

AGENDA INFORMATION	
<input checked="" type="checkbox"/> Regular Meeting	Date: November 4, 2019
<input type="checkbox"/> Other:	Date: _____

Dept. Manager	GM/ Director	CAO
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The District of North Vancouver REPORT TO COUNCIL

October 28, 2019

File:

AUTHOR: Megan Curren

SUBJECT: Updating Corporate (Municipal) Policies to Align with IPCC Climate Science

RECOMMENDATION:

THAT staff be directed to update the *Green Building Policy: Municipal Buildings* to require high performance buildings such as passive or passive equivalent, prioritize modular construction, eliminate all non-renewable energy sources including fossil gas, make other recommendations and updates to achieve net zero emission buildings;

AND THAT to account for and report all embodied energy and carbon (i.e. lifecycle assessment or LCA) for all new construction projects on DNV lands, including demolition impacts and achieve net zero emissions or better;

AND THAT the Energy Policy 0970 be updated to reflect current climate goals and to specifically eliminate “natural gas” as an acceptable energy source;

AND THAT the language be updated in all DNV policies and reports from “natural gas” to “fossil gas”;

AND THAT staff report back with costs to retrofit all DNV buildings by 2025 to achieve highest energy performance and net zero carbon emissions;

AND THAT staff provide LCA and financial impacts to transition municipal equipment powered by fossil fuels such as lawn mowers, leaf blowers, garbage trucks, etc. to electric or biogas.

REASON FOR REPORT:

In July 2019, Council unanimously declared a Climate & Ecological Emergency and called for transformative action. To avoid catastrophic climate change impacts, Canada must urgently reduce its GHG emissions to zero. Local governments contribute up to half of Canada's emissions. (Source: FCM)

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BACKGROUND:

We need to stop making climate change worse and demonstrate leadership by rapidly reducing our energy consumption and eliminating all fossil fuels in DNV corporate operations, including new construction projects on DNV lands.

District buildings account for 63% of the total energy use, 54% of GHG emissions and 41% of total energy costs. (Source: SEMP report March 16, 2016).

From 2017 to 2018, the cost of fossil gas in corporate operations increased by 277% from \$101,272 in 2017 to \$382,468.00 in 2018. (Source SOFI 2017/2018).

More than 90% of all oil and gas wells in B.C. require extensive fracking, which pulverizes hydrocarbon-bearing rock with highly pressurized streams of water, sand and chemicals. (Source: The Tyee). The Council of Canadians opposes fracking because of its high water use, its high carbon emissions, its impacts on human health, the disruption it causes to wildlife, and the danger it poses to groundwater and local drinking water.

Constructing only net zero emissions new buildings will support leaders in the construction/building sector who acknowledge the climate emergency and are acting upon the science. If many local governments act together we can create new jobs, build capacity and support a local economy for materials and supplies.

Any building constructed now to depend on fossil gas or another fossil fuel must be retrofitted to eliminate its fossil fuel dependence. Buildings constructed today are not required to consider future temperature increases so are not designed to meet occupant health and safety needs over the life of the building. Every fossil fuel-dependent building we construct now increases carbon pollution and future retrofits will be costly, resource-intensive, and time-consuming.

The municipal automobile fleet has been updated to an electric fleet and staff e-bikes have also been introduced; however, heavy equipment/vehicles as well as leaf blowers, lawn mowers, etc. are still using fossil fuels. The purpose of this report is to have staff report back on costs and carbon impacts (including embodied energy/carbon) of transitioning to zero emission equipment.

Corporate policies that do not reflect the nature of the Climate and Ecological Emergency need to be updated.

Conclusion:

Policy change at the corporate level is in council's purview. The technology and resources to reduce our energy consumption and decarbonize our corporate operations exist.

People around the world are suffering and dying from the impacts of climate change. Every inaction today increases future climate impacts. We have a moral responsibility to act.

Provide staff direction to update corporate policies to align with IPCC science.

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Respectfully submitted,


Megan Curren
Councillor

Attachments:

Attachment 1: Strategic Energy Management Plan (SEMP)

Attachment 2: Climate Action Revenue Incentive Program (CARIP)

Attachment 3: Green Building Policy - Municipal Buildings

Attachment 4: Energy Efficiency Policy

REVIEWED WITH:					
<input type="checkbox"/> Community Planning	_____	<input type="checkbox"/> Clerk's Office	_____	External Agencies:	
<input type="checkbox"/> Development Planning	_____	<input type="checkbox"/> Communications	_____	<input type="checkbox"/> Library Board	_____
<input type="checkbox"/> Development Engineering	_____	<input type="checkbox"/> Finance	_____	<input type="checkbox"/> NS Health	_____
<input type="checkbox"/> Utilities	_____	<input type="checkbox"/> Fire Services	_____	<input type="checkbox"/> RCMP	_____
<input type="checkbox"/> Engineering Operations	_____	<input type="checkbox"/> ITS	_____	<input type="checkbox"/> NVRC	_____
<input type="checkbox"/> Parks	_____	<input type="checkbox"/> Solicitor	_____	<input type="checkbox"/> Museum & Arch.	_____
<input type="checkbox"/> Environment	_____	<input type="checkbox"/> GIS	_____	<input type="checkbox"/> Other:	_____
<input type="checkbox"/> Facilities	_____	<input type="checkbox"/> Real Estate	_____		
<input type="checkbox"/> Human Resources	_____	<input type="checkbox"/> Bylaw Services	_____		

District of North Vancouver

Strategic Energy Management Plan (SEMP)

Our Strategic Energy Management Plan (SEMP) will help us integrate energy efficiency into our day-to-day operations.

By taking an 'efficiency first' approach to how we manage energy, we will reduce our greenhouse gas emissions 20% by 2017 (below 2012 levels), and accumulate annual savings of almost \$275,000 by 2018, while enhancing the comfort of our facilities.

News and updates

September 16, 2016 — Launch of Karen Magnussen Rec Centre energy retrofit

Today, Mayor Walton took part in a hockey game at the Karen Magnussen Community Recreation Centre to inaugurate recently completed energy retrofits that are projected to save \$120,000 in annual energy costs.

[Learn more about this project \[/news/new-energy-retrofit-karen-magnussen-rec-centre-will-reduce-energy-use-60\]](#)

July 19, 2016 — Presentation to Council

Staff gave Council an update on the work being done to retrofit the Karen Magnussen Recreation Centre.

- View the staff presentation in the 'Documents and resources' tab

March 16, 2016 — Update to Council

Staff sent Council an information report that updated them on progress made with the SEMP. Their report included an overview of money and energy saved, and an update on current projects that are making our facilities more energy efficient.

- View the information report in the 'Documents and resources' tab

Details

Our approach to managing energy

We are committed to an 'efficiency first' approach to strategically managing our energy. This approach focuses on:

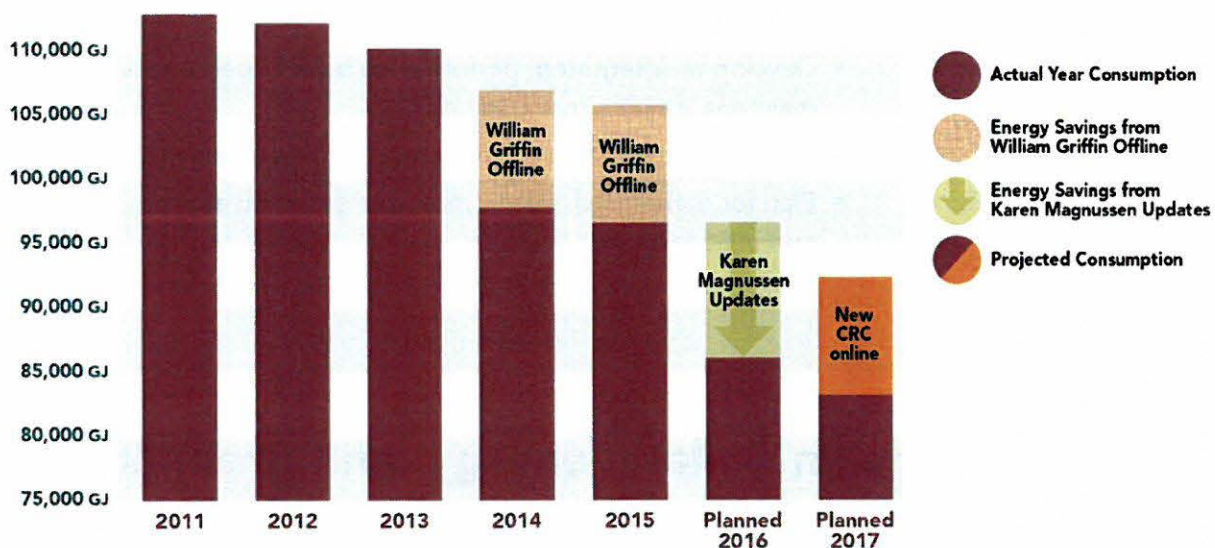
- avoiding wasting energy, material, effort, money, and time
- reducing energy use before finding new sources
- integrating capital renewal and operations (integrated asset management)

Our energy use targets to 2018

To reach our targets, the strategy is focused on our four highest energy consuming buildings:

- District Hall
- Operations Centre
- Karen Magnussen Community Recreation Centre
- Ron Andrews Community Recreation Centre

In the coming years, we will expand the strategy to include opportunities for energy and emission reduction in street lighting, utilities, and the District Fleet.



This table illustrates our annual energy consumption (in gigajoules) since 2011

Planned actions

The SEMP focuses on developing longer term goals and actions that will embed energy efficiency as a regular part of our business and operations. It is a multi-year plan with short, medium, and long term actions.

Short term (2015-16)

- Apply the existing ERP budget to lighting, mechanical, and building envelope systems
- Retrofit the Karen Magnussen Community Recreation Centre
- Conduct energy studies to develop large scale retrofit plans for major facilities

Mid term (2017)

- Begin focusing on high energy intensity facilities, and those with operational challenges
- Implement large scale retrofits or retro-commissioning of major facilities
- Develop a metering plan that includes water meters for DNV facilities

Long term (2018 onward)	<ul style="list-style-type: none"> • Develop an integrated, performance based operation and maintenance plan for buildings • Continue implementing large scale retrofits at major facilities • Plan for embedded energy management team effort in fleet and utilities
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Project savings (in dollars, energy, and greenhouse gas emissions)

Accumulated annual savings from energy projects will reach \$219,370 per year by the end of 2017, and can continue to increase in the future.

Year	Energy saved (ekWh)	Money saved	Emissions reduced (tonnes)	Accumulated savings (\$)
2011	173,854	\$7,450	12	
2012	267,984	\$11,141	10	\$7,450
2013	846,644	\$32,018	81	\$18,591
2014	222,275	\$8,474	38	\$50,609
2015	387,479	\$14,246	52	\$59,063
2016	3,908,472	\$146,041	504	\$73,329
2017	1,374,674	\$52,975	161	\$219,370

Year	Energy saved (ekWh)	Money saved	Emissions reduced (tonnes)	Accumulated savings (\$)
2018	270,985	\$12,027	15	\$272,345

Funding opportunities

Since 2010, we have attracted over \$2 million in partner and grant funding for our program. This includes:

- Over \$1.3 million from BC Hydro and FortisBC for project incentives and salary support
- \$632,000 from the Union of BC Municipalities (UBCM) for the Karen Magnussen Recreation Center retrofit
- Over \$400,000 in carbon tax rebates as part of the Climate Action Revenue Incentive Program (CARIP)

Documents and resources

Council documents

- July 19, 2016 —
Presentation to Council on Karen Magnussen retrofit
[\[http://app.dnv.org/OpenDocument/Default.aspx?docNum=2943783\]](http://app.dnv.org/OpenDocument/Default.aspx?docNum=2943783)
(PDF; 16.6MB)
- March 16, 2016
Information report prepared for Council [/sites/default/files/edocs/SEMP-
— information-report-20160316.pdf]
(PDF; 309KB)

Related projects

- [Climate Change Adaptation Strategy \[/programs-and-services/climate-change-adaptation-strategy\]](#)
- [Reducing our greenhouse gas emissions \[/programs-services/reducing-our-greenhouse-gas-emissions\]](#)
- [Karen Magnussen Community Recreation Centre energy retrofit \[node/1482\]](#)

Background

Active in energy management since 2009

- 2009 — Partnered with BC Hydro to fund an Energy Manager position at District Hall
- 2010 — Partnered with FortisBC to fund an Energy Specialist position
- 2011 — Developed an energy reduction program with \$3.6 million in funding

Committed to carbon neutrality

We — along with over 180 other local governments — have signed the BC Climate Action Charter. As a signatory of the charter, we are eligible for a conditional grant provided by the Climate Action Revenue Incentive Program (CARIP).

This grant is equivalent to one hundred percent of the carbon taxes we pay, and supports our efforts to reduce greenhouse gas emissions.

[Learn more about our involvement with CARIP \[/programs-services/reducing-our-greenhouse-gas-emissions\]](#)



District of North Vancouver

Climate Action Revenue Incentive Program (CARIP)

We are working with the Province of BC and the Union of BC Municipalities to reduce our greenhouse gas (GHG) emissions, and create complete, compact, and energy-efficient communities.

We — along with over 180 other local governments — have signed the BC Climate Action Charter. As a signatory of the charter, we are eligible for a conditional grant provided by the Climate Action Revenue Incentive Program (CARIP).

This grant is equivalent to one hundred percent of the carbon taxes we pay, and supports our efforts to reduce greenhouse gas emissions.

To be eligible for the conditional grant, we must:

- be carbon neutral, or working towards carbon neutrality, in our corporate operations
- measure and report on our community GHG emissions profile
- create complete, compact, energy-efficient rural and urban communities

Required reporting

We have completed the 2018 CARIP Public Report, as required by the Province of BC.

The CARIP report summarizes actions taken in 2018 and proposed for 2019 to reduce corporate and community-wide energy consumption and greenhouse gas emissions, and reports on progress towards achieving carbon neutrality.

[Review the 2018 CARIP Public Report \[/sites/default/files/edocs/carip-survey-](#)

- [report-2019.pdf\]](#)

Get additional information

Learn more about the BC Climate Action Charter

[\[http://www.cscd.gov.bc.ca/lgd/greencommunities/climate_action_charter.html\]](http://www.cscd.gov.bc.ca/lgd/greencommunities/climate_action_charter.html)

Learn about the Climate Action Revenue Incentive Program (CARIP)

[\[http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.html\]](http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.html)

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The Corporation of the District of North Vancouver

CORPORATE POLICY MANUAL

Section:	Buildings, Facilities and Properties	2
Sub-Section:	General	3710
Title:	GREEN BUILDING POLICY – MUNICIPAL BUILDINGS	2

PREAMBLE

The District of North Vancouver has committed to bold leadership in sustainability as evident in the District's Vision Statement:

'By 2020, we will be recognized among the most sustainable communities in the world as demonstrated through our environmental stewardship, strong network of communities, a vibrant economy and community-driven growth and change'

The construction and operation of buildings take a toll on the natural environment throughout their entire lifecycle, including eventual demolition and disposition and their contribution to greenhouse gas emissions.

In 2010, the District established community greenhouse gas emission reduction targets of 8% by 2020, 13% by 2030 and 21% by 2050, over 2007 levels, to be achieved through land use and transportation, planning programs, waste reduction strategies, community engagement and, the development of higher performing, energy efficient buildings.

In addition to establishing a green building performance standard to reduce energy consumption and greenhouse gas emissions arising from private building projects, the District, through this Policy, is showing its leadership by establishing a higher performance standard for future new municipal buildings and additions and renovations to the existing municipal building stock.

REASON FOR POLICY

The reason for this policy is primarily to contribute to a shift towards more energy efficient municipal buildings. However, the District also wishes to promote the use of broader green building strategies to:

- encourage buildings which reduce electricity consumption and greenhouse gas emissions and their overall impact on the environment;
- reduce the impact of buildings on municipal financial resources through reduced construction and on-going operating and maintenance costs;
- create and maintain healthy and effective work places for staff and visitors; and
- reduce the amount of construction and demolition waste sent to landfills by encouraging re-use of buildings, utilizing recyclable materials and designing for future deconstruction.

APPLICATION

1. For the purposes of this policy, municipal buildings include buildings that are owned, managed or occupied by the District of North Vancouver.
2. This Policy applies to:
 - all new municipal buildings and private sector projects on lands acquired from or leased by the District;
 - additions to municipal buildings requiring a building permit; and
 - renovations to municipal buildings requiring a building permit
3. Compliance with this Policy is **mandatory**.

POLICIES

1. The District of North Vancouver will pursue the development of new municipal buildings and additions or renovations to existing municipal buildings, incorporating a variety of energy efficiency and other green building measures.
2. The design process for all projects shall include the completion of the applicable Green Building Performance Commitment.
3. All building projects, except projects deemed to be minor by the Director of Corporate Services or designate, shall meet either of the following performance baselines depending upon the type and scale of project:
 - LEED – NC or CS (2009) 'Gold' + a minimum of 9-11 points under the Energy and Atmosphere Credit 1;
 - A minimum energy performance level of Energuide 82;
4. In the case of additions/renovations or other minor projects, the Director of Corporate Services or designate may accept compliance with an alternate rating system, if appropriate.
5. The District recognizes the value of an Integrated Design Process in identifying opportunities for more efficient building design and operation and as a result, the design process for building projects covered under this Policy shall incorporate an Integrated Design Process, as far as practical, given the scale of the project.
6. As it is not only the design and construction of buildings which determine performance but its ongoing use, all building projects covered under this Policy shall be operated and maintained to ensure that they continue to perform as designed and commissioned.
7. As far as practical, projects covered under this Policy shall give preference to low or zero carbon energy sources and systems for heating, domestic water heating, ventilation and lighting unless it can be shown that they are not effective on a life cycle cost basis.
8. This Policy will be reviewed and amended as required to ensure it remains current with respect to the B.C. Building Code, building practices and applicable rating system metrics.

EXEMPTIONS:

This policy does not apply to:

- Utility installation buildings although such projects shall be governed by the Energy Efficiency Policy 2-0970-1
- Designated heritage buildings

AUTHORITY TO ACT

Delegated to Staff

Approval Date:	November 15, 2010	Approved by:	Regular Council
1. Amendment Date:	November 14, 2016	Approved by:	Council
2. Amendment Date:		Approved by:	
3. Amendment Date:		Approved by:	



The Corporation of the District of North Vancouver

CORPORATE POLICY MANUAL

Section:	Buildings - Facilities and Properties	2
Sub-Section:	Utilities - General	0970
Title:	ENERGY EFFICIENCY POLICY	1

POLICY

The District of North Vancouver is committed to considering the efficient use of electrical energy in the planning and operating of all of the facilities under its jurisdiction.

Each member of management is responsible for the energy efficient operation of his/her area of responsibility, and each employee has a vital role to play in supporting this policy.

REASON FOR POLICY

To conserve electrical energy within the municipal services wherever possible.

AUTHORITY TO ACT

Delegated to Staff

PROCEDURE

To carry out this policy, the District of North Vancouver will:

1. Maintain an active and aggressive energy conservation awareness program among all employees.
2. Consider life cycle costs when purchasing new equipment and when undertaking major repairs to equipment. (That is, products and systems with superior efficiency, which will pay for their premium costs within half of their usable life, will be preferred).
3. Provide, within reason, the best available energy efficient systems.
4. Upgrade existing facilities and equipment to higher efficiency where the change offers a simple payback of five years.
5. Maintain equipment to energy efficient standards.
6. Maintain a continuous education program in energy efficiency procedures and practices.
7. Encourage all employees to suggest an initiate projects that will save energy.
8. Ask all employees to observe established energy conservation practices.
9. Monitor electrical consumption so that energy efficiency goals can be established and performance measured and reviewed annually.

PERFORMANCE STANDARDS

1. All new purchase orders specify:
 - high efficiency motors, transformers and air compressors
 - adjustable speed drives for all fans and pumps where variable flows are required.
2. All buildings equipped with monitoring type controls to manage electrical use.
3. Lighting systems in new office buildings require no more than 5.0 kilowatt hours per square foot per year.
4. New office buildings operate on a total energy budget of no more than 18 kilowatt hours per square foot per year.
5. Natural gas, where available, is used for space and water heating.
6. All appliances meet the applicable B.C.Hydro efficiency rating.
7. Conversion where possible of:
 - watt fluorescent tubes to 34 watt tubes
 - ballasts to energy saving type
 - incandescent lamps to compact fluorescent
 - mercury vapor lighting to metal halide and high (or low) pressure sodium lighting.
8. Maintenance of equipment and of lighting undertaken to a level so as to achieve optimum efficiency of operation.

Approval Date:	September 9, 1991	Approved by:	Policy & Planning Committee
1. Amendment Date:	December 11, 1995	Approved by:	Regular Council
2. Amendment Date:		Approved by:	
3. Amendment Date:		Approved by:	