



Public Works and Transportation Committee

Anderson Room, City Hall
6911 No. 3 Road

Wednesday, April 22, 2015
4:00 p.m.

Pg. # ITEM

MINUTES

PWT-5 *Motion to adopt the **minutes** of the meeting of the Public Works and Transportation Committee held on Wednesday, March 18, 2015.*



NEXT COMMITTEE MEETING DATE

Thursday, May 21, 2015, (tentative date) at 4:00 p.m. in the Anderson Room

PLANNING & DEVELOPMENT DIVISION

1. **RELEASE OF PROVINCE OF BRITISH COLUMBIA 10-YEAR TRANSPORTATION PLAN: BC ON THE MOVE**
(File Ref. No. 01-0150-20-THIG1) (REDMS No. 4537163)

PWT-9

See Page PWT-9 for full report

Designated Speaker: Donna Chan

STAFF RECOMMENDATION

That staff be directed to continue to liaise with the provincial Ministry of Transportation and Infrastructure to:

Pg. # ITEM

- (1) *identify any provincial highway and cycling improvement projects within Richmond to be funded as part of the 10-Year Transportation Plan;*
- (2) *seek that the George Massey Tunnel Replacement Project proceeds in line with the previously Council-approved project objectives; and*
- (3) *pursue any cost-share opportunities for new cycling infrastructure projects or other local road improvements in Richmond.*



2. **PROVINCIAL 2014-2015 BIKEBC PROGRAM SUBMISSION**

(File Ref. No. 01-0150-20-THIG1) (REDMS No. 4543539)

PWT-16

See Page PWT-16 for full report

Designated Speaker: Victor Wei

STAFF RECOMMENDATION

- (1) *That the submission for cost-sharing to the Province's 2014-2015 BikeBC Program for Phase 1 of the Crosstown Neighbourhood Bike Route, as described in the staff report titled Provincial 2014-2015 BikeBC Program Submission, dated March 27, 2015, from the Director, Transportation, 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 agreement.*



ENGINEERING AND PUBLIC WORKS DIVISION

3. **REPORT 2014: RECYCLING AND SOLID WASTE MANAGEMENT - LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS**

(File Ref. No. 10-6375-05) (REDMS No. 4544434)

PWT-24

See Page PWT-24 for full report

Designated Speaker: Suzanne Bycraft

STAFF RECOMMENDATION

That the annual staff report titled Report 2014: Recycling and Solid Waste Management - Leadership and Excellence to Achieve Goals, dated March 30, 2015, from the Director, Public Works Operations, be endorsed and made available to the community through the City's website and through various communication tools including social media channels and as part of community outreach initiatives.



4. **2015 LIQUID WASTE MANAGEMENT PLAN BIENNIAL REPORT**
(File Ref. No. 10-6060-03-01) (REDMS No. 4539736)

PWT-86

See Page PWT-86 for full report

Designated Speaker: Lloyd Bie

STAFF RECOMMENDATION

That the "2015 Liquid Waste Management Plan Biennial Report," presented as Attachment 1 to the staff report titled 2015 Liquid Waste Management Plan Biennial Report, dated March 23, 2015, from the Director, Engineering, be submitted to Metro Vancouver.



5. **RIVER GREEN DISTRICT ENERGY UTILITY BYLAW NO. 9134, AMENDMENT BYLAW NO. 9239**
(File Ref. No. 10-6600-10-01; 12-8060-20-009239) (REDMS No. 4540591 v. 8)

PWT-124

See Page PWT-124 for full report

Designated Speaker: Alen Postolka

STAFF RECOMMENDATION

- (1) *That the name for the River Green District Energy Utility be re-named to the Oval Village District Energy Utility; and*
- (2) *That the River Green District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9239 be introduced and given first, second and third readings.*



Pg. # ITEM

LULU ISLAND ENERGY CORPORATION

6. **OVAL VILLAGE DISTRICT ENERGY UTILITY UPDATE**
(File Ref. No. 10-6600-10-03) (REDMS No. 4546385 v. 3)

PWT-135

See Page **PWT-135** for full report

Designated Speaker: Alen Postolka

STAFF RECOMMENDATION

That the report titled Oval Village District Energy Utility Update, dated April 1, 2015, from the Chief Executive Officer and Chief Financial Officer, Lulu Island Energy Company, be received for information.

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7. **MANAGER'S REPORT**

ADJOURNMENT

☐



Public Works and Transportation Committee

Date: Wednesday, March 18, 2015

Place: Anderson Room
Richmond City Hall

Present: Councillor Chak Au, Chair
Councillor Harold Steves
Councillor Ken Johnston
Councillor Alexa Loo (entered at 4:06 p.m.)

Absent: Councillor Derek Dang

Also Present: Councillor Carol Day

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

MINUTES

It was moved and seconded

That the minutes of the meeting of the Public Works and Transportation Committee held on Wednesday, February 18, 2015, be adopted as circulated.

CARRIED

NEXT COMMITTEE MEETING DATE

Wednesday, April 22, 2015, (tentative date) at 4:00 p.m. in the Anderson Room

PLANNING AND DEVELOPMENT DIVISION

1. **INSTALLATION OF DYNAMIC MESSAGE SIGN ON NORTHBOUND KNIGHT STREET**
(File Ref. No. 01-0150-20-THIG1) (REDMS No. 4507396)

Public Works & Transportation Committee
Wednesday, March 18, 2015

It was moved and seconded

That the staff report regarding the installation of a dynamic message sign on northbound Knight Street to support regional transportation management in the Metro Vancouver area, dated February 17, 2015, from the Director, Transportation, be received for information.

CARRIED

ENGINEERING AND PUBLIC WORKS DIVISION

2. CITY OF RICHMOND UTILITY BOX ART WRAP PROGRAM IMPLEMENTATION

(File Ref. No. 11-7000-09-20-101) (REDMS No. 4521667)

In reply to queries from Committee, Eric Fiss, Public Art Planner, advised that a vinyl material will be utilized for the utility box art wraps, and this material typically lasts approximately five years.

It was moved and seconded

That the implementation of integrating artwork on City of Richmond utility boxes, as outlined in the staff report from the Director, Public Works and Director, Arts, Culture and Heritage Services, dated March 2, 2015, be endorsed.

CARRIED

3. 2015 CLOTHES WASHER REBATE PROGRAM

(File Ref. No. 10-6650-02/2015) (REDMS No. 4507873 v. 3)

It was moved and seconded

That:

- (1) the City partner with BC Hydro to offer a combined rebate program May 1 to June 30 and October 1 to October 31 of this year, which will provide a rebate of up to \$200, equally cost shared between BC Hydro and the City, for the replacement of an inefficient clothes washer with a new high efficiency one;*
- (2) the scope of the existing toilet rebate program funding be expanded to include clothes washer rebates; and*
- (3) the CAO and General Manager, Engineering and Public Works, be authorized to execute an agreement with BC Hydro to implement this program.*

CARRIED

Public Works & Transportation Committee

Wednesday, March 18, 2015

4. **FINAL 2013 CORPORATE CARBON NEUTRAL EMISSIONS**

(File Ref. No. 10-6125-07-03) (REDMS No. 4474585 v. 3)

In reply to queries from Committee, Levi Higgs, Corporate Energy Manager, advised that of the 160 local governments that signed the BC Climate Action Charter, approximately 30 have achieved carbon neutral status.

Cllr. Loo entered the meeting (4:06 p.m.)

Discussion took place on the City's green cart program and Tom Stewart, Director, Public Works, advised that staff are in discussions with local farmers regarding the use of the City's composted green cart collection materials; he noted that, although there is interest in utilizing this material, factors such as nutrient content and how the material would feed through a spreader remain to be resolved.

Also, discussion took place on reporting requirements as it relates to the City's credits for the Richmond Olympic Oval.

It was moved and seconded

That the staff report titled "Final 2013 Corporate Carbon Neutral Emissions" from the Director, Engineering, dated February 23, 2015, be received for information.

CARRIED

5. **MANAGER'S REPORT**

Transportation Department Updates

Victor Wei, Director, Transportation, advised that the provincial government has announced a \$2.5 billion transportation plan to maintain and replace infrastructure, noting that a staff report in relation to projects relevant to Richmond will be presented at the next Public Works and Transportation Committee meeting. Mr. Wei spoke on the George Massey Tunnel replacement project, noting that the report confirms that a bridge will replace the existing tunnel; however, the cost of the project and its funding source were not disclosed.

Discussion took place regarding buses along Chatham Street, and Mr. Wei advised that staff are working with TransLink on the matter; also, he noted that the Mayors' Council Transportation and Transit Plan indicates that a bus exchange in Steveston may be pursued should the transit plebiscite be approved.

Public Works & Transportation Committee
Wednesday, March 18, 2015

ADJOURNMENT

It was moved and seconded

That the meeting adjourn (4:17 p.m.).

CARRIED

Certified a true and correct copy of the Minutes of the meeting of the Public Works and Transportation Committee of the Council of the City of Richmond held on Wednesday, March 18, 2015.

Councillor Chak Au
Chair

Hanieh Berg
Committee Clerk



City of Richmond

Report to Committee

To: Public Works & Transportation Committee
From: Victor Wei, P. Eng.
Director, Transportation
Date: March 18, 2015
File: 01-0150-20-
THIG1/2014-Vol 01
Re: **Release of Province of British Columbia 10-Year Transportation Plan: *BC on the Move***

Staff Recommendation

That staff be directed to continue to liaise with the provincial Ministry of Transportation & Infrastructure to:

- (1) identify any provincial highway and cycling improvement projects within Richmond to be funded as part of the 10-Year Transportation Plan;
- (2) seek that the George Massey Tunnel Replacement Project proceeds in line with the previously Council-approved project objectives; and
- (3) pursue any cost-share opportunities for new cycling infrastructure projects or other local road improvements in Richmond.

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

Att. 2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Intergovernmental Relations & Protocol Unit	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

At the December 2, 2014 meeting of the General Purposes Committee, a staff report “*Update on Province of British Columbia 10-Year Transportation Plan: BC on the Move*” was presented for information regarding the initiation of a public consultation phase by the Ministry of Transportation & Infrastructure (MoTI) to gather comments to be considered in the development of the Province of BC’s new 10-Year Transportation Plan. Following the release of the new Plan on March 17, 2015, this report highlights the key components of the Plan that can be viewed in its entirety on the Province’s website at <http://engage.gov.bc.ca/transportationplan>.

Analysis

Highlights of 10-Year Transportation Plan: BC on the Move

The development of the Plan included input gathered during a public consultation phase held in Fall 2014 that included over 100 meetings with stakeholders throughout the province, including First Nations, local governments (staff attended a meeting with MoTI in October 2014), Chambers of Commerce, and port and airport authorities. A public survey was also held that garnered over 12,500 responses.

The Plan includes a funding commitment of \$2.5 billion over the next three years on a variety of projects and programs with \$0.8 billion directed towards existing infrastructure and \$1.0 billion towards expansion. Limited information is available at this time on the locations of specific projects and/or the breakdown of that funding within each of 12 priority areas of the Plan. Attachment 1 lists the province-wide Plan components based on available information while Table 1 below summarizes those specifically identified within the Lower Mainland.

Table 1: 10-Year Transportation Plan Projects Identified in Lower Mainland

Priority	Identified Projects/Programs within Lower Mainland
Highway Safety	<ul style="list-style-type: none"> Enhance DriveBC website and increase the number of digital message signs Enable municipalities to allow motorcycle parking near intersections
Highway Capacity & Reliability	<ul style="list-style-type: none"> Advance development of George Massey Tunnel Replacement Project – Construction to start in 2017 Initiate design for 6-laning of Highway 1 (Langley-Abbotsford) Plan and deliver 20 new interchange improvement projects over next 10 years Highway widening, capacity, safety, and operational improvements
Provincial Trucking Strategy	<ul style="list-style-type: none"> Construct at least two new truck parking areas
Public Transit	<ul style="list-style-type: none"> Fund one-third of cost of new rapid transit projects and the Pattullo Bridge, provided costs can be accommodated within the provincial fiscal plan and investments are supported by a business case Work with region to secure federal government funding for rapid transit projects
Cycling	<ul style="list-style-type: none"> Increased cost-share funding for new cycling infrastructure Widen pathways; install safety fencing on both sides of Stanley Park causeway
Ports & Rail	<ul style="list-style-type: none"> New infrastructure that enhances access to ports and increases port bulk, break bulk and container capacity, including Port Metro Vancouver facilities
Accessibility	<ul style="list-style-type: none"> Through the Passenger Transportation Board, increase the number of wheelchair accessible taxis Partner with TransLink to make additional accessibility upgrades to SkyTrain stations, including adding new and improved elevators and escalators, and removing any barriers

Staff Comments

The previous staff report “*Update on Province of British Columbia 10-Year Transportation Plan: BC on the Move*” on this topic noted that staff would convey the following key transportation improvements for Richmond to MoTI during the public consultation phase:

- Mayors’ Council Transportation Vision: reiteration that the Transportation Vision developed by the Mayors’ Council encompasses the top transportation priorities for the region; and
- Cycling-Pedestrian Access to/across Provincial Highways: improved cycling and pedestrian access to and across provincial highways, which represent a significant barrier for cyclists and pedestrians (e.g., need to cross higher speed on- and off-ramps).

The final Plan responds somewhat positively to these two priorities, as the Province has re-affirmed its commitment to fund one-third of the cost of new rapid transit projects in the region and the Pattullo Bridge albeit with conditions (i.e., funding is subject to the projects being accommodated in the provincial fiscal plan and supported by business cases). With respect to enhancing cycling, the Plan offers a modest increase in cost-share funding for new cycling infrastructure (i.e., \$6 million per year for the next three years for the entire province, up from \$4 million per year over the past three years).

As for the George Massey Tunnel Replacement Project, the description of this project in the 10-Year Transportation Plan provides few details on the scope of improvements. Furthermore, the Plan is silent on specific components of the planned improvements such as the removal of existing tunnel or any new interchanges to be constructed. Staff will continue to seek that the Project proceeds in line with the previously Council-approved project objectives (Attachment 2).

Financial Impact

None.

Conclusion

Staff will continue to liaise with MoTI and seek that the George Massey Tunnel Replacement Project proceeds in line with the previously Council-approved project objectives as well as pursue any cost-share opportunities for new cycling infrastructure projects in Richmond, including any future cost-share opportunities that may become available for other improvements to local roads. Should any future provincial projects identified for the Lower Mainland be located in Richmond (e.g., interchange improvements, highway widening), staff will inform Council accordingly and ensure that Richmond’s interests are respected.



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

JC:lce

Att. 1: Province-Wide Components of 10-Year Transportation Plan

Att. 2: Council-Approved Objectives for George Massey Tunnel Replacement Project

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Province-Wide Components of 10-Year Transportation Plan

Priority	\$ (Millions)*	Components
Rehabilitation	\$380	<ul style="list-style-type: none"> Resurface over 1,000 kms of provincial highway annually
	\$180	<ul style="list-style-type: none"> Bridge rehabilitation: full replacement, resurface deck, seismic upgrade, painting, railing repairs
	\$270	<ul style="list-style-type: none"> Up to 30 projects annually to improve over 500 kms of side roads: hard surfacing, dust control, shoulder widening
	\$60	<ul style="list-style-type: none"> Up to 20 projects annually to upgrade roads in northeast BC in support of natural gas industry
	-	<ul style="list-style-type: none"> Explore opportunities to maintain public access to resource and back-country roads
	\$9	<ul style="list-style-type: none"> Up to 30 projects annually for new and upgraded rest areas: expanded parking, upgraded amenities (washrooms, picnic tables), accessibility improvements (curb letdowns)
Highway Safety	\$75	<ul style="list-style-type: none"> Road Safety Improvement Program: 20-25 projects annually for community safety (crosswalks, signage), wildlife detection, livestock fencing, guardrail program, variable speed limit signs
	\$30	<ul style="list-style-type: none"> Intersection safety improvements: design changes, advance left-turn signal
	-	<ul style="list-style-type: none"> Work with provincial policing agencies and other incident-response partners to reduce duration of highway closures
	-	<ul style="list-style-type: none"> Undertake review of traffic management and safety aspects associated with pulling drivers over in traffic
	-	<ul style="list-style-type: none"> Improve driver information systems: enhance DriveBC website and webcam system, increase number of digital message signs
	-	<ul style="list-style-type: none"> Continue to develop and implement strategies to improve roadside worker safety
	-	<ul style="list-style-type: none"> Implement strategies for drivers to stay out of the left lane and not impede other traffic
	-	<ul style="list-style-type: none"> Enable municipalities to allow motorcycle parking near intersections
	-	<ul style="list-style-type: none"> Introduce new regulations to clarify the definition of winter tires and traction devices
	-	<ul style="list-style-type: none"> Work with ICBC to explore opportunities to allow drivers more choices to use slow-moving vehicles and other mobility devices in smaller communities
	-	<ul style="list-style-type: none"> Improve public safety in B.C.'s "party bus" and limousine industry
Highway Capacity & Reliability	\$1,000	<p><u>Highway 1: Kamloops to Alberta Border</u></p> <ul style="list-style-type: none"> 4-laning between Kamloops and Golden 4-laning east of Golden through Kicking Horse Canyon Improve safety with focus on avalanche infrastructure <p><u>Highway 97: Okanagan Valley</u></p> <ul style="list-style-type: none"> Initiate planning for second crossing of Okanagan Lake and assess Hwy 97 corridor through Kelowna-Peachland 4-laning and passing lanes including 6-laning in Kelowna Intersection improvements and new interchanges <p><u>Highway 3: Crowsnest</u></p> <ul style="list-style-type: none"> Realignments and passing lanes between Hope-Princeton and Cranbrook-Alberta border Improve safety in downtowns of communities in corridor <p><u>Highway 5: Yellowhead</u></p> <ul style="list-style-type: none"> Passing lanes between Kamloops and Tête Jaune Cache <p><u>Highway 97: Cariboo Connector</u></p> <ul style="list-style-type: none"> 4-laning south of Williams Lake <p><u>Northwest BC/Highway 16: Yellowhead</u></p> <ul style="list-style-type: none"> Passing lanes on Hwys 16 and 37 (northwest BC and around Prince George) <p><u>Northeast BC/Highways 97 North and 2</u></p> <ul style="list-style-type: none"> 4-lane Hwys 97 and 2 from Fort St. John-Alberta border New passing lanes north of Fort St. John <p><u>Vancouver Island</u></p> <ul style="list-style-type: none"> Upgrade Hwy 1 between Langford-Victoria Intersection improvements and new access roads to improve access through communities Safety improvements: Hwy 4 west of Port Alberni, Malahat corridor of Hwy 1 <p><u>Lower Mainland</u></p> <ul style="list-style-type: none"> advance George Massey Tunnel Replacement Project initiate design for 6-laning of Hwy 1 (Langley-Abbotsford) 20 interchange improvement projects over next 10 years Widening, capacity, safety, and operational improvements

Province-Wide Components of 10-Year Transportation Plan

Priority	\$ (Millions)*	Components
Provincial Trucking Strategy	-	<ul style="list-style-type: none"> Upgrade and replace structures such as bridges and overpasses to accommodate heavy and large loads Expand the number of provincial highway corridors pre-approved for the transport of 85- to 125-metric-tonne loads Streamline permitting and reduce the number of truck permits required while ensuring commercial vehicle safety Identify priority locations for new and expanded parking, staging, inspection pullouts, and chain-up/off areas on key corridors Undertake a review of B.C.'s pilot-car requirements Support the Office of the Independent Container Trucking Commissioner
Transit	-	<u>Provincial Transit Services</u> <ul style="list-style-type: none"> Provide BC Transit with \$312 million in operating contributions over next three years Partner with local communities to replace one-half of BC Transit's fleet (about 500 buses) over the next five years Partner with local communities to build transit infrastructure to provide more efficient operations and improved transit services Continue to seek opportunities to deploy compressed natural gas (CNG) buses in communities <u>Metro Vancouver Transit Services</u> <ul style="list-style-type: none"> Fund one-third of the cost of new rapid transit projects and the Pattullo Bridge, provided they can be accommodated within the provincial fiscal plan and the investments are supported by a business case Work with the region to secure federal funding for rapid transit projects
Cycling	\$18	<ul style="list-style-type: none"> Cost-sharing with communities to build new cycling infrastructure
	-	<ul style="list-style-type: none"> Widen shoulders, double the frequency of sweeping and implement safety improvements in areas with high volumes of cyclists Develop and implement a cycling tourism signage and marketing strategy
Airports	\$24	<ul style="list-style-type: none"> Funding for new BC Air Access Program
	-	<ul style="list-style-type: none"> Support development of the aviation industry near BC airports Engage the federal government to enhance BC's aviation sector
Ports & Rail	-	<ul style="list-style-type: none"> Determine potential infrastructure upgrades needed to support Liquefied Natural Gas (LNG) Facilitate Port of Kitimat development with port structure and governance models that support economic activity New infrastructure to enhance access to ports, increase port bulk, breakbulk and container capacity, and efficiency of goods movement by rail Explore options for the revitalization of the Belleville Terminal in Victoria
Ferries	-	<ul style="list-style-type: none"> Continue to pursue strategies to achieve vision of an affordable, sustainable and efficient coastal ferry service Engage federal government to secure additional federal funding support for BC's coastal ferry service Continue to renew inland ferry assets
Partnerships with First Nations	-	<ul style="list-style-type: none"> Partner with First Nations on projects that support economic development on their lands Facilitate more employment and training opportunities for First Nations through the ministry's major projects Reconcile outstanding highway tenure issues
Accessibility	-	<ul style="list-style-type: none"> Upgrade rest areas to improve accessibility for persons with limited mobility: curb letdowns, accessible washrooms Increase the number of wheelchair-accessible taxis Partner with TransLink to make additional accessibility upgrades to SkyTrain stations, including adding new and improved elevators and escalators, and removing any barriers to movement Continue to work with BC Transit to improve transit service accessibility for people with disabilities Encourage BC Ferries to continue to improve accessibility at terminals and on vessels for people with disabilities

Province-Wide Components of 10-Year Transportation Plan

Priority	\$ (Millions)*	Components
Environment	\$6	<ul style="list-style-type: none"> • Conservation of habitat and improvement of fish and wildlife protection • Delivery of invasive plant management programs • Continue to invest in transit and cycling programs • Deliver 1.8 million square metres of hot-in-place recycle paving every year • Promote use of cleaner fuel alternatives: natural gas for heavy-duty commercial vehicles, CNG for buses and LNG for ferries
	\$3.9	
	-	
	-	
	-	

* Funding to be provided over next three years.

George Massey Tunnel Replacement Project: Council-Approved Objectives

- A. Land Use: ensure a net zero or positive impact to agricultural land.
- B. Support Regional Transportation Vision: TransLink's Regional Transportation Strategy Framework has target goals for 2045 of more than one-half of the region's trips to be by means other than private vehicle (versus 27 per cent in 2013) and for kilometres driven by auto to be reduced by one-third. Accordingly, any expanded peak-hour lane capacity on a new bridge should be dedicated to a specific use (e.g., transit, HOV, trucks) rather than open to general purpose traffic in order to adhere to these goals. Furthermore, the project should include effective improvements to support the increased use of transit, cycling, carpooling and walking in the vicinity of interchanges.
- C. Reduce Congestion: travel times, reliability and GHG emissions from idling vehicles should be improved, particularly at the Steveston Highway-No. 5 Road intersection where it has been consistently ranked as highest in Richmond for congestion and traffic safety concerns. Many major businesses, employees, residents, and visitors in this area have cited the tunnel traffic congestion as their biggest challenge to maintaining reasonable access. Furthermore, congestion should be improved along the entire corridor including connecting roadways and not be simply moved to further downstream of traffic flow.
- D. Supporting Connections: connecting pedestrian, cycling, transit, and related roadway improvements at both ends of the crossing and along Hwy 99 corridor, including replacement/upgrade of the interchanges within the highway right-of-way and local roadway tie-ins, should be included in the design, scope and budget of the overall project.
- E. An Iconic Bridge: being the first river crossing on Highway 99 entering into the western part of the region from the south, the new bridge should provide a provincial and regional legacy by incorporating a creative architectural design to signify it as an iconic visual gateway.
- F. Sustainable Transportation Options: promote excellence in facilitating sustainable transportation options including the potential of rapid transit in the near future.



City of Richmond

Report to Committee

To: Public Works and Transportation Committee

Date: March 27, 2015

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

File: 01-0150-20-
THIG1/2015-Vol 01

Re: Provincial 2014-2015 BikeBC Program Submission

Staff Recommendation

1. That the submission for cost-sharing to the Province's 2014-2015 *BikeBC Program* for Phase 1 of the Crosstown Neighbourhood Bike Route, as described in the report, titled "Provincial 2014-2015 BikeBC Program Submission" dated March 27, 2015, from the Director, Transportation, be endorsed.
2. That should the above application be successful, the Chief Administrative Officer and the General Manager, Planning and Development, be authorized to execute the funding agreement.

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

Att. 5

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

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. As part of the Government of B.C.'s new 10-year transportation plan, the Ministry of Transportation & Infrastructure (MoTI) is committing \$6 million in BikeBC funding for the 2014-2015 period. Within this program, the City is eligible to apply to the *Cycling Infrastructure Partnership Program* (CIPP). This report presents the proposed submission from the City for consideration of cost-share funding under this program.

Analysis

Crosstown Neighbourhood Bike Route: Phase 1

Building on the Crabapple Ridge and Parkside neighbourhood bike routes, both of which run north-south, the Crosstown bike route would be the first east-west neighbourhood bikeway that would be aligned between Blundell Road and Francis Road (see Attachment 1). Consistent with Section 3.5 Connected Neighbourhoods within the Official Community Plan (see Attachment 2), the route is part of the overall neighbourhood links network that connects to the Railway Greenway in the west and the Parkside bikeway in the east, and ultimately will provide walking, cycling and rolling access to several elementary and secondary schools, parks and neighbourhood shopping centres.

The overall project will be constructed in phases and will include the upgrade of existing crossings at arterial roads complete with intersection improvements (e.g., wider sidewalks, ramps, new pedestrian signals), repaving and widening of several existing off-street public pathways, adding new ramps where the pathways connect to roadways, and the installation of wayfinding signage and pavement markings. The City's proposed application comprises the following works planned to be undertaken during 2015 as Phase 1:

- widening of the sidewalk on the east side of No. 2 Road between Colville Road and Danube Road to accommodate cyclists and pedestrians as well as upgrade of the existing special crosswalk on No. 2 Road at Colville Road to a pedestrian signal (see Attachment 3);
- upgrade of an existing off-street pathway 370 m in length that connects Dorval Road and Lucas Road (see Attachment 4). The upgrade would widen (from 1.5 m to 3.0 m) and repave the pathway to safely accommodate two-way cycling, rolling and walking; and
- upgrade of the existing special crosswalk on Gilbert Road at Lucas Road to a pedestrian signal (see Attachment 5).

Council has previously approved the Crosstown Bikeway as part of the 2014 and 2015 Capital Budgets as well for submission to TransLink for consideration of cost-share funding as part of its 2014 and 2015 *Major Road Network & Bike Program*.

Requested External Funding and Estimated Project Costs

Table 1 below summarizes the estimated project cost for Phase 1, the previously approved City funding as part of the 2014 and 2015 Capital Budgets and the requested external funding source.

Should the submission be successful, the City would enter into a funding agreement with the Province. The agreement is a standard form agreement provided by the Province and includes 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.

Table 1: Project to be Submitted to 2014-2015 CIPP

Crosstown Bike Route: Elements	Estimated Total Cost	Source of City Funds (As approved by Council)	Requested External Funding⁽¹⁾
Colville Road-No. 2 Road: Sidewalk Improvements	\$50,000	\$25,000 2014 Active Transportation Program	\$295,000 2014-2015 CIPP
Colville Road-No. 2 Road: Upgrade to Pedestrian Signal	\$120,000	\$60,000 2014 Active Transportation Program	
Off-Street Pathway Upgrade	\$300,000	\$150,000 2015 Active Transportation Program	
Lucas Road-Gilbert Road: Upgrade to Pedestrian Signal	\$120,000	\$60,000 2015 Active Transportation Program	
Total	\$590,000		


(1) The amount shown represents the maximum funding contribution to be received from the external agency based on the City's cost estimate for the project. The actual approved amount may be lower than requested. The actual invoiced amount follows project completion and is based on incurred costs.

Financial Impact

The funding source 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. The 2015 Capital Plan and the 5-Year (2015-2019) Financial Plan would be updated to reflect the receipt of the external grants where required dependant on the timing of the budget process.

Conclusion

The ultimate implementation of the project would provide a key east-west off-street pathway for active transportation users across the urban part of the city. It would also 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.


 FOR Joan Caravan
 Transportation Planner
 (604-276-4035)

- Att. 1: Proposed Crosstown Neighbourhood Bike Route
- Att. 2: Official Community Plan - Section 3.5: Specific Richmond Neighbourhoods – Blundell
- Att. 3: Upgrades at Colville Road–No. 2 Road
- Att. 4: Upgrade of Off-Street Pathway in Blundell Park
- Att. 5: Upgrade at Lucas Road-Gilbert Road

Proposed Crosstown Neighbourhood Bike Route

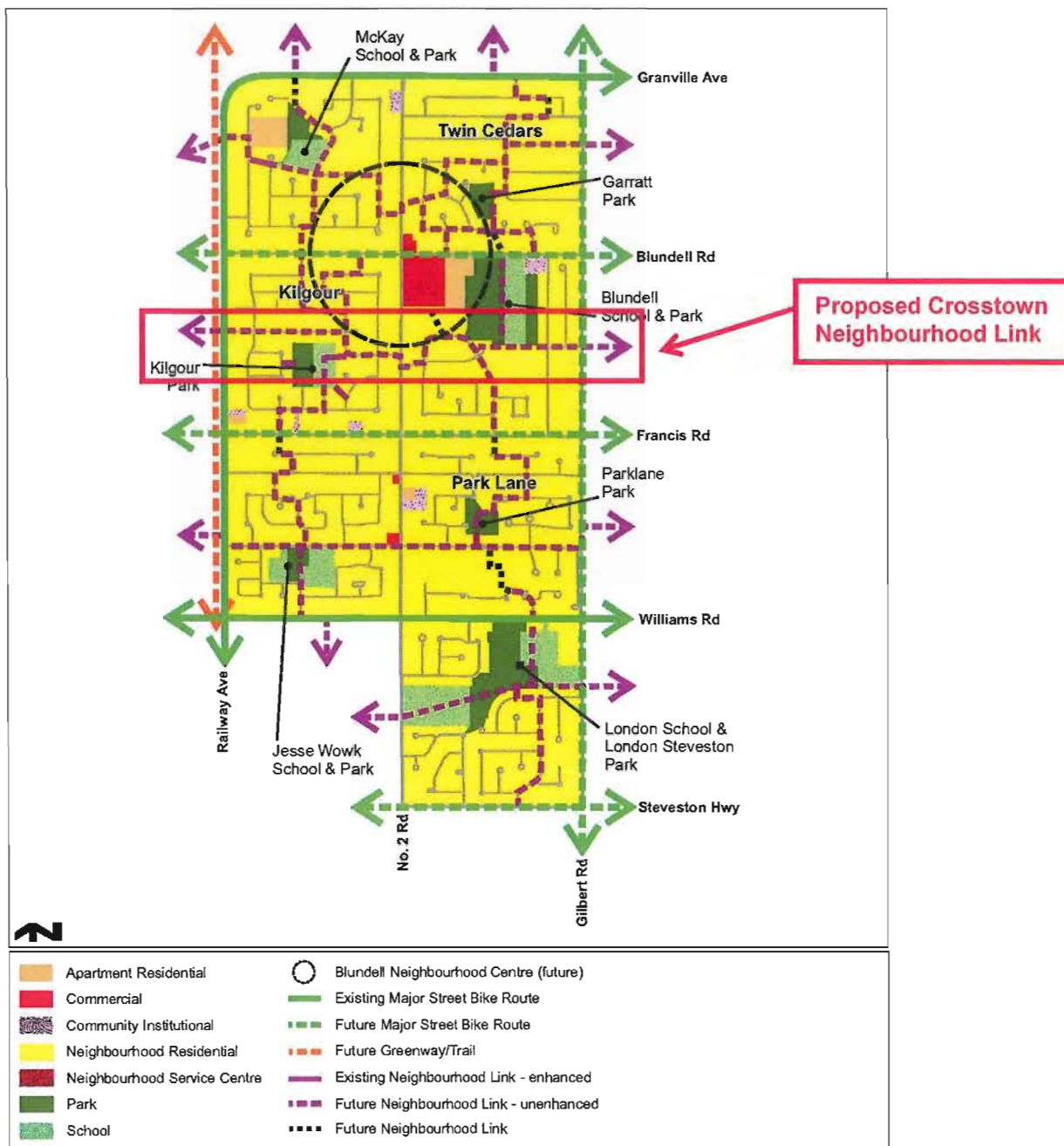


Official Community Plan Section 3.5: Specific Richmond Neighbourhoods – Blundell

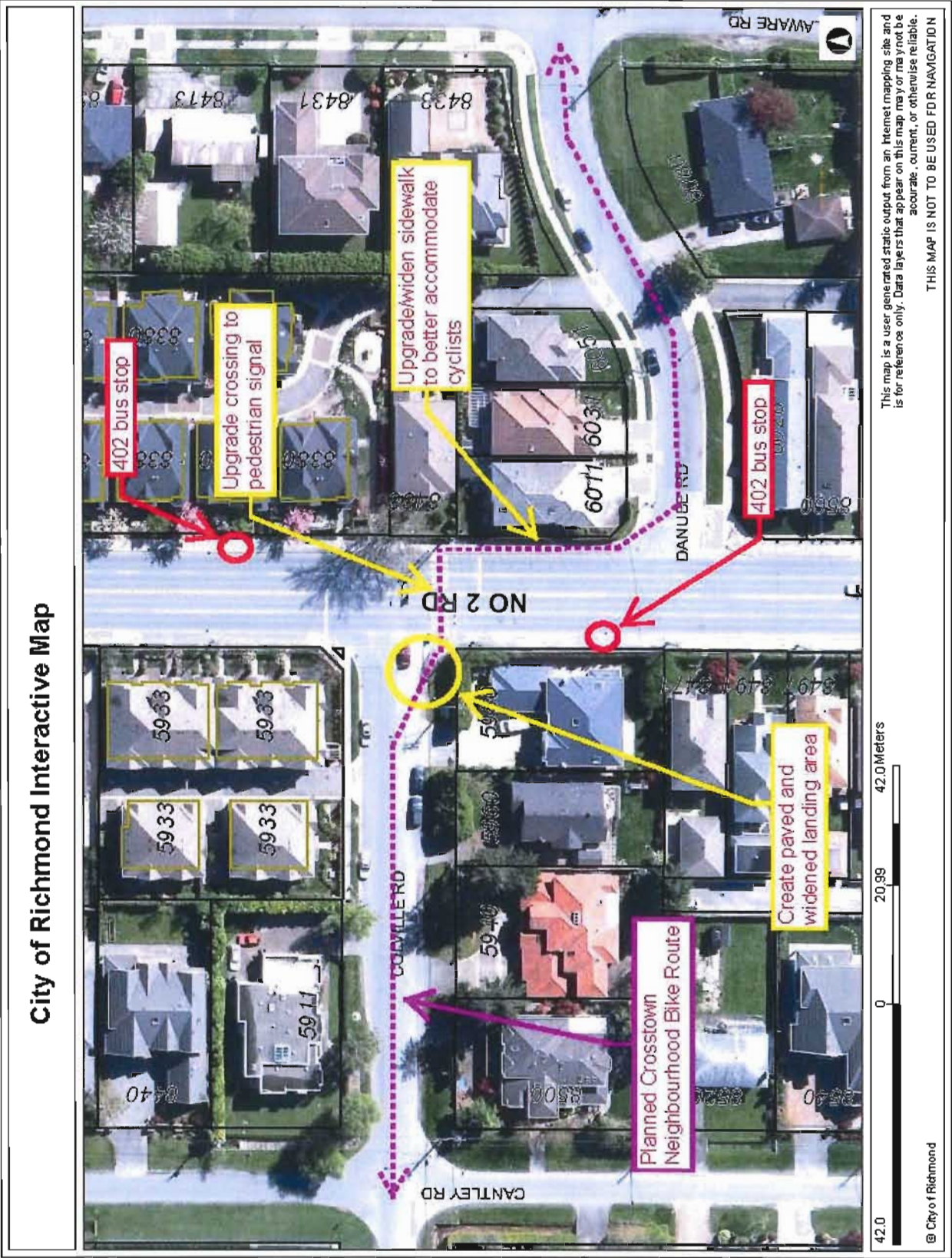
Connected Neighbourhoods With Special Places



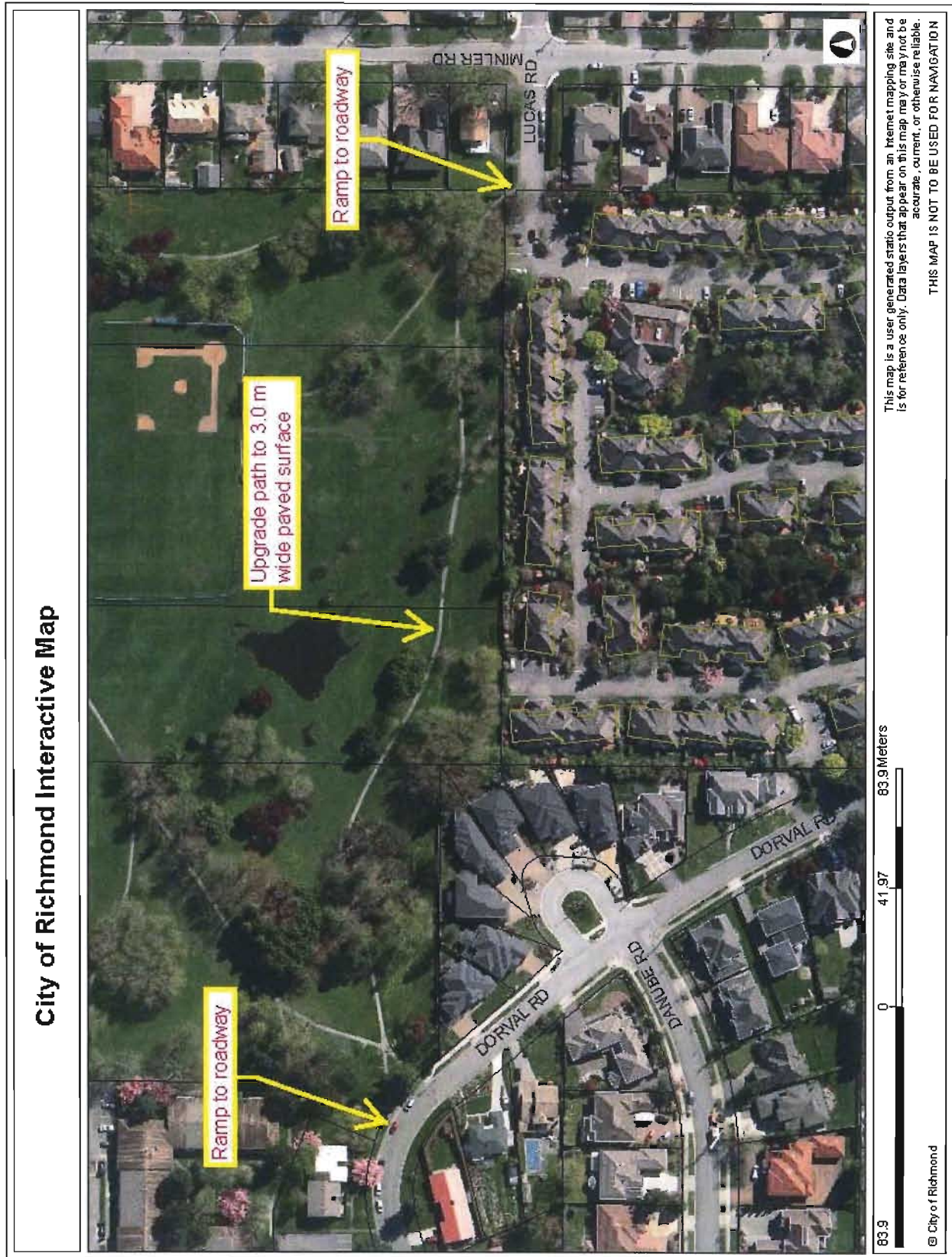
5. Blundell

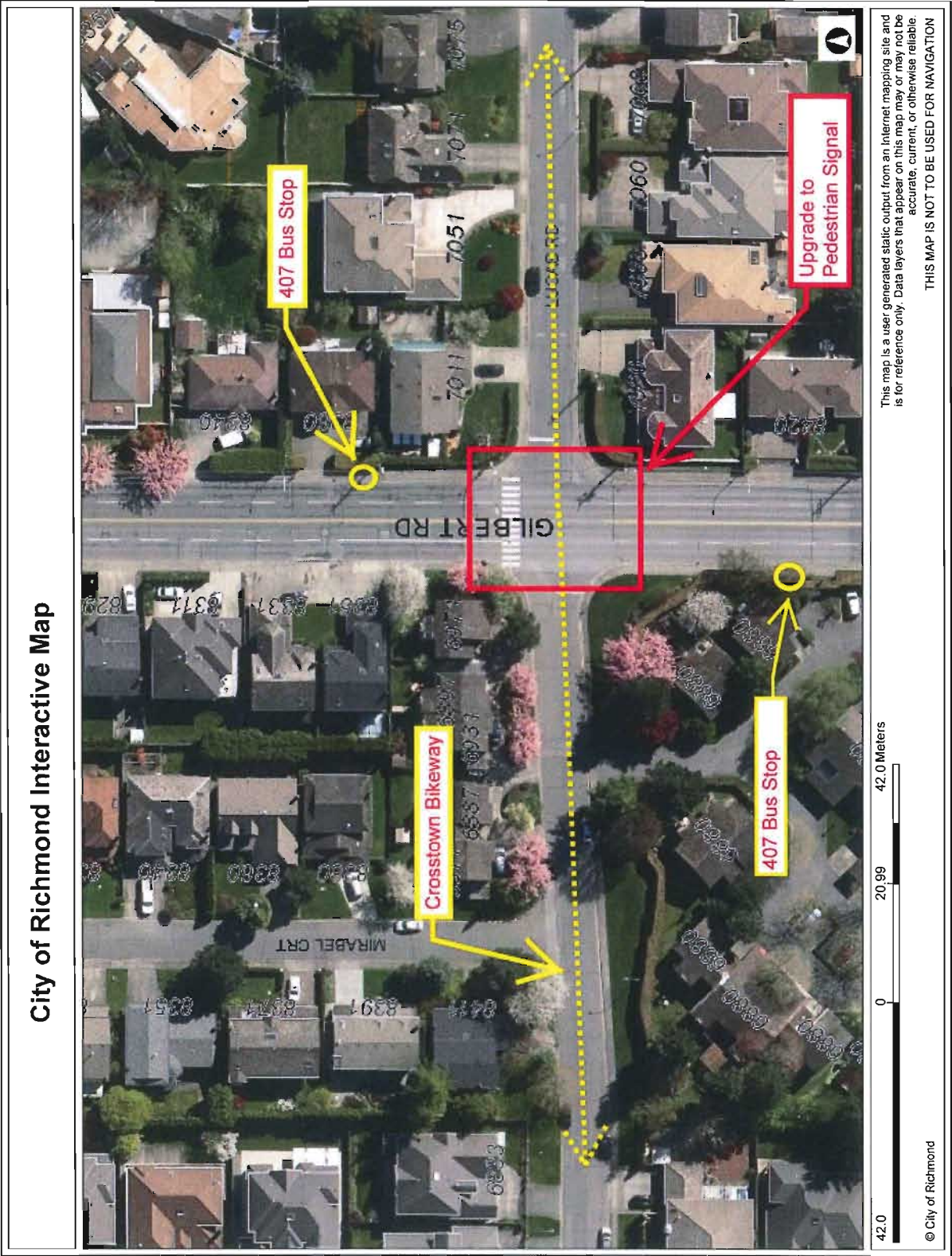


Upgrades at Colville Road-No. 2 Road



Upgrade of Off-Street Pathway in Blundell Park







To: Public Works and Transportation Committee

Date: March 30, 2015

From: Tom Stewart, ASCT.
Director, Public Works Operations

File: 10-6375-05/2015-Vol
01

Re: Report 2014: Recycling and Solid Waste Management - Leadership and Excellence to Achieve Goals

Staff Recommendation

That the annual report titled, "Report 2014: Recycling and Solid Waste Management - Leadership and Excellence to Achieve Goals" dated March 30, 2015, from the Director, Public Works Operations, be endorsed and made available to the community through the City's website and through various communication tools including social media channels and as part of community outreach initiatives.

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

Att. 1

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

Staff Report

Origin

The City has established a waste diversion target of 70% by 2015, aspiring to 80% by 2020 in accordance with the regional Integrated Solid Waste and Resource Management Plan (ISWRMP). As well, the City's vision for sustainability includes a key goal to be a Recycling Smart City. The City offers a number of waste reduction and recycling programs to the community to help achieve these targets. To support full utilization of recycling programs and services in Richmond, the City also implements a range of communication and outreach programs to ensure residents are aware of the services available and understand how to access and use these services.

The annual "Report 2014: Recycling and Solid Waste Management - Leadership and Excellence to Achieve Goals" (The Report) is presented (Attachment 1) to track progress on these programs and report back to the community. This report summarizes Richmond's comprehensive programs, highlights results achieved in 2014, provides insights into upcoming initiatives, and includes tips and resources to support recycling and sustainable waste management.

This report supports Council's Term Goal #8 Sustainability:

8.1: Continued implementation and significant progress towards achieving the City's Sustainability Framework, and associated targets. A key component of the sustainability framework is the Solid Waste Strategic Program within the goal area of Sustainable Resource Use, and

8.3. Communicate to the public the City's Sustainability goals with details on how the City is meeting (or exceeding) these goals and how they support Provincial goals.

Analysis

The Report highlights Richmond's leadership in sustainable waste management over the past year, including comprehensive implementation of expanded services, proactive pilot programs to test program options and award recognition for excellence in communications. At the same time, the City has remained committed to ensuring residents are informed about the progressive suite of recycling services available to them, including details on how to use each program. Success with this combination of service delivery and outreach is measured by the continued increase in recycling and waste diversion thanks to residents' participation in recycling.

A notable success in 2014 was the implementation of significantly expanded Blue Box and Blue Cart recycling services through partnership with Multi-Material British Columbia (MMBC). Under the expanded program, items such as aerosol containers, paper food containers and milk cartons, along with a broad range of additional plastic items are now accepted in the City's curbside and central collection recycling programs. Richmond also initiated a new Glass Recycling Bin to accommodate the need for separating glass jars and bottles for recycling, and successfully launched this service in tandem with the MMBC program launch on May 19, 2014.

This ensured a seamless transition to the MMBC program for residents, with no service interruptions.

Another significant achievement in 2014 was the completion of a 15-month food scraps pilot program for multi-family complexes, which achieved 27% organic recycling diversion, and provided valuable data and input from residents for the development of recommendations to expand Green Cart service to multi-family complexes with centralized collection. As well, the City introduced a Garbage Cart Pilot Project, which will evaluate waste diversion using weekly and bi-weekly collection, as well as fee incentives for reducing garbage.

Residents in single-family homes achieved 71% waste diversion – up from 70% in 2013 – well ahead of the 2015 diversion goal. The increase in 2014 was due, in part, to the expanded range of recycling materials accepted in 2014 and the continued commitment by residents to recycle their waste. In addition, the amount of food scraps and yard trimmings continued to increase markedly in 2014, or over 2,000 tonnes more than the prior year. The City's Large Item Pick Up program (introduced in 2013), continued to grow with over 11,679 items collected – an increase of more than 3,000 items compared to the last year.

The Report features outreach and community engagement as a key contributor to increased recycling, both at home and at community events. In 2014, Richmond was recognized with two Awards of Excellence for its leadership in outreach through its Green Cart communication campaign. The City's communication and community engagement includes reaching out to the community by hosting recycling displays at local shopping centres to share information and educational materials, answering questions and engaging community members in fun activities that emphasize how to use recycling programs. Richmond's outreach also includes connecting with students who share their commitment to recycling at school and at home, and high school students volunteering as Green Ambassadors continue to support event recycling, which results in significant waste diversion. Richmond's partnership with schools also provides important recycling and litter management information to students using fun and engaging shows, and then reinforces those behaviours through contests that turn the new ideas and tips into action.

The "Report 2014: Recycling and Solid Waste Management - Leadership and Excellence to Achieve Goals" highlights key accomplishments, which include:

- Achieved 71% waste diversion from single-family homes.
- Expanded the Blue Box and Blue Cart recycling programs to include a broader range of materials through partnership with MMBC, including separate collection of glass.
- Recognized with the national Silver Leaf and provincial Bronze Quill Awards from the International Association of Business Communicators (IABC) for the City's Green Cart communication plan.
- Completed a 15-month Green Cart Pilot Program for multi-family complexes and achieved 27% organic recycling diversion during the pilot.
- Delivered 28 workshops involving 616 participants on waste reduction, recycling and how to avoid food wastage.
- Initiated a Garbage Cart Pilot Program to test weekly and bi-weekly garbage collection using City-provided carts.

- Conducted a pilot project with the small building industry to trial different methods of recycling materials from single-family home demolitions
- Council adopted the “Management of Waste and Recyclable Materials from City Facilities Demolition and Construction Activities” policy
- Assisted with over 20,190 customer calls to the Environmental Programs Information Line
- Organized DreamRider Theatrical Shows including Zero Heroes and Clean Up your Act at 18 elementary schools, reaching 2,680 students. Green Ambassadors contributed over 1,200 hours to help promote recycling at events and 1,850 hours to organize the 2014 REaDY Summit. The Green Ambassadors achieved a 97.5% diversion rate for waste generated at the 2014 REaDY Summit
- Hosted recycling stations and eight events resulting in waste diversion ranging from about 85% to 97% at four major City events

Proposed Communication

Subject to Council’s approval, the annual "Report 2014: Recycling and Solid Waste Management - Leadership and Excellence to Achieve Goals" will be posted on the City’s website and made available through various communication tools including social media channels and as part of community outreach initiatives.

Report 2014 Overview

The 2014 Report contains four chapters that summarize outcomes and accomplishments in current waste management and recycling services, and highlights the variety of public education/community outreach programs delivered across the city. The Report also includes a comprehensive tips and resources section. The Report content features information to raise awareness about how recycled materials are used as a new resource, and tips for residents to help them connect with City and product stewardship programs for disposing of a variety of items.

A summary overview of each chapter follows.

Chapter 1: Annual Outlook – Leadership and Excellence to Achieve Goals highlights the importance of City’s leadership and continuous improvement efforts to advance further toward waste reduction goals. The Annual Outlook features the achievements from the past year, including the expanded recycling services introduced, success of the Green Cart Pilot Program for food scraps recycling in multi-family complexes, and the Awards of Excellence for the City’s Green Cart communications. This section also provides a brief summary of the new initiatives and service targets for the upcoming year.

Chapter 2: Programs and Services – Expanding Services to Make Recycling Easy and Convenient describes the City’s comprehensive recycling and waste reduction initiatives and highlights how each program contributes to overall diversion targets and sustainability goals. Details on the quantities collected through programs such as Blue Box, Blue Cart, the Recycling Depot, Yard Trimmings Drop Off, Green Cart, the Multi-family Green Cart Pilot Program and litter collection services are provided. This section also includes details on the City’s Large Item Pick Up Program, and the major categories of items collected through this program. In addition,

this section outlines the measures the City takes to promote recycling space in commercial and multi-family buildings.

Chapter 3: Outreach and Customer Service – Supporting Awareness and Education presents the City’s commitment to support waste reduction and reuse by providing residents information and education through workshops and displays, and through programs to support event recycling. Our extensive public education and community outreach initiatives aim to raise awareness and foster sustainable behaviours where recycling and waste reduction practices become a way of life. Free workshops on composting, waste reduction, eco-cleaning, reuse and more are offered throughout the year, as are outreach displays at various events and in local shopping centres. City staff partner with the Richmond School District to engage both high school and elementary school students to promote sustainable stewardship behaviours. They learn about how to recycle and reduce litter, and then they practice those skills through school contests. City staff members also mentor the high school Green Ambassadors by hosting information-sharing meetings and coordinating these volunteers as they assist with public spaces recycling centres at community events.

Chapter 4: Tips and Resources – Easy Steps to Increase Recycling and Reduce Waste – This section provides a comprehensive guide to recycling. It includes specific information on how and what to recycle in the City’s Blue Box, Blue Cart and Green Cart programs. There is information on how to compost at home, the items accepted for recycling at Richmond’s Recycling Depot, and what to do with many household items ranging from medication to recyclable mattresses. The resources section also includes information on what to do with special waste items and banned materials, including recycling and disposal options through take-back programs. There is also contact information and locations for Richmond services and community partners involved in stewardship programs.

Moving Forward

As the City continues to grow and expand our services to further advance toward 80% waste diversion for all residents, key focus areas going forward include:

- Increase awareness of the expanded range of materials accepted in the Blue Box and Blue Cart recycling programs under new partnership with MMBC;
- Report to Council regarding carts for garbage service and considerations for altering levels of service to increase recycling and waste diversion;
- Explore initiatives to support food scraps recycling in mixed use buildings and the commercial sector;
- Expand food scraps recycling for all residents in multi-family complexes with centralized collection;
- Expand the compost collection program to a full food scraps recycling program at all City Facilities, including a staff awareness and education campaign;
- Build on the success of existing community outreach and education programs to deliver workshops, theatrical shows, contests and annual REaDY Summit;
- Adopt a policy with recycling targets for waste reduction and recycling of materials from residential demolition activities;
- Continue to expand and broaden the City’s public spaces recycling program;

- Support a regional initiative to develop a plan for managing debris from disasters as part of emergency preparedness,
- Explore Eco-Centre concept, including possible expansion of services at the Richmond Recycling Depot; and
- Continue involvement in regional planning and implementation efforts for the ISWRMP.

Financial Impact

None. Programs related to solid waste that impact service levels are brought to Council for review and consideration throughout the year.

Conclusion

Through the annual "Report 2014: Recycling and Solid Waste Management - Leadership and Excellence to Achieve Goals", the City is providing its residents with a progress report on the many recycling and waste management programs and activities delivered in the community. The Report also serves as a comprehensive resource and guide that supports recycling, reuse and reduction activities throughout the year. By tracking progress towards its goals for waste diversion and reporting this to the community, the City is demonstrating Richmond's commitment to responsive services, responsible government and accessible information and communication.

It is through residents' participation and commitment to recycling that those living in single-family homes have achieved 71% waste diversion in 2014, well ahead of the 2015 target of 70%. Future years will see continued efforts to expand recycling services to residents in multi-family homes as part of helping all residents work toward achieving the 80% waste diversion target by 2020.



Suzanne Bycraft
Manager, Fleet & Environmental Programs
(604-233-3338)

Att. 1: City of Richmond Report 2014: Recycling and Solid Waste Management



LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

Let's trim our waste!



**LET'S
TRIM
OUR
WASTE!**

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2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

ANNUAL OUTLOOK

LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

Continuous improvement is the hallmark for waste management in Richmond. The City aligns its targets with regional goals and, working with the community, continues to achieve those targets ahead of schedule. This success is thanks to the City's commitment to service excellence in recycling, along with dedicated residents who maximize their recycling efforts to divert more than 71% of their waste from the garbage. Working together, City Council, staff and residents are moving Richmond toward its goal to be a Recycling Smart City.

In 2014, the City demonstrated its leadership as it tackled multiple projects to enhance recycling services in the community. One key success was the full implementation of recycling services under the new partnership with Multi-Material BC (MMBC). Richmond's leadership in recycling was evident as it successfully ensured residents would have a separate glass recycling program in place in time for the initial MMBC program roll out. This involved a significant adaptation of existing programs, including the purchase of new glass recycling bins for every resident in the program. While some communities are gradually introducing a residential glass recycling service, Richmond residents benefited from a seamless program transition with no service interruptions.

Under the expanded program, residents can recycle a much broader range of household materials, such as aerosol containers, paper and plastic drink cups, milk cartons, gable top containers used for soy milk and juice, plastic and paper garden pots, and bakery trays. Residents with the Blue Box program can now combine all of their newspaper and other paper products into one, new Mixed Paper Recycling Bag and they have a new Glass Recycling Bin to recycle glass jars and bottles. Residents in townhomes and apartments with the centralized Blue Cart program are also able to combine their newspaper and other paper products into a Mixed Paper Recycling Cart, and they have new Glass Recycling Carts for recycling glass jars and bottles. By working in partnership with MMBC, the City is delivering an enhanced level of service to its residents, making it easier for them to reduce the amount of household waste going into the garbage.

In addition to the expanded recycling using the Blue Cart and Blue Box programs, Richmond provides residents with a convenient and safe option to dispose of large household items including furniture, mattresses and appliances. The Large Item Pick Up program ensures that recyclable materials are kept out of the landfill, and makes it easier for residents by providing curbside collection of up to four items per household per year.

Richmond has also continued to engage residents to ensure its programs are designed to meet their needs. This commitment to excellence involved two major pilot programs in 2014: the Multi-family Green Cart Pilot Program and the Garbage Cart Pilot Program. With these programs, the City is able to test a range of service options and gain input from residents on the best program components and areas of concern that need to be addressed.

In preparation for the 2015 Metro Vancouver food scraps disposal ban, the City had already implemented an enhanced Green Cart program for residents in single-family homes and townhomes with City garbage and/or Blue Box service. This ensured 60% of Richmond residents were set up with a convenient recycling service; however, the City wanted to ensure that all residents, including those who live in multi-family complexes with a central collection area, would have the same level of service.

CITY OF RICHMOND

Richmond recognized with two IABC Awards of Excellence for its Green Cart communications!

Because centralized services involve unique requirements, the City initiated the Multi-Family Green Cart Pilot Program to test service options. The pilot program was concluded in the fall, with recommendations for a City-wide Green Cart program that would ensure all Richmond residents have access to easy and convenient food scraps recycling. The goal was to ensure that Green Cart service would be fully implemented prior to July 1, 2015, when the grace period for the new food scraps disposal ban ends.

The Garbage Cart Pilot Program allows evaluation of options for weekly or biweekly garbage collection, along with preferences for cart sizes and fee incentives for reducing garbage. With input from residents in the pilot, Richmond will be able to design a program that is tailored to the interests and priorities identified by residents while also supporting the City's goals to reduce garbage. Early results from this Pilot Program are showing a marked improvement in recycling in homes with biweekly garbage collection.

The progress towards goals is an excellent measure of the success with Richmond's recycling programs. Residents in single-family homes achieved the City's initial target to reduce garbage by 70% two years ahead of schedule. In 2014, residents in single-family homes reached 71% waste diversion. Now the City is working with residents to achieve the next target: diverting 80% of waste from the landfill by 2020.

Richmond was also proud to be honoured with two awards of excellence in government communication for the City's Green Cart program communication campaign. The International Association of Business Communicators presented the City of Richmond with an IABC Bronze Quill Award of Excellence (a provincial-level award) and an IABC Silver Leaf Award of Excellence (a national award). These awards give credit to the success of Richmond's programs and place the City in a league with some of the best communicators in the field from across the country. These awards of distinction recognize organizations that are setting the standard for communications excellence.

The past year's achievements exemplify the City's leadership and excellence in sustainable waste management, and its commitment to continuous improvement to benefit residents.

THREE EASY STEPS

Richmond can achieve its targets with the help of community commitment to these three easy steps to reduce waste:

RECYCLE

BUMP UP RECYCLING - EXPAND YOUR RECYCLING TO INCLUDE FOOD SCRAPS AND OTHER MATERIALS ACCEPTED THROUGH CITY COLLECTION SERVICES, THE RECYCLING DEPOT AND TAKE-BACK PROGRAMS.



REDUCE

BE CHOOSY WHEN YOU SHOP - SELECT PRODUCTS WITH MINIMAL OR NO PACKAGING, LIKE USING A MUG INSTEAD OF A PAPER CUP.



REUSE

DONATE BEFORE YOU DISPOSE - CONSIDER DONATING OR SELLING GENTLY USED PRODUCTS.



2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

OUR TOP ACCOMPLISHMENTS IN 2014

The following are some of the key accomplishments in 2014.

GREEN CART PILOT PROGRAM

Completed Completed a 15-month food scraps pilot program for multi-family complexes and achieved 27% organic recycling diversion during the pilot.

COMMUNITY OUTREACH

Delivered 28 workshops involving 616 participants on waste reduction, recycling and how to avoid food wastage.

AWARDS OF EXCELLENCE

Received the Silver Leaf and the Bronze Quill Awards of Excellence from the International Association of Business Communicators for the City's Green Cart communication campaign.

EXPANDED SERVICES

Expanded the Blue Box and Blue Cart recycling programs to include a broader range of materials through partnership with MMBCC. Expanded drop-off services at the Recycling Depot to accept Styrofoam, plastic bags and overwrap.

DEMOLITION & CONSTRUCTION WASTE

Conducted a pilot project with the small building industry to trial different methods of recycling materials from single-family home demolitions. Council adopted the "Management of Waste and Recyclable Materials from City Facilities Demolition and Construction Activities" policy, which targets 80% diversion of demolition and construction waste from new City's facilities construction and demolition projects.

CUSTOMER SERVICE

Assisted with over 20,190 customer calls to the Environmental Programs Information Line. Sold 71 compost bins, 9,600 Garbage Tags, and 761 Garbage Disposal Vouchers out of the City's Recycling Depot and other City facilities.

STUDENT & COMMUNITY ENGAGEMENT

Organized DreamRider Theatrical Shows including Zero Heroes and Clean Up your Act at 18 elementary schools, reaching 2,749 students. Green Ambassadors contributed nearly 2,500 hours to help promote recycling at events in 2013/2014 and achieved a 97.5% diversion rate for waste generated at the 2014 REaDY Summit.

EVENT RECYCLING

Hosted recycling stations at eight events, resulting in waste diversion ranging from about 85% to 97% at four major City events. Provided free recycling bins to support organizers of six events to promote recycling.

CITY OF RICHMOND

OUR GOALS

Richmond has set its long-term goal to be a Recycling Smart City and has established annual goals to help achieve this target. Each goal is designed to provide easy and convenient services for residents, along with creating opportunities for innovation, partnership and continuous improvement.

1

Multi-family food scraps recycling

Expand food scraps recycling to over 30,000 residents in multi-family complexes in advance of the regional food scraps disposal ban enforcement in 2015.

2

Garbage cart pilot program

Report to Council regarding carts for garbage service and considerations for altering levels of service (biweekly) to increase recycling and waste diversion.

3

Organics recycling at City facilities

Expand the City of Richmond's successful compost collection program to a full organics food scraps recycling program at all City facilities, including a staff awareness and education campaign.

4

Packaging and printed paper stewardship program

Expand awareness of the expanded range of materials accepted in the Blue box and Blue Cart recycling programs under the new partnership service with MMBC.

5

Expand community outreach

Build on the success of existing outreach and education programs to deliver workshops, theatrical shows, contests and the 5th annual REaDY Summit.

6

Undertake a review of the Green Ambassador program

Review the program (in cooperation with the School District) to address program management challenges, identify future directions as well as potential opportunities to expand and enhance youth engagement in environmental initiatives.

7

Expand recycling of building demolition waste

Using the results and analysis of a pilot initiative, develop a policy approach to expand recycling of demolition waste from residential demolitions.

8

Explore eco-centre concept

Explore options including expansion of the City's existing Recycling Depot into a larger facility that accepts a much broader range of materials and offers additional services such as a re-use centre and education facility.

9

Increase awareness and understanding of sustainable waste management

Implement a quarterly "Let's trim our waste!" communication campaign to raise awareness about the importance of recycling and waste reduction, and promote increased use of Richmond's programs and services.

10

Expand public spaces recycling

Accept an expanded range of materials for recycling in public spaces and enhance the container replacement and maintenance program. Develop enhanced recycling educational signage to improve recycling diversion, minimize contamination and align materials accepted with residential Blue Box and Blue Cart recycling programs.



THANK YOU TO RICHMOND RESIDENTS

81% waste diversion goal achieved by single family residents in 2014!

Each year, Richmond residents add more to their recycling and reduce the amount of garbage going to the landfill. Richmond appreciates this dedication and will continue to explore options to provide residents with easy and convenient recycling options at home and in the community.

With the expanded Blue Box and Blue Cart recycling now available through the partnership with MMBC and the plans underway to ensure that all Richmond residents have access to food scraps recycling using the Green Cart program, Richmond is on track to be a Recycling Smart City. This commitment includes continuous improvement to its program as the City strives for service excellence and sustainable waste management programs.

Thanks to the tremendous participation in the expanded Green Cart program, the City was proud to receive two Awards of Excellence from the International Association of Business Communicators. While these awards are for the communication program delivered by the City, they are evaluated based on measured outcomes. This means that the City's success is a reflection of the successful recycling done by residents.

Thank you for supporting the success of the Green Cart program, and for your continued effort to help Richmond achieve its goal to reduce garbage by 80% by 2020.

DID YOU KNOW?

You can recycle aerosol cans, plastic and paper milk cartons, and plastic containers including drink cups in your Blue Box or Containers Blue Cart.



2013 REPORT • ACHIEVING GOALS THROUGH COMMUNITY ENGAGEMENT

PROGRAMS AND SERVICES

EXPANDING SERVICES TO MAKE RECYCLING EASY AND CONVENIENT

Richmond residents in single-family homes are now diverting 71% of their waste, and recycling is increasing in townhomes and other multi-family complexes. To support residents and their commitment to recycling, Richmond continues to expand opportunities for residents to recycle by creating new and enhanced programs for recycling at home and when on the go in the community. Residents can also drop off a growing list of recyclable items at the City's Recycling Depot and other drop-off facilities.

Richmond works with residents, industry partners, product stewardship groups and businesses to achieve its goal to be a Recycling Smart City and implement sustainable waste management. Through partnerships and community engagement, Richmond's commitment to continuous improvement results in enhanced services to benefit residents.



Residents in single-family homes are now diverting 71% of their waste.



RICHMOND RECYCLING AND WASTE MANAGEMENT

Richmond delivers a wide range of recycling and waste management services for residents to ensure that all waste is managed effectively and efficiently, and adheres to sustainability principles. In 2014, Richmond worked in partnership with MMBC to expand recycling services to include many new household items. The following are the key recycling and waste management services offered through the City of Richmond.

BLUE BOX

Weekly curbside collection for recycling paper and newsprint, glass, plastic containers, and tin and aluminium containers. This program is provided to more than 40,230 residential units in single-family homes and townhomes. For details, see page 32.

BLUE CART

Weekly recycling collection for paper and newsprint, glass, plastic containers, and tin and aluminium containers. This program is provided to more than 31,460 multi-family units. For details, see page 34.

GREEN CART

Curbside collection for recycling foods scraps and yard trimmings. This program is provided to residents in single-family homes and some townhomes as well as multi-family complexes involved in a pilot project. For details, see page 36.

RECYCLING DEPOT

Drop-off service for products ranging from yard trimmings and household items, to hazardous materials and take-back program products. This service is available to all residents and in limited quantities for commercial operators. The Depot also sells compost bins, rain barrels, Garbage Tags and Garbage Disposal Vouchers for use at the Vancouver Landfill. For details, see page 40.



SINGLE-FAMILY RECYCLING



Residents in single-family homes recycled or reduced nearly 33,966.63 tonnes in 2014 – 71% of total estimated waste generated – through a number of recycling and waste reduction opportunities, including curbside and Recycling Depot collection, as well as composting programs.

* Estimated

GO! RECYCLE PUBLIC SPACES AND EVENT RECYCLING

Recycling bins in the community make it easy to recycle on the go, such as in parks, at community centres, in the Steveston business district and at the Canada Line stations and Richmond central bus stops.

COMPOSTING AT HOME

Support for residential composting includes the sale of compost bins, a composting demonstration garden and related workshops. These services are available to all residents. For details, see page 37.

CURBSIDE GARBAGE COLLECTION

Curbside collection of garbage, not including banned items such as hazardous waste and materials that can be recycled, is available to residents in single-family homes and some townhomes. For details, see page 38.

EXTRA GARBAGE DISPOSAL

Garbage disposal tags and vouchers for the Vancouver Landfill provide options for residents when they need to dispose of additional garbage or large items. For details, see page 38.

LARGE ITEM PICK-UP PROGRAM

Residents in single-family homes and some townhomes can arrange for curbside collection of four large household items per year. For details, see page 39.

COMMUNITY AND SCHOOL ENGAGEMENT

Through partnerships with students, teachers and the School District, Richmond sponsors educational shows, awareness programs and volunteer opportunities to increase understanding of recycling and the benefits of reducing waste. For details see the Outreach and Customer Service section on page 25.

DID YOU KNOW?

Plastic takes one million years to break down in a landfill, whereas recycled plastic can be used to make bottles, clothing, carpet, picnic tables, drainage pipes, bags, trash cans, paneling, flower pots and pallets.



RESIDENTIAL RECYCLING PROGRAMS

With weekly collection services, drop-off programs, public spaces recycling and community take back programs, it's easy and convenient to recycle in Richmond. Richmond offers residents a range of services to support recycling at home and on the go.

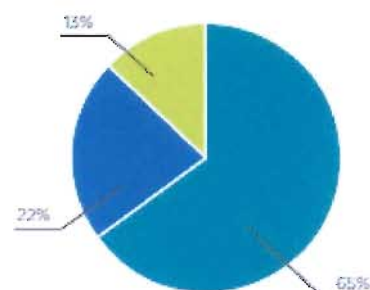
BLUE BOX RECYCLING PROGRAM

The Blue Box Recycling program provides convenient collection services in the community. Residents in single-family homes and some townhome complexes use the City's Blue Box program to recycle newspaper, paper products and cardboard along with tin, aluminium, glass bottles and jars, and plastic containers. More than 40,230 residential units are serviced with weekly collection under this program.

In 2014, more than 6,790 tonnes of materials were recycled in the Blue Box program. Of this, 65% was mixed paper, 13% was newspaper and 22% was co-mingled containers.

Items that can be recycled through this program are listed in the Tips and Resources section of this publication and at www.richmond.ca/recycle.

BLUE BOX RECYCLING MIX



- MIXED PAPER (4,425 TONNES)*
- NEWSPAPER (872.84 TONNES)
- CONTAINERS (1,492.80 TONNES)

* Starting in mid May, newspaper was combined with mixed paper for recycling.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

BLUE CART RECYCLING PROGRAM

People who live in multi-family complexes can recycle the same products as residents who use the Blue Box program through the City's Blue Cart recycling program. The City provides recycling carts for a mini-recycling depot at each complex, which is generally located in the garbage enclosure or other convenient location. This service is currently available to over 31,460 multi-family units, and the City has information tools such as Blue Cart decals, posters and brochures that are offered to stratas and property managers to help raise awareness and increase participation.

In 2014, more than 2,400 tonnes of materials were recycled through the Blue Cart recycling program.

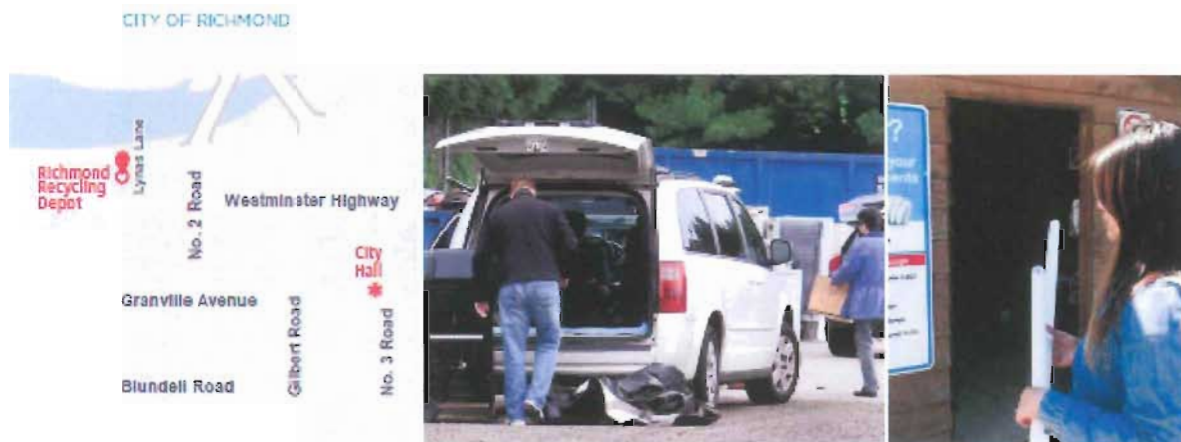
For a detailed list of items that can be recycled through the Blue Cart recycling program, see the Tips and Resources section or visit www.richmond.ca/recycle.

**TIP FOR RESIDENTS**

Residents in single-family homes and some townhomes can pick up complimentary Blue Box supplies at the Richmond Recycling Depot and City Hall, or order them online at www.richmond.ca/recycle.

Residents in multi-family complexes with Blue Cart service can pick up an indoor collection bag at Richmond Recycling Depot or order a bag online at www.richmond.ca/recycle.





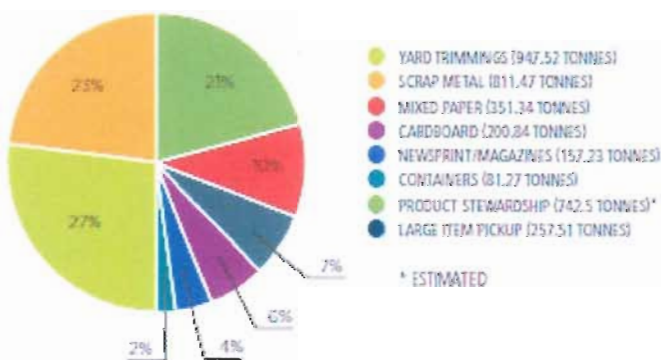
RECYCLING DEPOT PROGRAM

The Richmond Recycling Depot is located at 5555 Lynas Lane and is open from 9:00 a.m. – 6:15 p.m., Wednesday to Sunday for drop off of a broad range of materials. The Depot also sells compost bins, rain barrels, Garbage Tags and Garbage Disposal Vouchers. The Recycling Depot is a Product Stewardship (Take Back) collection site for small appliances, paints, solvents, flammable liquids, pesticides, lights and lighting fixtures.

RECYCLING DEPOT SERVICES

This facility accepts a wide range of materials including cardboard, yard and garden trimmings, mixed paper and newspapers, and now also accepts Styrofoam, used books, cell phones, household batteries and plastic bags. The facility also accepts large appliances (e.g. fridges, stoves, washing machines), metal items (e.g. bike frames, barbecues, lawn mowers), glass bottles, jars, tin and aluminium cans, paints, pesticides and solvents. For a detailed list of items see page 41. The Recycling Depot is owned and operated by the City of Richmond, with two full-time staff and additional staff support in the summer months to manage increased recycling volumes. Staff on site are available to answer questions and provide assistance with unloading awkward or heavy items.

DEPOT RECYCLING: BREAKDOWN OF MATERIALS COLLECTED IN 2014



TOTAL TONNAGE = 3,549.68

In 2014, 3,549.68 tonnes of recyclable materials were collected at the Recycling Depot. This includes yard trimmings, scrap metal, mixed paper products and rigid plastic containers. For more information on drop-off programs for yard trimmings, see page 17.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

DEPOT RECYCLING: MATERIALS AND AMOUNTS COLLECTED THROUGH TAKE BACK PROGRAMS IN 2014

PAINT
226,368 EQUIVALENT LITRES



AEROSOLS
2,450 EQUIVALENT LITRES



SOLVENTS & PESTICIDES
11,664 EQUIVALENT LITRES



SMALL APPLIANCES
93.4 TONNES



CFLS
239 BOXES



4' TUBES
247 BOXES

8' TUBES
58 BOXES

FOR SALE AT THE RECYCLING DEPOT

Residents can purchase the following items from the Depot:

- Compost bins - \$25 each
- Rain barrels - \$30 each
- Extra Garbage Tags - \$2 each
- Garbage Disposal Vouchers - \$5 each for Richmond residents and it is worth \$20 at the Vancouver Landfill

RECYCLE AT THE DEPOT

Richmond's free drop-off program includes:

- Styrofoam;
- Batteries (household batteries 5 kg or under);
- Cell phones;
- Used books;
- Plastic bags and plastic overwrap;
- Large and small appliances;
- Scrap metal; and
- Yard and garden trimmings

For a full list of items that can be recycled at the Recycling Depot, see page 41.

**TIP FOR RESIDENTS**

Fats, oils and grease should never be disposed down sinks, drains or garburators as the material hardens and builds up on the inside of sewage lines, causing blockages. This can lead to breaks and sewage spills or overflows. Recycle food scraps and grease in your Green Cart, and take used cooking oils and liquid fats in a sealed container to the Recycling Depot (5555 Lynas Lane, open Wednesday to Sunday from 9:00 a.m. to 6:15 p.m.) for free disposal.

CITY OF RICHMOND



COMPOSTING PROGRAMS

Composting is a simple and organic process that can reduce household waste by up to 40%—significantly reducing the amount of waste that goes to the landfill. Fruit and vegetable peelings, along with grass, leaves and other yard trimmings, can be added to a compost bin. In addition, composted matter produces a very nutrient-rich soil to keep lawns and gardens healthy.

BACKYARD COMPOST BIN DISTRIBUTION PROGRAM

The City of Richmond supports composting by providing free composting workshops from January to November, which include information on backyard and worm composting and how to harvest compost. The City offers compost bins for sale at the Recycling Depot for \$25 each. Backyard composting is the most effective way to dispose of fruit and vegetable peelings, eggshells, coffee grounds, filters, tea bags and yard trimming materials. Since this program started in 1992, 10,609 compost bins have been distributed.

Additional tips and information on composting are provided in the Tips and Resources section and at www.richmond.ca/recycle.

COMPOST DEMONSTRATION GARDEN

To help residents learn about backyard composting, the City offers a Compost Demonstration area in the Terra Nova Rural Park located at 2631 Westminster Highway just west of No.1 Road. It is open from dawn to dusk year-round, and is supplemented by workshops. Residents are encouraged to take a self-guided tour to learn about different types of compost bins and the benefits of composting.



TIP FOR RESIDENTS

The Compost Hotline at 604-736-2250 offers tips and advice on how to compost and use the nutrient-rich soil produced for home gardens. Compost from yard trimmings drop-off programs and through the Green Cart and Green Can collection programs are sold for residential use and for use in the landscaping industry.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

Richmond residents are generating their own compost to enrich their garden soil. With 10,609 bins sold, home composting is an excellent way to help keep recyclable organic materials out of the garbage.

YARD TRIMMINGS DROP-OFF PROGRAMS

ECOWASTE INDUSTRIES

The City offers residents the option to drop off unlimited quantities of yard and garden trimmings for free at Ecowaste Industries located at 15111 Triangle Road. Proof of Richmond residency is required.

Visit ecowaste.com or call 604-277-1410 for hours of operation and directions.

RECYCLING DEPOT

Residents may drop off limited quantities of yard and garden trimmings (up to 1 cubic yard) at the City's Recycling Depot. A fee of \$20 applies for each additional cubic yard. Commercial operators may also use the Recycling Depot for dropping off of trimmings for a fee of \$20 per each cubic yard. The Recycling Depot is located at 5555 Lynas Lane and is open from 9:00 a.m. – 6:15 p.m., Wednesday to Sunday.

For a detailed list of all items that can be recycled at the Depot, please refer to the Tips and Resources section on page 41.

DID YOU KNOW?

When food scraps are disposed of in a landfill, the decomposition process creates methane. Methane is a powerful greenhouse gas that contributes to global warming.

DROP OFF TONNAGE IN 2014

In 2014, approximately 3,410 tonnes of yard trimmings were collected at the Recycling Depot and through the Ecowaste residential and commercial drop-off service.



CITY OF RICHMOND



GREEN CART PROGRAM

Richmond's Green Cart recycling program for food scraps and yard trimmings is provided to single-family and townhomes with City garbage and/or Blue Box service. As well, in 2014, residents in approximately 50 multi-family complexes with centralized collection received Green Cart service as part of a Multi-family Green Cart Pilot Program. Green Cart recycling totaled approximately 16,314 tonnes in 2014 – a 15% increase over 2013.

Food scraps and yard trimmings represent about 40% of household waste, and the increase in Green Cart recycling along with Richmond's other recycling services has contributed to residents in single-family homes reducing their garbage by 71% in 2014. The Green Cart program is also an important service to support residents with an easy and convenient recycling option prior to the Metro Vancouver disposal ban on food scraps in 2015.

In 2014, Richmond was honoured with two Awards of Excellence in government communication by the International Association of Business Communicators (IABC). The IABC Bronze Quill (provincial level) and IABC Silver Leaf (national level) awards of distinction recognize organizations that are setting the standard for communications excellence.

RECYCLING WASTE TO REDUCE COSTS

Tipping fees for garbage taken to landfills have increased by about 75% since 2008. As well, there are additional fees, called surcharges, applied to garbage loads that contain more than 5% banned materials such as paper and cardboard, food scraps, containers made of glass, metal or banned recyclable plastic, beverage containers and clean wood. These additional fees can add up to more than 50% more to the tipping fee cost. There are also additional charges at the composting facility when Green Cart recycling loads come contaminated with non-organic materials. The best way to keep these costs down is to recycle materials using the correct receptacles and to reduce waste overall.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

GREEN CART SIZE OPTIONS AND BENEFITS



Richmond's Green Cart program currently serves approximately 41,000 homes and 50 multi-family complexes – 60% of all Richmond residents – to provide convenient access to yard trimmings and food scraps recycling. Green Carts are easy to use thanks to wheels and attached lids. As well, Green Carts are available in a range of sizes.

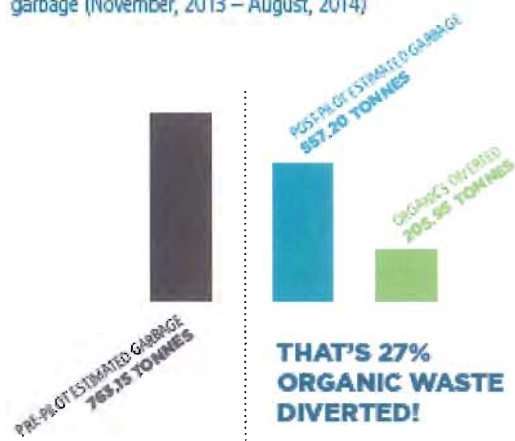
MULTI-FAMILY GREEN CART PILOT PROGRAM

In December 2014, the City of Richmond completed a Council-approved Green Cart Pilot Program for food scraps recycling in approximately 50 multi-family complexes. This program was undertaken in preparation of the food scraps disposal ban beginning in 2015. It was designed to test different methodologies for achieving maximum food scraps diversion in multi-family buildings. This 15-month Pilot Program expanded on the existing Green Cart service provided to single-family homes and townhomes, and achieved 27% organics recycling diversion. Total garbage tonnage was reduced by 205.95 tonnes.

The testing results also showed that using compostable plastic bags for kitchen containers is not a viable option at this time because these bags need more time to biodegrade than is cost-effective at the composting facility, and the cost to debag many smaller plastic bags versus the one large liner provided by the City is labour intensive and will add significant costs. As well, residents indicated that having lined Green Carts and regular cleaning would be important, and that space is limited, which means fewer carts can fit and more frequent collection may be needed.

MULTI-FAMILY ORGANICS PILOT PROGRAM

Organics diverted from pre-pilot estimated garbage (November, 2013 – August, 2014)



CITY OF RICHMOND



GARBAGE COLLECTION SERVICES

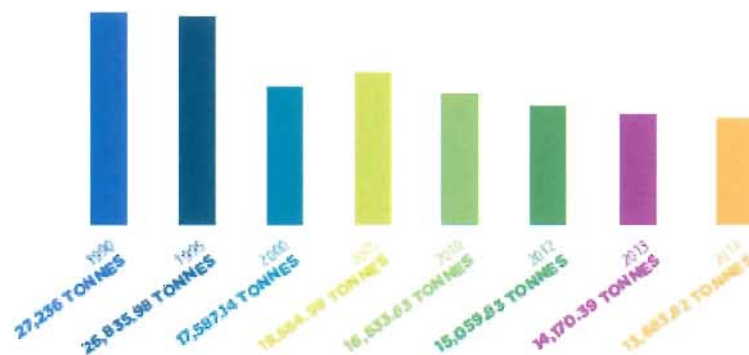
Weekly curbside collection of garbage provides residents with a convenient service for waste disposal. This includes the Large Item Pick Up program to provide curbside collection of up to four large household items each year.

GARBAGE COLLECTION

The City of Richmond provides weekly garbage collection services of two garbage cans for all single-family homes and some townhome developments. Additional garbage cans may be put out, but each extra container or bag must display a tag that can be purchased at City facilities for \$2 each. Certain items, such as hazardous waste materials and those items that can be recycled, are prohibited from garbage bins (see the chart on page 46 for more information on prohibited items).

Richmond also introduced a Garbage Cart Pilot Program in 2014 to begin testing options such as weekly and biweekly collection as well as fee incentives for using smaller carts by reducing garbage. The results of the pilot program will be reported in 2015.

GARBAGE DISPOSAL OVER THE YEARS



As conscientious recyclers, residents have drastically reduced the amount of garbage disposed since 1990. The City is reviewing options to help further reduce garbage, such as incentives to decrease garbage and possible use of City-provided garbage carts.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

**LARGE ITEM PICK UP PROGRAM**

Richmond's Large Item Pick Up program provides curbside collection of up to four large items per year. This program is provided to residents in single-family homes and townhomes with the City's garbage collection and/or Blue Box program. Curbside collection makes it easier for residents who do not have access to a vehicle to dispose of large items. Residents can contact the City's service provider at 604-270-4722 to arrange for collection of up to four large items per year. All four large items can be picked up at the same time, or in varying bundles for a total of four items annually.

Items accepted in this program include furniture, appliances and small household goods. Restrictions apply to ensure items can be handled safely from the curbside and mattresses must be covered in plastic to keep them dry. If residents have more than four large items to dispose of, they can purchase a Garbage Disposal Voucher for \$5 from any City facility and use the voucher to dispose of up to \$20 worth of garbage items at the Vancouver Landfill.

For more information on this program, see page 39 or visit www.richmond.ca/recycle.

COMMON MATERIALS AND AMOUNTS COLLECTED THROUGH THE LARGE ITEM PICK UP PROGRAM

MATTRESSES
48% OF REQUESTS



TELEVISIONS
14% OF REQUESTS



WASHERS & DRYERS
14% OF REQUESTS



FRIGIDES & FREEZERS
12% OF REQUESTS



BARBECUES
10% OF REQUESTS



DISHWASHERS
9% OF REQUESTS



STOVES
6% OF REQUESTS



MICROWAVES
2% OF REQUESTS

OVER **6,500** REQUESTS FOR SERVICE **11,679** ITEMS COLLECTED
468 TONNES WERE COLLECTED AND OF THIS, **257** TONNES WERE RECYCLED

CITY OF RICHMOND



LITTER COLLECTION SERVICES

Maintaining a litter-free city is a key focus area to ensure residents can enjoy clean parks and public spaces. The City of Richmond has made efforts to ensure that there are garbage cans, and in many cases recycling options, in public spaces throughout the city.

In addition, City crews work seven days a week to collect litter from parks, school grounds, roadsides, sidewalks and boulevards. They empty garbage and recycling from approximately 5,100 City litter and recycling receptacles in the community each week, and assist with removing graffiti from City garbage cans. As well, they collect illegally-dumped materials found on City property and provide safe disposal and recycling of these items. Together, these measures help to support a safe and appealing community.

DID YOU KNOW?

The City sponsors engaging programs at elementary schools to teach students about reducing litter, and promotes a litter-free community through its Partners for Beautification Program.

APPROXIMATELY
5,000 LOADS OF LITTER & RECYCLABLES
 COLLECTED
 FROM
 APPROXIMATELY **5,100** CITY LITTER & RECYCLING
 RECEPTACLES

Commercial buildings and multi-family complexes share a responsibility for recycling. Property owners and managers can facilitate recycling with well-designed recycling and garbage centres. Richmond has developed guidelines to help ensure commercial buildings and multi-family complexes are designed with accessible, centralized and well-organized recycling facilities. Increasing recycling in these buildings is integral to achieving the City's goals for reducing garbage going to landfills.

COMMERCIAL BUILDING GUIDELINES

Effective garbage and recycling management at commercial buildings is most successful when these facilities are integrated into the design and operations of the building or site. To support this, the City of Richmond has developed commercial building guidelines that are outlined in the City of Richmond Design Considerations for Commercial Properties: Recycling and Garbage. These guidelines assist designers and developers of commercial buildings in three key areas:

- the design of storage facilities for garbage and recycling;
- selection of containers for garbage and recycling; and
- planning of access for both tenants and collection service providers.

These guidelines help commercial property owners by giving general advice for meeting City regulations and suggesting goals for effective garbage and recycling programs. This information is provided as a resource and should be used with, not in place of, all applicable building codes, City standards and other relevant legislation.

For more information, visit www.richmond.ca/recycle.

MULTI-FAMILY BUILDING GUIDELINES

All multi-family residential and mixed-use buildings in Richmond require adequate storage for garbage and recycling, and these storage areas must meet Building Code Regulations.

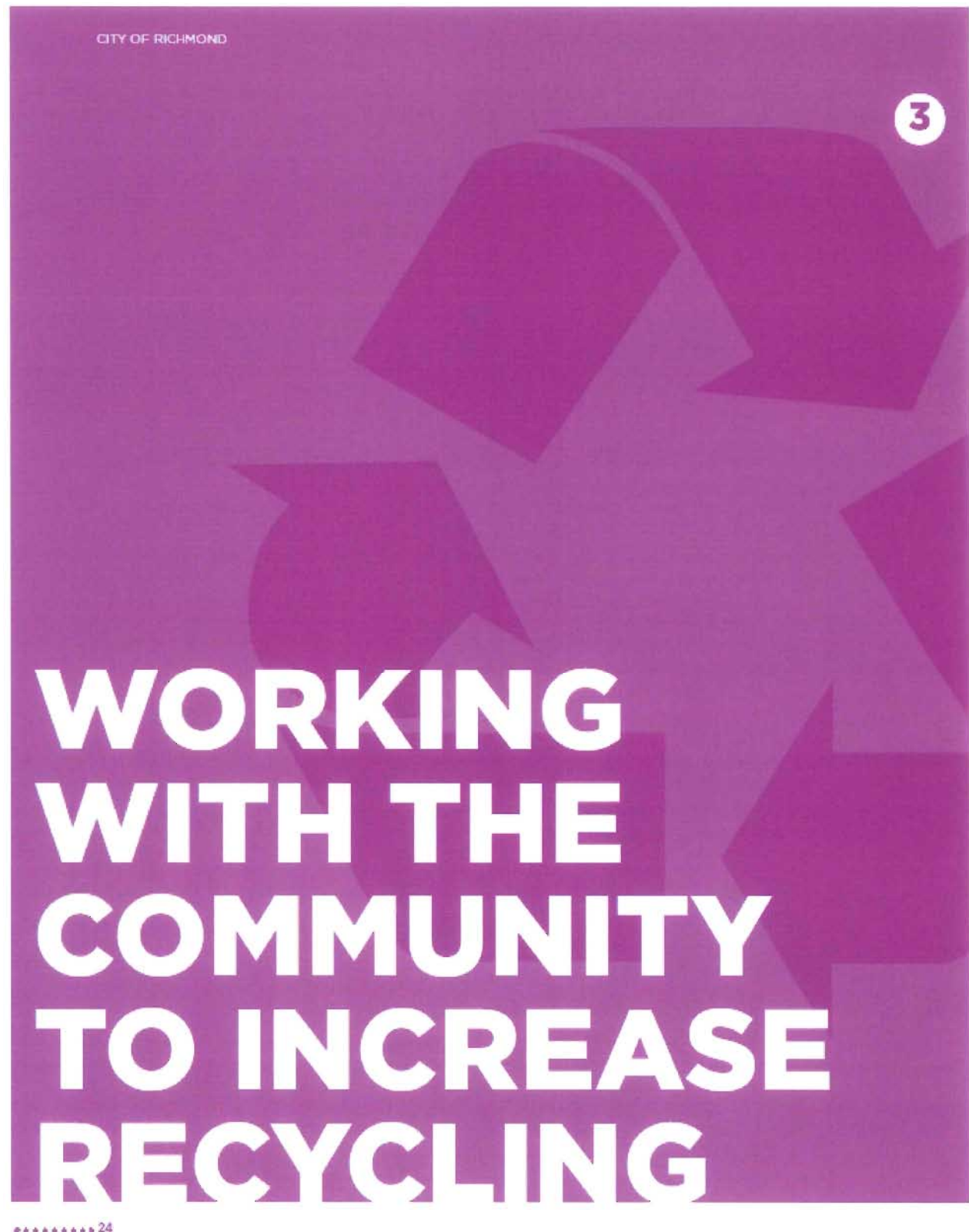
At the same time, garbage and recycling collection at multi-family and mixed-use buildings is an area where there is potential for future expansion and improvement.

As an important foundation, the City of Richmond has developed Multi-family Building Guidelines to help support consistent standards at all buildings. The guidelines include information such as basic service requirements, container access for residents and collection, and maximum container size. The information is provided as a convenient source of information, and property owners are responsible for ensuring they meet all applicable building codes, City standards and other relevant legislation.

For more information, visit www.richmond.ca/recycle.

DID YOU KNOW?

Starting in January 2015, food scraps cannot be put in the garbage, and starting in July 2015, penalties such as surcharges will apply if food scraps are found in garbage loads at the landfill. Commercial operators may qualify for City Green Cart service. For details visit www.richmond.ca/greencart.



2013 REPORT • ACHIEVING GOALS THROUGH COMMUNITY OUTREACH

OUTREACH AND CUSTOMER SERVICE

SUPPORTING AWARENESS AND EDUCATION

Richmond recognizes that providing recycling services is the first important step in reducing waste; however, the second critical step is communication and community engagement. This includes informing residents about City and partner programs and services available in the community, educating them on how to use the programs, raising awareness about why recycling and reducing waste is important, and engaging the community to help design programs that fit their needs and priorities. The third essential step is providing excellent customer service. With its commitment to community outreach and customer service, the City goes beyond providing services – it supports residents so they can be successful in reducing their waste.



In 2014, approximately 178 youth volunteered more than 1,200 hours in Richmond's Green Ambassador program to support recycling awareness at events and outreach displays.



CUSTOMER SERVICE

Richmond's successful outreach and customer service programs are designed to help turn information and education into action. By working with children and youth through school programs and the Green Ambassadors, Richmond creates a learning environment where students gain a better understanding about recycling and sustainable waste management, and then apply their skills as volunteers and through school activities. Providing outreach, customer support services and information materials also assists residents by increasing their understanding of how to recycle along with new tools and services to promote recycling at home and on the go.

The Environmental Programs Information Line staff assisted customers with more than 20,190 calls in 2014, answering questions, assisting with requests relating to garbage and recycling and providing guidance on where to go for additional information and resources. Richmond also assists customers directly at the Recycling Depot, and through its outreach programs in the community.

At the Depot, staff provide assistance with where and how to recycle using its drop-off options, answer questions about City programs and services and sell products such as compost bins and rain barrels as well as Garbage Tags and Garbage Disposal Vouchers. Through outreach, Richmond goes into the community to connect with residents to share information and respond to questions.

20,190
CUSTOMER SERVICE
CALLS SUPPORTED

9,600
GARBAGE TAGS SOLD

761
GARBAGE DISPOSAL
VOUCHERS SOLD

71 COMPOST
BINS SOLD

Richmond measures the success of its programs, customer service and community engagement by monitoring a number of performance indicators, such as continued progress towards its goals for reducing waste, the community's impressive track record for using programs properly to keep banned recyclables out of the garbage, and low contamination levels thanks to residents sorting recyclable materials into the correct containers.

2014 HIGHLIGHTS

ENGAGING STUDENTS

In 2014, the City hosted Clean Up Your Act and Zero Heroes shows at elementary schools to promote responsible actions to avoid littering, graffiti and vandalism. The shows reached 2,680 elementary school students and 135 teachers. To reinforce what they learned, these schools participated in the My School Sparkles Contest, which has two categories, and the Zero Heroes Contest. For the My School Sparkles Contest, schools are evaluated on levels of littering before and after the show. The winners of the "My School Always Sparkles" category for the school with the least amount of litter on its school grounds and adjacent public space were Sea Island Elementary School and Spul'u'kwuks Elementary School. The winner of the "My School is Sparkling" category for the school that demonstrated the most improvement was awarded to Anderson Elementary School. The Zero Heroes Contest is based on collecting pledges to reduce and recycle waste. The winners of the Zero Heroes Contest was Talmey Elementary School.

RICHMOND GREEN AMBASSADORS

Richmond's Green Ambassadors are dedicated high school students who participate in monthly workshops to learn about environmental sustainability and apply what they have learned as volunteers at City events and activities. In 2014, approximately 178 students in the program contributed more than 1,200 volunteer hours to promote recycling at community events and organize the REaDY Summit. These energetic and environmentally conscious individuals also manage green initiatives in their school.

RICHMOND HOSTS ANNUAL EARTH DAY SUMMIT

The Richmond Earth Day Youth (REaDY) Summit was a resounding success again in 2014 thanks to volunteer support and community partnerships, City staff, the Richmond School Board, the David Suzuki Foundation, and the Richmond Green Ambassadors.

The summit was again successful in increasing awareness of environmental sustainability, fostering continual interest in recycling and reducing waste, and raising awareness on sustainability issues identified by local youth. The Summit featured a keynote address by Dr. David Suzuki and included 15 environmental sustainability workshops. The 88 Green Ambassadors who worked on supporting this event dedicated 1,850 hours of volunteer time throughout the school year. Over 600 delegates attended, and the Green Ambassadors helped organizers achieve a 97.5% diversion of waste through recycling – exceeding their 76% target.

CITY OF RICHMOND

**EVENT RECYCLING**

Recycling stations are required for all special event bookings taking place in Richmond. For some events, the City hosts recycling stations with assistance from the Green Ambassador volunteers. This involves setting up recycling stations and having recycling assistants at the event to advise people on how to recycle. In 2014, the City hosted recycling stations at eight events, including the Public Works Open House, Farmer's Market, REaDY Summit, Kajaks' Track/Field Tournament, Ship to Shore Festival, Salmon Festival and Maritime Festival. Typically, very high diversion rates are achieved thanks to the efforts of the City's Green Ambassadors. Examples include:

- Ships to Shore – 92.18% diversion rate
- Salmon Festival – 88.28% diversion rate
- Maritime Festival – 85.06% diversion rate
- REaDY Summit – 97.5% diversion rate

The City also supports events by providing organizers with recycling bins for events at no charge. The City's convenient resources include recycling stations and garbage carts rentals and collection services, which makes it easy for event organizers to keep the venue clean and recyclables out of the landfill. In 2014, six events used the City's event recycling program to help keep recyclable materials out of the garbage at events.

PARTNERS FOR BEAUTIFICATION

This program engages residents and groups to participate in enhancing the beauty of the City by becoming involved in various environmental adoption stewardship programs where volunteers adopt public spaces in their community by keeping them litter free and looking beautiful. In 2014, 443 volunteers contributed 870 hours toward various beautification initiatives.

CHRISTMAS TREE RECYCLING

The City hosted its annual Christmas Tree Recycling service at Garry Point. Thanks to the participation of residents who brought their trees in for recycling, Richmond collected and chipped 14 tonnes of chips and sent them to Harvest Power and Ecowaste for composting.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS



COMMUNITY WORKSHOPS

Richmond's free community workshops provide education and tips that support recycling and waste reduction techniques. In 2014, the City hosted 28 community workshops with a total of 616 participants. A summary of workshops that focus on helping residents towards the City's goal for 80% waste diversion is provided below.

For information on the workshops, email esoutreach@richmond.ca. To attend free workshops offered by the City, visit richmond.ca/register or call 604-276-4300 and press "2" at the prompt (Monday to Friday from 8:30 a.m. to 5:30 p.m.) to register.

COMMUNITY WORKSHOPS			
TYPE OF WORKSHOP	NUMBER OF WORKSHOPS	NUMBER OF PARTICIPANTS	DESCRIPTION
Composting Workshops	8	80	Whether a novice or an experienced compost creator, learn simple compost harvesting techniques and how to effectively convert food and yard waste into an organic soil conditioner.
Do-it-yourself Recycling Workshops	8	161	Turn second hand items into amazing treasures. Participants learn how to 'upcycle' various old items into new things such as vertical pallet gardens, stationary items, holiday-themed gift baskets and repurposing old clothing into new knit or crocheted items.
Food Waste Reduction Workshops	10	336	Reduce food waste by learning harvesting, freezing/canning, and, fermenting techniques to store foods.
Eco-cleaning	2	39	Homemade household cleaners work well, save money and are less harmful to people, animals and the environment. With a few easy steps, participants learn to make and use eco-friendly cleaners. Eco-cleaning reduces the use of toxic household items, and the course includes tips on how to recycle and safely dispose of these harmful materials.
Total	28	616	



2013 REPORT • ACHIEVING GOALS THROUGH COMMUNITY ENGAGEMENT

TIPS AND RESOURCES

EASY STEPS TO INCREASE RECYCLING AND REDUCE WASTE

In Richmond, we care about our community, and we are working together to trim our waste. The City works with residents and community partners to make it easy and convenient to reuse and recycle at home and on the go. It's all about making recycling a way of life. This at-a-glance resource on the various types of recycling programs and services available through the City of Richmond is a valuable guide to support being recycling smart in Richmond. The Tips and Resources include highlights such as how and where to recycle, what to do with hazardous waste and where to find additional information.

Resources also include contact information and locations for Richmond services and community partners involved in take back collection through product stewardship programs. Together these Tips and Resources help to support maximum recycling with minimum contamination in the waste going to the landfill.



Richmond's Environmental Program staff share information on tips and resources by phone, through outreach events and on the website.

CITY OF RICHMOND



BLUE BOX

Starting the week of May 19, 2014, Richmond expanded its Blue Box program to include more types of plastic containers plus milk cartons, paper and plastic drink cups, flower pots, aerosol cans and spiral wound tins like frozen juice concentrate containers.

Recyclable materials from the Blue Box program are collected from single-family homes and some townhome complexes on the same day that garbage is collected. Containers are placed into the Blue Box, glass bottles and jars are placed in the grey Glass Recycling Bin and all paper products, including newspaper and cardboard are placed in the yellow Mixed Paper Recycling Bag. Blue Boxes are available in two sizes: regular (16 gallons) and tall (22 gallons) for extra capacity.

For a list of items accepted in Blue Box recycling, see page 33 or visit www.richmond.ca/recycle.

Set Out Time

Before 7:30 a.m. on collection day.

Report a Missed Collection

Call 604-276-4010 or email garbageandrecycling@richmond.ca.

How to Get a Mixed Paper Recycling Bag, Glass Recycling Bin or Blue Box

There is no charge for new or replacement Blue Boxes, Glass Recycling Bins or Mixed Paper Recycling Bags.

For additional Blue Box supplies call 604-276-4010, order them online at www.richmond.ca/recycle, or pick them up at the following locations:

City Recycling Depot

5555 Lynas Lane
Wednesday to Sunday (Closed on Mondays, Tuesdays & Statutory Holidays)
9:00 a.m. to 6:15 p.m.

City Hall

6911 No. 3 Road
Monday to Friday (Closed on Saturdays, Sundays & Statutory Holidays)
8:15 a.m. to 5:00 p.m.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

WHAT GOES WHERE:



MIXED PAPER RECYCLING BAG

ACCEPTED

- ✓ Newspapers, inserts & flyers
- ✓ Flattened cardboard boxes
- ✓ Catalogues & magazines
- ✓ Cereal boxes
- ✓ Clean pizza boxes
- ✓ Corrugated cardboard (small pieces)
- ✓ Envelopes
- ✓ Junk mail
- ✓ Paper bags
- ✓ Paper egg cartons
- ✓ Paper gift wrap & greeting cards
- ✓ Telephone books
- ✓ Writing paper (notepads, loose leaf paper, white or coloured paper, printed paper, shredded paper)

HOW TO RECYCLE

- Remove plastic liners/covers.
- Remove any food residue.
- Flatten boxes.
- Place in **Mixed Paper Recycling Bag**.
- Cardboard is limited to one bundle per week. Bundle size: 3 ft x 2 ft x 4 in (90 cm x 60 cm x 10 cm)

Note: Oversized/excessive amounts of cardboard can be dropped off at the City's Recycling Depot at 5555 Lynas Lane.

NOT ACCEPTED

- ✗ Cardboard boxes with wax coating
- ✗ Plastic bags used to cover newspapers/flyers
- ✗ Metallic wrapping paper
- ✗ Ribbons or bows
- ✗ Musical greeting cards with batteries
- ✗ Padded envelopes
- ✗ Plastic or foil candy wrappers

GLASS RECYCLING BIN

ACCEPTED

- ✓ Clear or coloured glass bottles & jars (pickle jars, jam jars, spaghetti sauce jars, soy sauce bottles)

HOW TO RECYCLE

- Remove lids & caps.
- Remove food residue.
- Empty & rinse.
- Place in **Glass Recycling Bin**.

NOT ACCEPTED

- ✗ Glasses, dishes, cookware, window glass or mirrors
- ✗ Ceramic products
- ✗ Lids & caps (place in Blue Box)

BLUE BOX AND CONTAINERS

ACCEPTED

- ✓ **New!** Aerosol cans & caps (food items, air fresheners, shaving cream, deodorant, hairspray)
- ✓ **New!** Microwavable bowls, cups & lids
- ✓ **New!** Paper food containers & cartons (ice-cream, milk, liquid whipping cream)
- ✓ **New!** Paper & plastic drink cups with lids
- ✓ **New!** Plastic containers, trays & caps (bakery containers & deli trays)
- ✓ **New!** Plastic and paper garden pots & trays
- ✓ **New!** Spiral wound paper cans & lids (frozen juice, potato chips, cookie dough, coffee, nuts, baby formula)
- ✓ Aluminium cans & lids
- ✓ Aluminium foil & foil containers (foil wrap, pie plates, food trays)
- ✓ Plastic bottles & caps (food items, condiments such as ketchup, mustard & relish, dish soap, mouthwash, shampoos, conditioners)
- ✓ Plastic jars & lids
- ✓ Plastic tubs & lids (margarine, spreads, dairy products such as yogurt, cottage cheese, sour cream, ice cream)
- ✓ Tin cans & lids

HOW TO RECYCLE

- Remove food residue.
- Remove caps or lids; place loose in the Blue Box.
- Empty and rinse.
- Place in **Blue Box**.

Note: Flatten and/or stack containers where possible.

NOT ACCEPTED

- ✗ Ceramic plant pots
- ✗ Compostable/biodegradable plastic bags & containers
- ✗ Containers for motor oil, or vehicle lubricant or wax products
- ✗ Foil-lined cardboard lids from take-out containers
- ✗ Garden hoses
- ✗ Plastic bags & over wrap (take to Recycling Depot)
- ✗ Plastic string or rope
- ✗ Spray paint cans (take to Recycling Depot)
- ✗ Styrofoam materials (take to Recycling Depot)

CITY OF RICHMOND



BLUE CART

All multi-level multi-family complexes like apartments and condominiums and some townhomes have a recycling depot with Blue Carts for recycling mixed paper, containers and glass. They are generally located in the garbage room or other convenient location.

Starting the week of May 19, 2014, Richmond expanded its Blue Cart program to include more types of plastic containers plus milk cartons, paper and plastic drink cups, flower pots, aerosol cans and spiral wound tins like frozen juice concentrate containers.

For sorting recycling, containers are placed in the Containers Recycling Cart, glass bottles and jars are placed in the Glass Recycling Cart and paper products including newspaper and cardboard are placed in the Mixed Paper Recycling Cart. These recyclable materials are banned from landfill.

The carts are emptied once a week. Statutory holidays do not generally affect the collection; however, Christmas Day may delay collection by one day if it falls on a weekday. For information about the recycling depot location in your building, contact your building manager or property manager.

For a list of items accepted in Blue Cart recycling, see page 35 or visit www.richmond.ca/recycle.

Cart Emptying

Some carts are retrieved from their site, however, some are brought out to a collection area.

Carts brought out must be at the collection area before 7:30 a.m.

Report a Missed Collection

Call 604-276-4010 or email garbageandrecycling@richmond.ca.

How to Get an Indoor Collection Bag for Blue Cart Recycling

There is no charge for new or replacement Blue Cart recycling bags. For additional bags call 604-276-4010, order them online at www.richmond.ca/recycle, or pick them up at the following locations:

City Recycling Depot

5555 Lynas Lane
Wednesday to Sunday (Closed on Mondays, Tuesdays & Statutory Holidays)
9:00 a.m. to 6:15 p.m.

City Hall

6911 No. 3 Road
Monday to Friday (Closed on Saturdays, Sundays & Statutory Holidays)
8:15 a.m. to 5:00 p.m.

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WHAT GOES WHERE:



MIXED PAPER RECYCLING CART

ACCEPTED

- ✓ Newspapers, inserts & flyers
- ✓ Flattened cardboard boxes
- ✓ Catalogues & magazines
- ✓ Cereal boxes
- ✓ Clean pizza boxes
- ✓ Corrugated cardboard (small pieces)
- ✓ Envelopes
- ✓ Junk mail
- ✓ Paper bags
- ✓ Paper egg cartons
- ✓ Paper gift wrap & greeting cards
- ✓ Telephone books
- ✓ Writing paper (notepads, loose leaf paper, white or coloured paper, printed paper, shredded paper)

HOW TO RECYCLE

- Remove plastic liners/covers.
- Remove any food residue.
- Flatten boxes.
- Place In **Mixed Paper Recycling Cart**.

Note: Oversized/excessive amounts of cardboard can be dropped off at the City's Recycling Depot at 5555 Lynas Lane.

NOT ACCEPTED

- ✗ Cardboard boxes with wax coating
- ✗ Plastic bags used to cover newspapers/flyers
- ✗ Metallic wrapping paper
- ✗ Ribbons or bows
- ✗ Musical greeting cards with batteries
- ✗ Padded envelopes
- ✗ Plastic or foil candy wrappers

GLASS RECYCLING CART

ACCEPTED

- ✓ Clear or coloured glass bottles & jars (pickle jars, jam jars, spaghetti sauce jars, soy sauce bottles)

HOW TO RECYCLE

- Remove lids & caps.
- Remove food residue.
- Empty & rinse.
- Place In **Glass Recycling Cart**.

NOT ACCEPTED

- ✗ Glasses, dishes, cookware, window glass or mirrors
- ✗ Ceramic products
- ✗ Lids & caps (place in Blue Box)

CONTAINERS RECYCLING CART

ACCEPTED

- ✓ **New!** Aerosol cans & caps (food items, air fresheners, shaving cream, deodorant, hairspray)
- ✓ **New!** Microwavable bowls, cups & lids
- ✓ **New!** Paper food containers & cartons (ice-cream, milk, liquid whipping cream)
- ✓ **New!** Paper & plastic drink cups with lids
- ✓ **New!** Plastic containers, trays & caps (bakery containers & deli trays)
- ✓ **New!** Plastic and paper garden pots & trays
- ✓ **New!** Spiral wound paper cans & lids (frozen juice, potato chips, cookie dough, coffee, nuts, baby formula)
- ✓ Aluminium cans & lids
- ✓ Aluminium foil & foil containers (foil wrap, pie plates, food trays)
- ✓ Plastic bottles & caps (food items, condiments such as ketchup, mustard & relish, dish soap, mouthwash, shampoos, conditioners)
- ✓ Plastic jars & lids
- ✓ Plastic tubs & lids (margarine, spreads, dairy products such as yogurt, cottage cheese, sour cream, ice cream)
- ✓ Tin cans & lids

HOW TO RECYCLE

- Remove food residue.
- Remove caps or lids; place loose in the Blue Box.
- Empty and rinse.
- Place In **Containers Recycling Cart**.

Note: Flatten and/or stack containers where possible.

NOT ACCEPTED

- ✗ Ceramic plant pots
- ✗ Compostable/biodegradable plastic bags & containers
- ✗ Containers for motor oil, or vehicle lubricant or wax products
- ✗ Foil-lined cardboard lids from take-out containers
- ✗ Garden hoses
- ✗ Plastic bags & over wrap (take to Recycling Depot)
- ✗ Plastic string or rope
- ✗ Spray paint cans (take to Recycling Depot)
- ✗ Styrofoam materials (take to Recycling Depot)

CITY OF RICHMOND

GREEN CART

Residents in single-family homes and townhomes with City garbage and/or Blue Box service have Green Carts to recycle food scraps and yard trimmings. Richmond is also working to expand Green Cart recycling to include multi-family complexes with centralized collection so that all Richmond residents have access to food scraps recycling before July 2015. When you recycle with a Green Cart, you are helping turn food scraps and yard trimmings into compost for nutrient-rich soil.

Residents may continue to use Green Cans for excess food scraps and yard trimmings. Paper yard waste bags and tied bundles of yard trimmings are also accepted. Please visit www.richmond.ca/recycle for more information.

Please note that Green Carts stay with the property. If residents move to another house in Richmond, they will have a Green Cart at that location. If there is no cart, please call 604-276-4010.

WHAT GOES IN THE GREEN CART:



FOOD SCRAPS

ACCEPTED

- ✓ Fruit
- ✓ Breads, pasta, rice & noodles
- ✓ Coffee grounds & filters
- ✓ Table scraps & food scrapings
- ✓ Meat, poultry, fish, shellfish & bones
- ✓ Eggshells

- ✓ Paper towels/napkin/plates
- ✓ Pizza delivery boxes
- ✓ Vegetables
- ✓ Tea bags
- ✓ Dairy products
- ✓ Solid grease

HOW TO RECYCLE

- Collect food scraps in your kitchen container.
- Empty materials from your kitchen container into your Green Cart.
- Place your Green Cart at the curb along with unlimited paper yard trimmings bags and/or Green Cans, Blue Box recycling and garbage by 7:30 a.m. on your regular collection day.

NOT ACCEPTED

- ✗ Coffee cups
- ✗ Cork or Styrofoam cups, meat trays or takeout containers
- ✗ Liquid grease
- ✗ Pet feces or kitty litter
- ✗ Plastic bags, biodegradable or compostable bags
- ✗ Plastic wraps

YARD TRIMMINGS

ACCEPTED

- ✓ Flowers
- ✓ Grass clippings
- ✓ Leaves
- ✓ Other organic yard materials
- ✓ Plants (living or dead/dried)
- ✓ Plant trimmings
- ✓ Tree & hedge prunings

HOW TO RECYCLE

- Place yard trimmings into Green Cart along with your food scraps.
- Extra yard trimmings can go in large paper bags or additional labeled Green Cans.
- Place your Green Cart at the curb along with unlimited paper yard trimmings bags and/or Green Cans, Blue Box recycling and garbage by 7:30 a.m. on your regular collection day.

NOT ACCEPTED

- ✗ Plastic bags, biodegradable or compostable bags
- ✗ Diseased plants
- ✗ Garden hoses or flower pots
- ✗ Prunings over 4 inches (10 cm) in diameter
- ✗ Rocks, dirt or sod
- ✗ Wood products

Yard Trimmings
Drop-off Locations

Richmond residents can drop off yard trimmings (see above for materials accepted) at the following locations, free of charge with proof of residency.

Ecowaste Industries
15111 Triangle Road
Open Monday to Friday from 7:00 a.m. to 5:30 p.m.
(last load in at 4:30 p.m.)
Open Saturday and Sunday from 8:00 a.m. to 4:00 p.m.
(last load in at 4:00 p.m.)
Visit ecowaste.com or call 604-277-1410 for detailed information.

City Recycling Depot
5555 Lynas Lane
Wednesday to Sunday (Closed on Mondays, Tuesdays & Statutory Holidays)
9:00 a.m. to 6:15 p.m.

There is no charge for dropping off amounts less than one cubic yard (a car, station wagon or minivan load). Large loads are charged a fee of \$20 per cubic yard. Commercial operators will be charged a fee of \$20 per cubic yard.

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HOME COMPOSTING

Home composting turns your food scraps and yard trimmings into nutrient-rich soil that can be spread on lawns and flowerbeds.

BACKYARD COMPOST BIN

"Garden Gourmet" compost bins are available to Richmond residents at the Recycling Depot for \$25 plus tax. The bin dimensions are 36 inches (90 cm) high, 22 inches (56 cm) wide and 22 inches (56 cm) deep. They are suitable for residential backyard composting of grass, leaves, vegetable trimmings, fruit trimmings and other miscellaneous organic garden trimmings.

COMPOSTING WORKSHOPS

To learn about composting, attend a Richmond composting workshop, held from January to November. Visit www.richmond.ca/register for workshop dates and locations or call Parks & Recreation at 604-276-4300 and press '2' from Monday to Friday between 8:30 a.m. to 5:30 p.m.

COMPOST HOTLINE

The Compost Hotline offers support and tips for best practices in home composting. It is operated by City Farmer, which has researched and promoted the best methods of urban composting since 1978.

Compost Hotline

Phone: 604-736-2250

Email: composthotline@telus.net

COMPOST DEMONSTRATION GARDEN

A compost demonstration garden is located at 2631 Westminster Highway in the Terra Nova Rural Park. Composting demonstration units are on display for viewing year-round, from dawn to dusk.



Nitrogen Rich Green Materials:

- PLANT TRIMMINGS
- FRUIT & VEGETABLE PEELINGS
- FRESH GRASS CLIPPINGS
- COFFEE GROUNDS & TEA LEAVES

Carbon Rich Brown Materials:

- DRY LEAVES
- SAWDUST
- STRAW
- SHREDDED NEWSPAPER CLIPPINGS

HOW TO COMPOST

- 1** USING A BACKYARD COMPOST BIN, START WITH A GOOD LAYER OF COARSE ORGANIC MATERIAL, SUCH AS STRAW, LEAVES OR PRUNING AT THE BOTTOM TO ALLOW AIR TO CIRCULATE.
- 2** ADD A GOOD LAYER OF NITROGEN-RICH GREEN MATERIAL FOLLOWED BY ONE LAYER OF CARBON-RICH BROWN MATERIAL, UNTIL THE BIN IS FULL.
- 3** COMPOST REQUIRES AIR. TURN AND STIR YOUR COMPOST WEEKLY SO THE ORGANISMS GET NECESSARY OXYGEN.
- 4** COMPOST REQUIRES MOISTURE. WATER YOUR COMPOST BIN FREQUENTLY, TO ENSURE IT STAYS AS MOIST AS A WRING-OUT SPONGE.
- 5** GIVE IT TIME - IN 12-18 MONTHS, MATERIAL AT THE BOTTOM AND MIDDLE OF THE BIN SHOULD BE COMPOSTED. USE THIS THROUGHOUT YOUR GARDEN. USE THE UN-COMPOSTED MATERIAL TO START A NEW BATCH. CHIPPING OR CHOPPING THE MATERIAL CAN INCREASE THE SPEED OF THE PROCESS. REGULAR AERATION IS KEY TO SUCCESSFUL COMPOSTING.

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GARBAGE COLLECTION

CURBSIDE COLLECTION SERVICE

Two Can Limit

Garbage is collected weekly for all single-family residents and some townhome complexes.

Garbage pickup in Richmond is limited to two containers (cans or bags) per week for each address or service. A \$2 Garbage Tag is required for each additional container or equivalent.

How Big Is a "Can"?

For the purposes of garbage pickup in Richmond, each of the following represents one can:

- A garbage can with lid
- Standard size: 19 inches x 27 inches (48 cm x 56 cm)
- Maximum size allowed: 24 inches x 32 inches (61 cm x 81 cm)
- An equivalent container should not exceed 3 cubic feet (100 L)

How Big Is a "Bag"?

- Standard size: 24 inches x 36 inches (61 cm x 91 cm)
- Maximum size allowed: 30 inches x 48 inches (76 cm x 120 cm)
- Any other container being used should not exceed 3 feet x 2 feet (91 cm x 60 cm)

Preparing Garbage for Collection

Loose garbage must be securely packed in plastic bags. This includes ashes, kitty litter, disposal diapers, vacuum cleaner sweepings and other loose household garbage.

To reduce litter and damage by animals, place bags and other garbage in plastic cans wherever possible. Garbage must be packed in plastic bags and then placed in cans with secure lids. Loose plastic bags must not rip when lifted.

All garbage must be placed at curbside before 7:30 a.m. on collection day but no earlier than 8:00 p.m. the day before. Do not place receptacles or other items on the road.

Residents are responsible for cleaning up any loose materials that have been scattered over the ground by animals, wind or vandalism.

Sign Up for Collection Day Reminders

Visit www.richmond.ca/recycle for details.

Extra Item Disposal Options

Purchase Garbage Tags or Garbage Disposal Vouchers to dispose of extra garbage.

\$2 Garbage Tags

Garbage Tags are available for purchase at all City facilities. One Garbage Tag is good for an additional garbage bag or can.

Garbage Disposal Vouchers

Richmond residents may purchase a Garbage Disposal Voucher for \$5 at all City facilities. These vouchers are good for \$20 at the Vancouver Landfill, and are valid anytime. They are limited to one per household. Visit www.richmond.ca/recycle for a list of City facilities selling Garbage Tags and Garbage Disposal Vouchers.

Large Item Pick-Up Program

Residents in single-family homes and some townhomes can arrange for curbside collection of four large household items each year.

The following items are **not** accepted in the garbage:

MATERIAL	HOW TO RECYCLE OR DISPOSE
X DEMOLITION WASTE	• Take to Ecowaste Industries at 15111 Triangle Road, or call the RCBC Recycling hotline at 604-RECYCLE (732-9253).
X DIRT, ROCK, CONCRETE OR BRICKS	• Take to Ecowaste Industries. Visit ecowaste.com or call 604-277-1410 for accepted items & hours.
X DRYWALL (GYPSUM, SHEETROCK, PLASTERBOARD, GYPROC & WALLBOARD)	• Take to the Vancouver Landfill at 5400 72nd Street, Delta or Ecowaste Industries. Visit ecowaste.com or call 604-277-1410 for accepted items & hours.
X GARBAGE BEYOND THE TWO CAN LIMIT	• Purchase a \$2 Garbage Tag at City facilities and put on can or bag. See Extra Item Disposal Options.
X HAZARDOUS WASTE	• Call RCBC Recycling Hotline at 604-RECYCLE, visit www.metrovancouverrecycles.org or see page 46 for drop-off locations.
X MATERIALS THAT ARE TOO BIG OR MAY DAMAGE GARBAGE TRUCK	• See Large Item Pick Up program on page 39 for disposal options.
X PROVINCIAL PRODUCT STEWARDSHIP COLLECTION (TAKE-BACK) ITEMS	• Visit bcstewards.com or call 604-RECYCLE.
X RECYCLABLES (BLUE BOX & BLUE CART)	• Place in appropriate recycling receptacle unless it is contaminated by food or other waste.
X UNWRAPPED OR LOOSE GARBAGE	• Must be in garbage bag or can.
X YARD TRIMMINGS & FOOD SCRAPS	<ul style="list-style-type: none"> • Place in Green Carts or for yard trimmings only, paper yard waste bags. • For yard trimmings only, one cubic yard or less may be dropped off at Recycling Depot. Unlimited amounts of yard trimmings can be dropped off at Ecowaste Industries with proof of residency. • Check Green Cart section for restrictions and accepted materials on page 36.

CURBSIDE COLLECTION FOR LARGE HOUSEHOLD ITEMS

Richmond's Large Item Pick Up program provides a convenient curbside collection service for up to four large household items per year, including mattresses, furniture and appliances. The program is available to residents in single-family homes and townhomes with the City's garbage collection service and/or Blue Box program.

This program is designed to make it more convenient for residents to dispose of large household items and to help reduce illegal dumping. As well, through this program, large household items that can be recycled will be diverted from the landfill, which will help Richmond achieve its goal for 80% waste diversion from the landfill by 2020.

STEPS ON HOW THE PROGRAM WORKS:

- 1** To schedule collection of up to four items per year, residents can contact the City's service provider, Sierra Waste Services at 604-270-4722 or schedule online at www.richmond.ca/largeitem.
- 2** Sierra Waste Services will contact you to provide a pick up date and confirmation number.
- 3** On your scheduled pick up date only, place items at the curb before 7:30 a.m. or no earlier than 8:00 p.m. the night before.

Safety Consideration: If the large item is a freezer, refrigerator, icebox or other container that is equipped with a latch or locking device, the door/latch must be removed and placed beside the large item for safety reasons.



DID YOU KNOW?

Wet mattresses cannot be recycled and pose safety hazards for lifting. Please ensure the mattress stays dry and mould-free by covering it in a plastic bag. Reuse the bag from newly-purchased mattresses or purchase bags from home hardware and supply stores. Mattresses not wrapped in plastic will not be picked up.

LIST OF ITEMS ACCEPTED

ACCEPTED	NOT ACCEPTED
<ul style="list-style-type: none"> ✓ Furniture (e.g. couches, coffee tables, chairs, desks, dressers, TV stands, cabinets, drawers, tables, hutches, cribs, high chairs, entertainment centres) ✓ Appliances (e.g. stoves, dishwashers, washers and/or dryers, hot water tanks, refrigerators, freezers, microwaves, coolers) ✓ Small household goods, which must be in boxes or bundled and are a reasonable size (one box or bundle is equal to one of the resident's four allotted items) ✓ Barbecues (remove propane tank and/or lava rock briquettes) ✓ Outdoor furniture (e.g. chairs, patio tables, patio umbrellas) ✓ Weight training equipment (e.g. treadmills, ellipticals, stationary bikes, stair masters, weight sets) ✓ Electric lawnmowers ✓ Mattresses (including headboard and frame) – please cover your mattress with a plastic bag. 	<ul style="list-style-type: none"> ✗ Car bodies or parts ✗ Tree stumps ✗ Carpets ✗ Lumber, demolition or home renovation materials ✗ Hazardous waste ✗ Propane tanks ✗ Tires ✗ Gas mowers ✗ Construction materials <p>Note: Items that contain any hazardous liquids such as gas, oil, etc. will not be accepted.</p> <p>See page 46 - 52 for disposal locations.</p>

Note: The item(s) must be able to be safely handled from the curbside in order to qualify for collection.

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RECYCLING DEPOT

The Richmond Recycling Depot is located at 5555 Lynas Lane and is open from Wednesday through Sunday from 9:00 a.m. to 6:15 p.m. The Depot accepts Styrofoam, batteries, cell phones, used cooking oil, large appliances, large metal items and yard trimmings, as well as recyclables normally placed at curbside.

Residents are encouraged to use the curbside recyclables collection for glass bottles and jars, rigid plastic containers, newsprint and mixed paper. Businesses are encouraged to subscribe to onsite collection services if a large quantity of recyclables is produced. Residents and small business operators can drop off one cubic yard of recyclables and three large appliances at the Depot per day.

In addition, the Depot is a Product Stewardship (Take Back) Collection site for paint, solvents, flammable liquids, pesticides, lights, lighting fixtures and small appliances.

FOR SALE AT THE RECYCLING DEPOT

Residents can purchase the following items from the Depot:

- Compost bins - \$25 each
- Rain barrels - \$30 each
- Extra Garbage Tags - \$2 each
- Garbage Disposal Vouchers (cost is \$5 for Richmond residents and value is \$20 at the Vancouver Landfill)



TIP FOR RESIDENTS

Residents can purchase compost bins from the Richmond Recycling Depot. To learn more about how to compost, see page 37, or visit the Compost Demonstration Garden located at 2631 Westminister Highway in the Terra Nova Rural Park.

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**MATERIALS ACCEPTED AT THE RICHMOND RECYCLING DEPOT**

Please note: All materials must be sorted into different containers at the Recycling Depot. Please visit www.richmond.ca/recycle for drop-off details.

- | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| ✓ Aluminium materials (aluminium foil, pie plates) | ✓ Flammable aerosols | ✓ Newspaper |
| ✓ Appliances (small and large electrical/battery operated appliances including Dishwashers, washing machines, stoves, barbeques, ovens, microwaves, fridges, freezers, vacuums, hair dryers, toaster ovens, etc.) | ✓ Flammable liquids | ✓ Paints (household paints) |
| ✓ Batteries (small household batteries less than 5 kg) | ✓ Flower pots (paper/plastic garden pots) | ✓ Paint aerosols |
| ✓ Books | ✓ Gasoline | ✓ Pesticides (domestic pesticides) |
| ✓ Cell phones (including batteries) | ✓ Glass bottles and jars (clear and coloured) | ✓ Plastic containers |
| ✓ Cooking oil and animal fat | ✓ Lights (fluorescent tubes, compact fluorescent lights, light emitting diodes, halogen and incandescent lights, high intensity discharge and other mercury containing lamps) | ✓ Plastic grocery shopping bags and film plastics |
| ✓ Corrugated cardboard (flattened, clean corrugated boxes) | ✓ Lighting fixtures | ✓ Sewing, knitting and textile machines |
| ✓ Exercise and hobby machines (treadmills, elliptical / cross trainers, cycling machines) | ✓ Magazines | ✓ Styrofoam packaging |
| | ✓ Metal items (bike frames, clean 45 gallon drums, clean automotive parts, lawn chairs, steel coat hangers, steel or lead piping) | ✓ Tin cans |
| | ✓ Paper (mixed paper products including flattened boxboards, envelopes, junk mail, flyers, inserts, office paper, paper egg cartons, telephone books, etc.) | ✓ Tools (power tools such as angle saws, jigsaws, trimmers, drum machines, etc.) |
| | | ✓ Yard and garden trimmings |

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TIP FOR RESIDENTS

Many electronics products can be reused by others and there are convenient services to sell them or give them away. You can also give them to a number of organizations who accept donated equipment to redistribute in the community. Please contact these agencies in advance to ensure they will accept specific items for donation.

BC Electronics Material Exchange: bcmex.ca
Free Geek Vancouver: freegeekvancouver.org

COMMUNITY RESOURCES AND PARTNERS

METRO VANCOUVER RECYCLES — REUSE AND RECYCLE IN THE REGION

A convenient web tool called Metro Vancouver Recycles makes it easy to connect with people who could use products you don't need, or to find options for recycling products that cannot be included in your curbside collection, visit metrovanancouverrecycles.org.

There are also convenient links to online services if you want to sell or give away goods. The following are just a few examples in the Metro Vancouver region:

weRecycle

iPhone app (available from iPhone App Store and at metrovanancouverrecycles.org)

Metro Vancouver Recycling Directory

metrovanancouverrecycles.org

MetroVan Reuses

bc.reuses.com

Richmond Shares

richmondshares.bc.ca

Multi-Material BC (MMBC)

multimaterialbc.ca

RCBC COMMUNITY RESOURCES

Recycling Hotline

Monday to Friday, 9 a.m. to 4 p.m.

Phone: 604-RECYCLE (604-732-9253)

Email: hotline@rcbc.bc.ca

RCBC Recyclepedia at rcbc.bc.ca/recyclepedia

Smart Phone App: BC Recyclepedia App

(available at iPhone App Store and Android Market)

RCBC MATERIALS EXCHANGE PROGRAM (MEX)

The RCBC MEX program is a completely self-serve web-based program comprised of Residential Reuse Programs and the BC Industrial Materials Exchange (BC IMEX) and is available at bc.reuses.com

DID YOU KNOW?

Four, 2-litre plastic bottles can be recycled into one t-shirt, filling for a ski jacket and two ball caps.

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PRODUCT STEWARDSHIP PROGRAMS

The City of Richmond works with local companies and organizations like Product Care and Encorp to support BC's Product Stewardship Programs.

These programs are often called take back programs or Extended Producer Responsibility (EPR) programs, and they are based on the principle that whoever designs, produces, sells or uses a product is also responsible for minimizing that product's environmental impact. The key participants in these programs are the BC government, local governments, producers, retailers and consumers who bring their products to designated collection sites when they are at their end of life. The cost of these programs is covered by consumers and producers, sometimes in the form of a deposit or levy that is charged at the time of purchase. In the case of beverage containers, there are refunds available when they are returned at a collection site.

Take back programs are important as they expand the opportunities for recycling beyond the curbside collection services. There are many household items that can be recycled through businesses and organizations in the community who participate in BC's Product Stewardship Program. Many of these items are also considered hazardous waste, and they are restricted from garbage as they are not accepted at the landfill. The take back programs help to ensure that these expired or end-of-life products will be disposed of safely, and recycled where possible.



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PRODUCT STEWARDSHIP PROGRAM CATEGORIES

The following categories highlight the products that can be returned to retailers and other community partners. For a list of drop-off locations for each category, please see pages 47 to 52.

TAKE BACK PROGRAMS	WHAT IS INCLUDED	STEWARDSHIP AGENCY
BATTERIES	Household batteries	<p>Call2Recycle</p> <p>Contact call2recycle.ca 1-888-224-9764 info@call2recycle.ca</p> <p>Drop off site locator 1-877-273-2925</p>
BEVERAGE CONTAINERS	Almost all types of beverage containers	<p>Encorp Pacific (Canada)</p> <p>Contact return-it.ca/locations 1-800-330-9767 or 604-473-2400 returnit@returnit.ca</p> <p>Note: Beverage containers like pop and juice cans and bottles can be recycled with the Blue Box or Blue Cart or can be dropped off at Richmond's Recycling Depot as part of the City's recycling services. Beverage containers can also be returned for a refund on the deposit at a number of Return-It Depot locations in Richmond.</p>
CELL PHONES	Mobile/wireless devices that connect to a cellular or paging network, including all cell phones, smart phones, wireless personal digital assistants (PDAs), external air cards and pagers, as well as cell phone batteries and accessories, including headsets and chargers	<p>Canadian Wireless Telecommunications Association</p> <p>Contact RecycleMyCell.ca 1-888-797-1740 info@recyclemycell.ca</p>
ELECTRONICS	Televisions and computer and printer products such as desktop computers, display devices, portable (laptop) computers, desktop printers and fax machines and computer accessories like keyboards, pointing devices, track balls and mice	<p>Encorp Pacific (Canada)</p> <p>Contact return-it.ca/electronics 1-800-330-9767 or 604-473-2400 returnit@returnit.ca</p>
MEDICATION	All expired or leftover prescription medication, non-prescription medication and mineral supplements, anti-fungal and anti-bacterial creams	<p>Health Products Stewardship Association</p> <p>Contact healthsteward.ca/returns/british-columbia 613-723-7262 info@healthsteward.ca</p>

DID YOU KNOW?

100% of brewer packaging is either reusable or recyclable, and in addition to standard beer cans and bottles, brewers reuse or recycle their aluminum kegs and their secondary packaging including plastic, stretch wrap, cardboard and wooden pallets.

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**DID YOU KNOW?**

A littered aluminum can takes 500 years to disintegrate, but it only takes six weeks to be manufactured, filled, sold, recycling, remanufactured, refilled and be back out on the marketplace.

TAKE BACK PROGRAMS	WHAT IS INCLUDED	STEWARDSHIP AGENCY
PACKAGING AND PRINTED PAPER	Aerosol cans, microwavable bowls/cups/lids, paper food containers & cartons, plastic & paper drink cups with lids, plastic containers/jars/tubs/trays, aluminium cans, tin cans, etc. Visit recyclinginbc.ca for a complete list	Multi Material British Columbia (MMBC) Contact Twitter: @recyclemorebc www.multimaterialbc.ca
PAINTS, SOLVENTS, PESTICIDES AND GASOLINE	Paints, solvents, pesticides and gasoline	Product Care Association Contact productcare.org/BC-Paint-Program
SMALL APPLIANCES AND POWER TOOLS	Kitchen countertop appliances (e.g. toasters, microwaves, coffee makers and food processors), electric bathroom scales, hair dryers, carpet cleaners, vacuum cleaners, portable fans, power tools, sewing and exercise machines	ElectroRecycle is a non-profit, province-wide, small electrical appliance recycling program in B.C. and the first of its kind in Canada through the Canadian Electrical Stewardship Association (CESA) with the help of BC's Product Care Association Contact electrorecycle.ca 1-800-667-4321
TIRES	Car tires, truck tires and some agricultural and logger/skidder tires	Tire Stewardship BC (TSBC) Contact tsbc.ca 1-866-759-0488
THERMOSTATS	Mercury-containing and electronic thermostats	Heating, Refrigeration and Air Conditioning Institute of Canada in partnership with the Canadian Institute of Plumbing and Heating, and delivered by Summerhill Impact. Contact switchthestat.ca 416-922-2448 (ext 232) jcourt@summerhillgroup.ca
USED OIL AND ANTIFREEZE	Motor oil, oil filters, empty oil containers, antifreeze and used antifreeze containers	BC Used Oil Management Association Contact usedoilrecycling.com/bc 1-866-254-0555 reception@usedoilrecycling.ca

CITY OF RICHMOND

HAZARDOUS WASTE AND OTHER DISPOSAL ITEMS

The careless handling of hazardous products can cause serious injury as well as damage to the environment. Hazardous products that are dumped in sewers or green spaces can injure livestock, wildlife and plant life. Careful and often specialized disposal is essential for these materials.

There are certain materials that Metro Vancouver disposal facilities do not accept, either because there are already disposal programs set up for these items, or because they are hazardous to waste collection workers, the public and the environment.

At disposal sites, garbage loads are inspected for banned and prohibited materials. Loads that arrive at the disposal sites containing prohibited materials are assessed a \$50 minimum surcharge, plus the cost of removal, clean-up or remediation. Loads containing banned materials are assessed a 50% tipping fee surcharge.

Many common hazardous household and automotive products must be recycled or disposed through special depots. Disposal sites and take back collection options for hazardous and banned materials are listed on the following pages. Please note that this information is provided as a reference for your convenience; however, it is not guaranteed. Please call first to confirm that the site is still open to accept these take-back products and to check hours of operation.

Please visit www.richmond.ca/recycle for more information.



BANNED/PROHIBITED FROM LANDFILL

EXAMPLES OF MATERIALS

Please refer to the Tips and Resources section for ways to safely dispose of these materials or call RCBC at 604-RECYCLE (732-9253).

<ul style="list-style-type: none"> ✗ Asbestos ✗ Automobile bodies and parts ✗ Batteries ✗ Barrels or drums in excess of 205 litres (45 gallons) ✗ Clean or treated wood exceeding 2.5 metres in length ✗ Electronics and electrical products (limited) ✗ Fluorescent lights 	<ul style="list-style-type: none"> ✗ Gypsum ✗ Hazardous waste ✗ Inert fill materials including soil, sod, gravel, concrete and asphalt in quantities exceeding 0.5 cubic metres per load ✗ Lead acid batteries ✗ Liquids and sludge ✗ Mattresses ✗ Oil containers, oil filters, paint products, solvents and flammable liquids 	<ul style="list-style-type: none"> ✗ Household or commercial appliances ✗ Pesticide products ✗ Pharmaceuticals ✗ Propane tanks ✗ Thermostats ✗ Tires ✗ Any material in new or expanded product categories for the Recycling Regulation that comes into effect while the 2013 Tipping Fee Bylaw No. 281 is in effect.
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BANNED MATERIALS THAT CAN BE RECYCLED

<ul style="list-style-type: none"> ✗ Corrugated cardboard ✗ Recyclable paper 	<ul style="list-style-type: none"> ✗ Containers made of glass, metal or banned recycled plastic  	<ul style="list-style-type: none"> ✗ Beverage containers (all except milk cartons) ✗ Yard and garden trimmings
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For a list of Banned and Prohibited Materials, please visit www.metrovancouver.org/services/solidwaste/disposal/Pages/bannedmaterials.aspx

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

**TIP FOR RESIDENTS**

To spot hazardous waste, look for the words Danger, Warning, or Caution on the product label, and any of the symbols shown above.

**ANTIFREEZE AND EMPTY CONTAINERS DB**

DROP-OFF LOCATION	ADDRESS	PHONE
Richmond Audi	5680 Parkwood Way	604-279-9663
Canadian Tire	3500 No. 3 Road	604-273-2970
Certigard Petro-Canada	4011 Francis Road	604-241-1101
Cowell Motors Ltd. - Volkswagen	13611 Smallwood Place	604-273-3922
Jaguar Land Rover Richmond	5680 Parkwood Way	604-273-6068
Lubeworld	10991 No. 4 Road	604-951-6662
Metron Auto Service Ltd.	104 - 8077 Alexandra Road	604-270-1668
Mr. Lube	9120 Westminster Highway	604-273-5823
Rainbow Auto Service	142 - 11788 River Road	604-276-2820

For a complete list of antifreeze or containers accepted, visit <http://usedoilrecycling.com/en/bc> or call 604-RECYCLE.

APPLIANCES - SMALL DB

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot	7960 River Road	604-244-0008
Regional Recycling	13300 Vulcan Way	604-276-8270
Steveston Return-It Depot	2 - 12320 Trites Road	604-241-9177

For a complete list of small appliances accepted, visit electrorecycle.ca or call 604-RECYCLE.

AUTOMOTIVE BATTERIES DB

DROP-OFF LOCATION	ADDRESS	PHONE
Canadian Tire	3500 No. 3 Road	604-273-2970
	11388 Steveston Highway	604-271-6651
Kal Tire	2633 No. 5 Road	604-278-9181
Regional Recycling *	13300 Vulcan Way	604-276-8270
Sota Battery Canada	11871 Horseshoe Way	604-271-9727

Note: All retail locations accept a used car battery for each new one purchased. For a list of collection sites, please visit www.recyclemybattery.ca

DB: Disposal ban | * A fee is charged

Please note: Drop-off locations may change without notice. Please call individual locations to confirm address and hours of operation.

CITY OF RICHMOND

BABY CAR SEATS

DROP-OFF LOCATION	ADDRESS	PHONE
City of Vancouver Landfill *	5400 72nd Street, Delta	604-873-7000

BATTERIES AND MOBILE PHONES ^{DB}
Batteries weighing less than 100g or less

DROP-OFF LOCATION	ADDRESS	PHONE
Best Buy	700-5300 No. 3 Road	604-273-7335
City's Recycling Depot	5555 Lynas Lane	604-276-4010
Dr Battery	135 - 13900 Maycrest Way	604-273-8248
Future Shop	102 - 5300 No. 3 Road	604-232-9772
	150 - 2780 Sweden Way	604-207-0199
Home Depot	2700 Sweden Way	604-303-7360
London Drugs	5971 No. 3 Road	604-448-4811
	3200 - 11666 Steveston Highway	604-448-4852
Pharmasave	116 - 10151 No. 3 Road	604-241-2898
Rona	7111 Elmbridge Way	604-273-4606
Staples	1 - 6390 No. 3 Road	604-270-9599
	110 - 2780 Sweden Way	604-303-7850

For a complete list of batteries accepted, please visit call2recycle.ca or call 1-888-224-9764.

For a complete list of mobile phones drop off locations, visit call2recycle.ca locator.

All cellular/mobile phone stores accept used cellular/mobile phones for refurbishing or recycling.

To erase information from your device, including text messages, contacts and personal files, use Cell Phone Data Erasers by recyclemycell.ca/recycling-your-device available for free.

CARBON MONOXIDE (CO), SMOKE AND COMBINATION SMOKE AND CO ALARMS ^{DB}

DROP-OFF LOCATION	ADDRESS	PHONE
London Drugs (smoke detectors only)	5971 No. 3 Road	604-448-4811
	3200 - 11666 Steveston Highway	604-448-4852
Regional Recycling	13300 Vulcan Way	604-276-8270
Steveston Return-It Depot	2 - 12320 Triton Road	604-241-9177

For a complete list of alarms accepted, please visit productcare.org/Smoke-Alarms or call 604-RECYCLE.

DB: Disposal ban | * A fee is charged

Please note: Drop-off locations may change without notice. Please call individual locations to confirm address and hours of operation.

ELECTRONICS: AUDIO VISUAL EQUIPMENT, COMPUTERS, MONITORS, TVs, PRINTERS, FAX MACHINES, SCANNERS, VIDEO GAMES & ACCESSORIES

DROP-OFF LOCATION	ADDRESS	PHONE
Best Buy	700 - 5300 No. 3 Road	604-273-7335
Future Shop	102 - 5300 No. 3 Road	604-232-9772
	150 - 2780 Sweden Way	604-207-0199
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot	7960 River Road	604-244-0008
Regional Recycling	13300 Vulcan Way	604-276-8270
Staples	1 - 6390 No. 3 Road	604-270-9599
	110 - 2780 Sweden Way	604-303-7850
Steveston Return-It Depot	2 - 12320 Triton Road	604-241-9177

For a complete list of materials accepted, please visit return-it.ca/electronics or call 604-473-2400.

EXERCISE & HOBBY MACHINES ^{DB}

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
Regional Recycling	13300 Vulcan Way	604-276-8270

EYEGLASSES

DROP-OFF LOCATION	ADDRESS	PHONE
Drop off at a local optometrist or eye care professional.		

FIRE EXTINGUISHERS

DROP-OFF LOCATION	ADDRESS	PHONE
Contact Recycling Council of BC at 604-RECYCLE for more information.		

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS

DID YOU KNOW?

The Product Stewardship Program helps with take back of many recyclable materials and is guided by the principle that whoever designs, produces, sells or uses a product takes responsibility for minimizing that product's environmental impact. The costs for

recycling these products are covered through environmental handling fees that are charged on the sale of products and through refundable deposits on items like beverage containers.


**FLAMMABLE LIQUIDS ^{DB}, PESTICIDES ^{DB},
SOLVENTS ^{DB}, GASOLINE ^{DB}**
Gasoline must be in approved ULC container

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010
Regional Recycling	13300 Vulcan Way	604-276-8270

For a complete list of flammable liquids, gasoline, pesticides and solvents accepted, please visit productcare.org/BC-Paint-Program or call 604-RECYCLE.

GENERAL HAZARDOUS MATERIALS

DROP-OFF LOCATION	ADDRESS	PHONE
Hazco Environmental (Tervita)*	160 - 13511 Vulcan Way	604-214-7000
Tempure Environmental	9 - 7483 Progress Way, Delta	604-952-1220

GYPHUM DRYWALL ^{DB}

No other materials attached to or on drywall

DROP-OFF LOCATION	ADDRESS	PHONE
City of Vancouver Landfill *	5400 72nd Street, Delta	604-873-7000
Ecowaste Industries Ltd. *	15111 Triangle Road	604-277-1410
New West Gypsum Recycling *	38 Vulcan Street, New Westminster	604-534-9925
Vancouver Transfer Station (Maximum 1/2 sheet with a paid load of garbage)	377 W. Kent Avenue N.	604-873-7000

HYPODERMIC NEEDLES

Purchase a "Sharps Container" from a pharmacy and return the container to same pharmacy when full.

**LIGHTS & LIGHTING FIXTURES ^{DB}**

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010
London Drugs	5971 No. 3 Road 3200 - 11666 Steveston Highway	604-448-4811 604-448-4852
Rona	7111 Elmbridge Way	604-273-4606

For a complete list of lighting products accepted, please visit productcare.org/lights or call 604-RECYCLE.

**LUBRICATING (USED) OIL ^{DB}, OIL FILTERS ^{DB},
PLASTIC OIL CONTAINERS ^{DB}**

DROP-OFF LOCATION	ADDRESS	PHONE
Audi of Richmond	5680 Parkwood Way	604-279-9663
Canadian Tire	3500 No. 3 Road 11388 Steveston Highway	604-273-2939 604-271-6651
Cowell Motors Ltd - Volkswagen	13611 Smallwood Place	604-273-3922
Esso Service Station (Blundell)	7991 No. 1 Road	604-277-1105
Jaguar Land Rover of Richmond	5660 Parkwood Way	604-273-6068
Jiffy Lube	10991 No. 4 Road	604-951-6662
Metric Auto Service Ltd.	104 - 8087 Alexandra Road	604-270-1668
Mix Lube	9120 Westminster Highway	604-273-5823
Sky Auto Services	110 - 5791 Minoru Boulevard	604-233-1828

For a complete list of lubricating oil, oil filters and plastic oil containers accepted, visit www.usedoilrecycling.com or call 604-RECYCLE.

DB: Disposal ban | * A fee is charged

Please note: Drop-off locations may change without notice. Please call individual locations to confirm address and hours of operation.

CITY OF RICHMOND

Working together with the City of Richmond, producers, retailers and residents can divert hazardous waste and other special disposal items from the landfill. Producers and retailers who support product stewardship and related take back programs assist with recycling and proper disposal, and residents can use these programs to help turn waste into resources.

**MATTRESSES AND BOXSPRINGS ^{DB}**

DROP-OFF LOCATION	ADDRESS	PHONE
Canadian Mattress Recycling*	1210 Cliveden Avenue, Delta	604-777-0324
City of Vancouver Landfill*	5400 72nd Street, Delta	604-873-7000
MattressRecycling.ca*	8275 Sherbrooke Street, Vancouver	604-961-1534

Richmond's Large Item Pick Up Program: Contact Sierra Waste at 604-270-4722. Please note some restrictions apply. See page 39.

MEDICAL DEVICES & EQUIPMENT ^{DB}

DROP-OFF LOCATION	ADDRESS	PHONE
Best Buy	700 - 5300 No. 3 Road	604-273-7335
Future Shop	102 - 5300 No. 3 Road	604-292-9772
	150 - 2780 Sweden Way	604-207-0199
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot	7960 River Road	604-244-0008
Regional Recycling	13300 Vulcan Way	604-276-8270
Staples	1 - 6390 No. 3 Road	604-270-9599
	110 - 2780 Sweden Way	604-303-7850
Steveston Return-It Depot	2 - 12320 Trites Road	604-241-9177

**MUSICAL INSTRUMENTS ^{DB}**

DROP-OFF LOCATION	ADDRESS	PHONE
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot (electrical instruments only)	7960 River Road	604-244-0008
Regional Recycling	13300 Vulcan Way	604-276-8270
Staples (electrical instruments only)	1 - 6390 No. 3 Road	604-270-9599
	110 - 2780 Sweden Way	604-303-7850

PAINT & PAINT AEROSOL CONTAINERS ^{DB}

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010
Regional Recycling	13300 Vulcan Way	604-276-8270
Rona	7111 Elmbridge Way	604-273-4606
Steveston Return-It Depot	2 - 12320 Trites Road	604-241-9177

For a complete list of paint & paint aerosol containers accepted, please visit productcare.org/BC-Paint-Program or call 604-RECYCLE.

DB: Disposal ban | * A fee is charged

Please note: Drop-off locations may change without notice. Please call individual locations to confirm address and hours of operation.

2014 REPORT • LEADERSHIP AND EXCELLENCE TO ACHIEVE GOALS



PHARMACEUTICAL^{DB}

All pharmacies accept left over or outdated prescription drugs, non-prescription medications, herbal products, mineral supplements, vitamin supplements and throat lozenges for safe disposal.

For a list of pharmacies and for drugs, medications, herbal products and mineral supplements accepted, visit healthservices.ca/return/british-columbia or call 604-RECYCLE.

Note: Please do not wash these items down the drain or throw them in the garbage.

PROPANE TANKS - REFILLABLE (EMPTY)

DROP-OFF LOCATION	ADDRESS	PHONE
City of Vancouver Landfill*	5400 72nd Street, Delta	604-873-7000
Richmond Husky Service*	8011 Mo. 3 Road	604-270-3822

PROPANE TANKS (SMALL) - DISPOSABLE (EMPTY)

DROP-OFF LOCATION	ADDRESS	PHONE
City of Vancouver Landfill	5400 72nd Street, Delta	604-873-7000

OUTDOOR POWER EQUIPMENT^{DB}

DROP-OFF LOCATION	ADDRESS	PHONE
Regional Recycling	13300 Vulcan Way	604-276-8270

SEWING, KNITTING & TEXTILE MACHINES^{DB}

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot	7960 River Road	604-244-0008
Regional Recycling	13300 Vulcan Way	604-276-8270
Steveston Return-It Depot	2 - 12320 Triton Road	604-241-9177

STYROFOAM - MOLDED PACKAGING & FOOD CONTAINERS

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010

London Drugs customers can return the moulded packaging Styrofoam from their appliance, computer and accessories products to any London Drugs store with proof of purchase.

STYROFOAM CHIPS (PEANUTS)

DROP-OFF LOCATION	ADDRESS	PHONE
The UPS Store	185 - 9040 Blundell Road	604-231-9643
	3080 - 16666 Steveston Hwy	604-271-1505
	130 - 8191 Westminster Hwy	604-279-0988
Packaging Depot	6360 Kingway, Burnaby	604-851-1206
	5524 Caroline Street, Vancouver	604-325-9966
Westcoast Plastic Recycling Inc.*	106 - 7080 River Road	604-247-1664

TELUS EQUIPMENT (RENTAL OR RETAIL)^{DB}

All TELUS rental or retail equipment such as cordless/corded phones, Voice Over IP (VOIP) phones, Global Positioning System (GPS) equipment and video/telephone conference equipment can be returned via Canada Post, call 604-310-2255 for more information.

DB: Disposal ban | * A fee is charged

Please note: Drop-off locations may change without notice. Please call individual locations to confirm address and hours of operation.

CITY OF RICHMOND

DID YOU KNOW?

Recycled tires are used in products such as artificial turfs, playground safety surfaces, synthetic surf boards and roofing products.



THERMOSTATS DB

DROP-OFF LOCATION	ADDRESS	PHONE
Andrew Sheret Ltd.	4500 Vanguard Road	604-278-3766

For more information, visit switchthestat.ca or call 1-416-922-2448 ext 232.

TIRES DB

DROP-OFF LOCATION	ADDRESS	PHONE
Big-O Tires	102 - 5651 No. 3 Road 11251 Bridgeport Road	604-247-1555 604-244-0464
Canadian Tire	3500 No. 3 Road 11388 Steveston Highway	604-273-2939 604-271-6651
Express Lube & Tune Centre	2840 No. 3 Road	604-278-1018
Kal Tire	2633 No. 5 Road	604-278-9181
Metro Tires Ltd.	12311 Mitchell Road	604-783-4435
Midas Auto & Tire Service	4660 No. 3 Road	604-273-9664
OK Tire Store	5831 Minoru Boulevard	604-278-5171
Redline Automotive Ltd.	1 - 11711 No. 5 Road	604-277-4269
Roadrunners Dial A Tire Ltd.	125 - 11780 River Road	604-274-8473
Shortstop Auto Service	11251 Bridgeport Road	604-244-0464
Signature Mazda	13800 Smalwood Place	604-278-3185
Vancouver Landfill (Passenger/light truck, with/ without rms limit of 10)	5400 72nd Street, Delta	604-873-7000

Note: All retail locations accept a used tire for a new one purchased.
For a complete list of tires accepted, visit tsbc.ca or call 1-866-759-0488.

DB: Disposal ban | * A fee is charged

Please note: Drop-off locations may change without notice. Please call individual locations to confirm address and hours of operation.



BICYCLE TIRES, TUBES, HELMETS, LOCKS AND WORKING BIKES

DROP-OFF LOCATION	ADDRESS	PHONE
Village Bikes	3891 Moncton Street	604-274-3865

For more information, visit tsbc.ca/bike.php or call 1-866-759-0488.

TOOLS - POWER (ELECTRONIC & ELECTRICAL) DB

DROP-OFF LOCATION	ADDRESS	PHONE
City's Recycling Depot	5555 Lynas Lane	604-276-4010
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot	7960 River Road	604-244-0008
Regional Recycling	13300 Vulcan Way	604-276-8270
Steveston Return-It Depot	2 - 12320 Trites Road	604-241-9177

TOYS (ELECTRONIC & ELECTRICAL) INCLUDING VIDEO GAMING SYSTEMS & ACCESSORIES DB

DROP-OFF LOCATION	ADDRESS	PHONE
Best Buy	700 - 5300 No. 3 Road	604-273-7335
Future Shop	102 - 5300 No. 3 Road 150 - 2780 Sweden Way	604-232-9722 604-207-0199
Ironwood Bottle & Return-It Depot	110 - 11020 Horseshoe Way	604-275-0585
OK Bottle Depot	7960 River Road	604-244-0008
Regional Recycling	13300 Vulcan Way	604-276-8270

NON HAZARDOUS MISCELLANEOUS ITEMS

Vancouver Landfill *	5400 72nd Street, Delta	604-873-7000
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CITY OF RICHMOND

Environmental Programs Information Line:

604-276-4010

www.richmond.ca/recycle

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recycled fibre, is FSC Certified and
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City of Richmond

Report to Committee

To: Public Works and Transportation Committee
From: John Irving, P.Eng. MPA
Director, Engineering
Date: March 23, 2015
File: 10-6060-03-01/2015-
Vol 01
Re: 2015 Liquid Waste Management Plan Biennial Report

Staff Recommendation

That the "2015 Liquid Waste Management Plan Biennial Report," presented as Attachment 1 to the staff report titled "2015 Liquid Waste Management Plan Biennial Report," dated March 23, 2015, from the Director, Engineering be submitted to Metro Vancouver.

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

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

Staff Report

Origin

The Greater Vancouver Sewerage and Drainage District (GVS&DD) Board adopted the Integrated Liquid Waste and Resource Management Plan (ILWRMP) in May 2010. Subsequently, at the September 27, 2010 City of Richmond Regular Council Meeting, Council adopted the following motion:

“That the municipal commitments in the Metro Vancouver 2010 Integrated Liquid Waste and Resource Management Plan be endorsed.”

The Minister of Environment approved the ILWRMP, subject to conditions identified in his letter, dated May 30, 2011.

The ILWRMP requires member municipalities to report progress on 27 municipal commitments on a biennial basis. Metro Vancouver provides a template for municipal reporting, in order to maintain a consistent approach to ILWRMP reporting across Metro Vancouver member municipalities. Metro Vancouver plans to bring forward the ILWRMP Biennial Report to the June 12, 2015 GVS&DD Board Meeting, and submit the report to the Minister of Environment in July.

This staff report reviews the City’s progress on the ILWRMP municipal actions and presents the 2015 Liquid Waste Management Plan Biennial Report (2015 Biennial Report) (Attachment 1) to Council for information and consideration.

Analysis

The ILWRMP includes a municipal commitment to report progress on a biennial basis. The 2015 Biennial Report covers the 2013 to 2014 reporting period. Richmond has previously submitted five biennial reports over the last 12 years based on reporting requirements in previous Liquid Waste Management Plans.

The 2015 Biennial Report includes 27 narratives, several tables and graphics attachments that report on the 27 municipal commitments included in the ILWRMP. The City is meeting or exceeding all of the requirements of the ILWRMP. The following are highlights of Richmond’s 2015 Biennial Report:

Inflow and Infiltration (I&I)

ILWRMP action 1.1.18 requires municipalities to develop and implement I&I management plans that ensure I&I levels are within Metro Vancouver allowances, as measured at Metro Vancouver’s flow metering stations. The City’s I&I rate is 10,100 L/ha/d, as measured at the Lulu Island Wastewater Treatment Plant. This level of I&I is 10% below the Metro Vancouver allowance of 11,200 L/ha/d. Staff continue to monitor I&I levels at the City’s sanitary pump stations, identifying any catchments that may have higher I&I rates for subsequent study and remediation if required.

On-Site Rainwater Management

ILWRMP action 1.1.20 requires municipalities to update municipal bylaws to require on-site rainwater management sufficient to meet criteria established in municipal stormwater plans or baseline region-wide criteria by 2014. Richmond already incorporates a number of on-site rainwater management features in its bylaws and standards, including green roofs and boulevard swales. Richmond has also developed an Integrated Rainwater Resource Management Strategy (IRRMS), which provides recommendations for on-site rainwater management. A staff report is being prepared to present the IRRMS to Council.

Condition Assessment

ILWRMP action 3.1.6 requires inspection and condition assessment of the municipal sanitary sewer system on a 20-year cycle. Richmond has inspected and assessed 90% of its sanitary sewers over the last 14 years and is ahead of schedule on this action. The remaining 10% is expected to be completed this year, 6 years ahead of schedule.

Asset Management Plan

ILWRMP action 3.1.8 requires municipalities to develop and implement asset management plans and to provide copies of those plans to Metro Vancouver by 2014. Richmond has both an Ageing Infrastructure Management Plan and a Growth Related Infrastructure Management Plan. Both of these have been in place for a number of years and were submitted ahead of Metro Vancouver's target date.

Sanitary Sewer Overflows

ILWRMP action 3.3.7 requires municipalities to report on the frequency and location of sewerage overflows from municipal sanitary sewers. The City does not have chronic sanitary sewer overflow issues and there were zero overflows for the reporting period. This is largely due to Richmond's successful capital and maintenance programs, separated sewer systems and low I&I rates.

Stormwater Management Plan

ILWRMP action 3.4.7 (related to action 1.1.20) requires municipalities to develop and implement stormwater management plans that integrate with land use by 2014. Richmond has developed an IRRMS ahead of Metro Vancouver's schedule.

Water Metering

Ministerial Condition 2 for approval of the ILWRMP strongly encourages municipalities to business case and/or implement residential water metering programs and to consider municipal rebate programs for water efficient fixtures and appliances to reduce water use.

The City has comprehensive water meter programs for both residential and commercial properties. All industrial, commercial, and farm properties in Richmond are metered. The City is universally metering all single-family properties, with a target completion in 2018, and multi-

family complexes can volunteer for water meters through a subsidized program. As of January 1, 77% of single-family properties and 35% of multi-family properties are metered.

To further promote reduced water use, the City provides metered customers with water conservation kits, which include low flow showerheads, faucet aerators, toilet fill cycle diverters, toilet leak detection tablets, and educational water conservation tools. In addition, the City has successful programs for toilet rebates, rain barrels, and clothes washer rebates. As of January 1, 4,848 toilet rebates, 966 rain barrels, and 205 clothes washer rebates have been issued to Richmond residents.

Financial Impact

None.

Conclusion

The 2010 ILWRMP includes a municipal commitment to report progress on ILWRMP actions on a biennial basis. The attached 2015 Biennial Report summarizes Richmond's progress on municipal actions for the 2013 to 2014 reporting period. The City of Richmond is meeting or exceeding all of the requirements of the ILWRMP and staff will continue work on municipal actions identified in the ILWRMP.

For Lloyd Bie, P.Eng.
Manager, Engineering Planning
(4075)

Jason Ho, P.Eng.
Project Engineer
(1281)

LB:jh

Att. 1: City of Richmond 2015 Liquid Waste Management Plan Biennial Report

2015 Liquid Waste Management Plan Biennial Report

Reporting Period: 2013 – 2014

Municipal Submission Section

To be completed by: March 1, 2015

Municipal Contact Information			
Name	Email	Phone	Responsible For ILWMP Action #'s
Jason Ho, P.Eng.	jho@richmond.ca	604-244-1281	
Lloyd Bie, P.Eng.	lbie@richmond.ca	604-276-4075	
Lesley Douglas, R.P.Bio.	ldouglas@richmond.ca	604-247-4672	1.1.16
Alen Postolka, P.Eng.	apostolka@richmond.ca	604-276-4283	1.3.17, 3.3.6

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2. Municipal Reporting Submission1

Submission Checklist

Narratives:

- ☒ Narrative 1: *Summarize ongoing permitting & inspection programs*
- ☒ Narrative 2: *Summarize approach to regulating pesticides and lawn care products*
- ☒ Narrative 3: *Summarize updates to outreach plans for supporting liquid waste source control programs (e.g. stormwater, sewer use, sewer maintenance, I&I management, cross connections etc.) during the reporting period*
- ☒ Narrative 4: *Summarize I&I management plans & list key actions resulting from plans*
- ☒ Narrative 5: *Summarize enforcement enhancements and process efforts during reporting period*
- ☒ Narrative 6: *Highlight and summarize bylaw changes relating to stormwater management*
- ☒ Narrative 7: *Highlight and summarize changes to utility design standards and neighbourhood design guidelines in relation to on-site rainwater management*
- ☒ Narrative 8: *Summarize development of municipal sanitary overflow management plans. Highlight specific examples.*
- ☒ Narrative 9: *Highlight & summarize progress on the prevention of CSOs and the separation of combined sewers*
- ☒ Narrative 10: *List approaches and strategies that address risks (ie: regular maintenance, SCADA, monitoring, protocols, identified redundancies/contingencies)*
- ☒ Narrative 10A: *Identify any emergency procedures & protocols developed for 2013-2014.*
- ☒ Narrative 11: *Describe regulations and status of applications*
- ☒ Narrative 12: *Summarize existing municipal odour control programs and the implementation of new programs for targeted municipal sewer facilities*
- ☒ Narrative 13: *Summarize air emissions management programs for standby power generators at municipal sewer pump stations*

- ☒ Narrative 14: *Summarize greenhouse gas emissions reduction initiatives for municipal liquid waste services.*
- ☒ Narrative 15: *Summarize key progress on the assessment and condition of municipal sewerage system*
- ☒ Narrative 16: *Summarize key progress or accomplishments on the development of asset management plans for municipal sewerage infrastructure*
- ☒ Narrative 17: *Summarize key findings from the tri-annual internal audit (first due in 2013)*
- ☒ Narrative 18: *Summarize the estimate of greenhouse gas emissions and odours associated with the operation of municipal and regional liquid waste management systems*
- ☒ Narrative 19: *Summarize and highlight any important details and action plans relating to wet weather SSOs & probable causes of CSOs*
- ☒ Narrative 20: *Summarize and highlight any changes to the existing municipal sewer flow & sewer level monitoring network*
- ☒ Narrative 21: *Summarize progress on the development of emergency management strategies and response plans for municipal & regional wastewater collection and treatment systems*
- ☒ Narrative 22: *Summarize key initiatives that support the adaptation of infrastructure & operations to address risks and long term needs*
- ☒ Narrative 23: *Summarize and highlight key initiatives relating to the development and implementation of the integrated management plans*
- ☒ Narrative 24: *Discuss water metering & rebate programs relating to water fixtures and appliances*
- ☒ Narrative 25: *Summarize whether any new municipal water metering policies or programs were introduced in 2013-2014 that address this action. If no changes, then indicate, "Same as the 2010-2012 reporting period: no changes".*
- ☒ Narrative 26: *Quote relevant OCP sections addressing stormwater, stream health and their consideration of ISMPs*

Tables:

- ☒ Table 1: *List core sewer use bylaws and summarize any changes*
- ☒ Table 2: *Summarize Status of Bylaws Related to Controlling Sediment Transport & Erosion*
- ☒ Table 3: *Types and Number of Liquid Waste Related Permits Issued 2013-2014*
- ☒ Table 4: *Products Regulated to Protect Stormwater Runoff Quality*
- ☒ Table 5: *Bylaws Regulating Discharges of Groundwater and Rainwater to Sanitary Sewers*
- ☒ Table 6: *List standards and guidelines and where applied*
- ☒ Table 7: *List references*
- ☒ Table 8: *Bylaws and Regulations Requiring Pleasure Craft Pump-out Facilities at Marinas*
- ☒ Table 9: *Summary of LWMP Implementation Budgets and Forecasts*
- ☒ Table 10: *Summary of Municipal Progress 2013-2014*

Graphics & GIS Data:

☒ Attachment 1:

- I&I Mapping showing I&I rates for neighbourhoods where studies have been completed with before and after I&I (L/ha-d). Objectives to Illustrates catchment areas covered by I&I studies.
- Transmit an electronic copy of GIS shape files for study catchment boundaries to Metro Vancouver

☒ Attachment 2:

- Mapping showing where sewer separation work occurred in 2013-2014
- GIS shape files of the locations where sewer separation occurred in 2013-2014 for composite mapping
- GIS shape files of catchments of remaining combined sewer catchments as of December 31, 2014 (if separated catchments discharge to combined sewers, code the separated catchments as "separated").

☒ Attachment 3:

- Map and GIS data showing location of emergency municipal overflows (this information should have already been provided through a separate request through the REAC LWSC as well as the 2010-2012 reporting). If already provided, please indicate so.

☒ Attachment 4:

- 2013-2014 map showing odour control facilities & locations of complaints (different than facility)
- GIS shape files for the odour facility and complaint mapping to allow for development of composite mapping

☒ Attachment 5:

- A map showing sewerage system CCTV inspection for 2013-2014 and the other areas of CCTV inspection work in a different colour over the previous 18 years (1994-2012).
- A map showing any sewer replacement /rehabilitation work for 2013-2014 as part of either asset management or capacity upgrades. Indicate whether the work is for upgrades or maintenance.

☒ Attachment 6:

- Titles of any completed asset [replacement] management plans (author, date, title, and publisher) for 2013-2014.
- Completed annual PSAP 3150 reporting on asset values for 2013-2014.
- Colour coded map showing age of the sewerage system (i.e.: <1900, 1901-1925, 1926-1950, 1951-1975, 1976-2000, >2001) updated to show any changes made in 2013-2014. If no changes, please indicate so and the mapping prepared for the 2010-2013 reporting period will be used.

☒ Attachment 7:

- Provide (if not already provided) GIS shape files which have the locations of the CSO outfalls for purposes of summary mapping (should already be reported under WSER).
- Provide GIS shape files or coordinates for the locations of wet & dry weather SSOs for each year (indicate which is dry/wet and year). Include SSO dates and estimated volume

☒ Attachment 8:

- Map and GIS coordinates showing locations of active municipal sewer flow/level monitors for the reporting period 2013-2014 (indicate whether permanent or temporary)

☒ Attachment 9:

- If not already provided, provide updated GIS shape files of the municipal sanitary sewer network, including manholes, pump stations, pipe diameters for the municipal sewer system as of the end of 2014. Please indicate what changes have been made for 2013-2014.

☒ Attachment 10:

- GIS shape files showing the ISMP boundaries and their status: Development Phase= Yellow; Implementation Phase = Light Green; Completed Phase = Dark Green. Add ISMPs still to start development as outlined only).

☒ Attachment 11:

- If initiated, results per watershed (as per ISMP Adaptive Management Framework)
- If undertaken, a map plus GIS shape files/coordinates showing location of monitoring.

☒ Attachment 12:

- Map showing any 2013-2014 changes to protected riparian areas & possible stream classifications. If no changes, then this figure is not required.

City of Richmond

Action 1.1.14 – Review and enhance sewer use bylaws to reduce liquid waste at source, including contaminants identified by the *Canadian Environmental Protection Act (2012)*.

Table 1 Core Sewer Use Bylaws

Sewer Use Bylaws*	2013-2014 Changes**
Drainage, Dyke and Sanitary Sewer System Bylaw No. 7551	No changes with respect to reducing liquid waste at source
Public Health Protection Bylaw No. 6989	No changes
Pollution Prevention and Clean-Up Bylaw No. 8475	No changes

*Re-list existing core sewer use bylaws and list all new bylaws

**Summarize any changes (if no changes, enter "No changes")

Table 2 Summarize Status of Bylaws Related to Controlling Sediment Transport & Erosion

Name of Bylaw*	
(related to controlling sediment release from land clearing and construction phase of development)	
Drainage, Dyke and Sanitary Sewer System Bylaw No. 7551	
Pollution Prevention and Clean-Up Bylaw No. 8475	
Boulevard and Roadway Protection and Regulation Bylaw No. 6366	
Boulevard Maintenance Bylaw No. 7174	
City of Richmond Engineering Design Specifications	
Bylaw Details	2013-2014 Changes*
Summarize monitoring requirements	No changes
How data is assessed under the bylaw?	No changes
How is assessment used to initiate corrective actions?	No changes
Summarize approaches used to maintain compliance with the bylaw (e.g. annual resources dedicated to maintaining compliance).	No changes
Discuss effectiveness of bylaw/bylaws and current approach to prevent inputs of sediment to the storm system and receiving environment.	No changes

*For bylaws unchanged since 2010-2012, summarize any changes 2013-2014 (if no changes, enter "No changes"). Otherwise, describe the new bylaw.

Action 1.1.15* – Continue existing programs of permitting and inspection to support and enforce sewer use bylaws (Ongoing, **City of Vancouver Only*).

Narrative 1: Summarize ongoing permitting & inspection programs

N/A

Table 3 Types and Number of Liquid Waste Related Permits Issued 2013-2014

Permit Type/Name*	Number of Permits*	Referenced Bylaw*
N/A		

**City of Vancouver Only*

Action 1.1.16 – Identify and regulate pesticides and lawn care products which negatively affect rainwater runoff quality and urban stream health (2014).

Narrative 2: Summarize approach to regulating pesticides & lawn care products for 2013-2014.

Richmond's Enhanced Pesticide Management Program (EPMP) reduces the exposure of Richmond residents to unnecessary pesticide use. This program includes a regulation restricting the use of pesticides for cosmetic purpose, as well as resources to empower community members to make the switch to pesticide-free practices.

Pesticide Use Control Bylaw No. 8514 restricts the cosmetic use of pesticides on residential and municipally-owned lands, allowing only low-toxicity products listed under the BC Integrated Pest Management (IPM) Regulation Schedule 2: Excluded Pesticides. In addition to bylaw enforcement, the City provides an expanded Education and Community Partnerships Program to inform the community about pesticide restrictions and to promote natural gardening and pest solutions. This includes a series of natural gardening workshops and a phone line to help residents learn proper plant care and sustainable pest solutions.

Table 4 Products Regulated to Protect Stormwater Runoff Quality

Regulated Products	Type of Regulation (Sales Ban, Use Ban, Permit, Limited Users, etc.)	Additional Information (Referenced Bylaw & Policy Numbers)
Pesticide	Limited users	Pesticide Use Control Bylaw No. 8514

Action 1.1.17 – Continue outreach plans to support liquid waste source control programs (*Ongoing*).

Narrative 3: Summarize 2013-2014 updates to outreach plans for supporting liquid waste source control programs (e.g. stormwater, sewer use, sewer maintenance, I&I management, cross connections etc.).

Green Cart Program

The Green Cart Program, an extension of the Green Can Program, started in 2013, with added service for townhouses.

Through the Green Cart Program, over 30,000 tonnes of food scraps and yard trimmings were collected in 2013 and 2014 from curb side collection alone. This program reduces the amount of waste that would otherwise be discharged to the sanitary sewer through garburators. To facilitate grease reduction in the sanitary system, Richmond conducts the following activities:

- Provide Green Cart Program literature, which includes information on the impact of grease on the sewer system as well as proper grease disposal techniques.
- Accept cooking oil and animal fat at the City's Recycling Depot.
- Promote proper disposal of cooking oil and grease on Facebook, annual collection calendar, ads in local newspaper, and annual report.
- Discourage the use of garburators as part of the Green Cart Program.
- Carry out the Green Cart and Recycling Depot programs, which allow residents to recycle food scraps and solid grease.

Metro Vancouver Waste Water Discharge Permit Process

The City continues to participate in the Metro Vancouver sanitary sewer source control program by supporting the Metro Vancouver Waste Water Discharge Permit process.

Fat, Oil and Grease Reduction Programs

Richmond Community Bylaws staff continued to work with representatives from Metro Vancouver, stakeholder groups, industry associations, pumping operators and grease trap vendors to mitigate the impact of fats, oils and grease (FOG) on the region's sanitary sewer system.

In addition, the City carried out the Grease Management Program, which included active inspection and enforcement of food sector establishments. In 2013 and 2014, assertive enforcement efforts resulted in 174 tickets issued and \$26,250 in revenue.

Rainwater Best Management Practices

Richmond's Official Community Plan Bylaw No. 9000 – Schedule 1, Section 14.2.10, Development Permit Guidelines – Green Buildings and Sustainable Infrastructure, provides general direction in regards to the voluntary undertaking, where feasible, of green building and sustainable infrastructure to support City

of Richmond sustainability objectives and help reduce the demand for energy and resources. Developers are encouraged to incorporate green roofs, bio-swales, infiltration and other best management practices throughout the building site to store rainwater, mitigate urban heat island effect, reduce heating and cooling loads and reduce the impact on City drainage systems.

Rain Barrel Program

The City offers rain barrels to Richmond residents at subsidized prices.

Low-Flow Toilet Rebate Program

The City offers a \$100 rebate to residents for replacing old toilets with new low-flush toilets to reduce waste volume through water conservation.

High-Efficiency Clothes Washer Rebate Program

The City partnered with BC Hydro to offer a maximum \$200 rebate to residents for replacing old clothes washers with new energy- and water- efficient models, in order to reduce GHGs through energy conservation as well as waste volume through water conservation.

Water Meter Programs

The City meters all commercial and industrial properties. Single-family dwellings will be universally metered by 2018, and multi-family complexes are eligible to volunteer for meters. Water metering encourages water conservation which, in turn, reduces waste volume.

Action 1.1.18 – Develop and implement inflow and infiltration management plans, using the Metro Vancouver template as a guide, to ensure wet weather inflow and infiltration volumes are within Metro Vancouver’s allowances as measured at Metro Vancouver’s flow metering stations (2012).

Narrative 4: Summarize I&I management plans & list key actions resulting from plans in 2013-2014. If no work was initiated or undertaken for 2013-2014, then indicate “Same as the 2010-2012 reporting period: no changes”.

Richmond’s overall I&I rate for a five-year return period storm is 10,100 L/ha/d, based on flows recorded at the Lulu Island Wastewater Treatment Plant. This rate is of I&I is 10% below the regional allocation of 11,200L/ha/d.

Richmond monitors I&I at the catchment level through pump runtimes at sanitary pump stations. Detailed pump runtimes are captured in data loggers that are manually downloaded to spreadsheets and subsequently converted to sanitary flow rates. The results of this monitoring program are included graphically in Attachment 1.

Richmond has installed pressure sensors at sanitary pump stations in order to improve the accuracy of pump runtime analysis. Utilizing pressure information and pump curves will improve the accuracy of the flow information generated by the City's monitoring program. In addition, the City continues to install magnetic flow meters at new sanitary pump stations. Automated pump runtime data collection has also been set up through the SCADA network, and the City is moving towards utilizing FlowWorks to further analyze the data collected.

Catchment level data is being utilized to identify catchments with excessive I&I for further study. This study will include a review of sanitary system response to rainfall events in order to determine the relative levels of I&I. This information will be subsequently utilized to identify appropriate inspection techniques for further catchment review.

Richmond has completed the CCTV inspection and sanitary sewer condition assessment for 90% of its gravity sewer system. The sewers inspected to date were found to be in excellent condition. There are very few significant structural defects (0.2 structural defects per km of pipe inspected), as well as low rates of I&I defects, which mainly consisted of infiltration at joints (0.7 I&I defects per km of pipe inspected).

Attachment 1:

a) I&I Mapping showing I&I rates for neighbourhoods where studies have been completed with before and after I&I (L/ha-d). Objectives to Illustrates catchment areas covered by I&I studies.

b) Transmit an electronic copy of GIS shape files for study catchment boundaries to Metro Vancouver.

Action 1.1.19 – Enhance enforcement of sewer use bylaw prohibition against the unauthorized discharge of rainwater and groundwater to sanitary sewers (2010).

Narrative 5: Summarize enforcement enhancements and process effort changes during 2013-2014. If no changes, then enter "Same as the 2010-2012 reporting period: no changes".

Same as the 2010-2012 reporting period: no changes.

Table 5 Bylaws Regulating Discharges of Groundwater and Rainwater to Sanitary Sewers

Regulation or Bylaw No.	Date	Summary of Any Changes 2013-2014*
Drainage, Dyke and Sanitary Sewer System Bylaw No. 7551	Effective Date – January 1, 2003	No changes with respect to unauthorized discharge of rainwater and groundwater to sanitary sewers

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**if no changes, enter "no changes" in table.*

Action 1.1.20 – Update municipal bylaws to require on-site rainwater management sufficient to meet criteria established in municipal integrated stormwater plans or baseline region-wide criteria (2014).

Narrative 6: Highlight and summarize any bylaw changes or development effort relating to stormwater management for 2013-2014. If no changes, indicate "Same as the 2010-2012 reporting period: no changes".

In addition to the bylaws and development effort outlined for the 2010-2012 reporting period, the City has developed an Integrated Stormwater Management Plan (ISMP), which establishes on-site rainwater management criteria.

Table 6 Bylaws Related to On-site Stormwater Management

Related Stormwater Bylaws	Changes to On-Site Stormwater Management Target/Objectives (2013-2014)*
Green Roofs & Other Options Involving Industrial & Office Buildings Outside the City Centre Bylaw No. 8385	No changes
Official Community Plan Bylaw No. 9000	No changes
Pollution Prevention and Clean-Up Bylaw No. 8475	No changes

**if no changes, enter "no changes" in table.*

Action 1.1.21 – Update municipal utility design standards and neighbourhood design guidelines to enable and encourage on-site rainwater management (2014).

Narrative 7: Highlight and summarize changes for 2013-2014 to utility design standards and neighbourhood design guidelines in relation to on-site rainwater management. If no changes were made or processes initiated, then indicate "Same as the 2010-2012 reporting period: no changes".

Same as the 2010-2012 reporting period: no changes.

Table 7 Municipal Standards, Guidelines and Policy Changes Related to On-site Stormwater Management

Name of Standard, Guideline or Policy	Changes for 2013-2014
City of Richmond Engineering Design Specifications	No changes

**If identified unchanged since 2010-2012, briefly summarize any changes 2013-2014 (if no changes, enter "No changes"). Otherwise, briefly summarize if a new bylaw.*

Action 1.2.5 – Work with Metro Vancouver to develop and implement municipal-regional sanitary overflow management plans as set out in 1.2.4 (2013).

Narrative 8: Summarize development of any municipal sanitary overflow management plans for 2013-2014. Highlight any specific examples. If no new plans developed, then indicate "Same as the 2010-2012 reporting period: no changes".

Same as the 2010-2012 reporting period: no changes.

Action 1.2.6 – Burnaby, New Westminster and Vancouver will work with Metro Vancouver to give effect to 1.2.2 and, specifically, implement plans to prevent combined sewer overflows by 2050 for the Vancouver Sewerage Area and 2075 for the Fraser Sewerage Area and separate combined sewers at an average rate of 1% and 1.5% of the system per year in the Vancouver Sewerage Area and Fraser Sewerage Area respectively (Ongoing).

Narrative 9: Highlight and summarize progress on the prevention of CSOs and the separation of combined sewers for 2013-2014.

There are no combined sewers in Richmond.

Attachment 2:

- a) Mapping showing where sewer separation work occurred in 2013-2014
- b) GIS shape files of the locations where sewer separation occurred in 2013-2014 for composite mapping
- c) GIS shape files of catchments of remaining combined sewer catchments as of December 31, 2014 (if separated catchments discharge to combined sewers, code the separated catchments as "separated").

N/A

Action 1.3.11 – Develop and implement operational plans for municipal sewerage facilities to ensure infrastructure reliability and optimal performance (*Ongoing*).

Narrative 10: Discuss approaches and strategies applied in 2013-2014 that address risks (i.e. regular maintenance, SCADA, monitoring, protocols, identified redundancies/contingencies). If these are the same as the previous reporting period 2010-2012, then indicate "Same as the 2010-2012 reporting period: no changes", or if only minor changes, enter appropriate text similar to "Same as the 2010-2012 reporting period except for..."

In addition to the approaches and strategies outlined for the 2010-2012 reporting period, the City has installed pressure sensors at its 152 sanitary pump stations to provide additional pump and forcemain performance information. Several upgrades to the SCADA infrastructure were completed in 2014, including decentralization of primary and secondary repeaters, fibre optic network upgrades, redundancy equipment upgrades, and backup power upgrades.

Action 1.3.12 – Work with Metro Vancouver to develop and implement emergency sanitary sewer overflow plans including contingency plans to minimize impacts of unavoidable sanitary sewer overflows resulting from extreme weather, system failures or unusual events (*Ongoing*).

Narrative 10A: Identify any emergency procedures & protocols developed for 2013-2014. If these are the same as the previous reporting period 2010-2012, then indicate "Same as the 2010-2012 reporting period: no changes", or if only minor changes, enter appropriate text similar to "Same as the 2010-2012 reporting period except for..."

Richmond's municipal sanitary system did not experience any sanitary sewer overflows during the reporting period. Richmond does not have any combined sewer systems, and maintains an overall I&I rate below the regional design allowance. As such, Richmond does not have chronic sanitary sewer overflow issues due to weather or rainfall. There have been no changes to the emergency management plan, procedures, and protocols outlined for the 2010-2012 reporting period.

Attachment 3:

Map and GIS data showing location of emergency municipal overflows (this information should have already been provided through a separate request through the REAC LWSC as well as the 2010-2012 reporting). If already provided, please indicate so.

N/A

Action 1.3.13 – Work with private marina operators, Ministry of Environment and Environment Canada to develop and implement regulations to ensure all new marinas and marinas where planned renovations exceed 50% of the assessed existing improvements value have pleasure craft pump-out facilities (*Ongoing*).

Table 8 Bylaws and Regulations Requiring Pleasure Craft Pump-out Facilities at Marinas

Regulation Process or Bylaw*	Date*
Public Health Protection Bylaw No. 6989, Subdivision Two – Marina Health and Safety Regulation	Effective Date – March 13, 2000

* This may be repeated from the 2010-2012 reporting period

Action 1.3.14 – Require all pleasure craft pump-out facilities to connect to a municipal sanitary sewerage system or a provincially permitted on-site treatment and disposal system or have established enforceable protocols for transporting liquid waste for disposal at a permitted liquid waste management facility (*Ongoing*).

Narrative 11: Describe any additional regulations and the number of on-site treatment systems required/installed during the reporting period 2013-2014. If these are the same as the previous reporting period 2010-2012, then indicate "Same as the 2010-2012 reporting period: no changes".

Same as the 2010-2012 reporting period: no changes.

Action 1.3.15 – Continue existing municipal odour control programs and implement new programs for targeted municipal sewer facilities (*Ongoing, see Action 3.3.4*).

Narrative 12: Summarize existing municipal odour control programs and the implementation of new programs for targeted municipal sewer facilities for the reporting period 2013-2014. If these are the same as the previous reporting period 2010-2012, then indicate "Same as the 2010-2012 reporting period: no changes", or if only minor changes, enter appropriate text similar to "Same as the 2010-2012 reporting period except for..."

Same as the 2010-2012 reporting period: no changes.

Attachment 4:

- a) 2013-2014 map showing odour control facilities & locations of complaints (different than facility)

- b) *GIS shape files for the odour facility and complaint mapping to allow for development of composite mapping*

Action 1.3.16 – Develop and implement air emissions management programs for standby power generators at municipal sewer pump stations (2016).

Narrative 13: Summarize air emissions management programs for standby power generators at municipal sewer pump stations. If these are the same as the previous reporting period 2010-2012, then indicate “Same as the 2010-2012 reporting period: no changes”, or if only minor changes, enter appropriate text similar to “Same as the 2010-2012 reporting period except for...” This action is not due until 2016.

Notes: Metro Vancouver has developed “Specifications for New Diesel Powered Vehicles & Equipment” as part of its green procurement process (details were shared with the REAC-LWS at an earlier meeting and are available from MV).

Same as the 2010-2012 reporting period: no changes.

Action 1.3.17 – Develop and implement programs to reduce greenhouse gas emissions from municipal liquid waste management systems to help achieve federal, provincial and municipal greenhouse gas targets (Ongoing, see Action 3.1.5).

Narrative 14: Summarize greenhouse gas emissions reduction initiatives for municipal liquid waste services. If these are the same as the previous reporting period 2010-2012, then indicate “Same as the 2010-2012 reporting period: no changes”, or if only minor changes, enter appropriate text similar to “Same as the 2010-2012 reporting period except for...”

Richmond’s 2041 OCP includes targets to reduce the community’s energy use by 10 per cent by 2020, and to reduce community greenhouse gas (GHG) emissions by 33 per cent by 2020 and 80 per cent by 2050. In January 2014, City Council approved Richmond’s Community Energy and Emissions Plan (CEEP). The CEEP includes:

- Strategy 9: Continue Advancement of Neighbourhood District Energy Systems;
- Strategy 10: Utilize Local Energy Sources; and
- Strategy 11: Maximize Use of Waste, including liquid waste.

In 2013, Richmond completed installation of the Gateway Theatre Sewer Heat Recovery System to recover heat from a municipal wastewater pump station. The system reduces the amount of natural gas and associated GHG emissions required to heat the Gateway Theatre. It is estimated that this project will reduce GHG emissions at the facility by 50 tonnes CO₂e. This was a pilot project implemented to validate the concept of sewer heat recovery and to support similar projects in the future.

Richmond is working with Metro Vancouver to implement a sewer heat recovery system on the Gilbert Trunk Sewer as part of the River Green District Energy Utility. During the reporting period, Lulu Island Energy Company Inc. (LIEC), a City-owned corporation that manages district energy initiatives, executed a Concession Agreement with Corix Utilities Inc. to provide thermal energy services to developments proximate Richmond's Oval Village. The project is under construction with first customers expected to be connected to the system in spring 2015. The sewer heat recovery portion of the project has a target construction date in 2018. At full build-out, there will be an estimated 2600 tonnes CO₂e GHG emissions reduction.

To reduce corporate GHG emissions, Richmond is partnering with Metro Vancouver to explore sewer heat recovery options at Lulu Island Waste Water Treatment Plant (LIWWTP), and is supporting the Metro Vancouver and FortisBC Biomethane Pilot Program at LIWWTP by purchasing renewable natural gas (RNG). The first phase of the project has reduced corporate GHG emissions by 186 tonnes CO₂e. Development of the biomethane plant at LIWWTP will potentially allow for the City to purchase more RNG and further reduce its corporate GHG emissions by approximately 2,000 tonnes of CO₂e.

Richmond secures commitments from new developments in the City Centre Area to be "District Energy Ready" as part of rezoning and development permitting. This is part of a medium- to long-term strategy to develop district energy utilities in the City Centre.

Action 3.1.6 – Assess the performance and condition of municipal sewerage systems by: (a) inspecting municipal sanitary sewers on a twenty year cycle, (b) maintaining current maps of sewerage inspection, condition and repairs, and (c) using the Metro Vancouver "Sewer Condition Report, November 2002" as a guide to ensure a consistent approach to sewer system evaluation and reporting (*Ongoing*).

Narrative 15: *Summarize key progress on the assessment and condition of municipal sewerage system for 2013-2014. If these are no changes since the previous reporting period 2010-2012, then indicate "Same as the 2010-2012 reporting period: no changes".*

In addition to the condition assessments outlined for the 2010-2012 reporting period, Richmond issued a request for proposals (RFP) for the CCTV inspection and assessment of the remaining 10% of its gravity sanitary sewer system. This project will be undertaken in 2015.

Attachment 5:

- a) *A map showing sewerage system CCTV inspection for 2013-2014 and the other areas of CCTV inspection work in a different colour over the previous 18 years (1994-2012).*
- b) *A map showing any sewer replacement /rehabilitation work for 2013-2014 as part of either asset management or capacity upgrades. Indicate whether the work is for upgrades or maintenance.*

Action 3.1.8 – Develop and implement asset management plans targeting a 100 year replacement of rehabilitation cycle for municipal sewerage infrastructure and provide copies of such plans to Metro Vancouver (2014).

Narrative 16: Summarize key progress or accomplishments on the development of asset management plans for municipal sewerage infrastructure for 2013-2014.

Richmond has an ongoing Ageing Infrastructure Replacement Program with dedicated funding from the Sanitary Sewer Utility that maintains the sanitary system in an appropriate operating condition. Staff report to City Council annually on the status of the program, including current infrastructure status, long-term funding requirements and funding gaps if they exist. The 2013 program update identified a long-term, sustainable capital requirement of \$6.4M and a budget of \$4.3M. City Council and staff have made significant progress in closing the funding gap and will continue to close the gap in subsequent utility rate setting cycles. The sanitary system is relatively young and the bulk of replacement funding is predicted to be required between 2041 and 2061. As such, the incremental approach to closing the funding gap is appropriate for the City of Richmond.

Attachment 6:

- a) *Titles of any completed asset [replacement] management plans (author, date, title, and publisher) for 2013-2014.*

Ageing Infrastructure Planning 2013 Update (August 14, 2013, Lloyd Bie, P.Eng., Andy Bell, P.Eng.), REDMS 3878967

Engineering Design and Construction – Construction Program Update to Mayor and Council, (Eric Sparolin, P.Eng.), REDMS 3249431

5-Year Capital Program – Sanitary, (Jason Ho, P.Eng.), REDMS 3247757

- b) *Completed annual PSAP 3150 reporting on asset values for 2013-2014.*

2013 Annual Report: <http://www.richmond.ca/cityhall/finance/reporting/reports.htm>

More information on Richmond's non-financial assets is available at:

http://www.cscd.gov.bc.ca/lgd/infra/municipal_stats/municipal_stats2013.htm

- c) *Colour coded map showing age of the sewerage system (i.e.: <1900, 1901-1925, 1926-1950, 1951-1975, 1976-2000, >2001) updated to show any changes made in 2013-2014. If no changes, please indicate so and the mapping prepared for the 2010-2013 reporting period will be used.*

Action 3.2.4 – Undertake a tri-annual internal audit of best practices of one municipal liquid waste management sub-program in each municipality to identify opportunities for innovation and improvements (*Triennially*).

Narrative 17: Summarize key findings from the tri-annual internal audit (first due for 2013, the next in 2016).

Ageing Infrastructure Planning Program

In 2013, Richmond conducted a review of the Ageing Infrastructure Planning Program, which included reconciling current inventory, reviewing the evolving theory on infrastructure service life, and updating infrastructure replacement pricing.

This audit identified the following key findings:

- Infrastructure replacement costs continue to increase due to inflation, environmental requirements and sanitary pump station complexity.
- Sanitary pump stations are becoming larger and more complex as the demands on them increase. Additionally, building pump stations in a built-out urban environment creates significant challenges beyond those encountered during green field development, including working in close proximity to existing structures and infrastructure, as well as accommodating existing flows during the construction period. As such, cost estimates for replacing Richmond's 152 sanitary pump stations have increased, thereby having a corresponding impact on the long-term annual funding requirement.
- Development facilitates significant infrastructure replacement, having a positive impact on the City's overall ageing infrastructure picture. However, development is subject to external factors, such as the economy, and does not always coincide with infrastructure that is beyond its useful life. Therefore, development is not considered a sustainable resource for ageing infrastructure replacement.
- The long-term, sustainable capital requirement is \$6.4M for the sanitary utility. The current budget is \$4.3M. Closing the funding gap is achievable within the next decade or sooner through the annual budgeting process.

Action 3.3.6 – In collaboration with Metro Vancouver, estimate and document the greenhouse gas emissions and odours associated with the operation of the municipal and regional liquid waste management systems (*2014*).

Narrative 18: Summarize the estimate of greenhouse gas emissions associated with the operation of municipal and regional liquid waste management systems. Odour control and mapping are being reported under Action 1.3.15.

The estimated total emissions in 2013 due to electricity use at sanitary pump stations and sanitary fleet fuel use for operational tasks is 95.2 tonnes of tCO₂e.

Action 3.3.7 – Estimate and report on the frequency, location and volume of sewerage overflows from municipal combined and sanitary sewers, and where feasible identify and address the probable causes (*Ongoing*).

Narrative 19: Summarize and highlight any important details and/or action plans relating to managing wet weather SSOs, CSOs and dry & wet weather SSOs during the period 2013-2014. If no changes since 2010-2012, then indicate "Same as the 2010-2012 reporting period: no changes".

For each CSO location, in a table indicated estimated volumes & number of occurrences (this will have been prepared for EC WSER reporting but is also required by the LWMP).

Richmond did not have any dry or wet weather SSOs during 2013 and 2014. There are no combined sewers in Richmond.

Attachment 7:

- a) Provide (if not already provided) GIS shape files which have the locations of the CSO outfalls for purposes of summary mapping (should already be reported under WSER).

N/A

- b) Provide GIS shape files or coordinates for the locations of wet & dry weather SSOs for each year (indicate which is dry/wet and year). Include SSO dates and estimated volume.

N/A

Action 3.3.8 – Maintain and, if necessary, expand the existing municipal sewer flow and sewer level monitoring network (*Ongoing*).

Narrative 20: Summarize and highlight any changes to the existing municipal sewer flow & sewer level monitoring network for 2013-2014 (if no changes, then indicate "Same as the 2010-2012 reporting period: no changes").

In addition to the sewer flow and level monitoring outlined for the 2010-2012 reporting period, the City has set up automated pump runtime data collection through the SCADA network.

Attachment 8:

- a) Map and GIS coordinates showing locations of active municipal sewer flow/level monitors for the reporting period 2013-2014 (indicate whether permanent or temporary)

Action 3.4.4 – In collaboration with Metro Vancouver and the Integrated Partnership for Regional Emergency Management (IPREM), develop emergency management strategies and response plans for municipal and regional wastewater collection and treatment systems (2015).

Narrative 21: Summarize any progress on the development of emergency management strategies and response plans for municipal & regional wastewater collection and treatment systems.

Note: This action is being addressed through direction by REAC to REAC LWSC and REAC WSC to undertake in 2015.

Same as the 2010-2012 reporting period: no changes.

Action 3.4.5 – Adapt infrastructure and operations to address risks and long-term needs (Ongoing).

Narrative 22: Summarize any key initiatives that support the adaptation of infrastructure & operations to address risks and long term needs (e.g. climate change, sea level rise, seismic risk, demographic growth, etc...). If no change from 2010-2012, then indicate, "Same as the 2010-2012 reporting period: no changes".

Same as the 2010-2012 reporting period: no changes.

Action 3.4.6 – Ensure liquid waste infrastructure and services are provided in accordance with the Regional Growth Strategy and coordinated with municipal Official Community Plans (Ongoing).

Attachment 9:

- a) If not already provided, provide updated GIS shape files of the municipal sanitary sewer network, including manholes, pump stations, pipe diameters for the municipal sewer system as of the end of 2014. Please indicate what changes have been made for 2013-2014.

NOTE: This information is part of the routine information provided to Metro Vancouver every two years in response to municipal obligations under the GVS&DD Act. This information will be used to update Metro Vancouver's GIS data base and to create a composite map showing alignment and discrepancies with the RGS.

Action 3.4.7 – Develop and implement integrated stormwater management plans at the watershed scale that integrate with land use to manage rainwater runoff (2014).

Narrative 23: Summarize and highlight key initiatives relating to the development and implementation of the integrated stormwater management plans for each watershed/ISMP area.

NOTE: Format and content should be similar to the reporting provided in January/February 2014 for the Interim Report: 2013 for the Integrated Liquid Waste and Resource Management Plan. See: <http://www.metrovancouver.org/services/liquid-waste/LiquidWastePublications/2014InterimReport-SSOsISMPs.pdf>

Richmond completed its ISMP, the Integrated Rainwater Resource Management Strategy (IRRMS), in advance of 2014. Due to Richmond's topography, diking, and historic agricultural land use, the City has few natural wetlands and no natural creeks or streams. However, many watercourses are recognized as Riparian Management Areas (RMAs), which are important wildlife habitats and contribute to surface water health. Richmond's drainage systems typically use enclosed, interlinked conduits and manmade watercourses to convey surface rainwater to gravity outfalls and drainage pump stations that discharge into the Fraser River. Due to the interlinked nature of the drainage systems, water can move in many directions throughout the system, making Lulu Island one big watershed. As such, the City completed one ISMP for the Lulu Island watershed.

Attachment 10:

- a) *GIS shape files showing the ISMP boundaries and their status: Development Phase= Yellow; Implementation Phase = Light Green; Completed Phase = Dark Green. Add ISMPs still to start development as outlined only).*

NOTE: The ISMPs will be summarized and mapped similar to the Interim Report 2013: <http://www.metrovancouver.org/about/publications/Publications/2014InterimReport-SSOsISMPs.pdf>

Action 3.5.8 – Biennially produce a progress report on plan implementation for distribution to the Ministry of the Environment that: (a) summarizes progress from the previous two years on plan implementation for all municipal actions, including the status of the performance measures, (b) includes summaries and budget estimates for proposed LWMP implementation programs for the subsequent two calendar years (July 1st biennially).

List budget estimates for the LWMP implementation programs and subsequent two years beyond biennial report (from 5 yr plan)

Table 9 Summary of LWMP Implementation Budgets and Forecasts

LWMP Implementation Action	Details/Notes	Budget			
		2013	2014	2015*	2016*
Sanitary Sewer Capital Program	Includes pump station replacement, gravity sewer and forcemain replacement, and sanitary rehabilitation works	4.6M ¹	6.7M ¹	7.6M ¹	5.6M ¹
Development Projects (Sub-Division Agreements)		3.8M	1.8M		

* *Subject to council approval*

¹ Includes base budget of \$4.3M plus development cost charges, which is dependent on development as well as the location of capital projects.

Action 3.5.9 – This reporting is an annual requirement. In the year of the biennial report, this action is covered off by municipal reporting on 3.4.7 & 3.3.7. In other years this addressed through the Interim Report. This municipal reporting is summarized regionally by Metro Vancouver under its Action 3.5.6.

Note: The Interim Report: 2013 was submitted to the Ministry of Environment in February 2014.

Ministerial Condition 2 – Member municipalities are strongly encouraged to business case and/or implement residential water metering programs and to consider municipal rebate programs for water efficient fixtures and appliances to reduce potable water use.

Narrative 24: *Discuss initiatives that evaluate/support water metering and rebate programs to water fixtures and appliances*

Richmond has comprehensive water meter programs for both residential and commercial properties. All industrial, commercial, and farm properties in Richmond are metered. In 2014, Richmond started implementing universal water metering for all single-family properties, with a target completion in 2018. Multi-family complexes can volunteer for water meters, with the City providing a minimum subsidy of \$60,000 per complex. As of January 1, 2015, 77% of single-family properties and 35% of multi-family properties are metered in Richmond.

To complement these water meter programs, Richmond provides metered customers with free water conservation kits, which include low flow showerheads, faucet aerators, toilet fill cycle diverters, toilet leak detection tablets, and educational water conservation tools. In addition, Richmond offers a \$100 rebate to residents for replacing old toilets with new low-flush toilets, and subsidized rain barrels to collect and store water for outdoor use. Richmond also partnered with BC Hydro to offer a \$100/200

rebate for high-efficiency clothes washer replacements. As of January 1, 2015, 4,848 toilet rebates, 966 rain barrels, and 205 clothes washer rebates have been issued to Richmond residents.

Ministerial Condition 3 – Metro Vancouver, in partnership with member municipalities, is encouraged to pursue a region-wide water conservation program targeting the industrial, commercial, institutional and agricultural sectors as part of its new Drinking Water Management Plan. Remaining municipalities in the region that have not implemented metering for these sectors are encouraged to do so.

Narrative 25: Summarize whether any new municipal water metering policies or programs were introduced in 2013-2014 that address this action. If no changes, then indicate, "Same as the 2010-2012 reporting period: no changes".

Same as the 2010-2012 reporting period: no changes.

Ministerial Condition 7 – Member municipalities will, with MV planning and coordination, and to the satisfaction of the Regional Manager, develop a coordinated program to monitor stormwater and assess and report the implementation and effectiveness of Integrated Storm Water Management Plans (ISMPs). The program will use a weight-of-evidence performance measurement approach and will report out in the Biennial Report. The Regional Manager may extend the deadline for completion of ISMP by municipalities from 2014 to 2016 if satisfied that the assessment program could result in improvement of ISMP and protect stream health.

Narrative 26: Quote relevant OCP sections addressing stormwater, stream health and their consideration of ISMPs.

Given the ISMP deadline requirement, please indicate in as a list any ISMPs not developed by the end of 2014.

A draft Monitoring and Adaptive Management Framework (MAMF) for ISMPs was developed in August 2014, with input from the Stormwater Interagency Liaison Group (SILG) and Environmental Monitoring Committee. The MAMF classifies all watercourses in Richmond as lower gradient, and recommends monitoring of various parameters twice per year in lower gradient systems.

Attachment 11:

a) If initiated, results per watershed (as per ISMP Adaptive Management Framework)

Not available at this time

b) If undertaken, a map plus GIS shape files/coordinates showing location of monitoring

Not available at this time

Ministerial Condition 9 – The ILWRMP has a goal of protecting public health and the environment. In keeping with this goal and to ensure alignment with other national, provincial and regional initiatives, Metro Vancouver and member municipalities are encouraged to: (a) Have a local land use planning consider the direction provided by the ISMPs, (b) Consider how the degree, type and location of development within a drainage can affect the long-term health of the watershed, (c) Consider how to protect the stream, including the riparian areas that exert an influence on the stream, from long-term cumulative impacts and (d) Use scenarios and forecasting to systematically consider environmental consequences/benefits of different land use approaches prior to build-out (for example, Alternative Future type approaches).

Narrative 27: Please describe any changes to how you have used proactive planning processes as listed in Ministerial Condition 9 for 2013-2014 and provide examples. If there are no changes since 2010-2012, then indicate: "Same as the 2010-2012 reporting period: no changes".

Same as the 2010-2012 reporting period: no changes.

Attachment 12:

- a) *Map showing any 2013-2014 changes to protected riparian areas & possible stream classifications. If no changes, then this figure is not required.*

No changes.

Municipal Progress Summary Table

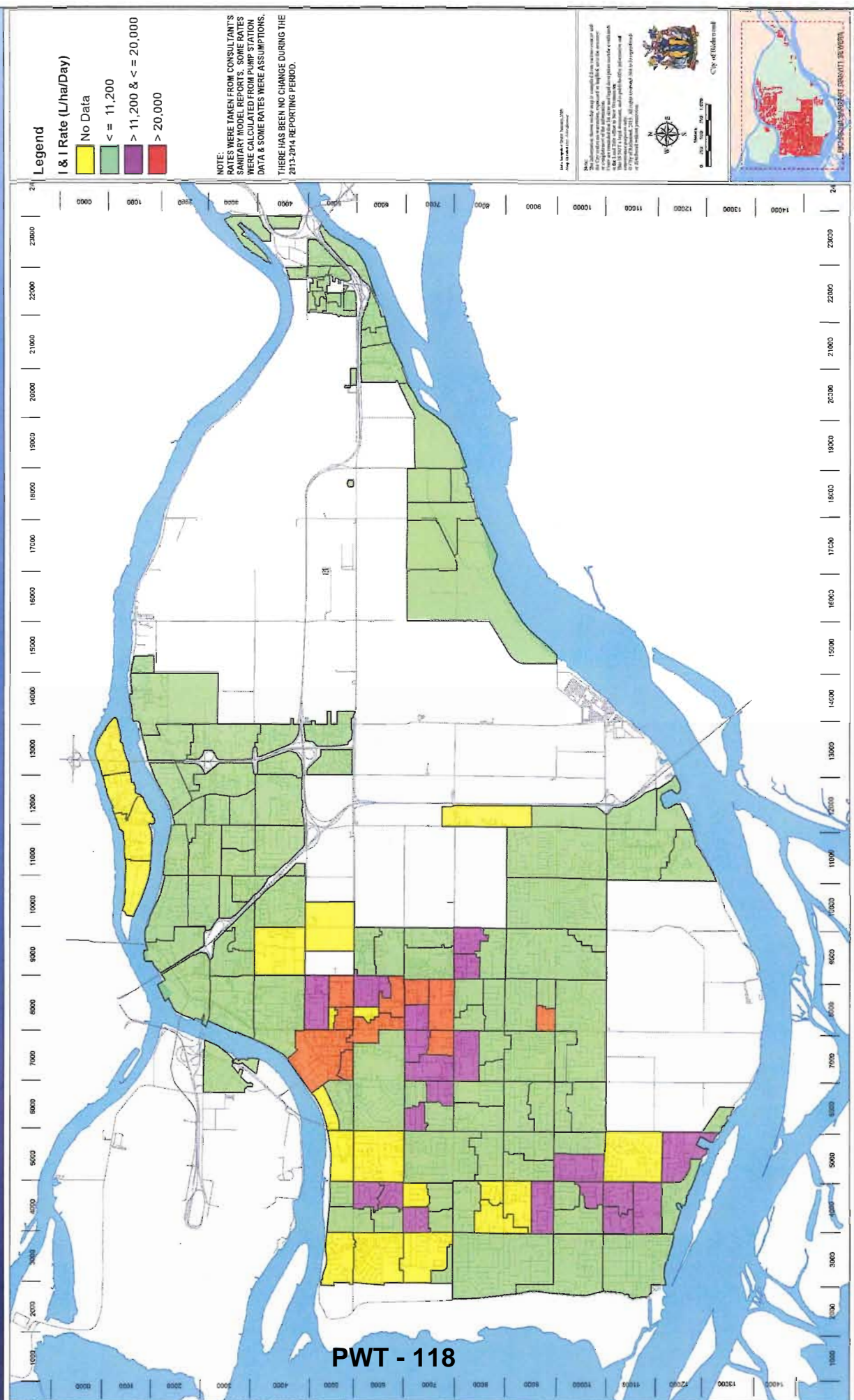
The summary table is the same format at pervious Biennial Report. The columns (Dec 2012 + Additions/Changes) should add to equal the Dec 2014 Total.

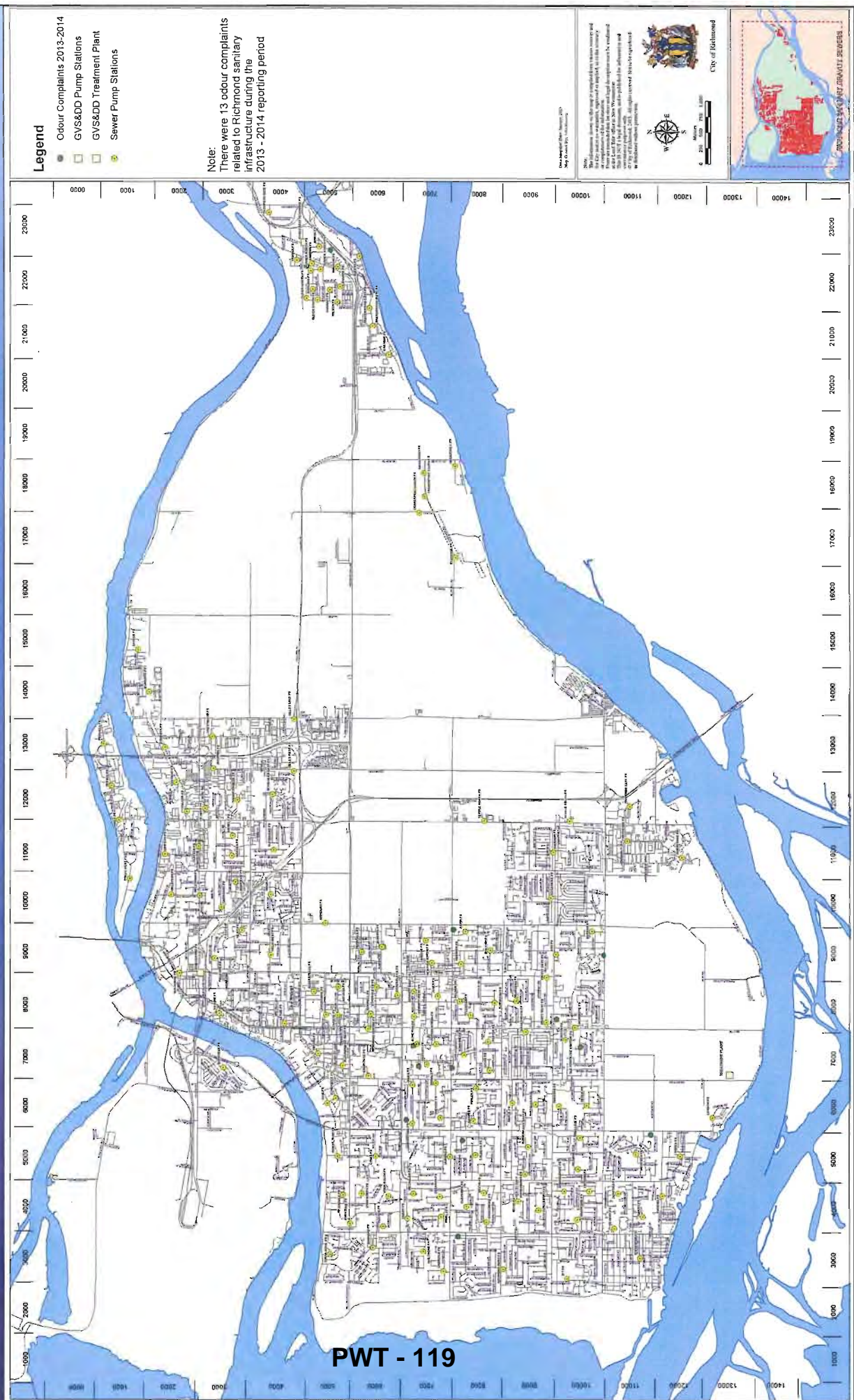
Table 10 Summary of Municipal Progress 2013-2014

Description	Unit	Total as of Dec 31 st , 2012	Additions & Changes	Total as of Dec 31 st , 2014
1. Municipal Sewer System Inventory				
a. Sanitary Gravity Sewers	m	467,324	-2,868	464,456
b. Sanitary Services (Connections)	ea.	31,591	-71	31,520
c. Sanitary Force mains	m	104,553	-3,543	101,010
2. Combined Sewer System Inventory				
a. Total Combined Sewers	m	0	0	0
b. Combined Services (Connections)	ea.	0	0	0
c. Combined Sewers Separated	m	0	0	0
d. Percentage of total system separated	%	0	0	0
3. Sanitary Sewer System Evaluation Program				
a. Sanitary Sewers Video Inspected	m	417,300	0	417,300
b. Percentage of Entire Municipal Sewer System Dye & Smoke Tested	%	0.7%	0	0.7%
c. Percentage of Entire Municipal Sewer System Video Inspected	%	89.7%	0	89.7%
d. Percentage of Entire Municipal Sewer System Structurally Rated	%	89.7%	0	89.7%
4. Sewer System Rehabilitation				
a. Total Length of Sewers Rehabilitated	m	2,584	0	2,584
b. Total Length of Sewers Replaced/Capacity Upgraded	m	10,390	950	11,340
c. Total Number of Service Laterals Rehabilitated	ea.	32	8	40
d. Number of Structurally Repaired Manholes/Cleanouts	ea.	2331	448	2,779
e. Number of Cross-Connections Corrected	ea.	7	0	7
5. Sanitary Sewer Overflows				
a. Total Number of Reported Dry Weather SSOs	ea.	0	0	0

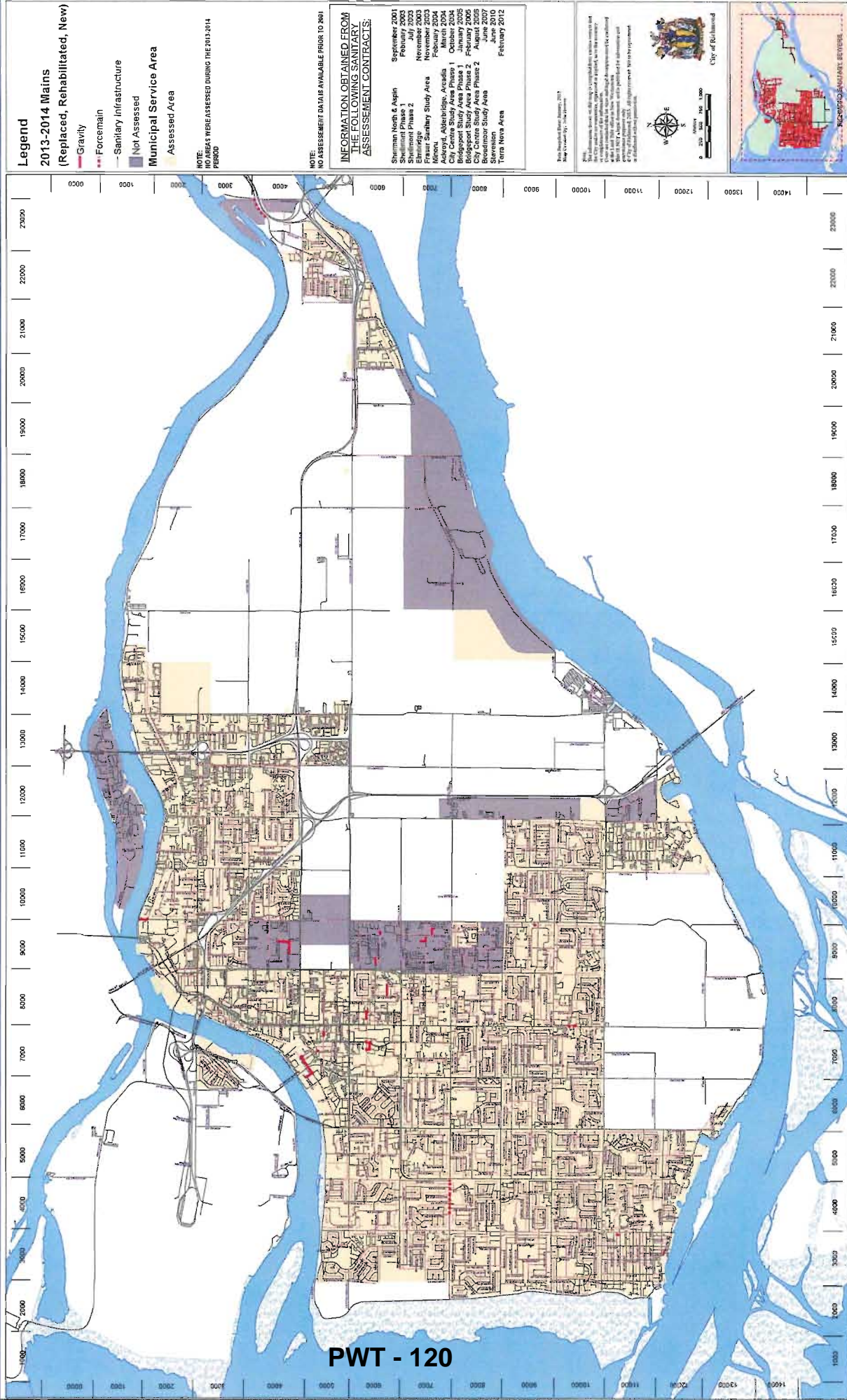
Description	Unit	Total as of Dec 31 st , 2012	Additions & Changes	Total as of Dec 31 st , 2014
b. Total Number of Reported Wet Weather SSOs	ea.	0	0	0
c. Number of Breakdowns from Failures	ea.	117	9	126
6. Greenhouse Gas Emissions				
a. CO ₂ emission reduction from sewer system	kg CO ₂	N/A	N/A	N/A
7. Summary of Costs		2013	2014	Total
a. Sanitary Sewer Condition Evaluation Program		0.75M	0.41M	1.16M
b. Combined Sewer Separation Program		0	0	0
c. Sewer System Rehabilitation Program		0.37M	0	0.37M
d. CO ₂ Reduction Program		0	0	0
e. ISMP Implementation		0	0	0
f. Total Cost for the Biennial Period		1.12M	0.41M	1.53M

10557638





Richmond City of Richmond Sanitary Sewer Assessment, Replacement & Rehabilitation January 2015



PWT - 120

Legend

2013-2014 Mains
(Replaced, Rehabilitated, New)

Gravily

Forcemain

Sanitary Infrastructure

Not Assessed

Municipal Service Area

Assessed Area

NOTE:
NO AREAS WERE ASSESSED DURING THE 2013-2014 PERIOD

NOTE:
NO ASSESSMENT DATA IS AVAILABLE PRIOR TO 2001

INFORMATION OBTAINED FROM THE FOLLOWING SANITARY ASSESMENT CONTRACTS:

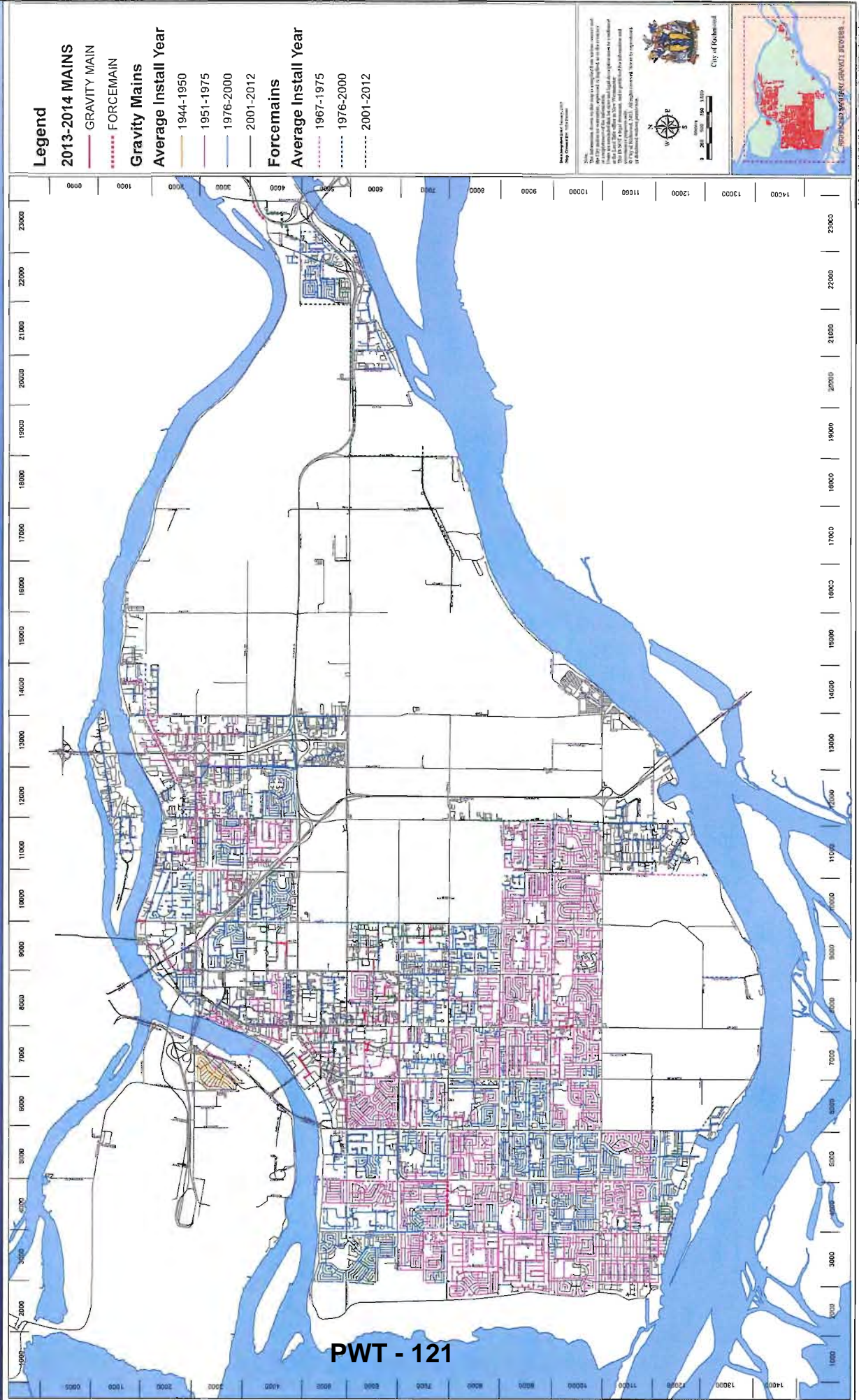
Sherman North & Aspin	September 2001
Shelburne Phase 1	February 2002
Shelburne Phase 2	February 2002
Elmer Ridge	November 2003
Fraser Sanitary Study Area	November 2003
Adairville, Alderbridge, Arcadia	February 2004
City Centre Study Area Phase 1	March 2004
City Centre Study Area Phase 2	October 2004
City Centre Study Area Phase 3	January 2005
City Centre Study Area Phase 4	February 2005
City Centre Study Area Phase 5	August 2005
Broadmead Study Area	June 2007
Stevenson	June 2010
Terra Nova Area	February 2012

City of Richmond, 2014
Map by: [unintelligible]

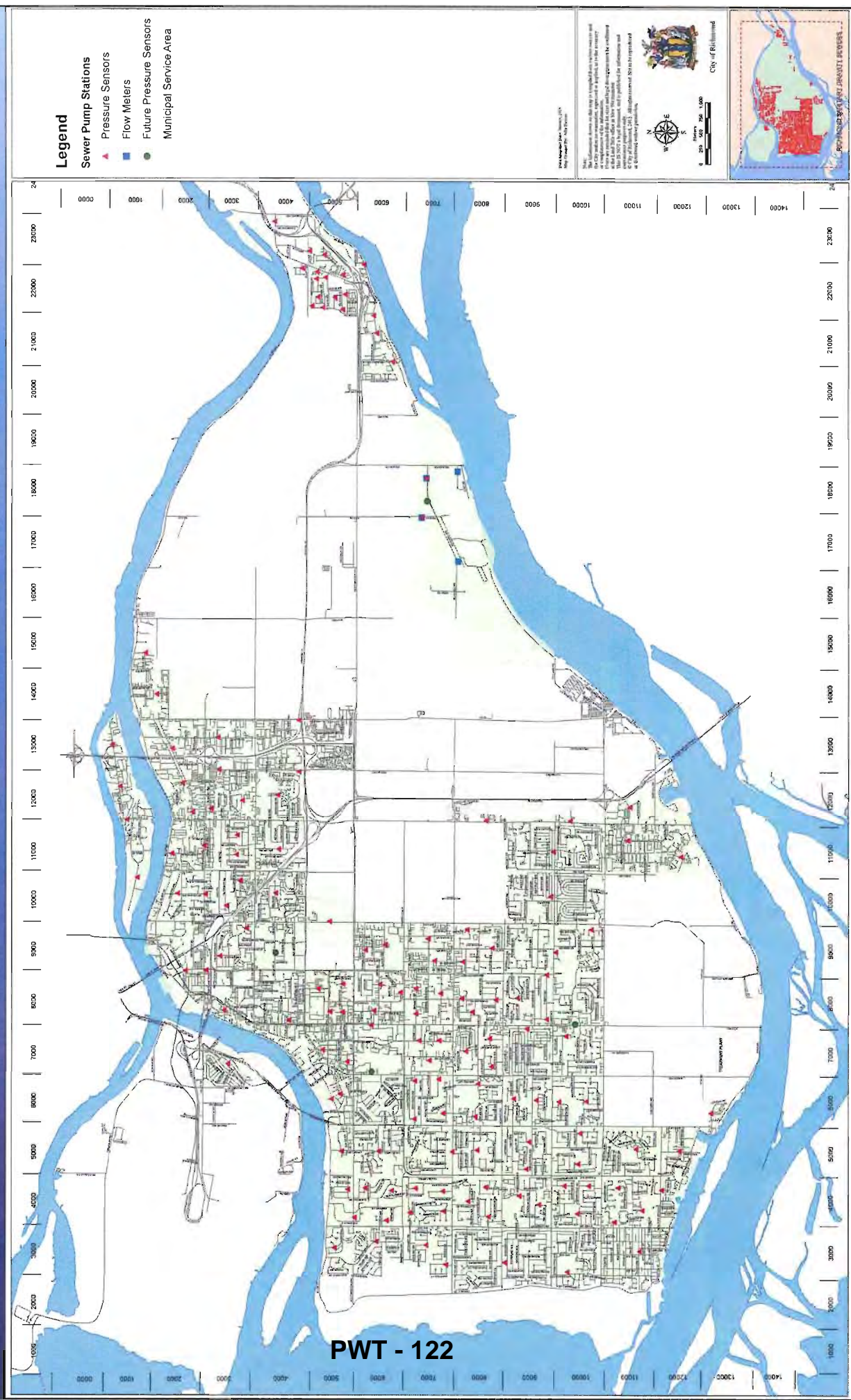
NOTE:
The information shown on this map is for informational purposes only and is not intended to be used for legal or engineering purposes. The City of Richmond is not responsible for any errors or omissions on this map. The City of Richmond is not responsible for any damages or liabilities arising from the use of this map. The City of Richmond is not responsible for any damages or liabilities arising from the use of this map.



City of Richmond Sanitary System Age - January 2015



City of Richmond Active Sewer Flow & Level Monitors - January 2015



PWT - 122

Legend

Sewer Pump Stations

Pressure Sensors

Flow Meters

Future Pressure Sensors

Municipal Service Area

City of Richmond
Richmond, Virginia
2015

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City of Richmond



Richmond Integrated Stormwater Management Plan (ISMP) Status Map - January 2015



Legend



Implementation Phase

Note:

Richmond is developing one ISMP for the entire City that will meet the Liquid Waste Management Plan (LWMP) requirements.

City of Richmond
Engineering Department
January 2015

This map was prepared by the City of Richmond Engineering Department. It is not intended to be used for any other purpose. The City of Richmond is not responsible for any errors or omissions in this map. The City of Richmond is not responsible for any damages or losses resulting from the use of this map. The City of Richmond is not responsible for any claims or liabilities resulting from the use of this map. The City of Richmond is not responsible for any claims or liabilities resulting from the use of this map.



City of Richmond



City of Richmond



City of Richmond

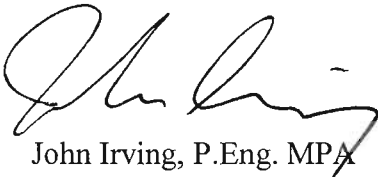
Report to Committee

To: Public Works and Transportation Committee
From: John Irving, P.Eng. MPA
Director, Engineering
Date: March 23, 2015
File: 10-6600-10-01/2015-
Vol 01
Re: River Green District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9239

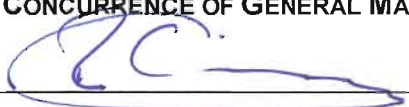

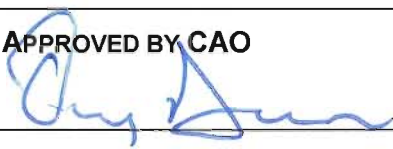
Staff Recommendation

That:

- a) the name for the River Green District Energy Utility be re-named to the Oval Village District Energy Utility; and
- b) the River Green District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9239 be introduced and given first, second and third readings.


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

Att. 2

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

Staff Report

Origin

In 2014, Council adopted the River Green District Energy Utility Bylaw No. 9134 establishing governing regulations for Phase 1 development of the River Green District Energy Utility (RGDEU) Service Area.

The purpose of this report is to recommend an amended RGDEU rate structure and rate for 2015, and to change the name of the River Green District Energy Utility to Oval Village District Energy Utility.

This report supports Council's Term Goal #8 Sustainability:

8.1. Continued implementation and significant progress towards achieving the City's Sustainability Framework, and associated targets.

8.4. Review opportunities for increasing sustainable development requirements for all new developments, including consideration of increasing requirements for sustainable roof treatments (e.g. rooftop gardens, solar panels, etc.) and energy security (e.g. use of local renewable energy sources, use of district energy systems, etc.).

Background

In 2013, at Council's direction, the Lulu Island Energy Company (LIEC) was established as a wholly-owned corporation of the City for the purposes of managing district energy utilities on the City's behalf. Further to that, a District Energy Utilities Agreement between the City and the LIEC was executed, assigning the LIEC the function of providing district energy services on behalf of the City.

In 2014, Council adopted the River Green District Energy Utility Bylaw No. 9134 (the Bylaw) establishing the regulatory framework for the RGDEU service area. The business which encompasses the RGDEU Service Area and the associated operations, assets and liabilities will be administered through the LIEC. The RGDEU business was established based on the concept that all capital and operating costs would be recovered through revenues from user fees, ensuring that the business would be cost neutral over time. In October 2014, in order to meet these requirements as well as the required service levels defined by the Bylaw, the LIEC and Corix Utilities entered into a concession agreement whereby the LIEC would own the RGDEU and its infrastructure, and Corix would design, construct, finance, operate and maintain the RGDEU, subject to the City as the sole shareholder of the LIEC setting rates to customers.

Analysis

Change of Name to Oval Village DEU

At the time the project was initiated, staff used the River Green DEU name after the largest development in the area – the River Green by Aspac Developments. Recently however, Aspac notified staff that their name River Green has been trademarked and that it should not be used. In

order to conform with the trademark and to promote the City's Oval Village where the system is located, it is recommended that the name be changed from River Green District Energy Utility to Oval Village District Energy Utility. This name change has been reviewed and supported by the LIEC Board of Directors, and is consistent with mapping utility naming to official OCP neighbourhood names. Subject to Council's approval, all future references to the River Green District Energy Utility will now be as the Oval Village District Energy Utility.

Proposed Rate Structure

Schedule D of the Bylaw defines the charges that constitute the rate for the service. These charges include a capacity charge (tied to the building gross floor area), and a volumetric charge (tied to the energy usage of the customer).

In order to provide certainty to developers and their customers with respect to the cost of energy, as well as assurance to the LIEC that the revenue collected would support the utility business case, the rate was set with 100% weight on the charge tied to the floor area of the building. The 2014 rate was set at \$0.07 per square foot per month of the gross floor area, with the volumetric charge left at \$0.00 per kilowatt hour as adopted by Council.

The City has received energy modeling reports summarizing the expected space heating and domestic hot water heating loads for the first few developments in the area. Although the energy loads vary between the developments, the energy modeling reports have provided an increased understanding of the expected energy loads and consumption. The City has also performed an analysis of different in-building space heating technologies (Water Source Heat Pumps, Hybrid Heat Pumps, Hydronic Perimeter Heating, 4-pipe Fan Coil), comparing how they use electricity to supplement some of the space heating loads.

The industry standard practice is to have a rate structure that is comprised of separate capacity and energy charges aiming to recover fixed (capital and operating) costs and variable (commodity) costs. These charges are based on the building gross floor area and energy usage. With the ability to forecast energy use more accurately, the City is not as reliant on the singular flat rate for certainty. The weighting can be shifted towards the objectives of equity and conservation, from which all customers will benefit.

The OVDEU business was established on the basis that all capital and operating costs would ultimately be recovered through revenues from user fees, ensuring that the business would be financially self-sustaining over the long term. The intent of amending the rate structure is to guarantee the necessary revenue to recover the capital and operating costs, while encouraging the building's high energy efficiency and energy conservation. In addition, the rate structure is designed to provide end users with annual energy costs that are competitive to conventional system energy costs based on the same level of service, as directed by Council.

Other factors that were considered when developing the 2015 OVDEU rate options include:

- **Competitive Rate:** The rate should provide end users with annual energy costs that are less than or equal to conventional system energy costs, based on the same level of service.

- **Forecasted Utility Costs:** Utility cost (electricity and natural gas) increases are outside the City's control. Nonetheless, these commodity costs directly impact the operation cost of the OVDEU. BC Hydro's 10 year plan projects an electricity rate increase of 6% in 2015. Natural gas costs are expected to increase 2.5% in 2015, based on National Energy Board estimates.
- **Consumer and Municipal Price Indexes:** Other factors to consider include various price indexes. For example, the consumer price index (CPI) is estimated by the Finance Department at 1.0% based on the average of recent BC forecasts, while municipal price index (MPI) is estimated at 2.76%.

Two options of the rate structure are presented for consideration as follows:

1. Leave the rate structure as is.
2. Reduce the Capacity (fixed) Charge and add a Volumetric (variable) Charge.

Option 1 – Leave the Rate Structure as is (Not Recommended)

This rate would reflect an approximate 4% increase over the 2014 rate and be comprised of:

1. Capacity Charge - monthly charge of \$0.0728 per square foot of the building gross floor area; and
2. Volumetric Charge - charge of \$0.00 per megawatt hour of energy consumed by the building.

The rate structure under this option would not encourage developers to build energy efficient buildings over time, which could result in an increased capital cost to the LIEC in order to build energy generation assets to meet the peak energy demand of the "inefficient" buildings. The capacity charge would have to be increased to recover the capital costs, and consequently, over time, the energy cost to the customers may increase above the energy cost for the conventional system.

In addition, this rate structure would not encourage the customers to conserve energy, which could result in higher costs in the electricity and gas required to generate the energy delivered to customers. This would have a negative impact on the variable operating costs of the LIEC.

Option 2 – Reduce the Capacity (Fixed) Charge and add a Volumetric (Variable) Charge (Recommended)

This rate would reflect an approximate 4% increase over the 2014 rate and be comprised of:

1. Capacity Charge - a monthly charge of \$0.0458 per square foot of the building gross floor area; and

2. Volumetric Charge - a charge of \$28.20 per megawatt hour of energy consumed by the building.

The rate structure under this option follows the industry standard practice of having separate capacity and energy charges based on the building energy capacity and energy usage. The Capacity Charge will aim to recover the capital investment and fixed operating costs, while the Volumetric Charge will aim to recover the cost of consumed electricity and gas required to generate the energy delivered to the customer.

The charge tied to energy use will encourage the customers to conserve energy. At the same time, this rate structure will guarantee the revenue necessary to recover the LIEC's capital investment and operating costs.

The recommended rate structure is based on the buildings' energy use estimates from the energy modeling reports received for the first few developments in the area and estimates for the typical buildings in the region. As the LIEC starts metering the district energy use from individual connected buildings, more accurate data on the actual energy use will become available. Going forward, this information will be used to help calculate annual rate adjustments that continue to encourage energy conservation and efficiency.

It is estimated that the resulting blended 2015 rate to customers will be \$94 per MWh or \$0.066 per square foot per month. This is in line with Council's objective to provide competitive annual energy costs for the LIEC customers. The conventional energy costs for space heating and hot water heating (called the "business as usual" (BAU) costs that represent electrical baseboard and natural gas heating systems) are estimated to be around \$0.068 per ft²/month (\$97 per MWh).

Stakeholder Consultation

City staff have been in contact with developers and landowners throughout the due diligence and business and infrastructure agreements process with Corix. Staff also provide regular updates on the OVDEU and ADEU through the Urban Development Institute (UDI) Liaison Committee. The 2015 OVDEU rate structure was presented by staff at the March UDI Liaison Committee meeting. In addition, a memorandum (Attachment 2) clarifying the proposed amended rate structure and 2015 rate has been distributed to this stakeholder group for review and comment. Comments received are summarized in the table below. Staff are confident that stakeholder concerns have been addressed with the proposed rate structure and 2015 rate as proposed in the bylaw amendment.

Table 1: Summary of Stakeholder Input

UDI Comment/Question	Staff Response
On-going, will the rates be continuously compared to the costs of a conventional system?	Yes. Staff will continuously monitor energy costs and review the rate to ensure rate fairness for the customers and cost recovery for the City.
Will the OVDEU rate structure be the same as the rate for the Alexandra District Energy Utility (ADEU)?	No. ADEU and OVDEU are two different systems. ADEU provides space heating, cooling and domestic hot water heating through an ambient temperature system, while OVDEU provides space heating and domestic hot water heating through a high temperature system. Also, the energy sources for these two systems are different. Due these reasons, the fixed and variable costs break down are different between these two systems and therefore the rate structures will be independent. However, the annual energy costs to the customers of both systems will be competitive to conventional system energy costs based on the same level of service.

Financial Impact

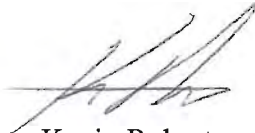
None at this time.

Conclusion

Council adopted an objective to provide end users with annual energy costs that are competitive to conventional system energy costs based on the same level of service. It is anticipated that the proposed revised utility rate structure will achieve this objective. As new developments tie in to the OVDEU system, staff will continuously monitor energy costs and review the rate structures with the objective that the average annual energy costs for end users are competitive with the conventional system energy costs for the same level of service.



Alen Postolka, P.Eng., CP
District Energy Manager
(604-276-4283)



Kevin Roberts
Project Engineer, District Energy
(604-204-8512)

AP:kr

Att. 1: River Green District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9239
2: City of Richmond - Memo to UDI - Oval Village District Energy Utility Rate Consultation



City of
Richmond

Bylaw 9239

River Green District Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9239

The Council of the City of Richmond enacts as follows:

1. The **River Green District Energy Utility Bylaw No. 9134**, as amended, is further amended:
 - (a) by deleting the title and replacing it with the following:

“OVAL VILLAGE DISTRICT ENERGY UTILITY BYLAW NO. 9134”
 - (b) by deleting Section 1 and replacing it with the following:

“1. Name of Bylaw. This Bylaw shall be known and cited for all purposes as “Oval Village District Energy Utility Bylaw No. 9134”.”
 - (c) by deleting Section 17 and replacing it with the following:

“17. This Bylaw is cited as “Oval Village District Energy Bylaw No. 9134”.”
 - (d) at Schedule B, by deleting Section 1.1(d) and replacing it with the following:

“(d) “Bylaw” means the Oval Village District Energy Utility Bylaw No. 9134 to which these General Terms and Conditions are attached and form part of;”
 - (e) by deleting Schedule D in its entirety and replacing it with Schedule A attached to and forming part of this Bylaw.
2. This Bylaw is cited as **"River Green Energy Utility Bylaw No. 9134, Amendment Bylaw No. 9239"**.

FIRST READING

SECOND READING

THIRD READING

ADOPTED

CITY OF RICHMOND
APPROVED for content by originating dept.
APPROVED for legality by Solicitor

MAYOR

CORPORATE OFFICER

Schedule A to Amendment Bylaw No. 9239

SCHEDULE D

Rates and Charges

PART 1 - RATES FOR SERVICES

The following charges, as amended from time to time, will constitute the Rates for Services:

- (a) capacity charge - a monthly charge of \$0.0458 per square foot of gross floor area;
and
- (b) volumetric charge – a monthly charge of \$28.20 per megawatt hour of Energy
returned from the Heat Exchanger and Meter Set at the Designated Property.

PART 2 - EXCESS DEMAND FEE

Excess demand fee of \$0.14 for each watt per square foot of the aggregate of the estimated peak heat energy demand referred to in section 19.1(e) (i), (ii), and (iii) that exceeds 6 watts per square foot.



City of Richmond

Memorandum Engineering and Public Works Sustainability and District Energy

To: Urban Development Institute
From: Alen Postolka, P.Eng., CEM, CP
Senior Manager, Sustainability and District Energy
Kevin Roberts
Project Engineer, District Energy
Date: March 26, 2015
File: 10-6600-10-01/2015-Vol 01
Re: **Oval Village District Energy Utility Rate Consultation**

In 2014, Council adopted the River Green District Energy Utility Bylaw No. 9134. The River Green District Energy Utility is now referred to as the Oval Village District Energy Utility (OVDEU), with the name change to be presented for endorsement by Council in April, 2015. Schedule D of Bylaw No. 9134 defines the charges that constitute the rate for service. These charges include a capacity charge (tied to the building gross floor area), and a volumetric charge (tied to the energy usage of the customer).

In order to provide certainty to developers and their customers with respect to the cost of energy, the initial rate was set with 100% weight on the charge tied to the floor area of the building. To achieve this, the rate was set at \$0.07 per month per square foot of the gross floor area at the time of the bylaw adoption, with the volumetric charge set at \$0.00 per megawatt hour of energy used. This rate was based on a reference building with an annual energy demand of 100 kWh per m² of floor area and an energy cost of 90 \$/MWh.

Since then, the City has received energy modeling reports summarizing the expected space heating and domestic hot water heating loads for the first few developments in the area. Although the energy loads vary between the developments, the energy modeling reports have provided a better understanding of the expected energy loads and consumption. The City has also performed an analysis of different in-building space heating technologies (Water Source Heat Pumps, Hybrid Heat Pumps, Hydronic Perimeter Heating, 4-pipe Fan Coil) comparing how they use electricity to supplement some of the space heating loads.

Based on the above information, we are not as reliant on the singular flat rate for certainty, and we can shift the weighting towards the objectives of equity and conservation from which all customers will benefit. The new rate structure will have a reduced Capacity Charge (fixed portion) and an increased Volumetric Charge (variable portion):

1. Capacity Charge – a monthly charge of \$0.0458 per square foot of the building gross floor area; and

2. Volumetric Charge – a charge of \$28.20 per megawatt hour of energy consumed by the building.

The proposed rate structure follows the industry standard practice of having separate capacity and energy charges based on the contract capacity and metered usage. The Capacity Charge will aim to recover the capital cost of the infrastructure, fixed operating and maintenance costs, metering, and invoicing, while the Volumetric Charge will aim to recover the cost of consumed natural gas and electricity required to generate the energy delivered to a customer.

We estimate that the resulting blended 2015 rate to customers will be \$94/MWh or \$0.066 per square foot per month. This is in line with City of Richmond Council's objective to keep the annual energy costs for OVDEU customers competitive with conventional energy costs, based on the same level of service. The conventional energy costs (called the "business as usual" (BAU) costs that represent electrical baseboard and natural gas heating systems) for space heating and hot water heating are estimated to be around \$0.068 per ft²/month (\$97 per MWh).

Staff are planning to bring forward the proposed rate structure for Council's consideration at April's Public Works and Transportation Committee, so we are seeking feedback from UDI members prior to April 7, 2015.

For further information please contact Kevin Roberts at kroberts@richmond.ca or 604-204-8512.



Alen Postolka, P.Eng., CEM, CP
Acting Senior Manager, Sustainability and District Energy
604-276-4283



Kevin Roberts
Project Engineer, District Energy
604-204-8512



City of Richmond

Report to Committee

To: Public Works and Transportation Committee
From: Robert Gonzalez, General Manager,
Engineering & Public Works and Chief Executive
Officer, Lulu Island Energy Company
Jerry Chong
Director, Finance and Chief Financial Officer,
Lulu Island Energy Company
Date: April 1, 2015
File: 10-6600-10-03/2015-
Vol 01
Re: Oval Village District Energy Utility Update

Staff Recommendation

That the report titled, "Oval Village District Energy Utility Update", dated April 1, 2015, from the Chief Executive Officer and Chief Financial Officer, Lulu Island Energy Company be received for information.

Robert Gonzalez, General Manager,
Engineering & Public Works and
Chief Executive Officer, Lulu Island Energy
Company

Jerry Chong
Director, Finance and Chief Financial Officer,
Lulu Island Energy Company

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

Report

DATE: April 1, 2015

TO: Robert Gonzalez
Chief Executive Officer, Lulu Island Energy Company

Jerry Chong
Chief Financial Officer, Lulu Island Energy Company

FROM: Alen Postolka, Acting Senior Manager, Sustainability and District Energy

Re: **Oval Village District Energy Utility Update**

Origin

Staff have received the five-year Capital Plan and updated the business case pro-forma from Corix for the year 2015, both of which have been approved by the Corporation's Board of Directors. The Lulu Island Energy Company (LIEC) is providing the project update report to Council for information.

Background

In 2013, at Council's direction, the LIEC was established as a wholly-owned corporation of the City for the purposes of managing district energy utilities on the City's behalf. Further to that, a District Energy Utilities Agreement between the City and the LIEC was executed, assigning the LIEC the function of providing district energy services on behalf of the City.

In 2014, Council adopted the River Green District Energy Utility Bylaw No. 9134 (the Bylaw) establishing the regulatory framework for the River Green District Energy Utility service area. Subject to Council's approval, the River Green District Energy Utility will be referred to as the Oval Village District Energy Utility (OVDEU) in the future. The business, which encompasses the OVDEU service area and the associated operations, assets and liabilities, will be administered through the LIEC. The OVDEU business was established on the concept that all capital and operating costs would be recovered through revenues from user fees, ensuring that the OVDEU business would be cost neutral over time. In October 2014, the LIEC and Corix Utilities entered into a concession agreement whereby the LIEC would own the OVDEU and its infrastructure, and Corix would design, construct, finance, operate and maintain the OVDEU, subject to the City as the sole shareholder of the LIEC setting rates to customers. As a part of the

agreement between LIEC and Corix, and for the reason that the LIEC was a start-up company with no current assets, City has provided a guarantee of the financial covenants of LIEC under the Concession Agreement, including any obligations arising from a termination of the agreement by LIEC, in the amount of up to \$18.2M.

Analysis

The OVDEU is the first district energy project developed through the LIEC. Staff are working with Corix to provide service in April 2015 to the first two developments: Carrera by Polygon and Riva by Onni, with Cadence by Cressey scheduled immediately afterwards. The following table represents anticipated development connection timelines for the next two years:

Table 1: Development Timing in OVDEU Service Area

	Anticipated Occupancy
Onni (Riva)	April 2015
Polygon (Carrera)	April 2015
Cressey (Cadence)	December 2015
Intracorp (River Park Place)	2016
Amacon (Tempo)	2016
Aspac (Parcel 9 & 12)	2016/2017

The Agreement between the LIEC and Corix stipulates that Corix submit a five year capital plan (Capital Plan) to the LIEC on an annual basis. The Capital Plan represents a five-year capital investment plan and budget, and includes the infrastructure work and operating costs necessary to provide service to customers. The plan is based on the thirty-year outlook of energy loads and capital requirements for the OVDEU, and is updated on a regular basis to maintain the best possible projections. These projections are based on prospective results using assumptions about future conditions and courses of action. The main purpose of the Capital Plan is so that the LIEC can confirm the expected long term rate for customers and prepare annual rate review recommendations to Council.

The highlights of the 2015 five-year Capital Plan and 30-year business case pro-forma are:

- the customer base (serviced floor area) at the full build out is now estimated at 494,000 m² vs. 273,000 in the 2014 pro-forma,
- the total capital cost at the full build out is now estimated at \$32M vs. \$19M in the 2014 pro-forma,
- the 2015 energy rate paid by LIEC is now estimated at \$85.43/MWh vs. \$85.80/MWh in the 2014 pro-forma,
- the percentage of energy delivered from renewable sources at the full build out is now estimated at 67% vs. 85% in the 2014 pro-forma.

The difference in the estimated total capital cost at the full build out is due to the fact that the serviced floor area has increased since the original pro-forma. For the same reason the percentage of energy delivered from renewable sources is now 67% since there is only a limited

amount of energy from sewer heat in the area. These numbers are high level estimates and LIEC will work with Corix to verify and update them on an annual basis.

In accordance with the concession agreement, Corix will procure, finance and construct the infrastructure with respect to the project. However, in order to maintain control over costs, the LIEC will approve all infrastructure capital and operating expenditures before each phase of construction. The concession agreement also includes provisions for third party review to ensure the efficient and optimal deployment of capital.

In order to maintain ownership of the OVDEU and preserve Council's ability to set rates, the agreement with Corix was structured as a concession agreement. Corix will design, construct, finance, operate and maintain the OVDEU. LIEC will report the assets and associated liabilities to Corix in the LIEC financial statements. Since the City's financial statements are prepared on a consolidated basis (by combining the financial statements of separate legal entities controlled by a parent company into one set of financial statements), the LIEC liability to Corix will be included when calculating the City's consolidated approval-free liability zone (AFLZ). The AFLZ is an annual calculation which determines the amount of debt that can be obtained without requiring electorate approval.

Financial Impact

None.

Conclusion

The five-year Capital Plan for 2015 (2015-2019) estimates the total project capital costs in this period to be \$9.5M, and at full build out after 30 years to be \$32M. The 2015 energy rate paid by the LIEC is \$85.43/MWh.



Alen Postolka, P.Eng., CP, CEM
Acting Senior Manager, Sustainability and District Energy
(604-276-4283)

AP:ap