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**To:** Public Works and Transportation Committee      **Date:** August 16, 2005  
**From:** Robert Gonzalez, P.Eng.  
Director, Engineering      **File:** 10-6125-05-01/2005-Vol 01  
**Re:** **Richmond's Energy Management Program 2005**

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**Staff Recommendation**

That "Richmond's Energy Management Program 2005" staff report from the Director, Engineering be received for information.

Robert Gonzalez, P.Eng.  
Director, Engineering  
(4150)

<b>FOR ORIGINATING DIVISION USE ONLY</b>		
<b>CONCURRENCE OF GENERAL MANAGER</b>		
<b>REVIEWED BY TAG</b>	YES <input checked="" type="checkbox"/> <i>dw</i>	NO <input type="checkbox"/>
<b>REVIEWED BY CAO</b>	YES <input checked="" type="checkbox"/> <i>Mick Reid</i>	NO <input type="checkbox"/>

## Origin

In the fall of 2002 the City of Richmond signed a Power Smart Partner Agreement with BC Hydro. The vision was to achieve continuous energy efficiency improvement, to have energy efficiency connected to the core business values and to become more environmentally sustainable. A subsequent review of Richmond's initiatives and energy savings from 1997 – 2002 resulted in the City of Richmond becoming the first Power Smart certified municipality in British Columbia.

## Findings Of Fact

### Awards and Achievements

- Power Smart Certification. BC Hydro Power Smart Certified customers are a select group of energy efficient leaders which include the City of Richmond, Fairmont Hotels and Resorts, Kwantlen University Collage, University of British Columbia, Vancity and the Vancouver International Airport Authority. At this year's Power Smart Awards Recognition Banquet, three new BC Hydro clients were recognized as Power Smart Certified Leaders. This year, the Hudson Bay Company, School District 34 Abbotsford and Canadian Autoparts Toyota Inc. were certified Power Smart. The City of Richmond remains the only Power Smart Certified municipality in B.C.
- On May 5, 2004 the City of Richmond received a glass platter, created by local B.C. glass artist Patrick Symond, from BC Hydro in recognition of our on-going commitment to the Power Smart ethic.
- Recognition for energy management initiatives published in the Power of Business 2005. (Attachment 1)
- On March 23, 2005 the City received a letter and a plaque, from The Honourable R. John Efford, Minister of Natural Resources Canada, for participation in the Office of Energy Efficiency's Energy Innovator's Initiative and for our efforts to reduce Green House Gas emissions that contribute to climate change.
- On May 12, 2005 the lighting retrofit project completed at the Steveston Library was recognized at this year's Illuminating Engineers Association Vision Awards for best lighting retrofit design. The project lighting designer from Quantum Lighting also won a special award from BC Hydro for the best reduction in annual energy consumption.

### Initiatives

From January 2, 2004 to June 30, 2005 staff facilitated several projects, including 12 major sites (see Attachment 2), to reduce energy consumption in City buildings. The most significant project undertaken was the Richmond Ice Centre Energy Retrofit with the installation of Low Emissivity ceilings, pony motors, low flow showerheads and lighting controls.

The total energy saved collectively from the 2005 energy reduction initiatives is 1,669,384 kWh which saves the City \$82,000 annually based on 2005 energy rates. In addition to the financial benefits, there is a positive impact for a sustainable future by reducing energy consumption. The hydro energy savings are enough to supply power to 170 average homes annually or a reduction of 600 tonne greenhouse gas emissions.

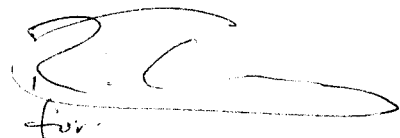
From January 2004 to June 2005 energy reduction projects required \$448,450 in capital funding. The City also has also received incentive and grant funding commitments from BC Hydro and NRCAN of \$201,084 reducing the net cost to the City to \$241,336. Based on 2005 BC Hydro rates this work has also resulted in annual hydro cost savings of \$82,000, giving the City a 3-year simple pay back. Attached is summary of the 2005 project (Attachment 2).

### **Financial Impact**

None.

### **Conclusion**

An effective Energy Management Program is essential to maintain and reduce energy use in City owned facilities. Staff will continue to pursue energy savings throughout the City's facilities through Richmond's Energy Management Program. The benefits of this program are widespread, including financial and sustainable benefits, and furthermore supports our vision to be "*The most appealing liveable and well managed community in Canada*".



Philip James Hogg  
Manager, Facilities Operations and Maintenance  
(1243)

## RELIABLE POWER, AT LOW COST, FOR GENERATIONS

**BC Hydro's purpose is to supply reliable power at low cost for generations to come. Our plan is to ensure that the resources we inherited will be just as valuable to our children.**

We'll ensure a **RELIABLE SUPPLY OF POWER** for our customers' homes and businesses by planning ahead to make sure that enough power generation is available to meet all of B.C.'s energy needs. We'll do this by strategically improving the electric system, and by making B.C. energy self-sufficient by decreasing our reliance on market purchases and looking to "made in B.C." solutions.

We'll maintain the competitive advantage provided by **LOW-COST POWER** by acquiring cost-effective energy from a mix of competitive generation resources and conservation programs, as well as optimizing the value of BC Hydro's heritage assets.

We'll ensure a legacy of sustainable energy **FOR GENERATIONS** by minimizing our impact on the environment. This involves thinking for the long term in all our decisions, balancing trade-offs along the environmental, social and financial bottom lines.

We can all consume less. If British Columbians make a significant and dramatic reduction in their electricity consumption, that would reduce the need for new generation sources and make a huge contribution to protecting our environment.

## Power Smart Certified Customers

### Past Year Highlights

**ACCOMPLISHING MUCH**, yet reaching for more. That describes our Power Smart Certified customers, a select group of energy efficiency leaders that includes the City of Richmond, Fairmont Hotels & Resorts, Kwantlen University College, University of British Columbia, Vancity and the Vancouver International Airport Authority. Here are some of the highlights accomplished this past year.

The **CITY OF RICHMOND** is on track to achieve its 15 per cent energy reduction target two years ahead of schedule. The City adopted a High Performance Building Policy that sets rigorous energy and environmental standards for City-owned buildings. And, by upgrading computers to energy-efficient models, Richmond saved 75 per cent in energy use.

**KWANTLEN UNIVERSITY COLLEGE** is halfway to meeting its goal of reducing annual electricity consumption by 35 per cent by 2006, compared with 2001 levels. This is being achieved through extensive lighting retrofits, energy controls and other upgrades.

**UBC** replaced all incandescent pathway and road lights with energy-efficient lights on its core campus, and is well on its way to achieving its 20 per cent energy reduction goal.

**VANCITY** initiated a program to replace exterior signs at all branches with LED signs. In addition, Vancity implemented improvements to its head office voltage distribution system, based on recommendations from a pilot study.

**VANCOUVER INTERNATIONAL AIRPORT AUTHORITY (YVR)** is one of the first airports in North America to use LED technology for taxiway lighting. As well as saving energy, the lights are brighter and increase safety. YVR also installed energy controls to run baggage conveyor systems only when needed.

Read about the three newest Power Smart Certified customers on the following pages: Hudson's Bay Company, School District 34 (Abbotsford) and Canadian Autoparts Toyota.



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## The City Of Richmond's Energy Management Program

### Energy Savings Initiative Projects, Savings and Incentives, January 2, 2004 – May 31, 2005

Initiative	Project Cost	Energy Saving	Annual Cost Saving	Simple Payback Years
City Hall Lighting	\$ 5,685	93,447 kWh	\$ 5,550	1.02
Vending Misers & Lighting Controls	\$ 17,020	57,510 kWh	\$ 3,410	5
LED Decorative Lighting	\$ 60,402	483,904 kWh	\$ 28,750	2.1
Minoru Aquatic	\$ 31,161	112,024 kWh	\$ 6,650	4.7
SACC	\$ 9,465	16,018 kWh	\$ 950	10
SCC	\$ 7,510	17,587 kWh	\$ 1,045	7.2
TCC	\$ 28,097	54,990 kWh	\$ 3,265	8.6
Watermania	\$ 2,503	8,995 kWh	\$ 535	4.7
WRCC	\$ 5,085	9,593 kWh	\$ 570	8.9
WY Site	\$ 16,122	38,356 kWh	\$ 2,280	7
RIC Re-Lamp	\$ 6,075	34,000 kWh	\$ 2,040	3
RIC Low E ceilings, Pony Pumps, Lighting c/w controls Low flow shower heads	\$ 238,000	743,410 kWh  195.2 Gj	\$ 26,390  \$ 1,400	6.56
Energy Audits	\$ 27,400			
Sub Total	\$ 448,450			
BCH Grants	(\$201,084)			
NRCAN Grants	(\$ 6,000)			
Total Net Cost	\$ 241,366	1,669,834 kWh 195.2 Gj	\$ 82,035 Annual Saving	2.94 years

1,669,384 kWh is enough power to supply power to a 170 average homes or a reduction 600 tonne GHG

Also to be considered, but not factored into the above chart, is the positive impact these projects have in reducing our on-going annual maintenance costs.

**(Attachment 2)**