

CARIP/Carbon Neutral Progress Report Reporting Year 2012

Supporting Documentation

GHG Reduction Project: Option 1 Reporting Template

LOCAL GOVERNMENT
City of Richmond 6911 No. 3 Road Richmond, BC V6Y 2C1
PROJECT DESIGNATE
Levi Higgs, Energy Manager, Sustainability Unit Direct 604-244-1239; Cell 778-835-0716 lhiggs@richmond.ca
PROJECT INFORMATION
City of Richmond Project 1C: Household Organic Waste The City of Richmond operates a curbside organics collection program to divert organic waste from the Metro Vancouver's landfills and waste to energy facility. Attached is the carbon credit rationale as provided by the Metro Vancouver report to the Regional Engineers Advisor Committee Climate Protection Subcommittee. From 2007 until 2012, the City of Richmond has diverted a total of 9,926 tonnes of eligible organics above the 2006 baseline. This diversion is equivalent to 3,157 tonnes CO ₂ e.
PROJECT TRANSPARENCY
As a GCC-supported project utilizing the attached Metro Vancouver rationale, this project is understood to be: <ul style="list-style-type: none">• outside of the corporate emissions boundary;• with GHG emissions counted only once;• with the City of Richmond having ownership of the specified GHG reductions;• with the emissions verifiable as having occurred following the release of the Climate Action Charter to the end of the 2012 reporting year;• part of the City's Carbon Neutrality report that indicates the City is making progress towards its carbon neutral commitment.

To: Regional Engineers Advisory Committee – Climate Protection Subcommittee

From: Conor Reynolds, Senior Project Engineer
 Planning, Policy & Environment Department

Date: April 15, 2013 Meeting Date: April 18, 2013

Subject: **2012 Green Communities Committee Carbon Credits for Organics Diversion**

RECOMMENDATION

That the Regional Engineers Advisory Committee – Climate Protection Subcommittee receive for information the report titled “2012 Green Communities Committee Carbon Credits for Organics Diversion”, and that municipalities that undertook organic diversion activities consider using the resulting carbon credits towards carbon neutrality for the 2012 (or subsequent) reporting year.

PURPOSE

This report provides the final amount of Green Community Committee (GCC) carbon credits, by municipality, for additional organics diverted from single family residences following release of the Climate Action Charter (2007) to the end of the 2012 reporting year.

BACKGROUND

Municipal curbside organics collection programs have been successful in diverting increasing quantities of organic waste (yard trimmings and food scraps) from landfill. Organics diversion activities have environmental benefits, including avoided emissions of landfill gas (which contains methane, a potent greenhouse gas). The Provincial Green Communities Committee (GCC) has developed a calculator to allow municipalities to calculate GHG reductions attributable to organics diversion. The resulting carbon credits can be used towards Municipal Carbon Neutrality goals, under the Climate Action Charter framework.

REAC-CPS has directed staff to calculate GCC carbon credits from organics diversion activities, using the GCC Organics Diversion Profile/Calculator [1] and the “Regional Approach to Determining Carbon Credits from Organics Diversion”, as reported to the Regional Engineers Advisory Committee on November 9, 2012 [2].

DISCUSSION

Metro Vancouver’s Solid Waste Department receives information from municipalities on solid waste diversion activities annually, including tonnes of municipal solid waste (MSW), recycling and organics (yard trimmings and food scraps) collected by municipal programs. These data are combined with data from Metro Vancouver’s Transfer Stations and the three regional final disposal sites (Cache Creek Landfill, Vancouver Landfill and the Waste to Energy Facility), to provide a complete picture of waste management activities in the region. As discussed in the report to REAC titled “Regional Approach to Determining Carbon Credits from Organics Diversion” [2], this

aggregated approach to quantifying waste flows is necessary because there is not sufficient data resolution to link all of the waste disposed in the region to individual municipalities. The critical factor determining whether a municipality receives GCC carbon credits is whether they collected additional organics in 2007-2012, above and beyond the amount collected in the 2006 baseline year. Attachment A provides the diverted organics by municipality, as reported to Metro Vancouver by the municipal solid waste coordinators, for 2006-2012, and the proportion eligible for carbon credits (in 2007-2012) based on the GCC’s additionality criteria.

The GCC Organics Diversion Calculator was used to calculate the carbon credits by municipality, by year. Key inputs to the calculator were:

- Table 1: regional proportion of MSW sent to each of the three final disposal sites by year (applies to all municipalities except City of Vancouver and Corporation of Delta);
- Table 2: landfill gas collection efficiencies for the Vancouver Landfill and Cache Creek Landfill, by year, as provided in the facilities’ public reports.

Table 1: Proportions of waste sent to each of the three final disposal facilities for the region (all municipalities except City of Vancouver and Corporation of Delta).

Year	WTEF	VLF	CCLF
2007	29.9%	27.4%	42.7%
2008	29.2%	26.7%	44.1%
2009	30.7%	25.8%	43.5%
2010	32.2%	22.4%	45.4%
2011	35.7%	30.3%	34.0%
2012	37.0%	31.4%	31.6%

Table 2: Landfill Gas Collection Efficiency, by year, for Vancouver Landfill (VLF) and Cache Creek Landfill (CCLF).

Year	VLF	CCLF
2007	50%	39%
2008	37%	47%
2009	39%	44%
2010	47%	40%
2011	38%	65%
2012	58%	71%
2013*	72%	73%
2014*	75%	75%
2015*	75%	75%
2016*	75%	75%

* Landfill gas (LFG) collection efficiencies up to and including 2012 are based on modeled LFG generation and actual LFG collection data; while efficiencies post 2012 are estimated from modeled generation and projected collection. Collection efficiencies greater than 75% are reported as 75%, according to the guidance in the GCC Organics Diversion Profile.

The factors presented in Tables 1 and 2 were used in the GCC Organics Diversion Calculator [1] to determine the GCC carbon credits from diverting one tonne of additional organic waste from disposal at the three facilities (Table 3). This “carbon credit factor” (i.e. amount of credits per tonne organics diverted) decreases over time because of improvements to the LFG collection systems at the two landfills.

Table 3: GCC Carbon Credits (tonnes) per tonne of diverted organics for all municipalities in the region except City of Vancouver and Delta.

Year	GCC Carbon Credits (tonnes) per tonne of diverted organics
2007	0.41
2008	0.39
2009	0.36
2010	0.32
2011	0.29
2012	0.26

Using the factors presented in Table 3, the number of carbon credits available to each municipality for the 2012 reporting year was calculated, and is presented in the table in Attachment B. The number of new GCC carbon credits available in 2013 and future years will depend on the amount of eligible organics diversion activity in those years and the 2013 inputs to the calculators (i.e. updated Tables 1 and 2).

ALTERNATIVES

The regional municipalities represented by the members of the REAC-CPS may choose to:

1. “Retire” the GCC carbon credits in Attachment B against their carbon liability for the 2012 reporting year, as part of their Carbon Neutral reporting.
2. “Bank” the credits for use in a subsequent Carbon Neutral reporting year.
3. Receive this report for information and take no further action at this time.

FINANCIAL IMPLICATIONS

GCC Carbon Credits are not saleable to carbon markets, such as the market managed by the Pacific Carbon Trust. However, if used (“retired”) towards carbon neutrality in place of the purchase of carbon credits, their value would be equivalent to the market value of the avoided offsets purchase. Currently, the purchase price of carbon offsets from the Pacific Carbon Trust is \$25 dollars per tonne.

SUMMARY / CONCLUSION

Municipal curbside organics collection programs result in avoided GHG emissions from landfill. The Provincial Green Communities Committee has released a calculator to enable local governments to calculate the carbon credits from organics diversion activities beyond the baseline level of activity in 2006. Metro Vancouver has calculated the carbon credits available to its member municipalities because it manages the waste for the whole region, except for City of Vancouver and the Corporation of Delta. Significant quantities of carbon credits are available to municipalities in the region for 2007-2012, which may be used towards carbon neutrality.

References:

1. Green Communities Committee (GCC), “Option 1D: Project Profile – Household Organic Waste Composting” (Profile and Calculator Version 3.0). Available at: <http://www.toolkit.bc.ca/resource/becoming-carbon-neutral-workbook-and-guidebook>
2. “Regional Approach to Determining Carbon Credits from Organics Diversion” Report to Regional Engineers Advisory Committee (REAC) from REAC-CPS and REAC-SWS, November 9, 2012.

Attachments:

- A. Table: Organics Diverted by Municipality, 2006-2012.
- B. Table: GCC Organics Diversion Carbon Credits by Municipality, 2007-2012, and total credits available for use in 2012 or subsequent reporting year.

ORBIT: 7260745

Attachment A. Organics (Yard Trimmings and Food Scraps, tonnes) Diverted by Municipality from single-family residences, 2006-2012

Municipality	2006 [1]		2007 [2]		2008		2009		2010		2011		2012	
	Baseline Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (post-Charter) (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)	Eligible Organics (tonnes)	Diverted Organics (tonnes)
Anmore	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Belcarra	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bowen Island, Elec B&C	50	82	9	96	46	112	62	0	0	0	0	0	0	0
Burnaby	9,634	10,123	129	9,979	345	9,655	21	12,714	3,080	13,050	3,416	14,410	4,776	14,410
Coquitlam	4,612	5,261	171	6,466	1,854	6,649	2,037	7,692	3,080	7,923	3,311	8,295	3,684	8,295
Delta	5,732	6,358	165	7,552	1,820	6,954	1,222	7,947	2,215	8,405	2,673	10,242	4,510	10,242
Langley City	504	0	0	1,211	707	1,010	506	1,138	634	1,138	634	1,138	634	1,138
Langley Township	3,433	3,206	0	5,388	1,955	5,267	1,834	5,992	2,559	6,733	3,300	7,884	4,451	7,884
Lions Bay	0	126	33	165	165	47	47	89	89	88	88	88	88	88
Maple Ridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Westminster	0	0	0	115	115	420	420	922	922	3,111	3,111	3,777	3,777	3,777
North Vancouver City	1,152	1,261	29	1,425	273	1,533	381	1,475	323	1,528	376	1,706	554	1,706
North Vancouver District	4,511	4,601	24	4,601	90	5,747	1,236	5,390	879	5,619	1,108	6,165	1,654	6,165
Pitt Meadows	0	0	0	0	0	0	0	0	0	0	0	1,139	1,139	1,139
Port Coquitlam	3,186	3,537	92	3,865	679	3,867	681	5,058	1,872	5,371	2,185	5,549	2,363	5,549
Port Moody	1,200	1,040	0	1,249	49	1,450	250	1,908	708	2,887	1,687	2,901	1,701	2,901
Richmond	7,783	10,075	603	9,443	1,660	8,904	1,121	9,434	1,650	9,900	2,117	10,549	2,765	10,549
Surrey	17,962	20,044	548	22,359	4,397	24,333	6,371	26,444	8,482	27,000	9,038	34,627	16,665	34,627
UBC/UEL	0	0	0	143	143	211	211	161	161	155	155	172	172	172
Vancouver	17,700	15,950	0	21,400	3,700	22,400	4,700	24,640	6,940	25,220	7,520	52,222	34,522	52,222
West Vancouver	3,184	3,436	66	3,647	463	3,906	722	3,773	589	4,023	839	4,458	1,274	4,458
White Rock	0	0	0	872	872	1,132	1,132	1,459	1,459	1,459	1,459	1,680	1,680	1,680
Total Eligible Organics:			1,867	19,333	22,954	35,643	43,018	86,410						

[1] The "Baseline" level of organics diversion is 2006. Eligible organics are the additional amount each year above and beyond the baseline amount.

[2] In 2007, eligible diverted organics are pro-rated to post-Charter (i.e. after September 26th, not the whole year).

Attachment B. GCC Organics Diversion Carbon Credits (tonnes CO2 equivalent), by Municipality for 2007-2012.

Municipality	2007 (tonnes CO2e) [2]	2008 (tonnes CO2e)	2009 (tonnes CO2e)	2010 (tonnes CO2e)	2011 (tonnes CO2e)	2012 (tonnes CO2e)	Aggregate (2007-12) [1]
Anmore	0	0	0	0	0	0	0
Belcarra	0	0	0	0	0	0	0
Bowen Island, Electoral B&C	3	18	22	0	0	0	43
Burnaby	52	135	7	985	992	1,247	3,418
Coquitlam	69	723	727	985	962	961	4,429
Langley City	0	276	181	203	184	166	1,009
Langley Township	0	762	655	819	958	1,162	4,356
Lions Bay	13	64	17	28	25	23	171
Maple Ridge	0	0	0	0	0	0	0
New Westminster	0	45	150	295	904	986	2,379
North Vancouver City	12	106	136	103	109	145	611
North Vancouver District	10	35	441	281	322	432	1,521
Pitt Meadows	0	0	0	0	0	297	297
Port Coquitlam	38	265	243	599	635	617	2,396
Port Moody	0	19	89	227	490	444	1,269
Richmond	245	647	400	528	615	722	3,157
Surrey	223	1,715	2,275	2,714	2,625	4,350	13,900
UBC/UEL	0	56	75	51	45	45	273
West Vancouver	27	181	258	188	244	333	1,230
White Rock	0	340	404	467	424	438	2,073
Totals:	693	5,387	6,081	8,474	9,533	12,365	42,533

[1] 2012 credits are the sum of all eligible credits since the signing of the Climate Action Charter. [Therefore 2013 and subsequent credits will be significantly less]

[2] It has been assumed that the additional organics diverted to date are 50:50 food scraps and yard trimmings, per Provincial guidance.