	1-Jun-11	0.96	<1	<2	11	<1	0.17
RMD-255	6000 Blk. Miller Rd.	1-Jun-11	0.99	<1	<2	10	<1	0.18
RMD-256	1000 Blk. McDonald Rd.	1-Jun-11	0.92	<1	<2	11	<1	0.15
RMD-254	5300 No. 3 Rd.	1-Jun-11	0.97	<1	<2	10	<1	0.14
RMD-270	8200 Jones Rd.	1-Jun-11	0.86	<1	<2	12	<1	0.14
RMD-269	14951 Triangle Rd.	1-Jun-11	0.82	<1	<2	13	<1	0.14
RMD-253	11051 No 3 Rd.	1-Jun-11	0.95	<1	<2	11	<1	0.14
RMD-257	6640 Blundell Rd.	3-Jun-11	0.91	<1	<2	9	<1	0.15
RMD-258	7000 Blk. Dyke Rd.	3-Jun-11	0.86	<1	<2	11	<1	0.17
RMD-268	13800 No. 3 Rd. (off Garden City)	3-Jun-11	0.7	<1	<2	10	<1	0.14
RMD-259	10020 Amethyst Ave.	3-Jun-11	0.84	<1	<2	10	<1	0.16
RMD-266	9380 General Currie Rd.	3-Jun-11	0.87	<1	<2	10	<1	0.15
RMD-260	11111 Horseshoe Way	3-Jun-11	0.95	<1	<2	10	<1	0.15
RMD-261	9911 Sidaway Rd.	3-Jun-11	0.86	<1	<2	10	<1	0.12
RMD-262	13799 Commerce Pkwy.	3-Jun-11	0.68	<1	<2	10	<1	0.16
RMD-263	12560 Cambie Rd.	3-Jun-11	0.64	<1	<2	10	<1	0.16
RMD-264	13100 Mitchell Rd.	3-Jun-11	0.87	<1	<2	11	<1	0.15
RMD-277	Opp. 11280 Twigg Place	3-Jun-11	0.9	<1	<2	13	<1	0.12

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-279	Opp. 20371 Westminster Hwy.	3-Jun-11	0.32	<1	<2	11	<1	0.21
RMD-278	6651 Fraserwood Place	3-Jun-11	0.13	<1	<2	14	<1	0.18
RMD-204	3180 Granville Ave.	6-Jun-11	0.79	<1	<2	10	<1	0.13
RMD-206	4251 Moncton St.	6-Jun-11	0.58	<1	2	10	<1	0.16
RMD-216	11080 No. 2 Rd.	6-Jun-11	0.8	<1	<2	9	<1	0.13
RMD-212	Opp. 8600 Riyan Rd.	6-Jun-11	0.93	<1	<2	9	<1	0.13
RMD-208	13200 No. 4 Rd.	6-Jun-11	0.87	<1	<2	9	<1	0.21
RMD-205	13851 Steveston Hwy.	6-Jun-11	0.82	<1	<2	9	<1	0.16
RMD-267	17240 Fedoruk	6-Jun-11	0.68	<1	2	9	<1	0.22
RMD-249	23000 Blk. Dyke Rd.	6-Jun-11	0.82	<1	<2	7	<1	0.35
RMD-276	22271 Cochrane Drive	6-Jun-11	0.50	<1	4	7	<1	0.27
RMD-275	5180 Smith Cres.	6-Jun-11	0.70	<1	<2	8	<1	0.32
RMD-203	23260 Westminster Hwy.	6-Jun-11	0.79	<1	6	7	<1	0.35
RMD-202	1500 Valemont Way	6-Jun-11	0.55	<1	<2	8	<1	0.12
RMD-214	11720 Westminster Hwy.	6-Jun-11	0.95	<1	<2	7	<1	0.15
RMD-251	5951McCallan Rd.	8-Jun-11	0.73	<1	<2	8	<1	0.27
RMD-273	Opp. 8331 Fairfax Place	8-Jun-11	0.61	<1	<2	14	<1	0.15
RMD-252	9751 Pendleton Rd.	8-Jun-11	0.70	<1	<2	9	<1	0.19
RMD-274	10920 Springwood Court	8-Jun-11	0.61	<1	<2	10	<1	0.51
RMD-253	11051 No 3 Rd.	8-Jun-11	0.73	<1	<2	7	<1	0.18
RMD-269	14951 Triangle Rd.	8-Jun-11	0.66	<1	<2	10	<1	0.18
RMD-270	8200 Jones Rd.	8-Jun-11	0.62	<1	<2	7	<1	0.29
RMD-254	5300 No. 3 Rd.	8-Jun-11	0.72	<1	<2	7	<1	0.22
RMD-271	3800 Cessna Drive	8-Jun-11	0.52	<1	2	9	<1	0.13
RMD-272	751 Catalina Cres.	8-Jun-11	0.71	<1	<2	8	<1	0.16
RMD-255	6000 Blk. Miller Rd.	8-Jun-11	0.81	<1	2	7	<1	0.36
RMD-256	1000 Blk. McDonald Rd.	8-Jun-11	0.51	<1	<2	9	<1	0.15
RMD-250	6071 Azure Rd.	8-Jun-11	0.79	<1	<2	7	<1	0.31
RMD-257	6640 Blundell Rd.	10-Jun-11	0.75	<1	<2	9	<1	0.13
RMD-266	9380 General Currie Rd.	10-Jun-11	0.66	<1	<2	9	<1	0.17
RMD-259	10020 Amethyst Ave.	10-Jun-11	0.71	<1	2	9	<1	0.19
RMD-268	13800 No. 3 Rd. (off Garden City)	10-Jun-11	0.66	<1	2	10	<1	0.13
RMD-258	7000 Blk. Dyke Rd.	10-Jun-11	0.66	<1	<2	12	<1	0.16
RMD-260	11111 Horseshoe Way	10-Jun-11	0.73	<1	<2	9	<1	0.13
RMD-261	9911 Sidaway Rd.	10-Jun-11	0.68	<1	2	9	<1	0.12
RMD-262	13799 Commerce Pkwy.	10-Jun-11	0.52	<1	<2	10	<1	0.29
RMD-263	12560 Cambie Rd.	10-Jun-11	0.65	<1	<2	9	<1	0.22
RMD-264	13100 Mitchell Rd.	10-Jun-11	0.61	<1	2	11	<1	0.16
RMD-277	Opp. 11280 Twigg Place	10-Jun-11	0.56	<1	<2	15	<1	0.11
RMD-279	Opp. 20371 Westminster Hwy.	10-Jun-11	0.28	<1	2	11	<1	0.22

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-278	6651 Fraserwood Place	10-Jun-11	0.20	<1	<2	12	<1	0.21
RMD-204	3180 Granville Ave.	13-Jun-11	0.47	<1	<2	13	<1	0.14
RMD-206	4251 Moncton St.	13-Jun-11	0.64	<1	<2	12	<1	0.15
RMD-216	11080 No. 2 Rd.	13-Jun-11	0.67	<1	<2	11	<1	0.16
RMD-212	Opp. 8600 Riyan Rd.	13-Jun-11	0.73	<1	2	12	<1	0.17
RMD-208	13200 No. 4 Rd.	13-Jun-11	0.73	<1	<2	11	<1	0.14
RMD-205	13851 Steveston Hwy.	13-Jun-11	0.73	<1	2	11	<1	0.16
RMD-267	17240 Fedoruk	13-Jun-11	0.92	<1	<2	11	<1	0.14
RMD-249	23000 Blk. Dyke Rd.	13-Jun-11	0.77	<1	<2	10	<1	0.31
RMD-276	22271 Cochrane Drive	13-Jun-11	0.65	<1	<2	11	<1	0.29
RMD-275	5180 Smith Cres.	13-Jun-11	0.62	<1	[Not recorded.] LA	11	<1	0.32
RMD-203	23260 Westminster Hwy.	13-Jun-11	0.76	<1	<2	10	<1	0.29
RMD-202	1500 Valemont Way	13-Jun-11	0.95	<1	<2	10	<1	0.14
RMD-214	11720 Westminster Hwy.	13-Jun-11	0.82	<1	<2	9	<1	0.18
RMD-251	5951McCallan Rd.	15-Jun-11	0.45	<1	2	10	<1	0.15
RMD-273	Opp. 8331 Fairfax Place	15-Jun-11	0.54	<1	2	17	<1	0.46
RMD-274	10920 Springwood Court	15-Jun-11	0.54	<1	4	15	<1	0.64
RMD-252	9751 Pendleton Rd.	15-Jun-11	0.57	<1	<2	11	<1	0.19
RMD-250	6071 Azure Rd.	15-Jun-11	0.57	<1	<2	12	<1	0.17
RMD-271	3800 Cessna Drive	15-Jun-11	0.39	<1	<2	13	<1	0.15
RMD-272	751 Catalina Cres.	15-Jun-11	0.65	<1	<2	12	<1	0.16
RMD-255	6000 Blk. Miller Rd.	15-Jun-11	0.78	<1	<2	10	<1	0.22
RMD-256	1000 Blk. McDonald Rd.	15-Jun-11	0.46	<1	<2	14	<1	0.14
RMD-254	5300 No. 3 Rd.	15-Jun-11	0.75	<1	<2	11	<1	0.23
RMD-270	8200 Jones Rd.	15-Jun-11	0.61	<1	<2	13	<1	0.27
RMD-269	14951 Triangle Rd.	15-Jun-11	0.48	<1	<2	16	<1	0.18
RMD-253	11051 No 3 Rd.	15-Jun-11	0.73	<1	2	11	<1	0.17
RMD-257	6640 Blundell Rd.	17-Jun-11	0.78	<1	<2	10	<1	0.16
RMD-258	7000 Blk. Dyke Rd.	17-Jun-11	0.7	<1	<2	10	<1	0.17
RMD-268	13800 No. 3 Rd. (off Garden City)	17-Jun-11	0.81	<1	<2	10	<1	0.17
RMD-259	10020 Amethyst Ave.	17-Jun-11	0.71	<1	<2	10	<1	0.16
RMD-266	9380 General Currie Rd.	17-Jun-11	0.74	<1	<2	10	<1	0.18
RMD-260	11111 Horseshoe Way	17-Jun-11	0.75	<1	<2	10	<1	0.16
RMD-261	9911 Sidaway Rd.	17-Jun-11	0.74	<1	<2	10	<1	0.15
RMD-262	13799 Commerce Pkwy.	17-Jun-11	0.87	<1	<2	10	<1	0.14
RMD-263	12560 Cambie Rd.	17-Jun-11	0.66	<1	<2	11	<1	0.17
RMD-264	13100 Mitchell Rd.	17-Jun-11	0.61	<1	<2	11	<1	0.13
RMD-277	Opp. 11280 Twigg Place	17-Jun-11	0.32	<1	<2	14	<1	0.13
RMD-279	Opp. 20371 Westminster Hwy.	17-Jun-11	0.61	<1	<2	11	<1	0.23

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-278	6651 Fraserwood Place	17-Jun-11	0.13	<1	20	13	<1	0.22
RMD-204	3180 Granville Ave.	20-Jun-11	0.65	<1	<2	13	<1	0.13
RMD-206	4251 Moncton St.	20-Jun-11	0.62	<1	<2	14	<1	0.13
RMD-216	11080 No. 2 Rd.	20-Jun-11	0.71	<1	<2	11	<1	0.12
RMD-212	Opp. 8600 Riyan Rd.	20-Jun-11	0.67	<1	<2	11	<1	0.15
RMD-208	13200 No. 4 Rd.	20-Jun-11	0.74	<1	<2	11	<1	0.13
RMD-205	13851 Steveston Hwy.	20-Jun-11	0.66	<1	<2	12	<1	0.17
RMD-267	17240 Fedoruk	20-Jun-11	0.79	<1	<2	12	<1	0.15
RMD-249	23000 Blk. Dyke Rd.	20-Jun-11	0.88	<1	40	11	<1	0.25
RMD-276	22271 Cochrane Drive	20-Jun-11	0.67	<1	2	12	<1	0.22
RMD-275	5180 Smith Cres.	20-Jun-11	0.89	<1	<2	11	<1	0.24
RMD-203	23260 Westminster Hwy.	20-Jun-11	0.92	<1	<2	10	<1	0.21
RMD-202	1500 Valemont Way	20-Jun-11	0.88	<1	<2	11	<1	0.11
RMD-214	11720 Westminster Hwy.	20-Jun-11	0.81	<1	4	10	<1	0.16
RMD-251	5951McCallan Rd.	22-Jun-11	0.77	<1	<2	10	<1	0.18
RMD-273	Opp. 8331 Fairfax Place	22-Jun-11	0.51	<1	<2	18	<1	0.46
RMD-252	9751 Pendleton Rd.	22-Jun-11	0.68	<1	<2	13	<1	0.15
RMD-274	10920 Springwood Court	22-Jun-11	0.66	<1	16	14	<1	0.12
RMD-250	6071 Azure Rd.	22-Jun-11	0.78	<1	<2	13	<1	0.21
RMD-271	3800 Cessna Drive	22-Jun-11	0.46	<1	6	15	<1	0.12
RMD-272	751 Catalina Cres.	22-Jun-11	0.70	<1	<2	11	<1	0.35
RMD-255	6000 Blk. Miller Rd.	22-Jun-11	0.79	<1	<2	11	<1	0.46
RMD-254	5300 No. 3 Rd.	22-Jun-11	0.79	<1	2	11	<1	0.19
RMD-270	8200 Jones Rd.	22-Jun-11	0.71	<1	<2	14	<1	0.21
RMD-269	14951 Triangle Rd.	22-Jun-11	0.86	<1	<2	17	<1	0.19
RMD-253	11051 No 3 Rd.	22-Jun-11	0.76	<1	2	11	<1	0.18
RMD-266	9380 General Currie Rd.	24-Jun-11	0.68	<1	<2	8	<1	0.18
RMD-257	6640 Blundell Rd.	24-Jun-11	0.71	<1	<2	8	<1	0.13
RMD-258	7000 Blk. Dyke Rd.	24-Jun-11	0.61	<1	<2	12	<1	0.18
RMD-268	13800 No. 3 Rd. (off Garden City)	24-Jun-11	0.56	<1	2	10	<1	0.13
RMD-259	10020 Amethyst Ave.	24-Jun-11	0.66	<1	<2	9	<1	0.15
RMD-260	11111 Horseshoe Way	24-Jun-11	0.80	<1	<2	10	<1	0.10
RMD-261	9911 Sidaway Rd.	24-Jun-11	0.71	<1	<2	10	<1	0.10
RMD-262	13799 Commerce Pkwy.	24-Jun-11	0.80	<1	<2	10	<1	0.13
RMD-263	12560 Cambie Rd.	24-Jun-11	0.73	<1	2	10	<1	0.12
RMD-264	13100 Mitchell Rd.	24-Jun-11	0.49	<1	<2	11	<1	0.14
RMD-277	Opp. 11280 Twigg Place	24-Jun-11	0.26	<1	2	15	<1	0.13
RMD-278	6651 Fraserwood Place	24-Jun-11	0.04	<1	22	14	<1	0.21
RMD-279	Opp. 20371 Westminster Hwy.	24-Jun-11	0.16	<1	<2	12	<1	0.20

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-256	1000 Blk. McDonald Rd. before flushing	24-Jun-11	0.03	<1		15	<1	0.61
RMD-256	1000 Blk. McDonald Rd. after flushing	24-Jun-11	0.36	<1		15	<1	0.16
RMD-204	3180 Granville Ave.	27-Jun-11	0.67	<1	<2	13	<1	0.12
RMD-206	4251 Moncton St.	27-Jun-11	0.71	<1	<2	13	<1	0.16
RMD-216	11080 No. 2 Rd.	27-Jun-11	0.72	<1	<2	11	<1	0.14
RMD-212	Opp. 8600 Riyan Rd.	27-Jun-11	0.62	<1	2	11	<1	0.14
RMD-208	13200 No. 4 Rd.	27-Jun-11	0.72	<1	<2	12	<1	0.14
RMD-205	13851 Steveston Hwy.	27-Jun-11	0.93	<1	2	10	<1	0.16
RMD-267	17240 Fedoruk	27-Jun-11	0.94	<1	<2	10	<1	0.14
RMD-249	23000 Blk. Dyke Rd.	27-Jun-11	0.72	<1	<2	10	<1	0.26
RMD-276	22271 Cochrane Drive	27-Jun-11	0.33	<1	2	13	<1	0.17
RMD-275	5180 Smith Cres.	27-Jun-11	0.63	<1	<2	12	<1	0.22
RMD-203	23260 Westminster Hwy.	27-Jun-11	0.72	<1	<2	11	<1	0.27
RMD-202	1500 Valemont Way	27-Jun-11	0.86	<1	<2	11	<1	0.12
RMD-214	11720 Westminster Hwy.	27-Jun-11	0.79	<1	<2	10	<1	0.17
RMD-251	5951McCallan Rd.	29-Jun-11	0.73	<1	<2	11	<1	0.14
RMD-273	Opp. 8331 Fairfax Place	29-Jun-11	0.79	<1	<2	18	<1	1.70
RMD-274	10920 Springwood Court	29-Jun-11	0.62	<1	62	14	<1	0.80
RMD-252	9751 Pendleton Rd.	29-Jun-11	0.69	<1	<2	14	<1	0.18
RMD-250	6071 Azure Rd.	29-Jun-11	0.69	<1	2	12	<1	0.20
RMD-271	3800 Cessna Drive	29-Jun-11	0.68	<1	22	16	<1	0.13
RMD-255	6000 Blk. Miller Rd.	29-Jun-11	0.79	<1	<2	10	<1	0.19
RMD-272	751 Catalina Cres.	29-Jun-11	0.53	<1	<2	12	<1	0.15
RMD-254	5300 No. 3 Rd.	29-Jun-11	0.65	<1	<2	11	<1	0.13
RMD-270	8200 Jones Rd.	29-Jun-11	0.90	<1	<2	16	<1	0.21
RMD-269	14951 Triangle Rd.	29-Jun-11	0.90	<1	<2	16	<1	0.14
RMD-253	11051 No 3 Rd.	29-Jun-11	0.80	<1	<2	11	<1	0.13
RMD-251	5951McCallan Rd.	4-Jul-11	0.74	<1	<2	9	<1	0.22
RMD-273	Opp. 8331 Fairfax Place	4-Jul-11	0.50	<1	4	17	<1	1.80
RMD-252	9751 Pendleton Rd.	4-Jul-11	0.66	<1	<2	11	<1	0.16
RMD-274	10920 Springwood Court	4-Jul-11	0.57	<1	98	12	<1	1.40
RMD-250	6071 Azure Rd.	4-Jul-11	0.67	<1	<2	11	<1	0.30
RMD-271	3800 Cessna Drive	4-Jul-11	0.74	<1	<2	10	<1	0.15
RMD-272	751 Catalina Cres.	4-Jul-11	0.77	<1	<2	10	<1	0.13
RMD-255	6000 Blk. Miller Rd.	4-Jul-11	0.72	<1	2	9	<1	0.32
RMD-256	1000 Blk. McDonald Rd.	4-Jul-11	0.59	<1	4	10	<1	0.14
RMD-254	5300 No. 3 Rd.	4-Jul-11	0.74	<1	4	9	<1	0.18
RMD-270	8200 Jones Rd.	4-Jul-11	0.61	<1	<2	12	<1	0.14

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-269	14951 Triangle Rd.	4-Jul-11	0.84	<1	<2	9	<1	0.12
RMD-253	11051 No 3 Rd.	4-Jul-11	0.76	<1	<2	9	<1	0.23
RMD-263	12560 Cambie Rd.	6-Jul-11	0.74	<1	<2	10	<1	0.34
RMD-264	13100 Mitchell Rd.	6-Jul-11	0.61	<1	<2	12	<1	0.18
RMD-277	Opp. 11280 Twigg Place	6-Jul-11	0.26	<1	<2	17	<1	0.13
RMD-262	13799 Commerce Pkwy.	6-Jul-11	0.83	<1	2	10	<1	0.17
RMD-278	6651 Fraserwood Place	6-Jul-11	0.26	<1	6	13	<1	0.24
RMD-279	Opp. 20371 Westminster Hwy.	6-Jul-11	0.20	<1	4	13	<1	0.23
RMD-261	9911 Sidaway Rd.	6-Jul-11	0.83	<1	<2	10	<1	0.12
RMD-260	11111 Horseshoe Way	6-Jul-11	0.62	<1	<2	10	<1	0.24
RMD-268	13800 No. 3 Rd. (off Garden City)	6-Jul-11	0.64	<1	<2	11	<1	0.18
RMD-258	7000 Blk. Dyke Rd.	6-Jul-11	0.62	<1	2	13	<1	0.18
RMD-257	6640 Blundell Rd.	6-Jul-11	0.7	<1	<2	9	<1	0.32
RMD-266	9380 General Currie Rd.	6-Jul-11	1.1	<1	<2	9	<1	0.34
RMD-259	10020 Amethyst Ave.	6-Jul-11	0.82	<1	<2	10	<1	0.28
RMD-204	3180 Granville Ave.	8-Jul-11	0.64	<1	<2	11	<1	0.16
RMD-206	4251 Moncton St.	8-Jul-11	0.61	<1	<2	11	<1	0.15
RMD-216	11080 No. 2 Rd.	8-Jul-11	0.7	<1	<2	11	<1	0.13
RMD-212	Opp. 8600 Riyan Rd.	8-Jul-11	0.59	<1	<2	11	<1	0.19
RMD-208	13200 No. 4 Rd.	8-Jul-11	0.69	<1	<2	11	<1	0.17
RMD-205	13851 Steveston Hwy.	8-Jul-11	0.92	<1	<2	10	<1	0.15
RMD-214	11720 Westminster Hwy.	8-Jul-11	0.79	<1	<2	9	<1	0.26
RMD-202	1500 Valemont Way	8-Jul-11	0.86	<1	2	10	<1	0.11
RMD-267	17240 Fedoruk	8-Jul-11	0.86	<1	<2	11	<1	0.09
RMD-249	23000 Blk. Dyke Rd.	8-Jul-11	0.11	<1	<2	15	<1	0.23
RMD-276	22271 Cochrane Drive	8-Jul-11	0.42	<1	2	11	<1	0.20
RMD-275	5180 Smith Cres.	8-Jul-11	0.57	<1	2	11	<1	0.21
RMD-203	23260 Westminster Hwy.	8-Jul-11	0.37	<1	<2	11	<1	0.25
RMD-251	5951McCallan Rd.	11-Jul-11	0.66	<1	2	11	<1	0.17
RMD-273	Opp. 8331 Fairfax Place	11-Jul-11	0.46	<1	4	19	<1	1.20
RMD-274	10920 Springwood Court	11-Jul-11	0.64	<1	24	13	<1	0.23
RMD-252	9751 Pendleton Rd.	11-Jul-11	0.68	<1	<2	13	<1	0.11
RMD-250	6071 Azure Rd.	11-Jul-11	0.73	<1	<2	11	<1	0.19
RMD-271	3800 Cessna Drive	11-Jul-11	0.55	<1	<2	11	<1	0.12
RMD-272	751 Catalina Cres.	11-Jul-11	0.72	<1	2	11	<1	0.14
RMD-255	6000 Blk. Miller Rd.	11-Jul-11	0.70	<1	<2	10	<1	0.24
RMD-254	5300 No. 3 Rd.	11-Jul-11	0.73	<1	2	10	<1	0.14
RMD-270	8200 Jones Rd.	11-Jul-11	0.57	<1	<2	14	<1	0.13
RMD-269	14951 Triangle Rd.	11-Jul-11	0.76	<1	<2	10	<1	0.12
RMD-253	11051 No 3 Rd.	11-Jul-11	0.70	<1	<2	10	<1	0.18

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-257	6640 Blundell Rd.	13-Jul-11	0.67	<1	<2	11	<1	0.13
RMD-258	7000 Blk. Dyke Rd.	13-Jul-11	0.67	<1	2	14	<1	0.14
RMD-268	13800 No. 3 Rd. (off Garden City)	13-Jul-11	0.64	<1	4	12	<1	0.14
RMD-259	10020 Amethyst Ave.	13-Jul-11	0.71	<1	<2	12	<1	0.13
RMD-266	9380 General Currie Rd.	13-Jul-11	0.68	<1	<2	12	<1	0.13
RMD-260	11111 Horseshoe Way	13-Jul-11	0.61	<1	<2	12	<1	0.11
RMD-261	9911 Sidaway Rd.	13-Jul-11	0.75	<1	<2	12	<1	0.09
RMD-262	13799 Commerce Pkwy.	13-Jul-11	0.71	<1	<2	13	<1	0.13
RMD-263	12560 Cambie Rd.	13-Jul-11	0.69	<1	2	12	<1	0.14
RMD-264	13100 Mitchell Rd.	13-Jul-11	0.62	<1	<2	13	<1	0.15
RMD-277	Opp. 11280 Twigg Place	13-Jul-11	0.26	<1	2	19	<1	0.13
RMD-256-1	1000 Blk. McDonald Rd. before flushing	13-Jul-11	0.10	<1	260	19	<1	0.70
RMD-278	6651 Fraserwood Place	13-Jul-11	0.32	<1	<2	16	<1	0.19
RMD-279	Opp. 20371 Westminster Hwy.	13-Jul-11	0.31	<1	<2	14	<1	0.25
RMD-256-2	1000 Blk. McDonald Rd. after slushing	13-Jul-11	[Not taken] NA	<1	240	[Not taken] NA	<1	0.67
RMD-204	3180 Granville Ave.	15-Jul-11	0.66	<1	<2	14	<1	0.16
RMD-206	4251 Moncton St.	15-Jul-11	0.63	<1	<2	14	<1	0.14
RMD-216	11080 No. 2 Rd.	15-Jul-11	0.76	<1	<2	12	<1	0.13
RMD-212	Opp. 8600 Riyan Rd.	15-Jul-11	0.71	<1	<2	13	<1	0.12
RMD-208	13200 No. 4 Rd.	15-Jul-11	0.78	<1	<2	11	<1	0.11
RMD-205	13851 Steveston Hwy.	15-Jul-11	0.56	<1	<2	11	<1	0.12
RMD-214	11720 Westminster Hwy.	15-Jul-11	0.81	<1	<2	10	<1	0.13
RMD-202	1500 Valemont Way	15-Jul-11	0.62	<1	<2	11	<1	0.15
RMD-267	17240 Fedoruk	15-Jul-11	0.73	<1	6	13	<1	0.08
RMD-276	22271 Cochrane Drive	15-Jul-11	0.51	<1	<2	13	<1	0.20
RMD-275	5180 Smith Cres.	15-Jul-11	0.73	<1	<2	13	<1	0.20
RMD-203	23260 Westminster Hwy.	15-Jul-11	0.63	<1	<2	12	<1	0.27
RMD-249	23000 Blk. Dyke Rd.	15-Jul-11	0.32	<1	4	14	<1	0.25
RMD-251	5951McCallan Rd.	18-Jul-11	0.64	<1	<2	10	<1	0.14
RMD-273	Opp. 8331 Fairfax Place	18-Jul-11	0.50	<1	2	18	<1	0.12
RMD-252	9751 Pendleton Rd.	18-Jul-11	0.61	<1	<2	12	<1	0.13
RMD-274	10920 Springwood Court	18-Jul-11	0.52	<1	280	14	<1	0.79
RMD-250	6071 Azure Rd.	18-Jul-11	0.59	<1	2	11	<1	0.16
RMD-271	3800 Cessna Drive	18-Jul-11	0.56	<1	<2	10	<1	0.16
RMD-272	751 Catalina Cres.	18-Jul-11	0.58	<1	<2	11	<1	0.15
RMD-255	6000 Blk. Miller Rd.	18-Jul-11	0.67	<1	<2	10	<1	0.74
RMD-256	1000 Blk. McDonald Rd.	18-Jul-11	0.47	<1	<2	11	<1	0.17

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-254	5300 No. 3 Rd.	18-Jul-11	0.59	<1	<2	10	<1	0.20
RMD-270	8200 Jones Rd.	18-Jul-11	0.55	<1	<2	12	<1	0.13
RMD-269	14951 Triangle Rd.	18-Jul-11	0.68	<1	<2	10	<1	0.16
RMD-253	11051 No 3 Rd.	18-Jul-11	0.64	<1	<2	10	<1	0.16
RMD-263	12560 Cambie Rd.	20-Jul-11	0.74	<1	<2	11	<1	0.14
RMD-264	13100 Mitchell Rd.	20-Jul-11	0.70	<1	<2	11	<1	0.64
RMD-277	Opp. 11280 Twigg Place	20-Jul-11	0.33	<1	8	18	<1	0.14
RMD-262	13799 Commerce Pkwy.	20-Jul-11	0.74	<1	2	10	<1	0.08
RMD-278	6651 Fraserwood Place	20-Jul-11	0.33	<1	4	15	<1	0.23
RMD-279	Opp. 20371 Westminster Hwy.	20-Jul-11	0.25	<1	2	15	<1	0.19
RMD-261	9911 Sidaway Rd.	20-Jul-11	0.45	<1	<2	13	<1	0.12
RMD-260	11111 Horseshoe Way	20-Jul-11	0.76	<1	<2	11	<1	0.09
RMD-259	10020 Amethyst Ave.	20-Jul-11	0.70	<1	<2	11	<1	0.14
RMD-268	13800 No. 3 Rd. (off Garden City)	20-Jul-11	0.73	<1	<2	11	<1	0.13
RMD-258	7000 Blk. Dyke Rd.	20-Jul-11	0.65	<1	<2	15	<1	0.14
RMD-257	6640 Blundell Rd.	20-Jul-11	0.76	<1	<2	10	<1	0.12
RMD-266	9380 General Currie Rd.	20-Jul-11	0.70	<1	<2	10	<1	0.14
RMD-204	3180 Granville Ave.	22-Jul-11	0.55	<1	<2	12	<1	0.49
RMD-206	4251 Moncton St.	22-Jul-11	0.50	<1	2	11	<1	0.36
RMD-216	11080 No. 2 Rd.	22-Jul-11	0.53	<1	<2	11	<1	0.25
RMD-212	Opp. 8600 Riyan Rd.	22-Jul-11	0.57	<1	2	11	<1	0.28
RMD-208	13200 No. 4 Rd.	22-Jul-11	0.53	<1	<2	11	<1	0.25
RMD-205	13851 Steveston Hwy.	22-Jul-11	0.69	<1	2	10	<1	0.31
RMD-214	11720 Westminster Hwy.	22-Jul-11	0.61	<1	<2	10	<1	0.20
RMD-202	1500 Valemont Way	22-Jul-11	0.57	<1	<2	10	<1	0.34
RMD-267	17240 Fedoruk	22-Jul-11	0.62	<1	<2	12	<1	0.09
RMD-249	23000 Blk. Dyke Rd.	22-Jul-11	0.04	<1	<2	14	<1	0.21
RMD-276	22271 Cochrane Drive	22-Jul-11	0.44	<1	<2	12	<1	0.26
RMD-275	5180 Smith Cres.	22-Jul-11	0.62	<1	<2	11	<1	0.23
RMD-203	23260 Westminster Hwy.	22-Jul-11	0.61	<1	<2	10	<1	0.38
RMD-251	5951McCallan Rd.	25-Jul-11	0.59	<1	<2	11	<1	0.12
RMD-273	Opp. 8331 Fairfax Place	25-Jul-11	0.44	<1	2	17	<1	0.49
RMD-252	9751 Pendleton Rd.	25-Jul-11	0.52	<1	4	12	<1	0.14
RMD-274	10920 Springwood Court	25-Jul-11	0.50	<1	<2	12	<1	0.47
RMD-253	11051 No 3 Rd.	25-Jul-11	0.70	<1	<2	10	<1	0.14
RMD-270	8200 Jones Rd.	25-Jul-11	0.51	<1	<2	12	<1	0.18
RMD-250	6071 Azure Rd.	25-Jul-11	0.58	<1	2	12	<1	0.13
RMD-271	3800 Cessna Drive	25-Jul-11	0.59	<1	2	11	<1	0.11
RMD-272	751 Catalina Cres.	25-Jul-11	0.58	<1	<2	10	<1	0.13
RMD-255	6000 Blk. Miller Rd.	25-Jul-11	0.50	<1	<2	9	<1	0.23

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-256	1000 Blk. McDonald Rd.	25-Jul-11	0.46	<1	<2	12	<1	0.16
RMD-254	5300 No. 3 Rd.	25-Jul-11	0.49	<1	<2	10	<1	0.13
RMD-269	14951 Triangle Rd.	25-Jul-11	0.65	<1	2	9	<1	0.15
RMD-257	6640 Blundell Rd.	27-Jul-11	0.59	<1	<2	10	<1	0.16
RMD-266	9380 General Currie Rd.	27-Jul-11	0.16	<1	<2	10	<1	0.11
RMD-263	12560 Cambie Rd.	27-Jul-11	0.57	<1	<2	10	<1	0.12
RMD-264	13100 Mitchell Rd.	27-Jul-11	0.54	<1	<2	11	<1	0.17
RMD-277	Opp. 11280 Twigg Place	27-Jul-11	0.42	<1	<2	15	<1	0.16
RMD-262	13799 Commerce Pkwy.	27-Jul-11	0.62	<1	<2	11	<1	0.09
RMD-278	6651 Fraserwood Place	27-Jul-11	0.34	<1	<2	14	<1	0.24
RMD-279	Opp. 20371 Westminster Hwy.	27-Jul-11	0.48	<1	<2	12	<1	0.38
RMD-261	9911 Sidaway Rd.	27-Jul-11	0.64	<1	<2	11	<1	0.13
RMD-260	11111 Horseshoe Way	27-Jul-11	0.55	<1	<2	11	<1	0.14
RMD-259	10020 Amethyst Ave.	27-Jul-11	0.51	<1	<2	11	<1	0.15
RMD-268	13800 No. 3 Rd. (off Garden City)	27-Jul-11	0.39	<1	<2	12	<1	0.22
RMD-258	7000 Blk. Dyke Rd.	27-Jul-11	0.54	<1	<2	13	<1	0.18
RMD-204	3180 Granville Ave.	29-Jul-11	0.50	<1	<2	13	<1	0.11
RMD-206	4251 Moncton St.	29-Jul-11	0.50	<1	2	13	<1	0.11
RMD-216	11080 No. 2 Rd.	29-Jul-11	0.57	<1	<2	13	<1	0.12
RMD-212	Opp. 8600 Riyan Rd.	29-Jul-11	0.55	<1	<2	13	<1	0.10
RMD-208	13200 No. 4 Rd.	29-Jul-11	0.58	<1	180	12	<1	0.11
RMD-205	13851 Steveston Hwy.	29-Jul-11	0.63	<1	<2	14	<1	0.08
RMD-267	17240 Fedoruk	29-Jul-11	0.60	<1	<2	14	<1	0.08
RMD-202	1500 Valemont Way	29-Jul-11	0.62	<1	<2	13	<1	0.12
RMD-214	11720 Westminster Hwy.	29-Jul-11	0.52	<1	<2	11	<1	0.13
RMD-275	5180 Smith Cres.	29-Jul-11	0.73	<1	<2	14	<1	0.28
RMD-203	23260 Westminster Hwy.	29-Jul-11	0.60	<1	<2	13	<1	0.26
RMD-276	22271 Cochrane Drive	29-Jul-11	0.57	<1	<2	14	<1	0.23
RMD-249	23000 Blk. Dyke Rd.	29-Jul-11	0.11	<1	2	15	<1	0.28
RMD-257	6640 Blundell Rd.	3-Aug-11	0.29	<1	<2	12	<1	0.20
RMD-258	7000 Blk. Dyke Rd.	3-Aug-11	0.39	<1	2	16	<1	0.13
RMD-268	13800 No. 3 Rd. (off Garden City)	3-Aug-11	0.45	<1	2	13	<1	0.15
RMD-259	10020 Amethyst Ave.	3-Aug-11	0.49	<1	<2	12	<1	0.17
RMD-266	9380 General Currie Rd.	3-Aug-11	0.49	<1	<2	11	<1	0.18
RMD-260	11111 Horseshoe Way	3-Aug-11	0.48	<1	<2	13	<1	0.14
RMD-261	9911 Sidaway Rd.	3-Aug-11	0.54	<1	<2	13	<1	0.14
RMD-262	13799 Commerce Pkwy.	3-Aug-11	0.49	<1	<2	12	<1	0.12
RMD-263	12560 Cambie Rd.	3-Aug-11	0.42	<1	<2	12	<1	0.17
RMD-264	13100 Mitchell Rd.	3-Aug-11	0.40	<1	<2	12	<1	0.19
RMD-277	Opp. 11280 Twigg Place	3-Aug-11	0.14	<1	36	19	<1	0.14

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-278	6651 Fraserwood Place	3-Aug-11	0.29	<1	2	15	<1	0.24
RMD-279	Opp. 20371 Westminster Hwy.	3-Aug-11	0.29	<1	2	14	<1	0.21
RMD-204	3180 Granville Ave.	5-Aug-11	0.49	<1	<2	12	<1	0.14
RMD-206	4251 Moncton St.	5-Aug-11	0.54	<1	<2	11	<1	0.39
RMD-216	11080 No. 2 Rd.	5-Aug-11	0.55	<1	<2	11	<1	0.14
RMD-212	Opp. 8600 Riyan Rd.	5-Aug-11	0.59	<1	<2	12	<1	0.13
RMD-208	13200 No. 4 Rd.	5-Aug-11	0.56	<1	<2	11	<1	0.11
RMD-205	13851 Steveston Hwy.	5-Aug-11	0.64	<1	<2	11	<1	0.16
RMD-214	11720 Westminster Hwy.	5-Aug-11	0.65	<1	<2	10	<1	0.12
RMD-202	1500 Valemont Way	5-Aug-11	0.67	<1	<2	12	<1	0.09
RMD-267	17240 Fedoruk	5-Aug-11	0.65	<1	<2	13	<1	0.11
RMD-249	23000 Blk. Dyke Rd.	5-Aug-11	0.08	<1	<2	15	<1	0.19
RMD-276	22271 Cochrane Drive	5-Aug-11	0.44	<1	<2	12	<1	0.28
RMD-275	5180 Smith Cres.	5-Aug-11	0.52	<1	<2	13	<1	0.29
RMD-203	23260 Westminster Hwy.	5-Aug-11	0.47	<1	<2	12	<1	0.26
RMD-251	5951McCallan Rd.	8-Aug-11	0.54	<1	2	13	<1	0.12
RMD-273	Opp. 8331 Fairfax Place	8-Aug-11	0.49	<1	<2	19	<1	1.20
RMD-274	10920 Springwood Court	8-Aug-11	0.57	<1	4	15	<1	0.85
RMD-252	9751 Pendleton Rd.	8-Aug-11	0.59	<1	<2	13	<1	0.16
RMD-250	6071 Azure Rd.	8-Aug-11	0.58	<1	2	13	<1	0.18
RMD-271	3800 Cessna Drive	8-Aug-11	0.57	<1	<2	15	<1	0.10
RMD-272	751 Catalina Cres.	8-Aug-11	0.56	<1	2	13	<1	0.12
RMD-255	6000 Blk. Miller Rd.	8-Aug-11	0.60	<1	<2	12	<1	0.26
RMD-256	1000 Blk. McDonald Rd.	8-Aug-11	0.50	<1	<2	14	<1	0.15
RMD-254	5300 No. 3 Rd.	8-Aug-11	0.52	<1	<2	12	<1	0.13
RMD-270	8200 Jones Rd.	8-Aug-11	0.59	<1	<2	14	<1	0.10
RMD-269	14951 Triangle Rd.	8-Aug-11	0.69	<1	<2	13	<1	0.13
RMD-253	11051 No 3 Rd.	8-Aug-11	0.59	<1	<2	13	<1	0.11
RMD-257	6640 Blundell Rd.	10-Aug-11	0.61	<1	<2	11	<1	0.12
RMD-258	7000 Blk. Dyke Rd.	10-Aug-11	0.60	<1	<2	15	<1	0.10
RMD-268	13800 No. 3 Rd. (off Garden City)	10-Aug-11	0.57	<1	<2	14	<1	0.10
RMD-259	10020 Amethyst Ave.	10-Aug-11	0.60	<1	<2	13	<1	0.10
RMD-266	9380 General Currie Rd.	10-Aug-11	0.56	<1	<2	14	<1	0.11
RMD-260	11111 Horseshoe Way	10-Aug-11	0.61	<1	<2	14	<1	0.10
RMD-261	9911 Sidaway Rd.	10-Aug-11	0.59	<1	<2	14	<1	0.10
RMD-264	13100 Mitchell Rd.	10-Aug-11	0.59	<1	6	14	<1	0.13
RMD-277	Opp. 11280 Twigg Place	10-Aug-11	0.23	<1	34	19	<1	0.11
RMD-263	12560 Cambie Rd.	10-Aug-11	0.61	<1	<2	13	<1	0.11
RMD-262	13799 Commerce Pkwy.	10-Aug-11	0.60	<1	<2	13	<1	0.09
RMD-279	Opp. 20371 Westminster Hwy.	10-Aug-11	0.26	<1	2	15	<1	0.22

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-278	6651 Fraserwood Place	10-Aug-11	0.10	<1	100	16	<1	0.34
RMD-204	3180 Granville Ave.	12-Aug-11	0.19	<1	<2	13	<1	0.15
RMD-206	4251 Moncton St.	12-Aug-11	0.49	<1	<2	13	<1	0.19
RMD-216	11080 No. 2 Rd.	12-Aug-11	0.47	<1	<2	13	<1	0.14
RMD-212	Opp. 8600 Riyan Rd.	12-Aug-11	0.56	<1	<2	13	<1	0.15
RMD-208	13200 No. 4 Rd.	12-Aug-11	0.56	<1	<2	13	<1	0.15
RMD-205	13851 Steveston Hwy.	12-Aug-11	0.65	<1	<2	13	<1	0.11
RMD-202	1500 Valemont Way	12-Aug-11	0.61	<1	<2	15	<1	0.10
RMD-214	11720 Westminster Hwy.	12-Aug-11	0.65	<1	<2	14	<1	0.14
RMD-267	17240 Fedoruk	12-Aug-11	0.67	<1	<2	15	<1	0.14
RMD-249	23000 Blk. Dyke Rd.	12-Aug-11	0.05	<1	<2	16	<1	0.26
RMD-276	22271 Cochrane Drive	12-Aug-11	0.43	<1	<2	14	<1	0.24
RMD-275	5180 Smith Cres.	12-Aug-11	0.51	<1	190	15	<1	0.56
RMD-203	23260 Westminster Hwy.	12-Aug-11	0.48	<1	2	15	<1	0.27
RMD-251	5951McCallan Rd.	15-Aug-11	0.57	<1	<2	13	<1	0.09
RMD-273	Opp. 8331 Fairfax Place	15-Aug-11	0.38	<1	2	19	<1	0.52
RMD-274	10920 Springwood Court	15-Aug-11	0.38	<1	42	16	<1	0.10
RMD-252	9751 Pendleton Rd.	15-Aug-11	0.50	<1	<2	14	<1	0.10
RMD-250	6071 Azure Rd.	15-Aug-11	0.56	<1	4	14	<1	0.18
RMD-271	3800 Cessna Drive	15-Aug-11	0.57	<1	2	13	<1	0.10
RMD-272	751 Catalina Cres.	15-Aug-11	0.54	<1	<2	13	<1	0.12
RMD-255	6000 Blk. Miller Rd.	15-Aug-11	0.57	<1	2	12	<1	0.27
RMD-256	1000 Blk. McDonald Rd.	15-Aug-11	0.54	<1	<2	14	<1	0.11
RMD-254	5300 No. 3 Rd.	15-Aug-11	0.54	<1	<2	12	<1	0.15
RMD-270	8200 Jones Rd.	15-Aug-11	0.48	<1	<2	15	<1	0.10
RMD-269	14951 Triangle Rd.	15-Aug-11	0.66	<1	2	14	<1	0.08
RMD-253	11051 No 3 Rd.	15-Aug-11	0.57	<1	<2	14	<1	0.13
RMD-257	6640 Blundell Rd.	17-Aug-11	0.54	<1	<2	14	<1	0.13
RMD-258	7000 Blk. Dyke Rd.	17-Aug-11	0.37	<1	<2	16	<1	0.11
RMD-268	13800 No. 3 Rd. (off Garden City)	17-Aug-11	0.51	<1	16	14	<1	0.09
RMD-259	10020 Amethyst Ave.	17-Aug-11	0.45	<1	<2	14	<1	0.12
RMD-266	9380 General Currie Rd.	17-Aug-11	0.59	<1	<2	14	<1	0.12
RMD-260	11111 Horseshoe Way	17-Aug-11	0.54	<1	<2	14	<1	0.14
RMD-261	9911 Sidaway Rd.	17-Aug-11	0.62	<1	<2	14	<1	0.09
RMD-264	13100 Mitchell Rd.	17-Aug-11	0.48	<1	<2	14	<1	0.13
RMD-277	Opp. 11280 Twigg Place	17-Aug-11	0.40	<1	2	17	<1	0.08
RMD-262	13799 Commerce Pkwy.	17-Aug-11	0.45	<1	2	14	<1	0.10
RMD-278	6651 Fraserwood Place	17-Aug-11	0.09	<1	2	15	<1	0.23
RMD-279	Opp. 20371 Westminster Hwy.	17-Aug-11	0.26	<1	<2	15	<1	0.22
RMD-263	12560 Cambie Rd.	17-Aug-11	0.49	<1	<2	14	<1	0.10

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-204	3180 Granville Ave.	19-Aug-11	0.48	<1	2	13	<1	0.12
RMD-206	4251 Moncton St.	19-Aug-11	0.54	<1	<2	13	<1	0.13
RMD-216	11080 No. 2 Rd.	19-Aug-11	0.57	<1	<2	13	<1	0.10
RMD-212	Opp. 8600 Riyan Rd.	19-Aug-11	0.57	<1	<2	13	<1	0.11
RMD-208	13200 No. 4 Rd.	19-Aug-11	0.62	<1	<2	13	<1	0.10
RMD-205	13851 Steveston Hwy.	19-Aug-11	0.62	<1	6	13	<1	0.08
RMD-214	11720 Westminster Hwy.	19-Aug-11	0.60	<1	4	12	<1	0.10
RMD-202	1500 Valemont Way	19-Aug-11	0.67	<1	2	13	<1	0.08
RMD-267	17240 Fedoruk	19-Aug-11	0.65	<1	<2	14	<1	0.09
RMD-249	23000 Blk. Dyke Rd.	19-Aug-11	0.49	<1	2	13	<1	0.22
RMD-276	22271 Cochrane Drive	19-Aug-11	0.32	<1	<2	13	<1	0.23
RMD-275	5180 Smith Cres.	19-Aug-11	0.49	<1	<2	13	<1	0.20
RMD-203	23260 Westminster Hwy.	19-Aug-11	0.62	<1	<2	13	<1	0.27
RMD-251	5951McCallan Rd.	22-Aug-11	0.51	<1	2	12	<1	0.17
RMD-273	Opp. 8331 Fairfax Place	22-Aug-11	0.35	<1	16	20	<1	1.20
RMD-252	9751 Pendleton Rd.	22-Aug-11	0.40	<1	2	14	<1	0.19
RMD-274	10920 Springwood Court	22-Aug-11	0.34	<1	380	15	<1	0.29
RMD-253	11051 No 3 Rd.	22-Aug-11	0.47	<1	<2	12	<1	0.21
RMD-269	14951 Triangle Rd.	22-Aug-11	0.54	<1	2	13	<1	0.10
RMD-270	8200 Jones Rd.	22-Aug-11	0.39	<1	<2	14	<1	0.21
RMD-271	3800 Cessna Drive	22-Aug-11	0.46	<1	6	11	<1	0.17
RMD-272	751 Catalina Cres.	22-Aug-11	0.49	<1	<2	13	<1	0.19
RMD-255	6000 Blk. Miller Rd.	22-Aug-11	0.50	<1	8	11	<1	0.25
RMD-256	1000 Blk. McDonald Rd.	22-Aug-11	0.37	<1	2	14	<1	0.19
RMD-254	5300 No. 3 Rd.	22-Aug-11	0.46	<1	<2	12	<1	0.19
RMD-250	6071 Azure Rd.	22-Aug-11	0.41	<1	2	13	<1	0.21
RMD-263	12560 Cambie Rd.	24-Aug-11	0.60	<1	<2	13	<1	0.35
RMD-264	13100 Mitchell Rd.	24-Aug-11	0.55	<1	<2	13	<1	0.21
RMD-277	Opp. 11280 Twigg Place	24-Aug-11	0.08	<1	22	20	<1	0.11
RMD-262	13799 Commerce Pkwy.	24-Aug-11	0.71	<1	40	13	<1	0.36
RMD-278	6651 Fraserwood Place	24-Aug-11	0.08	<1	<2	15	<1	0.27
RMD-279	Opp. 20371 Westminster Hwy.	24-Aug-11	0.06	<1	6	15	<1	0.30
RMD-261	9911 Sidaway Rd.	24-Aug-11	0.14	<1	<2	15	<1	0.29
RMD-260	11111 Horseshoe Way	24-Aug-11	0.61	<1	<2	14	<1	0.31
RMD-259	10020 Amethyst Ave.	24-Aug-11	0.59	<1	2	13	<1	0.22
RMD-266	9380 General Currie Rd.	24-Aug-11	0.52	<1	<2	12	<1	0.28
RMD-268	13800 No. 3 Rd. (off Garden City)	24-Aug-11	0.44	<1	2	13	<1	0.23
RMD-258	7000 Blk. Dyke Rd.	24-Aug-11	0.52	<1	<2	14	<1	0.18
RMD-257	6640 Blundell Rd.	24-Aug-11	0.48	<1	<2	12	<1	0.27
RMD-204	3180 Granville Ave.	26-Aug-11	0.52	<1	<2	14	<1	0.18

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-206	4251 Moncton St.	26-Aug-11	0.54	<1	4	13	<1	0.23
RMD-216	11080 No. 2 Rd.	26-Aug-11	0.58	<1	<2	13	<1	0.16
RMD-212	Opp. 8600 Riyan Rd.	26-Aug-11	0.57	<1	<2	13	<1	0.17
RMD-208	13200 No. 4 Rd.	26-Aug-11	0.60	<1	<2	15	<1	0.17
RMD-205	13851 Steveston Hwy.	26-Aug-11	0.66	<1	2	15	<1	0.23
RMD-267	17240 Fedoruk	26-Aug-11	0.65	<1	<2	15	<1	0.22
RMD-214	11720 Westminster Hwy.	26-Aug-11	0.69	<1	<2	15	<1	0.21
RMD-202	1500 Valemont Way	26-Aug-11	0.67	<1	<2	13	<1	0.23
RMD-203	23260 Westminster Hwy.	26-Aug-11	0.56	<1	<2	14	<1	0.30
RMD-275	5180 Smith Cres.	26-Aug-11	0.24	<1	2	13	<1	0.30
RMD-276	22271 Cochrane Drive	26-Aug-11	0.30	<1	2	15	<1	0.28
RMD-249	23000 Blk. Dyke Rd.	26-Aug-11	0.07	<1	6	15	<1	0.23
RMD-251	5951McCallan Rd.	29-Aug-11	0.54	<1	2	15	<1	0.15
RMD-273	Opp. 8331 Fairfax Place	29-Aug-11	0.32	<1	<2	17	<1	0.16
RMD-252	9751 Pendleton Rd.	29-Aug-11	0.49	<1	<2	14	<1	0.11
RMD-274	10920 Springwood Court	29-Aug-11	0.48	<1	2	15	<1	0.15
RMD-250	6071 Azure Rd.	29-Aug-11	0.55	<1	<2	15	<1	0.16
RMD-271	3800 Cessna Drive	29-Aug-11	0.55	<1	<2	15	<1	0.12
RMD-272	751 Catalina Cres.	29-Aug-11	0.51	<1	<2	15	<1	0.15
RMD-255	6000 Blk. Miller Rd.	29-Aug-11	0.51	<1	<2	15	<1	0.19
RMD-256	1000 Blk. McDonald Rd.	29-Aug-11	0.51	<1	<2	15	<1	0.14
RMD-254	5300 No. 3 Rd.	29-Aug-11	0.56	<1	<2	14	<1	0.12
RMD-270	8200 Jones Rd.	29-Aug-11	0.42	<1	<2	15	<1	0.12
RMD-269	14951 Triangle Rd.	29-Aug-11	0.61	<1	<2	15	<1	0.14
RMD-253	11051 No 3 Rd.	29-Aug-11	0.57	<1	2	15	<1	0.12
RMD-257	6640 Blundell Rd.	31-Aug-11	0.56	<1	<2	14	<1	0.18
RMD-258	7000 Blk. Dyke Rd.	31-Aug-11	0.45	<1	<2	14	<1	0.10
RMD-268	13800 No. 3 Rd. (off Garden City)	31-Aug-11	0.47	<1	<2	14	<1	0.16
RMD-259	10020 Amethyst Ave.	31-Aug-11	0.54	<1	<2	14	<1	0.12
RMD-266	9380 General Currie Rd.	31-Aug-11	0.56	<1	2	14	<1	0.12
RMD-260	11111 Horseshoe Way	31-Aug-11	0.52	<1	2	14	<1	0.14
RMD-261	9911 Sidaway Rd.	31-Aug-11	0.49	<1	<2	14	<1	0.10
RMD-262	13799 Commerce Pkwy.	31-Aug-11	0.61	<1	6	15	<1	0.10
RMD-263	12560 Cambie Rd.	31-Aug-11	0.60	<1	<2	14	<1	0.10
RMD-264	13100 Mitchell Rd.	31-Aug-11	0.58	<1	<2	15	<1	0.11
RMD-277	Opp. 11280 Twigg Place	31-Aug-11	0.54	<1	2	16	<1	0.13
RMD-278	6651 Fraserwood Place	31-Aug-11	0.01	<1	110	15	<1	0.23
RMD-279	Opp. 20371 Westminster Hwy.	31-Aug-11	0.11	<1	16	18	<1	0.20
RMD-204	3180 Granville Ave.	2-Sep-11	0.49	<1	<2	15	<1	0.14
RMD-206	4251 Moncton St.	2-Sep-11	0.43	<1	<2	14	<1	0.17

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-216	11080 No. 2 Rd.	2-Sep-11	0.47	<1	<2	14	<1	0.17
RMD-212	Opp. 8600 Riyan Rd.	2-Sep-11	0.55	<1	<2	14	<1	0.14
RMD-208	13200 No. 4 Rd.	2-Sep-11	0.52	<1	<2	14	<1	0.11
RMD-205	13851 Steveston Hwy.	2-Sep-11	0.63	<1	<2	13	<1	0.17
RMD-214	11720 Westminster Hwy.	2-Sep-11	0.53	<1	<2	14	<1	0.12
RMD-202	1500 Valemont Way	2-Sep-11	0.45	<1	<2	15	<1	0.14
RMD-267	17240 Fedoruk	2-Sep-11	0.62	<1	2	15	<1	0.15
RMD-249	23000 Blk. Dyke Rd.	2-Sep-11	0.13	<1	<2	16	<1	0.19
RMD-276	22271 Cochrane Drive	2-Sep-11	0.19	<1	20	13	<1	0.21
RMD-275	5180 Smith Cres.	2-Sep-11	0.28	<1	6	13	<1	0.25
RMD-203	23260 Westminster Hwy.	2-Sep-11	0.36	<1	<2	13	<1	0.21
RMD-257	6640 Blundell Rd.	7-Sep-11	0.70	<1	<2	10	<1	0.37
RMD-251	5951McCallan Rd.	7-Sep-11	0.25	<1	<2	13	<1	0.37
RMD-266	9380 General Currie Rd.	7-Sep-11	0.67	<1	4	11	<1	0.25
RMD-273	Opp. 8331 Fairfax Place	7-Sep-11	0.28	<1	2	19	<1	0.26
RMD-274	10920 Springwood Court	7-Sep-11	0.38	<1	180	16	<1	0.28
RMD-263	12560 Cambie Rd.	7-Sep-11	0.65	<1	<2	12	<1	0.24
RMD-252	9751 Pendleton Rd.	7-Sep-11	0.49	<1	<2	14	<1	0.30
RMD-264	13100 Mitchell Rd.	7-Sep-11	0.54	<1	2	11	<1	0.33
RMD-250	6071 Azure Rd.	7-Sep-11	0.53	<1	4	14	<1	0.46
RMD-277	Opp. 11280 Twigg Place	7-Sep-11	0.13	<1	44	18	<1	0.16
RMD-271	3800 Cessna Drive	7-Sep-11	0.32	<1	2	16	<1	0.25
RMD-262	13799 Commerce Pkwy.	7-Sep-11	0.70	<1	2	14	<1	0.18
RMD-272	751 Catalina Cres.	7-Sep-11	0.54	<1	<2	12	<1	0.26
RMD-255	6000 Blk. Miller Rd.	7-Sep-11	0.61	<1	6	12	<1	0.38
RMD-278	6651 Fraserwood Place	7-Sep-11	0.26	<1	26	14	<1	0.30
RMD-256	1000 Blk. McDonald Rd.	7-Sep-11	<0.01	<1	28	19	<1	0.23
RMD-279	Opp. 20371 Westminster Hwy.	7-Sep-11	0.09	<1	20	15	<1	0.23
RMD-261	9911 Sidaway Rd.	7-Sep-11	0.26	<1	<2	14	<1	0.26
RMD-254	5300 No. 3 Rd.	7-Sep-11	0.64	<1	<2	12	<1	0.29
RMD-260	11111 Horseshoe Way	7-Sep-11	0.53	<1	<2	11	<1	0.28
RMD-270	8200 Jones Rd.	7-Sep-11	0.43	<1	<2	14	<1	0.30
RMD-269	14951 Triangle Rd.	7-Sep-11	0.89	<1	6	17	<1	0.40
RMD-259	10020 Amethyst Ave.	7-Sep-11	0.54	<1	4	11	<1	0.22
RMD-268	13800 No. 3 Rd. (off Garden City)	7-Sep-11	0.47	<1	<2	12	<1	0.49
RMD-253	11051 No 3 Rd.	7-Sep-11	0.55	<1	<2	13	<1	0.30
RMD-258	7000 Blk. Dyke Rd.	7-Sep-11	0.42	<1	4	14	<1	1.40
RMD-204	3180 Granville Ave.	9-Sep-11	0.77	<1	<2	14	<1	0.26
RMD-206	4251 Moncton St.	9-Sep-11	0.64	<1	<2	15	<1	0.32
RMD-216	11080 No. 2 Rd.	9-Sep-11	0.84	<1	<2	13	<1	0.25

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-212	Opp. 8600 Riyan Rd.	9-Sep-11	0.87	<1	<2	13	<1	0.26
RMD-208	13200 No. 4 Rd.	9-Sep-11	0.84	<1	<2	13	<1	0.28
RMD-205	13851 Steveston Hwy.	9-Sep-11	0.64	<1	4	17	<1	0.09
RMD-202	1500 Valemont Way	9-Sep-11	0.64	<1	<2	17	<1	0.11
RMD-214	11720 Westminster Hwy.	9-Sep-11	0.99	<1	<2	11	<1	0.28
RMD-267	17240 Fedoruk	9-Sep-11	0.62	<1	<2	17	<1	0.09
RMD-249	23000 Blk. Dyke Rd.	9-Sep-11	0.52	<1	<2	14	<1	0.22
RMD-276	22271 Cochrane Drive	9-Sep-11	0.26	<1	<2	15	<1	0.19
RMD-275	5180 Smith Cres.	9-Sep-11	0.37	<1	<2	16	<1	0.26
RMD-203	23260 Westminster Hwy.	9-Sep-11	0.48	<1	<2	15	<1	0.15
RMD-251	5951McCallan Rd.	12-Sep-11	0.90	<1	8	11	<1	0.31
RMD-273	Opp. 8331 Fairfax Place	12-Sep-11	0.57	<1	<2	18	<1	0.27
RMD-252	9751 Pendleton Rd.	12-Sep-11	0.74	<1	<2	15	<1	0.24
RMD-274	10920 Springwood Court	12-Sep-11	0.69	<1	<2	15	<1	0.34
RMD-250	6071 Azure Rd.	12-Sep-11	0.81	<1	<2	15	<1	0.32
RMD-271	3800 Cessna Drive	12-Sep-11	1.0	<1	<2	15	<1	0.33
RMD-272	751 Catalina Cres.	12-Sep-11	0.89	<1	2	14	<1	0.33
RMD-255	6000 Blk. Miller Rd.	12-Sep-11	0.9	<1	<2	12	<1	0.34
RMD-256	1000 Blk. McDonald Rd.	12-Sep-11	0.7	<1	<2	12	<1	0.38
RMD-254	5300 No. 3 Rd.	12-Sep-11	0.88	<1	<2	13	<1	0.35
RMD-270	8200 Jones Rd.	12-Sep-11	0.69	<1	2	12	<1	0.29
RMD-269	14951 Triangle Rd.	12-Sep-11	0.1	<1	480	15	<1	1.10
RMD-253	11051 No 3 Rd.	12-Sep-11	0.98	<1	<2	13	<1	0.30
RMD-257	6640 Blundell Rd.	14-Sep-11	0.91	<1	2	11	<1	0.31
RMD-258	7000 Blk. Dyke Rd.	14-Sep-11	0.80	<1	4	15	<1	0.38
RMD-268	13800 No. 3 Rd. (off Garden City)	14-Sep-11	0.74	<1	<2	12	<1	1.60
RMD-259	10020 Amethyst Ave.	14-Sep-11	0.92	<1	<2	13	<1	0.26
RMD-266	9380 General Currie Rd.	14-Sep-11	1.0	<1	<2	12	<1	0.29
RMD-260	11111 Horseshoe Way	14-Sep-11	0.9	<1	<2	13	<1	0.30
RMD-261	9911 Sidaway Rd.	14-Sep-11	0.74	<1	<2	15	<1	0.29
RMD-262	13799 Commerce Pkwy.	14-Sep-11	0.63	<1	2	17	<1	0.16
RMD-263	12560 Cambie Rd.	14-Sep-11	0.82	<1	<2	14	<1	0.22
RMD-264	13100 Mitchell Rd.	14-Sep-11	0.87	<1	4	13	<1	0.29
RMD-277	Opp. 11280 Twigg Place	14-Sep-11	0.83	<1	<2	14	<1	0.32
RMD-278	6651 Fraserwood Place	14-Sep-11	0.43	<1	<2	16	<1	0.25
RMD-279	Opp. 20371 Westminster Hwy.	14-Sep-11	0.25	<1	<2	16	<1	0.23
RMD-204	3180 Granville Ave.	16-Sep-11	0.75	<1	<2	12	<1	0.37
RMD-206	4251 Moncton St.	16-Sep-11	0.72	<1	<2	11	<1	0.27
RMD-216	11080 No. 2 Rd.	16-Sep-11	0.74	<1	<2	12	<1	0.22
RMD-212	Opp. 8600 Riyan Rd.	16-Sep-11	0.82	<1	<2	13	<1	0.25

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-208	13200 No. 4 Rd.	16-Sep-11	0.70	<1	<2	13	<1	0.22
RMD-205	13851 Steveston Hwy.	16-Sep-11	0.68	<1	<2	15	<1	0.10
RMD-214	11720 Westminster Hwy.	16-Sep-11	0.94	<1	<2	10	<1	0.21
RMD-202	1500 Valemont Way	16-Sep-11	0.67	<1	<2	15	<1	0.12
RMD-267	17240 Fedoruk	16-Sep-11	0.33	<1	<2	16	<1	0.14
RMD-249	23000 Blk. Dyke Rd.	16-Sep-11	0.44	<1	<2	15	<1	0.23
RMD-276	22271 Cochrane Drive	16-Sep-11	0.18	<1	<2	14	<1	0.23
RMD-275	5180 Smith Cres.	16-Sep-11	0.28	<1	<2	13	<1	0.26
RMD-203	23260 Westminster Hwy.	16-Sep-11	0.39	<1	<2	14	<1	0.22
RMD-251	5951McCallan Rd.	19-Sep-11	1.0	<1	<2	13	<1	0.20
RMD-273	Opp. 8331 Fairfax Place	19-Sep-11	0.57	<1	6	19	<1	0.19
RMD-274	10920 Springwood Court	19-Sep-11	0.70	<1	<2	14	<1	0.50
RMD-252	9751 Pendleton Rd.	19-Sep-11	0.69	<1	<2	14	<1	0.22
RMD-250	6071 Azure Rd.	19-Sep-11	0.85	<1	2	14	<1	0.24
RMD-271	3800 Cessna Drive	19-Sep-11	0.77	<1	<2	13	<1	0.36
RMD-272	751 Catalina Cres.	19-Sep-11	0.80	<1	<2	14	<1	0.53
RMD-255	6000 Blk. Miller Rd.	19-Sep-11	0.84	<1	4	11	<1	0.29
RMD-256	1000 Blk. McDonald Rd.	19-Sep-11	0.51	<1	2	14	<1	0.26
RMD-254	5300 No. 3 Rd.	19-Sep-11	0.64	<1	<2	12	<1	0.27
RMD-270	8200 Jones Rd.	19-Sep-11	0.79	<1	<2	15	<1	0.20
RMD-269	14951 Triangle Rd.	19-Sep-11	0.68	<1	<2	15	<1	0.78
RMD-253	11051 No 3 Rd.	19-Sep-11	0.95	<1	96	12	<1	0.21
RMD-257	6640 Blundell Rd.	21-Sep-11	0.51	<1	<2	13	<1	0.19
RMD-258	7000 Blk. Dyke Rd.	21-Sep-11	0.84	<1	<2	14	<1	0.16
RMD-268	13800 No. 3 Rd. (off Garden City)	21-Sep-11	0.79	<1	<2	14	<1	0.22
RMD-259	10020 Amethyst Ave.	21-Sep-11	0.87	<1	<2	14	<1	0.19
RMD-266	9380 General Currie Rd.	21-Sep-11	0.89	<1	<2	13	<1	0.19
RMD-260	11111 Horseshoe Way	21-Sep-11	0.42	<1	<2	15	<1	0.23
RMD-261	9911 Sidaway Rd.	21-Sep-11	0.64	<1	<2	17	<1	0.14
RMD-262	13799 Commerce Pkwy.	21-Sep-11	0.66	<1	<2	15	<1	0.16
RMD-263	12560 Cambie Rd.	21-Sep-11	0.70	<1	<2	15	<1	0.15
RMD-264	13100 Mitchell Rd.	21-Sep-11	0.97	<1	2	15	<1	0.17
RMD-277	Opp. 11280 Twigg Place	21-Sep-11	0.95	<1	<2	15	<1	0.21
RMD-279	Opp. 20371 Westminster Hwy.	21-Sep-11	0.19	<1	<2	15	<1	0.22
RMD-278	6651 Fraserwood Place	21-Sep-11	0.19	<1	<2	15	<1	0.27
RMD-204	3180 Granville Ave.	23-Sep-11	0.79	<1	<2	14	<1	0.18
RMD-206	4251 Moncton St.	23-Sep-11	0.73	<1	<2	14	<1	0.17
RMD-216	11080 No. 2 Rd.	23-Sep-11	0.82	<1	2	14	<1	0.17
RMD-212	Opp. 8600 Riyan Rd.	23-Sep-11	0.88	<1	<2	14	<1	0.18
RMD-208	13200 No. 4 Rd.	23-Sep-11	0.89	<1	<2	14	<1	0.22

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-205	13851 Steveston Hwy.	23-Sep-11	0.66	<1	<2	16	<1	0.19
RMD-202	1500 Valemont Way	23-Sep-11	0.61	<1	<2	16	<1	0.12
RMD-214	11720 Westminster Hwy.	23-Sep-11	0.89	<1	<2	12	<1	0.20
RMD-267	17240 Fedoruk	23-Sep-11	0.47	<1	<2	16	<1	0.15
RMD-249	23000 Blk. Dyke Rd.	23-Sep-11	0.37	<1	2	14	<1	0.28
RMD-276	22271 Cochrane Drive	23-Sep-11	0.30	<1	<2	14	<1	0.25
RMD-275	5180 Smith Cres.	23-Sep-11	0.30	<1	2	14	<1	0.21
RMD-203	23260 Westminster Hwy.	23-Sep-11	0.30	<1	4	14	<1	0.21
RMD-251	5951McCallan Rd.	26-Sep-11	0.88	<1	2	13	<1	0.22
RMD-273	Opp. 8331 Fairfax Place	26-Sep-11	0.63	<1	<2	18	<1	0.34
RMD-252	9751 Pendleton Rd.	26-Sep-11	0.88	<1	2	14	<1	0.22
RMD-274	10920 Springwood Court	26-Sep-11	0.74	<1	<2	14	<1	0.20
RMD-253	11051 No 3 Rd.	26-Sep-11	0.87	<1	<2	13	<1	0.19
RMD-270	8200 Jones Rd.	26-Sep-11	0.76	<1	<2	14	<1	0.18
RMD-254	5300 No. 3 Rd.	26-Sep-11	0.87	<1	<2	13	<1	0.22
RMD-271	3800 Cessna Drive	26-Sep-11	0.85	<1	<2	14	<1	0.20
RMD-272	751 Catalina Cres.	26-Sep-11	0.92	<1	<2	13	<1	0.19
RMD-255	6000 Blk. Miller Rd.	26-Sep-11	1.2	<1	<2	13	<1	0.29
RMD-256	1000 Blk. McDonald Rd.	26-Sep-11	0.83	<1	<2	14	<1	0.23
RMD-250	6071 Azure Rd.	26-Sep-11	0.90	<1	<2	14	<1	0.20
RMD-269	14951 Triangle Rd.	28-Sep-11	0.30	<1	<2	15	<1	[No turbidity bottle received.] NA
RMD-257	6640 Blundell Rd.	28-Sep-11	0.93	<1	<2	14	<1	0.32
RMD-266	9380 General Currie Rd.	28-Sep-11	0.68	<1	<2	14	<1	0.19
RMD-263	12560 Cambie Rd.	28-Sep-11	0.75	<1	<2	15	<1	0.24
RMD-264	13100 Mitchell Rd.	28-Sep-11	0.87	<1	<2	15	<1	0.17
RMD-277	Opp. 11280 Twigg Place	28-Sep-11	0.85	<1	<2	15	<1	0.21
RMD-262	13799 Commerce Pkwy.	28-Sep-11	0.62	<1	<2	15	<1	0.27
RMD-278	6651 Fraserwood Place	28-Sep-11	0.07	<1	<2	15	<1	0.34
RMD-279	Opp. 20371 Westminster Hwy.	28-Sep-11	0.04	<1	4	15	<1	0.29
RMD-261	9911 Sidaway Rd.	28-Sep-11	0.45	<1	<2	15	<1	0.25
RMD-260	11111 Horseshoe Way	28-Sep-11	0.62	<1	<2	15	<1	0.24
RMD-259	10020 Amethyst Ave.	28-Sep-11	0.81	<1	<2	15	<1	0.16
RMD-268	13800 No. 3 Rd. (off Garden City)	28-Sep-11	0.79	<1	2	15	<1	0.14
RMD-258	7000 Blk. Dyke Rd.	28-Sep-11	0.87	<1	2	15	<1	0.14
RMD-204	3180 Granville Ave.	30-Sep-11	0.68	<1	<2	15	<1	0.18
RMD-206	4251 Moncton St.	30-Sep-11	0.76	<1	<2	15	<1	0.17

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-216	11080 No. 2 Rd.	30-Sep-11	0.57	<1	<2	14	<1	0.21
RMD-212	Opp. 8600 Riyan Rd.	30-Sep-11	0.58	<1	<2	15	<1	0.23
RMD-208	13200 No. 4 Rd.	30-Sep-11	0.57	<1	<2	14	<1	0.22
RMD-205	13851 Steveston Hwy.	30-Sep-11	0.71	<1	<2	15	<1	0.26
RMD-202	1500 Valemont Way	30-Sep-11	0.66	<1	<2	15	<1	0.30
RMD-214	11720 Westminster Hwy.	30-Sep-11	0.65	<1	<2	14	<1	0.24
RMD-267	17240 Fedoruk	30-Sep-11	0.36	<1	<2	15	<1	0.24
RMD-249	23000 Blk. Dyke Rd.	30-Sep-11	0.23	<1	<2	13	<1	0.36
RMD-276	22271 Cochrane Drive	30-Sep-11	0.08	<1	46	15	<1	0.29
RMD-275	5180 Smith Cres.	30-Sep-11	0.17	<1	42	15	<1	0.29
RMD-203	23260 Westminster Hwy.	30-Sep-11	0.22	<1	2	13	<1	0.41
RMD-251	5951McCallan Rd.	3-Oct-11	0.47	<1	<2	14	<1	0.18
RMD-273	Opp. 8331 Fairfax Place	3-Oct-11	0.42	<1	2	17	<1	1.20
RMD-274	10920 Springwood Court	3-Oct-11	0.35	<1	<2	16	<1	0.17
RMD-252	9751 Pendleton Rd.	3-Oct-11	0.53	<1	<2	14	<1	0.18
RMD-250	6071 Azure Rd.	3-Oct-11	0.56	<1	<2	14	<1	0.16
RMD-271	3800 Cessna Drive	3-Oct-11	0.55	<1	4	14	<1	0.22
RMD-272	751 Catalina Cres.	3-Oct-11	0.45	<1	<2	14	<1	0.24
RMD-255	6000 Blk. Miller Rd.	3-Oct-11	0.54	<1	6	13	<1	0.24
RMD-256	1000 Blk. McDonald Rd.	3-Oct-11	0.52	<1	<2	14	<1	0.22
RMD-254	5300 No. 3 Rd.	3-Oct-11	0.54	<1	2	13	<1	0.22
RMD-270	8200 Jones Rd.	3-Oct-11	0.53	<1	<2	15	<1	0.23
RMD-269	14951 Triangle Rd.	3-Oct-11	0.76	<1	<2	14	<1	0.25
RMD-253	11051 No 3 Rd.	3-Oct-11	0.56	<1	<2	13	<1	0.20
RMD-257	6640 Blundell Rd.	5-Oct-11	0.66	<1	<2	13	<1	0.17
RMD-258	7000 Blk. Dyke Rd.	5-Oct-11	0.57	<1	4	14	<1	0.25
RMD-268	13800 No. 3 Rd. (off Garden City)	5-Oct-11	0.54	<1	<2	14	<1	0.16
RMD-259	10020 Amethyst Ave.	5-Oct-11	0.58	<1	<2	13	<1	0.16
RMD-266	9380 General Currie Rd.	5-Oct-11	0.63	<1	<2	13	<1	0.20
RMD-260	11111 Horseshoe Way	5-Oct-11	0.72	<1	<2	13	<1	0.26
RMD-261	9911 Sidaway Rd.	5-Oct-11	0.80	<1	<2	13	<1	0.30
RMD-264	13100 Mitchell Rd.	5-Oct-11	0.58	<1	<2	15	<1	0.22
RMD-277	Opp. 11280 Twigg Place	5-Oct-11	0.58	<1	<2	13	<1	0.26
RMD-263	12560 Cambie Rd.	5-Oct-11	0.59	<1	2	14	<1	0.21
RMD-262	13799 Commerce Pkwy.	5-Oct-11	0.70	<1	<2	13	<1	0.29
RMD-278	6651 Fraserwood Place	5-Oct-11	0.09	<1	<2	14	<1	0.33
RMD-279	Opp. 20371 Westminster Hwy.	5-Oct-11	0.08	<1	2	14	<1	0.43
RMD-204	3180 Granville Ave.	7-Oct-11	0.49	<1	2	13	<1	0.23
RMD-206	4251 Moncton St.	7-Oct-11	0.52	<1	<2	13	<1	0.17
RMD-216	11080 No. 2 Rd.	7-Oct-11	0.61	<1	<2	13	<1	0.18

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-212	Opp. 8600 Riyan Rd.	7-Oct-11	0.53	<1	4	13	<1	0.20
RMD-208	13200 No. 4 Rd.	7-Oct-11	0.60	<1	2	13	<1	0.15
RMD-205	13851 Steveston Hwy.	7-Oct-11	0.88	<1	2	13	<1	0.26
RMD-202	1500 Valemont Way	7-Oct-11	0.58	<1	2	13	<1	0.25
RMD-214	11720 Westminster Hwy.	7-Oct-11	0.66	<1	<2	13	<1	0.19
RMD-267	17240 Fedoruk	7-Oct-11	0.13	<1	8	14	<1	0.29
RMD-249	23000 Blk. Dyke Rd.	7-Oct-11	0.25	<1	2	14	<1	0.33
RMD-276	22271 Cochrane Drive	7-Oct-11	0.10	<1	52	14	<1	0.26
RMD-275	5180 Smith Cres.	7-Oct-11	0.20	<1	2	14	<1	0.33
RMD-203	23260 Westminster Hwy.	7-Oct-11	0.26	<1	<2	13	<1	0.39
RMD-257	6640 Blundell Rd.	12-Oct-11	0.77	<1	<2	11	<1	0.24
RMD-258	7000 Blk. Dyke Rd.	12-Oct-11	0.64	<1	<2	13	<1	0.35
RMD-268	13800 No. 3 Rd. (off Garden City)	12-Oct-11	0.6	<1	<2	12	<1	0.17
RMD-259	10020 Amethyst Ave.	12-Oct-11	0.63	<1	<2	12	<1	0.16
RMD-266	9380 General Currie Rd.	12-Oct-11	0.73	<1	<2	12	<1	0.17
RMD-260	11111 Horseshoe Way	12-Oct-11	0.69	<1	<2	12	<1	0.31
RMD-261	9911 Sidaway Rd.	12-Oct-11	0.69	<1	<2	11	<1	0.23
RMD-264	13100 Mitchell Rd.	12-Oct-11	0.68	<1	<2	13	<1	0.19
RMD-277	Opp. 11280 Twigg Place	12-Oct-11	0.61	<1	<2	13	<1	0.21
RMD-263	12560 Cambie Rd.	12-Oct-11	0.53	<1	<2	13	<1	0.19
RMD-262	13799 Commerce Pkwy.	12-Oct-11	0.60	<1	<2	12	<1	0.24
RMD-278	6651 Fraserwood Place	12-Oct-11	0.20	<1	<2	11	<1	0.45
RMD-279	Opp. 20371 Westminster Hwy.	12-Oct-11	0.08	<1	<2	11	<1	0.45
RMD-204	3180 Granville Ave.	14-Oct-11	0.52	<1	<2	12	<1	0.17
RMD-206	4251 Moncton St.	14-Oct-11	0.57	<1	<2	13	<1	0.13
RMD-216	11080 No. 2 Rd.	14-Oct-11	0.80	<1	<2	12	<1	0.23
RMD-212	Opp. 8600 Riyan Rd.	14-Oct-11	0.74	<1	<2	12	<1	0.26
RMD-208	13200 No. 4 Rd.	14-Oct-11	0.82	<1	<2	11	<1	0.17
RMD-205	13851 Steveston Hwy.	14-Oct-11	0.74	<1	<2	11	<1	0.22
RMD-214	11720 Westminster Hwy.	14-Oct-11	0.57	<1	<2	11	<1	0.17
RMD-202	1500 Valemont Way	14-Oct-11	0.40	<1	<2	12	<1	0.21
RMD-267	17240 Fedoruk	14-Oct-11	0.13	<1	2	12	<1	0.21
RMD-249	23000 Blk. Dyke Rd.	14-Oct-11	0.25	<1	<2	12	<1	0.28
RMD-276	22271 Cochrane Drive	14-Oct-11	0.08	<1	6	13	<1	0.28
RMD-275	5180 Smith Cres.	14-Oct-11	0.13	<1	4	[Not taken] NA	<1	0.33
RMD-203	23260 Westminster Hwy.	14-Oct-11	0.28	<1	<2	12	<1	0.32
RMD-251	5951McCallan Rd.	17-Oct-11	0.76	<1	<2	12	<1	0.17
RMD-273	Opp. 8331 Fairfax Place	17-Oct-11	0.52	<1	<2	14	<1	0.13

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-252	9751 Pendleton Rd.	17-Oct-11	0.57	<1	<2	13	<1	0.16
RMD-274	10920 Springwood Court	17-Oct-11	0.41	<1	46	14	<1	0.13
RMD-253	11051 No 3 Rd.	17-Oct-11	0.69	<1	<2	12	<1	0.19
RMD-269	14951 Triangle Rd.	17-Oct-11	0.77	<1	2	11	<1	0.25
RMD-270	8200 Jones Rd.	17-Oct-11	0.62	<1	<2	12	<1	0.18
RMD-254	5300 No. 3 Rd.	17-Oct-11	0.84	<1	<2	11	<1	0.17
RMD-271	3800 Cessna Drive	17-Oct-11	0.75	<1	<2	12	<1	0.14
RMD-272	751 Catalina Cres.	17-Oct-11	0.61	<1	2	12	<1	0.15
RMD-255	6000 Blk. Miller Rd.	17-Oct-11	0.8	<1	2	11	<1	0.25
RMD-256	1000 Blk. McDonald Rd.	17-Oct-11	0.41	<1	<2	12	<1	0.21
RMD-250	6071 Azure Rd.	17-Oct-11	0.68	<1	2	12	<1	0.14
RMD-263	12560 Cambie Rd.	19-Oct-11	0.52	<1	<2	11	<1	0.20
RMD-264	13100 Mitchell Rd.	19-Oct-11	0.29	<1	<2	12	<1	0.22
RMD-277	Opp. 11280 Twigg Place	19-Oct-11	0.38	<1	2	15	<1	0.15
RMD-262	13799 Commerce Pkwy.	19-Oct-11	0.58	<1	<2	12	<1	0.23
RMD-278	6651 Fraserwood Place	19-Oct-11	0.19	<1	4	13	<1	0.31
RMD-261	9911 Sidaway Rd.	19-Oct-11	0.69	<1	<2	12	<1	0.44
RMD-260	11111 Horseshoe Way	19-Oct-11	0.72	<1	<2	12	<1	0.19
RMD-259	10020 Amethyst Ave.	19-Oct-11	0.73	<1	<2	12	<1	0.21
RMD-266	9380 General Currie Rd.	19-Oct-11	0.77	<1	<2	11	<1	0.17
RMD-268	13800 No. 3 Rd. (off Garden City)	19-Oct-11	0.66	<1	<2	12	<1	0.31
RMD-258	7000 Blk. Dyke Rd.	19-Oct-11	0.64	<1	2	12	<1	0.16
RMD-257	6640 Blundell Rd.	19-Oct-11	0.74	<1	<2	11	<1	0.18
RMD-279	Opp. 20371 Westminster Hwy.	20-Oct-11	0.50	<1	2	11	<1	0.28
RMD-204	3180 Granville Ave.	21-Oct-11	0.70	<1	4	15	<1	0.14
RMD-206	4251 Moncton St.	21-Oct-11	0.58	<1	<2	15	<1	0.17
RMD-216	11080 No. 2 Rd.	21-Oct-11	0.56	<1	<2	15	<1	0.20
RMD-212	Opp. 8600 Riyan Rd.	21-Oct-11	0.73	<1	<2	14	<1	0.18
RMD-208	13200 No. 4 Rd.	21-Oct-11	0.8	<1	<2	14	<1	0.15
RMD-205	13851 Steveston Hwy.	21-Oct-11	0.75	<1	<2	14	<1	0.24
RMD-214	11720 Westminster Hwy.	21-Oct-11	0.76	<1	2	14	<1	0.18
RMD-202	1500 Valemont Way	21-Oct-11	0.50	<1	2	15	<1	0.31
RMD-267	17240 Fedoruk	21-Oct-11	0.46	<1	<2	15	<1	0.19
RMD-249	23000 Blk. Dyke Rd.	21-Oct-11	0.33	<1	2	14	<1	0.34
RMD-275	5180 Smith Cres.	21-Oct-11	0.28	<1	<2	15	<1	0.27
RMD-276	22271 Cochrane Drive	21-Oct-11	0.22	<1	<2	15	<1	0.25
RMD-203	23260 Westminster Hwy.	21-Oct-11	0.33	<1	<2	15	<1	0.33
RMD-251	5951McCallan Rd.	24-Oct-11	0.40	<1	8	12	9	0.22
RMD-273	Opp. 8331 Fairfax Place	24-Oct-11	0.62	<1	<2	15	<1	0.13
RMD-274	10920 Springwood Court	24-Oct-11	0.45	<1	<2	14	<1	0.16

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-252	9751 Pendleton Rd.	24-Oct-11	0.61	<1	<2	12	<1	0.14
RMD-250	6071 Azure Rd.	24-Oct-11	0.69	<1	<2	12	<1	0.23
RMD-271	3800 Cessna Drive	24-Oct-11	0.81	<1	<2	11	<1	0.13
RMD-272	751 Catalina Cres.	24-Oct-11	0.61	<1	<2	12	<1	0.19
RMD-255	6000 Blk. Miller Rd.	24-Oct-11	0.58	<1	<2	11	<1	0.24
RMD-256	1000 Blk. McDonald Rd.	24-Oct-11	0.64	<1	<2	13	<1	0.18
RMD-254	5300 No. 3 Rd.	24-Oct-11	0.79	<1	<2	11	<1	2.60
RMD-270	8200 Jones Rd.	24-Oct-11	0.65	<1	<2	12	<1	0.18
RMD-269	14951 Triangle Rd.	24-Oct-11	0.69	<1	2	12	<1	0.30
RMD-253	11051 No 3 Rd.	24-Oct-11	0.76	<1	4	11	<1	0.18
RMD-257	6640 Blundell Rd.	26-Oct-11	0.79	<1	<2	11	<1	0.15
RMD-258	7000 Blk. Dyke Rd.	26-Oct-11	0.68	<1	<2	11	<1	0.18
RMD-268	13800 No. 3 Rd. (off Garden City)	26-Oct-11	0.64	<1	<2	11	<1	0.17
RMD-259	10020 Amethyst Ave.	26-Oct-11	0.83	<1	<2	11	<1	0.17
RMD-266	9380 General Currie Rd.	26-Oct-11	0.84	<1	<2	10	<1	0.17
RMD-261	9911 Sidaway Rd.	26-Oct-11	0.74	<1	<2	11	<1	0.22
RMD-260	11111 Horseshoe Way	26-Oct-11	0.76	<1	<2	11	<1	0.21
RMD-262	13799 Commerce Pkwy.	26-Oct-11	0.57	<1	<2	11	<1	0.21
RMD-264	13100 Mitchell Rd.	26-Oct-11	0.62	<1	<2	11	<1	0.14
RMD-277	Opp. 11280 Twigg Place	26-Oct-11	0.84	<1	<2	11	<1	0.17
RMD-263	12560 Cambie Rd.	26-Oct-11	0.68	<1	2	11	<1	0.20
RMD-279	Opp. 20371 Westminster Hwy.	26-Oct-11	0.16	<1	<2	11	<1	0.51
RMD-278	6651 Fraserwood Place	26-Oct-11	0.05	<1	14	12	<1	0.32
RMD-204	3180 Granville Ave.	28-Oct-11	0.70	<1	<2	11	<1	0.12
RMD-206	4251 Moncton St.	28-Oct-11	0.59	<1	<2	12	<1	0.13
RMD-216	11080 No. 2 Rd.	28-Oct-11	0.60	<1	10	11	<1	0.17
RMD-212	Opp. 8600 Riyan Rd.	28-Oct-11	0.74	<1	2	11	<1	0.16
RMD-208	13200 No. 4 Rd.	28-Oct-11	0.68	<1	4	10	<1	0.15
RMD-205	13851 Steveston Hwy.	28-Oct-11	0.69	<1	2	10	<1	0.22
RMD-202	1500 Valemont Way	28-Oct-11	0.42	<1	<2	11	<1	0.24
RMD-214	11720 Westminster Hwy.	28-Oct-11	0.84	<1	<2	10	<1	0.16
RMD-267	17240 Fedoruk	28-Oct-11	0.18	<1	2	11	<1	0.24
RMD-249	23000 Blk. Dyke Rd.	28-Oct-11	0.24	<1	2	11	<1	0.28
RMD-276	22271 Cochrane Drive	28-Oct-11	0.19	<1	24	11	<1	0.25
RMD-275	5180 Smith Cres.	28-Oct-11	0.30	<1	<2	11	<1	0.24
RMD-203	23260 Westminster Hwy.	28-Oct-11	0.38	<1	<2	11	<1	0.27
RMD-251	5951McCallan Rd.	31-Oct-11	0.80	<1	<2	10	<1	0.13
RMD-273	Opp. 8331 Fairfax Place	31-Oct-11	0.60	<1	4	13	<1	0.11
RMD-274	10920 Springwood Court	31-Oct-11	0.61	<1	<2	13	<1	0.14
RMD-252	9751 Pendleton Rd.	31-Oct-11	0.60	<1	<2	11	<1	0.13

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-250	6071 Azure Rd.	31-Oct-11	0.75	<1	<2	11	<1	0.13
RMD-271	3800 Cessna Drive	31-Oct-11	0.79	<1	2	11	<1	0.15
RMD-272	751 Catalina Cres.	31-Oct-11	0.59	<1	<2	10	<1	0.15
RMD-255	6000 Blk. Miller Rd.	31-Oct-11	0.67	<1	<2	10	<1	0.15
RMD-256	1000 Blk. McDonald Rd.	31-Oct-11	0.69	<1	<2	10	<1	0.15
RMD-254	5300 No. 3 Rd.	31-Oct-11	0.74	<1	<2	10	<1	0.15
RMD-270	8200 Jones Rd.	31-Oct-11	0.65	<1	6	10	<1	0.13
RMD-269	14951 Triangle Rd.	31-Oct-11	0.80	<1	<2	11	<1	0.16
RMD-253	11051 No 3 Rd.	31-Oct-11	0.74	<1	<2	10	<1	0.14
RMD-257	6640 Blundell Rd.	2-Nov-11	0.64	<1	<2	10	<1	0.13
RMD-266	9380 General Currie Rd.	2-Nov-11	0.86	<1	<2	10	<1	0.14
RMD-263	12560 Cambie Rd.	2-Nov-11	0.59	<1	<2	10	<1	0.15
RMD-264	13100 Mitchell Rd.	2-Nov-11	0.59	<1	<2	10	<1	0.2
RMD-277	Opp. 11280 Twigg Place	2-Nov-11	0.69	<1	<2	10	<1	0.26
RMD-262	13799 Commerce Pkwy.	2-Nov-11	0.50	<1	<2	10	<1	0.17
RMD-278	6651 Fraserwood Place	2-Nov-11	0.19	<1	<2	10	<1	0.27
RMD-279	Opp. 20371 Westminster Hwy.	2-Nov-11	0.11	<1	<2	10	<1	0.31
RMD-261	9911 Sidaway Rd.	2-Nov-11	0.71	<1	<2	10	<1	0.16
RMD-260	11111 Horseshoe Way	2-Nov-11	0.69	<1	<2	10	<1	0.15
RMD-259	10020 Amethyst Ave.	2-Nov-11	0.82	<1	<2	10	<1	0.11
RMD-268	13800 No. 3 Rd. (off Garden City)	2-Nov-11	0.57	<1	<2	10	<1	0.12
RMD-258	7000 Blk. Dyke Rd.	2-Nov-11	0.65	<1	<2	10	<1	0.10
RMD-204	3180 Granville Ave.	4-Nov-11	0.65	<1	<2	10	<1	0.18
RMD-206	4251 Moncton St.	4-Nov-11	0.54	<1	2	10	<1	0.14
RMD-216	11080 No. 2 Rd.	4-Nov-11	0.63	<1	<2	10	<1	0.17
RMD-212	Opp. 8600 Riyan Rd.	4-Nov-11	0.66	<1	<2	10	<1	0.13
RMD-208	13200 No. 4 Rd.	4-Nov-11	0.70	<1	<2	9	<1	0.17
RMD-205	13851 Steveston Hwy.	4-Nov-11	0.72	<1	<2	10	<1	0.20
RMD-202	1500 Valemont Way	4-Nov-11	0.26	<1	<2	11	<1	0.33
RMD-214	11720 Westminster Hwy.	4-Nov-11	0.77	<1	<2	9	<1	0.20
RMD-267	17240 Fedoruk	4-Nov-11	0.12	<1	<2	11	<1	0.26
RMD-249	23000 Blk. Dyke Rd.	4-Nov-11	0.33	<1	<2	10	<1	0.30
RMD-276	22271 Cochrane Drive	4-Nov-11	0.13	<1	<2	11	<1	0.27
RMD-275	5180 Smith Cres.	4-Nov-11	0.22	<1	<2	10	<1	0.32
RMD-203	23260 Westminster Hwy.	4-Nov-11	0.41	<1	<2	10	<1	0.34
RMD-251	5951McCallan Rd.	7-Nov-11	0.64	<1	2	10	<1	0.19
RMD-273	Opp. 8331 Fairfax Place	7-Nov-11	0.56	<1	<2	11	<1	0.12
RMD-252	9751 Pendleton Rd.	7-Nov-11	0.47	<1	<2	11	<1	0.13
RMD-274	10920 Springwood Court	7-Nov-11	0.59	<1	<2	12	<1	0.15
RMD-253	11051 No 3 Rd.	7-Nov-11	0.70	<1	<2	9	<1	0.13

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-269	14951 Triangle Rd.	7-Nov-11	0.63	<1	<2	10	<1	0.32
RMD-270	8200 Jones Rd.	7-Nov-11	0.60	<1	<2	10	<1	0.15
RMD-254	5300 No. 3 Rd.	7-Nov-11	0.66	<1	<2	9	<1	0.12
RMD-272	751 Catalina Cres.	7-Nov-11	0.64	<1	<2	9	<1	0.13
RMD-271	3800 Cessna Drive	7-Nov-11	0.61	<1	2	9	<1	0.13
RMD-255	6000 Blk. Miller Rd.	7-Nov-11	0.79	<1	12	9	<1	0.45
RMD-256	1000 Blk. McDonald Rd.	7-Nov-11	0.47	<1	4	9	<1	0.14
RMD-250	6071 Azure Rd.	7-Nov-11	0.68	<1	<2	10	<1	0.15
RMD-263	12560 Cambie Rd.	9-Nov-11	0.61	<1	<2	10	<1	0.14
RMD-264	13100 Mitchell Rd.	9-Nov-11	0.52	<1	<2	10	<1	0.25
RMD-277	Opp. 11280 Twigg Place	9-Nov-11	0.55	<1	<2	10	<1	0.39
RMD-262	13799 Commerce Pkwy.	9-Nov-11	0.58	<1	<2	9	<1	0.29
RMD-278	6651 Fraserwood Place	9-Nov-11	0.23	<1	<2	11	<1	0.18
RMD-279	Opp. 20371 Westminster Hwy.	9-Nov-11	0.15	<1	<2	11	<1	0.26
RMD-261	9911 Sidaway Rd.	9-Nov-11	0.57	<1	<2	9	<1	0.19
RMD-260	11111 Horseshoe Way	9-Nov-11	0.73	<1	<2	9	<1	0.49
RMD-259	10020 Amethyst Ave.	9-Nov-11	0.75	<1	<2	10	<1	0.11
RMD-266	9380 General Currie Rd.	9-Nov-11	0.84	<1	<2	9	<1	0.11
RMD-268	13800 No. 3 Rd. (off Garden City)	9-Nov-11	0.73	<1	<2	10	<1	0.22
RMD-258	7000 Blk. Dyke Rd.	9-Nov-11	0.88	<1	2	10	<1	0.17
RMD-257	6640 Blundell Rd.	9-Nov-11	0.83	<1	<2	9	<1	0.16
RMD-251	5951McCallan Rd.	14-Nov-11	0.74	<1	<2	9	<1	0.09
RMD-273	Opp. 8331 Fairfax Place	14-Nov-11	0.68	<1	<2	11	<1	0.10
RMD-274	10920 Springwood Court	14-Nov-11	0.63	<1	18	11	<1	0.14
RMD-252	9751 Pendleton Rd.	14-Nov-11	0.77	<1	<2	10	<1	0.15
RMD-250	6071 Azure Rd.	14-Nov-11	0.76	<1	<2	9	<1	0.15
RMD-271	3800 Cessna Drive	14-Nov-11	0.72	<1	<2	9	<1	0.19
RMD-272	751 Catalina Cres.	14-Nov-11	0.86	<1	<2	9	<1	0.15
RMD-255	6000 Blk. Miller Rd.	14-Nov-11	0.78	<1	<2	9	<1	0.24
RMD-256	1000 Blk. McDonald Rd.	14-Nov-11	0.64	<1	<2	8	<1	0.12
RMD-254	5300 No. 3 Rd.	14-Nov-11	0.86	<1	<2	8	<1	0.10
RMD-253	11051 No 3 Rd.	14-Nov-11	0.82	<1	<2	8	<1	0.10
RMD-269	14951 Triangle Rd.	14-Nov-11	0.79	<1	<2	7	<1	0.18
RMD-270	8200 Jones Rd.	14-Nov-11	0.82	<1	<2	8	<1	0.11
RMD-257	6640 Blundell Rd.	16-Nov-11	0.85	<1	<2	8	<1	0.15
RMD-258	7000 Blk. Dyke Rd.	16-Nov-11	0.60	<1	<2	9	<1	0.15
RMD-268	13800 No. 3 Rd. (off Garden City)	16-Nov-11	0.74	<1	<2	9	<1	0.15
RMD-259	10020 Amethyst Ave.	16-Nov-11	0.82	<1	<2	9	<1	0.16
RMD-266	9380 General Currie Rd.	16-Nov-11	0.76	<1	<2	9	<1	0.17
RMD-260	11111 Horseshoe Way	16-Nov-11	0.73	<1	<2	9	<1	0.22

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-261	9911 Sidaway Rd.	16-Nov-11	0.73	<1	<2	9	<1	0.38
RMD-264	13100 Mitchell Rd.	16-Nov-11	0.68	<1	<2	8	<1	0.15
RMD-277	Opp. 11280 Twigg Place	16-Nov-11	0.79	<1	<2	9	<1	0.24
RMD-263	12560 Cambie Rd.	16-Nov-11	0.59	<1	<2	9	<1	0.24
RMD-262	13799 Commerce Pkwy.	16-Nov-11	0.55	<1	<2	9	<1	0.24
RMD-278	6651 Fraserwood Place	16-Nov-11	0.25	<1	10	10	<1	0.61
RMD-279	Opp. 20371 Westminster Hwy.	16-Nov-11	0.09	<1	12	10	<1	0.37
RMD-204	3180 Granville Ave.	18-Nov-11	0.66	<1	<2	9	<1	0.13
RMD-206	4251 Moncton St.	18-Nov-11	0.59	<1	<2	10	<1	0.21
RMD-216	11080 No. 2 Rd.	18-Nov-11	0.68	<1	<2	9	<1	0.14
RMD-212	Opp. 8600 Riyan Rd.	18-Nov-11	0.73	<1	2	9	<1	0.15
RMD-208	13200 No. 4 Rd.	18-Nov-11	0.68	<1	<2	10	<1	0.14
RMD-205	13851 Steveston Hwy.	18-Nov-11	0.79	<1	<2	9	<1	0.19
RMD-202	1500 Valemont Way	18-Nov-11	0.21	<1	4	10	<1	0.27
RMD-214	11720 Westminster Hwy.	18-Nov-11	0.74	<1	<2	9	<1	0.14
RMD-267	17240 Fedoruk	18-Nov-11	0.14	<1	<2	11	<1	0.20
RMD-249	23000 Blk. Dyke Rd.	18-Nov-11	0.29	<1	2	9	<1	0.17
RMD-276	22271 Cochrane Drive	18-Nov-11	0.27	<1	<2	10	<1	0.16
RMD-275	5180 Smith Cres.	18-Nov-11	0.28	<1	2	10	<1	0.19
RMD-203	23260 Westminster Hwy.	18-Nov-11	0.33	<1	<2	9	<1	0.22
RMD-251	5951McCallan Rd.	21-Nov-11	0.66	<1	2	7	<1	0.11
RMD-273	Opp. 8331 Fairfax Place	21-Nov-11	0.64	<1	<2	8	<1	0.16
RMD-252	9751 Pendleton Rd.	21-Nov-11	0.48	<1	<2	8	<1	0.16
RMD-274	10920 Springwood Court	21-Nov-11	0.57	<1	14	9	<1	0.17
RMD-253	11051 No 3 Rd.	21-Nov-11	0.66	<1	<2	7	<1	0.15
RMD-269	14951 Triangle Rd.	21-Nov-11	0.75	<1	<2	7	<1	0.24
RMD-270	8200 Jones Rd.	21-Nov-11	0.68	<1	10	8	<1	0.17
RMD-254	5300 No. 3 Rd.	21-Nov-11	0.73	<1	<2	7	<1	0.14
RMD-271	3800 Cessna Drive	21-Nov-11	0.68	<1	<2	8	<1	0.15
RMD-272	751 Catalina Cres.	21-Nov-11	0.62	<1	<2	8	<1	0.16
RMD-255	6000 Blk. Miller Rd.	21-Nov-11	0.65	<1	<2	7	<1	0.24
RMD-256	1000 Blk. McDonald Rd.	21-Nov-11	0.52	<1	<2	7	<1	0.11
RMD-250	6071 Azure Rd.	21-Nov-11	0.63	<1	<2	8	<1	0.11
RMD-263	12560 Cambie Rd.	23-Nov-11	0.48	<1	4	7	<1	0.27
RMD-262	13799 Commerce Pkwy.	23-Nov-11	0.40	<1	<2	7	<1	0.29
RMD-278	6651 Fraserwood Place	23-Nov-11	0.06	<1	24	9	<1	0.28
RMD-279	Opp. 20371 Westminster Hwy.	23-Nov-11	0.21	<1	<2	8	<1	0.21
RMD-264	13100 Mitchell Rd.	23-Nov-11	0.53	<1	6	7	<1	0.18
RMD-277	Opp. 11280 Twigg Place	23-Nov-11	0.47	<1	<2	8	<1	0.17
RMD-261	9911 Sidaway Rd.	23-Nov-11	0.67	<1	<2	7	<1	0.42

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-260	11111 Horseshoe Way	23-Nov-11	0.72	<1	<2	7	<1	0.29
RMD-259	10020 Amethyst Ave.	23-Nov-11	0.71	<1	<2	8	<1	0.19
RMD-266	9380 General Currie Rd.	23-Nov-11	0.75	<1	<2	7	<1	0.15
RMD-268	13800 No. 3 Rd. (off Garden City)	23-Nov-11	0.65	<1	<2	8	<1	1.60
RMD-258	7000 Blk. Dyke Rd.	23-Nov-11	0.66	<1	<2	8	<1	1.00
RMD-257	6640 Blundell Rd.	23-Nov-11	0.75	<1	<2	7	<1	1.40
RMD-204	3180 Granville Ave.	25-Nov-11	0.89	<1	<2	8	<1	0.15
RMD-206	4251 Moncton St.	25-Nov-11	0.82	<1	<2	9	<1	0.16
RMD-216	11080 No. 2 Rd.	25-Nov-11	0.94	<1	<2	8	<1	0.22
RMD-212	Opp. 8600 Riyan Rd.	25-Nov-11	0.82	<1	<2	8	<1	0.17
RMD-208	13200 No. 4 Rd.	25-Nov-11	1.0	<1	<2	7	<1	0.16
RMD-205	13851 Steveston Hwy.	25-Nov-11	0.73	<1	28	8	<1	0.10
RMD-202	1500 Valemont Way	25-Nov-11	0.32	<1	<2	7	<1	0.28
RMD-214	11720 Westminster Hwy.	25-Nov-11	0.91	<1	<2	8	<1	0.21
RMD-267	17240 Fedoruk	25-Nov-11	0.24	<1	<2	8	<1	0.23
RMD-249	23000 Blk. Dyke Rd.	25-Nov-11	0.32	<1	2	8	<1	0.41
RMD-276	22271 Cochrane Drive	25-Nov-11	0.30	<1	<2	9	<1	0.32
RMD-275	5180 Smith Cres.	25-Nov-11	0.50	<1	6	10	<1	0.41
RMD-203	23260 Westminster Hwy.	25-Nov-11	0.65	<1	<2	9	<1	0.48
RMD-251	5951McCallan Rd.	28-Nov-11	1.1	<1	<2	8	<1	0.11
RMD-273	Opp. 8331 Fairfax Place	28-Nov-11	0.90	<1	<2	8	<1	0.13
RMD-252	9751 Pendleton Rd.	28-Nov-11	0.86	<1	<2	9	<1	0.14
RMD-274	10920 Springwood Court	28-Nov-11	0.80	<1	<2	9	<1	0.13
RMD-250	6071 Azure Rd.	28-Nov-11	0.93	<1	<2	9	<1	0.12
RMD-271	3800 Cessna Drive	28-Nov-11	0.82	<1	<2	9	<1	0.17
RMD-272	751 Catalina Cres.	28-Nov-11	0.88	<1	<2	8	<1	0.14
RMD-255	6000 Blk. Miller Rd.	28-Nov-11	0.95	<1	2	9	<1	0.17
RMD-256	1000 Blk. McDonald Rd.	28-Nov-11	0.84	<1	<2	9	<1	0.12
RMD-254	5300 No. 3 Rd.	28-Nov-11	0.98	<1	<2	9	<1	0.15
RMD-270	8200 Jones Rd.	28-Nov-11	0.85	<1	<2	8	<1	0.20
RMD-269	14951 Triangle Rd.	28-Nov-11	0.76	<1	<2	9	<1	0.11
RMD-253	11051 No 3 Rd.	28-Nov-11	0.94	<1	<2	8	<1	0.13
RMD-263	12560 Cambie Rd.	30-Nov-11	0.71	<1	2	6	<1	0.14
RMD-264	13100 Mitchell Rd.	30-Nov-11	0.72	<1	<2	6	<1	0.21
RMD-277	Opp. 11280 Twigg Place	30-Nov-11	0.62	<1	<2	7	<1	0.12
RMD-262	13799 Commerce Pkwy.	30-Nov-11	0.73	<1	<2	6	<1	0.14
RMD-278	6651 Fraserwood Place	30-Nov-11	0.80	<1	<2	7	<1	0.56
RMD-279	Opp. 20371 Westminster Hwy.	30-Nov-11	0.61	<1	<2	7	<1	0.49
RMD-261	9911 Sidaway Rd.	30-Nov-11	0.80	<1	<2	5	<1	0.12
RMD-260	11111 Horseshoe Way	30-Nov-11	0.73	<1	<2	6	<1	0.11

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-259	10020 Amethyst Ave.	30-Nov-11	0.84	<1	<2	6	<1	0.17
RMD-266	9380 General Currie Rd.	30-Nov-11	0.75	<1	<2	5	<1	0.14
RMD-268	13800 No. 3 Rd. (off Garden City)	30-Nov-11	0.66	<1	<2	6	<1	0.47
RMD-258	7000 Blk. Dyke Rd.	30-Nov-11	0.63	<1	<2	7	<1	0.88
RMD-257	6640 Blundell Rd.	30-Nov-11	0.74	<1	<2	5	<1	0.15
RMD-204	3180 Granville Ave.	2-Dec-11	0.70	<1	2	6	<1	0.70
RMD-206	4251 Moncton St.	2-Dec-11	0.45	<1	2	8	<1	0.24
RMD-216	11080 No. 2 Rd.	2-Dec-11	0.60	<1	4	7	<1	0.16
RMD-212	Opp. 8600 Riyan Rd.	2-Dec-11	0.66	<1	<2	8	<1	0.25
RMD-208	13200 No. 4 Rd.	2-Dec-11	0.70	<1	<2	7	<1	0.17
RMD-205	13851 Steveston Hwy.	2-Dec-11	0.78	<1	<2	7	<1	0.17
RMD-202	1500 Valemont Way	2-Dec-11	0.61	<1	2	8	<1	0.35
RMD-214	11720 Westminster Hwy.	2-Dec-11	0.64	<1	<2	8	<1	0.15
RMD-267	17240 Fedoruk	2-Dec-11	0.38	<1	<2	9	<1	0.31
RMD-249	23000 Blk. Dyke Rd.	2-Dec-11	0.70	<1	<2	7	<1	0.43
RMD-276	22271 Cochrane Drive	2-Dec-11	0.58	<1	2	8	<1	0.41
RMD-275	5180 Smith Cres.	2-Dec-11	0.65	<1	2	7	<1	0.38
RMD-203	23260 Westminster Hwy.	2-Dec-11	0.73	<1	2	7	<1	0.39
RMD-251	5951McCallan Rd.	5-Dec-11	0.77	<1	2	6	<1	0.15
RMD-273	Opp. 8331 Fairfax Place	5-Dec-11	0.75	<1	<2	8	<1	0.17
RMD-252	9751 Pendleton Rd.	5-Dec-11	0.77	<1	<2	7	<1	0.16
RMD-274	10920 Springwood Court	5-Dec-11	0.59	<1	4	9	<1	0.19
RMD-253	11051 No 3 Rd.	5-Dec-11	0.73	<1	<2	6	<1	0.22
RMD-269	14951 Triangle Rd.	5-Dec-11	0.75	<1	<2	6	<1	0.11
RMD-270	8200 Jones Rd.	5-Dec-11	0.77	<1	<2	6	<1	0.14
RMD-254	5300 No. 3 Rd.	5-Dec-11	0.79	<1	<2	6	<1	0.16
RMD-250	6071 Azure Rd.	5-Dec-11	0.71	<1	<2	6	<1	0.20
RMD-271	3800 Cessna Drive	5-Dec-11	0.62	<1	<2	7	<1	0.19
RMD-272	751 Catalina Cres.	5-Dec-11	0.70	<1	<2	6	<1	0.21
RMD-256	1000 Blk. McDonald Rd.	5-Dec-11	0.61	<1	4	6	<1	0.22
RMD-255	6000 Blk. Miller Rd.	5-Dec-11	0.94	<1	<2	5	<1	3.60
RMD-263	12560 Cambie Rd.	7-Dec-11	0.70	<1	<2	5	<1	0.77
RMD-264	13100 Mitchell Rd.	7-Dec-11	0.65	<1	<2	6	<1	0.23
RMD-277	Opp. 11280 Twigg Place	7-Dec-11	0.48	<1	2	7	<1	0.22
RMD-262	13799 Commerce Pkwy.	7-Dec-11	0.62	<1	<2	6	<1	0.18
RMD-278	6651 Fraserwood Place	7-Dec-11	0.67	<1	<2	7	<1	0.30
RMD-279	Opp. 20371 Westminster Hwy.	7-Dec-11	0.56	<1	<2	7	<1	0.27
RMD-261	9911 Sidaway Rd.	7-Dec-11	0.70	<1	<2	6	<1	0.17
RMD-260	11111 Horseshoe Way	7-Dec-11	0.76	<1	<2	6	<1	0.19
RMD-259	10020 Amethyst Ave.	7-Dec-11	0.76	<1	<2	6	<1	0.16

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-266	9380 General Currie Rd.	7-Dec-11	0.74	<1	<2	6	<1	0.25
RMD-268	13800 No. 3 Rd. (off Garden City)	7-Dec-11	0.68	<1	<2	6	<1	0.21
RMD-258	7000 Blk. Dyke Rd.	7-Dec-11	0.86	<1	2	6	<1	0.17
RMD-257	6640 Blundell Rd.	7-Dec-11	0.85	<1	2	5	<1	0.15
RMD-204	3180 Granville Ave.	9-Dec-11	0.74	<1	2	6	<1	0.47
RMD-206	4251 Moncton St.	9-Dec-11	0.71	<1	<2	6	<1	0.16
RMD-216	11080 No. 2 Rd.	9-Dec-11	0.82	<1	2	4	<1	0.17
RMD-212	Opp. 8600 Riyan Rd.	9-Dec-11	0.83	<1	<2	5	<1	0.18
RMD-208	13200 No. 4 Rd.	9-Dec-11	0.91	<1	6	4	<1	0.16
RMD-205	13851 Steveston Hwy.	9-Dec-11	0.73	<1	<2	4	<1	0.24
RMD-214	11720 Westminster Hwy.	9-Dec-11	0.79	<1	<2	4	<1	0.16
RMD-202	1500 Valemont Way	9-Dec-11	0.55	<1	<2	5	<1	0.28
RMD-267	17240 Fedoruk	9-Dec-11	0.55	<1	2	5	<1	0.23
RMD-249	23000 Blk. Dyke Rd.	9-Dec-11	0.60	<1	4	5	<1	0.33
RMD-276	22271 Cochrane Drive	9-Dec-11	0.49	<1	4	5	<1	0.25
RMD-275	5180 Smith Cres.	9-Dec-11	0.56	<1	<2	5	<1	0.25
RMD-203	23260 Westminster Hwy.	9-Dec-11	0.66	<1	<2	5	<1	0.29
RMD-251	5951McCallan Rd.	12-Dec-11	0.79	<1	<2	6	<1	0.18
RMD-273	Opp. 8331 Fairfax Place	12-Dec-11	0.73	<1	<2	7	<1	0.24
RMD-274	10920 Springwood Court	12-Dec-11	0.66	<1	<2	8	<1	0.26
RMD-252	9751 Pendleton Rd.	12-Dec-11	0.68	<1	<2	7	<1	0.20
RMD-250	6071 Azure Rd.	12-Dec-11	0.78	<1	4	7	<1	0.21
RMD-271	3800 Cessna Drive	12-Dec-11	0.39	<1	<2	8	<1	0.22
RMD-272	751 Catalina Cres.	12-Dec-11	0.82	<1	2	5	<1	0.19
RMD-255	6000 Blk. Miller Rd.	12-Dec-11	0.85	<1	<2	5	<1	0.34
RMD-256	1000 Blk. McDonald Rd.	12-Dec-11	0.81	<1	6	5	<1	0.22
RMD-254	5300 No. 3 Rd.	12-Dec-11	0.87	<1	<2	5	<1	0.25
RMD-270	8200 Jones Rd.	12-Dec-11	0.76	<1	<2	7	<1	0.21
RMD-269	14951 Triangle Rd.	12-Dec-11	0.72	<1	<2	5	<1	0.30
RMD-253	11051 No 3 Rd.	12-Dec-11	0.78	<1	<2	5	<1	0.23
RMD-257	6640 Blundell Rd.	14-Dec-11	0.66	<1	2	6	<1	0.23
RMD-258	7000 Blk. Dyke Rd.	14-Dec-11	0.75	<1	<2	7	<1	0.25
RMD-268	13800 No. 3 Rd. (off Garden City)	14-Dec-11	0.68	<1	<2	7	<1	0.35
RMD-259	10020 Amethyst Ave.	14-Dec-11	0.77	<1	2	7	<1	0.21
RMD-266	9380 General Currie Rd.	14-Dec-11	1.1	<1	<2	6	<1	0.21
RMD-260	11111 Horseshoe Way	14-Dec-11	0.68	<1	<2	7	<1	0.27
RMD-261	9911 Sidaway Rd.	14-Dec-11	0.67	<1	<2	7	<1	0.29
RMD-262	13799 Commerce Pkwy.	14-Dec-11	0.64	<1	<2	7	<1	0.28
RMD-264	13100 Mitchell Rd.	14-Dec-11	0.90	<1	<2	6	<1	0.27
RMD-277	Opp. 11280 Twigg Place	14-Dec-11	0.51	<1	<2	9	<1	0.18

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-263	12560 Cambie Rd.	14-Dec-11	0.67	<1	<2	6	<1	0.24
RMD-278	6651 Fraserwood Place	14-Dec-11	0.08	<1	70	8	<1	0.22
RMD-279	Opp. 20371 Westminster Hwy.	14-Dec-11	0.54	<1	<2	7	<1	0.26
RMD-204	3180 Granville Ave.	16-Dec-11	0.75	<1	<2	5	<1	0.28
RMD-206	4251 Moncton St.	16-Dec-11	0.64	<1	<2	6	<1	0.18
RMD-216	11080 No. 2 Rd.	16-Dec-11	0.59	<1	<2	6	<1	0.21
RMD-212	Opp. 8600 Riyan Rd.	16-Dec-11	0.66	<1	<2	6	<1	0.29
RMD-208	13200 No. 4 Rd.	16-Dec-11	0.70	<1	<2	5	<1	0.21
RMD-205	13851 Steveston Hwy.	16-Dec-11	0.59	<1	<2	7	<1	0.27
RMD-202	1500 Valemont Way	16-Dec-11	0.59	<1	<2	7	<1	0.25
RMD-214	11720 Westminster Hwy.	16-Dec-11	0.65	<1	<2	6	<1	0.22
RMD-267	17240 Fedoruk	16-Dec-11	0.39	<1	<2	7	<1	0.24
RMD-249	23000 Blk. Dyke Rd.	16-Dec-11	0.54	<1	<2	6	<1	0.28
RMD-276	22271 Cochrane Drive	16-Dec-11	0.35	<1	<2	7	<1	0.23
RMD-275	5180 Smith Cres.	16-Dec-11	0.57	<1	<2	6	<1	0.24
RMD-203	23260 Westminster Hwy.	16-Dec-11	0.61	<1	<2	6	<1	0.29
RMD-251	5951McCallan Rd.	19-Dec-11	0.75	<1	2	6	<1	0.19
RMD-273	Opp. 8331 Fairfax Place	19-Dec-11	0.62	<1	<2	7	<1	0.16
RMD-274	10920 Springwood Court	19-Dec-11	0.58	<1	2	7	<1	0.48
RMD-252	9751 Pendleton Rd.	19-Dec-11	0.68	<1	<2	7	<1	0.17
RMD-250	6071 Azure Rd.	19-Dec-11	0.82	<1	<2	7	<1	0.18
RMD-271	3800 Cessna Drive	19-Dec-11	0.76	<1	<2	6	<1	0.21
RMD-272	751 Catalina Cres.	19-Dec-11	0.77	<1	<2	6	<1	0.20
RMD-255	6000 Blk. Miller Rd.	19-Dec-11	0.78	<1	<2	5	<1	0.48
RMD-256	1000 Blk. McDonald Rd.	19-Dec-11	0.75	<1	<2	5	<1	0.20
RMD-254	5300 No. 3 Rd.	19-Dec-11	0.82	<1	<2	6	<1	0.23
RMD-270	8200 Jones Rd.	19-Dec-11	0.80	<1	<2	6	<1	0.20
RMD-269	14951 Triangle Rd.	19-Dec-11	0.72	<1	<2	5	<1	0.21
RMD-253	11051 No 3 Rd.	19-Dec-11	0.81	<1	<2	5	<1	0.21
RMD-257	6640 Blundell Rd.	21-Dec-11	0.49	<1	<2	5	<1	0.31
RMD-258	7000 Blk. Dyke Rd.	21-Dec-11	0.47	<1	<2	6	<1	0.22
RMD-268	13800 No. 3 Rd. (off Garden City)	21-Dec-11	0.49	<1	<2	6	<1	0.18
RMD-259	10020 Amethyst Ave.	21-Dec-11	0.62	<1	<2	5	<1	0.19
RMD-266	9380 General Currie Rd.	21-Dec-11	0.70	<1	<2	5	<1	0.21
RMD-260	11111 Horseshoe Way	21-Dec-11	0.64	<1	<2	6	<1	0.20
RMD-261	9911 Sidaway Rd.	21-Dec-11	0.67	<1	<2	5	<1	0.18
RMD-262	13799 Commerce Pkwy.	21-Dec-11	0.67	<1	<2	6	<1	0.23
RMD-264	13100 Mitchell Rd.	21-Dec-11	0.73	<1	<2	5	<1	0.17
RMD-277	Opp. 11280 Twigg Place	21-Dec-11	0.42	<1	<2	8	<1	0.16
RMD-263	12560 Cambie Rd.	21-Dec-11	0.62	<1	2	6	<1	0.20

Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-278	6651 Fraserwood Place	21-Dec-11	0.40	<1	<2	7	<1	0.28
RMD-279	Opp. 20371 Westminster Hwy.	21-Dec-11	0.54	<1	<2	6	<1	0.34
RMD-204	3180 Granville Ave.	22-Dec-11	0.46	<1	<2	5	<1	0.27
RMD-206	4251 Moncton St.	22-Dec-11	0.41	<1	<2	4.5	<1	0.17
RMD-216	11080 No. 2 Rd.	22-Dec-11	0.47	<1	<2	5	<1	0.16
RMD-212	Opp. 8600 Riyan Rd.	22-Dec-11	0.50	<1	2	5	<1	0.17
RMD-208	13200 No. 4 Rd.	22-Dec-11	0.49	<1	<2	4.5	<1	0.18
RMD-205	13851 Steveston Hwy.	22-Dec-11	0.38	<1	<2	5.5	<1	0.22
RMD-202	1500 Valemont Way	22-Dec-11	0.42	<1	<2	6	<1	0.29
RMD-214	11720 Westminster Hwy.	22-Dec-11	0.63	<1	<2	4.5	<1	0.18
RMD-267	17240 Fedoruk	22-Dec-11	0.39	<1	<2	6	<1	0.24
RMD-249	23000 Blk. Dyke Rd.	22-Dec-11	0.41	<1	2	6	<1	0.24
RMD-276	22271 Cochrane Drive	22-Dec-11	0.29	<1	<2	6	<1	0.24
RMD-275	5180 Smith Cres.	22-Dec-11	0.48	<1	<2	5.5	<1	0.25
RMD-203	23260 Westminster Hwy.	22-Dec-11	0.59	<1	<2	4.5	<1	0.28
RMD-257	6640 Blundell Rd.	28-Dec-11	0.80	<1	NA	5	<1	0.18
RMD-258	7000 Blk. Dyke Rd.	28-Dec-11	0.58	<1	NA	6	<1	0.18
RMD-268	13800 No. 3 Rd. (off Garden City)	28-Dec-11	0.48	<1	NA	7	<1	0.18
RMD-259	10020 Amethyst Ave.	28-Dec-11	0.51	<1	NA	6	<1	0.20
RMD-266	9380 General Currie Rd.	28-Dec-11	0.53	<1	NA	5	<1	0.22
RMD-260	11111 Horseshoe Way	28-Dec-11	0.56	<1	NA	5	<1	0.22
RMD-261	9911 Sidaway Rd.	28-Dec-11	0.59	<1	NA	6	<1	0.26
RMD-262	13799 Commerce Pkwy.	28-Dec-11	0.54	<1	NA	6	<1	0.26
RMD-264	13100 Mitchell Rd.	28-Dec-11	0.65	<1	NA	6	<1	0.20
RMD-277	Opp. 11280 Twigg Place	28-Dec-11	0.23	<1	NA	8	<1	0.16
RMD-263	12560 Cambie Rd.	28-Dec-11	0.53	<1	NA	6	<1	0.25
RMD-278	6651 Fraserwood Place	28-Dec-11	0.03	<1	NA	6	<1	0.21
RMD-279	Opp. 20371 Westminster Hwy.	28-Dec-11	0.54	<1	NA	6	<1	0.30
RMD-204	3180 Granville Ave.	30-Dec-11	0.37	<1	NA	7	<1	0.20
RMD-206	4251 Moncton St.	30-Dec-11	0.40	<1	NA	7	<1	0.19
RMD-216	11080 No. 2 Rd.	30-Dec-11	0.52	<1	NA	7	<1	0.19
RMD-212	Opp. 8600 Riyan Rd.	30-Dec-11	0.51	<1	NA	7	<1	0.22
RMD-208	13200 No. 4 Rd.	30-Dec-11	0.55	<1	NA	6	<1	0.17
RMD-205	13851 Steveston Hwy.	30-Dec-11	0.60	<1	NA	5	<1	0.24
RMD-202	1500 Valemont Way	30-Dec-11	0.61	<1	NA	6	<1	0.40
RMD-214	11720 Westminster Hwy.	30-Dec-11	0.50	<1	NA	5	<1	0.20
RMD-267	17240 Fedoruk	30-Dec-11	0.52	<1	NA	6	<1	0.36
RMD-249	23000 Blk. Dyke Rd.	30-Dec-11	0.11	<1	NA	6	<1	0.29
RMD-276	22271 Cochrane Drive	30-Dec-11	0.58	<1	NA	5	<1	0.35
RMD-275	5180 Smith Cres.	30-Dec-11	0.61	<1	NA	6	<1	0.33

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Sample Name	Sample Reported Name	Sampled Date	Chlorine Free mg/L	Ecoli MF/100mLs	HPC CFU/mls	Temperature °C	Total Coliform MF/100mLs	Turbidity NTU
RMD-203	23260 Westminster Hwy.	30-Dec-11	0.77	<1	NA	6	<1	0.36

APPENDIX 3 : CITY OF RICHMOND S.C.A.D.A AND PREASURE 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 4 – CITY OF RICHMOND WATER SAMPLING SITES

	Water Sampling Sites		Sampling Station Number
Monday	Valmont & Knox Way	1500 Valmont Way	202
	Westminster Hwy & Willett Ave.	23260 Westminster Hwy.	203
	3180 Granville Ave.	3180 Granville Ave.	204
	Fraser Wharves	13851 Steveston Hwy.	205
	Steveston Ball Park	4251 Moncton Street	206
	13200 No. 4 Rd	13200 No. 4 Rd.	208
	South Arm Park	Opp. 8880 Williams Rd.	212
	Opp. Richmond Nature Park	11720 Westminster Hwy.	214
	11080 No. 2 Rd.	11080 No. 2 Rd.	216
	17240 Fedoruk Rd.	17240 Fedoruk Rd.	267
Tuesday	No. 2 Rd. & Blundell Rd.	6640 Blundell Rd.	257
	Gilbert Rd. & Dyke Rd.	7000 Blk Dyke Rd.	258
	10020 Amethyst Ave.	10020 Amethyst Ave.	259
	11111 Horseshoe Way	11111 Horseshoe Way	260
	Mylora Golf Course	9911 Sidaway Rd.	261
	13799 Commerce Pkwy.	13799 Commerce Pkwy.	262
	Cambie Community Centre	12560 Cambie Rd.	263
	13100 Mitchell Rd.	13100 Mitchell Rd.	264
	Ash St & General Currie	9380 General Currie Rd.	266
	13000 Blk. Garden City Rd.	13800 No. 3 Rd.	268
Wednesday	Shell & Dyke Rd.	11000Blk Dyke Rd.	249
	6071 Azure Rd.	6071 Azure Rd.	250
	Opp. Works Yard	5951 McCallan Rd.	251
	Hugh Boyd School	9751 Pendleton Rd.	252
	No.3 Rd.& Steveston Hwy	11051 No.3 Rd.	253
	8000 Blk. Alderbridge Way	5300 No. 3 Rd.	254
	Miller Rd. Sample Station	6000 Blk. Miller Rd.	255
	McDonald Beach	1000 Blk. McDonald Rd.	256
	14951 Triangle Rd.	14951 Triangle Rd.	269
	8200 Jones Rd.	8200 Jones Rd.	270

APPENDIX 5: 2011 THM AND HAA TEST RESULTS

Sample	Date Sampled	THM (ppb)						HAA (ppb)						
		Bromodichloromethane	Bromoform	Chlorodibromomethane	Chloroform	Total Trihalomethanes	**Total THM Quarterly Average**	Dibromoacetic Acid	Dichloroacetic Acid	Monobromoacetic Acid	Monochloroacetic Acid	Trichloroacetic Acid	**Total Haloacetic Acid**	**Total HAA Quarterly Average**
RMD-250	5/18/2010	<1	<1	<1	76	76		<0.5	48	<1	9	48	105	
RMD-250	9/15/2010	<1	<1	<1	39	39		<0.5	38	<1	4	61	103	
RMD-250	11/24/2010	<1	<1	<1	26	26		<0.5	18	<1	15	29	62	
RMD-250	2/17/2011	<1	<1	<1	18	18	40	<0.5	8	<1	5	12	25	74
RMD-250	5/11/2011	<1	<1	<1	29	29.1	28	<0.5	14	<1	16	15	45	59
RMD-250	9/12/2011	<1	<1	<1	47	46.7	30	<0.5	23	<1	16	26	66	49
RMD-250	11/14/2011	<1	<1	<1	27	26.7	30	<0.5	14	<1	19	10	44	45
RMD-251	5/18/2010	<1	<1	<1	76	77		<0.5	49	<1	16	49	114	
RMD-251	9/15/2010	<1	<1	<1	39	39		<0.5	37	<1	5	61	103	
RMD-251	11/24/2010	<1	<1	<1	26	26		<0.5	20	<1	22	27	69	
RMD-251	2/17/2011	<1	<1	<1	16	16	40	<0.5	9	<1	6	8	24	78
RMD-251	5/11/2011	<1	<1	<1	25	25.3	27	<0.5	16	<1	17	17	50	61
RMD-251	9/12/2011	<1	<1	<1	35	35	26	<0.5	26	<1	27	28	81	56
RMD-251	11/14/2011	<1	<1	<1	26	26.1	26	<0.5	12	<1	12	11	34	47
RMD-258	5/18/2010	<1	<1	<1	79	79		<0.5	45	<1	13	49	107	
RMD-258	9/15/2010	<1	<1	<1	38	38		<0.5	38	<1	6	58	102	
RMD-258	11/29/2010	<1	<1	<1	25	25		<0.5	13	<1	5	22	39	
RMD-258	2/17/2011	<1	<1	<1	18	18	40	<0.5	7	<1	4	9	20	67
RMD-258	5/11/2011	<1	<1	<1	29	28.7	27	<0.5	13	<1	10	17	40	50
RMD-258	9/12/2011	<1	<1	<1	45	45	29	<0.5	32	<1	12	42	87	47
RMD-258	11/14/2011	<1	<1	<1	27	26.8	30	<0.5	12	<1	14	12	38	46
RMD-259	5/18/2010	<1	<1	<1	78	78		<0.5	45	<1	6	43	94	
RMD-259	9/15/2010	<1	<1	<1	39	39		<0.5	33	<1	5	51	89	
RMD-259	11/24/2010	<1	<1	<1	26	26		<0.5	19	<1	17	29	65	
RMD-259	2/17/2011	<1	<1	<1	16	16	40	<0.5	9	<1	6	9	24	68
RMD-259	5/11/2011	<1	<1	<1	28	28.1	27	<0.5	14	<1	19	15	49	57
RMD-259	9/12/2011	<1	<1	<1	38	38.2	27	<0.5	29	<1	7	42	78	54
RMD-259	11/14/2011	<1	<1	<1	23	23.3	26	<0.5	12	<1	13	10	35	46

Sample		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.	11/14/2011	<1	<1	<1	27	26.7	<0.5	14	<1	19	10	43.5	
RMD-251	5951McCallan Rd.	11/14/2011	<1	<1	<1	26	26.1	<0.5	12	<1	12	11	34.1	
RMD-258	7000 Blk. Dyke Rd.	11/14/2011	<1	<1	<1	27	26.8	<0.5	12	<1	14	12	37.8	
RMD-259	10020 Amethyst Ave.	11/14/2011	<1	<1	<1	23	23.3	<0.5	12	<1	13	10	35.0	7.3

APPENDIX 6 : CITY OF RICHMOND : 2011 HEAVEY METAL TESTING RESULTS

Sample Name	Sample Description	Sampled Date	Sample Type	Copper Total	Iron Total	Lead Total	Zinc Total
				µg/L	µg/L	µg/L	µg/L
RMD-250	6071 Azure Rd.	11/7/2011 15:55	GRAB	2.8	11	<0.5	<3
RMD-257	6640 Blundell Rd.	11/7/2011 16:05	GRAB	3.5	12	0.7	<3
RMD-263	12560 Cambie Rd.	11/7/2011 14:30	GRAB	3.9	23	0.5	<3

CANADA LINE WATERMAIN CONSTRUCTION
CLOUDY WATER NOTICE

To accommodate Canada Line construction and passage along Cambie Street, the Greater Vancouver Water District (GVWD) must re-align the Cambie - Richmond watermain at 41st and 49th Avenues in Vancouver. This watermain is the major source of drinking water to West Richmond.

In preparation of the re-alignment work and in collaboration with the City of Richmond, the GVWD will be conducting a supply and capacity test on the night of February 17, 2007 from 10:00 p.m. to 7:00 a.m. This Test may result in turbidity (or cloudy water), discolouration or low pressure at your water taps.

These impacts are purely aesthetic. Either run taps until water becomes clear, or refrigerate drinking water ahead of time.

During this time the City of Richmond will conduct monitoring to ensure water quality. We appreciate your understanding throughout this test.

For further information on water quality or water supply, please contact the City of Richmond's Public Works Control Centre at 604-244-1262.

For general information on Canada Line construction visit www.canadaline.ca, or call 604-608-0200.

Fecal or E. coli, Positive Response

If a water sample tests positive for fecal coliform, the following response plan will occur;

- The municipality's water quality personnel and the MHO will be notified via 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 MHO. If a boil water advisory is deemed necessary, the municipality will carry out various means to inform the public. The Metro Vancouver will be informed of this public advisory.
- The City in consultation with the MHO 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 MHO 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, if necessary, banning water usage.

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 the regional health authority.
- 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 MHO.

In the even of possible biological or chemical contamination all steps to safety will be taken to ensure public health including, if necessary, banning water usage.

Turbidity Response

Turbidity(cloudy water) occurs during periods of heavy rain at/around GVWD water sources. Following completion of the Seymour-Capilano Filtration project the number of turbidity events should be reduced. The City of Richmond in conjunction with the Regional Health Authority 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
- monitored the City's S.C.A.D.A. system with updates sent to the regional Health Authority on a predetermined schedule
- issue a public communication in consultation with the regional Health Authority
- if necessary issue a boil water advisory will be issued 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 S.C.A.D.A. system will be monitored with updates sent to the regional Health Authority 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.
- The Metro Vancouver and the MHO will be notified, and updated concerning 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 Water Main Breaks with Suspected Contamination

All water main breaks where chemical or microbiological contamination of the system is suspected will be immediately reported to the MHO. The municipality will isolate the contaminated section from the rest of the distribution system. Once the water main 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 taken and appropriate action taken.

City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	June 20, 2012
From:	John Irving, P.Eng. MPA Director, Engineering	**File:**	10-6060-04-01/2012-Vol 01
Re:	**Annual Flood Protection Report 2012**		

Staff Recommendation

That the staff report titled "Annual Flood Protection Report 2012" (dated June 20, 2012, from the Manager, Engineering Planning) be received for information.

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

Att. 5

REPORT CONCURRENCE			
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**	
Roads and Construction Sewerage and Drainage	☑ ☑		
REVIEWED BY SMT SUBCOMMITTEE	**INITIALS:**	**REVIEWED BY CAO**	**INITIALS:**

Staff Report

Origin

The City of Richmond has generally flat topography that is largely at 1 m or higher above mean tide level. The City is protected from the Fraser River and the Straight of Georgia by a system that includes 49 km's of dikes. Storm water is drained off Lulu Island via 617 km of drainage pipes, 181 km of ditches and 39 storm water pumping stations.

The 2008 – 2031 Richmond Flood Protection Strategy is the City's guiding framework for continuing upgrading and improvement of the City's flood protection system. Included in the document is a commitment to review the strategy approximately every 5 years and the first review will take place in 2013.

This annual report updates Council on the performance of the flood protection system through the 2011-2012 rain and freshet season as well as improvements completed during 2011.

Findings of Fact

Rainfall

Rainfall data highlights for 2011 include the following:

- Approximately 1,083 mm of rain fell on the City of Richmond in 2011, which is below the average annual rainfall of 1,239 mm.
- January was the wettest month in 2011with 202 mm of recorded precipitation (based on rainfall data sensors located at City Hall).
- The rainiest day of 2011 was April 4, with 38 mm of rainfall in a 24 hour period, which is well below the single day precipitation record for Richmond of 74 mm on December 16, 1979.
- The most significant storm of 2011 was on January 12, which recorded a rainfall intensity of 9 mm / hour over two hours and has a statistical return period of 5 years.

In general, 2011 was a below average rainfall year with one 5 year return period storm and all events were within the design limits for Richmond's drainage system. **Attachment 1** is a chart of annual rainfall.

Freshet

The Fraser River's peak discharge volume during the 2011 freshet was above average but below that experienced in 2007 and well below historic peak volumes. A cool, wet May and June caused an unusually long freshet period of 55 days that caused high discharges until mid July (**Attachment 2**). Through this time the City's dikes and drainage system performed well, and no related flooding was observed.

The 2012 Fraser River Freshet is in full swing at the time of writing this report. An above average snowpack combined with recent weather patterns has lead to high water levels in the Fraser River. The BC River Forecast Centre (under the Ministry of Forests, Lands and Natural Resource Operations) issued two Highwater Level Advisories for the Lower Fraser River so far in 2012. Peak water levels so far have been 1.3m or more below the Richmond's dike's crest and have presented no flooding risk to Richmond.

The 2012 freshet is expected to last longer than average due to the large snow pack and the Ministry of Forests, Land and Natural Resource Operations will continue to publish predicted Fraser River flows and high water elevations for discharge observations at Mission above 9,200 cubic meters per second.

2008 – 2031 Richmond Flood Protection Strategy

The 2008 – 2031 Richmond Flood Protection Strategy is the City's guiding framework for continuing upgrading and improvement of the City's flood protection system. The strategy includes a total of 32 short, medium and long term actions listed in **Attachment 3**, which also catalogues the City's considerable progress on these actions. Highlights of accomplishments since 2008 include:

- Approximately $9.6 million in senior government grant funding for drainage and diking projects has been secured;
- Bylaw 8204 – Flood Plain Designation and Protection was adopted by Council in 2008 and sets the flood control elevations for development in Richmond;
- Ongoing work with the Diking Authority to interpret the January 27, 2011, BC Ministry of Environment "Climate Change Adaptation Guidelines for Sea Dikes and Coastal Flood Hazard Land Use Sea Dike Guidelines";
- Ongoing work with the development community to improve form of development and dike heights for development adjacent to dikes;
- Initiating master planning for dike upgrading in Steveston to accommodate sea level rise due to climate change; and
- Establishment of a program for phasing/prioritizing perimeter dike improvements.

Drainage System Performance

103 service requests related to drainage issues were recorded by Public Works in 2011. Service requests were generally associated with local blockage issues. No significant flooding events recorded. The drainage system performed very well with no major problems identified. **Attachment 4** charts drainage issue related call outs for the last eight years.

Drainage System Improvements

Engineering and Public Works is constantly upgrading and improving the City's drainage system to accommodate new development and climate change. In 2011, 2.7 cubic meters per second of pumping capacity was added through completion of the No. 4 Road North pump station replacement. Staff are currently working on replacement of the Williams Road and No. 1 Road North pump stations. These stations should be complete late in early 2013 and will improve pumping capacity by 3.3 cubic meters per second. **Attachment 5** charts pumping capacity improvements over the last eight years.

Beyond pumping capacity improvements, the City completed approximately $2 million in pipeline and ditch conveyance capacity improvements in 2011.

Dike Improvements

Improvements to 1 km of the Middle Arm Dike between Cambie Road and the Dinsmore Bridge were completed in 2010, raising dikes to an elevation of 4.0m which is over the Provincial flood protection standard. While no dike improvements were completed in 2011 within the capital program, staff negotiated dike improvements at the ASPAC and Kawaki development sites that will be completed in the next five years. Staff continue to pursue dike improvements through developments that are adjacent to the dike.

Staff are also working toward a Steveston Dike master plan that is scheduled for completion late in 2012. The master plan will provide long term guidance for dike improvements in the Steveston area, which will assist in guiding development requirements in this historic area. The Steveston Dike master plan is a first step toward developing a comprehensive dike improvement program that is an important element of the 2008 – 2031 Richmond Flood Protection Strategy

Financial Impact

None.

Conclusion

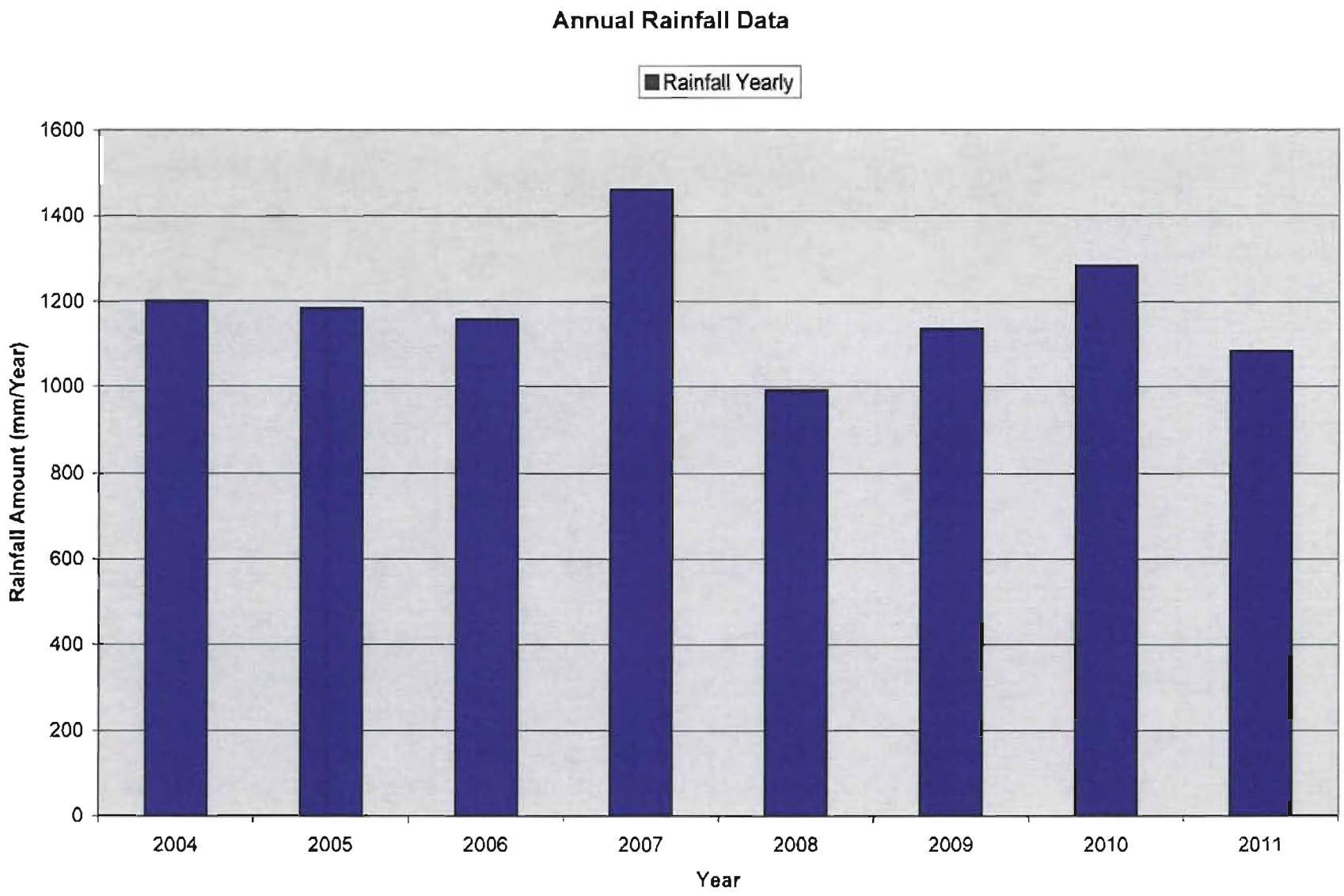
2011 was a below average rainfall year during which there were no significant drainage issues identified. The 2011 freshet water levels in the Fraser River were above average and continued well into July, which is unusually long. The dike and drainage system performed well throughout the year with no significant flooding events reported.

During 2011, the No. 4 Road pump station improvement project was completed increasing over all pumping capacity by 2.7 meters cubed per second. Staff also completed approximately $2 million in pipeline and ditch improvements throughout the year.

Staff continues to follow the action items identified in the 2008 – 2031 Richmond Flood Protection Strategy. Considerable progress has been made since 2008 and staff will continue to build upon this success.

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

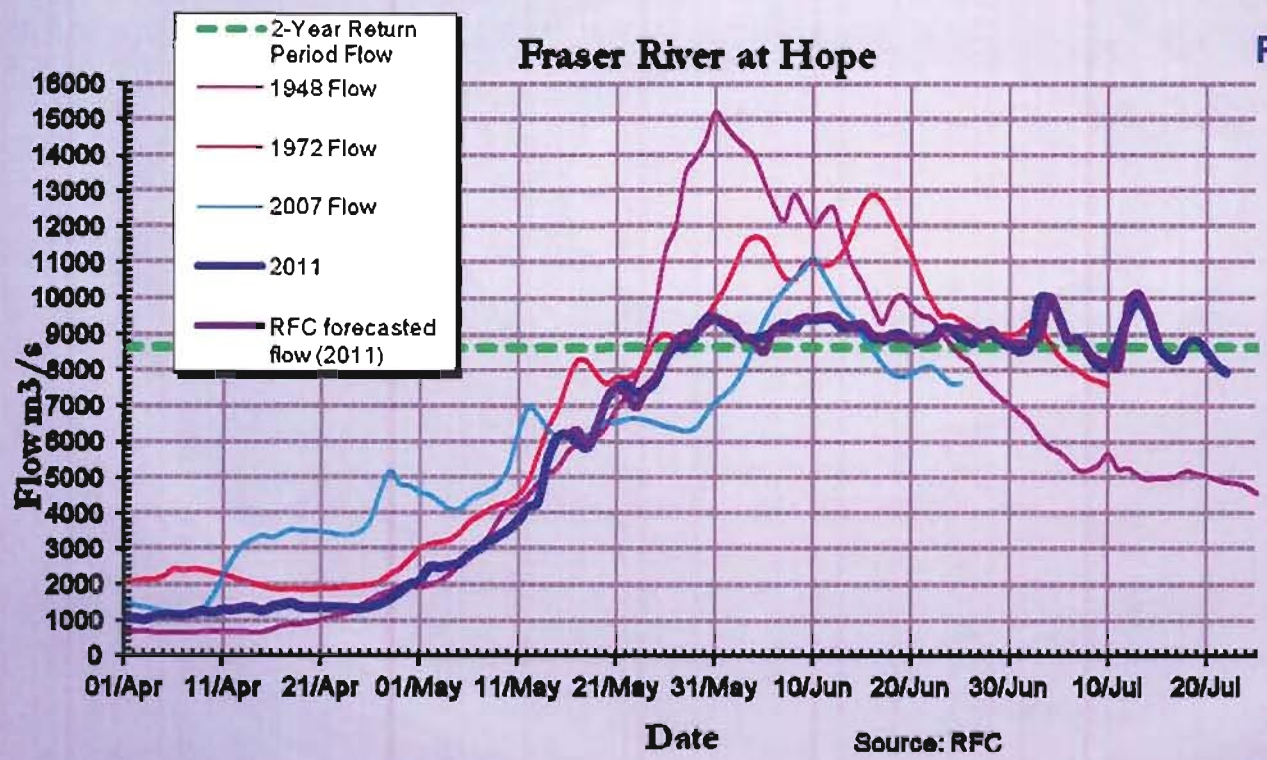
LB:lb


Annual Rainfall Data
Rainfall Yearly
1600
1400
1200
1000
800
600
400
200
0
Rainfall Amount (mm/Year)
2004
2005
2006
2007
2008
2009
2010
2011
Year

BRITISH COLUMBIA

Ministry of Forests, Lands and Natural Resource Operations

2011 Freshet Forecasting



Peaks occurred three times (WSC raw data record):

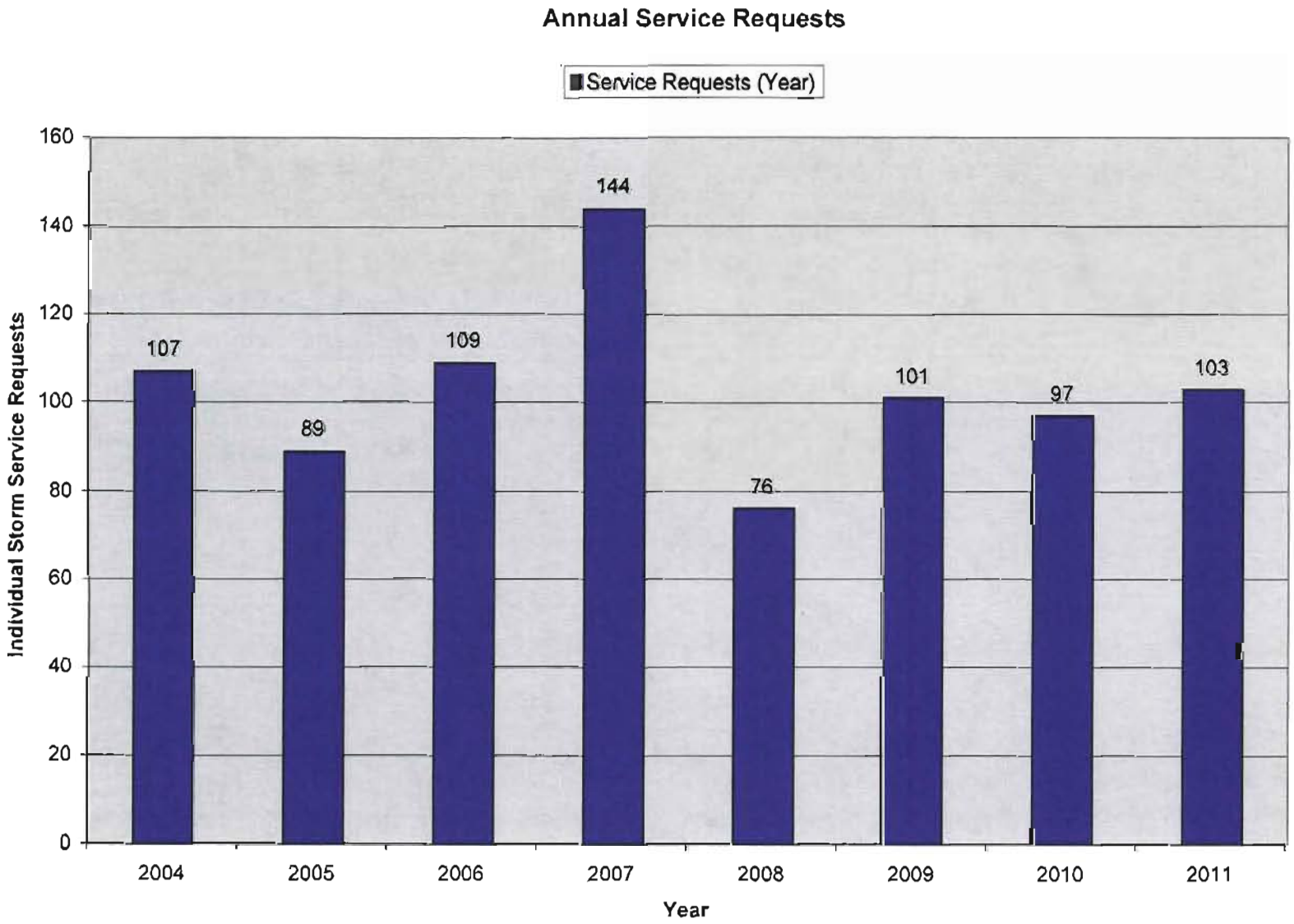
- June 1st – peak inst Q of 9,498 m^3/s (daily av 9,355 m^3/s)
- July 3rd – peak inst Q of 10,244 m^3/s (daily av of 9,912 m^3/s)
- July 13th – peak inst Q of 10,126 m^3/s (daily average of 9,862 m^3/s)

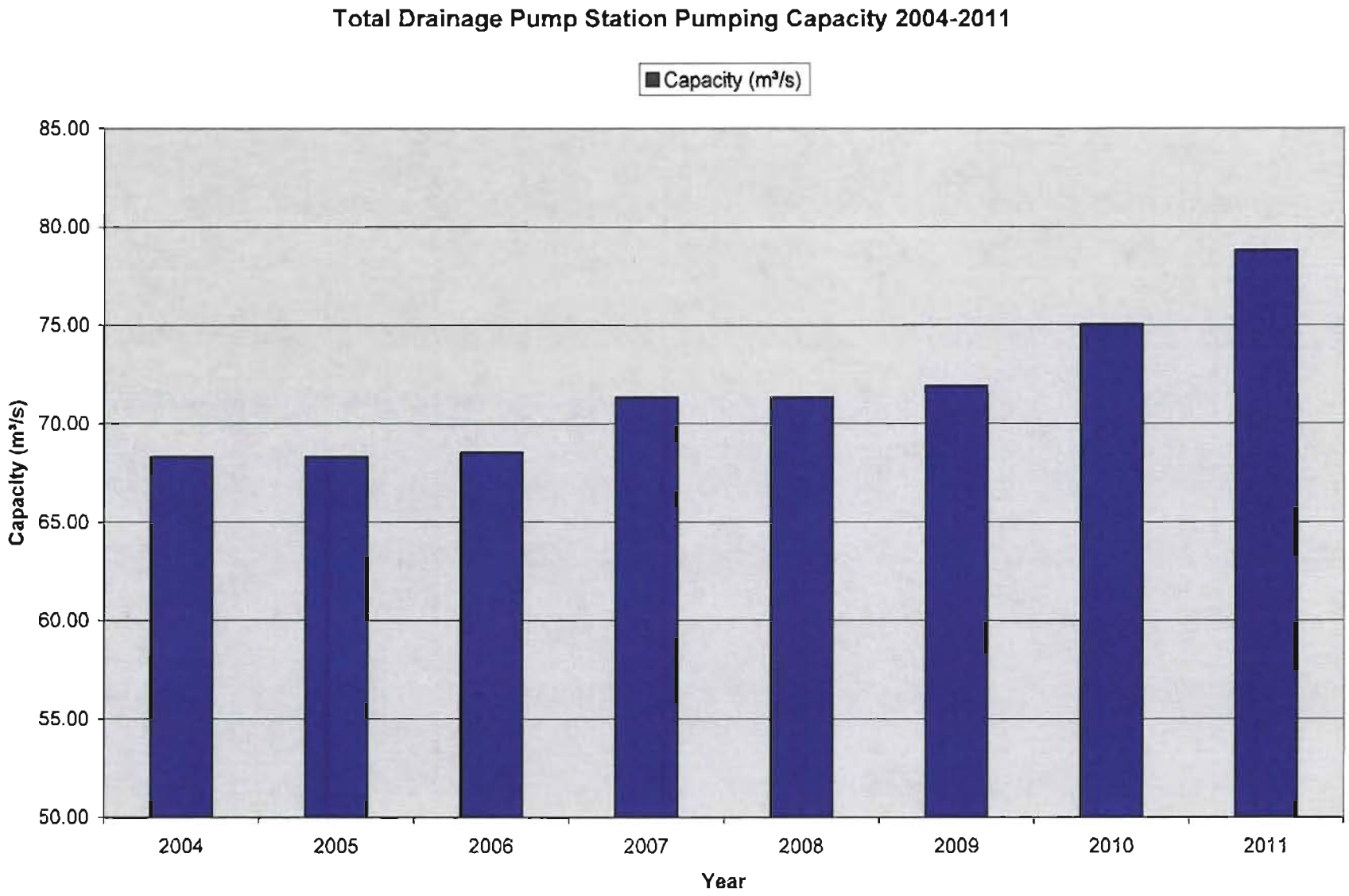
Key Actions	Status	Comments
Short Term (2008)		
Examine and pursue senior government cost sharing to implement the FPMS (Engineering; Public Works; Finance)	Ongoing	Approximately $9.6 million in senior government grant money was achieved since 2008 allocated to the following projects: • No.3 Road Drainage PS Screens • Middle Arm Dike • No. 4 Road PS • Williams Road Drainage PS • No. 1 Road Drainage PS • South Dike from No. 7 Road to 1000 metres east (2007)
Collaborate among City Engineering, Building Approvals, Policy Planning [PPD], Development Applications, Facilities Divisions to develop a phased plan for overall land grade increases (Engineering; Planning)	Regulation changes complete, Implementation Ongoing	This is largely being achieved through Bylaw 8204 – Flood Plain Designation and Protection. Additional effort is being focused on raising the floor plates of large developments to a level above the flood control level with some success.
Pursue and plan for appropriate grade changes in City area plans (e.g. City Centre Area Plan update) (PPD).	Ongoing	This is ongoing with success in the West Cambie area plan and at the development level with developments including ASPAC.
Consult at timely intervals with experts (e.g., MoE, Canadian Hydrographic Service, FBC) and monitor the latest long-range ocean/climate change forecasts and science for their implications (Engineering)	Ongoing	Canada participates in the Intergovernemental Panel on Climate Change (IPCC). This group gathers climate change information and forecasts future climate change. These results are recognized by senior levels of Canadian Government and are monitored by City staff.
Rescind Floodplain Management Implementation Strategy Policy 7000 (PPD)	Complete 2008	
Prepare a Floodplain Bylaw including the new FCLs and the requirement for covenants/ indemnity (Engineering; PPD; Law)	Complete 2008	Bylaw 8204 – Flood Plain Designation and Protection
Adopt other mechanisms and techniques [All].	Ongoing	Staff is currently reviewing wave attenuation measures as an alternate to raising dikes.
Establish protocol for obtaining dike rights of way for Mitchell Island (Engineering, PPD, Law).	Ongoing	The City has obtained dike rights on one recent development and had another build much higher than the flood control level, relieving the need for a dike in that location.
Work with the BC MoT and others on a program to study, plan and cost share in the building of the Highway 99/Knight Street mid-island barrier.	Ongoing	Perimeter dike upgrading was identified as a higher priority than the mid island dike in the 2009 Mid Island Dike Scoping Study.

Key Actions	Status	Comments
Medium Term (2009)		
Improve the City's ability to obtain data and undertake direct measurements (e.g., monitoring local sea level changes through City operated gauging stations (Engineering; Public Works)	Ongoing	The City has installed a salt content measuring device slightly upstream of the No. 6 Road Pump Station that will gather data on the salt wedge protrusion. This will give staff insight into the impact of climate change on the salt wedge and the City's ability to reliably provide irrigation water from the Fraser River for farming purposes.
Direct staff to update the City's Flood Response Plan as part of the overall Emergency Response Plan (updated on basis of new modeling and technical information) (Engineering; Emergency Programs)	Ongoing	The City has developed an evacuation plan (January 26, 2009) which outlines the strategies and considerations for evacuation. Evacuation routes are determined at the time of an emergency to ensure the safety of the public.
Work with VIAA to clarify jurisdiction, maintenance standards and improvement programs for the Sea Island dikes (Engineering)	Complete	Jurisdiction has been clarified and some areas of sub standard dike have been identified and scheduled for improvement by VIAA.
Encourage the City of New Westminster to harmonize its flood protection levels with Richmond's strategy (Engineering)	Complete	Staff are currently in discussion with New Westminster staff regarding dike master planning.
Work with Department of Fisheries and Oceans [DFO] on a plan for widening the perimeter dikes - inside and outside existing dikes, addressing related mitigation and compensation requirements (Engineering)	Ongoing	Staff is currently in discussion with DFO regarding environmental issues associated with replacement of the No. 1 Road and the Williams Road drainage pump stations.
Work with external agencies (such as the Agricultural Land Commission) to develop a protocol that will allow for these changes in use through rezoning, development permits, etc. (PPD)	Ongoing	
Seek direction from Province on new acceptable probability criteria that will address sea level rise and climate related extremes for the next 100 years	Ongoing	On January 27, 2011, the BC Ministry of Environment issued the Climate Change Adaptation Guidelines for Sea Dikes and Coastal Flood Hazard Land Use Sea Dike Guidelines. Staff is working with the Provincial Diking Authority to interpret the guidelines and determine their implications for the City of Richmond.
Prepare and implement a comprehensive perimeter dike improvement program (researching, strengthening and widening dikes to reduce the level of risk)	Ongoing	Staff are currently working on the Dike Master Plan, Phase 1, which is concerned with dikes in the Steveston area, which is scheduled for completion in 2012.

Key Actions	Status	Comments
Establish a program for phasing/prioritizing perimeter dike improvement (e.g., seismically weak areas first, the mid island barrier, overall perimeter dike improvements) (Engineering)	Complete 2009	Technical report outlining the program for phasing/prioritizing perimeter dikes is titled "Prioritization Framework for City of Richmond Perimeter Ring Dike Improvement Projects".
Once Mid Island Barrier technical details are finalized: established a phased implementation program seek senior government cost sharing.	Ongoing	Perimeter dike upgrading was identified as a higher priority than the mid island dike in the 2009 Mid Island Dike Scoping Study.
Longer Term (2010 – 2031)		
Prepare plans and policies (e.g., OCP, area plans, to support increased density adjacent to dikes but require grade increases and contributions to dike improvements. Retain dike rights of ways and access (PPD, real Estate)	Ongoing	Dikes are being raised in conjunction with adjacent development applications. This has been achieved in the planning phase of a number of developments including ASPAC and Kawaki.
Remove and relocate or replace toe ditches adjacent to dikes (Engineering)	Ongoing	Engineering is looking for opportunities to remove toe ditches as part of development.
Ensure that emergency facilities and refuge areas are located in areas not subject to flooding) (Engineering; Emergency Programs; PPD, Dev Applications)	Ongoing	This is implemented through ongoing coordination between Engineering, Project Development, and Emergency Programs
Review implementation plans for refuge areas, emergency routes, and create public awareness (Engineering; Emergency Programs)	Plans Complete Public awareness work is ongoing	The City has developed an evacuation plan (January 26, 2009) which outlines the strategies and considerations for evacuation. Evacuation routes are determined at the time of an emergency to ensure the safety of the public.
Review this Strategy approximately every 5 years to ensure that new information is reflected. (All)	Ongoing	The first update to the strategy is scheduled for 2013.
Develop on-going public evacuation and communication programs (Engineering; Emergency Programs).	Ongoing	The City has created a public awareness program and uses a variety of mediums to communicate. There is a significant volume of information on the City's web site concerning flooding and the programs in place to prevent flooding.
Ensure issues of flood protection, grade levels, as well as refuge areas are considered in the development of local area plans (PPD; Engineering; Emergency Programs)	Ongoing	Policy Planning, with other City departments (e.g., Engineering) ensures that appropriate policies and regulations are included in the OCP (current 1999 and proposed 2041 OCP) and all Area Plans.

Key Actions	Status	Comments
Review dike maintenance programs at ongoing 3 to 5 year intervals (Engineering; Public Works)	Ongoing	These reviews are ongoing on an annual basis.
Support sustainable funding for a federal [VFPA) river dredging program to maintain river profile (Engineering)	Ongoing	Discussions are ongoing with Port Metro Vancouver
Establish in City budget annual amount for land for access rights to waterfront and dike areas (All)	Complete	Funding is available in the Diking Utility.
Establish and maintain inventory of rights of way and access agreements to diking system (Engineering)	Complete	There is an inventory of dike rights of way in the City's GIS. A catalogue of access agreements has also been completed. Both of these are updated on an ongoing basis.
Update existing procedural policy of comprehensive dike maintenance (Engineering, Public Works).	Ongoing	
Pursue development of the mid island barrier along the Highway 99 / Knight Street Corridor (Construction cost estimate - $16 million) (Engineering)	Ongoing	Perimeter dike upgrading was identified as a higher priority than the mid island dike in the 2009 Mid Island Dike Scoping Study.


Annual Service Requests
Service Requests (Year)
Individual Storm Service Requests
160
140
120
100
80
60
40
20
0
107
89
109
144
76
101
97
103
2004
2005
2006
2007
2008
2009
2010
2011
Year


Total Drainage Pump Station Pumping Capacity 2004-2011
Capacity (m³/s)
85.00
80.00
75.00
70.00
65.00
60.00
55.00
50.00
Capacity (m³/s)
2004
2005
2006
2007
2008
2009
2010
2011
Year

City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	June 27, 2012
From:	John Irving, P.Eng. MPA Director, Engineering	**File:**	10-6060-01/2012-Vol 01
Re:	**Dike Master Plan - Phase 1**		

Staff Recommendation

That the public and key external stakeholders be consulted to provide feedback on the Steveston area and the West Dike flood protection concepts identified in the attached staff report from the Director, Engineering.

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

Att. 3

REPORT CONCURRENCE			
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**	
Real Estate Services	☑		
Sustainability	☑		
Roads and Construction	☑		
Sewerage and Drainage	☑		
Parks	☑		
Development Applications	☑		
Policy Planning	☑		
Transportation	☑		
REVIEWED BY SMT SUBCOMMITTEE	**INITIALS:**	**REVIEWED BY CAO**	**INITIALS:**

Staff Report

Origin

The 2008 – 2031 Richmond Flood Protection Strategy identified the need to "Prepare and implement a comprehensive dike improvement program". On June 13, 2011 Council approved that $200,000 of surplus from the 2010 operating budget be used to initiate a Dike Master Plan. This budget is being used to fund Phase 1 of the master plan, which is primarily focused on identifying a long term flood protection improvement plan for the Steveston and southern West Dike area.

The purpose of this staff report is to present preliminary concepts for flood protection works that will be required to address long-term sea level rise and future flood risks.

Analysis

Richmond has grown into a large thriving City with considerable assets to protect. Directed by the 2008 – 2031 Richmond Flood Protection Strategy, the Drainage and Diking Utility was created to fund the construction, operation and maintenance of City dikes, drainage pump stations and drainage conveyance systems that protect the City against floods. The Drainage, Dike and Sanitary System Bylaw No 7551 and Watercourse Protection and Crossing Bylaw No. 8441 regulate drainage activities to minimise the risk of flooding inside of the City's dike. The Flood Plain Designation and Protection Bylaw No. 8204 prevents development from encroaching onto dikes and requires that all new finished floor areas susceptible to flood damage be above the flood plain construction level.

The Dike Master Plan is intended to be a comprehensive guide to upgrade flood protection infrastructure to:

- Adequately protect Richmond from both ocean storm surges and Fraser River freshet events,
- Adapt to sea level rise,
- Meet appropriate seismic and other design standards,
- Follow the five strategic directions of the City's 2009 Waterfront Strategy, and
- Prioritize dike improvement phasing to efficiently use resources.

Sea and river dikes form the backbone of Richmond's flood protection infrastructure. As a Local Diking Authority the City of Richmond manages the integrity of 49 km of dike on Lulu and Sea Islands. In the medium to long term, dike crest elevations will need to be raised to mitigate sea level rise caused by climate change.

Richmond's dikes are located in City right-of-ways, City owned land, Federal/Provincial Land and private land. Land ownership and land use issues create a number of challenges that the City must address as dike crest elevations are raised. Creating a long-term dike master plan for the Steveston area has been identified as a priority. The Steveston dike impacts many things, for example, existing roads and buildings, heritage structures, harbour functionality and Steveston Village's unique character. Development is also hindered without a long-term master plan. Actual implementation of any approved master plan would occur over many decades as the identified sea level risk will largely materialize beyond the 50-year timeline.

The City has engaged Delcan/DHV as the lead consultant to complete Phase I of the Dike Master Plan. Tasked with identifying traditional and creative flood protection solutions that have minimal impact, Delcan has identified two primary dike alignments between Garry Point Park and London Farm: 1) raising the dikes in their current or similar alignment, or 2) using Steveston (Shady) Island to form a new dike structure. These alignments are illustrated in **Attachment 1** and are explained below.

Primary Alignment 1: Raise dikes in their current alignment or a close parallel alignment on Lulu Island

Raising dikes in their current location presents a number of challenges that include limited space, utility conflict, development conflict and construction scheduling. Leaving dikes in their existing alignment also excludes a number of properties from current and future flood protection. **Attachment 1** shows the dike divided into a number of reach boundaries (sections). Within each reach the dike's current alignment as well as some proposed alternative alignment options are shown.

Attachment 2 presents a series of dike alignment options within each reach boundary. Options vary with location and seismic design considerations. For reasons relating mainly to land ownership, land use and heritage preservation, dike alignment options are presented that exclude some City, Provincial and Federal property from flood protection. Should these alternatives be chosen and property is left outside of the City's main dike the property owners could use a number of strategies to prevent local flood damage that include changing property and building usage, raising building elevations, raising ground elevations or constructing private flood walls.

Moving the dike closer to the water's edge presents challenges and would significantly change the look and feel of the existing harbour and potentially disrupt sensitive shoreline ecology. In some areas sheet pile walls with backfilled dike material will likely be required to create a seismically stable dike that is capable of meeting today's dike crest planning elevation (4.7 m geodetic is used in this study) and those required further into the future.

Primary Alignment 2: Raise a dike on Steveston Island and install gate structures to enclose the harbour

This alignment uses a similar layout to the Steveston Community Fishing Harbour Long Term Development Plan that is proposed under the City's Waterfront Strategy Implementation Plan. However, while the Community Fishing Harbour Plan is envisaged to have two clear openings at each end of the Harbour's channel, this alternative would use gates or other structures that would close the channel during combined high tides and storm surge events. Assuming that water quality can be maintained, another option is to completely close the channel at its east end. The implications of full enclosure on dredging needs has not yet been analysed. Similarly, the ecological impacts on existing wetlands located within and east of the harbour and authorization from Federal Agencies in relation to ecological, First Nations, and/or fisheries values have not yet been evaluated.

Primary Alignment 2 (**Attachment 3**) shows that the proposed dike would begin somewhere west of 7th Avenue where a new structure would be built heading South into the Steveston Harbour that would intersect the west end of Steveston Island. At this point, Steveston Island would be modified along its entire length to form a dike. Additional structures or embankments would then be needed to enclose the Harbour approximately 250 m east of No. 2 Road. At its

west end, a gate structure would be built to close off the Harbour during periods of combined storm surge and high tide. A pump station may also be required to ensure stable water elevations during closure periods. **Attachment 3** shows renderings that have previously been presented to Council of the Steveston Community Fishing Harbour Long Term Development Concept. The rendering has been modified to show the compatibility of the dike development concept with the Integrated Flood Protection Strategy.

Option Comparison

In preparation for stakeholder discussions, **Table 1** makes a preliminary comparison of the pros and cons of Primary Alignment 1 versus Primary Alignment 2.

The two primary alignments are not exclusive of each other. Elements of each could be used over time to provide a complete flood protection package.

Table 1. The pros and cons of Primary Alignment 1 versus Primary Alignment 2

	Primary Alignment 1 – Lulu Island		**Primary Alignment 2 – Steveston Island**	
Topic	**Pros**	**Cons**	**Pros**	**Cons**
Cost	Neutral – initial cost estimates are similar for both options			
Property and Land Use	City owns land and right of ways for some options	Existing structures must be accommodated	Steveston Island is vacant of development	Government jurisdiction issues with land use
Construction	Can build in pieces and use temporary infrastructure for effective flood protection	High community disruption	Low community disruption	Must be built as one project to be effective
Adaptability to Future Raising		Will disturb the community if raised in the future	Relatively easy to raise in the future	
Environmental	Needs further assessment			
Geotechnical Implications		Ground improvement may impact existing buildings and infrastructure	Minimises ground improvement impacts to existing buildings and infrastructure	
Community impact		High impact on existing village character & heritage assets	Minimises the impact on village character and heritage assets. Aligns with the Steveston Harbour Authority Concept	
Operation and Maintenance	Design resembles existing or traditional infrastructure for relatively simple O&M	The replacement cost of sheet pile sections is high. Maintenance may impact the local community	Maintenance can be achieved with little impact to the local community	A harbour gate requires new O&M procedures with additional short and long term costs
Roadway Disruptions		Disruption likely for some options	No disruption	

Sturgeon Bank, Roberts Bank and River Training Structures

The existing river training structures (rock groynes and timber pilings) at the Fraser River's mouth and the extensive Sturgeon Bank mud flats protect Richmond's West Dike and the Steveston area from large waves that develop in the Georgia Strait. As sea levels rise water washing over these areas will become deeper and the current level of wave protection will be reduced.

Sediment deposition and erosion on Sturgeon Bank occurs due to a multitude of factors that changed significantly through the 19th Century. Tidal drift, river dredging and river training structures all impact sedimentation in the Fraser River Delta. It is unclear how current sedimentation patterns will effect Sturgeon Bank's ability to mitigate wave action, however, any net erosion is anticipated to exacerbate the loss of wave protection caused by rising sea levels.

The maintenance and enhancement of river training structures is anticipated to help protect Richmond from waves and will also benefit shipping and local harbour activities. As is now being practiced around the world, beach nourishment (the addition of sand and sediment to a "beach") may be used to grow mud flat and sand banks to restore (e.g. New Orleans, Louisiana) or enhance (e.g. ocean beaches, The Netherlands) wave protection. Although its effectiveness in the Fraser River Delta is not yet understood, the careful planning of beach nourishments may mitigate wave action from the Georgia Strait and benefit the natural environment (Steveston Island is partially manmade which over the last 50 to 100 years has changed from a low lying sand bank into its current make up of trees, plants and intertidal beaches that support an abundance of wildlife). Sturgeon Banks are currently designated as Provincially protected for their high wetland ecological value and migratory bird habitat.

Reach 8, Options B and C (**Attachment 2**) indicate how elevating Sturgeon Bank or creating a chain of islands along it (similar to Steveston Island) could reduce current and future wave action on the west dike that would minimise future dike crest elevation upgrades.

Next Steps

Staff plan to gain feedback from key stakeholders and the public. Key stakeholders include:

- Steveston Harbour Authority
- Small Craft Harbours
- Port Metro Vancouver
- Department of Fisheries and Oceans
- BC Inspector of Dikes
- Gulf of Georgia Cannery Society / Parks Canada
- Britannia Heritage Shipyard Society
- Heritage Advisory Committee
- Advisory Committee on the Environment

The key stakeholder group will be engaged through ongoing meetings and communications. Public consultation would include two public open houses held before the end of September.

Financial Impact

None.

Conclusion

Consistent with the City's 2008 – 2031 Richmond Flood Protection Strategy, Phase 1 of a Dike Master Plan is being prepared. Two primary dike alignments in the Steveston area as well as wave mitigation strategies for the southern West Dike area have been prepared for key stakeholder consultation. Staff plan to engage stakeholders so that they may provide input into determining a preferred future dike alignment in the Steveston area.

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

Andy Bell, P.Eng., M.Eng.
Project Engineer, Engineering Planning
(604-247-4656)

LB:lb

1:10000 0 200 600m

LEGEND:

CURRENT DIKE ALIGNMENT

PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS

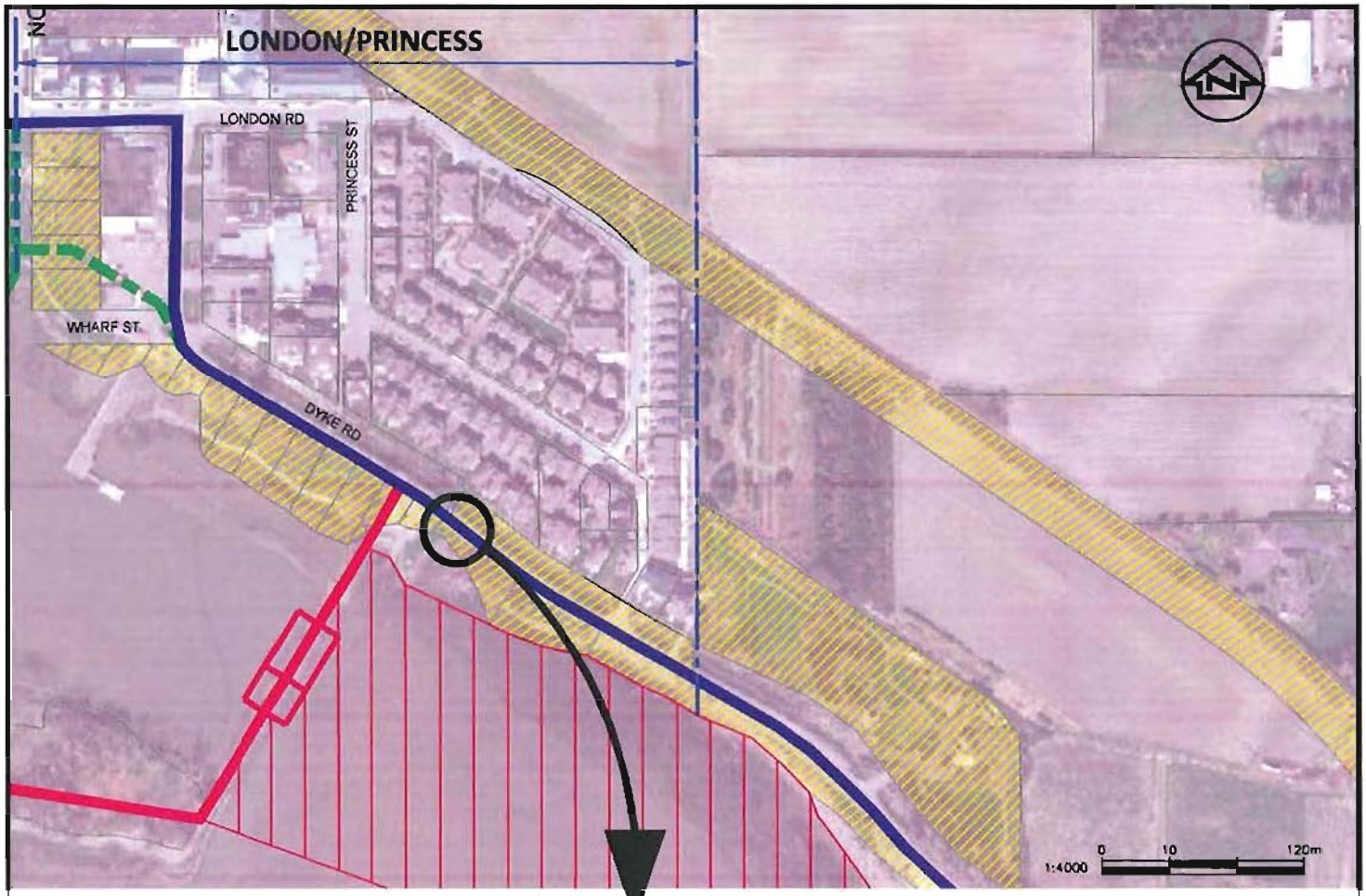
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND

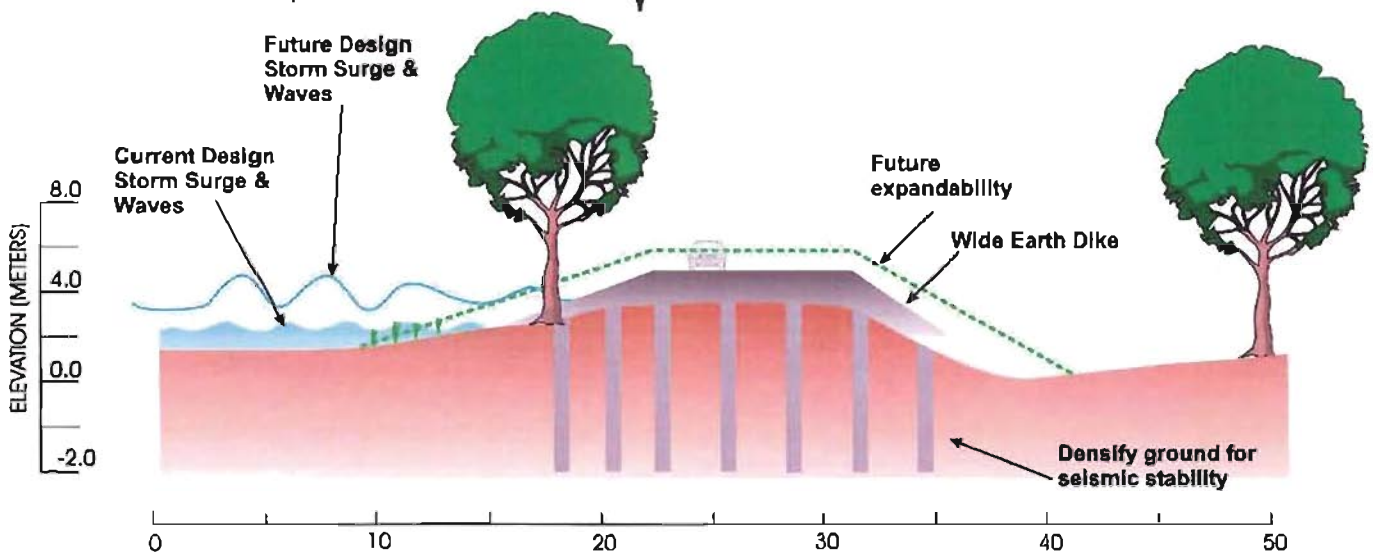
CITY OF RICHMOND

LULU ISLAND DIKE MASTER PLAN PHASE 1

CONCEPTUAL DESIGN ALTERNATIVES

Attachment 1





LEGEND:

CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 1: London/Princess Option A

Delcan

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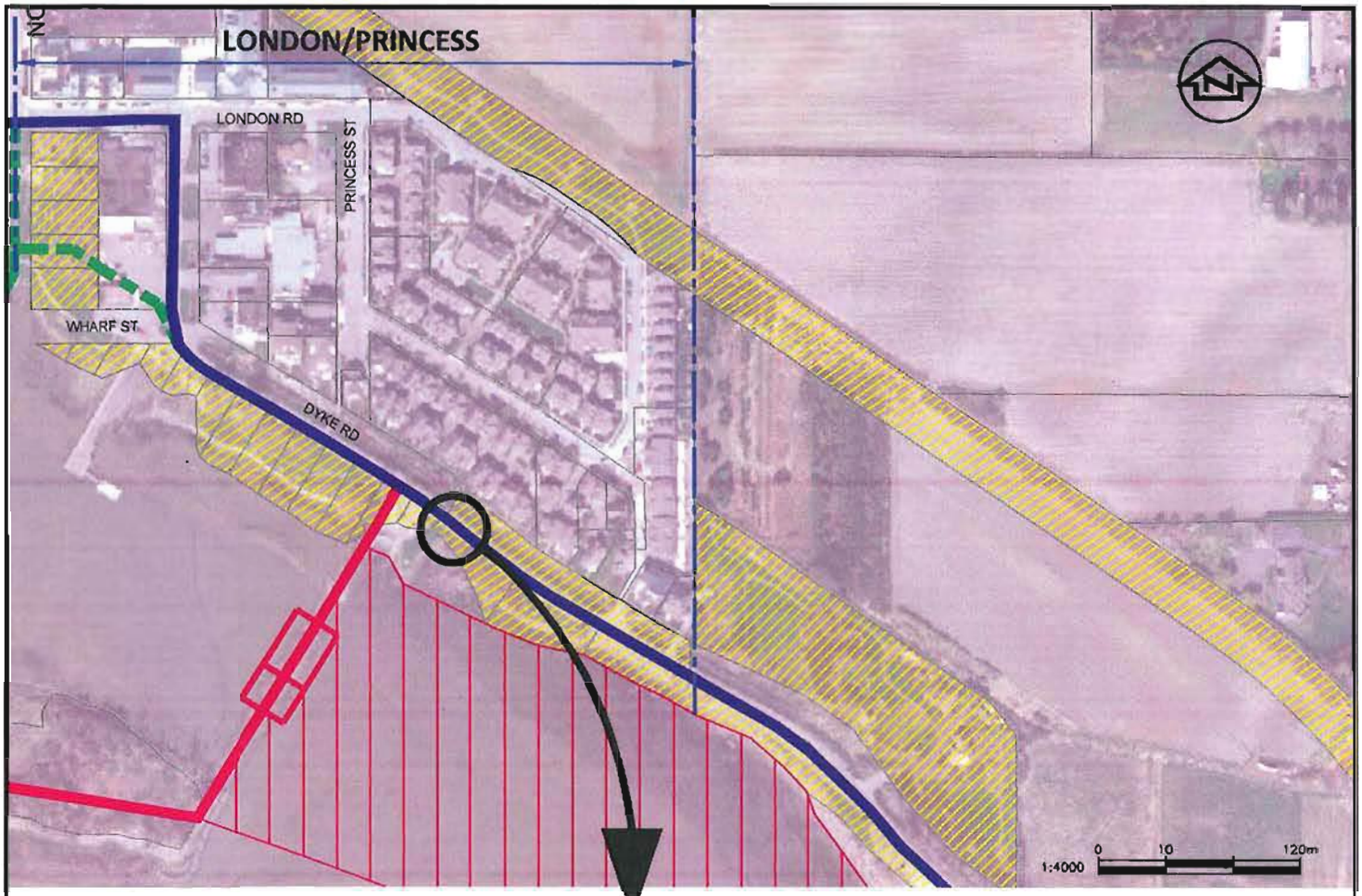

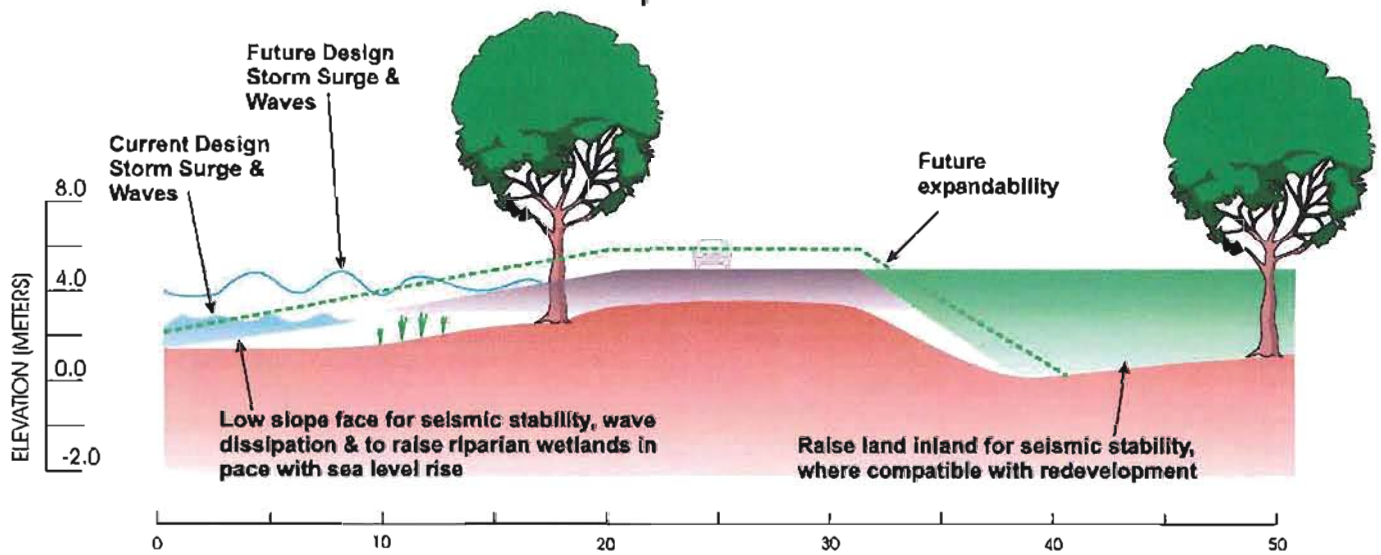

LEGEND:

- CURRENT DIKE ALIGNMENT
- PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
- PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
- REACH BOUNDARIES
- FEDERAL/PROVINCIAL OWNED LAND
- CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 1: London/Princess Option B

Delcan

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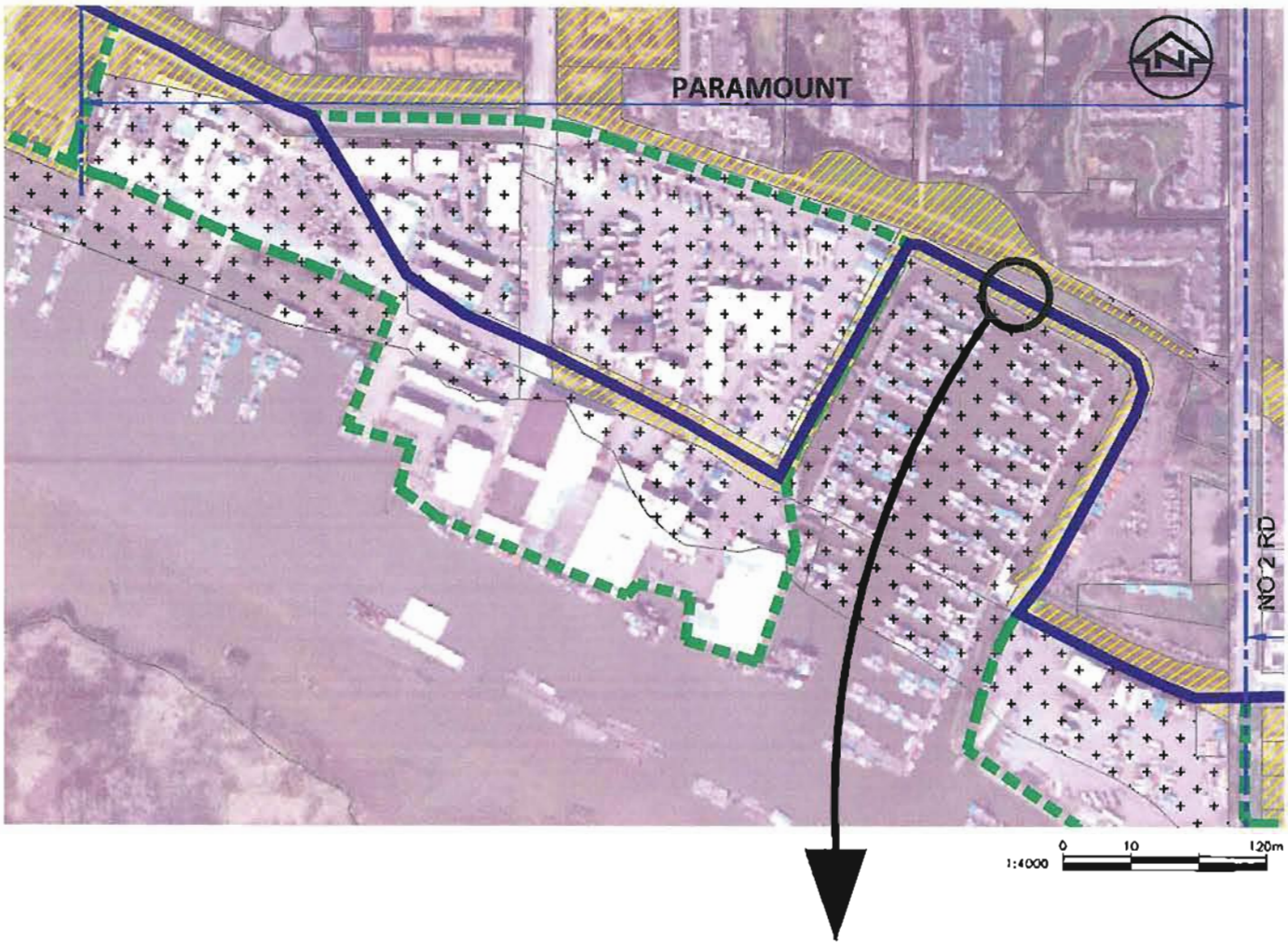

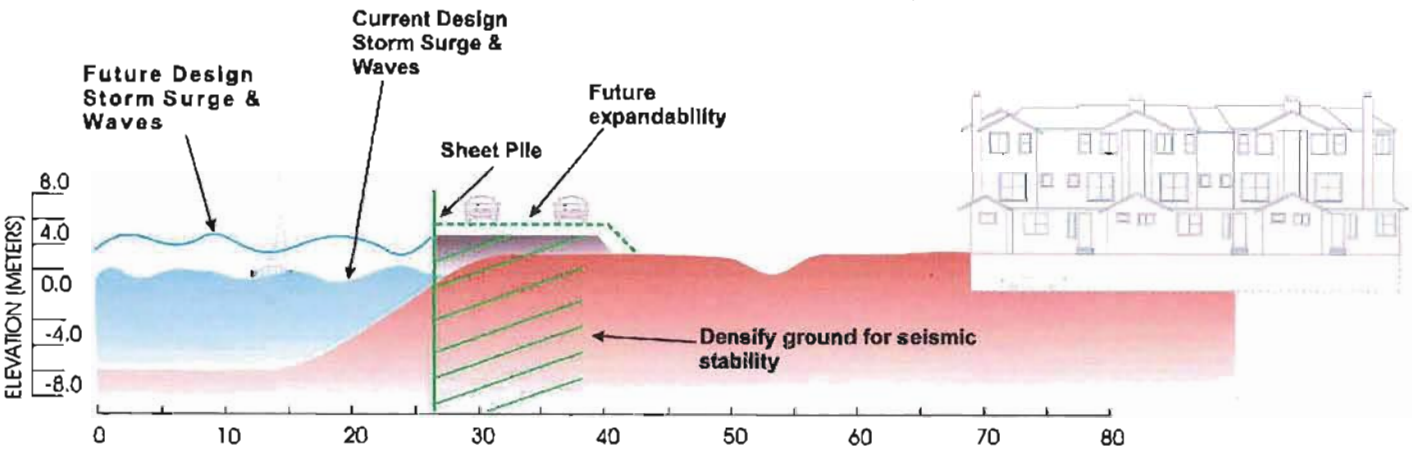

LEGEND:

CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 2: Paramount Option A

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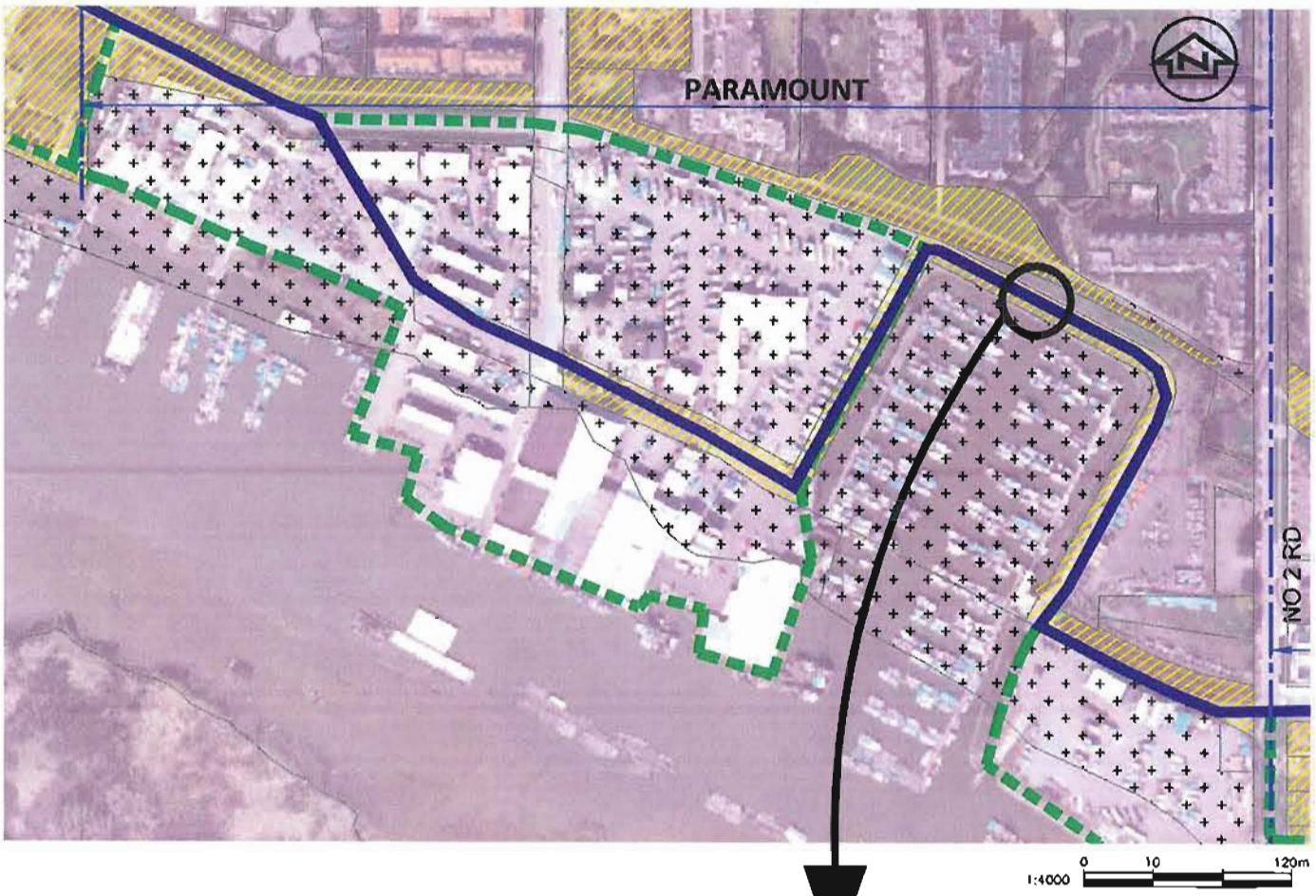

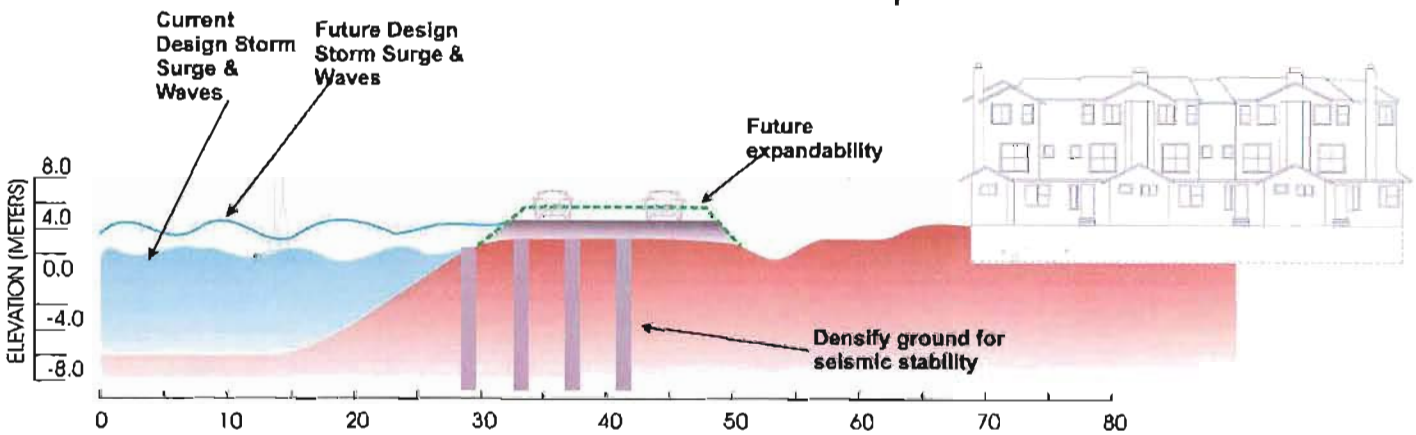

LEGEND:

CURRENT DIKE ALIGNMENT

PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS

PRIMARY ALIGNMENT 2 - STEVESTON ISLAND

REACH BOUNDARIES

FEDERAL/PROVINCIAL OWNED LAND

CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 2: Paramount Option B

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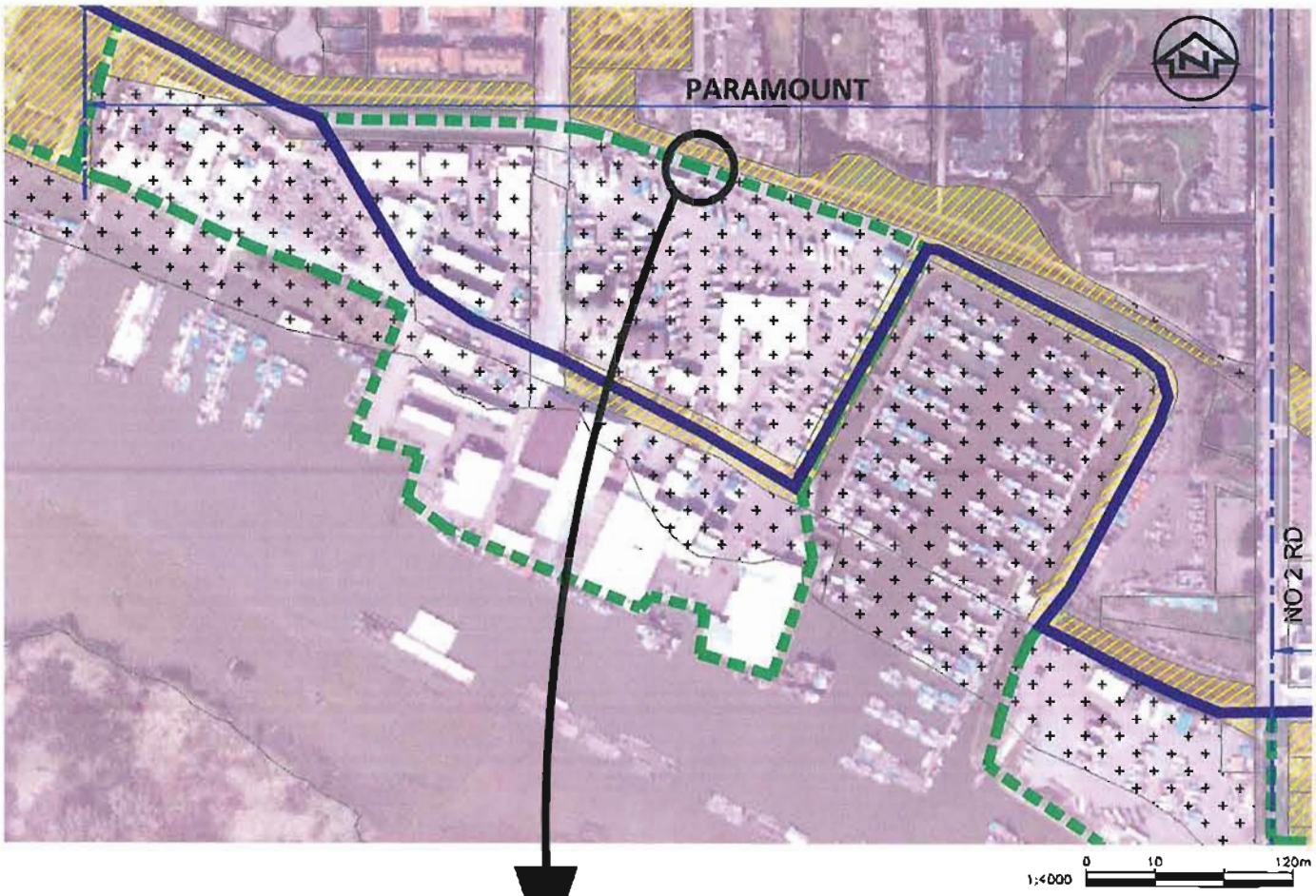
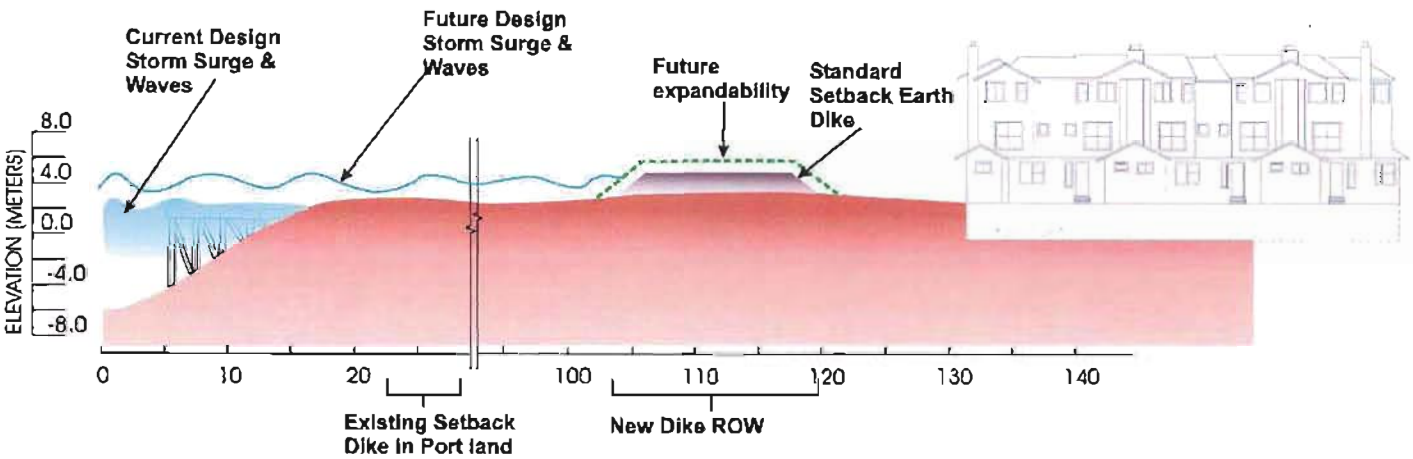


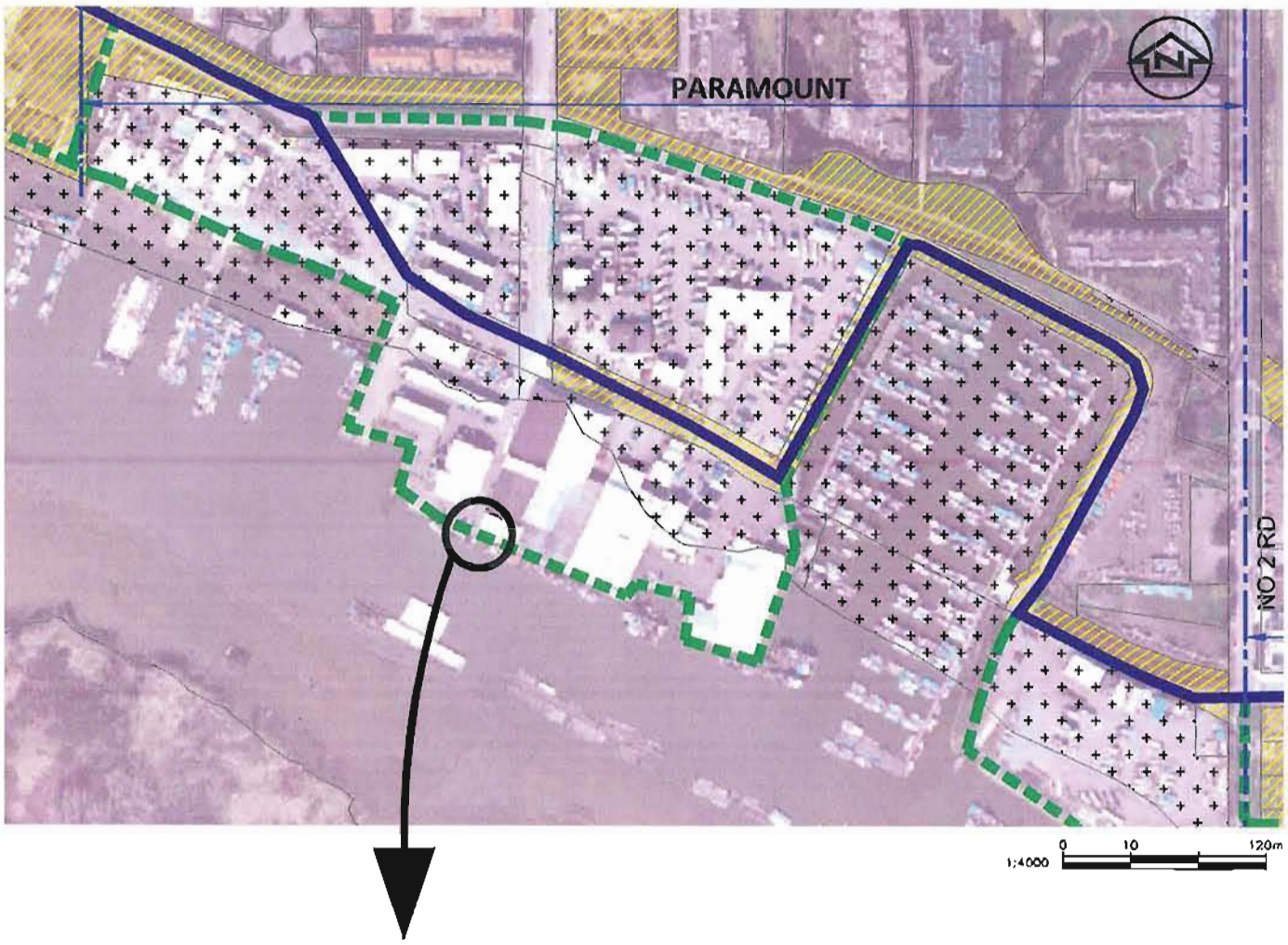


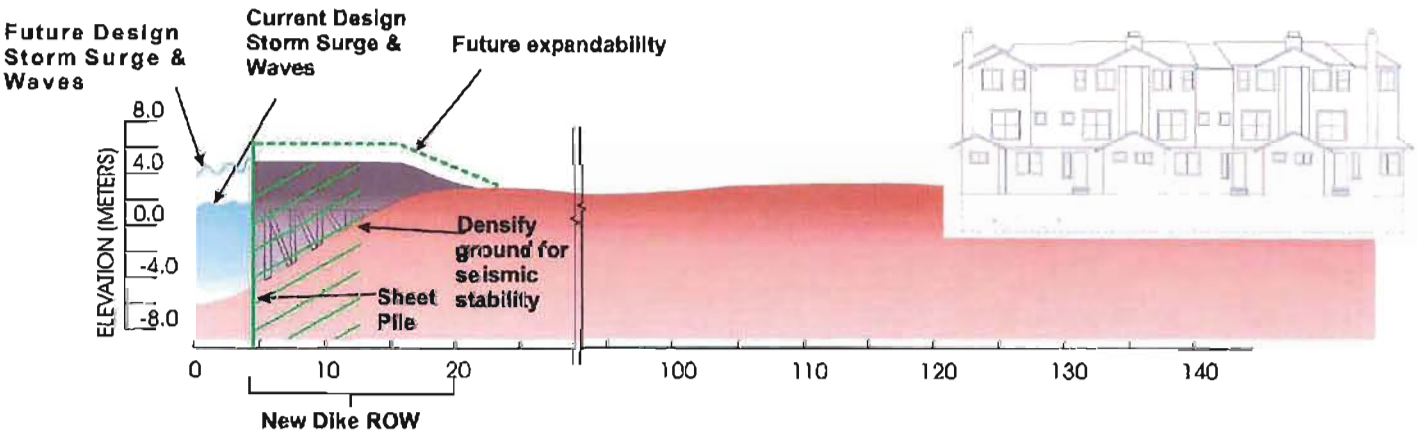
LEGEND:

CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 2: Paramount Option C

EB3763 July 2012





LEGEND:

CURRENT DIKE ALIGNMENT

PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS

PRIMARY ALIGNMENT 2 - STEVESTON ISLAND

REACH BOUNDARIES

FEDERAL/PROVINCIAL OWNED LAND

CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 2: Paramount Option D

Delcan

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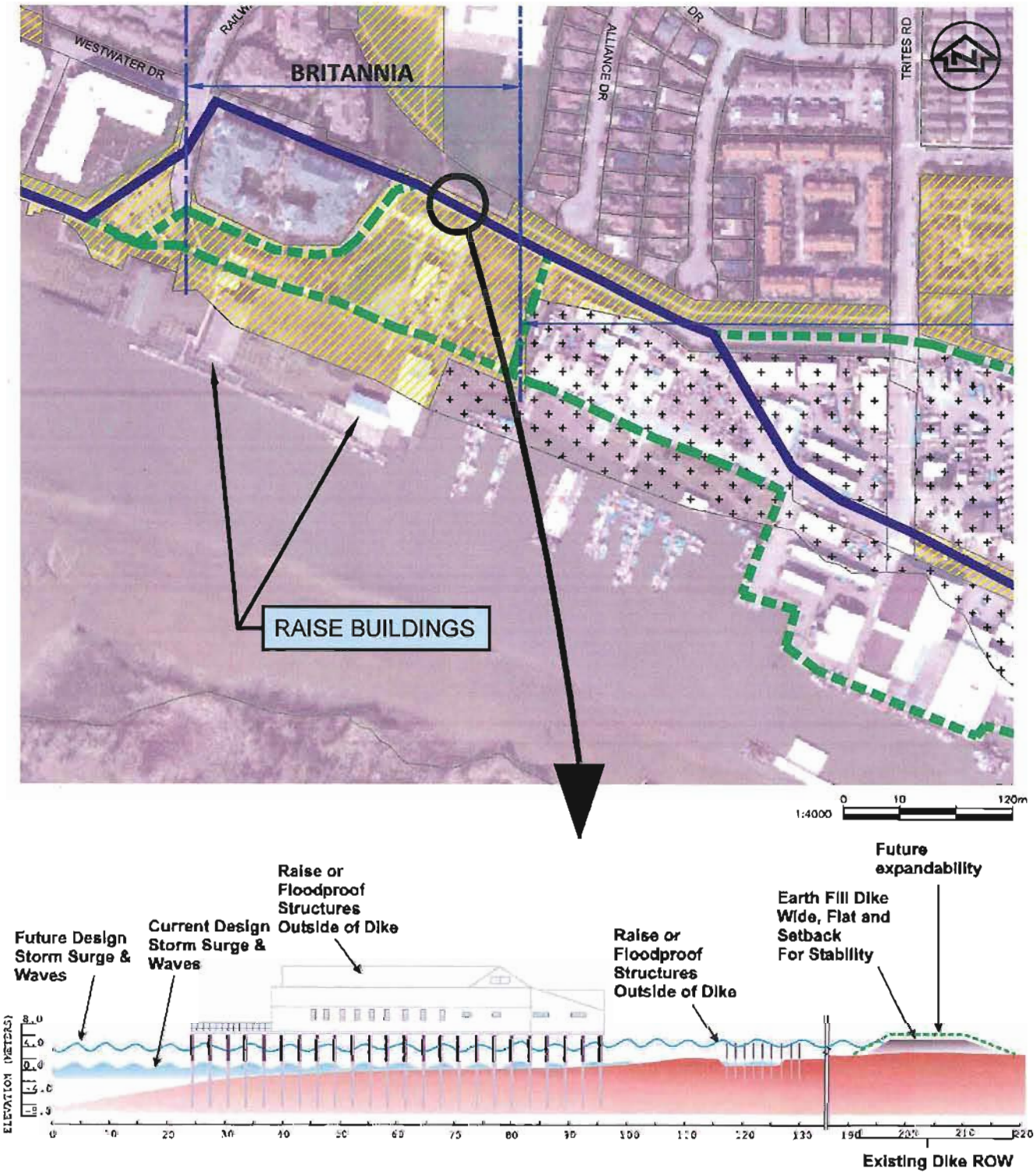

LEGEND:

CURRENT DIKE ALIGNMENT

PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS

PRIMARY ALIGNMENT 2 - STEVESTON ISLAND

REACH BOUNDARIES

FEDERAL/PROVINCIAL OWNED LAND

CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 3: Britannia Option A

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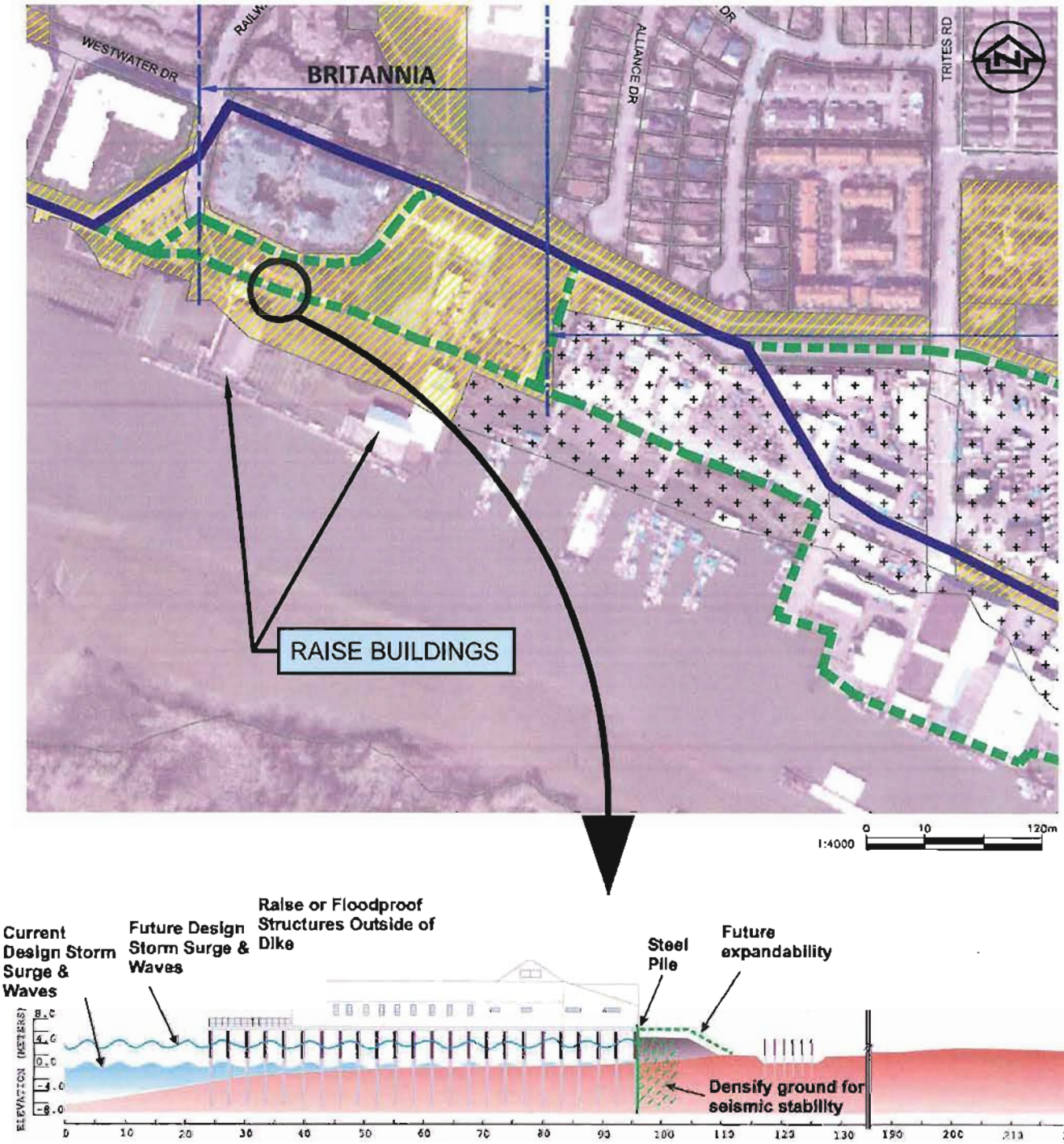

LEGEND:

CURRENT DIKE ALIGNMENT

PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS

PRIMARY ALIGNMENT 2 - STEVESTON ISLAND

REACH BOUNDARIES

FEDERAL/PROVINCIAL OWNED LAND

CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 3: Britannia Option B

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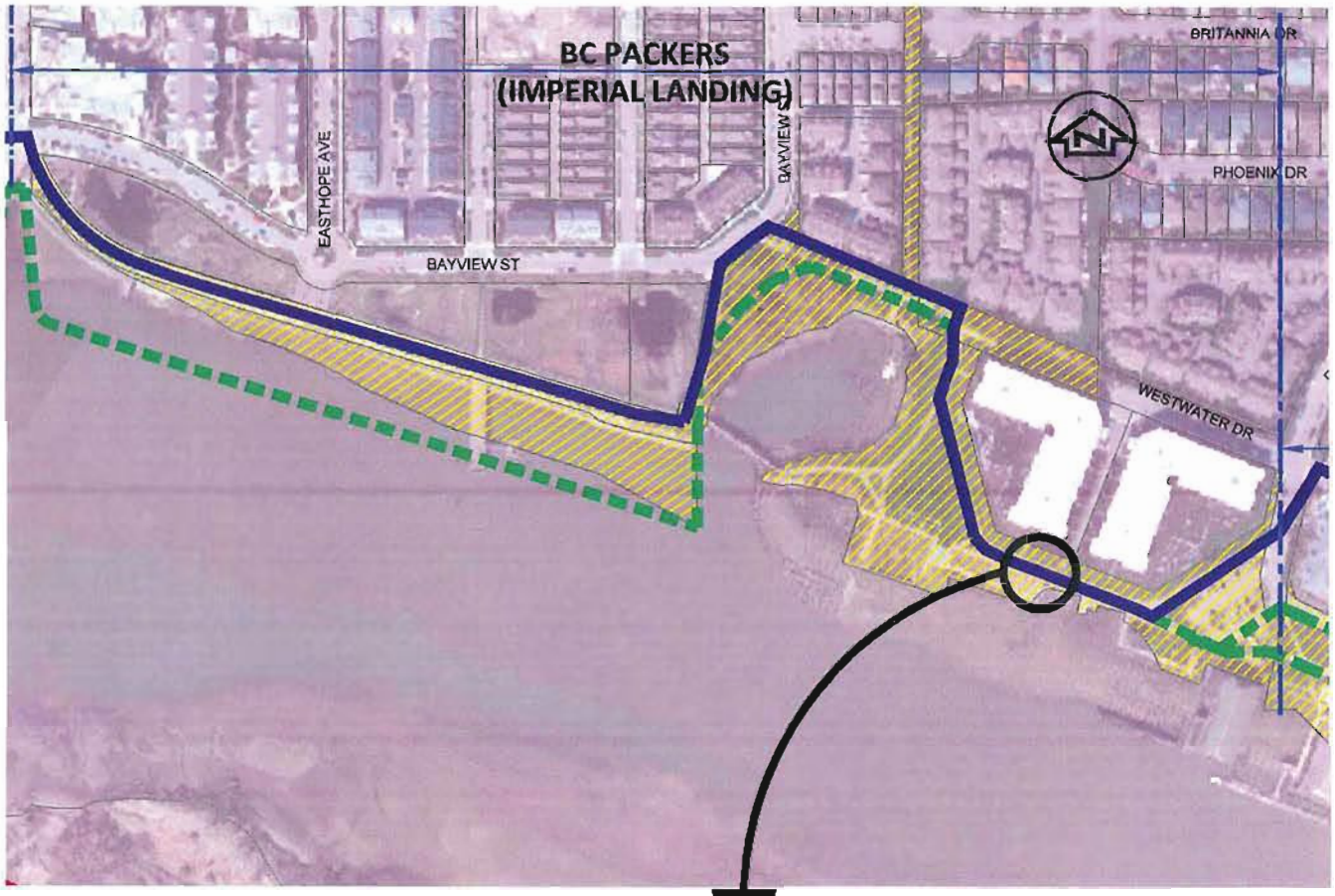

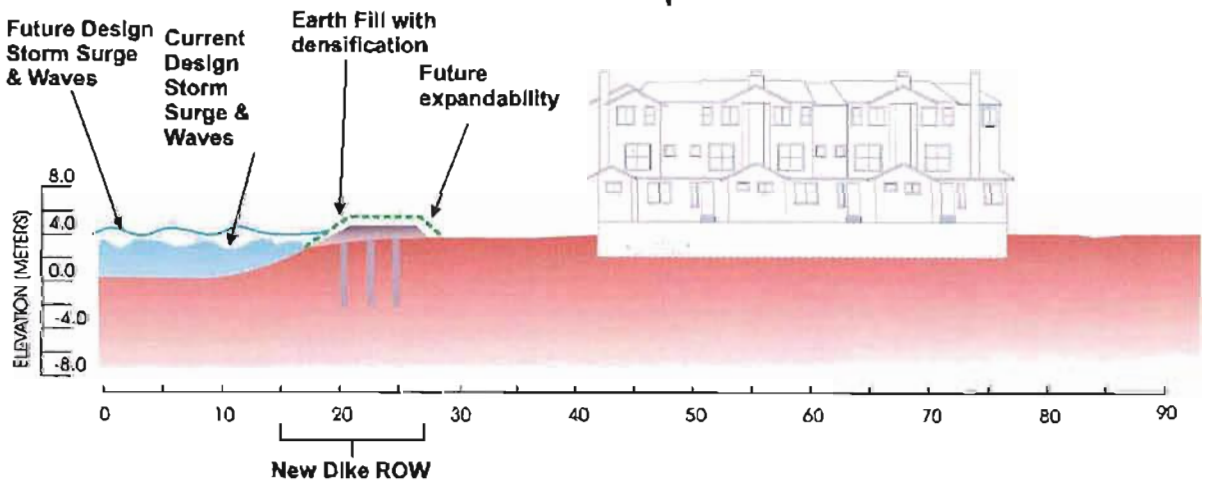

LEGEND:

CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 4: BC Packers

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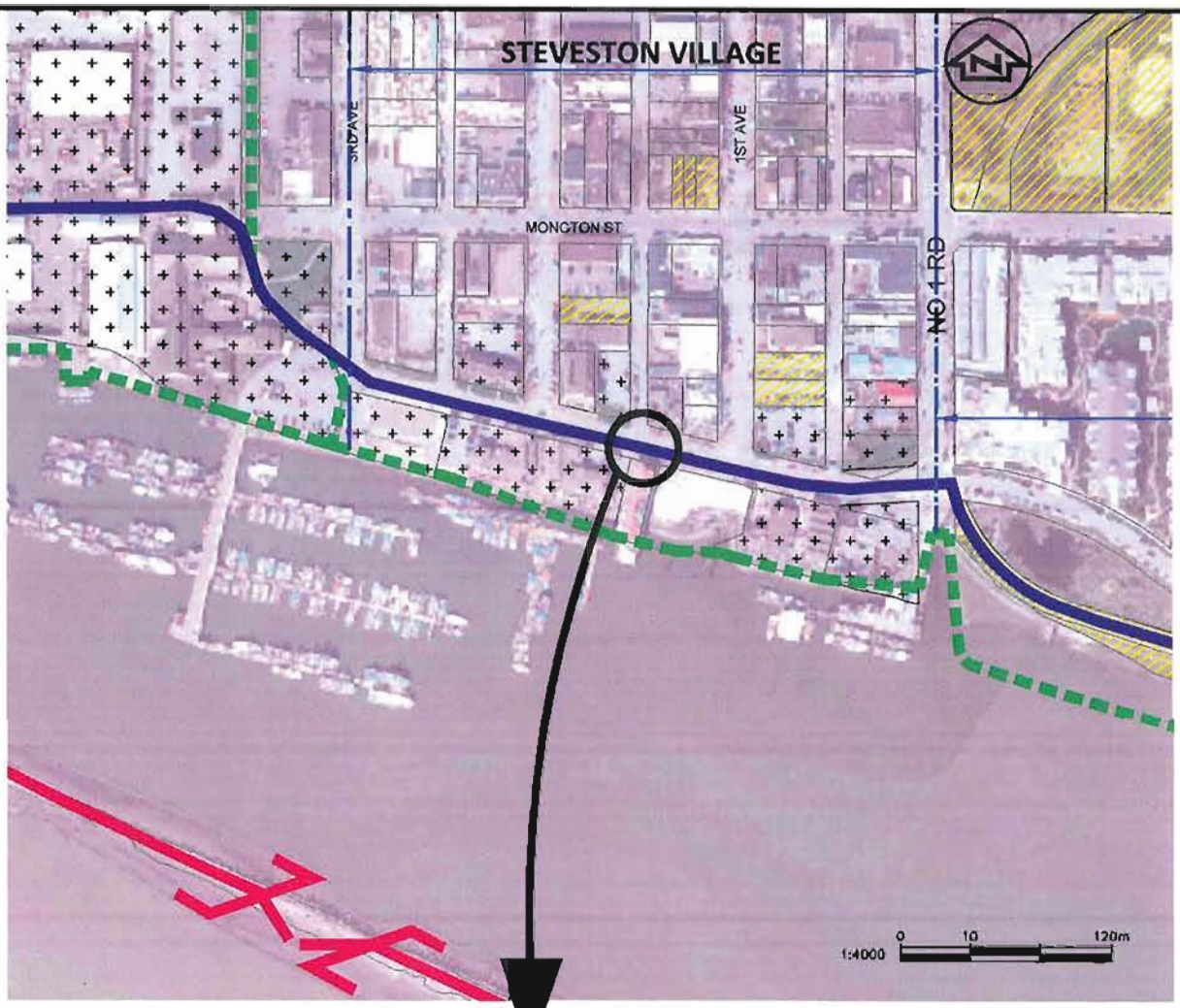

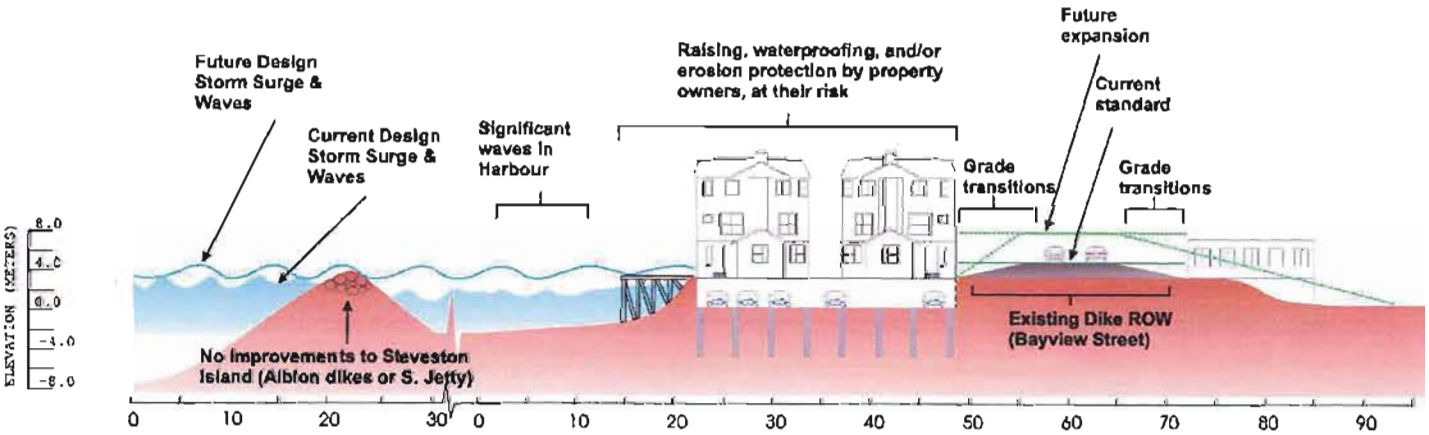

LEGEND:

CURRENT DIKE ALIGNMENT

PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS

PRIMARY ALIGNMENT 2 - STEVESTON ISLAND

REACH BOUNDARIES

FEDERAL/PROVINCIAL OWNED LAND

CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 5: Steveston Village Option A

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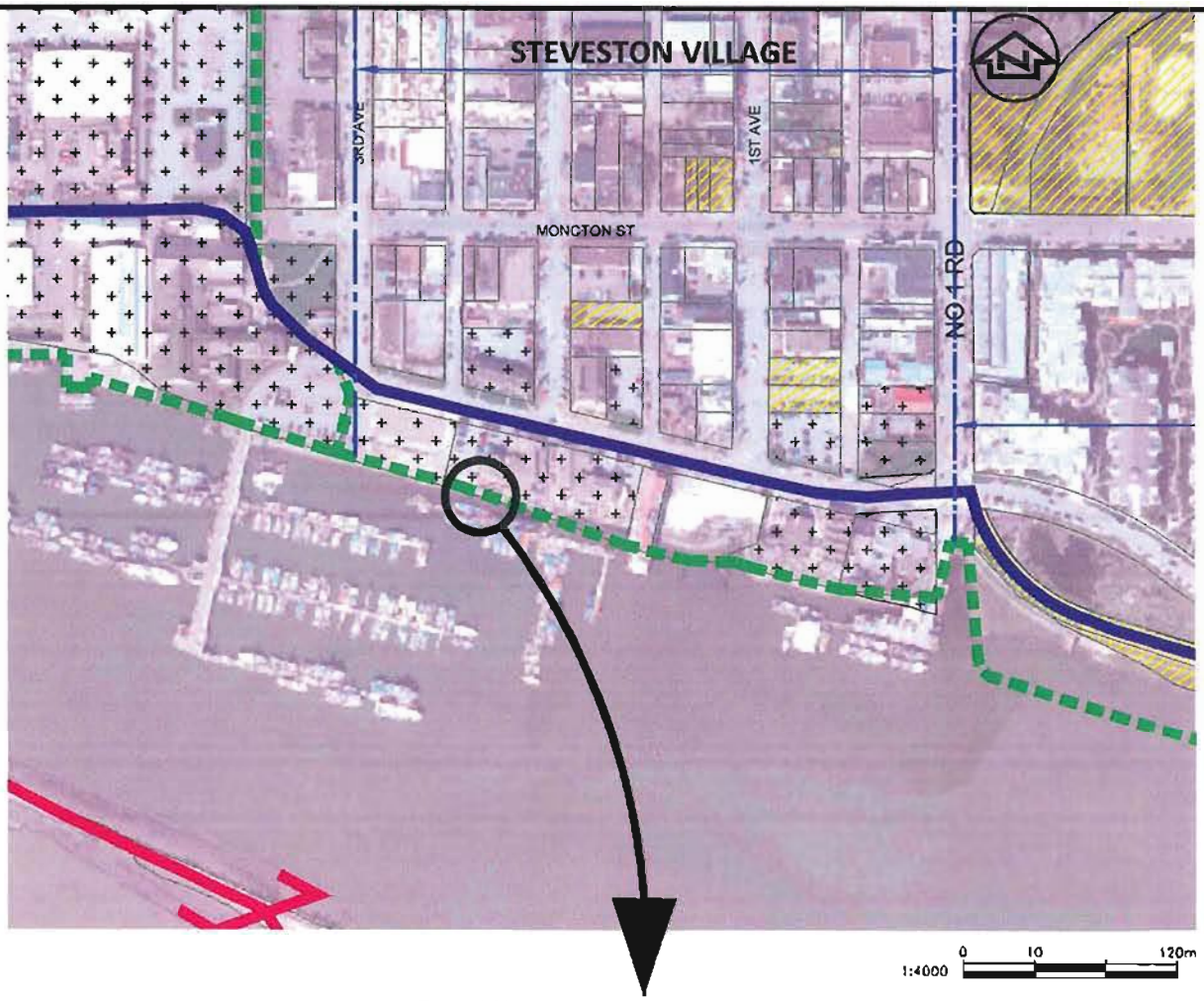

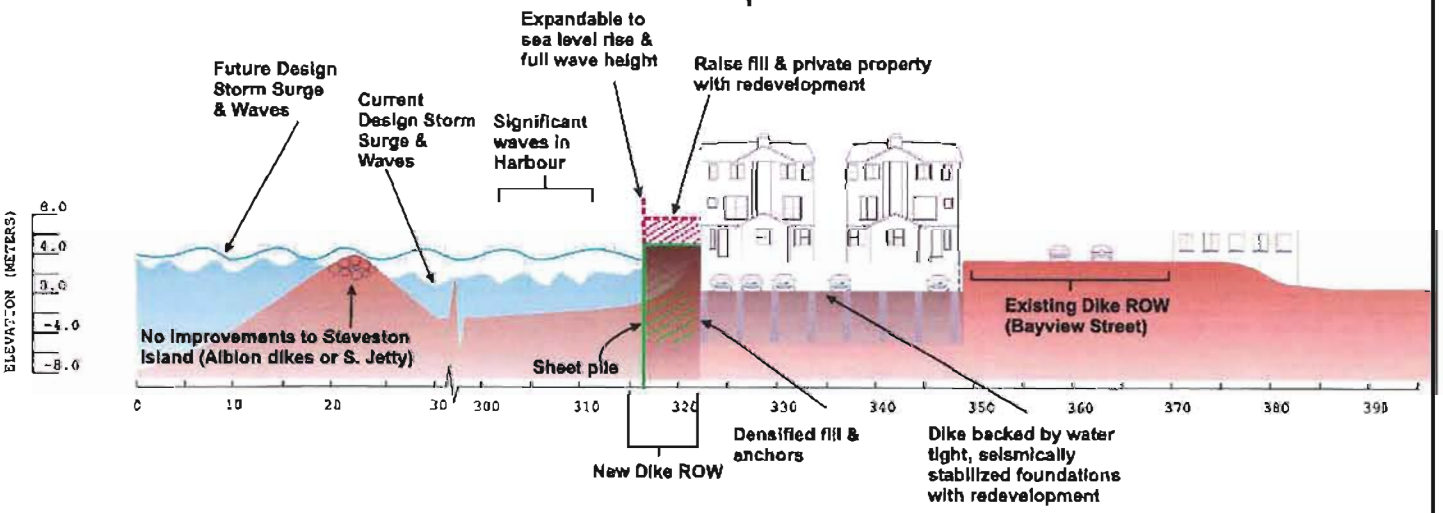

LEGEND:

CURRENT DIKE ALIGNMENT

PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS

PRIMARY ALIGNMENT 2 - STEVESTON ISLAND

REACH BOUNDARIES

FEDERAL/PROVINCIAL OWNED LAND

CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 5: Steveston Village Option B

Delcan

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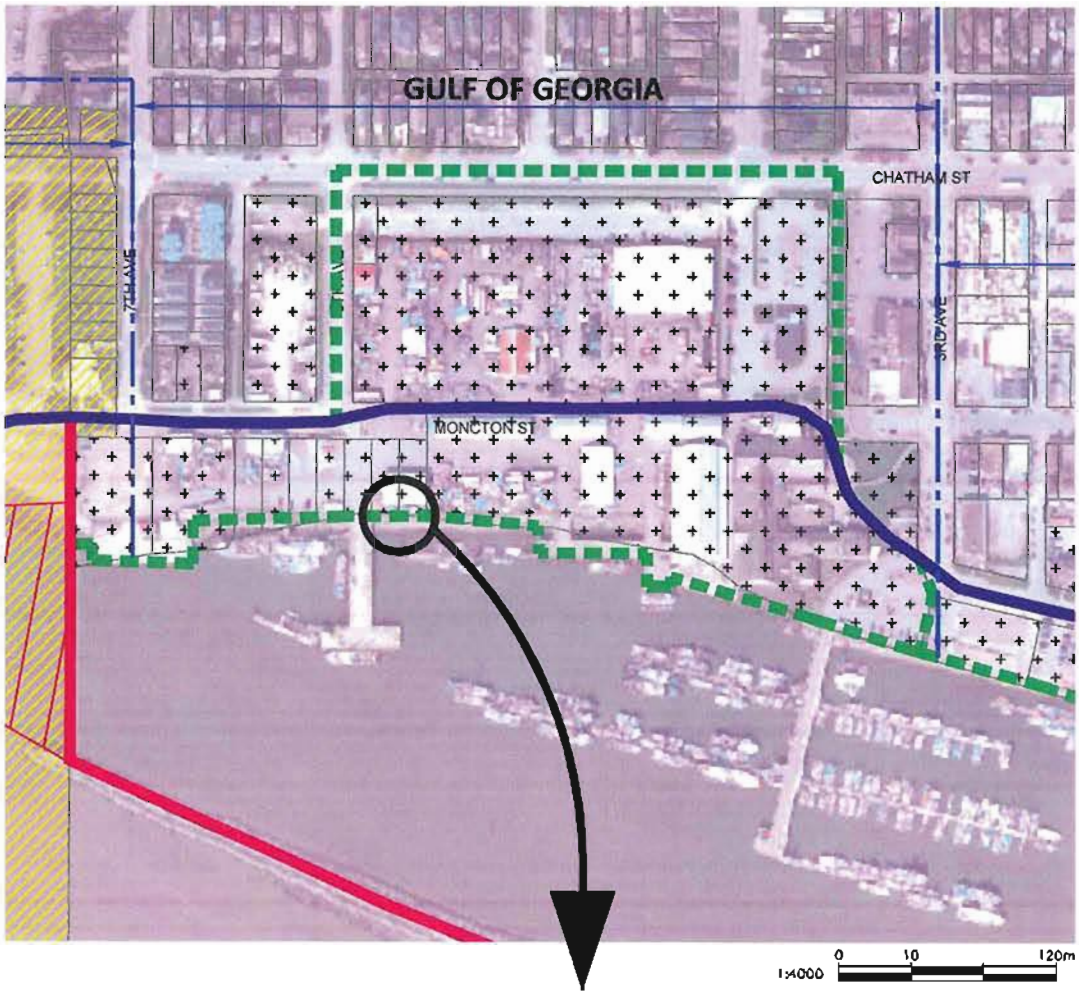

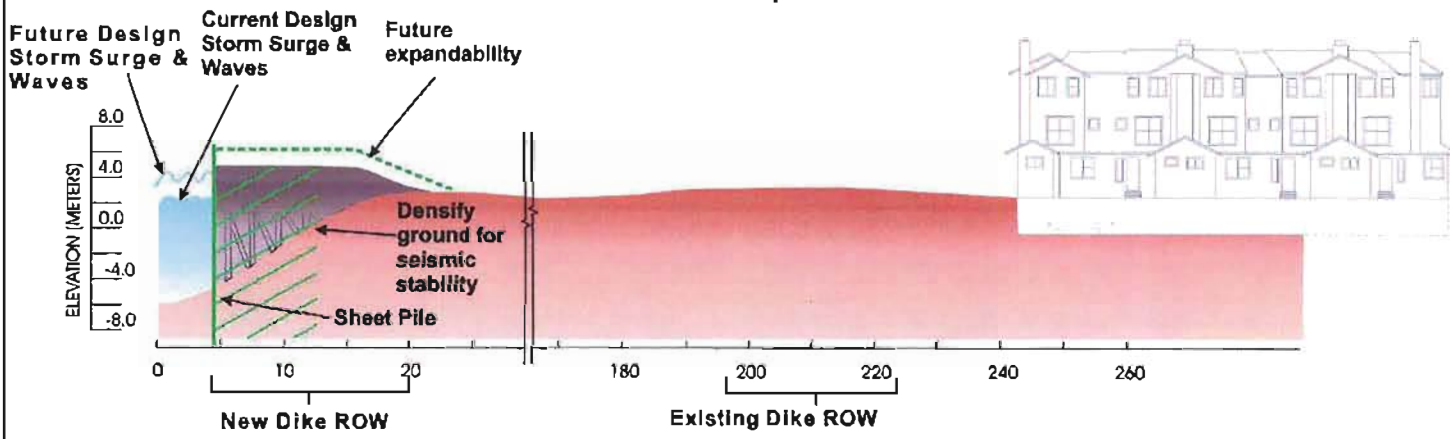

LEGEND:

CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 6: Gulf of Georgia

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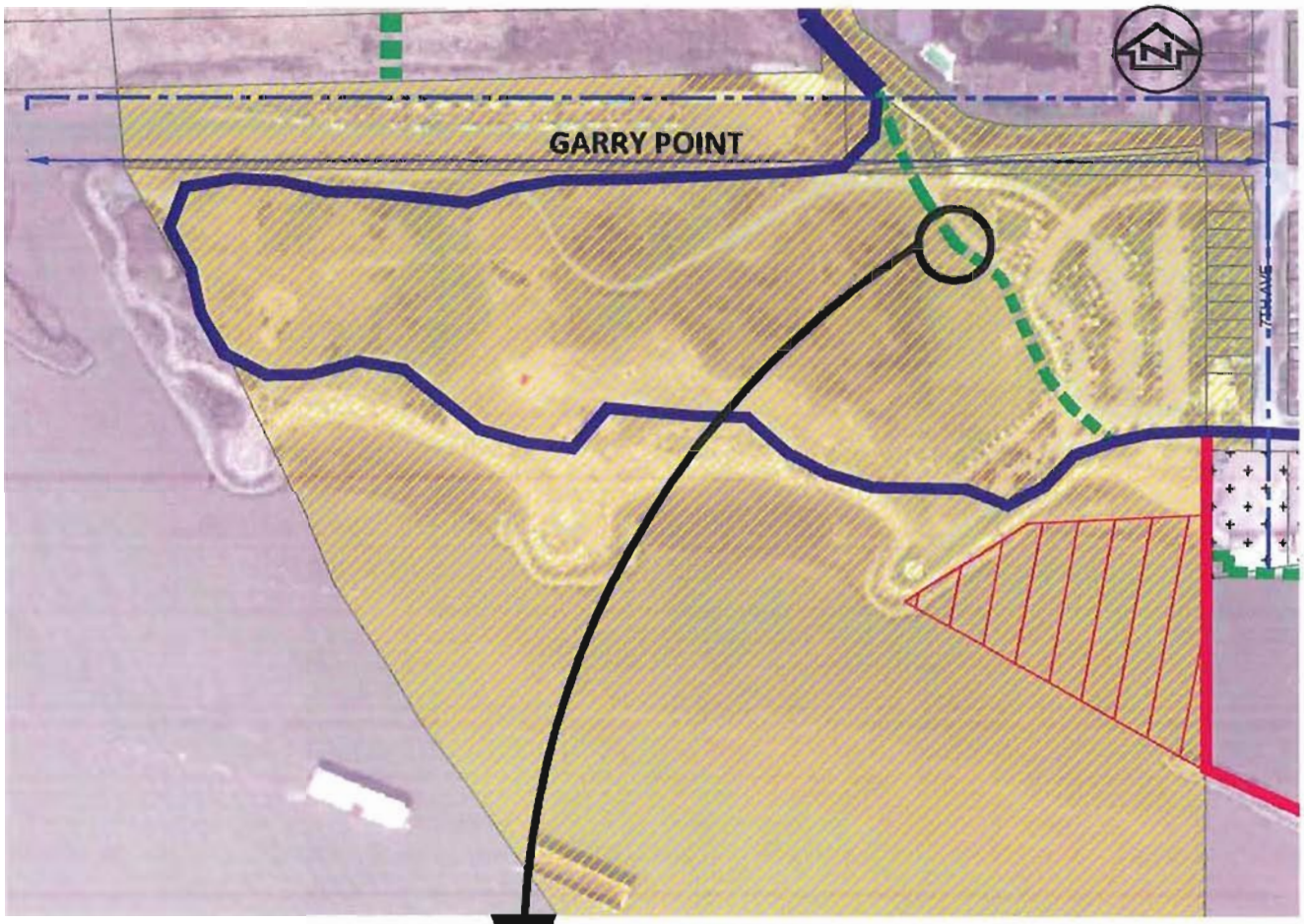
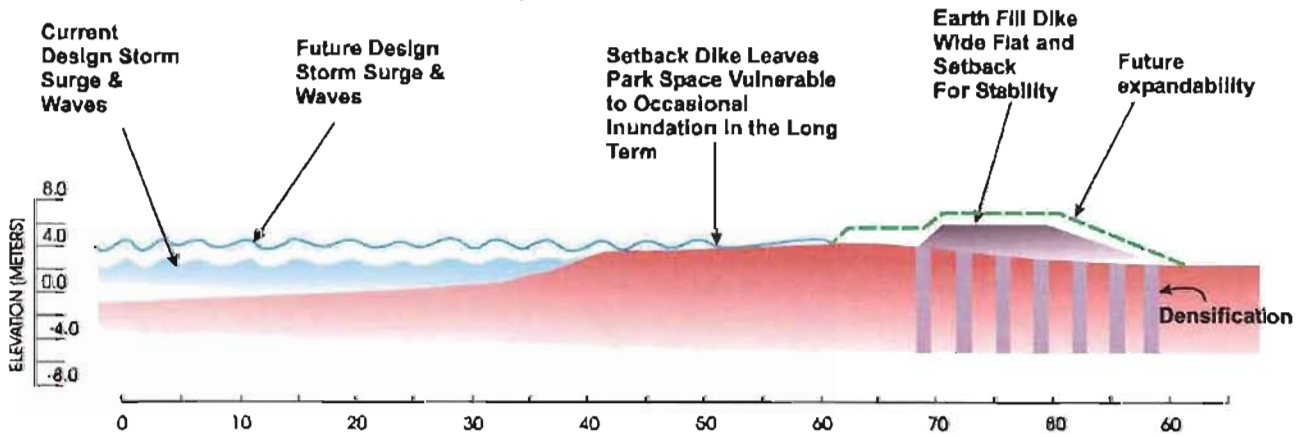




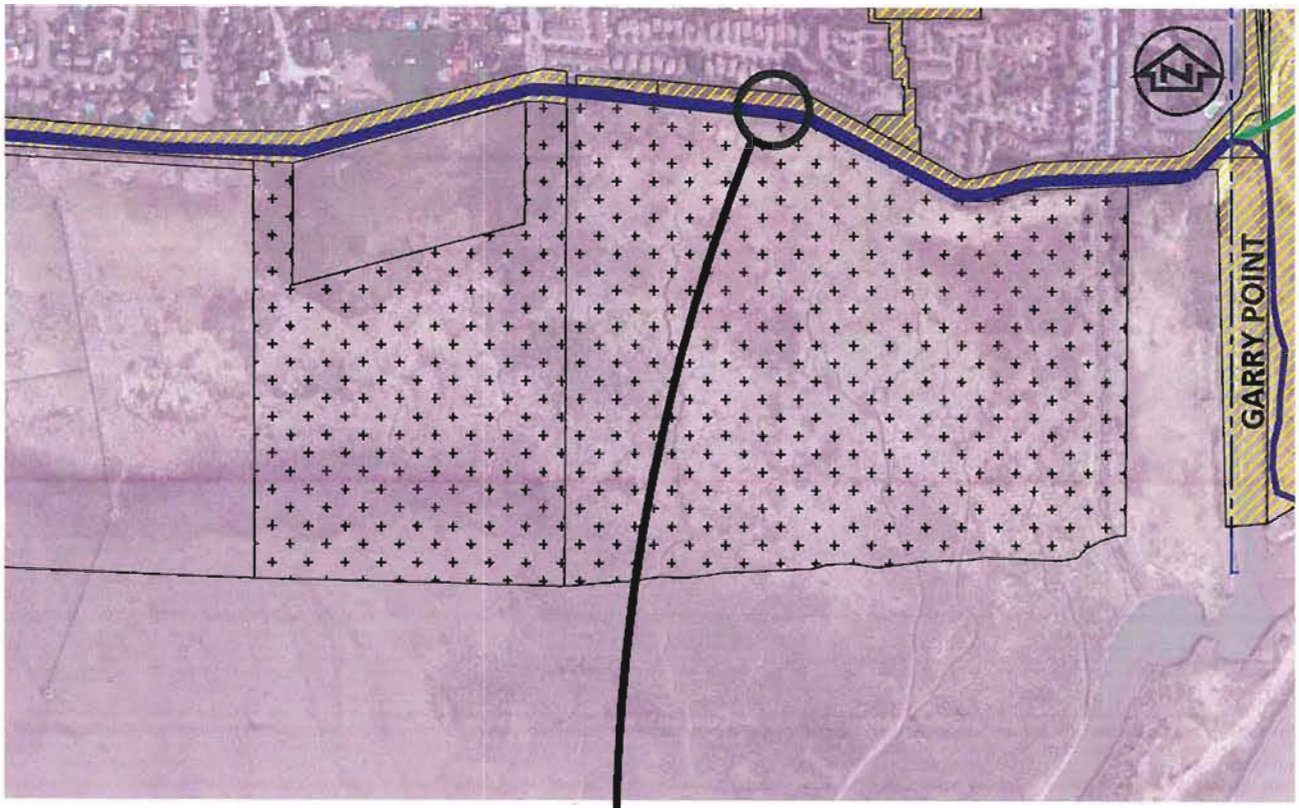
LEGEND:

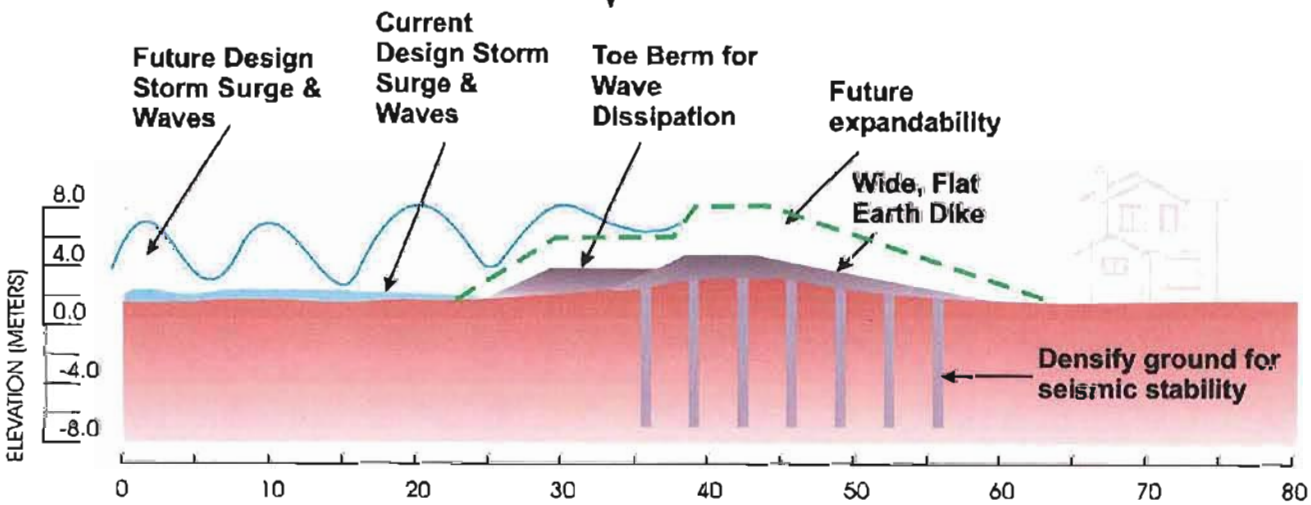
CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 7: Garry Point

Delcan

EB3763 July 2012





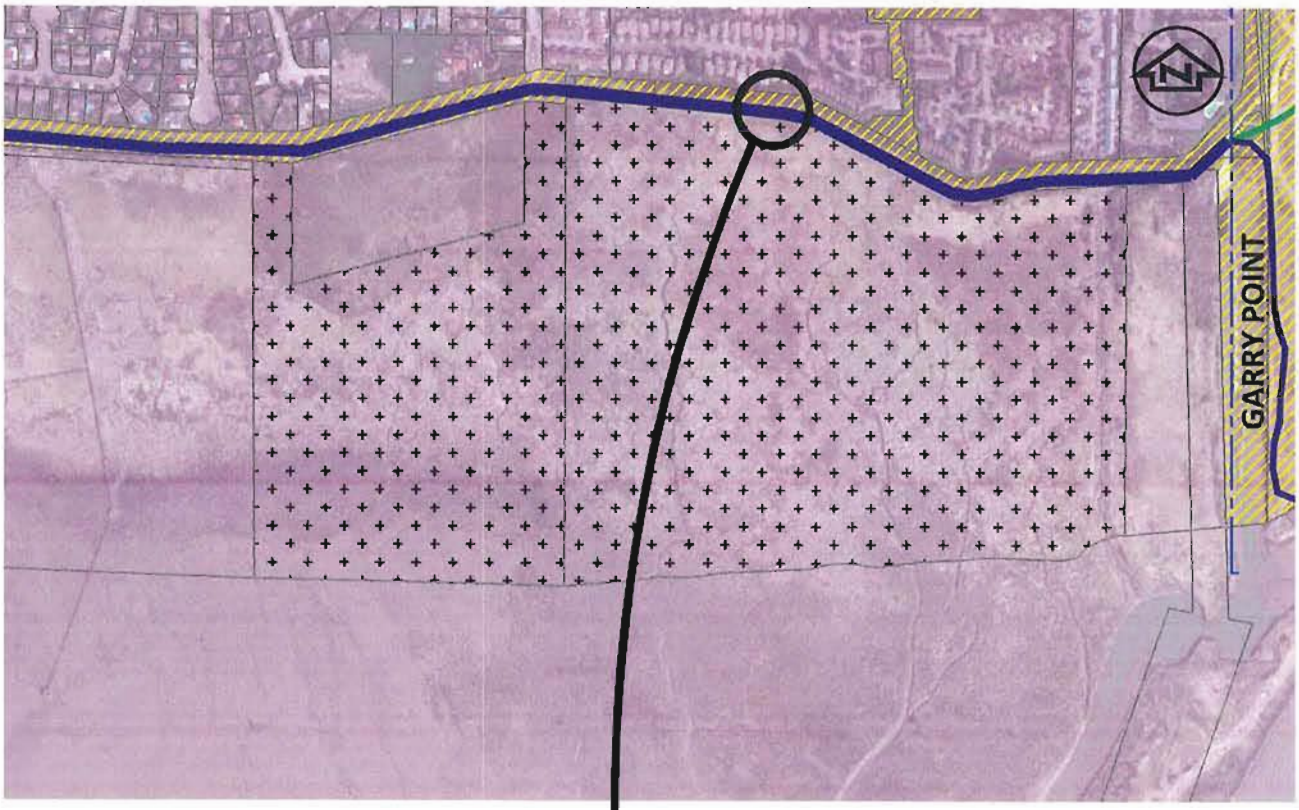
LEGEND:

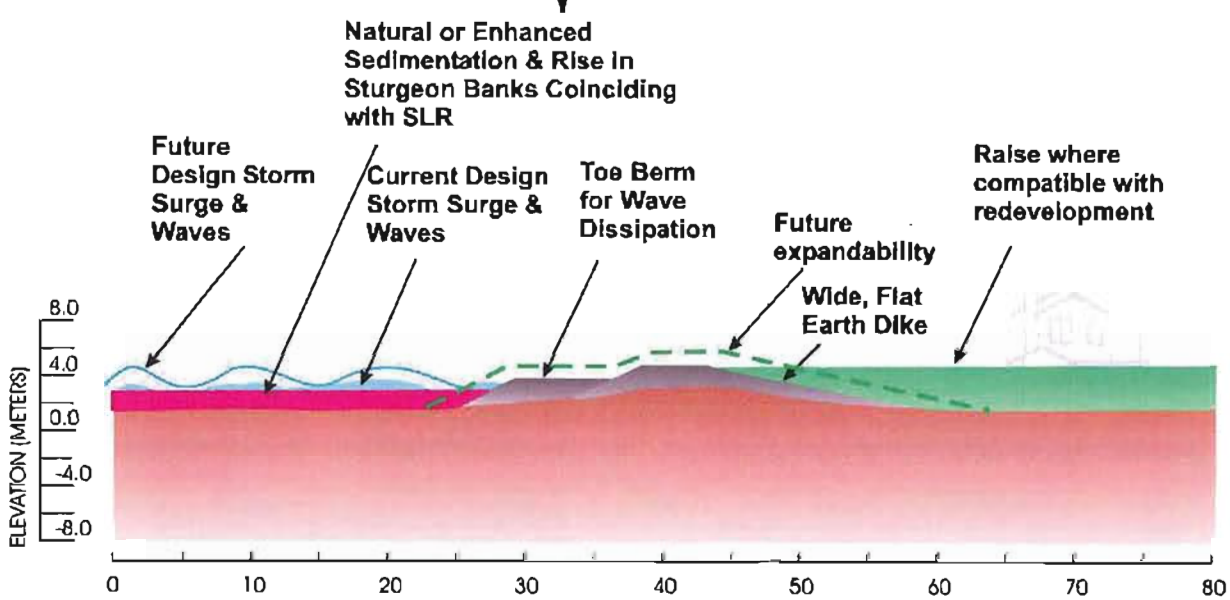
CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 8: West Dike Option A

Delcan

EB3763 July 2012





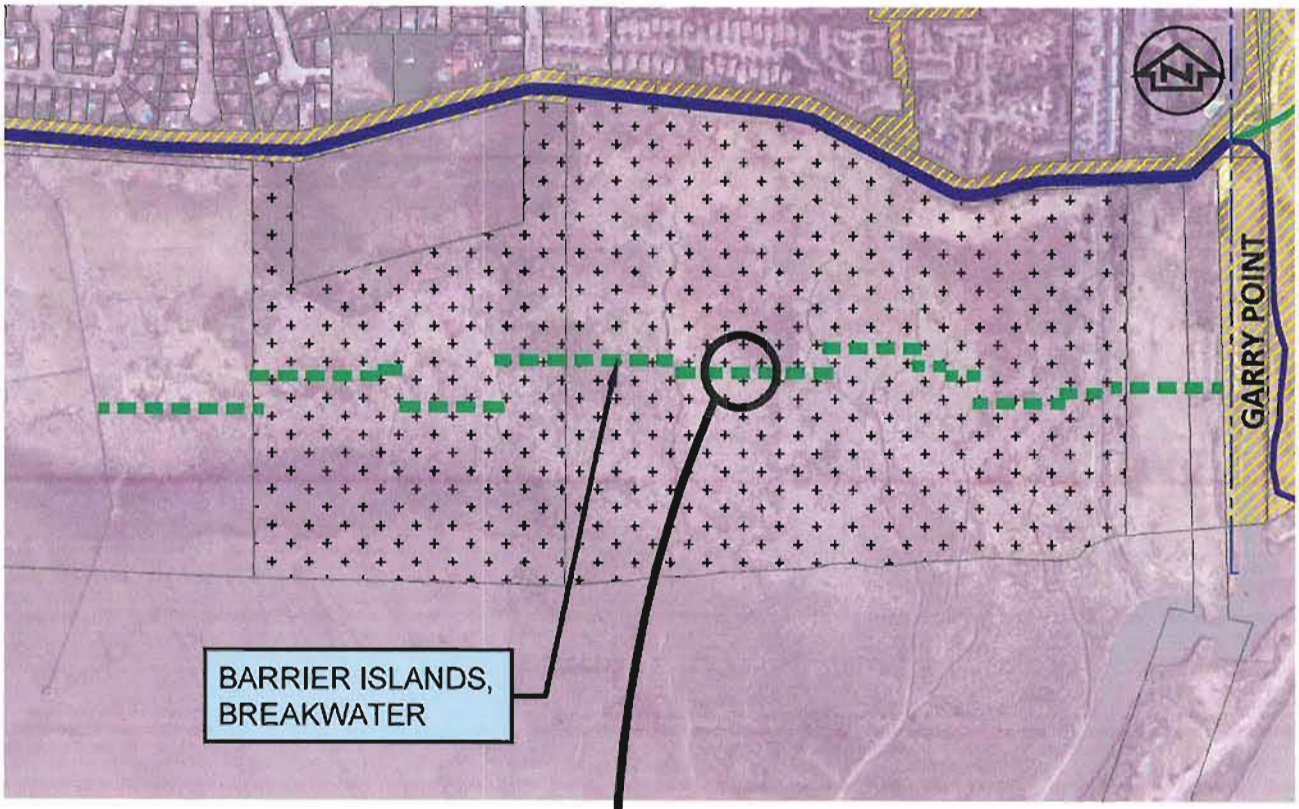
LEGEND:

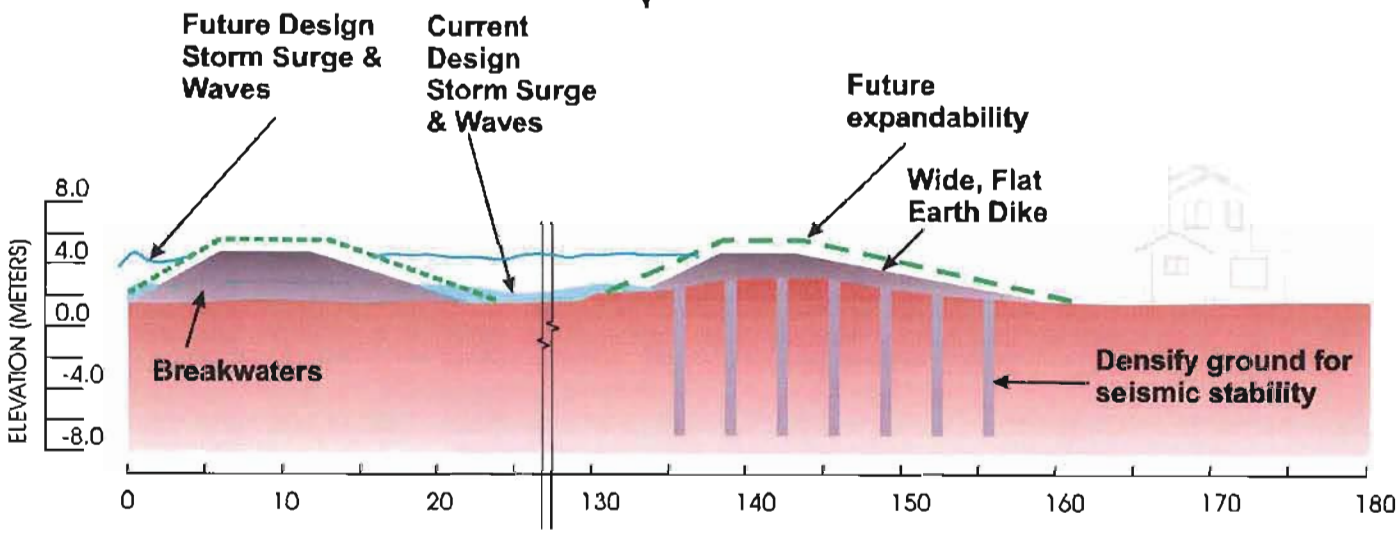
CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 8: West Dike Option B

Delcan

EB3763 July 2012





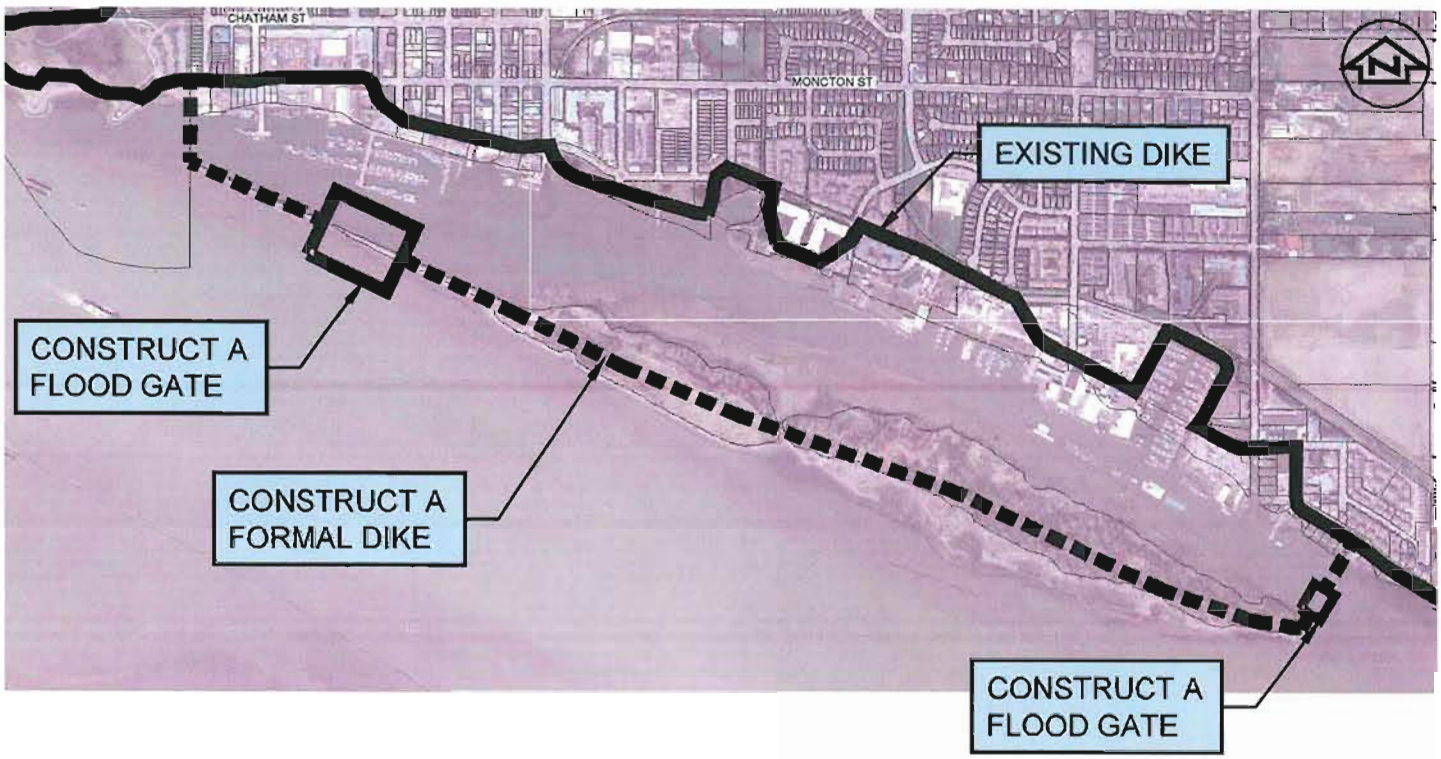
LEGEND:

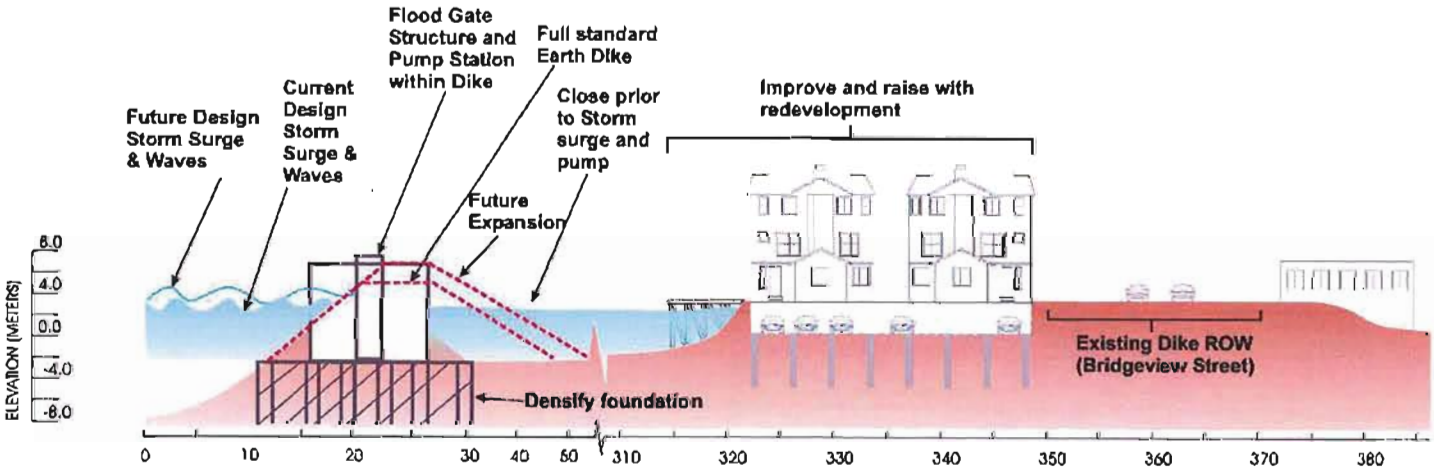
CURRENT DIKE ALIGNMENT
PRIMARY ALIGNMENT 1 - LULU ISLAND ALIGNMENTS
PRIMARY ALIGNMENT 2 - STEVESTON ISLAND
REACH BOUNDARIES
FEDERAL/PROVINCIAL OWNED LAND
CITY OWNED LAND

Flood Protection Improvement Alternatives Reach 8: West Dike Option C

Delcan

EB3763 July 2012





City of Richmond Dike Master Plan
Primary Alignment 2 - Steveston Island

Richmond

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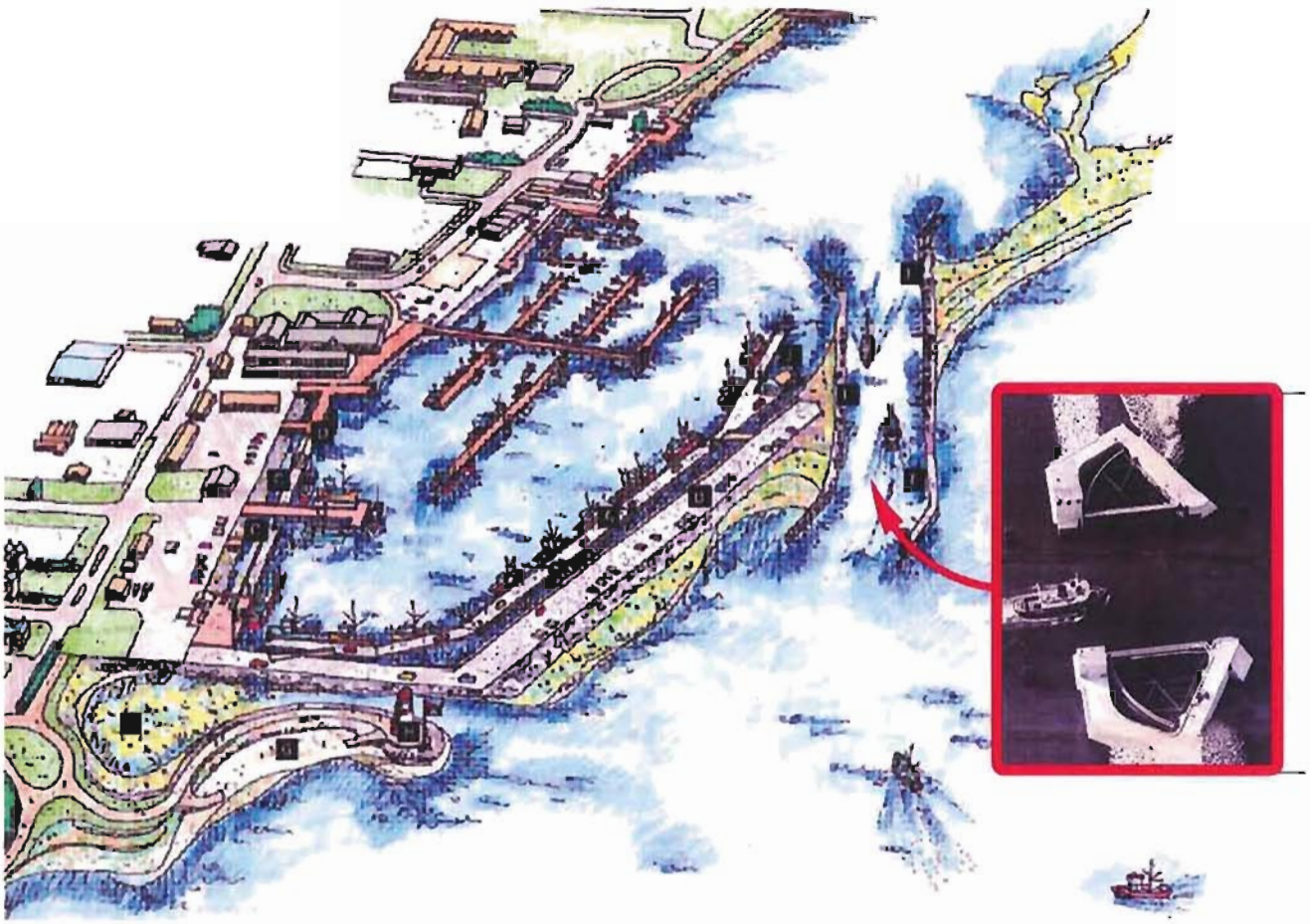
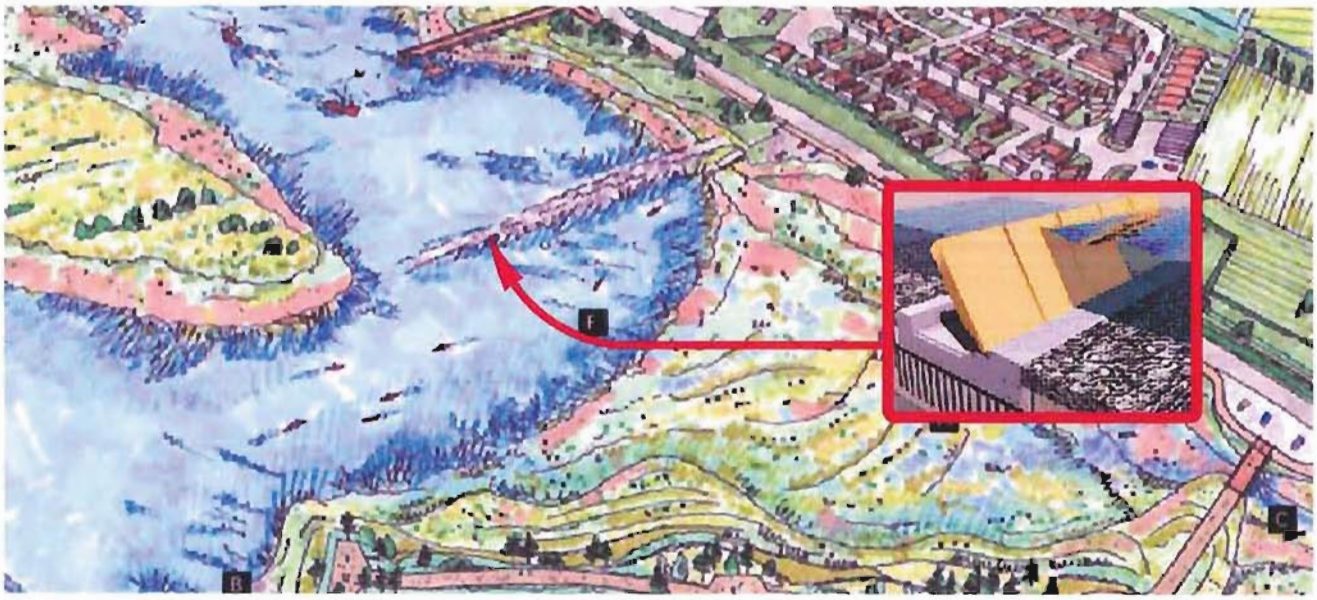
EB3763 June 2012





City of Richmond Dike Master Plan
Steveston Community Fishing Harbour Longterm Development Concept with Integrated Flood Protection

Richmond

Delcan

EB3763 June 2012

City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	June 27, 2012
From:	Tom Stewart, Director, Public Works Operations	**File:**	
Re:	**City Infrastructure Protocol Agreement and Canada Line Richmond Access Agreement Amendment No. 3**		

Staff Recommendations

1. That the City enter into the following attached agreements:

   (a) the City Infrastructure Protocol Agreement dated for reference May 1, 2011 between the City of Richmond, South Coast British Columbia Transportation Authority and Intransit BC Limited Partnership; and

   (b) the Canada Line Richmond Access Agreement Amendment No. 3 made as of August 12, 2009 between the City of Richmond and the South Coast British Columbia Transportation Authority; and

2. That the Mayor and City Clerk be authorized to execute the above-mentioned agreements on the City's behalf.

Tom Stewart, AScT
Director, Public Works Operations
(604-233-3301)
Att. 2

REPORT CONCURRENCE			
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**	
Law Parks, Recreation and Cultural Services	☑ ☑		
REVIEWED BY SMT SUBCOMMITTEE	**INITIALS:**	**REVIEWED BY CAO**	**INITIALS:**

Staff Report

Origin

At the Regular Council Meeting of March 29, 2005, Council endorsed the signing of the Richmond Airport Vancouver Rapid Transit Line Richmond Access Agreement. This agreement provided Canada Line Rapid Transit Inc. ("CLCO") exclusive possession of the System Required Lands for the operation of the Richmond portion of the RAV Line and granted the City certain rights to install, operate and maintain City infrastructure within the System Required Lands and on the RAV line infrastructure. This agreement was subsequently supplemented and amended (collectively, the "Richmond Access Agreement").

Effective August 12, 2009, CLCO transferred all of its right, title, and interest in and to the Richmond Access Agreement to the South Coast British Columbia Transportation Authority ("Translink").

Translink then entered into a separate agreement entitled the Amended and Restated RAV Concession Agreement ("Concession Agreement"), with Intransit BC Limited Partnership ("Intransit BC"). This agreement dealt with the design, construction, operation and maintenance of the System.

Pursuant to an assignment agreement entitled "COR Assignment Agreement", certain rights and benefits of TransLink under the Richmond Access Agreement were assigned or sub-licensed to IntransitBC, including with respect to City infrastructure for the duration of the term of the Concession Agreement.

Pursuant to an assumption agreement entitled "Concessionaire Assumption Agreement", Intransit BC assumed certain obligations and liabilities of TransLink under the Richmond Access Agreement, including with respect to City infrastructure, for the duration of the term of the Concession Agreement.

Purpose

The purpose of this staff report is to recommend that the following two agreements be signed by the Mayor and City Clerk:

1. City Infrastructure Protocol Agreement, and
2. Canada Line Richmond Access Agreement Amendment No 3.

Analysis

Canada Line Richmond Access Agreement Amendment No. 3

The proposed Canada Line Richmond Access Agreement Amendment No. 3 **(attachment 1)** does not replace the Richmond Access Agreement but amends it by identifying deletions or additions to the System Required Lands referred to in the Richmond Access Agreement. These changes are required because of minor alignment or location changes that occurred to

accommodate construction of the Canada Line. These outstanding land issues were tracked by staff during construction while CLCO was dissolved and the responsibilities were transferred to a new group at Translink. It is consistent with the intent of the Richmond Access Agreement that was previously endorsed by Council. Staff recommend the proposed agreement be executed by the Mayor and City Clerk on the City's behalf.

City Infrastructure Protocol Agreement

The recent public art and decorative lighting installations were challenged by Translink given they were not permitted within the context of the original agreements. As such, Staff have been extensively involved in the development of the City Infrastructure Protocol Agreement **(attachment 2)** and are in agreement with its terms. The purpose of the City Infrastructure Protocol Agreement is to provide supplemental guidance only to the application of the Richmond Access Agreement, the Assignment Agreement and the Assumption Agreement and not to amend such agreements. Instead it sets out guidelines and requirements respecting the installation and maintenance of new or existing City owned infrastructure on the RAV System Required Lands or RAV infrastructure. It is consistent with the intent of the Richmond Access Agreement that was previously endorsed by Council. Staff therefore recommend the proposed agreement be executed by the Mayor and City Clerk on the City's behalf.

Financial Impact

There is no direct financial impact from entering into these agreements. However, these agreements do provide a commitment by the City to pay nominal costs incurred by Translink or Intransit BC for any new design, installation, review, or maintenance of any City owned infrastructure on any System Required Lands or RAV infrastructure.

Conclusion

The proposed Richmond Access Agreement Amendment No. 3 between the City and Translink addresses any omissions to the System Required Lands identified in the Richmond Access Agreement.

The City Infrastructure Protocol Agreement between the City, Translink, and Intransit B.C. provides supplemental guidance to the application of the Access Agreement, the Assignment Agreement and the Assumption Agreement and does not amend such agreements. It establishes requirements regarding the installation of any City owned infrastructure on RAV system required lands or RAV infrastructure.

The terms and conditions of the proposed agreements sufficiently protect the City's interests.

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

CANADA LINE

RICHMOND ACCESS AGREEMENT

AMENDMENT NO. 3

This Agreement is made as of August 12, 2009 (the "**Amending Date**"):

BETWEEN:

CITY OF RICHMOND
6911 No. 3 Road
Richmond, British Columbia V6Y 2C4

(the "**City**")

AND:

SOUTH COAST BRITISH COLUMBIA TRANSPORTATION AUTHORITY
1600 - 4720 Kingsway
Vancouver, British Columbia V5H 4N2

("**TransLink**")

RECITALS:

A. The City, Canada Line Rapid Transit Inc. ("**CLCO**") and TransLink entered into the Access Agreement in respect of, *inter alia*, the design, construction, operation and maintenance of the Richmond Segment of the Project, which agreement has been subsequently supplemented and amended by the parties;

B. Pursuant to the Access Agreement, the City granted to CLCO the exclusive possession of the System-Required Lands as required for the operation of the System;

C. Effective August 12, 2009, CLCO transferred all of its right, title and interest in and to the Access Agreement to TransLink;

D. TransLink has requested the City, and the City has agreed to include certain Additional Lands and other lands, which are not Additional Lands but are owned or controlled by the City, as System-Required Lands in accordance with Sections 2.7 and 2.8 of the Access Agreement; and

E. The parties have further agreed to consolidate the System Required Lands added to the Access Agreement by the agreement entitled *Amendment No. 1 Richmond • Airport • Vancouver Rapid Transit Line Richmond Access Agreement* dated October 1, 2007 into this Agreement.

NOW THEREFORE in consideration of their mutual promises and other good and valuable consideration (the receipt and sufficiency whereof is acknowledged), the parties hereto agree, each with the other, as follows:

1.0 INTERPRETATION

1.1 Capitalized terms used in this Agreement will have the meanings ascribed to such terms in the Access Agreement, unless such terms are specifically defined in this Agreement or the context of their use requires otherwise.

1.2 In this Agreement, the following definitions apply:

(a) "**Access Agreement**" means the agreement entitled "*Richmond • Airport • Vancouver Rapid Transit Line Richmond Access Agreement*" dated November 30, 2004, as supplemented and amended by:

(i) the agreement entitled "*Cable Agreement (Richmond)*" effective July 29, 2005; and

(ii) the agreement entitled "*Canada Line Richmond Access Agreement Amendment No. 2*" in respect of fibre optic cable effective May 4, 2009;

but expressly excluding this Agreement;

(b) "**Additional System-Required Lands**" has the meaning ascribed to that term in section 2.1(a);

(c) "**Agreement**" means this agreement;

(d) "**Amending Date**" has the meaning ascribed to that term on page 1 of this Agreement; and

(e) "**Amendment #1**" means the agreement entitled "*Amendment No. 1 Richmond • Airport • Vancouver Rapid Transit Line Richmond Access Agreement*" dated October 1, 2007.

2.0 AMENDMENTS TO THE ACCESS AGREEMENT

2.1 The City and TransLink agree the Access Agreement is hereby further amended effective the Amending Date by:

(a) adding as System-Required Lands the City's right, title and interest in the lands and premises, or the City's interests therein (as the context requires), which are described in Exhibit "A" attached hereto (the "**Additional System-Required Lands**");

(b) deleting Schedule B.1 to the Access Agreement in its entirety and substituting therefore the pages attached hereto as Exhibit "B".

2.2 The City and TransLink agree:

(a) the terms "*System-Required Lands*" and "*Project-Required Lands*", as defined in the Access Agreement, will be read to include the Additional System-Required Lands; and

(b) for the purposes of the Access Agreement, and in particular but without limitation for the purposes of Section 10.1 therein, any activities and/or work performed in respect of the Additional System-Required Lands will, in all respects, be read and

interpreted to be activities and/or work performed or to be performed in furtherance of the "*Project*" and the "*System*", as those terms are defined in the Access Agreement,

and the Access Agreement will, in all respects, be read and interpreted accordingly.

2.3 As a result of incorporating the additional lands added as System-Required Lands to the Access Agreement by Amendment #1 into this Agreement, the parties further agree that Amendment #1 is hereby rescinded and, as of the Amending Date, of no force and effect.

3.0 GENERAL PROVISIONS

3.1 This Agreement will take effect as of the Amending Date.

3.2 The parties agree that, as of the Amending Date, the Access Agreement will be read and construed together with this Agreement, and the Access Agreement, together with this Agreement, will continue in full force and effect for the remainder of the Term.

3.3 The parties acknowledge this Agreement, as applicable, will extend to, be binding upon, and enure to the benefit of each of the parties and their respective successors and permitted assigns.

3.4 This Agreement may be executed and delivered by execution and hand delivery of an original copy or by delivery by facsimile or similar verifiable electronic transmission with an original copy to follow by courier and in counterparts and, when each party has executed a counterpart, each of such counterparts will be deemed to be an original and all such counterparts, when taken together, will constitute one and the same agreement, and upon such execution and delivery to each of the other parties, this Agreement will be legally binding on all parties.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto, all with effect as of the Amending Date.

CITY OF RICHMOND

Per: _____

Per: _____

SOUTH COAST BRITISH COLUMBIA TRANSPORTATION AUTHORITY

Per: _____

EXHIBIT "A"

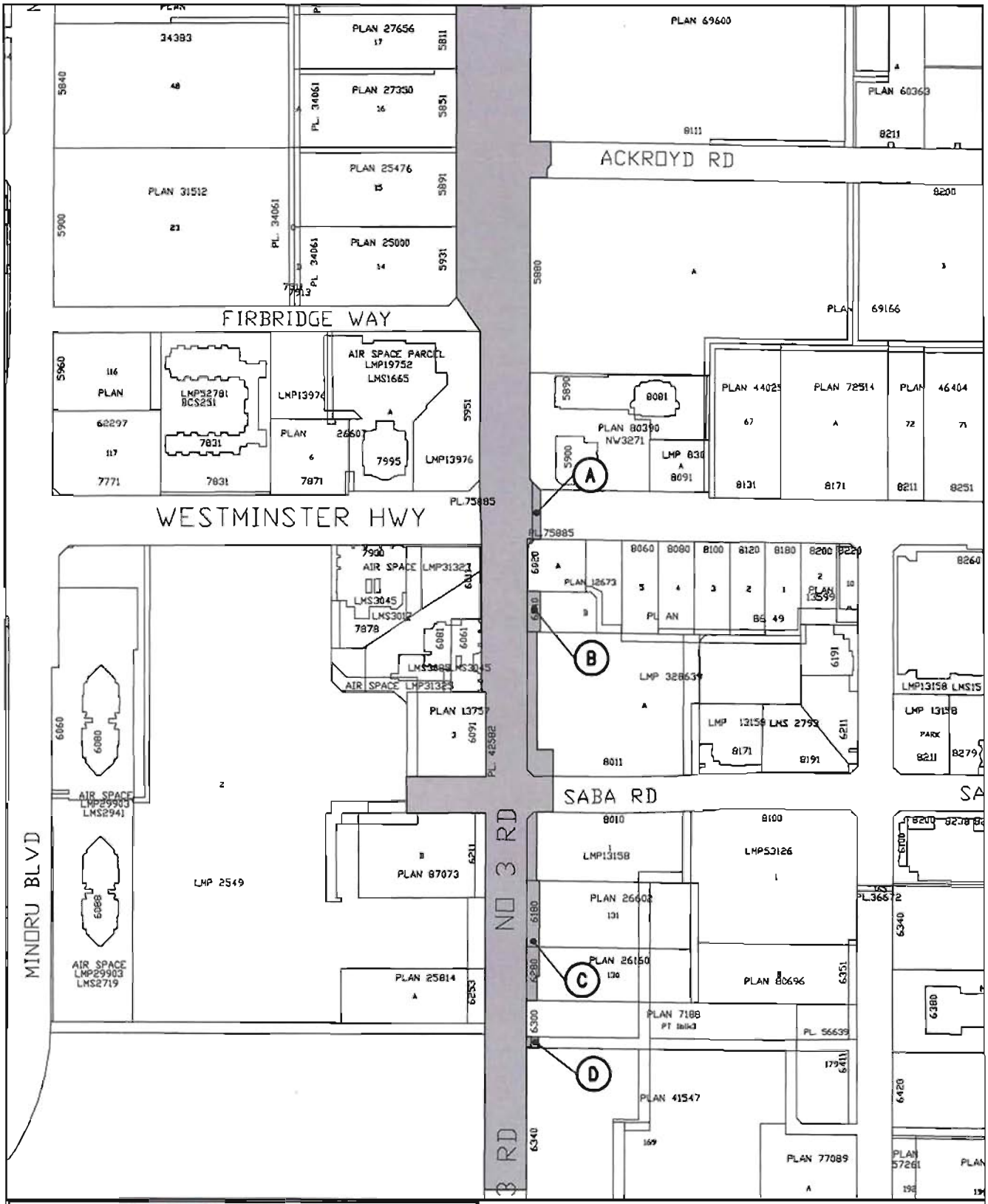
ADDITIONAL SYSTEM-REQUIRED LANDS

Reference (as shown in attached Exhibit B, being an amendment to Schedule B.1 of Access Agreement)	Sheet	Property	PID
A	1	Westminster Highway east of No. 3 Road	Untitled Road
B	1	8068 Westminster Highway (formerly known as 6040 No. 3 Road)	SRW #BB517545 (Plan BCP30773) charging Common Property BCS3778
C	1	No. 3 Road west of 6188 No. 3 Road (currently known as 6180 and 6280 No. 3 Road), subject to City receiving this portion of property as dedicated road (per DP 11-584010)	Future Untitled Road
D	1	6300 No. 3 Road	Unregistered right of way charging the southwest corner of North 86.1 feet, Lot 1, Section 9, Block 4 North, Range 6 West, NWD Plan 7188 within plan 52405
E	4	Cambie Road east of No. 3 Road	Untitled Road
F	4	Capstan Way southeast of No. 3 Road	Untitled Road
G	5	Sea Island Way east of No. 3 Road	Untitled Road
H	5	Bridgeport Road west of No. 3 Road	Untitled Road
I	6	Great Canadian Way between Van Horne Way and River Road	Untitled Road
J	6	Great Canadian Way between Van Horne Way and River Road	Untitled Road
K	7	River Road west of No. 4 Road	Untitled Road
L	7	River Drive north of Van Horne Way	Untitled Road

M	8	Grauer Road	Untitled Road

EXHIBIT "B"

[Replacement pages for Schedule B.1 Plans and Legal Description of System-Required Lands - attached]



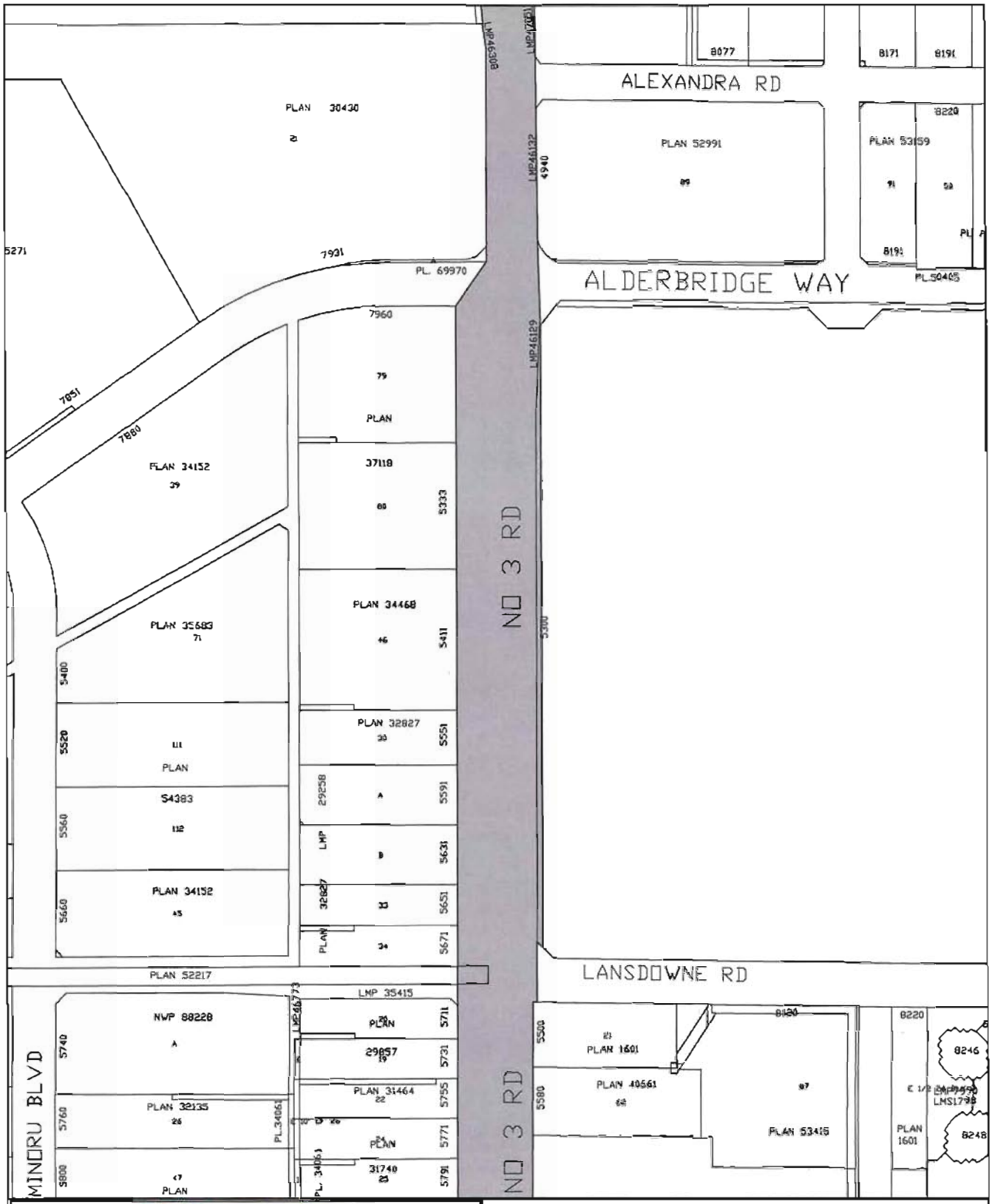
CANADA LINE

DATE	BY	REVISION DESCRIPTION	REV
2004-11-02	JCWW	RICHMOND ACCESS AGREEMENT - ORIGINAL	B
2011-03-03	JCWW	RICHMOND ACCESS AGREEMENT - AMENDMENT	E
2012-04-10	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	F

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 – SYSTEM REQUIRED LANDS

SCALE 1:3000 | PROJECT | DRAWING NUMBER SK-3117 SHEET 1
DATE 2004/11/02

SUPERSEDES PRINTS OF THIS NUMBER WITH LETTERS PREVIOUS TO → F



CANADA LINE

DATE	BY	REVISION DESCRIPTION	REV
2004-11-02	JCWW	RICHMOND ACCESS AGREEMENT - ORIGINAL	B
2012-04-10	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	C

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 – SYSTEM REQUIRED LANDS

SCALE 1:3000 | PROJECT | DRAWING SK-3117 SHEET 2
DATE 2004/11/02

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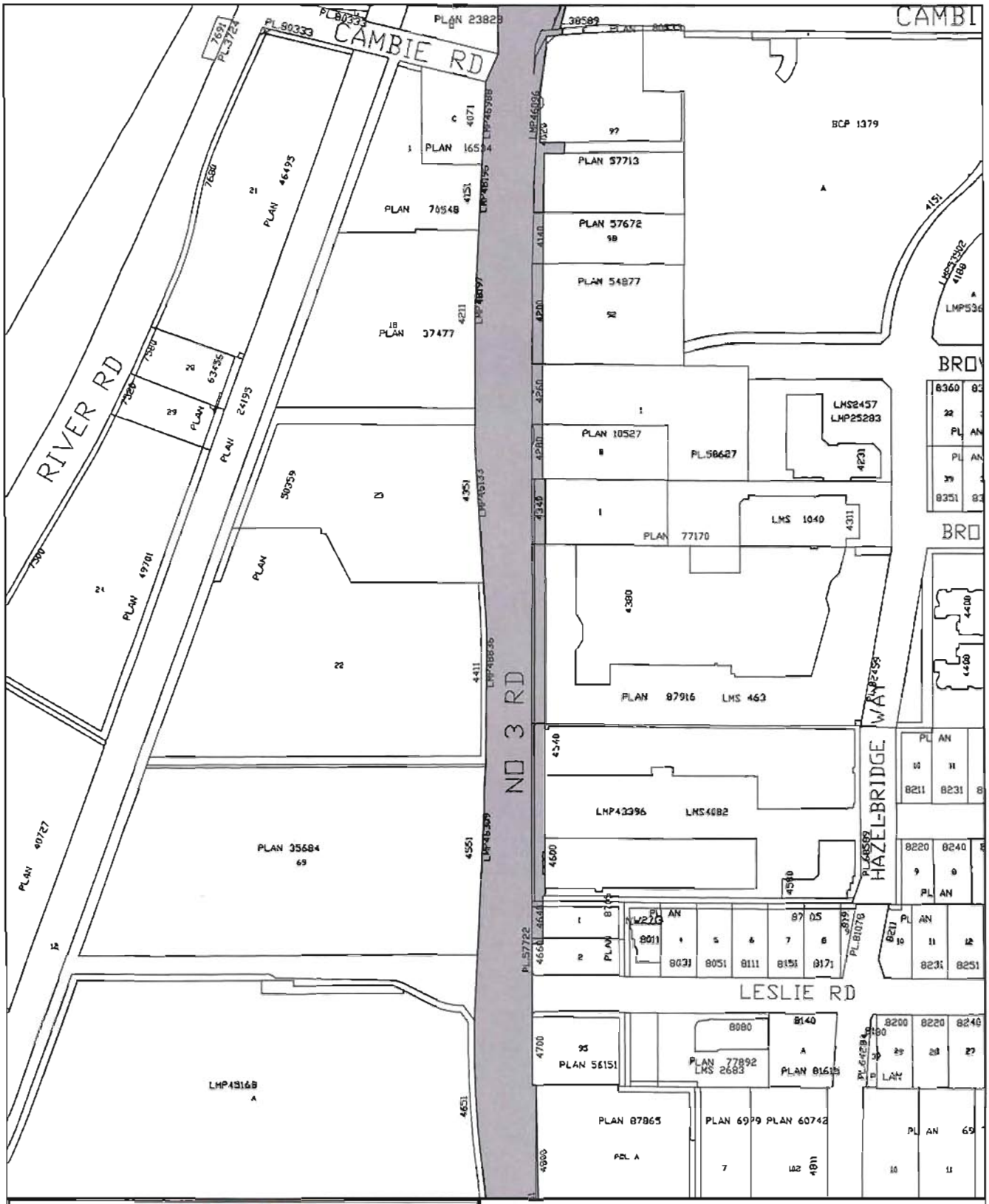

CANADA LINE

DATE	BY	REVISION DESCRIPTION	REV
2004-11-02	JCWW	RICHMOND ACCESS AGREEMENT - ORIGINAL	B
2012-04-10	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	C

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 – SYSTEM REQUIRED LANDS

SCALE 1:3000 | PROJECT | DRAWING SK-3117 SHEET 3
DATE 2004/11/02

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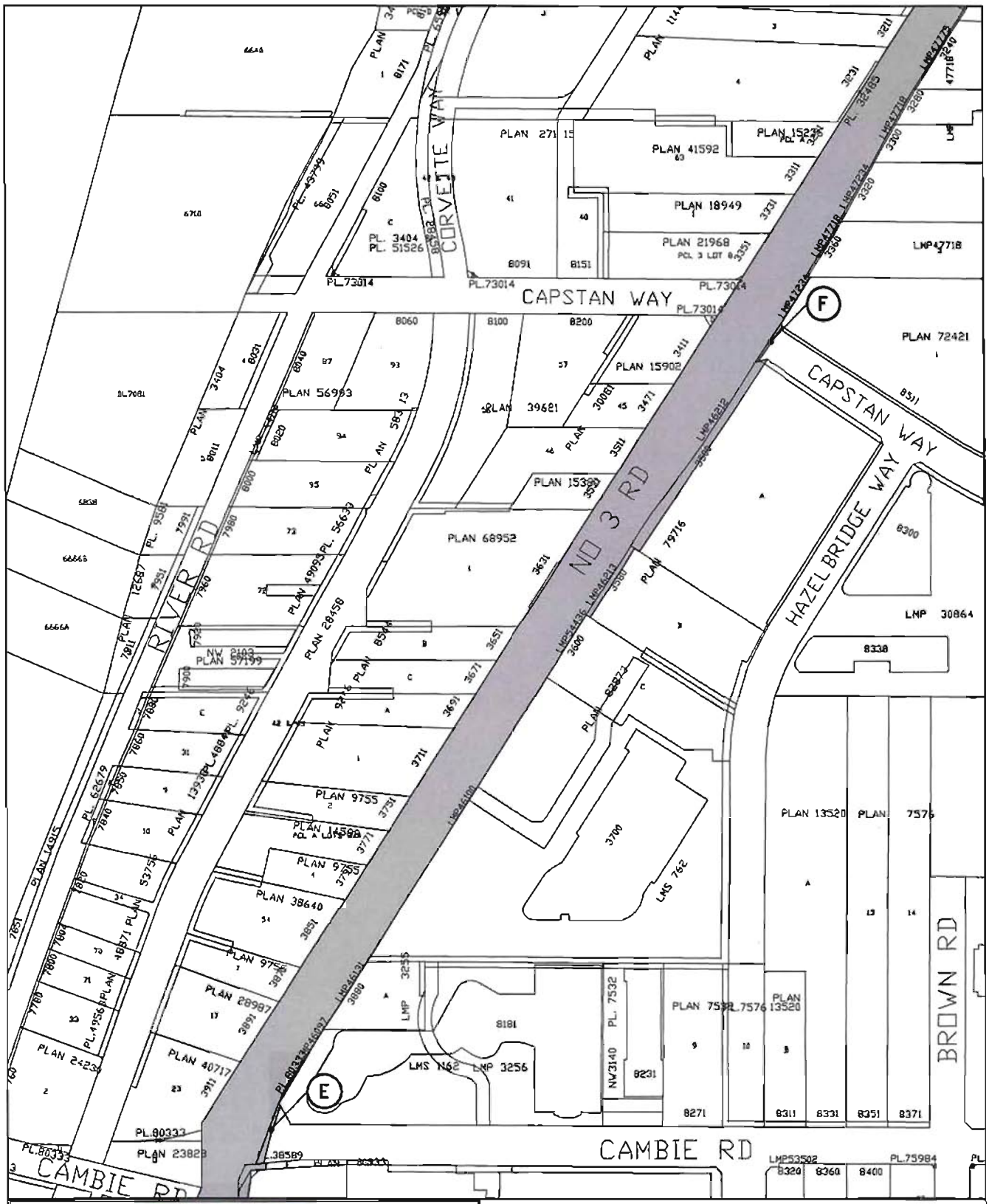

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DATE	BY	REVISION DESCRIPTION	REV
2004-11-02	JCWW	RICHMOND ACCESS AGREEMENT - ORIGINAL	B
2011-03-03	JCWW	RICHMOND ACCESS AGREEMENT - AMENDMENT	D
2012-04-10	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	E

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 – SYSTEM REQUIRED LANDS

SCALE 1:3000 | PROJECT | DRAWING AMENDED SK-3117 SHEET 4

DATE 2004/11/02

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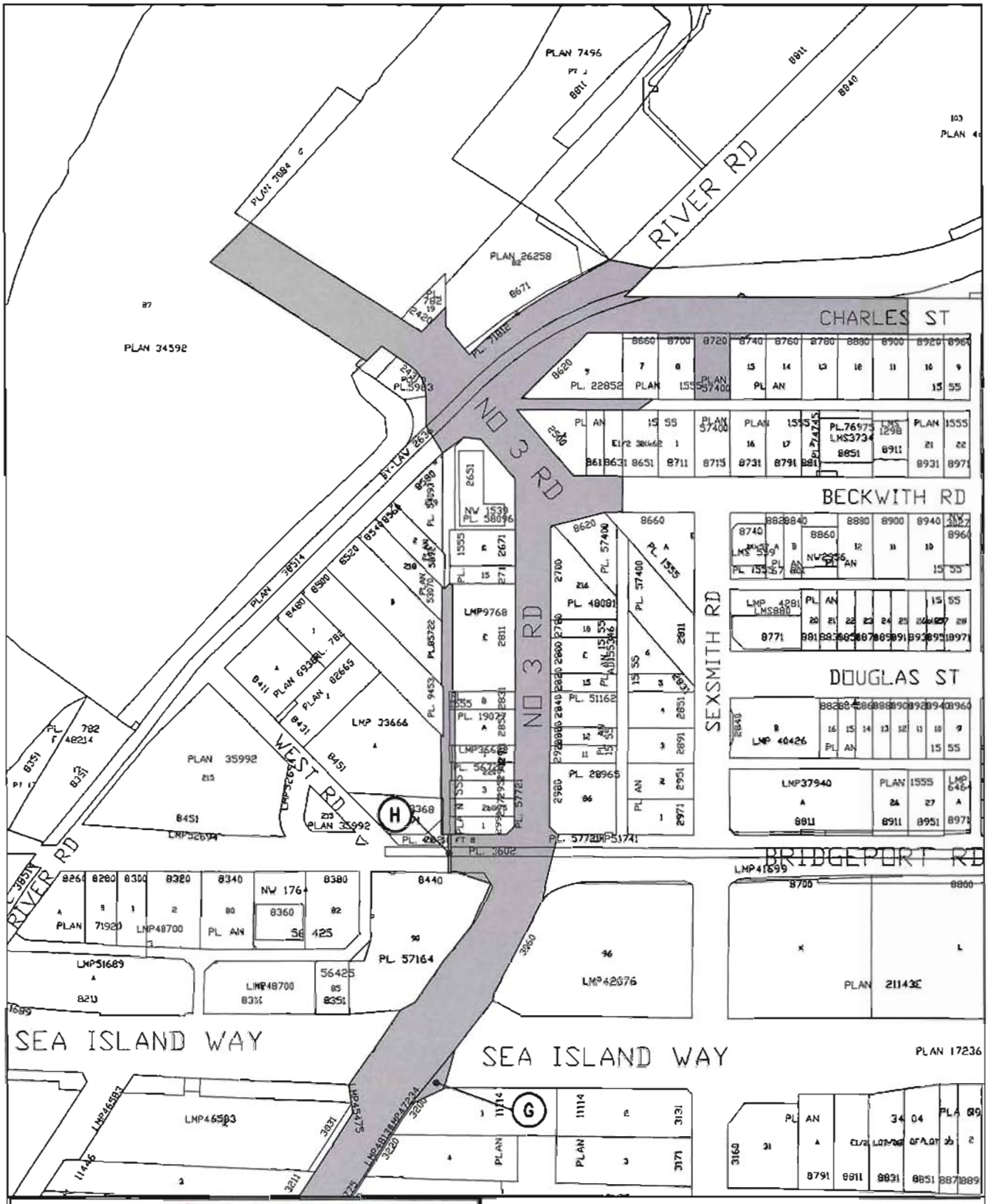

CANADA LINE

DATE	BY	REVISION DESCRIPTION	REV
2004-11-02	JCWW	RICHMOND ACCESS AGREEMENT - ORIGINAL	B
2011-03-03	JCWW	RICHMOND ACCESS AGREEMENT - AMENDMENT	E
2012-04-10	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	F

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 - SYSTEM REQUIRED LANDS

SCALE 1:3000 | PROJECT | DRAWING AMENDED SK-3117 SHEET 5

DATE 2004/11/02

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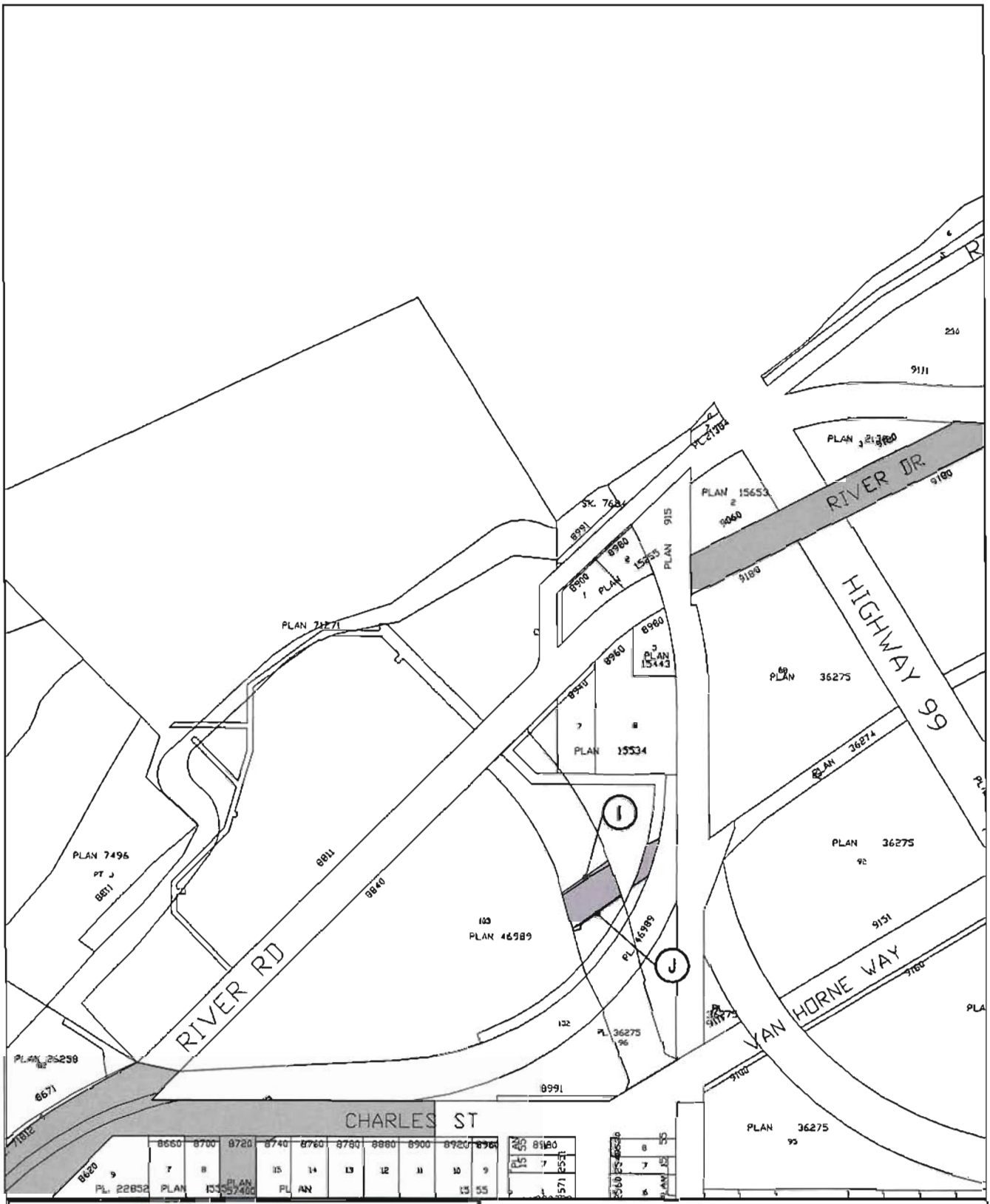

CANADA LINE

DATE	BY	REVISION DESCRIPTION	REV
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2011-03-03	JCWW	RICHMOND ACCESS AGREEMENT - AMENDMENT	E
2012-04-10	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	F

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 – SYSTEM REQUIRED LANDS

SCALE 1:3000 | PROJECT | DRAWING AMENDED SK-3117 SHEET 6

DATE 2004/11/02

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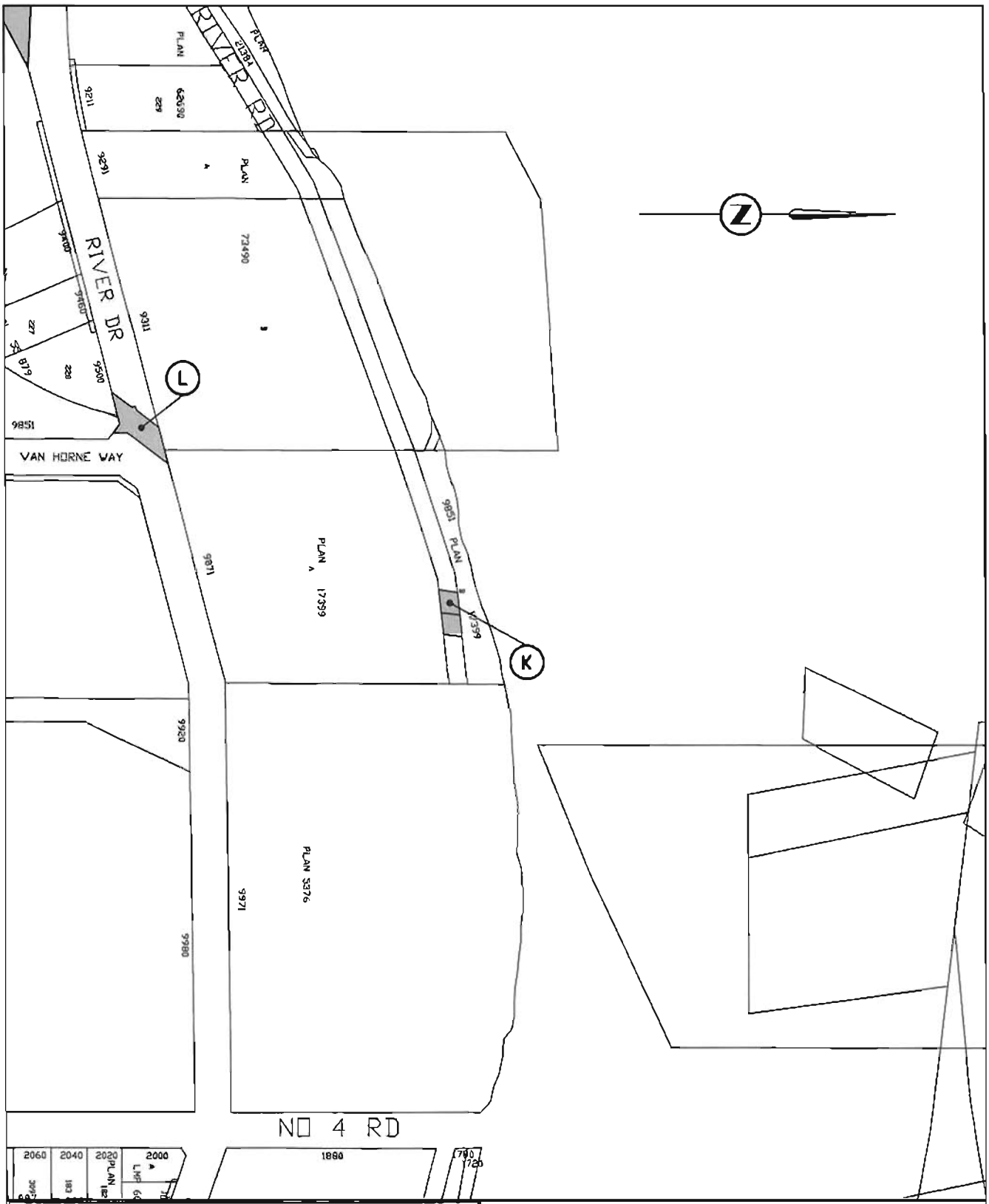

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DATE	BY	REVISION DESCRIPTION	REV
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2011-03-03	JCWW	RICHMOND ACCESS AGREEMENT - AMENDMENT	E
2012-04-16	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	F

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 – SYSTEM REQUIRED LANDS

SCALE 1:3000 | PROJECT | DRAWING AMENDED SK-3117 SHEET 7

DATE 2004/11/02

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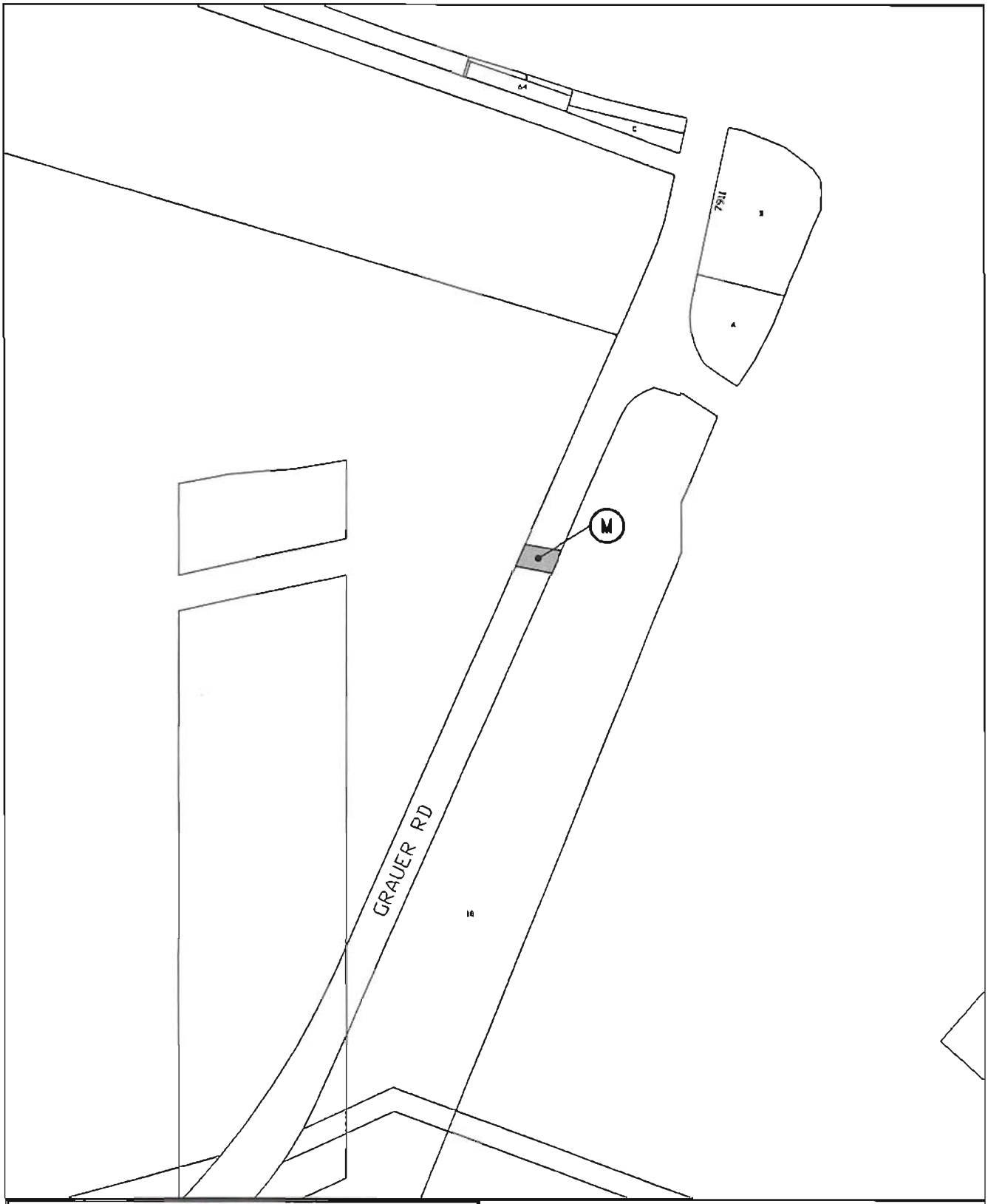


CANADA LINE

DATE	BY	REVISION DESCRIPTION	REV
2004-11-02	JCWW	RICHMOND ACCESS AGREEMENT - ORIGINAL	B
2011-03-03	JCWW	RICHMOND ACCESS AGREEMENT - AMENDMENT	D
2012-04-10	JCWW	REVISED TO FINAL AS-BUILT CONFIGURATION	E

RICHMOND ACCESS AGREEMENT PLAN
SCHEDULE B.1 – SYSTEM REQUIRED LANDS
(GRAUER ROAD ON SEA ISLAND)

SCALE 1:3000 | PROJECT | DRAWING AMENDED SK-3117 SHEET 8
DATE 2004/11/02

SUPERSEDES PRINTS OF THIS NUMBER WITH LETTERS PREVIOUS TO → E

Legal Descriptions
Richmond Access Agreement Plan
Schedule B.1 – System Required Lands

Sheet No.	Civic	Legal & PID	Existing Use
1	8068 Westminster Highway (formerly known as 6040 No. 3 Road)	SRW #BB517545 (Plan BCP30773) charging the Common Property of Strata Plan BCS3778	Commercial/ Residential Strata Building
1	6300 No. 3 Road	Unregistered right of way charging the southwest corner of North 86.1 feet, Lot 1, Section 9, Block 4 North, Range 6 West, NWD Plan 7188 within plan 52405	Utility SRW
5	8720 Charles Street	Parcel "A" (Bylaw Plan 57400) Section 21 Block 5 North Range 6 West as dedicated on road NWD Plan 1555 (PID 000-540-153)	Vacant Land
8	Portion of Westerly 22 feet of Grauer Road, Sea Island	Bylaw 870, Filing 23134 of "No. 13 Road Widening Bylaw, 1941"	Road allowance

CITY INFRASTRUCTURE PROTOCOL

This Protocol, dated for reference May 1, 2011 (the "**Reference Date**"), but having effect as of the Effective Date of the Access Agreement (the "**Effective Date**") made:

AMONG:

CITY OF RICHMOND
6911 No. 3 Road, Richmond, BC V6Y 2C1

(the "**City**")

AND:

SOUTH COAST BRITISH COLUMBIA TRANSPORTATION AUTHORITY
1600 - 4720 Kingsway, Vancouver, British Columbia V5H 4N2

("**TransLink**")

AND:

INTRANSIT BC LIMITED PARTNERSHIP
1212 – 750 West Pender Street, Vancouver, BC V6C 2T8

(the "**Concessionaire**")

RECITALS:

A. The City and TransLink (as assignee from Canada Line Rapid Transit Inc. ("**CLCO**")) entered into an agreement entitled "*Richmond • Airport • Vancouver Rapid Transit Line Richmond Access Agreement*" as assigned, and as amended from time to time (collectively, the "**Access Agreement**"), under which, among other things, TransLink acquired exclusive possession of the System-Required Lands for the operation of the Richmond Segment of the System and the City was granted certain rights to install, operate and maintain City Infrastructure within the System Required Lands and on RAV Infrastructure;

B. The Concessionaire and TransLink (as assignee from CLCO) entered into an agreement entitled "*Amended and Restated RAV Concession Agreement*" as assigned, and as amended from time to time (collectively, the "**Concession Agreement**") in respect of, *inter alia*, the design, construction, operation and maintenance of the System;

C. Pursuant to an assignment agreement entitled "*COR Assignment Agreement*" as assigned, and as amended from time to time (collectively referred to as the "**Assignment Agreement**") certain rights and benefits of TransLink (as assignee from CLCO) under the Access Agreement were assigned or sub-licenced to the Concessionaire, including with respect to City Infrastructure, for the duration of the term of the Concession Agreement;

D. Pursuant to an assumption agreement entitled "*Concessionaire Assumption Agreement*" as assigned, and as amended from time to time (collectively, the "**Assumption Agreement**") the Concessionaire assumed certain obligations and liabilities of TransLink (as assignee from CLCO) under the Access Agreement, including with respect to City Infrastructure, for the duration of the Concession Agreement;

E. The parties have agreed to establish processes and protocols with respect to the installation and maintenance of City Infrastructure within System Required Lands and on RAV Infrastructure to supplement the provisions of the Access Agreement, the Assignment Agreement and the Assumption Agreement and to establish procedures to facilitate approval processes and to manage the obligations of the parties under the Access Agreement, the Assignment Agreement and the Assumption Agreement; and

F. It is not the intention of the parties that the provisions of this Protocol amend the Access Agreement, the Assignment Agreement or the Assumption Agreement, but to provide supplemental guidance thereto.

G. It is the intention of the parties that the provisions of this Protocol will apply during the term of the Concession Agreement and, as between TransLink and the City, following the expiration or early termination of the Concession Agreement.

NOW THEREFORE in consideration of their mutual promises and other good and valuable consideration (the receipt and sufficiency whereof is acknowledged by each of the parties), the parties hereto agree as follows:

1.0 INTERPRETATION

1.1 *Definitions* - Capitalized terms used in this Protocol will have the meanings ascribed to such terms in the Access Agreement, the Assignment Agreement or the Assumption Agreement, as the case may be, unless such terms are specifically defined in this Agreement or the context of their use requires otherwise.

2.0 TERM AND PARTIES

2.1 *Term* - This Protocol becomes effective as of the Effective Date and will apply as between TransLink, the City and the Concessionaire during the term of the Concession Agreement, and as between the City and TransLink (or any subsequent concessionaire who has entered into an assumption agreement with the City) following the expiration or early termination of the Concession Agreement for the term of the Access Agreement.

2.2 *Parties upon Termination of Concession Agreement* - From and after the expiration or termination of the Concession Agreement, all references to the Concessionaire, as the context so requires, will be read and construed as references to TransLink or any subsequent concessionaire, as the case may be, save and except as to any indemnities or with respect to any claims, which arose prior to the expiration or termination of the Concession Agreement, which will survive the expiration or termination of the Concession Agreement.

3.0 DESIGN, INSTALLATION AND REMOVAL OF CITY INFRASTRUCTURE

3.1 *General* - The parties agree to abide by the provisions of section 3.4(c) of the Access Agreement with respect to City Infrastructure in or on System-Required Lands.

3.2 *Responsibility for Infrastructure Work* – In accordance with, and in no way limiting the generality of section 7.14 of the Access Agreement, the City is solely responsible for the installation of City Infrastructure on RAV Infrastructure, including, without limitation:

(a) the planning, design, procurement, construction, installation, inspection, maintenance, cleaning, modification, replacement and removal of any City Infrastructure;
(b) the maintenance, repair and cleaning of RAV Infrastructure where such work is necessitated by the presence of City Infrastructure thereon;
(c) the provision of any power supply or other utility service required for the City Infrastructure from a source independent of the RAV Infrastructure; and
(d) the management of vegetation planted or maintained by the City, including to ensure the vegetation remains at all times outside a one metre envelope surrounding the Guideway spans and Vehicle dynamic envelope; and
(e) payment of any associated Reasonable Costs of TransLink and the Concessionaire.

3.3 *Payment of Costs* - Unless otherwise provided in this Protocol, the Access Agreement or the Assumption Agreement, the City will remit any payments required to be made to the Concessionaire or TransLink within 45 days of the date it receives each invoice.

3.4 *No Adverse Impact* – Subject always to the provisions of sections 6.4, 7.14 and 7.15 of the Access Agreement, the ability of the City to install and maintain City Infrastructure, including signage, on RAV Infrastructure or on the System Required Lands, will be subject to the Concessionaire being satisfied that such installation:

(a) whenever possible, avoids direct attachment or fixation to the RAV Infrastructure;
(b) does not interfere with or otherwise affect the safety or integrity of the RAV Infrastructure;
(c) does not interfere with or otherwise affect access to or use of the RAV Infrastructure or the System Required Lands;
(d) does not impact the orderly operation of the System;
(e) does not endanger the life or safety of any person or cause damage to property;
(f) does not restrict access to the RAV Infrastructure, including for the purposes of inspection, operation, maintenance, repair or replacement; and
(g) is not capable of installation elsewhere with comparable convenience or amenity.

3.5 *Installation Prerequisites* - Prior to any installation, the City will:

(a) obtain the Concessionaire's approval for such installation (which will not be unreasonably withheld or delayed) and comply with any conditions reasonably imposed by the Concessionaire as a condition of such approval; and
(b) agree to pay the Concessionaire's Reasonable Costs, which payment will be made in accordance with Section 3.3 of this Protocol.

3.6 *Requests for Approval* - When requesting approval for installation of City Infrastructure, the City will deliver to the Concessionaire:

(a) details of the proposed installation, including detailed plans and specifications;
(b) documentation addressing the requirements set out in section 3.4 of this Protocol;
(c) where the installation contemplates affixation to RAV Infrastructure, a technical analysis verifying the installation will not damage, weaken, compromise or denigrate the structural integrity or surface quality of the RAV Infrastructure;
(d) any other documents and information reasonably requested by the Concessionaire.

3.7 *Effect of Approval* – If the Concessionaire determines the proposed installation meets the requirements set out in section 3.4 of this Protocol, then, upon receipt of written approval from the Concessionaire, the City may proceed with the installation of the City Infrastructure in accordance with applicable Law and in a manner consistent with the information provided to the Concessionaire and in accordance with any conditions reasonably imposed by the Concessionaire as a condition of such approval. The Concessionaire reserves the right to independently monitor any City work associated with installation of the City Infrastructure on RAV Infrastructure, with any costs associated with such independent monitoring to be included as part of the Concessionaire's Reasonable Costs.

3.8 *Lack of Approval* – If the Concessionaire determines the proposed installation of City Infrastructure does not meet the requirements set out in section 3.4 of this Protocol, the Concessionaire shall provide written notice to the City identifying the Concessionaire's concerns. The Concessionaire and the City will work co-operatively to identify alternatives, including an alternate location or modifications to the design and plans, in order to reasonably accommodate the City's objectives.

4.0 LIABILITY AND INDEMNIFICATION

4.1 *No Release* – Receipt of approval for installation will not relieve the City of its liability with respect to, or responsibility for, any claims related to such City Infrastructure, including any claims by the Concessionaire or TransLink.

4.2 *Indemnification* - Nothing in this Protocol restricts or modifies any indemnities granted by any party to the other in the Access Agreement, the Assignment Agreement or the Assumption Agreement, including but not limited to the indemnities granted by the City under Sections 3.4(d) and 7.14(c) of the Access Agreement.

5.0 APPROVAL FOR PRIOR INSTALLATIONS

5.1 *Approval and Acknowledgement* – The parties acknowledge that City Infrastructure, including signage, has been installed on RAV Infrastructure or on the System Required Lands after the Effective Date but prior to the Reference Date without strict compliance by the City to the provisions of this Protocol, including the requirement to first obtain the Concessionaire's approval for such installation. Despite the foregoing, the Concessionaire hereby approves the installation of the City Infrastructure listed on Schedule A, attached hereto, that has been installed prior to the Reference Date, such approval having the same effect as if given prior to the installation of the City Infrastructure, and such approval in no way relieving the City of its obligations with respect to City Infrastructure (as more specifically set out in sections 3.2 of this Protocol) or any liability with respect to, or responsibility for, any claims related to such City Infrastructure, including any claims by the Concessionaire or TransLink.

IN WITNESS WHEREOF, this Protocol has been executed by the parties hereto as of the Reference Date, all with effect as of the Effective Date.

SOUTH COAST BRITISH COLUMBIA TRANSPORTATION AUTHORITY

Signature
Name:
Title:

INTRANSIT BC LIMITED PARTNERSHIP, by its General Partner, **INTRANSIT BRITISH COLUMBIA GP LTD.**

Signature
Name: Doug Allen
Title: President

CITY OF RICHMOND

Signature
Name:
Title:

Signature
Name:
Title:

Schedule A
Approved City Infrastructure Installed Within System-Required Lands

1. Greenscreen column enclosures installed on or around Canada Line guideway columns from the southern terminus of the Canada Line to and including the first column north of Capstan Way; and

2. Traffic light mounting brackets, associated conduits and electrical utility fixtures affixed to the Canada Line guideway structures; and

3. Poles supporting street lamps, pedestrian crossing signals or City signage that extend within the one metre buffer of System-Required Lands around RAV Infrastructure; and

4. Lighting fixtures and associated conduits, cabling, electrical utility fixtures, power supplies and fastenings for both decorative and illuminative lighting affixed to or installed around Canada Line columns and guideway between Lansdowne Station and Alderbridge Way; and

5. Three public art enclosures installed on or around Canada Line guideway columns in the vicinity of Richmond-Brighouse, Lansdowne and Aberdeen Stations, provided that, within one year of the Reference Date, the City shall re-locate and re-install the public art enclosures to the following Canada Line guideway column numbers:

   (a) R27a (the northeast platform support column at Lansdowne Station);

   (b) R27b (the northwest platform support column at Lansdowne Station); and

   (c) R57a (the southeast platform support column at Aberdeen Station)

City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	June 20, 2012
From:	Victor Wei, P. Eng. Director, Transportation	**File:**	01-0150-20-THIG1/2012-Vol 01
	Mike Redpath Senior Manager, Parks		
Re:	**PROVINCIAL 2012-2013 BIKEBC PROGRAM – SUBMISSIONS FOR COST-SHARING**		

Staff Recommendation

1. That the submission for cost-sharing to the Province's 2012-2013 *BikeBC Program* of the following two projects:

   - the Railway Avenue Corridor Greenway; and
   - Phase 1 of the Parkside Neighbourhood Bike Route,

   as described in the report, be endorsed.

2. That should the above applications be successful, the Chief Administrative Officer and the General Manager, Planning and Development, be authorized to execute the funding agreements as outlined in the report dated June 20, 2012.

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

Mike Redpath
Senior Manager, Parks
(604-276-4942)

Att. 2

REPORT CONCURRENCE			
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**	
Budgets & Accounting	☑	Brian Jackson for JE	
Engineering	☑		
Sustainability	☑		
REVIEWED BY SMT SUBCOMMITTEE	**INITIALS:**	**REVIEWED BY CAO**	**INITIALS:**

Staff Report

Origin

The Province of BC's *BikeBC Program* is a 50-50 cost-share program between the province and local governments to support the construction of new bike lanes, trails and pathways to promote cycling as a means of reducing traffic congestion and greenhouse gas emissions. Within this program, the City is eligible to apply to the following two funding streams:

- *Provincial Cycling Investment Program* (PCIP): supports larger projects that complete key links in existing cycling networks; and
- *Cycling Infrastructure Partnership Program* (CIPP): supports smaller scale projects up to a maximum contribution of $100,000 per municipality.

This report presents the proposed submissions from the City for consideration of cost-share funding under this program.

Analysis

1. Project Submission to Provincial Cycling Investment Program: Railway Avenue Corridor Greenway (Phase 1)

In 2010, the City purchased the Canadian Pacific Railway (CPR) corridor adjacent to Railway Avenue between Granville Avenue and Garry Street. The goal to develop a trail/greenway for pedestrians, cyclists and other wheeled users along the 3.7 kilometre corridor was established in the original 1979 *Trails Plan* and the subsequent *2010 Trails Strategy*. With this recent acquisition, the City can now fulfill the long-held vision of creating a major recreational, transportation and ecological north-south greenway that connects the South Arm of the Fraser to the Middle Arm Greenway, or Steveston to Terra Nova to City Centre (see **Attachment 1**).

Some of the key principles for developing the future greenway will include:

- referencing its major historic and present day transportation role;
- promoting and reinforcing the connections to the many neighbourhoods it crosses through;
- integration of Ecological Network principles including habitat protection and enhancement;
- creating distinct points of interest;
- respecting its strong linear character and view corridors; and
- promoting a healthy and active lifestyle.

Development of the corridor will be phased over time and there will be opportunities to work with multiple departments to fulfill a number of objectives such as the Ecological Network, Eco-Plus+, rainwater management, the Outcomes of the *Parks and Open Space Strategy*, and expanding the City's bike network with a superior off-street facility that can be used by both cyclists and other wheeled users such as in-line skaters, skateboarders and low-speed scooter operators. The design process for the Railway Corridor began in April 2012 with public open houses anticipated in Summer 2012.

Phase 1 will encompass the planning, design and construction of a 4.0 m wide two-way multi-use pathway end-to-end (from Granville Avenue to Garry Street) with a gravel surface on the base of the existing railway bed. Securing the full additional requested external funding would

enable an enhanced level of development along with connections to existing trails and bus stops on Railway Avenue. The long-term development of the greenway would be compatible with and build upon this fundamental building block. If external supplemental funding is not available or limited, the scope of work would be revised to reflect the funding available. The existing on-street bike lanes on Railway Ave between Granville Ave and Moncton Street would remain in place to serve commuter and other higher speed cyclists seeking a direct route designated for cyclists only.

Council has previously approved this project as part of the 2012 Capital Budget (February 13, 2012 regular Council meeting) as well as for submission to TransLink for consideration of cost-share funding as part of its 2012 *Bicycle Infrastructure Capital Cost-Share Program* (March 12, 2012 regular Council meeting).

2. Project Submission to Cycling Infrastructure Partnership Program: Parkside Neighbourhood Bike Route (Phase 1)

Following the completion of the Crabapple Ridge neighbourhood bike route earlier this year, which uses local roads and off-street connecting pathways, the next proposed route connects the South Arm and McLennan areas and provides cycling connections to South Arm Park, Paulik Gardens Neighbourhood Park and Garden City Community Park (hence the route name) primarily along Ash Street (see **Attachment 2**). Phase 1 of the project (between Granville Avenue and Williams Road) would comprise the installation of wayfinding signage and pavement markings, repaving and widening of an existing off-street public pathway, adding new ramps where the pathway connects to the roadway, modification of the existing diagonal diverter at Ash Street and Dayton Avenue, and the upgrade of existing crosswalks on Ash Street at Francis Road and Blundell Road. No major modifications of the roadway (e.g., relocation of curbs) are required. Phase 2 (between Granville Avenue and Westminster Hwy) would be undertaken in 2013.

Council has previously approved this project as part of the 2012 Capital Budget (February 13, 2012 regular Council meeting) as well as for submission to TransLink for consideration of cost-share funding as part of its 2012 *Bicycle Infrastructure Capital Cost-Share Program* (November 28, 2011 regular Council meeting).

3. Requested External Funding and Estimated Project Costs

As noted in Sections 1 and 2, both projects have also been submitted to TransLink for cost-share consideration. Based on discussions with TransLink staff, staff anticipate that both projects will receive some funding support from TransLink as shown in the last column of Table 1 below but the amounts have not yet been confirmed. Should the cost-share applications to the 2012-2013 *BikeBC Program* be successful and additional external funding become available, then for each project:

- *Railway Avenue Corridor Greenway* (Phase 1): the City's share of the funding would remain unchanged and the increased external funding would be utilized to improve the accessibility of the greenway through the provision of a smooth asphalt surface along the entire route as opposed to a rougher asphalt blend surface in some, or all, locations; and
- *Parkside Neighbourhood Bike Route* (Phase 1): the project components would remain unchanged and the City's share of the funding would be reduced proportionately.

Table 1 below summarizes the estimated project costs, the previously approved City funding as part of the 2012 Capital Budget and the requested external funding sources.

Table 1: Projects to be Submitted to 2012-2013 BikeBC Cost-Share Program

Proposed Project	Estimated Total Cost	Source of City Funds (As approved by Council)	Requested External Agency Funding[1]
Railway Avenue Corridor Greenway: Granville Avenue-Garry Street (Phase 1)	$1,100,000	$350,000 2011 Trails Program ($100,000) 2012 Trails Program ($200,000) 2012 Characterization Program ($50,000)	$200,000 (TransLink) $550,000 (BikeBC)
Parkside Neighbourhood Bike Route (Phase 1)	$267,000	$133,500[2] 2012 Cycling Network Expansion Program ($63,830) 2012 Misc. Cycling Safety Enhancements ($25,000) 2010 Cycling Network Expansion Program ($17,170) 2012 Arterial Road Crosswalk Program ($27,500)	$133,500 (TransLink) $100,000 (BikeBC)

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

(2) Should both cost-share applications be successful, the project scope would remain unchanged and the City's funding would be reduced proportionately.

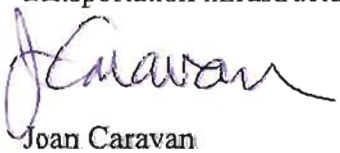
Should the submissions be successful, the City would enter into funding agreements with the Province. The agreements are standard form agreements provided by the Province and include an indemnity and release in favour of the Province. Staff recommend that the Chief Administrative Officer and General Manager, Planning and Development be authorized to execute the agreements. The 2012 Capital Plan and the 5-Year Financial Plan (2012-2016) would be updated to reflect the receipt of the external grants where required dependant on the timing of the budget process.

Financial Impact

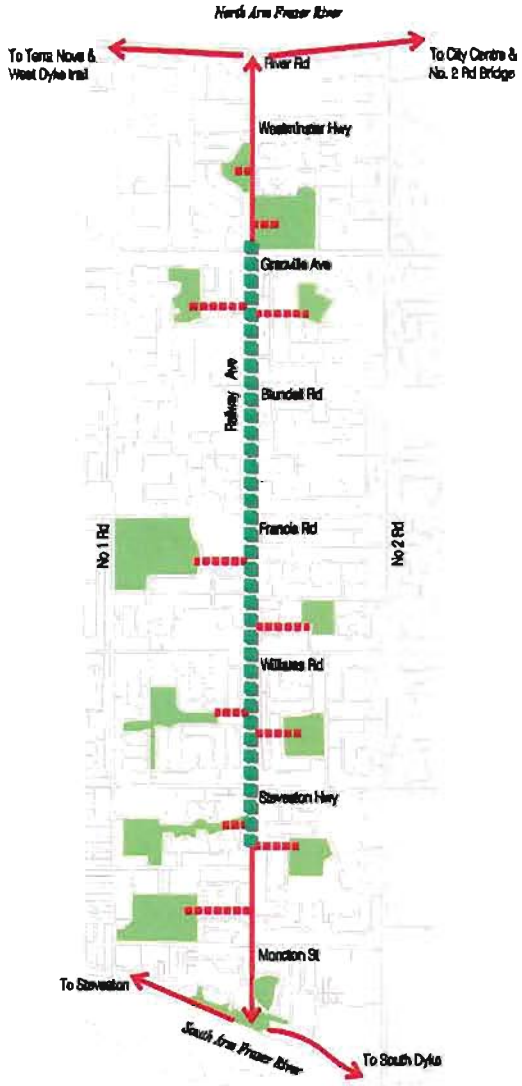
The funding sources for the City's portion of the costs of the projects have been previously approved by Council as outlined in Sections 1 and 2 of this report. Both projects have additional external grants pending approval from TransLink. The 2012 Capital Plan and the 5-Year Financial Plan (2012-2016) would be updated to reflect the receipt of the external grants where required dependant on the timing of the budget process.

Conclusion

The implementation of both projects will support Council goals to improve community mobility and reduce greenhouse gas emissions by encouraging more cycling trips rather than driving. The potential receipt of external funding would enable the City to expedite the provision of sustainable transportation infrastructure and improve healthy and active travel options for the community.



Joan Caravan
Transportation Planner
(4035)



Overall Goals :

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

2012 Goal

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

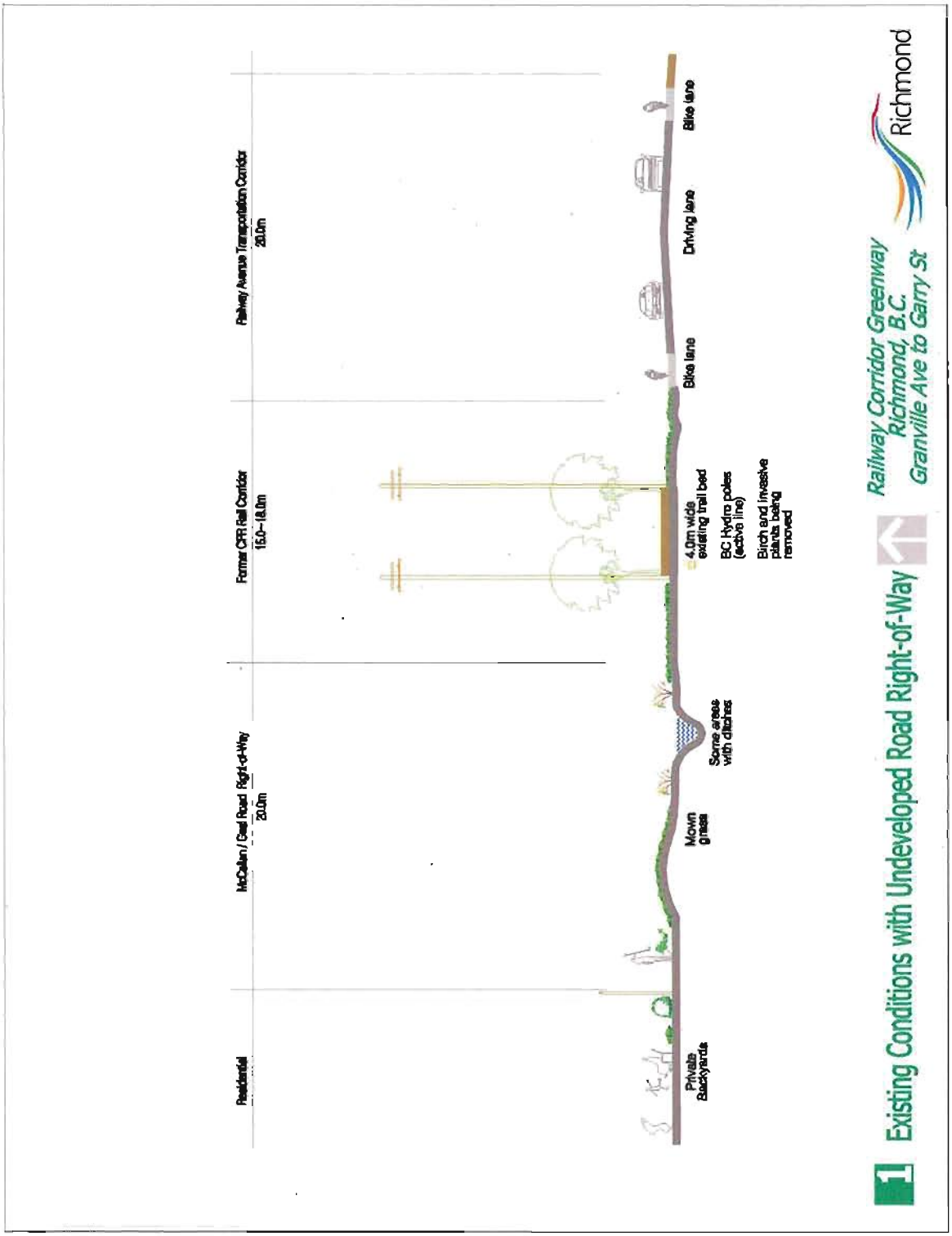
Legend

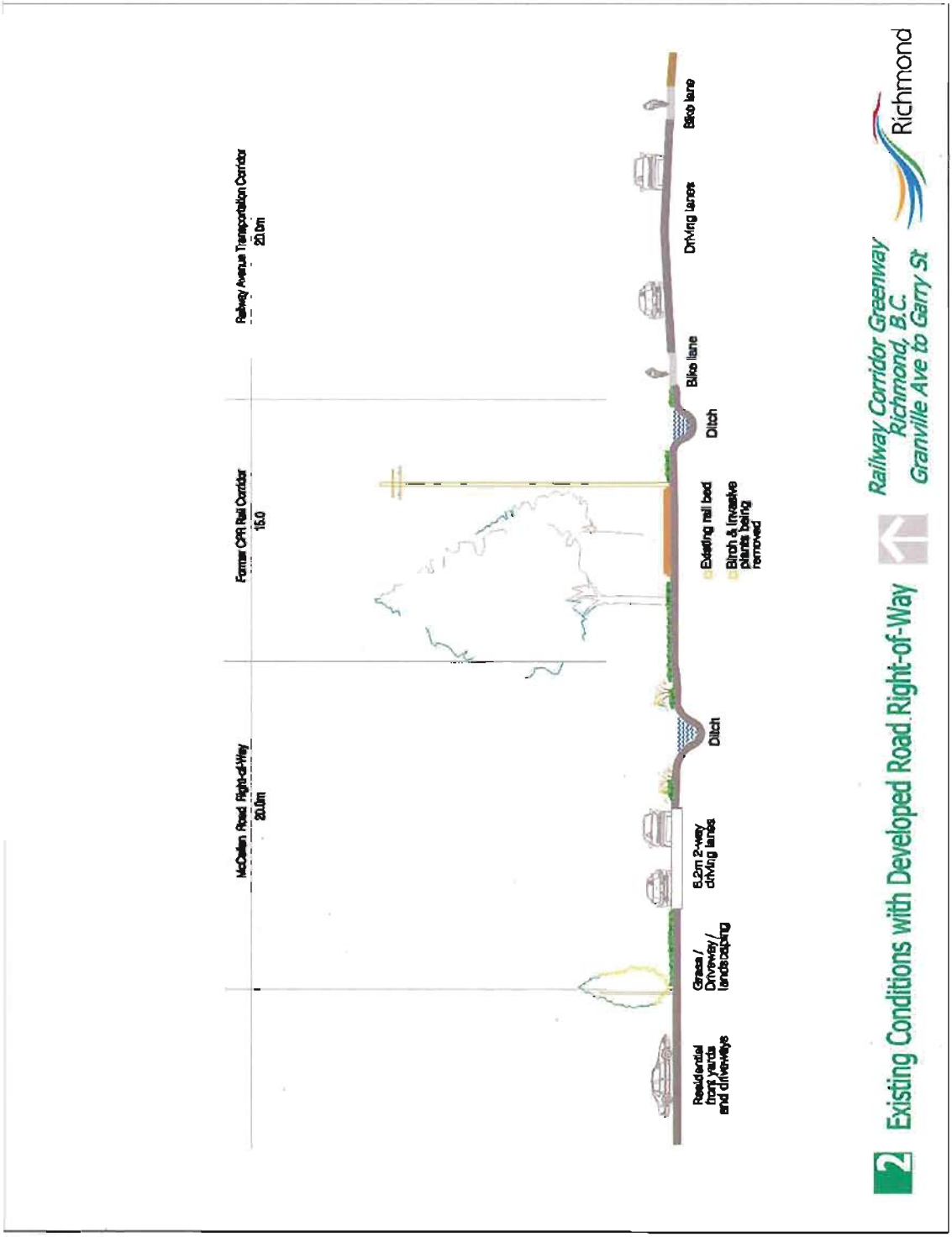
- Proposed Greenway
- Existing & Proposed Neighborhood Connections
- Existing Trails
- Existing Parks / Schools

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

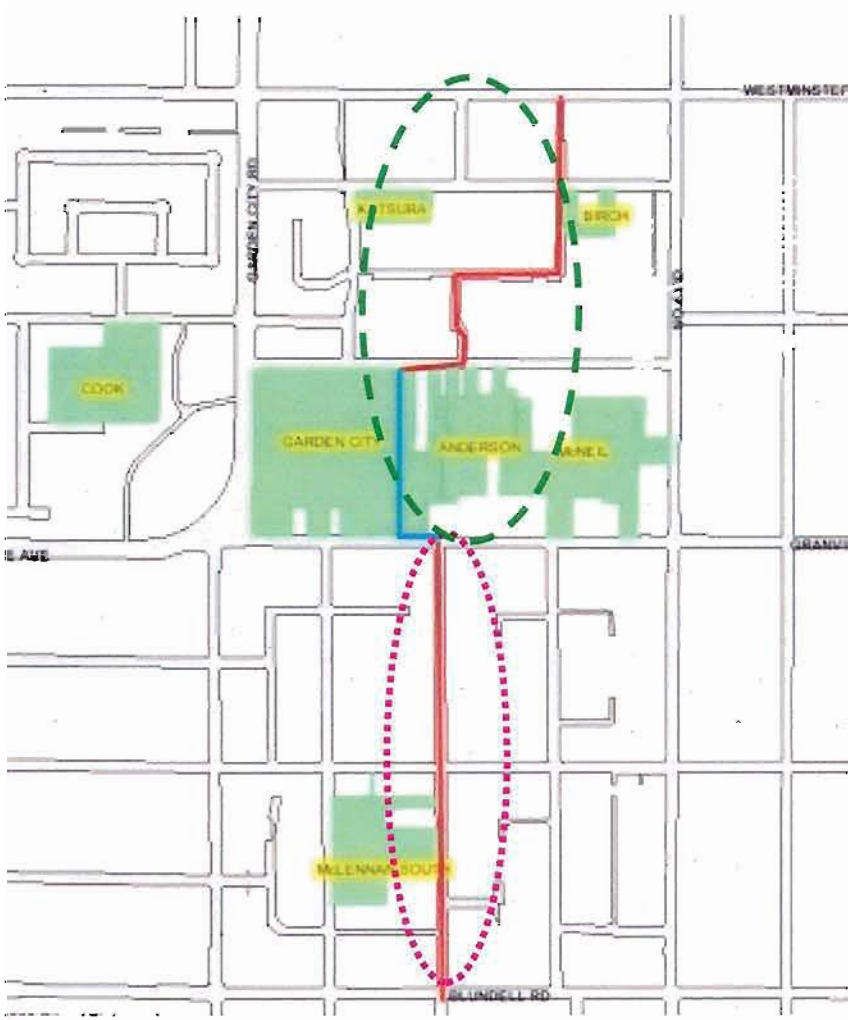
CONTEXT MAP

Richmond


Residential
McCallum / Geal Road Right-of-Way
20.0m
Former CPR Rail Corridor
15.0–18.0m
Railway Avenue Transportation Corridor
20.0m
Private Backyards
Mown grass
Some areas with ditches
4.0m wide existing trail bed
BC Hydro poles (active line)
Birch and invasive plants being removed
Bike lane
Driving lane
Bike lane
1 Existing Conditions with Undeveloped Road Right-of-Way
Railway Corridor Greenway
Richmond, B.C.
Granville Ave to Garry St
Richmond


McDiarmid Road Right-of-Way
20.0m
Former CPR Rail Corridor
15.0
Railway Avenue Transportation Corridor
20.0m
Residential front yards and driveways
Grass / Driveway / landscaping
6.2m 2-way driving lanes
Ditch
Existing rail bed
Birch & Invasive plants being removed
Ditch
Bike lane
Driving lanes
Bike lane
2
Existing Conditions with Developed Road Right-of-Way
Railway Corridor Greenway
Richmond, B.C.
Granville Ave to Garry St
Richmond

Parkside Neighbourhood Bike Route: Proposed Routing



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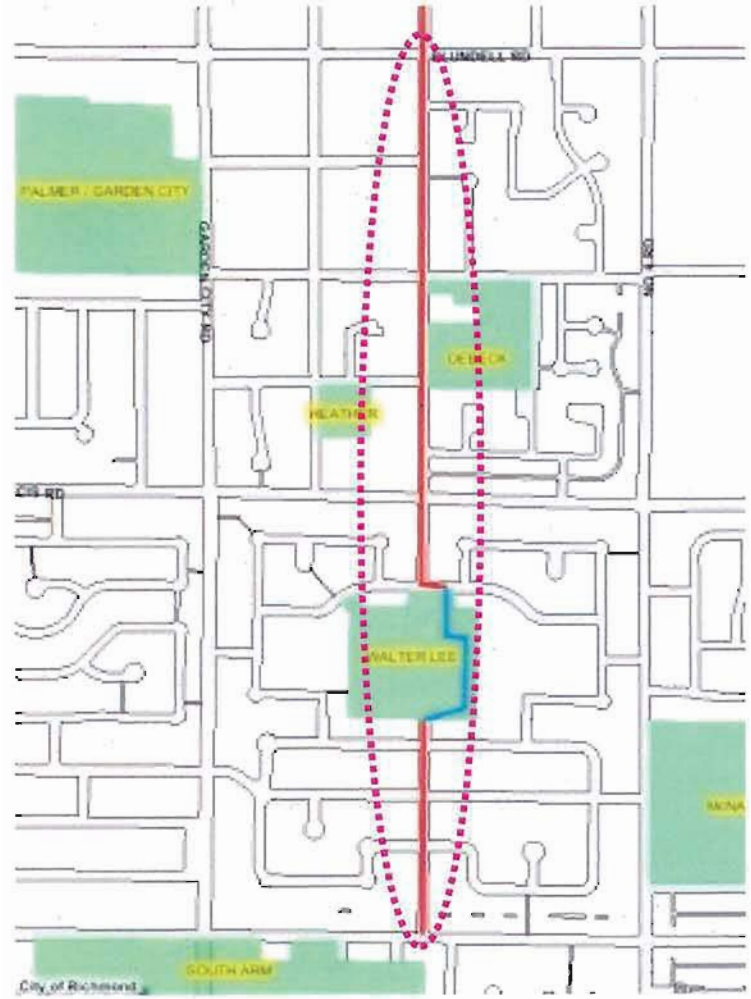

Local Street

Off-Street Pathway

Proposed Phase 1

Proposed Phase 2

City of Richmond

Report to Committee

To:	Public Works and Transportation Committee	**Date:**	June 20, 2012
From:	Victor Wei, P. Eng. Director, Transportation	**File:**	01-0140-20-TCAN1-01/2012-Vol 01
Re:	**DEVELOPMENT OF NATIONAL RAILWAY-ROADWAY GRADE CROSSING STANDARDS AND REGULATIONS**		

Staff Recommendation

1. That a letter be sent to the Minister of Transport requesting that:

   - the proposed Railway-Roadway Grade Crossings Standards be revised to be engineering guidelines, to allow for a risk-based approach that provides flexibility for owners of railway crossings, including road authorities, to address any identified safety concerns in light of limited financial resources and technical constraints; and

   - a dedicated program be established to provide adequate funding support to owners of railway crossings, including municipalities, for any upgrades required to meet the new guidelines.

2. That a copy of the above letter be sent to all Richmond Members of Parliament and Lower Mainland municipalities affected by the proposed Regulations for support of the above request.

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

Att. 2

REPORT CONCURRENCE			
ROUTED TO:	**CONCURRENCE**	**CONCURRENCE OF GENERAL MANAGER**	
Engineering ☑ Roads and Construction ☑		Brian Jackson for JE	
REVIEWED BY SMT SUBCOMMITTEE	**INITIALS:**	**REVIEWED BY CAO**	**INITIALS:**

Staff Report

Origin

Transport Canada is in the process of developing Canadian Railway-Roadway Grade Crossings Standards (the Standards) and the associated Railway-Roadway Grade Crossings Regulations (the Regulations) that would enable enforcement of the standards. The Regulations would apply to all public and private grade crossings on federally-regulated rail lines and govern the grade crossing owners (i.e., road authorities, beneficiaries and railway companies) who share ownership of these crossings. As the City is the responsible road authority for over 40 public grade crossings in Richmond, compliance with the proposed standards could materially impact City resources. Accordingly, staff recommend that the proposed standards instead be introduced as guidelines to permit a risk-based approach that allows for engineering judgement on a site-specific basis.

Analysis

1. Development of Railway-Roadway Grade Crossings Standards and Regulations

According to Transport Canada, the multi-jurisdictional responsibility of grade crossings can make the application of the current requirements, guidelines and manuals of recommended practice for grade crossings complex and difficult for owners. These regulations include legislative requirements (e.g., the *Railway Safety Act*, *Railway-Highway Crossing at Grade Regulations*, *Highway Crossings Protective Devices Regulations*, and *Railway Safety Management System Regulations*) as well as standards and guidelines associated with the design, maintenance and inspection of grade crossings.

The Railway-Roadway Grade Crossings Regulations are intended to resolve existing gaps that continue to impede the appropriate management of safety at grade crossings, such as establishing common and comprehensive safety standards for both public and private grade crossigns as well as clear roles and responsibilities for managing the safety of grade crossings. As the knowledge and cooperation of both the road owner and the railway company are required to establish an adequate safety management plan for a grade crossing, the Regulations would also require the sharing of information between the two agencies. The desired outcome is efficiently managed and safer grade crossings that would lead to reductions in collisions, fatalities, injuries, property damage, and the potential for environmental disasters resulting from a spill of dangerous commodities.

1.1 Proposed Roles and Responsibilities

Table 1 below identifies the proposed allocation of roles and responsibilities for grade crossings between the railway company and the road authority (i.e., the City).

Table 1: Allocation of Roles and Responsibilities

Area	Railway Company	Road Authority
Information Sharing	• With road authorities and beneficiaries as required	• With railway companies, other road authorities and beneficiaries as required
Safety	• Safety documentation and safety reviews	• Safety reviews

Area	Railway Company	Road Authority
Surfaces	• Railway crossing	• Road approaches
Drainage	• Within railway right-of-way	• Within road right-of-way
Sightlines	• Within railway right-of-way • Notify landowners of requirements over owner's land	• Within road right-of-way • Notify landowners of requirements over owner's land
Signage	• Railway crossing, number of tracks, emergency notification, prohibitive stored and standing equipment	• Traffic control devices including interconnected devices on road approaches
Warning Systems	• Grade crossing warning systems	• Stop signs
Snow Removal	• Within crossing surface and railway right-of-way	• On road approaches
Vehicle Movements	• Coordinating trains, engines and other railway equipment	• Coordinating road traffic

Based on Table 1 above, the resulting added responsibilities for the City would comprise:

- gathering and documenting the information to be shared, which includes roadway specifications, traffic volumes including pedestrians and cyclists, and safe stopping distance;
- conducting safety reviews, which are targeted towards recurring unsafe occurrences at a grade crossing and must be conducted within a reasonable time of being made aware of the occurrence;
- funding the construction and installation of any warranted upgrades identified by a safety review that are within the road right-of-way; and
- notifying landowners of sightline requirements over the owner's land.

1.2 Proposed Standards

For road authorities, the basic standards for all public grade crossings that must be met within five years of the Regulations coming into force include:

- *Road Geometry*: specifications regarding vertical and horizontal alignments, maximum gradients, roadway widths, and the angle of intersection between the road and the track;
- *Sightlines*: minimum required sightlines along the roadway;
- *Signs and Road Markings*: required signage (location and type) and pavement markings, including the need for continous backup power where required;
- *Flashing Light Units*: number, location and alignment of flashing light units installed as part of grade crossing warning systems; and
- *Traffic Signal Pre-emption*: requirements for traffic signal pre-emption where the grade crossing is equipped with a warning system, including the need for continous backup power where signals and warning systems are interconnected.

Transport Canada acknowledges that the most significant increase in cost due to the Regulations, for both road owners and railway companies, would be associated with the requirement to meet certain safety standards. However, the agency does not intend to establish a dedicated funding program to assist owners of railway crossings to comply with the proposed standards. Transport Canada's existing Grade Crossing Improvement Program provides a contribution of up to 80 per cent of the capital cost of a crossing improvement project (up to a maximum contribution of $550,000) but there is a limited amount of available funds in a given year for the 14,000 public

grade crossings in Canada. Staff therefore recommend that Transport Canada be requested to establish a dedicated program to provide adequate funding support to owners of railway crossings for any upgrades required to meet the proposed Standards.

2. Consultation Process

The draft Policy and Standards documents are available on Transport Canada's website and the agency is currently completing a two-phase consultation process to obtain comments from the general public and stakeholders on the proposed standards. The feedback obtained will be gathered into a Summary Report to be posted on Transport Canada's website and, as required, used to revise the draft Regulations and the Regulatory Impact Analysis Statement.

2.1 Phase 1: On-Line Consultation (January-April 2012)

Phase 1 comprised on-line consultations that were conducted between January 30 and April 24, 2012. As part of this phase, staff reviewed the draft Policy and submitted comments as shown in **Attachment 1**. A number of other Greater Vancouver municipalities as well as TransLink submitted similar comments, all of which are posted on Transport Canada's website at: http://www.tc.gc.ca/eng/railsafety/submissions-796.htm.

In addition to submitting its own comparable comments as part of Phase 1, the City of Langley submitted an Emergency Resolution regarding the proposed Regulations (see **Attachment 2**) for consideration at the Federation of Canadian Municipalities (FCM) annual conference held June 1-4, 2012 in Saskatoon. The resolution was approved and will be forwarded to the federal Minister of Transport.

2.2 Phase 2: Consultation Meetings with Stakeholders (May-June 2012)

Phase 2 was a series of consultation meetings with road authorities, beneficiaries and railway companies across Canada held between May and June 2012. Staff attended a Phase 2 consultation meeting held in Surrey on June 21, 2012. At the workshop, Transport Canada provided an overview of the proposed Regulations and summarized the key themes of the feedback received to date as outlined in Table 2 below. As evidenced by these comments, the City's concerns are shared by other municipalities across the country.

Table 2: Key Themes of Stakeholder Feedback to Date

Key Theme	Stakeholder Comments
Roles & Responsibilities	• concerns regarding the allocation of responsibilities between owners • lack of clarity regarding roles during implementation and dispute resolution processes
Timelines	• proposed timelines are too tight and extensions are required • municipalities lack sufficient resources (staff and budget) to comply and will need to forgo other higher priority items
Sharing of Information	• requirements will result in additional administrative burden • certain elements and their allocated responsibilities need to be clarified
Safety Documentation & Reviews	• requirements present significant burden for municipalities • need to clarify responsibilities and the credentials of the "qualified person" who completes the safety documentation and reviews

Key Theme	Stakeholder Comments
Standards	• prefer guidelines versus standards • requirements for closing and re-opening grade crossings are excessive • lack of clarity regarding grandfathering of existing crossings
Other Technical Components	• maintenance, testing and inspection requirements need to be reviewed to confirm feasibility
Train Operations	• municipalities support the requirement that public crossings not to be obstructed for more than 10 minutes but train operators advise they cannot confirm compliance with proposed regulation • who will enforce the maximum obstruction duration of 10 minutes • need additional requirement regarding the co-ordination of subsequent trains to ensure that vehicle queues are cleared at the crossing
Proximity to Crossing	• whistling cessation process needs to be clarified and defined in Regulations • responsibility for preventing trespassing should rest with railway companies not municipalities

3. Timelines and Next Steps

Notwithstanding the stakeholder comments received to date, Transport Canada intends to publish the Regulations and Regulatory Impact Analysis Statement in the *Canada Gazette*, Part I in Fall 2012. Stakeholders and the public will be allowed 90 days to provide formal feedback. The Regulations will then be finalized and published in the *Canada Gazette*, Part II by Winter 2013. Once the Regulations come into force upon final publication, they will be phased in whereby:

- all grade crossing information is to be shared by the end of Year 2;
- all grade crossing safety documentation is to be completed by the end of Year 3; and
- basic standards are to be met for all public grade crossing by the end of Year 5.

To emphasize the City's concerns with proposed Regulations, staff propose that a letter be sent to the Minister of Transport requesting that the proposed policies be introduced as guidelines rather than standards to allow for a risk-based approach that provides flexibility for road authorities to address any identified safety concerns. Compliance with the proposed standards is likely to create an additional burden for the City and, given limited resources, may displace other municipal priorities.

Financial Impact

None.

Should the proposed Standards come into force, staff would report back on the estimated financial impacts to the City following a more comprehensive analysis of any upgrades required at each grade crossing in Richmond. At this time, staff expect the potential costs could range from $5,000 per crossing for signage and pavement markings up to more than $100,000 per crossing to address road geometry and sightline deficiencies.

Conclusion

Transport Canada is currently seeking feedback from stakeholders regarding its proposed Canadian Railway-Roadway Grade Crossings Standards and associated Regulations. Staff support the intent of the Regulations to increase public safety at grade crossings but advise that compliance

with the Standards could create a burden as the City is the responsible road authority for over 40 public railway-roadway grade crossings in Richmond. This concern is shared by municipalities across Canada as evidenced by a recent Federation of Canadian Municipalities resolution on this issue. While staff have already submitted comments on the proposed Regulations, a letter from the City would underline the City's concerns with a prescribed approach rather than guidelines that provide flexibility for meeting the safety objectives of the proposed Standards and Regulations.

Joan Caravan
Transportation Planner
(604-276-4035)

JC:jc

City of
Richmond
6911 No. 3 Road
Richmond, BC V6Y 2C1
www.richmond.ca

April 24, 2012
File: 01-0140-20-TCAN1-01/2012-Vol 01

Planning and Development Department
Transportation

Luc Bourdon
Director General, Rail Safety Branch
Transport Canada
427 Laurier Street West
Ottawa, Ontario K1A 0N5

Dear Mr. Bourdon:

Re: Consultation on Development of Railway-Roadway Grade Crossing Regulations

Thank you for the opportunity to offer comments on the proposed regulations. The City of Richmond, located in the Greater Vancouver area, currently has a number of roadway-railway crossings within its boundaries and, in principle, is supportive of the objective to improve safety at all railway crossings. At this time, we offer the following preliminary comments on the proposed regulations for your consideration.

1. Roles and Responsibilities

The responsibilities of the railway and roadway authorities are not easily understood and greater clarification is needed, particularly with respect to:

- apportionment of costs (e.g., maintenance, inspection, upgrades required, etc);
- Transport Canada's role should the proposed standards/policy come into force; and
- process for resolving disputes.

2. Canadian Railway-Roadway Grade Crossings Standards (formerly RTD 10)

- Standards versus Guidelines: rather than a prescriptive standard, we would prefer a more flexible approach that allows for the application of engineering judgement and the ability to prioritize based on risk. What happens if the proposed standards cannot be met (e.g., meeting proposed standards would require significant road reconfiguration)?
- Whistle Cessation: a consistent process should be established and the role of Transport Canada in this process should be clarified.
- Trespassing: need to clarify responsibilities of authorities. Generally, the rail authority should be responsible for its corridor. The City would prefer definition/delineation (e.g., planting, other visual queues) versus securing (e.g., full height fencing) of the rail corridor.
- Sightline Management: this may be difficult to manage for private property. Who would be responsible for the proposed notification procedures?
- Inspection Requirements: clarity is required regarding what agency conducts the safety reviews (e.g., need to define what is "within a reasonable time"?), the frequency of inspections

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and tests, and the timeline and apportionment of costs to complete the work identified in the inspections.

3. Timeline

The schedule should allow for more flexibility as more time is needed to fully assess the implications of the proposed standards and policy document let alone comply with the proposed standards within the five-year time horizon.

4. Conclusion

In summary, the City has two key concerns:

- current ambiguity regarding the responsibilities of the railway and roadway authorities; and
- potentially significant capital and operating cost implications for local governments of the proposed regulations that would need to be addressed within a five-year time horizon.

We suggest that:

- a streamlined document summarizing the variations of the current draft regulations from the existing be prepared and made available for all stakeholders by Transport Canada for a more focused review; and
- further discussion and consultation is needed, particularly with local municipalities on the issues of engineering and financial feasibility to meet the new regulations, prior to finalization and publication of the regulations.

Please feel free to contact me at 604-276-4131 or vwei@richmond.ca if you have any questions regarding the City's comment or wish to discuss this matter further.

Yours truly,

Victor Wei, P. Eng.
Director, Transportation

pc: John Irving, Director, Engineering
Tom Stewart, Director, Public Works
Wisdom Chan, Transportation Engineer, TransLink

JC:lco

FCM Resolution: Annual Conference, Saskatoon 2012

Proposed Transport Canada's Railway-Roadway Grade Crossing Regulations

WHEREAS Transport Canada is seeking input to the consultation process regarding the proposed changes to the Canadian Railway-Roadway Grade Crossing Standards (CRRGCS); and

WHEREAS The City of Langley is concerned with the proposed introduction of the draft CRRGCS as standards as opposed to guidelines to allow for flexibility to meet specific site conditions, allow for the use of a risk based approach to prioritize improvements, and address concerns with potential liability; and

WHEREAS The City of Langley has some specific concerns with the proposed document, including:

- a clear and consistent whistling cessation process;
- a process to resolve disputes between railways and road authorities;
- clarification on the distribution of financial responsibility between Transport Canada, the road authorities, and the rail companies regarding safety assessments and upgrades such as the installation of grade crossing warning systems; and,
- that the regulations propose that local governments will be responsible for private property owners removing or relocating existing obstructions within private property which is unreasonable and in many cases impractical, given that:
  - a local government may not have the authority to require the removal of structures within private property that have been legally constructed;
  - the impact to private properties may be significant and at a high cost;
  - the requirement of local governments to remove or relocate obstructions on the road right of way without consideration of any potential negative impacts on the delivery of other government or community services; and

WHEREAS The policy on safety documents and safety reviews is unclear on the responsibility for completing the safety assessment and the specific instances or circumstances that would necessitate a review, which may require significant resources (both staff and financial) to achieve the data inventory and the safety inspection requirements of the draft policy; and

WHEREAS The City of Langley supports the intent of the draft regulation and policy in terms of seeking improvements to road-rail safety, but the City does not support the proposed draft CRRGCS standard and policy due to our concerns around:

- significant cost implications for local government;
- the roles and responsibilities and financial implications to affected parties; and
- the proposed "standards" instead of "guidelines"; therefore be it

RESOLVED That the Federation of Canadian Municipalities urge the Federal Government to allow for additional time for a more thorough review of the proposed Railway-Roadway Grade Crossing Standards draft policy and regulations and the implications to local governments; and be it further

RESOLVED That the Federation of Canadian Municipalities urge the Federal Government to reconsider the decision within the CRRGCS to instill standards as opposed to guidelines, as this places increased liability and financial strain upon local governments.