ENVIRONMENT COMMITTEE

NOTICE OF OPEN MEETING

DATE: **TUESDAY, 2015 JUNE 09**

TIME: **6:00 PM**

PLACE: **Council Committee Room, Main Floor, City Hall**

A G E N D A

1. CALL TO ORDER **PAGE**

2. MINUTES

a) Open meeting of the Environment Committee held on 2015 April 14 1

3. DELEGATIONS

a) Matt Hulse, Our Horizon 7
Re: Climate Change Initiative
Speaker(s): Matt Hulse, BC Campaign Director

b) Jerry Huang 8
Re: Burnaby's Living Environment
Speaker(s): Jerry Huang

4. CORRESPONDENCE

a) Memorandum from the City Clerk 9
Re: Oil Spill in English Bay, Vancouver - MV Marathassa

b) Memorandum from City Clerk 13
Re: European Chafer

c) Memorandum from the Deputy City Clerk 17
Re: 2015 Environmental Awards Program

d) Memorandum from the Director Finance 27
Re: City Green Team Food Recovery Activities

5. REPORTS

a) Report from the Director Planning and Building 28
Re: World Rivers Day 2015

b) Report from the Director Engineering 32
Re: Annual Drinking Water Quality Monitoring Report (2014)

6. NEW BUSINESS

a) Environment Week 2015 - Verbal Update
Mark Sloat, Planner

7. INQUIRIES

8. ADJOURNMENT

ENVIRONMENT COMMITTEE MINUTES

Tuesday, 2015 April 14

An 'Open' meeting of the Environment Committee was held in the Council Committee Room, Main Floor, City Hall, 4949 Canada Way, Burnaby, B.C. on Tuesday, **2015 April 14** at 6:00 p.m.

1. CALL TO ORDER

PRESENT: Councillor A. Kang, Chair
Councillor P. Calendino, Member
Mr. P. Cech, Citizen Representative
Ms. P. Hua, Citizen Representative

ABSENT: Councillor S. Dhaliwal, Vice Chair
Mr. B. Brassington Jr., Citizen Representative
Mr. F. Zhao, Citizen Representative

STAFF: Ms. L.Garnett, Assistant Director Long Range Planning
Mr. D. Dattani, Assistant Director Engineering – Environmental Protection
Mr. M. Sloat, Planner 1
Ms. B. Zeinabova, Administrative Officer

The Chair called the 'Open' meeting to order at 6:02 p.m.

2. MINUTES

a) Open meeting of the Environment Committee held on 2015 February 10

MOVED BY MR. P. CECH:
SECONDED BY COUNCILLOR P. CALENDINO:

THAT the minutes of the Environment Committee 'Open' meeting held on 2015 February 10 be adopted.

CARRIED UNANIMOUSLY

3. CORRESPONDENCE

MOVED BY COUNCILLOR P. CALENDINO:
SECONDED BY MS. P. HUA:

THAT the correspondence be received.

CARRIED UNANIMOUSLY

a) Correspondence from Wendy Hinestrosa Re: Sustainable Infrastructure

Correspondence was received from Ms. Wendy Hinestrosa expressing concerns regarding sustainability, specifically concerning storm water. Ms. Hinestrosa suggested the City investigate Seattle's green storm water and drainage project and other solutions.

Staff provided an overview of the initiatives the City is already involved with, i.e. the Draft Environment Sustainability Strategy, use of regulations and standards to address some of these issues, City or privately initiated projects, Integrated Storm Management Plan (ISMP), discussions with Metro Vancouver, etc.

Arising from discussion, Councillor Calendino was granted leave by the Committee to introduce the following motion:

MOVED BY COUNCILLOR P. CALENDINO:
SECONDED BY MR. P. CECH:

THAT staff send a letter to the writer thanking her for her correspondence and addressing issues raised and the City's initiatives.

CARRIED UNANIMOUSLY

b) Correspondence from City of Port Moody Re: Declaration of the Right to a Healthy Environment

Correspondence was received from the City of Port Moody advising that Council, at the Regular Council meeting held on 2015 February 10, passed a resolution regarding the Right to a Healthy Environment and forwarded this declaration to the LMLGA, UBCM and FCM for discussion at their 2015 conference/convention. Further, the City of Port Moody requested support for their resolution from the City of Burnaby.

c) Memorandum from the Director Parks, Recreation and Cultural Services
Re: Burnaby Fraser Foreshore Park - Fraser River Dyke Rehabilitation Compensation Sites

A memorandum was received from the Director Parks, Recreation and Cultural Services advising that the Parks, Recreation and Culture Commission, at its meeting held on 2015 February 18, received a report regarding Burnaby Fraser Foreshore Park - Fraser River Dyke Rehabilitation Compensation Sites, and forwarded the same to the Environment Committee for information.

d) Memorandum from the Deputy City Clerk
Re: Blue Dot Declaration

A memorandum was received from the Deputy City Clerk advising that Council, at its meeting held on 2015 February 16, received a delegation providing an overview of the Blue Dot Campaign. The delegation requested that the City consider passing 'Burnaby Municipal Declaration to the Right to a Healthy Environment'. Arising from discussion, Council adopted the declaration and forwarded the same to the Environment Committee for information.

4. REPORTS

MOVED BY COUNCILLOR P. CALENDINO:
SECONDED BY MR. P. CECH:

THAT the reports be received.

CARRIED UNANIMOUSLY

a) Report from the Director Planning and Building
Re: 2015 Environment Week Program

The Director Planning and Building submitted a report seeking approval for the 2015 Environment Week Program.

The Director Planning and Building recommended:

1. THAT Council be requested to approve the 2015 Environment Week Program, as outlined in Appendix A.

MOVED BY MS. P. HUA:
SECONDED BY COUNCILLOR P. CALENDINO:

THAT the recommendation of the Director Planning and Building be adopted.

Staff provided a Power Point presentation summarizing the report.

CARRIED UNANIMOUSLY

The Committee requested staff to rationalize cost for advertisement and try to find cost savings.

Staff undertook to investigate this matter.

b) Report from the Director Engineering
Re: 2014 Annual Solid Waste and Recycling Report
- A Year in Review

The Director Engineering submitted the 2014 annual report on the City's integrated solid waste and recycling program.

The Director Engineering recommended:

1. THAT the Committee receive the 2014 Annual Solid Waste and Recycling Report and forward it to Council for information.

MOVED BY MS. P. HUA:
SECONDED BY MR. P. CECH:

THAT the recommendation of the Director Engineering be adopted.

Staff provided a Power Point presentation summarizing the report.

CARRIED UNANIMOUSLY

The Committee requested staff undertake an educational program in libraries including posters with appropriate phrases, i.e. “We collect bulky items for free”, etc.

The Committee further requested more education on ‘reuse’.

Staff undertook to investigate these matters.

c) Report from the Director Engineering and the Director Parks, Recreation and Cultural Services
Re: Grand Opening of Still Creek Works Yard

The Director Engineering and the Director Parks, Recreation and Cultural Services submitted a report seeking approval for the Engineering and Parks Departments to host a Grand Opening of the Still Creek Works Yard on 2015 May 23.

The Director Engineering and the Director Parks, Recreation and Cultural Services recommended:

1. THAT the Committee recommend Council to authorize staff to host the Grand Opening of the new Still Creek Works Yard for the general public on Saturday, May 23 from 10:30 a.m. to 2:30 p.m.

MOVED BY COUNCILLOR P. CALENDINO:
SECONDED BY MR. P. CECH:

THAT the recommendation of the Director Engineering and the Director Parks, Recreation and Cultural Services be adopted.

CARRIED UNANIMOUSLY

5. NEW BUSINESS

Councillor Calendino

Councillor Calendino noted an article in Vancouver Sun regarding the City of Surrey's plan to convert organic garbage and yard trimmings into biogas for its fleet of collection trucks, municipal vehicles and city operations.

Staff advised that in the past the City did an economic analysis of converting the City's vehicles to biogas; however, this plan was not viable at that time.

Staff undertook to further investigate the feasibility of converting green waste to gas.

Mr. Peter Cech

Mr. Cech inquired regarding the Environmental Sustainability Strategy report.

Staff noted that the second Draft of the ESS will be available in the Fall 2015, after which there will be another round of public consultation before it's finally adopted by Council.

Councillor Kang

Councillor Kang noted that the 'bee condos' are now in place across the City.

6. INQUIRIES

There were no inquiries brought before the Committee at this time.

7. ADJOURNMENT

MOVED BY MR. P. CECH:
SECONDED BY COUNCILLOR P. CALENDINO:

THAT this Open Committee meeting do now adjourn.

CARRIED UNANIMOUSLY

The Committee meeting adjourned at 7:51 p.m.

_____	_____
Blanka Zeinabova	Councillor Anne Kang
ADMINISTRATIVE OFFICER	CHAIR

From: Matt Hulse [mailto:matt@ourhorizon.org]
Sent: May-25-15 3:19 PM
To: Clerks
Subject: Request to Present to the Environment Committee - June 9 - Matt Hulse

Dear Burnaby Clerks Office,

My name is Matt Hulse and I work for an organization called Our Horizon. I would like to request to appear as a delegation before the City of Burnaby Environment Committee at their meeting on June 9, 2015.

I would like to introduce to the Committee an initiative to put climate change warning labels on gasoline nozzles as a means to help transition away from fossil fuel use. The concept is similar to the warnings on cigarette packages. This tool will change the conversation around fossil fuel use and create space for government and industry to introduce climate-friendly transportation solutions.

We believe that the ability to implement these warning labels falls within the powers of a municipality as set out in the Community Charter.

Please let me know if you require any further information. I can be reached by return email or at 250 886-3464. I look forward to hearing from you.

Matt

--
Matt Hulse, B.Sc(H), J.D.
BC Campaign Director
Our Horizon

Website | Facebook | Twitter | TEDx | **DONATE**

June 5, 2015

Burnaby Environment Committee,

As per suggestion from City Councilor James Wang, I would like to attend your meeting on June 9 as a delegation and present some ideas and suggestions on improving Burnaby's living environment, protecting trees, as well as earthquake and emergency preparation in neighborhoods that are included in city's plan as "Multiple Family Residential".

Jerry Huang
Burnaby Resident
Address: #307 – 5568 Barker Ave, Burnaby, BC V5H 2N9
Email: jhuang_25@hotmail.com
Cell: 778-228-3180

City of Burnaby

Office of the City Clerk

D. Back, City Clerk
S. Cleave, Deputy City Clerk
K. O'Connell, Deputy City Clerk

INTER-OFFICE MEMORANDUM

TO: CHAIR AND MEMBERS
ENVIRONMENT COMMITTEE

DATE: 2015 MAY 05

FROM: CITY CLERK

FILE: 02410-20
x. ref: 33200-01

SUBJECT: OIL SPILL IN ENGLISH BAY, VANCOUVER – MV MARATHASSA
(ITEM NO. 01, MANAGER'S REPORTS, COUNCIL 2015 APRIL 27)

Burnaby City Council, at the Open Council meeting held on 2015 April 27, received the above noted report and adopted the following recommendations contained therein:

1. **THAT** this report be received for information; and

2. **THAT** a copy of this report be forwarded to the Minister of Fisheries and Oceans, Burnaby MLA's, Burnaby MP's and the Environment Committee.

Arising from discussion, Council also adopted the following motion:

1. **THAT** staff be requested to prepare a resolution for the Federation of Canadian Municipalities and the Union of BC Municipalities calling for a better emergency response plan for oil spill situations in the Vancouver harbor, and that the plan be transparent and completely industry funded.

As directed by Council, please find attached a copy of the report.

Dennis Back
City Clerk

DB:rj

City of Burnaby

Item .....
Meeting ..... 2015 Apr 27

COUNCIL REPORT

TO: CITY MANAGER **DATE:** 2015 April 22

FROM: DIRECTOR ENGINEERING
FIRE CHIEF

SUBJECT: **OIL SPILL IN ENGLISH BAY, VANCOUVER – MV MARATHASSA**

PURPOSE: To provide Council with information on the recent oil spill in English Bay from MV Marathassa and provide information on potential implications to Burnaby for any similar occurrences within Burrard Inlet in the future.

RECOMMENDATION:

1. **THAT** this report be received for information; and

2. **THAT** a copy of this report be forwarded to the Minister of Fisheries and Oceans, Burnaby MLA's, Burnaby MP's and the Environment Committee.

REPORT

1.0 INTRODUCTION

Under the New Business portion of the Open Council meeting held on 2015 April 13, members of Council expressed concern regarding notification procedures and response to the recent oil spill in Vancouver. Arising from the discussion, Council requested staff to prepare a report to provide information on potential implications to Burnaby for any similar occurrences within Burrard Inlet in the future.

The following report provides information on the recent oil spill in English Bay from MV Marathassa and provides information on potential implications to Burnaby for any similar occurrences within Burrard Inlet in future.

2.0 OIL SPILL IN ENGLISH BAY, VANCOUVER – MV MARATHASSA

At approximately 5:00 pm on 2015 April 08, Port Metro Vancouver Operations Centre and the Canadian Coast Guard received calls regarding an oil sheen observed in English Bay. In response to the calls, a Port Metro Harbour boat was dispatched shortly thereafter to investigate the area where the oil sheen was observed. At approximately 8:00 pm, the Canadian Coast Guard called Western Canada Marine Response Corporation (WCMRC) to respond to the oil spill.

WCMRC clean-up crews arrived at the site at approximately 9:25 pm, undertook skimming activities and upon confirmation of the source at approximately 4:00 am on 2015 April 09, placed a boom around MV Marathassa. The City of Vancouver was notified about the oil spill at approximately 5:00 am and staff received incident notification from WCMRC at 7:14 am.

MV Marathassa is a panamax sized bulk grain carrier managed by Alassia NewShips Management Inc. and commissioned in 2015.The oil spill from this vessel, later identified to be Bunker C, has resulted in closure of a number of beaches in Vancouver and North Shore, and impacted wildlife. Approximately 30 birds were found to be oiled. According to Transport Canada, approximately 2,700 L of oil (approximately 17 barrels) had been spilled from MV Marathassa. WCMRC claims to have recovered four-fifths of the reported release amount. The exact amount of oil released is unavailable at present and the cause of the oil spill is still under investigation. Currently, the majority of the beaches impacted by oil have been cleaned-up and re-opened.

For Council's information, WCMRC is a private company formed from a small oil spill response co-operative known as Burrard Clean Operations in 1976. Its five shareholders include the four major oil companies (Imperial Oil, Shell Canada, Chevron and Suncor) and Trans Mountain Pipeline. Trans Mountain currently owns 50.9 percent of the shares in WCMRC. These five companies also sit on WCMRC's Board. WCMRC is certified as a Response Organization by Transport Canada – Marine Safety and its geographic area of response includes the BC coast extending to the 200 nautical mile limit as well as all inland navigable waters in the province. WCMRC has three main offices/warehouses to cover the North Coast, South Coast and the Vancouver Island. The South Coast office/warehouse is located at the former Shell Refinery site in Burnaby.

3.0 POTENTIAL IMPLICATIONS TO BURNABY FOR SIMILAR OCCURRENCCES IN BURRARD INLET IN FUTURE

The oil spill incident in English Bay from MV Marathassa on 2015 April 08 has clearly identified the need for a more co-ordinated and effective spill recovery response and an improved notification process. This incident also raises questions regarding the capacity and capability of responders (responsible parties, agencies and contractors) to effectively respond to larger oil spills from an oil tanker within Burrard Inlet.

For Council's information, in the event that a marine vessel spills oil while in transit within Burrard Inlet, the vessel owner would be responsible for the costs relating to the clean-up. The Canadian Coast Guard, as in the above case, would be the lead agency and the City along with other regulatory agencies would be part of the unified command. For marine vessel docked at a terminal during a spill event from the vessel or from the equipment loading fuel or product to the vessel, the owner of the vessel would be responsible for all its legal liabilities arising from spill caused by the vessel and the terminal owner/operator would be responsible for all its legal liabilities arising from the spill caused by its facilities. The lead response agency will depend on whether the spill is contained on land or has migrated to or occurs in the marine environment.

In case of the proposed Trans Mountain Pipeline Expansion Project, Council has raised a number of questions to the National Energy Board relating to oil spill and related impacts from oil tankers arriving at the Westridge Marine Terminal. The incident in English Bay just confirms the concerns which have been previously expressed by Council.

4.0 CONCLUSION

The recent oil spill in English Bay from MV Marathassa on 2015 April 08 has clearly identified the need for a more co-ordinated and effective spill recovery response and an improved notification process. This incident also raises questions regarding the capacity and capability of responders (responsible parties, agencies and contractors) to effectively respond to larger oil spills in a timely manner from an oil tanker within Burrard Inlet. In the case of the Trans Mountain Expansion Project, Council has raised a number of questions to the National Energy Board relating to oil spill and related impacts from oil tankers arriving at the Westridge Marine Terminal. The incident in English Bay just confirms the concerns which have been previously expressed by Council.

Leon A. Gous, P. Eng., MBA
DIRECTOR ENGINEERING

Doug McDonald
FIRE CHIEF

Copied to: Deputy City Managers
Director Planning and Building
Director Finance
City Solicitor
Emergency Coordinator

DD:ac

City of Burnaby
Office of the City Clerk

D. Back, City Clerk
S. Cleave, Deputy City Clerk
K. O'Connell, Deputy City Clerk

INTER-OFFICE MEMORANDUM

TO: CHAIR AND MEMBERS
ENVIRONMENT COMMITTEE

DATE: 2015 MAY 26

FROM: CITY CLERK

FILE: 02410-20

SUBJECT: EUROPEAN CHAFER
(ITEM NO. 09, MANAGER'S REPORTS, COUNCIL 2015 MAY 25)

Burnaby City Council, at the Open Council meeting held on 2015 May 25, received the above noted report and adopted the following recommendations contained therein:

1. **THAT** the European Chafer Management Plan be approved as outlined in Section 2.0 of this report.

2. **THAT** a copy of this repot be forwarded to the Environment Committee for information.

As directed by Council, please find attached a copy of the report.

Dennis Back
City Clerk

DB:rj

Copied to: Director Engineering

City of Burnaby

Item .....
Meeting .....2015 May 25

COUNCIL REPORT

TO: CITY MANAGER **DATE:** 2015 May 15

FROM: DIRECTOR ENGINEERING **FILE:** 33000 05

SUBJECT: **EUROPEAN CHAFER**

PURPOSE: To seek Council's approval on the proposed 2015 European Chafer Management Plan.

RECOMMENDATIONS:

1. **THAT** the European Chafer Management Plan be approved as outlined in Section 2.0 of this report.

2. **THAT** a copy of this repot be forwarded to the Environment Committee for information.

REPORT

1.0 INTRODUCTION

The European Chafer (*Rhizotrogus majalis)* is a non-native beetle that spends the majority of its life as a white grub (larva) in the soil. The grub form of the Chafer causes damage to turf grass in fall and spring when the grub feeds on turf roots. Secondary damage to lawns, boulevards and medians is caused by birds, skunks, and racoons digging through the turf to feed on the grubs. Since its introduction into Canada and more particularly in New Westminster in 2001, European Chafer has spread to a number of communities within this region. In response to discovering the European Chafer in the City in early 2000, the City developed a comprehensive education and outreach program and on two occasions sold a limited number of nematodes (biological treatment) to the residents to encourage sustainable landscape maintenance practices which align with the requirements of the City's pesticide uses control bylaw. While the City's effort has had success in managing the pest, this past year has seen a rise in a number of public and private lands being impacted by European Chafer.

The purpose of this report is to seek Councils approval on the proposed 2015 European Chafer Management Plan.

2.0 EUROPEAN CHAFER MANAGEMENT PLAN (2015)

Building up on the City's European Chafer Program, the elements of the proposed European Chafer Management Plan for 2015 will include the following:

Phase	Activity	Comments
Education	Public	Continue to maintain and update the City Website to include information on European Chafer, re-landscaping options, biological treatment and upcoming sale of limited number of nematode packages to residents. Distribute European Chafer brochures at public events and at all civic facilities.
	Staff	Continue to educate City staff to identify and report on Chafer impacted public lands.
Surveillance and Biological Treatment	Public Lands	Continue to identify and map high value public lands that have been impacted by European Chafer. Undertake inventory of impacted public lands and prioritize areas for rehabilitation and treatment using nematodes.
	Private Lands	Record and verify, where appropriate and or necessary, complaints from residents and businesses regarding European Chafer impacts on private lands. Offer for sale at subsidized rate, limited number of nematode packages to Burnaby residents on a first come first serve basis. ▪ Each residential property owner wanting to purchase nematode packages from the City will only be provided with up to two nematode packages* per property. ▪ Residential property owner will be required to pre-purchase nematode packages. Details regarding location and dates where nematode packages can be pre-purchased by Burnaby residents will be advertised in the local papers in early June.

		▪ Nematode packages which have been pre-purchased will be made available for pick up by residents in mid-July in advance of the treatment time which is in late July. Details regarding the location and dates when the nematode packages can be picked up will be provided to the residents at the time of the pre-purchase. Water exemption permits, in accordance with the applicable bylaw, will be issued at the time of picking up nematode packages as nematode treatment requires pre and post watering of impacted turf area. Nematode packages will not be sold at the time of pick-up.

*Nematode Packages – Each package will contain 50 million natively-occurring nematodes (or microscopic roundworm) *Heterorhabditis bacteriophora*, a "cruiser" species that actively infects and kills white grub, such as the European Chafer grubs. Treatment is most effective if done in late July, after the European Chafer eggs have hatched and when the young grubs are most vulnerable to nematode attack. Each package can treat up to 750 square feet of impacted area.

3.0 CONCLUSION

The City has a comprehensive program to respond to emerging issue of damaged lawns due to European Chafer activity. While the City's effort has had success in managing the pest, this past year has seen a rise in a number of public and private lands being impacted by European Chafer. In response to this, staff recommends that Council approve the European Chafer Management Plan for 2015 as noted in Section 2 of this report.

Leon A. Gous P.Eng., MBA
Director Engineering

DD:cp

Copied to: Director Parks, Recreation and Cultural Services
Director Finance

City of Burnaby
Office of the City Clerk

D. Back, City Clerk
S. Cleave, Deputy City Clerk
K. O'Connell, Deputy City Clerk

INTER-OFFICE MEMORANDUM

TO: CHAIR AND MEMBERS ENVIRONMENT COMMITTEE **DATE:** 2015 JUNE 02

FROM: DEPUTY CITY CLERK **FILE:** 02410-20

SUBJECT: **2015 ENVIRONMENTAL AWARDS PROGRAM**
ITEM NO. 16, MANAGER'S REPORTS, COUNCIL 2015 JUNE 01

Burnaby City Council, at the Open Council meeting held on 2015 June 01, received the above noted report and adopted the following recommendations contained therein:

1. **THAT** the Citizen Representatives of the Environment Committee recommend the following 2015 Environmental Awards to Council for consideration at Council's meeting of 2015 June 1:

    a. A 2015 Environmental Award in the category of Business Stewardship be presented to Electronic Arts (Canada) Inc. for measuring their greenhouse gas emissions and implementing various sustainability measures to reduce their environmental and carbon footprints.

    b. A 2015 Environmental Award in the category of Communications be presented to the Zero Waste Initiative, developed by Simon Fraser University Sustainability Office in partnership with Facilities Services, for creative and engaging communication strategies to reduce waste.

    c. A 2015 Environmental Award in the category of Community Stewardship be presented to Stoney Creek Environment Committee for their ongoing stewardship of Stoney Creek and in recognition of the 25th Anniversary of the Great Salmon Send-Off.

    d. A 2015 Environmental Award in the category of Green Choices be presented to Park Avenue Towers Green Team for their exceptional achievements in waste reduction and organic waste diversion in a multi-family development.

.../2

e. A 2015 Environmental Award in the category of Planning and Development be presented to SFU Community Trust for achievements in environmental sustainability for Phase 4 of the UniverCity Master Plan.

f. A 2015 Environmental Award in the category of Youth be presented to Salina Kung, a student at Alpha Secondary School, for her many outstanding environmental achievements.

2. **THAT** the Citizen Representatives of the Environment Committee recommend the following 2015 Environmental Stars to Council for consideration at Council's meeting of 2015 June 1:

a. A 2015 Environmental Star in the category of Business Stewardship be presented to D-Wave Systems Inc. for achieving significant energy savings and operational efficiencies by upgrading their facility in Burnaby and for implementing various sustainability measures.

b. A 2015 Environmental Star in the category of Communications be presented to Kyle Empringham, a Burnaby youth who co-founded "The StarFish Canada", an online publication that celebrates the achievements of youth and environmental sustainability.

c. A 2015 Environmental Star in the category of Community Stewardship be presented to Luanne Bradshaw, a Burnaby resident who has dedicated many years to keeping the City of Burnaby clean by picking up waste and refuse.

3. **THAT** the 2015 Environmental Awards and Environmental Stars be presented at a reception at the Burnaby Lake Rowing Pavilion on 2015 June 14.

4. **THAT** a copy of this report be submitted to the Environment Committee for their information.

S Cleave

Sid Cleave
Deputy City Clerk

SC:rj

Copied to: Deputy City Managers

City of Burnaby

Meeting 2015 June 01

COUNCIL REPORT

TO:	CITY MANAGER	**DATE:**	2015 May 27
FROM:	CITIZEN REPRESENTATIVES ENVIRONMENT COMMITTEE	**FILE:** *Reference:*	33000 01 *Environmental Awards*

SUBJECT: 2015 ENVIRONMENTAL AWARDS PROGRAM

PURPOSE: To recommend recipients of the 2015 City of Burnaby Environmental Awards Program.

RECOMMENDATIONS:

1. **THAT** the Citizen Representatives of the Environment Committee recommend the following 2015 Environmental Awards to Council for consideration at Council's meeting of 2015 June 1:

   a. A 2015 Environmental Award in the category of Business Stewardship be presented to Electronic Arts (Canada) Inc. for measuring their greenhouse gas emissions and implementing various sustainability measures to reduce their environmental and carbon footprints.

   b. A 2015 Environmental Award in the category of Communications be presented to the Zero Waste Initiative, developed by Simon Fraser University Sustainability Office in partnership with Facilities Services, for creative and engaging communication strategies to reduce waste.

   c. A 2015 Environmental Award in the category of Community Stewardship be presented to Stoney Creek Environment Committee for their ongoing stewardship of Stoney Creek and in recognition of the 25th Anniversary of the Great Salmon Send-Off.

   d. A 2015 Environmental Award in the category of Green Choices be presented to Park Avenue Towers Green Team for their exceptional achievements in waste reduction and organic waste diversion in a multi-family development.

   e. A 2015 Environmental Award in the category of Planning and Development be presented to SFU Community Trust for achievements in environmental sustainability for Phase 4 of the UniverCity Master Plan.

f. A 2015 Environmental Award in the category of Youth be presented to Salina Kung, a student at Alpha Secondary School, for her many outstanding environmental achievements.

2. **THAT** the Citizen Representatives of the Environment Committee recommend the following 2015 Environmental Stars to Council for consideration at Council's meeting of 2015 June 1:

a. A 2015 Environmental Star in the category of Business Stewardship be presented to D-Wave Systems Inc. for achieving significant energy savings and operational efficiencies by upgrading their facility in Burnaby and for implementing various sustainability measures.

b. A 2015 Environmental Star in the category of Communications be presented to Kyle Empringham, a Burnaby youth who co-founded "The StarFish Canada", an online publication that celebrates the achievements of youth and environmental sustainability.

c. A 2015 Environmental Star in the category of Community Stewardship be presented to Luanne Bradshaw, a Burnaby resident who has dedicated many years to keeping the City of Burnaby clean by picking up waste and refuse.

3. **THAT** the 2015 Environmental Awards and Environmental Stars be presented at a reception at the Burnaby Lake Rowing Pavilion on 2015 June 14.

4. **THAT** a copy of this report be submitted to the Environment Committee for their information.

REPORT

1.0 BACKGROUND

The City of Burnaby's Environmental Awards Program recognizes significant environmental achievements of people and organizations in our community. The program was established in 1996 based on direction provided in the State of the Environment Report for Burnaby (1993).

On an annual basis, awards may be issued in six categories: Business Stewardship, Communications, Community Stewardship, Green Choices, Planning and Development, and Youth, as described in ***Appendix A (attached)***. As established in 2000, there are two designations in each category:

- Environmental Awards, for recognition of environmental achievements of a larger scale, such as long-term commitments to an organization or cause, leadership of numerous other individuals, and projects of a significant size and relatively complex scope, and

- Environmental Stars, for recognition of environmental achievements of a smaller or more individual scale that may nevertheless serve to catalyze larger initiatives and inspire others.

Each nomination received is reviewed by the Citizen Representatives of the City's Environment Committee who then recommend award recipients to Mayor and Council.

As approved by the Citizen Representatives and Chair of the Environment Committee, this report recommends six (6) Environmental Awards and three (3) Environmental Stars for Council's approval this year, to be awarded on 2015 June 14 at a reception at the Burnaby Lake Rowing Pavilion.

2.0 AWARD PROCESS

This year's call for award nominations was approved by Council at its Regular Meeting on 2015 February 16. The call for nominations was promoted at civic facilities and to Burnaby's environmental community, published on the City's website, promoted on social media, and advertised in local newspapers. Twenty-two (22) nominations were received. The applications were compiled by staff and reviewed with the Citizen Representatives of the Environment Committee.

3.0 2015 ENVIRONMENTAL AWARDS AND STARS

The Citizen Representatives of the Environment Committee recommend for Council's approval the following nominees for Environmental Awards and Environmental Stars.

3.1 Environmental Awards

Business Stewardship (1 Award)

Electronic Arts (Canada) Inc. for measuring their greenhouse gas (GHG) emissions and implementing various sustainability measures at their Burnaby campus to reduce their environmental and carbon footprints.

Nominee Summary

Electronic Arts (Canada) Inc. employs over 1,500 employees at their Burnaby campus. In 2010, they began measures to reduce GHG emissions and in 2014 they achieved Climate Smart certification. As part of their strategy to reduce their GHG emissions, electric car charging stations were installed and a car sharing service is now available at their Burnaby campus.

Electronic Arts also retained a third party consultant to audit all aspects of their facility and develop strategies for efficient operations. Electronic Arts facilities in Burnaby have historically emphasized environmental sustainability.

Communications (1 Award)

The **Zero Waste Initiative,** developed by Simon Fraser University Sustainability Office in partnership with Facilities Services, for creative communications and engagement strategies to reduce waste.

Nominee Summary

The **Zero Waste Initiative** was developed by the Simon Fraser University Sustainability Office, in partnership with Facilities Services. This initiative supports SFU's Sustainable Strategic Plan and aims to double the amount of landfill waste recycled or composted and to divert 70% of waste from landfills. A key focus of the initiative is creative communications and engagement strategies that promote sustainable behaviours. Since its launch in 2014, the Zero Waste Initiative has created new waste stations for use at all SFU campuses and delivered creative and engaging multi-media campaigns. At SFU in 2014, the percentage of waste diverted from landfills increased from 25% to 40%.

Community Stewardship (1 Award)

The **Stoney Creek Environment Committee** for their ongoing stewardship of Stoney Creek and in recognition of the 25th Anniversary of the Great Salmon Send-Off.

Nominee Summary

While individual members of the **Stoney Creek Environment Committee** have been recognized with Environmental awards in previous years, this award recognizes this streamkeeper group's ongoing collective stewardship efforts and marks the significance of the 25th Anniversary of the Great Salmon Send-Off that took place on May 9th of this past year. This well established community event has now engaged multiple generations of Burnaby residents in the stewardship of Burnaby's most productive salmon bearing stream.

Green Choices (1 Award):

Park Avenue Towers Green Team for their exceptional achievements in waste reduction and organic waste diversion in a multi-family development.

Nominee Summary

The **Park Avenue Tower Green Team** was formed in 2013 to educate the residents and fellow strata members of this large multi-family building about recycling and organic waste diversion.

Their goal was to change attitudes and overcome the perceived barriers for many residents toward waste reduction, recycling and separating organics. By taking a community-based approach, removing barriers and educating their neighbours, the Park Avenue Green Team has experienced high participation and effectiveness rates in their waste reduction programs, while at the same time building a stronger community. The City of Burnaby has identified the Park Avenue Tower Green Team and their approach as a model for other multi-family dwellings to follow.

Planning and Development (1 Award):

SFU Community Trust for achievements in environmental sustainability for the Phase 4 Master Plan of UniverCity.

Nominee Summary

This Environmental award recognizes the recently enacted **Phase 4 Master Plan at UniverCity**. In developing UniverCity, a primary goal of the **SFU Community Trust** has always been to create a model of sustainable community development. As UniverCity continues to grow and transition from its early visions of sustainability, beginning Phase 4 is as an exciting milestone where innovative and cutting edge sustainable community development continues to be implemented successfully in a real world setting. Environmental sustainability initiatives include continued use of UniverCity's comprehensive green zoning bylaw that defines standards for green building and energy efficiency, expansion of the Neighbourhood Energy utility, a new rainwater management pond, and stormwater management practices that are continually refined through an adaptive management process.

Youth (1 Award)

Salina Kung, student at Alpha Secondary School, for her many outstanding environmental achievements.

Nominee Summary

Salina Kung's achievements in environmental stewardship and sustainability are exceptional. In the ninth grade, Ms. Kung won Canada's Next Green Journalist award for an article she authored about the salmonids in the classroom program at a local elementary school. She received a $500 prize for the award and used these funds to create a second salmon stewardship initiative at her school. Presently, she serves as Chair of the Executive Committee for the Burnaby Youth Sustainability Network and in the past has served as president of her school's green club. In these capacities, some of her accomplishments include establishing a garden for growing food at her school, preparing a detailed proposal for a school district wide food scraps recycling program with support from the School Board and Be the Change Alliance, and co-organizing Vancouver's largest clothing swap with assistance from the Canadian Youth Sustainability Network.

3.2 Environmental Stars

Business Stewardship (1 Star)

D-Wave Systems Inc. for achieving significant energy savings and operational efficiencies by upgrading their facility in Burnaby and for implementing various sustainability measures to reduce their environmental footprint;

Nominee Summary

D-Wave Systems Inc. made significant upgrades to their facility in Burnaby, using new technologies to optimize their heating and cooling systems, installing new air compressors and air dryers and installing energy efficient exterior and interior lighting. These improvements result in significant and measureable savings of electricity and natural gas use, consequently reducing their GHG emissions. They have also started a comprehensive waste management program and have retained a third party consultant to audit and develop a strategy to further reduce their GHG emissions.

Communications (1 Star)

Kyle Empringham, a Burnaby youth who co-founded "The StarFish Canada", an online publication that celebrates the achievements of youth and environmental sustainability.

Nominee Summary

Kyle Empringham is a Burnaby youth who co-founded "The StarFish Canada", an online publication that celebrates the achievements of youth and environmental sustainability. The website is reported to receive nearly 180,000 visits per year, mostly from youth between the ages of 15 to 30. Each year The StarFish recognizes the Top 25 Environmentalists under 25 from across Canada.

Community Stewardship (1 Star)

Luanne Bradshaw, a Burnaby resident who has dedicated many years to keeping the City of Burnaby clean by picking up waste and refuse; and

Nominee Summary

Luanne Bradshaw is a Burnaby resident who for the past 25 years has diligently taken her own initiative to keep the City of Burnaby clean by picking up waste and refuse. Ms. Bradshaw removes waste and refuse that is possible to pick up on her own, and calls the appropriate municipal staff when she encounters something larger. Her tireless efforts in this regard are an exceptional example of community stewardship.

4.0 CONCLUSION

The City of Burnaby Environmental Awards Program provides an annual opportunity to recognize the significant environmental achievements of individuals and organizations in our community. For 2015, six (6) Environmental Awards and three (3) Environmental Stars are recommended for Council approval by the Citizen Representatives of the Environment Committee. The recommendations for award recipients are proposed for consideration at the Council meeting on 2015 June 1. Presentation of the Environmental Awards and Environmental Stars is proposed for a reception to be held at the Burnaby Lake Rowing Pavilion on 2015 June 14.

This report is respectfully submitted by the Citizen Representatives of the Environment Committee for consideration.

PETER CECH, Citizen Member
Environment Committee

PEGGY HUA, Citizen Member
Environment Committee

BILL BRASSINGTON JR., Citizen Member
Environment Committee

FRANK ZHAO, Citizen Member
Environment Committee

MS/sla
Attachment

cc: Deputy City Managers
City Clerk

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environment week

May 30 ~ June 6, 2015

burnaby.ca/environmentweek

City of Burnaby

The City of Burnaby Environmental Awards Program recognizes contributions made by individuals, groups, organizations and companies to improve Burnaby's environment and our understanding of it. The program increases the awareness and responsibilities of the public and the City toward the environment.

The City's Environmental Awards Program consists of the Environment Awards and the Environmental Stars. The Environment Awards recognize the outstanding environmental achievements of an individual or group over a number of years, while the Environmental Stars acknowledge a significant environmental achievement at a smaller scale.

Make a nomination today and show your support for Burnaby's environmental leaders!

Environment Awards 2015

burnaby.ca/environmentawards

1 Business Stewardship
This category identifies businesses located in Burnaby, whose exemplary environmental activities have promoted sustainability in the workplace or in the community. Nominated businesses should demonstrate excellence in raising awareness of environmental issues with staff or clients, reducing the business' ecological footprint and/or notably enhancing or rehabilitating the City's environment.

2 Communications
This category includes newspaper articles, publications, and video, audio or multi-media presentations that help to increase the understanding of environmental issues in Burnaby. The nominated work should demonstrate a comprehensive understanding of an environmental issue and its relationship to the citizens of Burnaby.

3 Community Stewardship
This category identifies citizens of Burnaby who have been actively involved in promoting environmental stewardship for several years and who, through their efforts, have increased public awareness of an environmental issue or notably enhanced or rehabilitated the City's environment.

4 Green Choices
This category recognizes residents of Burnaby who demonstrate an exemplary commitment to environmentally friendly choices in the home, garden and community. Nominated individuals should demonstrate commitment to reducing their impact on the natural environment through any or all of the following means: household energy, waste and water efficiency, innovation in natural garden practices, and other sustainable lifestyle choices.

5 Planning and Development
This category highlights exemplary developments that demonstrate innovative environmental features that may include environmentally sensitive site planning, alternative energy and climate control, water conservation, storm water or wastewater management, conservation of energy, reuse of materials, the protection and enhancement of urban streams or the enhancement of wildlife habitat in the City. Developments may range in scale from large commercial, industrial, institutional or residential projects to individual new or renovated buildings.

6 Youth
This category recognizes the contributions that children or teenagers have made, either through their own initiatives or through school programs that have resulted in enhanced public awareness of environmental issues or notably enhanced or rehabilitated the City's environment.

Nomination Information

Multiple recipients can be identified in any and all award categories. The deadline for nominations is Monday, April 13th, 2015. Visit the City's webpage at **burnaby.ca/environmentawards** to complete an on-line nomination form. A print version is also available.

Award Process
The Environment Awards are given annually during Environment Week. Recipients are recommended by the Citizen Representatives of the City's Environment Committee. The list is then forwarded by the Environment Committee to City Council for review and approval. The award recipients are scheduled to be announced at Council on Monday, May 25th, 2015. The awards will then be presented at a special reception on Sunday, June 14th.

Additional Information
If you have any questions, comments, or require additional information, please contact:

City of Burnaby Planning Department
Tel: 604-294-7400
E-mail: planning@burnaby.ca
burnaby.ca/environmentawards

Nomination Deadline:

City of Burnaby

Finance Department

INTER-OFFICE MEMORANDUM

TO: CHAIR AND MEMBERS
ENVIRONMENT COMMITTEE

DATE: 2015 May 27

FROM: DIRECTOR FINANCE

FILE: 2410-20

SUBJECT: CITY GREEN TEAM FOOD RECOVERY ACTIVITIES

At the Environment Committee meeting held on 2015 February 10, the Committee received a report regarding an update on 2014 activities and a 2015 workplan for the Burnaby Green Team. The City Green Team is comprised of authorized City staff charged with implementing the Sustainable Purchasing Guidelines and Initiatives, endorsed by Council at its meeting of 2008 October 27.

The recent report included information on food recovery activities undertaken by the Burnaby Green Team in partnership with the City's Food Services Division. As indicated in the report, this memorandum provides a further update to the Environment Committee on these activities.

The food recovery pilot is being completed through participation in the Greater Vancouver Food Bank Society's 'Community Angels' Food Runners Program. The Program facilitates (through pick-up and delivery) the donation of nourishing food to local meal providing agencies – food that would otherwise go to waste. Due to higher food preparation and service levels, the food recovery pilot was expanded from Burnaby Mountain Clubhouse, as initially proposed, to include Riverway Clubhouse. A dry run was completed in 2015 February and, after subsequent process adjustments, initial pick-ups began in May.

Pilot findings indicate that, due to efficiencies introduced by the Food Services Division, less food than originally expected is left over and available for donation. However, during the busy late spring/summer service and event season (e.g. weddings, corporate events), donation amounts are expected to increase. The pilot will run until the end of 2015 and a full report on the outcomes will be forwarded to the Environment Committee at that time.

Denise Jorgenson
DIRECTOR FINANCE

GC:RM/ts

cc: Director Parks, Recreation and Cultural Services

City of Burnaby

Meeting 2015 June 9

COMMITTEE REPORT

TO:	CHAIR AND MEMBERS ENVIRONMENT COMMITTEE	**DATE:**	2015 June 4
FROM:	DIRECTOR PLANNING AND BUILDING	**FILE:** *Reference:*	33000 01 *World Rivers Day*

SUBJECT: **WORLD RIVERS DAY 2015**

PURPOSE: To seek approval of the program for World Rivers Day 2015 at the Burnaby Village Museum and Council expenditure authorization for advertising, promotion and support of the program.

RECOMMENDATIONS:

1. **THAT** Council approve the program for World Rivers Day 2015 at the Burnaby Village Museum.

2. **THAT** Council authorize expenditures for World Rivers Day 2015 in the amount of $4,000 for advertising, promotion and programming, as outlined in this report.

3. **THAT** a copy of this report be forwarded to the Burnaby Parks, Recreation and Culture Commission; Mark Angelo, World Rivers Day Chair and Founder and representative of the International River Foundation; and the Outdoor Recreation Council of British Columbia for information purposes.

REPORT

1.0 BACKGROUND

World Rivers Day and BC Rivers Day events are organized annually on the last Sunday in September to celebrate the environmental, economic, social and cultural values of waterways in our province and around the world. These community events help raise awareness of the many threats and challenges faced by rivers and streams and the importance of environmental sustainability and stewardship. World Rivers Day and BC Rivers Day in 2015 fall on Sunday, September 27.

The first BC Rivers Day was held in 1980 and was created by world renowned river advocate and Burnaby resident, Mark Angelo. Over the years, the event became firmly established in many communities across BC and western Canada. Based on the success of BC Rivers Day, Mark Angelo initiated the establishment of World Rivers Day in 2005, which was launched as part of the United Nations Water for Life Decade. World Rivers Day has its origin in BC Rivers Day and thus, in our province, the events are one in the same. Annual Rivers Day celebrations remain a fixture in many BC communities and on the same day millions of people in over 60 countries now celebrate World Rivers Day with events in their local communities. 2015 marks the 35th anniversary of BC Rivers Day and in 1993, the City of Burnaby was the first municipality in BC to proclaim 'BC Rivers Day'.

2.0 PARTNERSHIPS AND ROLES FOR 2015 EVENT

The World Rivers Day event in Burnaby is organized by a planning committee consisting of staff from Burnaby Village Museum (BVM), the Planning Department, and Mark Angelo. Since 2013, BVM has hosted World Rivers Day, and will do so again for 2015. BVM staff undertake the programming, promotion and marketing for the event.

The BVM is an ideal venue for World Rivers Day. The museum staff's capacity and organizational knowledge for hosting large public events is a significant benefit, as is their growing knowledge of how the themes of World Rivers Day complement the museum's regular programming and the natural asset that is Deer Lake Brook, which bisects the museum grounds. Waterways such as the Fraser River, Brunette River and Burrard Inlet have played important roles in Burnaby's development. Hosting World Rivers Day at the Burnaby Village Museum helps celebrate this history and the City's ongoing efforts to protect its natural heritage, which includes the salmon that return to spawn in Brunette Basin tributaries, such as Deer Lake Brook and nearby Buckingham Creek. While typically closed for the season after Labour Day, the BVM opens its doors specifically to host World Rivers Day. For the event, the museum is staffed to operate as it would for any significant community event. All exhibits and food concessions are open.

3.0 PROPOSED WORLD RIVERS DAY PROGRAM

World Rivers Day is scheduled for the Burnaby Village Museum on Sunday, September 27, 2015 from 11am to 4:30pm. The proposed program for the day aims to build on the successes and lessons learned from the previous two years that the BVM has hosted the event. Key activities for the 2015 event are summarized below:

Activities:
Riparian Planting Demonstration: Evergreen, a locally based environmental organization, will lead a riparian planting demonstration activity on Deer Lake Brook, as it has done in past years. Ecological information about Deer Lake Brook will be displayed on the bridge crossing of this waterway. For 2015, the planning committee is investigating ways to create more opportunities for the public to participate in the planting.
Film Screenings: Short films created by the BCIT Rivers Institute will be shown on a loop at 'Stride Studios', located in the village along the Main Street.
Mapping: The City of Burnaby Planning Department will present their large aerial photo map of the City to show where salmon spawn and will have copies of the 'Waterways of Burnaby' maps available for free to the public.
Children's Parade: The Nylon Zoo, a children's entertainer that allows children to participate in a real parade while dressed in animal costumes, has been invited back and will be located in the field near the carousel.

Entertainment
Children's Musician: Between the opening of the event at 11am and 2pm, the children's musician will perform two sets, with the opening remarks scheduled for between the first and second set. This enables the primary musical act to entertain and draw people to the event in the morning when the museum opens, but also perform in the early afternoon when the event is typically the busiest. For

2015, the planning committee is investigating adding children's entertainers to the Main Street area, to enliven this area of the site.
All ages musician: A second musician will perform from 2pm to the end of the day.

Exhibitors
Environmental Exhibitors: Ten to fifteen environmental exhibitors will present their information beneath tents along the pedestrian pathways in the main village or on the east side of Deer Lake Brook near the main entrance.

In addition to the activities listed above, there will be time allotted in the day's schedule for official remarks by the Mayor, Council members and Mark Angelo.

New ideas are currently being explored by the planning committee for developing additional activities focused on streams and rivers in Burnaby, the rest of BC and all over the world. Some of these ideas involve using trivia about streams and rivers, such as 'what is the longest river in BC' or 'what is the largest river by volume in the world'. Such trivia may be used in displays or as part of a scavenger hunt. Presenting the word 'river' in different languages and matching the word to its native language is a similar example.

4.0 WORLD RIVERS DAY BUDGET

For 2015, an expenditure of $4,000 from the Boards, Committees and Commissions operating budget is requested, in keeping with last year's request. The 2014 request was similar to amounts approved between 2010 and 2013, which ranged between $4,000 to $5,500.

The proposed budget covers costs for advertising, promotion and programming. In 2014, the advertising and promotion was conducted by BVM staff and consisted of print ads in local papers, outdoor bus shelter ads, creation of berm signs at the museum, overpass banners, placement in the CTV Community Calendar, bookmarks available at local public libraries, sponsored electronic media, and electronic display ads on one mobile version of a regional newspaper. BVM would undertake similar advertising activities for 2015.

Programming proposed for 2015 would include one children's musical entertainer and one "all ages" musical entertainer, three children's entertainers (non-musical), three specialized environmental exhibitors, exhibits from various environmental groups, and materials such as plants for the riparian planting demonstration. There is also a significant cost for other materials to support the event (tents, tables, chairs, etc.) The 2015 programming budget is slightly higher than the 2014 budget to include new programming elements such as children's entertainers on Main Street, and expanded Dear Lake Brook demonstration planting.

The funding available for the 2015 event is estimated at $12,600, with $4,000 anticipated from the Boards, Committees and Commissions operating budget, $2,000 from the Planning Department operating budget, $5,100 from the BVM operating budget, and $1,500 from Mark Angelo. Other organizations, such as Evergreen, provide in-kind contributions to World Rivers Day programming. The funding available for 2015 is $1,500 less than what was available in 2014. The planning committee proposes modestly improving the programming in 2015 by including additional children's entertainers and materials for activities, which is anticipated to add $1,000 to the budget. Therefore,

to maintain the level of programming in previous years and enhance the programs and activities for 2015, this Committee could consider recommending additional funding from the Boards, Committees and Commissions operating budget in the amount of $2,500.

5.0 CONCLUSION

Celebrating World Rivers Day provides a meaningful opportunity for the public to explore and celebrate rivers and waterways. This annual community event has always had special meaning in our community because Burnaby was the first municipality to proclaim BC Rivers Day in 1993. That this year is the 35th Anniversary of BC Rivers Day only adds to the significance.

It is again planned that World Rivers Day in Burnaby be hosted by the Burnaby Village Museum, located in the heart of the Brunette Basin watershed and bisected by Deer Lake Brook, one of Burnaby's most ecologically significant streams. This year's program will focus on environmental information presented in an engaging manner, entertainment for children and families and connecting the public to waterways in Burnaby, BC and around the world.

Approval by Council of an expenditure of $4,000 is requested for 2015 programs, activities and promotion. The Committee could also consider additional funding in the amount of $2,500 to maintain and modestly expand the program for this year's event.

Burnaby's continued co-operation with Mark Angelo and the City's community partners is expected to contribute positively to the event's success. Typically one of the high profile Rivers Day events in the province, the celebration of World Rivers Day in Burnaby highlights the City's ongoing commitment to the sustainability of Burnaby's streams, rivers and watersheds.

for: Lou Pelletier, Director
PLANNING AND BUILDING

MS/sla

cc: City Manager
Deputy City Managers
Director Engineering
Director Finance
Director Parks, Recreation and Cultural Services
OIC, RCMP
Fire Chief
Chief Librarian
President, CUPE Local 23
City Clerk

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City of Burnaby

Meeting 2015 June 09

COMMITTEE REPORT

TO:	CHAIR AND MEMBERS ENVIRONMENT COMMITTEE	**DATE:**	2015 June 04
FROM:	DIRECTOR ENGINEERING	**FILE:**	39500 12
SUBJECT:	**ANNUAL DRINKING WATER QUALITY MONITORING REPORT (2014)**		
PURPOSE:	To present the Committee and Council with the City's Annual Drinking Water Quality Monitoring Report for 2014.		

RECOMMENDATION:

1. **THAT** the Committee recommend Council to:

   a. Receive this report for information purposes, and

   b. Forward a copy of this report to Dr. Lisa Mu, Medical Health Officer, Fraser Health Authority, Suite 400-Central City Tower, 13450 -102nd Avenue, Surrey, BC V3T 0H1.

REPORT

Enclosed (under separate cover) is the City's Annual Drinking Water Quality Monitoring Report for 2014. The report provides an overview of the regulatory context, outlines the drinking water quality program undertaken by staff in 2014 and includes associated sample results to provide the evidence of potability and compliance with the *B.C. Drinking Water Protection Regulations*.

In summary, in 2014 a total of 3,032 routine drinking water samples were obtained in Burnaby for bacteriological analysis. Of these, 1,624 samples were obtained by City staff from 63 dedicated sample locations selected throughout the City's waterworks system and 1,408 samples were collected by Metro Vancouver staff from 15 locations along its transmission mains located within the City boundary. The samples collected by City staff were submitted to the Metro Vancouver laboratory for analysis of Total Coliform, E. Coli (indicator of fecal contamination), Heterotrophic Plate Count (HPC - early indicator of bacterial re-growth in the water mains), and turbidity. Free chlorine residual and temperature were also measured in the field at the time of sampling. In addition, a limited number of sample locations were also used for monitoring disinfection by-products (trihalomethanes and haloacetic acid), pH, metals, and vinyl chloride.

In reviewing the 2014 drinking water quality sample data, it was noted that the water quality continues to improve over previous years. The bacteriological water quality complied with the *B.C. Drinking Water Protection Regulation* with the exception of the following one event which was subsequently followed up on and brought into compliance with the regulations:

One drinking water sample obtained on August 12, 2014 from a sampling kiosk located at 8300 block Willard Street show the presence of an E. Coli bacteria. In response, staff immediately implemented pre-established protocols for an E. Coli Event. Fraser Health Authority (FHA) was notified regarding the sample result. The results of all the drinking water samples taken from the area were reviewed and noted to be in compliance. The watermains in the immediate area of 8300 block Willard Street were flushed and re-sampled. The supplement samples were found to be in compliance with the *BC Drinking water Protection Regulations*. Based on the follow-up procedures undertaken and the resultant water quality findings, FHA staff were satisfied with the actions taken and did not require any additional action.

With respect to Total Coliform, three (3) samples were found to contain Total Coliform but at no time did the percentage of samples tested positive for Total Coliform exceed the 10% stipulated in the *B.C. Drinking Water Protection Regulations* (see **Figure 7**). Furthermore, none of the three samples that tested positive for Total Coliforms was greater than 10. For the Committee and Council's information, any sample with greater than 1 Total Coliform would result in resampling. Any sample with greater than 10 Total Coliforms would result in a follow-up with FHA and immediate flushing of applicable water mains and re-sampling.

Free chlorine residuals at sampling stations have also improved over the past years. Sixty-one of the sixty-three sampling stations achieved the objective of 0.2 mg/L or above in 2014 on average. Sampling stations that experience temporary lower residual chlorine are largely due to low flow/use through the distribution system. The City maintains the residual chlorine levels in these areas by frequent flushing of the watermains to enhance flow.

Physical/chemical, pH and the disinfection by-product measured as Total Trihalomethanes, Bromochloromethanes and Haloacetic Acids were found to be below the *Federal Guidelines for Canadian Drinking Water Quality*.

With respect to turbidity in drinking water, the majority of samples had turbidity of less than 1 NTU. For those samples where turbidity was greater than 1 NTU, these may be attributed to source water conditions or other transient activities such as water main flushing, water main breaks or firefighting which cause a change in the water pressure or flow in the system.

Staff will be providing a notice in the local newspaper informing the public regarding the availability of this report. Limited copies of the City's Annual Drinking Water Quality Report (2014) will be available to the public at the Engineering Department. Alternately, the public can access an electronic copy of the report from the City's website.

This is provided for the Committee and Council's information.

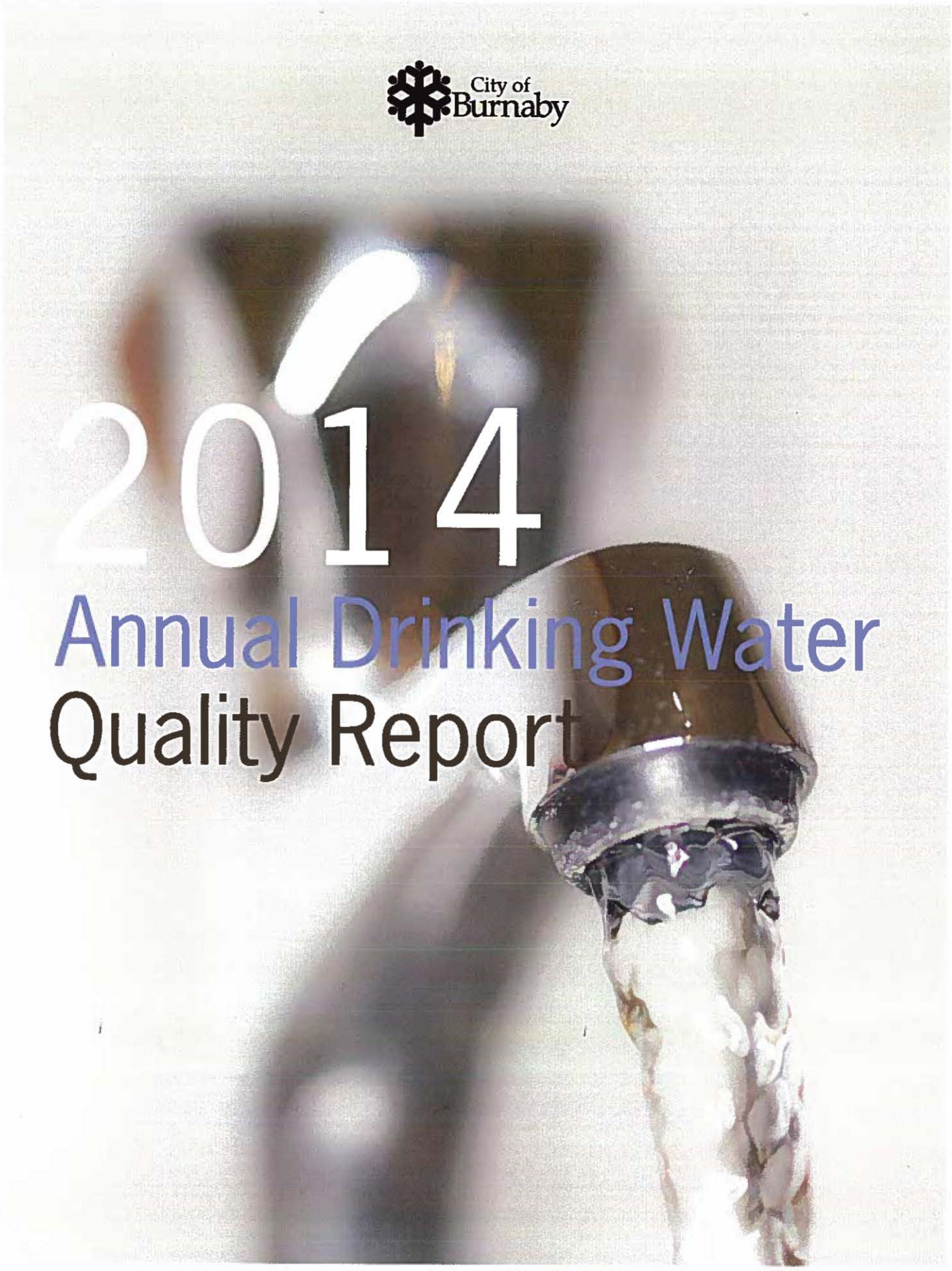
Leon A. Gous, P.Eng., MBA
Director Engineering

DD:ac

Attachment

Copied to: City Manager

City of Burnaby



2014 Annual Drinking Water Quality Report

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INTRODUCTION

This report provides an overview of the regulatory context, outlines the drinking water quality program for 2014 and associated sample results to provide evidence of potability and compliance with the *British Columbia Drinking Water Protection Regulation.*

REGULATORY CONTEXT

Drinking water in the City of Burnaby (the City) falls under the regulatory jurisdiction of several government agencies:

PROVINCIAL/FEDERAL REGULATORY REQUIREMENTS

The *British Columbia Drinking Water Protection Regulation* promulgated under the *Drinking Water Protection Act* requires, amongst other aspects, suppliers of drinking water in British Columbia to hold an Operating Permit, demonstrate that the drinking water is appropriately treated and monitored from microbial perspective, have appropriate emergency and public notification plans in place, and prepare and make public an annual report on the results of previous year. In addition, the Federal *Guidelines for Canadian Drinking Water Quality* provide references for acceptable concentration values for various chemical and physical parameters for potable water.

REGIONAL HEALTH AUTHORITY REQUIREMENTS

In 2000, a "Water Quality Monitoring and Reporting Plan for the GVRD and Member Municipalities" (WQMRP) was established by the Regional Medical Health Officials, the Greater Vancouver Water District and member municipalities. This document, which was reviewed and amended in January 2006, is a cornerstone in providing regional consistency in the monitoring and reporting of bacteriological and chemical drinking water quality parameters. In order to avoid duplication, the WQMRP separates the responsibilities for water quality monitoring and reporting between the GVRD (now Metro Vancouver) and the member municipalities by generally assigning the responsibility of source water and reporting to the Metro Vancouver and the responsibility for distribution system monitoring and reporting to the municipalities.

METRO VANCOUVER REQUIREMENTS

In addition to the WQMRP, the Drinking Water Management Plan (DWMP) was adopted in 2005 to ensure that our region's water needs will be met affordably and sustainably for Metro Vancouver and its member municipalities. In 2007, the Plan was amended to fully incorporate management of the source watersheds. In June 2011, the Plan was updated again detailing the investments in water treatment, supply and conservation programs necessary to provide consistently higher quality drinking water, improved supply reliability, and greater environmental protection. Details of the Plan and the municipal actions identified and adopted by the City are posted on the Metro Vancouver website at: **www.metrovancouver.org**

DRINKING WATER SYSTEM

Metro Vancouver draws its water from Capilano, Seymour and Coquitlam sources and distributes it through its waterworks systems to member municipalities after treatment. As a part of the provision for treating water, Metro Vancouver uses chlorine and ultraviolet light (UV) as primary disinfectants for Seymour and Capilano source waters. Coquitlam source water uses ozone and UV as primary disinfectants. These source waters are subsequently re-chlorinated at various regional secondary disinfection facilities (8 stations located throughout Metro Vancouver) installed in 1998. The disinfectant dosages are monitored at the regional chlorination facilities using on-line potentiometric chlorine analyzers. **Figure 1** shows an aerial shot of Metro Vancouver's source water.

Figure 1 - Metro Vancouver Source Watershed (photo credit: metrovancouver.org)

SOURCE WATER QUALITY MONITORING

Metro Vancouver undertakes comprehensive biological and chemical monitoring of the water while it is in their system. Source water monitoring recommended in the WQMRP includes monitoring for: Total Coliform, *E. Coli*, Heterotrophic Plate Count (HPC), turbidity, pesticides, herbicides, all chemical parameters listed in the *Guidelines for Canadian Drinking Water Quality*, and *Giardia* and *Cryptosporidium* in water at the water supply intakes. In addition, Metro Vancouver also monitors its transmission mains and reservoirs for indicator organisms (Total Coliforms, *E. Coli*, and HPC), and a limited number of chemicals (free chlorine residual, polycyclic aromatic hydrocarbons (PAH's) and Benzene, Toluene, Ethylbenzene, Xylene (BTEX). The 2014 water quality results for Capilano, Seymour and Coquitlam watersheds can be found in **Appendix B.**

SOURCE WATER QUALITY REPORTING

The Metro Vancouver staff presented its annual report on 2014 source water quality to the Metro Vancouver Utilities Committee on May 28th, 2015 to meet the requirement for water suppliers as per the *Drinking Water Protection Regulation* and as described in the Water Quality Monitoring and Reporting Plan. Summary and highlights of the region's water quality monitoring for 2014 can be found in their publication "The Greater Vancouver Water District Quality Control Annual Report 2014, Volume I" (**Appendix B**) and Volume II provides Chemical and Physical Monitoring results (full tabulation of data). In an effort to reduce paper usage, the printing of Volume II has been limited by Metro Vancouver to provide hard copy to specific individuals. Volume II will be made available to others if requested, either in hard copy or electronically. Requests for Volume II should be directed to the Water Quality Enquiry Line at 604-451-6010. This publication will be available at public libraries and posted in the Metro Vancouver's web site www.metrovancouver.org by the end of June 2015.

WATER CONSERVATION

Here in Burnaby, surrounded by waterways and with our mild, wet winters, it's easy to forget that water is a precious and limited resource. On average, Lower Mainland residents use more than 340 L per day for activities such as washing dishes and clothes, showering, flushing toilets, lawn sprinkling and other outside activities. With our climate and accessible resources, it's easy to take water for granted.

Water conservation is important for:

- Ensuring sufficient drinking water supplies through the year, for when low snow-pack levels and long, hot summers prevent our reservoirs from a full recharge. The Capilano, Seymour and Coquitlam reservoirs are filled by rain and snowmelt
- Meeting the demands of a growing population and delaying (or eliminating) the need for costly upgrades in the future
- Reducing waterfront pollution by minimizing how much waste water is generated

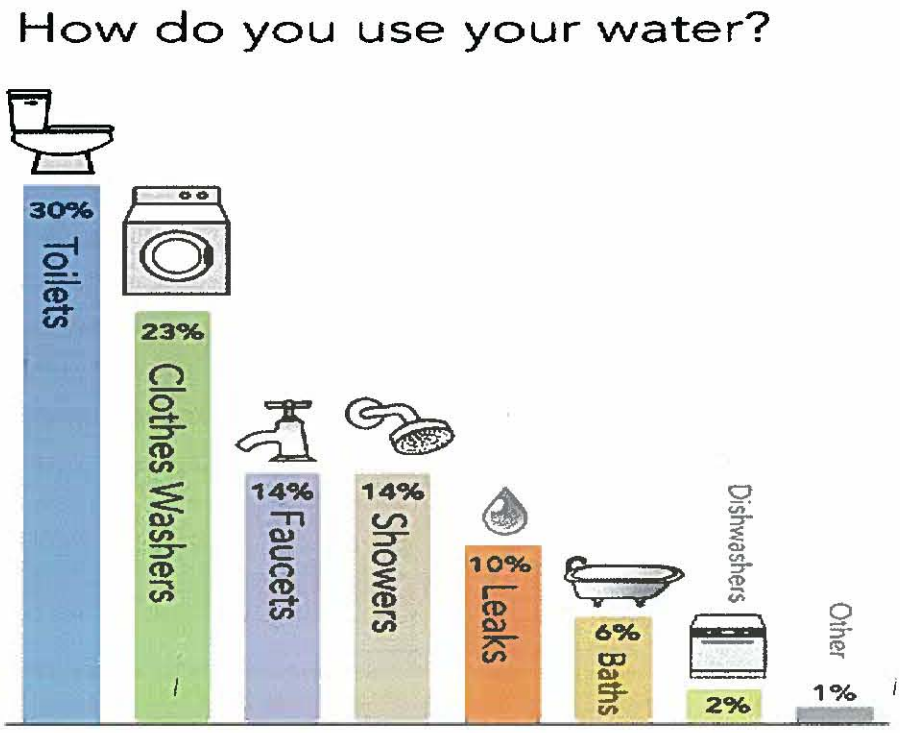

Figure 2 – How do you use your water? (image from Metro Vancouver)

The City of Burnaby encourages residents to use water sustainably to protect our water supply, conserve energy, and help reduce personal utility costs. Water use can typically be reduced with a few simple changes:

- Turn off the tap while brushing your teeth or washing dishes.
- Use a City Rain Barrel to collect rain water for use in gardens and planters.
- Water lawns sparingly or not at all. This saves up to 17,000 litres of water per household over the summer months.
- Use Spring-loaded garden hose nozzles. This saves 23 litres of water per minute.
- Wash Full loads and use shorter cycles when doing laundry. This will save 95 litres of water per load.
- Use low-flow toilets and save six to 14 litres of water per flush.
- Toilet inserts save up to 100 litres of water per day.
- Use aerator and flow restrictors on the kitchen tap to save up to 20 litres of water per day.
- Fix leaks in kitchen and bathroom taps and save 47 litres of water per day

Water Conservation in a Rainforest?

Metro Vancouver gets a lot of rain throughout the year (over 1 metre per year in some regions) except during the months of July, August and September. At the same time these are the months the water demand increases, in part, due to watering our lawns which can create a shortage of fresh water. A healthy lawn needs only one hour of rain or sprinkling per week. The City of Burnaby and other member municipalities of Metro Vancouver have Lawn Sprinkling Regulations in place to help conserve water in the summer months, when we use water faster than our reservoirs can refill. More details on the Lawn Sprinkling Restrictions are available at **www.burnaby.ca.**

DISTRIBUTION SYSTEM

The City receives its treated water from Metro Vancouver and distributes it through a series of reservoirs and a network of pipes to the consumers. In order to ensure potability of the water at the point of supply, the City has a comprehensive program consisting of water quality monitoring, routine uni-directional flushing of water mains, cross-connection control and reservoir exercising.

INFRASTRUCTURE

The City's water system consists of four water pump (or booster) stations, four active water storage reservoirs (storage capacity 13.0 ML), twenty (20) pressure reducing stations, twenty-one (21) pressure zones and over 700 km of watermains valued at over $490 M.

The City has a water main replacement program (average age of pipe is 29 years) to replace aging water mains at a rate of about 2% a year (approximately 15km per year), and a program to install dedicated sampling kiosks at sampling locations.

CROSS CONNECTION CONTROL PROGRAM

The City's cross connection control program works to ensure the potable water supply is protected from contamination in the event of back siphonage or back pressure. The City requires that appropriate backflow preventers are installed and tested annually as prescribed in the City of Burnaby Plumbing Bylaw #11148. Regulations for the cross connection control can be found in the British Columbia Plumbing Code.

WATER QUALITY MONITORING PROGRAM

In 2014, there were 63 water quality sample locations in Burnaby (detailed in **Appendix A**). These sample locations were selected on the basis of determining water quality in various pressure zones, dead ends, reservoirs, feed lines from the Metro Vancouver water mains, residences and institutions. These locations were grouped into four routes for sample collection purpose. Water samples were collected on average twice a week on a 2 week sample location cycle. At the time of sample collection, free chlorine residual, turbidity and temperature of water were measured using field test kits. In addition, Metro Vancouver also collected water samples from 15 sites from its transmission mains in the City (detailed in **Appendix A**).

The collected samples were submitted to the Metro Vancouver Laboratory for analysis. The Metro Vancouver Laboratory is a member of the Canadian Association of Environmental Analytical Laboratories (CAEAL), is accredited by the Standards Council of Canada (SCC) and is also approved by the Provincial Medical Health Officer for potable water testing.

A total of **3,032** routine drinking water samples were obtained in 2014 for bacteriological analysis. These included **1,624** samples collected from City sample sites and **1,408** samples collected from Metro Vancouver transmission line sites located within the City boundary (see **Appendix A** for details). The average number of samples collected for bacterial monitoring by the City every month was over 135 and is well above the 103 monthly sample requirement stipulated in the B.C. Drinking Water Protection Regulation for Burnaby's population size.

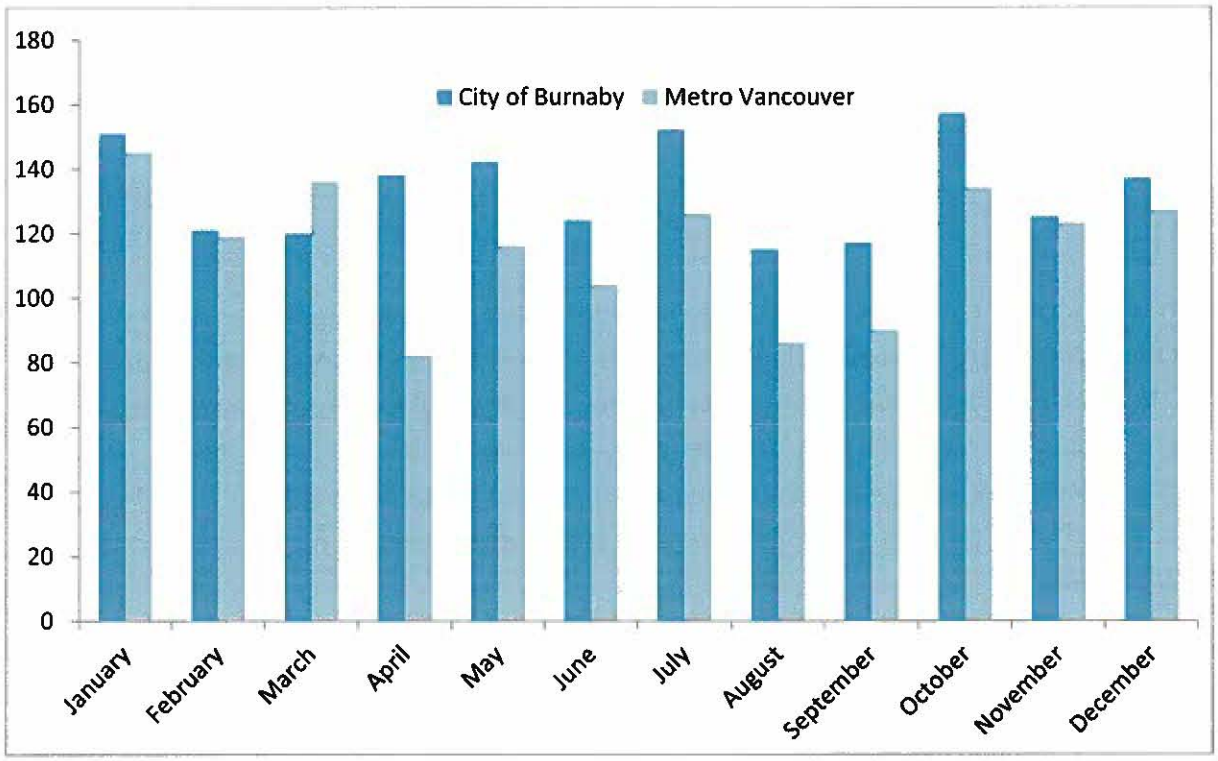

Figure 3 - Number of Monthly Routine Samples Taken in 2014

The water sampling frequency for microbiological characterization of the potable water is stipulated in Schedule B of *Guidelines for Canadian Drinking Water Quality* to be as follows:

Table 1- Schedule B – Frequency of Monitoring Samples for Prescribed Water Supply Systems	
Population Served	**Number of Samples Per Month**
Less than 5,000	4
5,000 to 90,000	1 per 1,000 of population
More than 90,000	90 plus 1 per 10,000 of population in excess of 90,000

From a reporting perspective, FHA was provided with the drinking water quality results directly by the Metro Vancouver laboratory at the same time as the results were sent to the City. It is to be noted that information regarding sampling locations, sample frequency, sample collection methodology, sample parameters and the laboratory to be used for sample analysis were submitted and accepted by the regulatory agency. Furthermore, Fraser Health Authority also collects water samples from City kiosks for audit purposes on a regular basis.

PHYSICAL PARAMETERS

The physical parameters tested for in the City's water distribution system include temperature and turbidity.

TEMPERATURE

Water temperature in the distribution system is dependent on the seasonal temperature variation experienced by the source water. The *Guidelines for Canadian Drinking Water Quality* set the aesthetic objective at less than 15°C for drinking water temperature. Temperatures above 15°C can impact aesthetic properties of taste, colour and odour. Temperature is also related to the microbiological characteristics of drinking water through

its effect on water treatment processes, especially disinfection, and its effect on the growth and survival of micro-organisms.

The average water temperature in the distribution system remained well below the aesthetic maximum objective of 15°C throughout most of the year. The average temperature peaked in August at 17.2°C. However, water quality samples did not show an increase in bacteriological growth, indicating that effective chlorine disinfection was achieved.

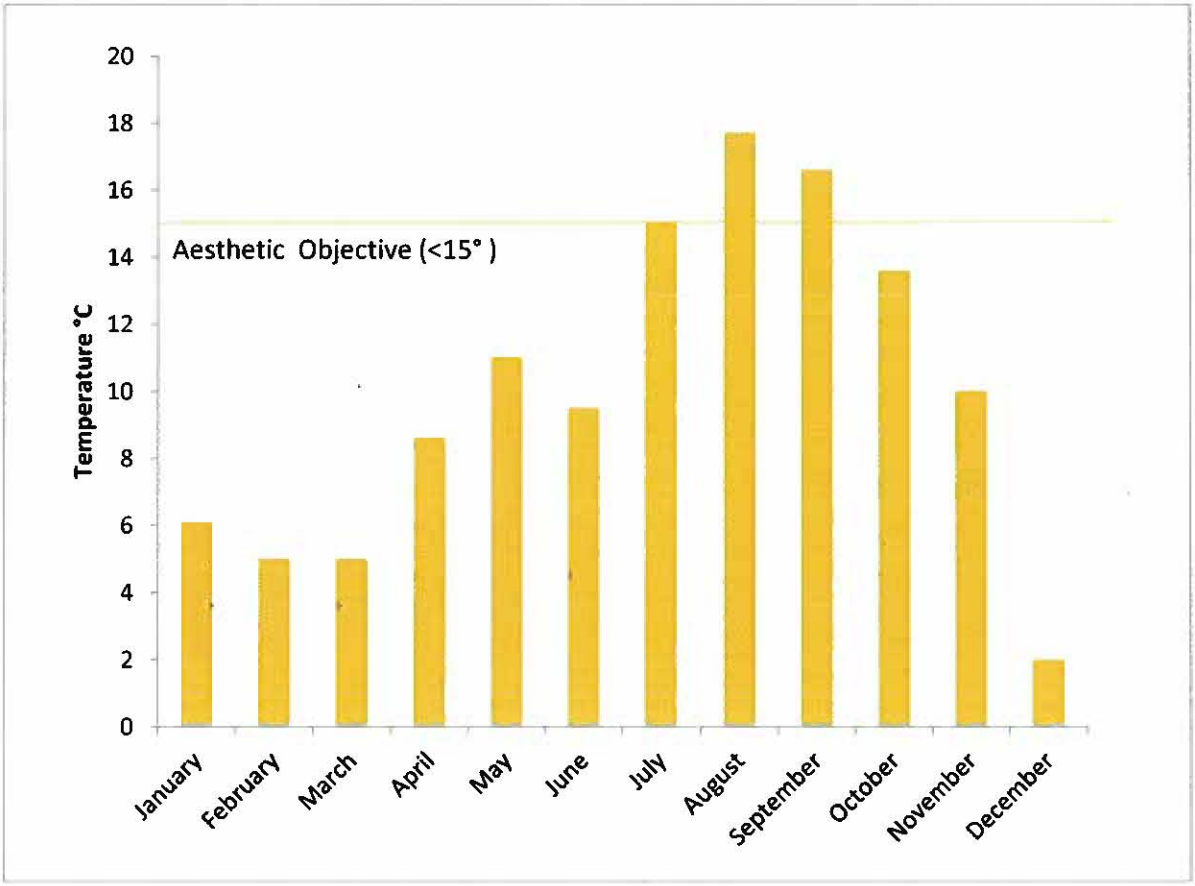

Figure 4 – 2014 Average Monthly Water Temperatures in the Distribution System

TURBIDITY

Turbidity is a measure of the relative clarity or cloudiness of water caused by fine suspended matter such as clay, silt and organics. Turbidity is not a direct measure of these particles, but

rather a general measure of the effect these particles have on light. Elevated turbidity may be attributed to source water conditions or other transient activities which causes a change in the water pressure or flow in the system. These activities include construction, watermain flushing, watermain breaks, or a sudden increase in water usage (i.e. firefighting). In an event that a sample indicated a high turbidity reading, follow up with the FHA and immediate flushing of applicable watermain(s) and re-sampling would be undertaken as appropriate.

In 2014, the majority (99.0%) of the samples obtained had turbidity <1 NTU. Twelve (12) samples (0.7%) had turbidity between 1-2 NTU, three (3) samples (0.18%) had turbidity between 2-3 NTU, one (1) sample (0.01%) had turbidity between 3-5 NTU and one (1) sample (0.01%) had a turbidity >5 NTU. The average turbidity in Burnaby's water system is seasonally constant as shown in **Figure 5** below.

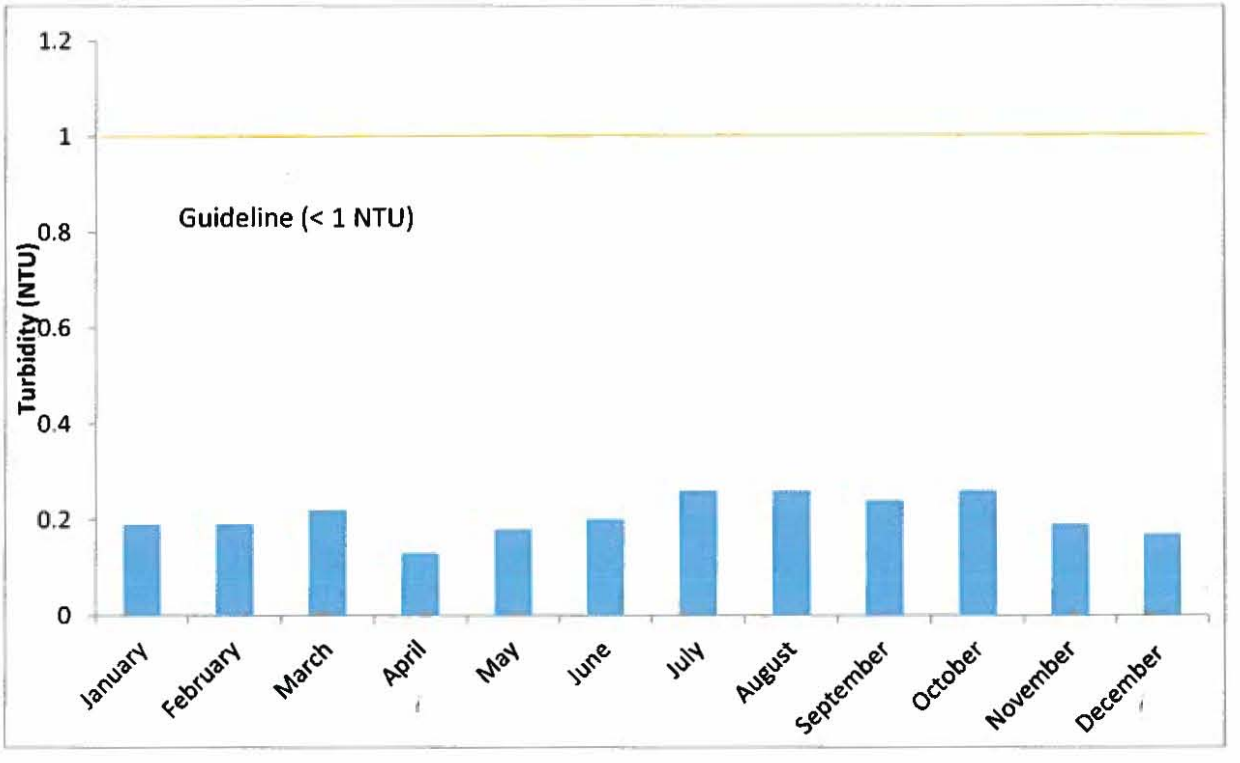

Figure 5 - 2014 Monthly Average Turbidity Levels in the Distribution System

CHEMICAL PARAMETERS

Water in the City's distribution system is also tested for chemical parameters of pH, chlorine, disinfection by-products (Haloacetic Acids and Total Trihalomethanes), metals and vinyl chloride.

PH

The pH levels of water at the select sample location were representative of the pH of source water. The water sample was 7.1, meeting the Aesthetic Objective of 6.5 to 8.5 noted in the *Guidelines for Canadian Drinking Water Quality*.

CHLORINE RESIDUAL

Chlorine is used to disinfect the water and safeguard against any microbial re-growth or contamination in the distribution system. The *Guidelines for Canadian Drinking Water Quality* recommends a minimum chlorine residual of 0.2 mg/L.

Sixty-one of the sixty-three sampling stations achieved the objective of 0.2 mg/L or above in 2014 on average. Sampling stations that experience temporary lower residual chlorine are largely due to low flow/use through the distribution system. The City maintains the residual chlorine levels in these areas by frequent flushing of the watermains to enhance flow.

DISINFECTION BY-PRODUCTS

Disinfection by-products are compounds formed by the interaction between chlorine and naturally occurring organic substances in the water such as decaying leaves and vegetation that enter the source water naturally.

The disinfection by-products, measured as Trihalomethanes and Haloacetic Acid were found to be below the Maximum Acceptable Concentration (MAC) value of 100 parts per billion and 80 parts per billion, respectively noted in the *Guidelines for Canadian Drinking Water Quality* (**Table 2**).

TABLE 2: Burnaby Drinking Water Disinfection By-Products Results (2014)

		THM (ppb)						HAA (ppb)						
Sample Site	Sample Date	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
BUR-561K	07/03/2014	<1	<1	<1	20	20.5	31	<0.5	8	<1	6	7	22	34
	06/06/2014	<1	<1	<1	52	51.9	31	<0.5	25	<1	5	28.9	59.1	37
	04/09/2014	<1	<1	<1	47	47.2	36	<0.5	21	<1	7	45.3	73.9	43
	20/11/2014	<1	<1	<1	27	27.2	37	<0.5	11	<1	4	13.3	30	46
BUR-584K	07/03/2014	<1	<1	<1	31	31.2	25	<0.5	15	<1	9	16.4	41.6	31
	06/06/2014	<1	<1	<1	18	18.6	25	<0.5	7	<1	4	5.9	17.5	30
	04/09/2014	1	<1	<1	29	30.6	26	<0.5	15	<1	8	14.2	39.2	30
	20/11/2014	<1	<1	<1	24	24.5	26	<0.5	10	<1	4	11.2	26.3	31
BUR-586K	07/03/2014	<1	<1	<1	21	21.2	25	<0.5	8	<1	6	5.4	19.7	25
	06/06/2014	<1	<1	<1	20	20.4	25	<0.5	7	<1	4	8.5	20.3	26
	04/09/2014	1	<1	<1	35	35.8	25	<0.5	8	1	4	17.3	30.3	23
	20/11/2014	<1	<1	<1	26	26.6	26	<0.5	9	<1	4	10.6	23.8	24
BUR-598K	07/03/2014	1	<1	<1	32	33.7	37	<0.5	1	<1	<2	11.7	15.7	13
	06/06/2014	<1	<1	<1	34	35.2	36	<0.5	2	<1	<2	13.9	18.9	13
	04/09/2014	2	<1	<1	36	37.3	34	<0.5	3	<1	<2	13.7	18.9	14
	20/11/2014	<1	<1	<1	20	20.5	32	<0.5	12	<1	4	16.6	33.1	22

METALS

Drinking water samples from six stations were tested for metals on two different occasions. None of the sample results exceeded any guideline values stipulated in the Federal *Guidelines for Canadian Drinking Water Quality* (**Table 3**).

TABLE 3: Burnaby Drinking Water Total Metal Sampling Results (2014)

	Site	BUR-561K		BUR-570K		BUR-576K		Guidelines[1]	
	Sample Date	13/05/14	14/11/14	13/05/14	14/11/14	13/05/14	14/11/14	Max.	Aesthetic
Total Metals (µg/L)	Aluminum	26	40	62	46	29	47	NA	NA
	Antimony	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6	NA
	Arsenic	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	NA
	Barium	3.2	3.2	2.6	3.3	3.2	3.3	1000	NA
	Boron	<10	<10	<10	<10	<10	<10	5000	NA
	Cadmium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	5	NA
	Calcium	3770	3330	2120	3230	3690	3340	NA	NA
	Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	50	NA
	Cobalt	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	Copper	18.7	27.5	8.0	9.4	2.8	5.5	NA	<1000
	Iron	6	5	33	7	5	13	NA	<300
	Lead	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	NA
	Magnesium	158	139	127	138	160	135	NA	NA
	Manganese	0.7	0.9	2.0	2.0	1.7	3.3	NA	<50
	Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1	NA
	Molybdenu	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	Nickel	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	Potassium	158	159	136	155	154	156	NA	NA
	Selenium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10	NA
	Silver	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA
	Sodium	1300	1780	3610	1510	1290	1460	NA	<200000
	Zinc	3.8	4.7	<3.0	3.5	4.4	3.2	NA	<5000

NA – No Current Guideline Available [1] Canadian Drinking Water Quality Guidelines

TABLE 3: Burnaby Drinking Water Total Metal Sampling Results (2014)								
	Site	BUR-582K		BUR-586		BUR-592K		Guidelines[1]
	Sample Date	13/05/14	14/11/14	13/05/14	14/11/14	13/05/14	14/11/14	Max. / Aesthetic
Total Metals (µg/L)	Aluminum	55	56	28	39	31	44	NA / NA
	Antimony	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6 / NA
	Arsenic	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10 / NA
	Barium	2.8	3.3	3.2	3.2	3.2	3.3	1000 / NA
	Boron	<10	<10	<10	<10	<10	<10	5000 / NA
	Cadmium	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	5 / NA
	Calcium	2530	3070	3650	3530	3700	3370	NA / NA
	Chromium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	50 / NA
	Cobalt	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA / NA
	Copper	9.4	14.5	17.5	26.8	8.4	4.2	NA / <1000
	Iron	30	12	17	14	8	6	NA / <300
	Lead	0.5	0.6	<0.5	<0.5	<0.5	<0.5	10 / NA
	Magnesium	132	134	148	129	161	135	NA / NA
	Manganese	2.8	2.4	1.7	0.9	2.6	3.6	NA / <50
	Mercury	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1 / NA
	Molybdenu	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA / NA
	Nickel	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA / NA
	Potassium	138	156	156	162	155	159	NA / NA
	Selenium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	10 / NA
	Silver	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA / NA
	Sodium	3020	2190	1400	1550	1300	1480	NA / <200000
	Zinc	<3.0	7.8	5.8	7.1	3.4	<3.0	NA / <5000

NA – No Current Guideline Available [1] Canadian Drinking Water Quality Guidelines

VINYL CHLORIDE

Vinyl chloride samples were not taken in 2014. However, historical data for water samples tested for vinyl chloride has been below guideline values of 2.0 µg/L stipulated in the *Guidelines for Canadian Drinking Water Quality.*

BACTERIOLOGICAL QUALITY

The bacteriological monitoring conducted regularly by the City includes testing for heterotrophic plate count (HPC), total coliform and E.coli.

HETEROTROPHIC PLATE COUNT

Heterotrophic Plate Count (HPC) is measured to monitor the system for early bacterial re-growth in the water distribution system. The annual average levels of HPC have been decreasing over the last ten years (Figure 4). While bacteriological re-growth in late summer and fall period is still occurring (due to warmer water temperatures), it is to a much lesser extent than in previous years. Continued effort in unidirectional flushing of water mains and maintaining free chlorine residual objective of 0.2 mg/L helps keeping the low HPC levels.

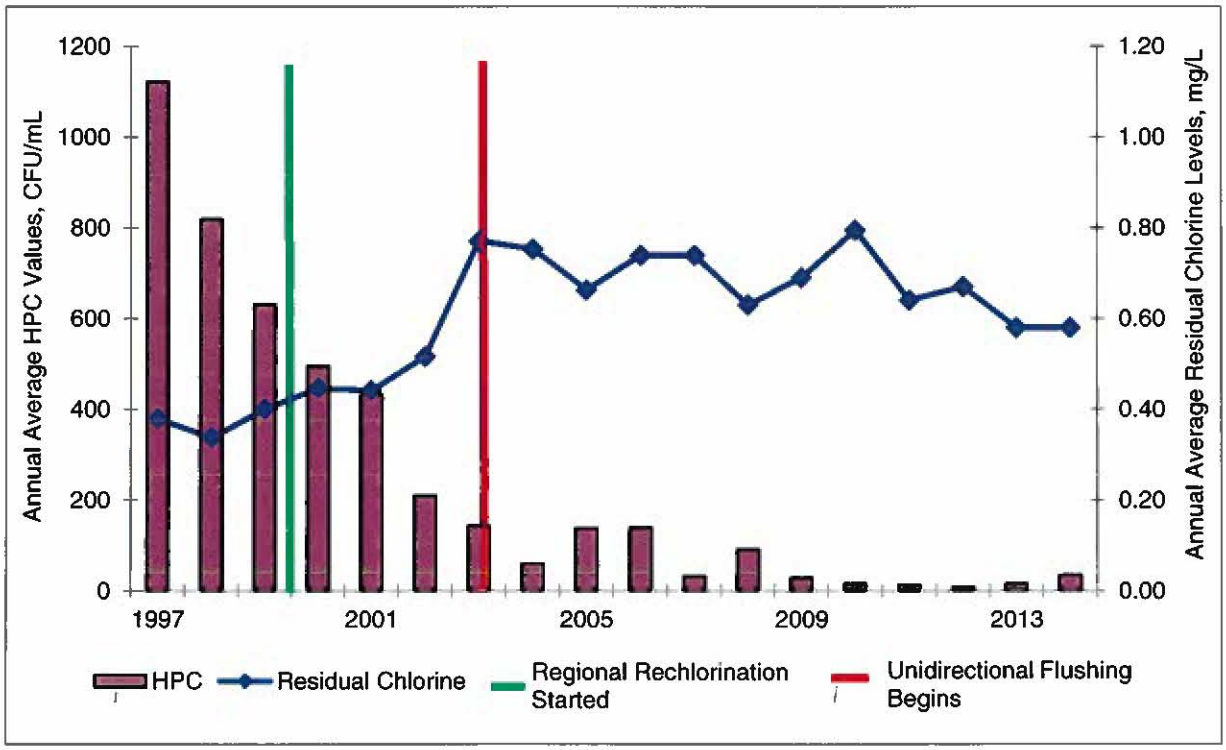

Figure 6- Improvements in Water Quality in Distribution System (1997-2014)

TOTAL COLIFORM AND E.COLI

For a waterworks system to be in compliance, the potable water sample must meet the following standards set out in Schedule A of the BCDWPA for the parameter tested:

Table 4: Schedule A – Water Quality Standards for Potable Water

Parameter	Standard
Fecal coliform bacteria	No detectable fecal coliform bacteria per 100 ml
Escherichia coli	No detectable *Escherichia coli* per 100 ml
Total coliform bacteria	a) No more than 10% of the samples in a 30 day period should be positive for total coliform bacteria when more than one sample is collected b) No sample should contain more than 10 total coliform bacteria per 100 mL

Overall, the bacteriological water quality complied with the *BC Drinking Water Protection Regulations* with the exception of the following one event which was subsequently followed up on and brought into compliance with the regulations:

One drinking water sample obtained on August 12, 2014 from a sampling kiosk located at 8300 block Willard Street show the presence of an E. Coli bacteria. In response, staff immediately implemented pre-established protocols for an E. Coli Event. Fraser health Authority (FHA) was notified regarding the sample result. The results off all the drinking water samples taken from the area were reviewed and noted to be in compliance. The watermains in the immediate area of 8300 block Willard Street were flushed and re-sampled. The supplement samples were found to be in compliance with the *BC Drinking water Protection Regulations*. Based on the follow-up procedures undertaken and the

resultant water quality findings, FHA were satisfied with the actions taken and did not require any additional action.

With respect to Total Coliform, three (3) samples were found to contain Total Coliform but at no time did the percentage of samples tested positive for Total Coliform exceed the 10% stipulated in the *B.C. Drinking Water Protection Regulations* (see **Figure 7**). Furthermore, none of the three samples that tested positive for Total Coliforms was greater than 10. As a standard protocol, any sample with greater than 1 Total Coliform would result in resampling. Any sample with greater than 10 Total Coliforms would result in a follow-up with FHA and immediate flushing of applicable water mains and re-sampling.

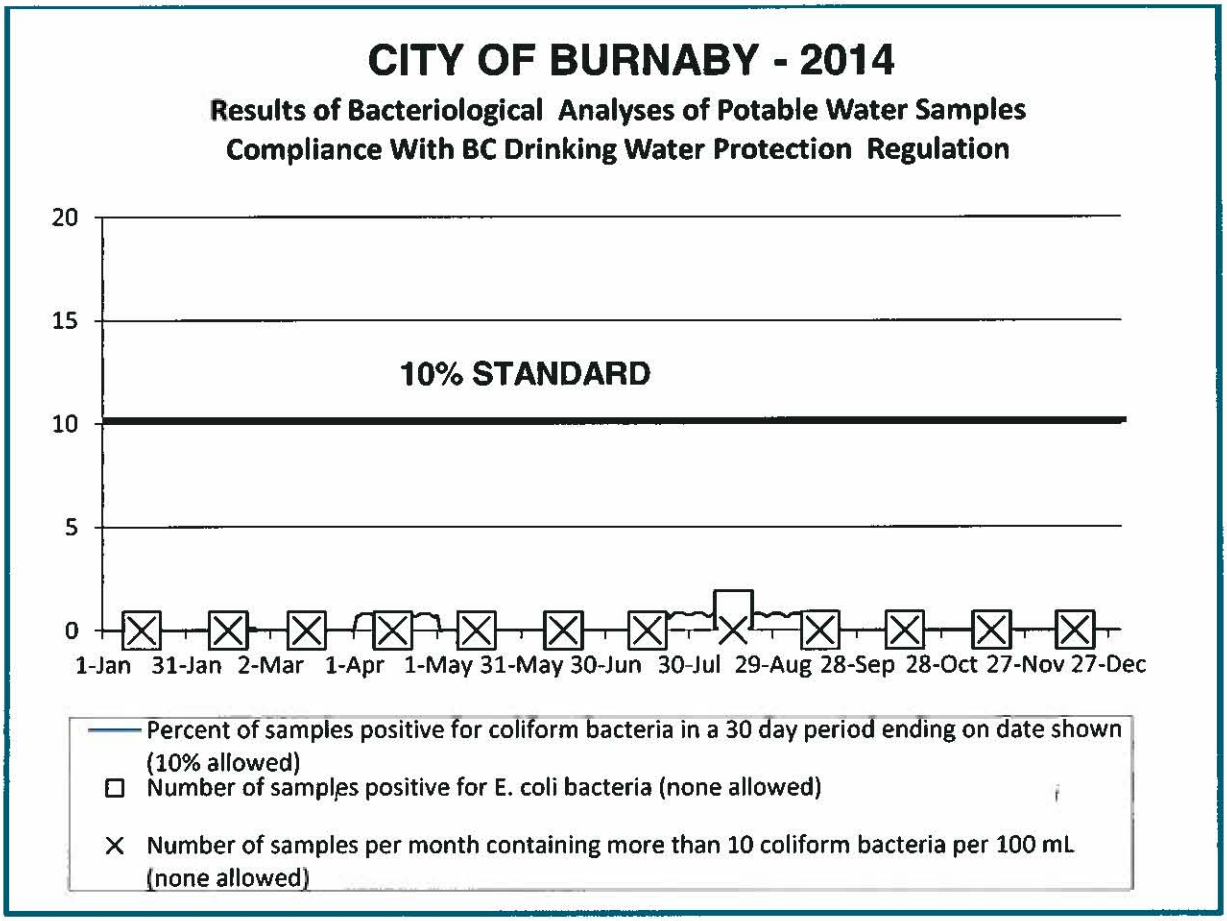

Figure 7 – City of Burnaby – Results of Bacteriological Analyses of Potable Water Samples Compliance with BC Drinking Water Protection Regulation

See **Appendix A** for a complete list of results by sampling location.

WATER UTILITY INCIDENT RESPONSE PLAN

In the event of major emergencies or disasters, the Engineering Department is responsible for restoring/maintaining water utility operations in order to ensure that water quality, quantities and pressures are sufficient for the distribution of drinking water and effective fire fighting. The Water Utility Incident Response Plan is the Engineering Department's action plan to ensure compliance to the legislated requirements under the BC Drinking Water Protection Act and Regulation. Should water utility service be diminished by an emergency or disaster this plan will assist in reducing the impact and ensuring orderly response.

CONCLUSION

The City of Burnaby in partnership with Metro Vancouver consistently deliver clean, safe and aesthetically pleasing drinking water to the residents, businesses and visitors in Burnaby. In 2014, the physical, chemical and bacteriological characteristics of the water continues to be of high quality and in compliance with applicable regulations and guidelines.

A PUBLIC HEALTH MESSAGE FROM THE FRASER HEALTH AUTHORITY

As per standard recommended water practices, "Water from taps that are not used for several hours is good for washing or watering plants but not for drinking or cooking, as it may contain elevated levels of lead or copper. Run the water for at least one minute, or until the water is cold before using it for drinking or cooking. For the same reason never use water from hot taps for drinking or cooking."

As per the request from the Fraser Health Authority the HealthlinkBC File #56 *"HealthlinkBC File #56- Persons with Compromised or Weakened Immune Systems"*, has been attached to the Annual Drinking Water Quality Report.