



DISTRICT OF WEST VANCOUVER
750 17TH STREET, WEST VANCOUVER BC V7V 3T3

10.2

COUNCIL REPORT

Date:	September 19, 2017
From:	David McKee, Energy Manager
Subject:	Corporate Energy and Emissions Plan Update
File:	540-01

RECOMMENDATION

THAT

1. The report dated September 19, 2017 titled "Corporate Energy and Emissions Plan Update" be received for information; and
2. Staff provide a status update in 12 months.

1.0 Purpose

The report provides an update on the Corporate Energy and Emissions Plan actions.

2.0 Legislation/Bylaw/Policy

1. Corporate Energy and Emissions Plan adopted by Council on October 3, 2017.
2. The 2010 Community Strategic Plan was developed with a number of objectives that included embedding best practices on sustainability throughout all District plans, policies, and improving energy efficiency in municipal operations.
3. The Climate Action Charter signed by the District in 2008 stipulates that municipalities should achieve carbon neutrality and report on and continue to undertake initiatives to reduce greenhouse gas (GHG) emissions from corporate activities.
4. The 2005 Environmental Strategy was designed to implement actions in the OCP. A number of objectives to reduce environmental impacts from District operations were identified.
5. Section 473 of the *Local Government Act* requires Official Community Plans (OCP) to include targets, policies and actions for reducing GHGs. The District's existing OCP includes targets of 33% reductions from 2007 levels by 2020 and 80% from 2007 levels by 2050.

3.0 Background

Climate change resulting from GHG emissions related to human activities is leading to an increasing threat to the environment. The creation of a Community Energy and Emissions Plan (CEEP) supported development of a Corporate Energy and Emissions Plan (Corporate EEP) in tandem. The Corporate EEP allowed an opportunity to further analyze corporate emissions and develop a GHG reduction plan. The District currently has carbon neutral status but it will only last a limited time making it important to continue pursuing emission reductions.

3.1 Previous Decisions

At the October 3, 2016, Council meeting, Council passed the following resolution:

1. The West Vancouver Corporate Energy & Emissions Plan "Corporate EEP" (attached as Appendix A to the report from the Energy Manager) be adopted;
2. Staff implement the West Vancouver Corporate Energy & Emissions Plan through existing and future sustainability plans and through key departmental work plans; and
3. Staff report back twelve months from the date of Council adoption with a status update on implementation progress to date and directions for further action.

3.2 History

The District has been working on improving corporate sustainability and reducing energy use:

1. Present (since 2010) – District reports annually to provincial government on community and corporate actions to reduce energy use and GHG emissions. The process allows the District to declare carbon neutrality with respect to corporate operations and obtain a refund on the carbon tax paid.
2. 2016 – Council adopted a Corporate Energy and Emissions Plan.
3. 2014 – District becomes "carbon neutral" with respect to corporate operations.
4. 2010 – Community Climate Action Plan (prepared by the Climate Action Working Group) adopted by Council. Plan informs OCP climate action targets and corporate energy and emissions actions.

5. 2008 – District becomes a signatory of the British Columbia Climate Action Charter, which commits local governments to reduce energy use and become carbon neutral by 2012.

4.0 Analysis

4.1 Discussion

Corporate Energy and Emissions Plan Update

To achieve a 33% GHG reduction by 2020 the Corporate Energy and Emissions Plan identified a number of activities and approaches to reducing corporate GHG emissions and improving corporate sustainability.

Building-related projects, changes in the vehicle fleet, and other supportive actions are being undertaken and planned to continually reduce corporate GHGs. There are 34 regularly occupied buildings with a total area of 54,500 m² (approximately 587,000 sf) and a fleet of 162 vehicles.

Progress in the key areas outlined in the Corporate Energy and Emissions Plan are listed below:

Action	Description
GO1	Update the Corporate Energy and Emissions Plan for 2020 to confirm progress and establish actions beyond 2020. Include a medium term target of reducing corporate GHGs by at least 50% below 2007 levels by 2030.
	Status: Will review in 2019.
BI1	Implement energy efficiency projects identified in the Strategic Energy Management Plan (SEMP).
	Status: Completed installation of two new air handling units, replaced shower heads in Aquatic Centre with energy/water saving faucets, and converted the Operations Centre gas pump lights to LED.
BI2	Conduct combined energy study for the Main Community/Aquatic Centres.
	Status: Completed a targeted study to identify projects in the Aquatic Centre and Ice Arena. Reviewing the Ice Arena ice plant design to get a better understanding of systems and saving opportunities.
BI3	Work with BC Hydro and Metro Vancouver to accelerate LED streetlight adoption and advanced controls.
	Status: Continued the conversion of District-owned ornamental streetlights to energy saving LED lights. Tracking BC Hydro's plans for LED streetlight upgrades.

BI4	Review equipment and energy use in water and wastewater pumping stations to identify energy efficiency opportunities for planned equipment upgrades.
	Status: Checking with BC Hydro on possible support for engineering studies at large pump stations. Began incorporating savings from pump station upgrades into SEMP.
BI5	Identify and implement additional efficiency projects in buildings and infrastructure 2018 - 2020.
	Status: Will be submitting a list of energy saving projects in the 2018 budget request. Upgrading the Ice Arena ice plant to more energy efficient equipment is requested for 2018.
FM1	Increase the percentage of bio-diesel used.
	Status: Within budget limitations, higher grade biodiesel fuel was purchased for fleet use in 2016 and 2017.
FM2	Expand driver training programs focused on fuel efficient driving.
	Status: Participated in a limited fleet monitoring pilot to understand driver habits and opportunities to save fuel from driving habits and idling. The results led to feedback to drivers on idling and data to develop a business case for installing anti-idling technology in some vehicles. In 2017 three vehicles with anti-idling technology were added to the fleet.
FM3	Analyze vehicle use and route and trip planning for efficiencies in fleet operation.
	Status: Participating in the vehicle tracking pilot provided data about fleet vehicle movement. This area requires rigorous analysis and operational change to be implemented.
FM4	Make emissions reductions part of the criteria for selecting a solid waste management company. Require annual reporting on fuel consumption and actions taken to reduce emissions.
	Status: Included language related to vehicle GHG emissions criteria in Request for Proposal (RFP) and evaluated as part of the selection process for solid waste hauling contracts. Companies are providing annual fuel consumption data.
RE1	Investigate and implement renewable energy projects such as district energy, solar water heating, or geo-exchange and maximize public profile.
	Status: Identified opportunities in the Ice Arena ice plant to improve sharing of waste energy between buildings.
PU1	Increase recycled content of paper to 100% where possible, and partial recycled content elsewhere.
	Status: 2016 saw the highest amount of recycled content paper purchased; of the total paper purchased 65% had 50% recycled content and 12% had 100% recycled content.

PU2	Identify ways to further reduce paper consumption.
	Status: Implemented more detailed tracking of office printing. Installed high-speed hand dryers at the Aquatic Centre to reduce paper towel use; to date the District has reduced paper towel use in the Aquatic Centre by 15% from 2014 levels. Replaced several paper towel dispensers in the fire halls with lower volume models.
SW1	Complete and implement the corporate solid waste plan that is currently underway.
	Status: Incorporated a solid waste plan in the Facilities and Assets Sustainability Strategy. 2017 saw deployment of waste diversion bins to all main buildings and ongoing communications to building occupants to build awareness around recycling.
WC1	Undertake a water use inventory and opportunity assessment. Implement appropriate measures.
	Status: Compiled an annual inventory of building water use for sustainability reporting. A more detailed audit of water use in main buildings will be planned.
CP1	Establish a Corporate Green Buildings Policy for new buildings and major renovations. Includes investigation of operational savings from energy efficiency and renewable energy options.
	Status: Started initial discussions on options.
CP2	Establish a Streetlight Policy to ensure new streetlights are energy efficient.
	Status: As opportunities arose installed more efficient LED streetlights in new neighbourhoods. Need to review requirements to create a policy.
CP3	Establish a Green Fleet Policy that incorporates carbon and life cycle costing for new vehicles.
	Status: Established a Transportation Demand Management staff committee to provide input on the development of a Green Fleet Policy.
CP4	Include green purchasing policies within the new District purchasing policy.
	Status: Developing purchasing guidelines for materials used in building operation and maintenance in the Facilities and Assets Sustainability Strategy.
CP5	Establish a Climate Action Strategic Planning Lens to manage carbon and costs.
	Status: Incorporated GHG reduction in building energy project calculations. Discussed modelling impacts of fleet vehicle improvement on GHG emissions.

SE1	Develop a strategic staff engagement strategy to support conservation and climate action.
	Status: Created a staff Environmental Team in 2017 to foster a broader approach to conservation and climate action in the organization. The SEMP includes programs to engage staff in energy saving.
CN1	Evaluate continuation of the District's corporate carbon neutrality by developing carbon credits from investment in innovative emission reduction projects.
	Status: As prospective projects arise they are considered for creating carbon credits that contribute to the District's carbon neutrality.

The Corporate Energy and Emissions Plan can be found at:

[https://westvancouver.ca/sites/default/files/dwv/assets/gov/docs/Reports/WE ST_VANCOUVER_CORPORATE_ENERGY_%26_EMISSIONS_PLAN.pdf](https://westvancouver.ca/sites/default/files/dwv/assets/gov/docs/Reports/WE%20ST_VANCOUVER_CORPORATE_ENERGY_%26_EMISSIONS_PLAN.pdf)

2016 GHG Inventory

The calculated corporate GHG emissions inventory for 2016 was 3,387 tonnes of CO₂ equivalent (t CO₂ e) an 8% reduction from the 2007 baseline. The sources of emissions that are reported come from services typically provided by a municipality.

In 2016, buildings and infrastructure energy use contributed 43% of the total reported emissions and vehicle fuel use including that from contracted services made up the remaining 57%.

The District was able to achieve carbon neutral status for 2016 owing to a bank of greenhouse gas credits arising from both the protection of forests from the creation of Whyte Lake Park and the diversion of a significant amount of organic waste from landfills.

Yearly GHG Emissions (t CO₂ e)

2007 (baseline)	2012	2013	2014	2015	2016
3,611*	3,012	3,183	2,731	2,959	3,387

*Adjusted to exclude police emissions included in original inventory.

Variations in GHG emissions result from both periodic large infrastructure projects that consume more vehicle fuel and colder winters that result in more natural gas use in buildings and the greater use of fleet fuel to maintain roadways. Additionally due to a more rigorous methodology more sources of GHGs such as emissions from contracted services are being included

compared to the 2007 baseline. Despite adding additional GHG sources to the reporting, the overall District emissions have declined from 2007 levels.

Emissions Source	2007 Emissions (t CO ₂ e)	2016 Emissions (t CO ₂ e)
Buildings & Stationary Infrastructure	2,385	1,448
Fleet & Mobile Activity	1,127*	1,064*
Contracted Emissions	0	859
Other	157	0
Total	3,611*	3,387*

*Excludes Police services

For additional information on corporate GHG emissions refer to the Climate Action Revenue Incentive Program (CARIP) inventory report for 2016. This can be accessed through:

<https://westvancouver.ca/sites/default/files/dwv/assets/gov/docs/Reports/climate-action-program/CARIP%20GHG%20Inventory%20Report%202016.pdf>

4.2 Sustainability

As recognized by the inclusion in Council's priorities, climate change is a pressing environmental issue and one that the District can take direct action on to immediately reduce GHG emissions. Reducing the consumption of energy associated with buildings and the fuel used by the fleet also reduces operating costs.

4.3 Other Communications, Consultation, and Research

Staff from the Corporate Services, Parks, Culture, & Community Services, Engineering and Transportation, Financial Services, Police Services, and Fire and Rescue Services departments have been involved in identifying further opportunities and supporting implementation of the Corporate Energy and Emissions Plan.

Author:



David McKee, Energy Manager

This Page Intentionally Left Blank



This Page Intentionally Left Blank

