



REPORT TO COUNCIL

To: **Mayor Schaffer and Councillors**

Subject 2015 Corporate Energy & GHG Emissions
Inventory

Report #: 16-043

From: Roy M. Beddow, MCIP, RPP
Deputy Director of Development Services
& Economic Development

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RECOMMENDATION:

THAT the 2015 Corporate Energy & Greenhouse Gas Emissions Inventory and 2015 Climate Action Revenue Incentive Program (CARIP) Report be received for information.

PURPOSE:

To present the 2015 Corporate Energy & GHG Emissions Inventory and 2015 CARIP Report.

POLICY:

Corporate Strategic Plan- Identifies Sustainability as a key focus area: *To create a sustainable community through responsible financial, social, and environmental planning and policies.*

Sustainability Framework- Identifies “Energy, Climate Change & Air Quality” as a focus area.

Corporate Energy and GHG Emissions Plan- Establishes target for the reduction of corporate energy consumption and GHG emissions (target is to reduce 2018



corporate GHG emissions by 134 tonnes from forecast level) and identifies initiatives to reduce energy consumption and GHG emissions.

Official Community Plan- Contains GHG reduction target from Corporate Energy and GHG Emissions Plan and expresses commitment to pursue carbon neutral operations in accordance with the B.C. Climate Action Charter.

COMMENTS/ANALYSIS:

1. Background

The City of Langley monitors its corporate energy consumption and greenhouse gas (GHG) emissions in accordance with the City's Corporate Energy & GHG Emissions Plan and its commitments under the B.C. Climate Action Plan and FCM's Partners for Climate Protection program. The City also submits a report each year as part of the province's Climate Action Revenue Incentive Program (CARIP).

2. 2015 Corporate Energy & GHG Emissions Inventory

The Corporate Energy & GHG Emissions Inventory accounts for all of the City's energy consumption and CO₂e (carbon dioxide equivalent) emissions from its corporate operations.

2015 Corporate Energy & GHG Emissions Inventory

Energy Type	Consumption	Energy	Costs	CO ₂ e Emissions
Electricity	3,317,056 kWh	11,941 GJ	\$377,737	33.2 tonnes
Natural Gas	7,359 GJ	7,359 GJ	\$63,888	276.0 tonnes
Biodiesel 5	94,663 litres	3,662 GJ	\$112,136 ¹	245.9 tonnes
Gasoline	61,159 litres	2,120 GJ	\$69,757 ¹	148.7 tonnes
Total		25,081 GJ	\$623,517	703.8 tonnes

¹Estimated cost

In accordance with CARIP requirements, energy consumption and GHG emissions resulting from contracted services are also included in the inventory. The contracted services components of the above totals are broken out in the table below.



*2015 Energy Consumption & GHG Emissions
 Contracted Services*

Energy Type	Consumption	Energy	Costs ²	CO ₂ e Emissions
Biodiesel 5	23,130 litres	895 GJ	\$27,409	60 tonnes
Gasoline	4,964 litres	172 GJ	\$5,975	12 tonnes
Total		1,067 GJ	\$33,384	72 tonnes

²Estimated Cost

A detailed breakdown of accounts by sector is attached to this report for information.

3. GHG Emissions Progress 2008-2015

The table below shows the City's carbon emissions from corporate operations since 2008. In order to enable year to year comparisons, emissions from contracted services are not included in the figures since data from contractors are only available for 2012-2015. While the report shows progress towards meeting the City's corporate target, the results should be received with some caution since annual variations can be significant. Weather, staffing levels, capital projects, community development and economic activity can all influence corporate energy consumption and GHG emissions, making year to year comparisons difficult.

Direct GHG Emissions³ 2008 – 2015 (Tonnes CO₂e)

Energy Type	2008	2009	2010	2011	2012	2013	2014	2015
Electricity	89	92	50	50	52	50	35	33
Natural Gas	395	414	367	347	372	335	300	276
Diesel/Biodiesel 5	244	201	209	171	195	151	189	186
Gasoline	115	112	125	114	127	139	139	137
Total	847	824	752	683	747	677	664	632

³Excludes emissions from contracted services (2012 – 138 t, 2013 – 150 t, 2014 -192 t , 2015 - 72t 2008-2011 – not calculated).



4. 2015 Corporate Emissions Analysis

Direct corporate emissions fell slightly from 2014 to 2015 as energy consumption declined across all sectors. Emissions from contracted services, meanwhile, fell from 192 tonnes CO₂e to 72 tonnes. The significant drop was attributable to two factors:

- Emissions reported by the City's solid waste contractor fell by 86 tonnes from the previous transitional year under the MMBC program
- Two fewer contractors met the minimum Provincial threshold (contract value >\$25,000) for inclusion in CARIP reporting

5. 2015 CARIP - Carbon Neutral Accounting

The City reported its 2015 GHG emissions to the province under the Climate Action Revenue Incentive Program (CARIP) on June 1, 2015. Although its corporate "carbon footprint" was 704 tonnes CO₂e, the City was able to offset all of its emissions by deploying carbon credits from green waste diversion and the Vancouver Landfill Gas Capture Optimization Project (see table below). As a result, the City of Langley was able to report being "Carbon Neutral" in 2015.

2015 CARIP - Carbon Neutral Accounting

Emissions		CO₂e (Tonnes)
Local Government Services (Direct)		632.0
+	<u>Contracted Services (Indirect)</u>	<u>72.0</u>
Total		704.0 ⁴
Credits		
2015 Organic Waste Diversion ⁵		362.0
+	<u>2015 VLF GCOP Allocation⁶</u>	<u>353.0</u>
Total		715.0
Balance		
Total Emissions		704.0
-	<u>Total Credits</u>	<u>715.0</u>
=	<i>Carbon Footprint</i>	0

⁴Revised from original total (708 t) reported to Province 08/06/2016

⁵Allocation per May 16, 2016 Metro Vancouver report

⁶Vancouver Landfill Gas Capture Optimization Project allocation of credits per May 20, 2016 Metro Vancouver report



6. 2016 GHG Reduction Initiatives

Consistent with previous years, Council has budgeted funds in 2016 (\$20,000 – Sustainability Initiatives) to offset the City's carbon emissions. This provides the option to purchase carbon credits from the Pacific Carbon Trust in order to achieve carbon neutrality. In practice, however, the City has used this funding for GHG reduction projects that also lower the City's energy costs. In recent years, the City has funded lighting replacement projects (substituting high efficiency fixtures and LED lighting) in this manner. In 2015 staff identified the replacement of the boiler at Al Anderson Memorial Pool as the highest priority project for reducing the City's carbon footprint. Accordingly, a boiler replacement project was conceived in late 2015 and completed in October 2016. It is expected that the new boiler system (for pool heating and domestic water) will significantly reduce energy costs and GHG emissions in the coming years.

BUDGET IMPLICATIONS:

The cost to prepare the 2015 Corporate Energy & Greenhouse Gas Emissions Inventory and CARIP report was \$1,470. The project was funded under the Development Services & Economic Development Department's 2016 operating budget (Sustainability Initiatives). Following completion of the 2015 Corporate Energy & Greenhouse Gas Emissions Inventory \$18,530 remains in the budget for Sustainability Initiatives and will be applied to the Al Anderson Memorial Pool boiler replacement project.

ALTERNATIVES:

N.A.

Respectfully Submitted,



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Deputy Director of Development Services
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RMB/

Attachment(s):

CHIEF ADMINISTRATIVE OFFICER'S COMMENTS:

I support the recommendation.



Francis Cheung, P. Eng.
Chief Administrative Officer

